

OVER 250 PRODUCT REVIEWS!

May 1987  
\$3.95/\$4.95 Canada & Foreign

# MacUser

THE MACINTOSH RESOURCE

## The Dawn Of Desktop Communications

### SPECIAL SUPPLEMENT

- AppleShare
- TOPS & MacLink Plus
- InterMail & inBox
- Networking Products
- Product Directory

### CRICKET DRAW

Pretty, Powerful & PostScript

### EZ DRAFT

CAD the Easy Way

### MUSIC MOUSE

Point and Click Music

### BANK ON MACMONEY

Home Accounting At Its Best



# Borland software: technically superior

## SideKick<sup>®</sup>

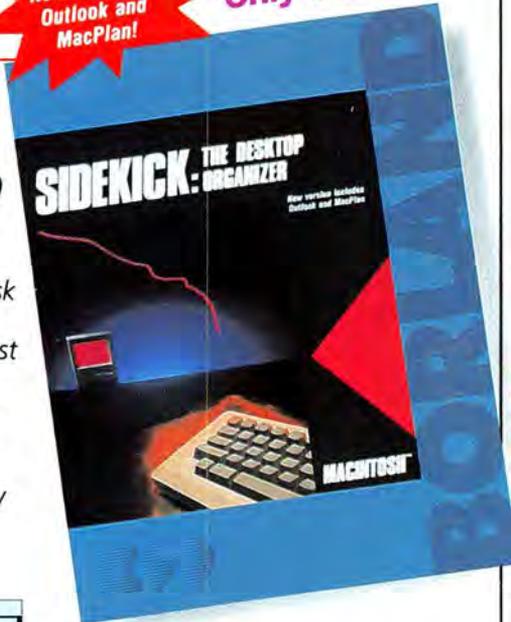
New! Includes  
Outlook and  
MacPlan!

Only \$99.95\*

### SideKick: The Desktop Organizer, Release 2.0

Thousands of users already know that SideKick is the most complete and comprehensive collection of desk accessories available.

Well, with Release 2.0, the best just got better. We've just added two powerful high-performance tools to SideKick. We've added Outlook: The Outliner and MacPlan: The Spreadsheet. They work in perfect harmony with each other and while you run other programs!



MacPlan does both spreadsheets and business graphs. Paste them into your Outlook files and generate professional reports.

#### SideKick: The Desktop Organizer, Release 2.0 now includes

- Outlook: The Outliner
- MacPlan: The Spreadsheet
- Mini word processor
- Calendar
- Telecommunications (new version now supports XModem file transfer protocol)
- PhoneLog
- Analog clock
- Alarm system
- Calculator
- Report generator

**Upgrade Now!** If you are one of the thousands of SideKick users, just send us your original master disk back with a check for \$34.95, and we'll rush you a brand new SideKick, Release 2.0, complete with manual.

\*Introductory offer expires July 1, 1987

## Reflex<sup>®</sup> The Database Manager

### Why are so many critics praising Reflex?

Because Reflex is the high-performance relational database manager that every Mac user has been waiting for.

Its simple spreadsheet approach makes calculations a snap.

And creating database designs, forms, and reports is as easy as drawing them on your screen.

Reflex lets you organize, analyze and report information faster than ever before.

Reflex is the full-featured database manager that everyone who manages mailing lists, customer files, budgets and almost any other set of business numbers needs today.

Whatever business you're in, whatever you manage, you need Reflex: The Database Manager.

### Outlook: The Outliner

- It's the desk accessory with more power than a stand-alone outliner
- A great desktop publishing tool, Outlook lets you incorporate both text and graphics into your outlines
- Works hand-in-hand with MacPlan
- Allows you to work on several outlines at the same time

### MacPlan: The Spreadsheet

- Integrates spreadsheets and graphs
- Does both formulas and straight numbers
- Graph types include bar charts, stacked bar charts, pie charts and line graphs
- Includes 12 ready-to-use templates free!
- Pastes graphics and data right into Outlook creating professional memos and reports, complete with headers and footers, in a snap



### Reflex: The Database Manager— MacUser Editor's Choice Award

#### System requirements:

Macintosh 512K or Macintosh Plus with one disk drive. Second external drive recommended.

Reflex, SideKick and Turbo Pascal are registered trademarks of Borland International, Inc. or Borland Analytica, Inc. Macintosh is a trademark of McIntosh Laboratory, Inc. and is licensed to Apple Computer, Inc. IBM is a registered trademark of International Business Machines Corp. Copyright 1987 Borland International

**New Version!**

#### System requirements:

Macintosh 512K or Macintosh Plus with one disk drive.

# Innovative, and easy to use

Only \$99.95\*



The Relational database that makes the most of your Mac's visual talents. Lets you draw on-screen lines to interconnect databases. Gives you a simple but sophisticated series of cross-references. Simple but sophisticated. Easy to use. Acclaimed by the critics.



## The Critics' Choice

“With 49 arithmetic, text and statistical functions . . . can handle business and engineering calculations that would stump most data managers.

**MacWorld**

. . . can be used quickly and easily even by someone who has never heard of a relational database. It is a good buy for its quality, not just its price.

**MacUser**

. . . a powerful relational database . . . uses a visual approach to information management that makes this power easy to manage.

**InfoWorld**

. . . a combination of power and flexibility that distinguishes it from any other product we've seen.

**Esther Dyson, Release 1.0 9 9**

**What more can we say?  
If you use a Mac, get  
Reflex: The Database  
Manager.**

\*Introductory offer expires July 1, 1987

# Turbo Pascal®

Only \$99.95\*



## Turbo Pascal: The fastest, most efficient and easy-to-use Pascal compiler!

Compiled source code races from Turbo Pascal at the astonishing rate of more than 12,000 lines per minute. Anything less than Turbo Pascal is an exercise in slow motion. You can expect what only Borland delivers: Quality, Speed, Power and Price.

### Turbo Pascal at a glance

- Compilation speed of greater than 12,000 lines per minute
- "Unit" structure lets you create programs in modular form
- Multiple editing windows—up to 8 at the same time
- Options include compiling to disk or memory, or compile and run
- No need to switch between programs to compile or run a program
- Streamlined development and debugging
- Compatible with Hierarchical File System
- Compatible with Macintosh Programmer's Workshop Pascal (with minor changes)
- Ability to define default volume and folder names used in compiler directives
- Search and Change features in the editor speed up and simplify alteration of routines
- Unlimited use of available Macintosh™ memory
- "Units" included to call all the routines provided by Macintosh Toolbox

### The Critics' Choice

“Turbo Pascal is the true winner in the stand-alone Macintosh development environments . . . Turbo Pascal provides ease of use, extremely fast compilations, excellent documentation, great support and a company that is well known in the industry. To end it off, you get all of this for the paltry price of \$99! Now isn't that a reason to get moving with Turbo?”

**Robert Forras, MacTimes**

Turbo Pascal is already an industry standard in the IBM-compatible world and we're very excited to see Borland International's new commitment to provide this and other modestly-priced, high-quality software for the Macintosh computer.

**John Sculley, Apple Computer, Inc. 9 9**

### System requirements:

Macintosh 512K or Macintosh Plus with one disk drive. (The complete Turbo Pascal package, including compiler and editor, occupies only 50K of memory.)

\*Introductory offer expires July 1, 1987

## Turbo Pascal: Truly compatible, easy-to-use

Turbo Pascal is compatible with your Mac's Hierarchical File System, Macintosh Programmer's Workshop Pascal, and Inside Macintosh. You're in familiar territory, but going a lot faster.

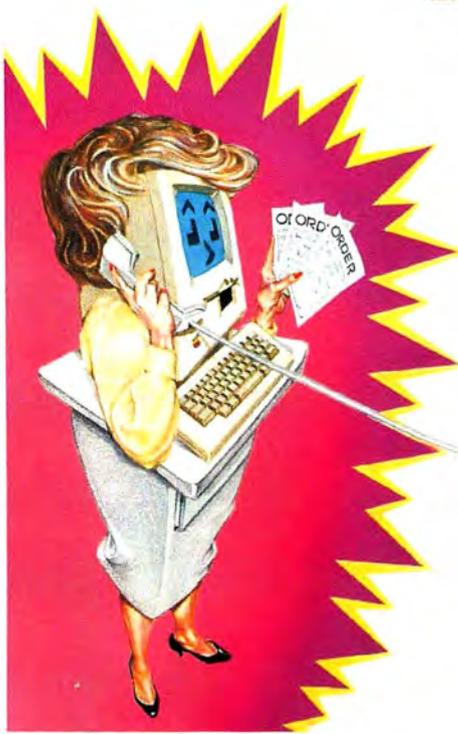
Please circle 128 on reader service card.

For the dealer nearest  
you, or to order by phone  
call (800) 255-8008  
CA (800) 742-1133  
Canada (800) 237-1136

# MacUser

THE MACINTOSH RESOURCE

Cover Illustration by Ron Chironna



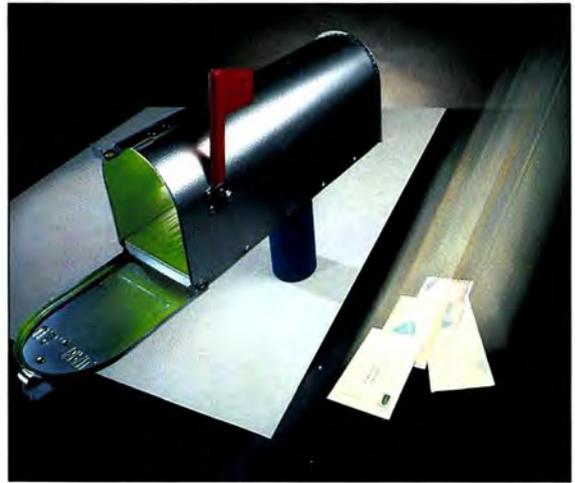
## G R A P H I C S

**ANOTHER ROUND OF CRICKET** *Cricket Draw* gives you graphic power and PostScript to boot. *by Henry Bortman* ..... 74

**DRAFTING MADE EZ** *EZ-Draft* brings full-featured computer-aided drafting to the Mac. *by Frank Conforti* 84

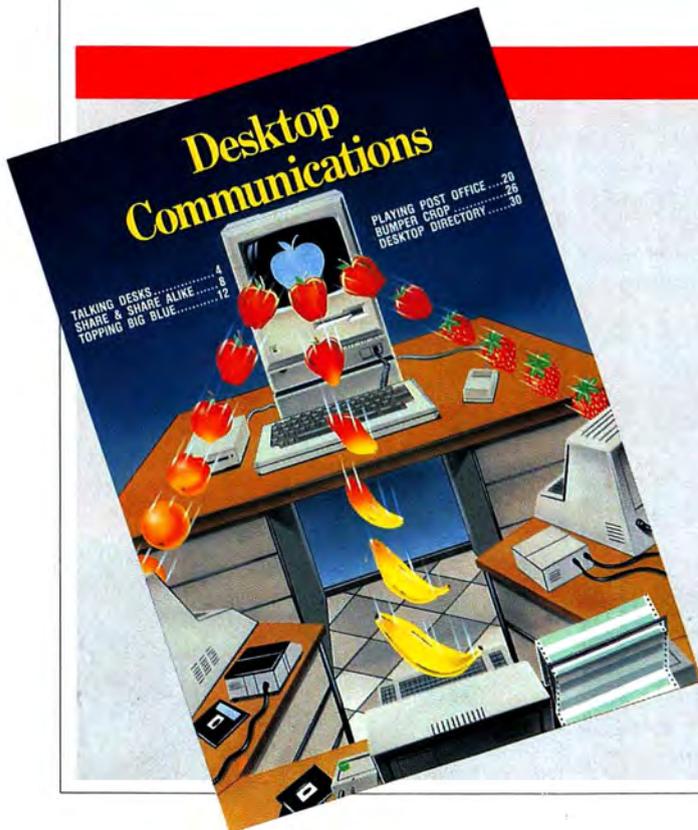
## P E R S O N A L F I N A N C E

**BANKING ON YOUR MAC** Using *Mac-Money* now could make things easier next April 15. *by Bonnie L. Walker* 94



## SPECIAL TEAR-OUT SUPPLEMENT

Beginning opposite page 100



**TALKING DESKS** An introduction to the newest concept: connectivity. *by Michael D. Wesley*..... 4

**SHARE & SHARE ALIKE** A first look at Apple's long-awaited file server, *AppleShare*. *by Steven Bobker* ..... 8

**TOPPING BIG BLUE** The Mac and IBM — they can work it out with *TOPS*. *by Tony Reveaux* ..... 12

**PLAYING POST OFFICE** *InterMail* and *inBox* bring electronic special delivery to your office. *by Léo LaPorte* 20

**BUMPER CROP** A roundup of third-party support for the new Macs. *by Michael D. Wesley*..... 26

**DESKTOP COMMUNICATIONS DIRECTORY** Where to find what you need. *by Michael D. Wesley*..... 30



**M U S I C**

**DO, RE, MOUSE** Jam with your Macintosh and *Music Mouse*. by *Steve Birchall* ..... 136

**R E S O U R C E S**

**NOT SO BASIC** A close look at version 3.0 of *Microsoft's BASIC* interpreter and their new *Compiler*. by *Sharon Zardetto Aker* ..... 144

**D E P A R T M E N T S**

**LETTERS** Readers have their say. *from the Mac community* ..... 25

**NEW ON THE MENU** Latest updates, Rumor Manager and more. *edited by Louise Kohl* ..... 32

**QUICK CLICKS** Eight of the great and near-great, including our first Big One. .... 65

**TIP SHEET** Mac hints, tips and shortcuts. *compiled by David Schargel* 153

**MINIFINDERS** Hundreds of capsule reviews to help you pick and choose ..... 166

**STRIP SHOW** Two pages of programs in Softstrip format ..... 190

**COMING NEXT MONTH** ..... 10

**ADVERTISER'S INDEX** ..... 196

**MACUSER AD DIRECTORY** ..... 200

**MACUSER BACK ISSUES** ..... 163

**MACUSER SUBSCRIPTIONS** ..16, 181



**C O L U M N S**

**THE EDITOR'S DESKTOP** Copyright — Copy Wrong by *Neil L. Shapiro* 15

**PINSTRIPED MAC** Walking The Floor by *Robert R. Wiggins* ..... 47

**WEST COAST REPORT** The Wild (Rainbow) Yonder by *Michael D. Wesley* ..... 55

**THE MACINTOSH BOUNDARY** In On The Ground Floor by *Doug Clapp* 61

**THE HELP FOLDER** Answers From the Mac Team. by *Dan Cochran* 159

**THE DEVIL'S ADVOCATE** Copping A Feel by *John C. Dvorak* ..... 204



*Publisher's Thought For the Month:*

"The first thing we do, let's kill all the lawyers." — Shakespeare 1564-1616 from *Henry VI part II*.

Editor in Chief Steven Bobker  
 West Coast Editor Michael D. Wesley  
 Executive Editor Louise Kohl  
 Managing Editor Daisy Genovese  
 Technical Editor David Schargel  
 West Coast Technical Editor Chip Carman  
 Editorial Assistant Jeri Harrison  
 Contributing Editors Sharon Zardetto Aker,  
 Dan Cochran, David Biedny, Tracie Forman Hines,  
 Dennis Brothers, Ian McKinnell, Doug Clapp  
 Contributing Business Editor Robert R. Wiggins  
 Contributing Anti-Editor John C. Dvorak

Editor at Large Neil L. Shapiro

Art Director Lisa Orsini  
 Associate Art Director Marybeth Cunniff  
 Production Manager Randi B. Kantor

National Advertising Director Steven J. Rosenfield  
 Advertising Managers  
 Southeast/Directory Russell Brody  
 Northeast Jonathan Just  
 Southwest Roy J. Kops  
 Northwest Noreen St. Pierre  
 Midwest Kevin Sullivan  
 Advertising Services Manager Mindy Roland

Circulation Managers Charles Mast,  
 Melinda Kendall  
 Customer Service Kimberly Armstrong  
 Credit/Collections Supervisor Paula Miles

Publisher Felix Dennis  
 Vice-President Susan Freeman  
 Assistant to the Publisher Susan Huang  
 Research & Development Kortwitz & Associates  
 Receptionist Jacqueline Gatling

ZIFF DAVIS PUBLISHING COMPANY

President Kenneth H. Koppel  
 Senior Vice President, Marketing Paul Chook  
 Vice President, Operations Baird Davis  
 Vice President, Controller John Vlachos  
 Vice President, Creative Services Herbert Stern  
 Vice President, Circulation Alicia Marie Ivans  
 Vice President, Circulation Services James Ramaley  
 Vice President, Marketing Services Ann Pollak Adelman  
 Vice President, Development Seth R. Alpert  
 Vice President Hugh Tietjen  
 Business Manager Gary A. Gustafson  
 Production Director Walter J. Terlecki

ZIFF COMMUNICATIONS COMPANY

Chairman Philip B. Korsant President Kenneth H. Koppel Senior Vice  
 President Philip Sine Vice Presidents Laurence Usdin, William Phillips,  
 J. Malcolm Morris, Steven C. Feinman Treasurer Selwyn I. Taubman  
 Secretary Bertram A. Abrams

MacUser (ISSN 0884-0997) is published monthly by Ziff-Davis Publishing Co., a division of Ziff Communications Co., One Park Ave., New York, NY 10016. Editorial Offices: 25 West 39th Street, New York, NY 10018. Telephone: (212) 302-2626. West Coast Offices: 11 Davis Drive, Belmont, CA 94002. Telephone: (415) 598-2323. Midwest Offices: 1150 Wilmette Avenue, Wilmette, IL 60091. Telephone: (312) 251-2541. U.S. subscription rates are \$27 for 12 issues, \$45 for 24 issues and \$62 for 36 issues. For Canada and Mexico, subscription rates in U.S. funds are \$29 for 12 issues, \$49 for 24 issues and \$68 for 36 issues. For other countries add \$50 per year to the U.S. rates for airmail. Add \$12 per year to the U.S. rates for surface mail. Single copy price is \$3.95 (Canada \$4.95). POSTMASTER: Send address changes to MacUser, P.O. Box 56986, Boulder, CO 80321-6986. Entire contents Copyright © 1987 Ziff Communications Company. All rights reserved; reproduction in whole or in part without permission is prohibited. PERMISSIONS: Material in this publication may not be reproduced in any form without permission. Requests for permission should be directed to the Licensing Manager, Jean Lamensdorf, Ziff-Davis Publishing Company, One Park Ave., New York, NY 10016. For back issues (subject to availability), send \$6 per issue, Canada foreign \$7 per issue to: Ziff-Davis, One Park Avenue, 4th floor, New York, New York 10016. Attn: K. Armstrong. Application to mail second-class is pending at NY, NY and additional mailing offices.

**MacUser**  
 THE MACINTOSH RESOURCE

MacUser is an independent journal, not affiliated in any way with Apple Computer, Inc. 

Printed in the USA.

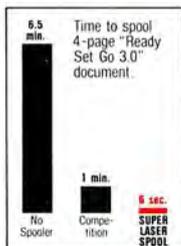


**BLINDINGLY FAST.** By sending your print files to the background and returning control of your Mac to you, SuperLaserSpool lets you work and print at the same time. And it does this 5 to 40 times faster than its nearest competitor.

SuperLaserSpool gets you back to work fast. You never wait for the printer, no matter how many documents you have queued up or even if the network is busy. SuperLaserSpool automatically manages the entire printing process while you work.

**WORKS WITH ANY APPLE® PRINTER.** SuperLaserSpool can print to the LaserWriter and ImageWriter™ (either direct-connect or AppleTalk™-connected).

**INCREDIBLY COMPACT.** Other spoolers require so much storage space that a hard disk is essential. Not so with SuperLaserSpool. You can use it with floppy-disk systems because its files are so compact.



*Look how much faster SuperLaserSpool will give your Mac back compared to its competition.*



*SuperLaserSpool's files are so small, you don't have to worry about running out of disk space.*

spool files are always safe, even if the system crashes.

SuperLaserSpool works with almost all Macintosh applications. You can even leave and enter different programs without disrupting the printing of documents.

And it's completely invisible: You can launch it and forget it's even there.

- SINGLE-USER: \$149.95
- MULTI-USER: \$395.00

Get SuperLaserSpool at your local SuperMac dealer today, or order direct.



950 N. Rengstorff, Mountain View, CA 94043  
 (415) 964-8884

Macintosh is a trademark licensed to Apple Computer, Inc. by McIntosh Laboratory, Inc.  
 LaserWriter, ImageWriter and AppleTalk are trademarks of Apple Computer, Inc. © 1986 SuperMac Software.

# Announcing RecordHolderPlus.™

The easiest-to-use data manager now lets you show your true **colors.**

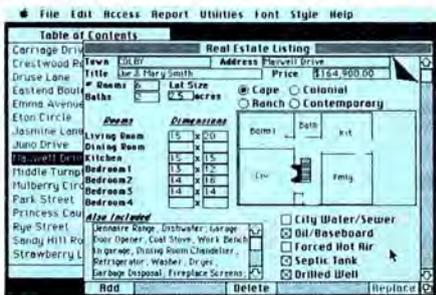
The original RecordHolder drew rave reviews: "powerful, easy to use," and a program that "outclasses most programs costing four times as much." Now, RecordHolderPlus adds color and graphics capabilities and much more at the same low price.

Put graphics and color in your reports anywhere you need them; store pictures in your data base; print text or graphics in any color on ImageWriter II.

Up to 32,000 characters per field or record. If you use long text fields, this is the data manager you need. You don't even have to specify text field length and your field can run to multiple pages. Individual scroll bars make viewing fast and easy.

Print multiple mailing labels across. And more. RecordHolderPlus gives you superb mailing label flexibility. Sort by Alpha or ZIP. Print multiple labels across, multiple identical labels and test print your labels before running a batch so alignment is perfect. Together with our MergeWrite™ program, you can manage your mailing lists letter perfectly.

Data entry is easy with "you-design" window formats. And more. Put text, graphics, clickable checkboxes and buttons in your window formats anywhere you need them. And more: check for text or numbers only; convert to all upper case; capitalize first letter of each word; perform range checks; fill in a field from a list of items or punctuation from a preset pattern.



Typical RecordHolderPlus screen, showing easy-to-format Display window and unique Table of Contents window that gives you instant access to records.

Directory, Bibliography, Real Estate Listing, Personnel Records, Sales Call Records, Patient Records, Legal Memos and many more.

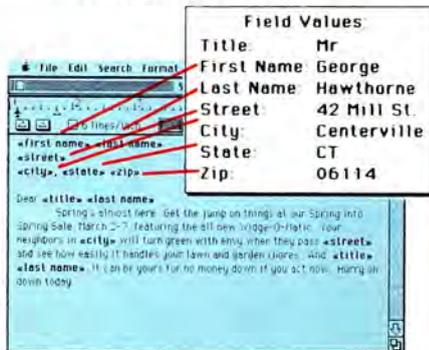
Still the best buy, too.  
**\$69.95**

For more information, clip your business card to this ad and send both to us.

Or:  
Order toll-free:  
**1-800-437-5200.**

Ask for Operator 29.  
VISA, MC, AMEX.

# At last. Mail merge for MacWrite.™



## Introducing MergeWrite.™

MergeWrite is designed to be used with MacWrite as a mail merger. With it, you can create personalized-looking form letters. A variety of headings can be created with salutations as your list requires.

Use alone or with a data manager. MergeWrite can be used alone to produce mailing materials. Or MergeWrite can accept data from our RecordHolderPlus data manager (or many other popular data managers). Either way, you get professional looking results under complete control.

Print different text sections for different records.

For some letters, you may want to direct different paragraphs to different recipients. With MergeWrite, it's a snap with its built-in "if-then-else" logic.

Print some or all of your lists. Just specify the portion of a list you wish to have printed and MergeWrite does it. You can sort by Alpha or ZIP. And MergeWrite supports the ImageWriter and LaserWriter printers.

For more information, clip your business card to this ad and send both to us.

Only **\$49.95**

Order toll-free:  
**1-800-437-5200.**

Ask for Operator 29.  
VISA, MC, AMEX.

**Software Discoveries, Inc.**

© Software Discoveries, Inc., 1987.

ImageWriter II is a trademark of Apple Computer, Inc.

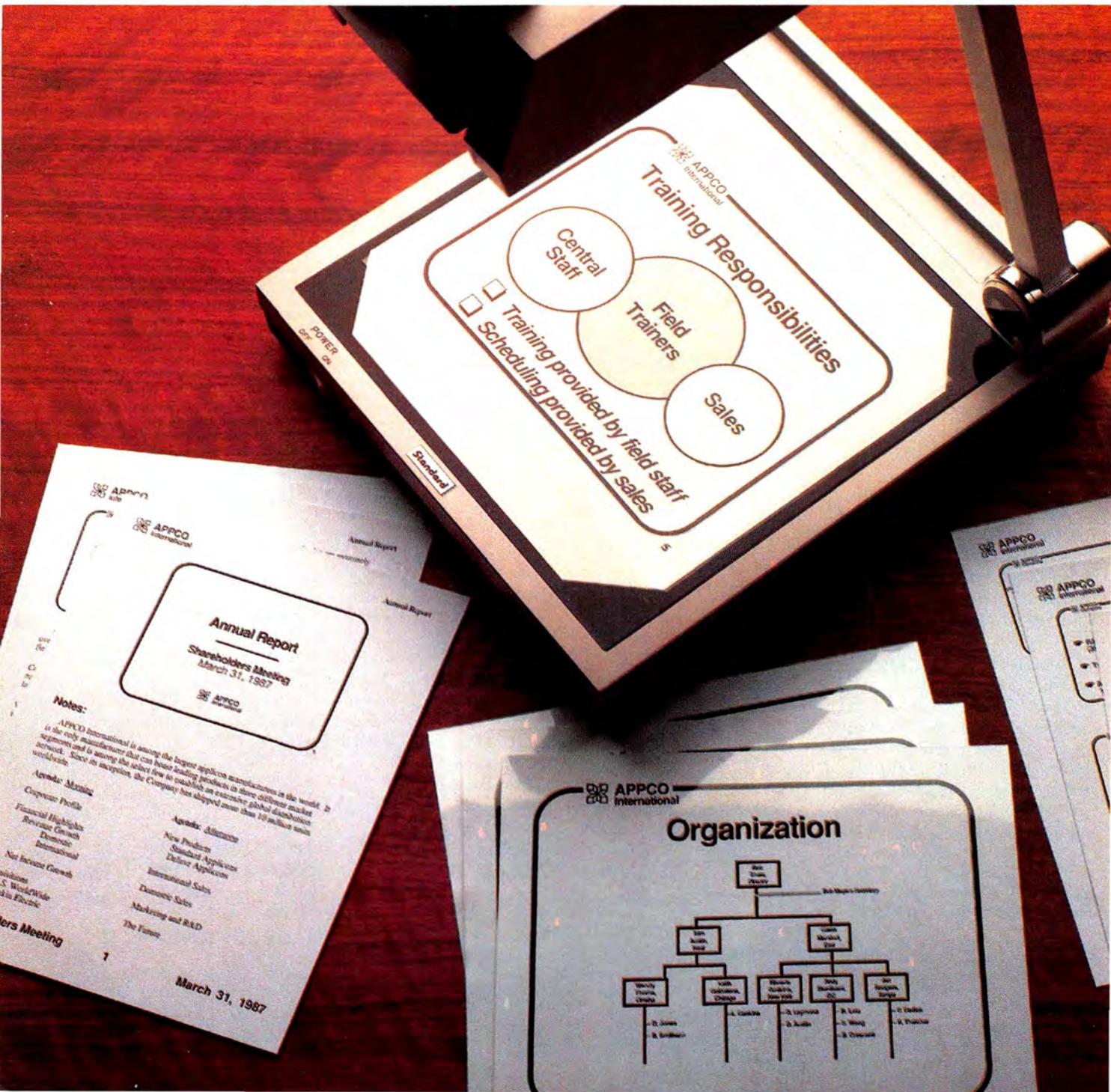
137 Krawski Drive  
South Windsor, CT 06074  
203-872-1024

**Software Discoveries, Inc.**

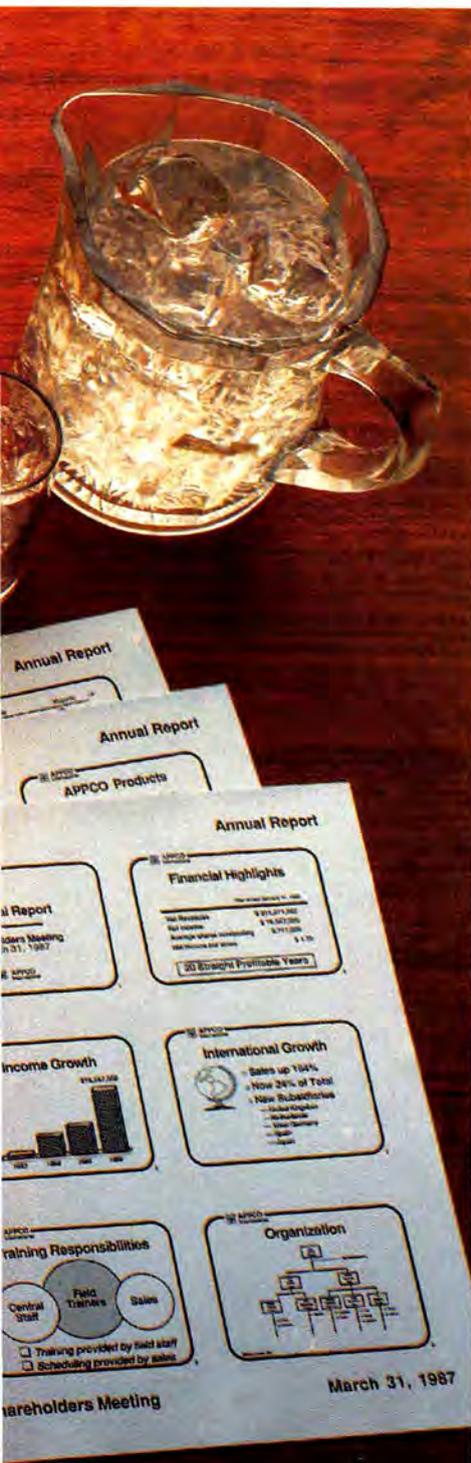
137 Krawski Drive  
South Windsor, CT 06074 203-872-1024  
© 1987 Software Discoveries, Inc. LaserWriter, ImageWriter and MacWrite are trademarks of Apple Computer, Inc.

Please circle 292 on reader service card.

# Everything you need for a great presentation



# eed to make ns, just add water.



## Introducing PowerPoint™

Now you can put together the kind of presentations you've always wanted. Quickly. Easily.

Complete, professional presentations, whether it's for an unexpected sales meeting in 10 minutes, or the annual shareholders' meeting in a month.

With PowerPoint, you actually plan, compose and edit your entire presentation on your Macintosh™ computer. So you see exactly what you, and your audience, are going to see.

PowerPoint is the only presentation package that gives you everything you could want, the way you want it, when you want it — overheads, slides or flipcharts, plus speaker's notes and audience handouts.

It's like having an entire staff of writers, designers, typesetters, artists and a print shop all to yourself. But without the hassles and headaches.

With PowerPoint's free-form design capabilities, you can easily create everything on your screen, no artistic talent required. Mix typeset-quality text with diagrams, graphs and illustrations. Or, you can copy charts, tables and illustrations from other programs just as easily.

Once you've decided on the "look" you want — big logos, thin borders, today's date, whatever — PowerPoint can standardize that format for all your other visuals, automatically.

And with PowerPoint's unique Slide Sorters, you can quickly rearrange your slides or combine them with slides from other presentations, automatically reformatting them to your new look.

Last minute changes? No problem. You can make them in an instant with PowerPoint. Now you're ready to simply print out your notes, handouts, overheads or flipcharts.

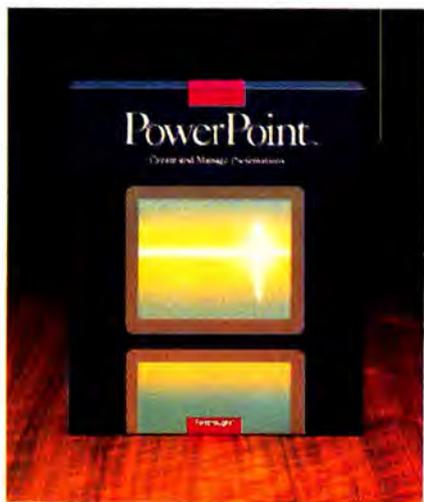
Then take a deep breath, pour yourself a glass of water, and you're set to wow 'em!

Because for just \$395, you have the only program that gives you everything you need to make your points, powerfully.

Call 1-800-622-9273 today for the name of your nearest dealer.

### We guarantee it.

If PowerPoint doesn't completely fulfill your expectations, call us and we'll solve your problem or arrange a refund.\* From Forethought®, Inc.



© 1987 Forethought, Inc. Forethought and PowerPoint are trademarks of Forethought, Inc. Macintosh is a trademark of Apple Computer, Inc. \*Refund must be requested within 30 days of purchase.

Please circle 225 on reader service card.

# “Our goal was simple capable writing tool mind saying, we’ve

*Charles Simonyi, Chief Architect, Applications, Microsoft Corporation.*

We weren't looking for incremental improvements. We were shooting for a quantum leap. Not a word processor but a *document* processor. A tool which would exceed every expectation and overwhelm every standard.

From now on, when people define what software should do for the production of documents, they'll point to this: Microsoft® Word Version 3.0 for the Apple® Macintosh.™

On Word, everything you need to structure a document is integrated into the program. Starting up front with the outliner. Followed by style sheets which you can quickly set up to standardize and recall the formats you use repeatedly. Then a built-in spelling checker proofreads for you when you're finished.

Because speed is of the essence, we made Word a rocket. It scrolls faster, saves faster. And you can't out-type it.

Because there's a big, diverse world out there, Word easily shares and automatically converts files created with the IBM® PC version of Word. And supports DCA protocols for exchanging formatted files with minis, mainframes, and dedicated word processors.

Finally, what you see on screen will look superb on paper. Word will set text next to graphics. And exploit the capabilities of laser printers beyond anything that has gone before.

But the most powerful feature of all is its accessibility. Word lets you run its menus in either Short or Full mode. The first, a concise, basic menu which gets new users producing instantly. The second, a comprehensive menu which taps into Word's vast capacities.

That's Word for the Macintosh. Not just the best word processor on any micro-computer, but the most effective tool of persuasion ever devised.

*Microsoft Word is available for the IBM PC and compatibles and the Apple Macintosh.*

**Microsoft**® For the name of the nearest Microsoft dealer or to upgrade to Version 3.0, call (800) 426-9400. In Washington State and Alaska, (206) 882-8088. In Canada, call (416) 673-7638.

Microsoft and the Microsoft logo are registered trademarks of Microsoft Corporation. Apple is a registered trademark and Macintosh is a trademark of Apple Computer, Inc. IBM is a registered trademark of International Business Machines Corporation.

# To create the most ever devised. I don't succeeded."

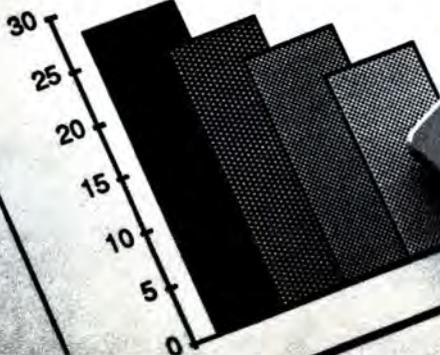
## Introducing Microsoft Word 3.0

MICROSOFT WORD VERSION 3.0 is a powerful word processing program that offers an unprecedented range of choices for the look of your document. With Word, you can mix graphics and text, within a paragraph or side-by-side. It provides built-in support for snaking and side-by-side columns. And you initiate automatic

hyphenation, for a tighter, more professional appearance.

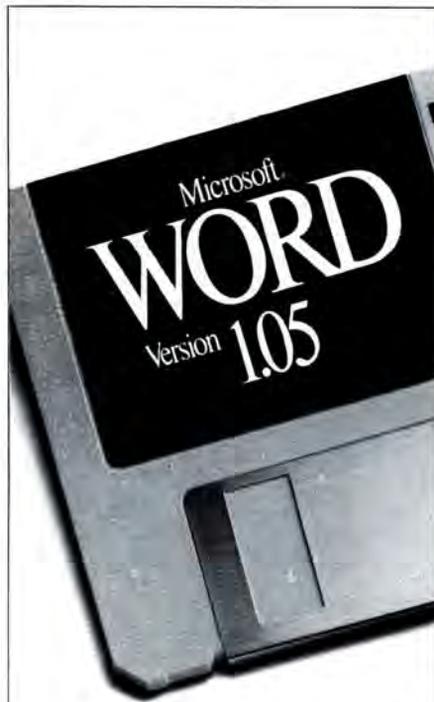
For even more sophisticated capabilities use a page layout program, such as PageMaker 2.0 from Aldus. PageMaker can read and write Microsoft Word files, and you can easily transfer formats between them.

Percentage of Computer Usage



■ Word Processing  
■ Spreadsheets

Microsoft  
WORD



Up to  
v. 3.0.  
Down to  
\$99.

Microsoft® Word Version 3.0 for the Apple® Macintosh™ is the most powerful word processor available for any personal computer.

Complete with outlining, integrated stylesheets and a spelling checker, it's worth every cent of the \$395 suggested retail price.

But if you own Word v.1.05 or earlier, we'll upgrade you to Version 3.0 for a mere \$99, or less.\*

Call the number below for your information package. The offer ends on May 31st, 1987.

(800) 323-3577

**Microsoft®**

\*\$50 if you bought Word after October 1st, 1986.

Microsoft and the Microsoft logo are registered trademarks of Microsoft Corporation. Apple is a registered trademark and Macintosh is a trademark of Apple Computer, Inc.

# COMING SOON

Balance your spreadsheet act with **TRAPEZE**

Unlocking the unknown power of **EXCEL**

Beyond the basic **SCRAPBOOK**

Winnowing out a winner in **DESKTOP PUBLISHING**

Conquer the New World in **SEVEN CITIES OF GOLD**

Color from your **LASERWRITER?**

Souped up **IMAGEWRITING**

**P L U S** 

The Macintosh Boundary from **Doug Clapp**. **John Dvorak** on the state of the Mac. **Michael D. Wesley's** West Coast Report. **Robert Wiggins'** Pinstripe Mac. **Dan Cochran** with Answers from the Mac Team. Three pages of **hints and tips**. Over 250 **MiniFinders**. An expanded **Quick Click** section, now including hardware. More **Cauzin Softstrips**.

**MacUser**

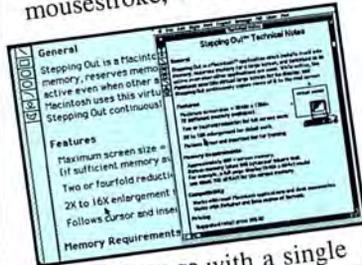
FINE PRINT WEASEL

Editors absolutely reserve the right to publish none, some, all, or just the parts we managed to complete of the above, due to the inherent problems that occur when reviewing software, hardware and the ever elusive vaporware.

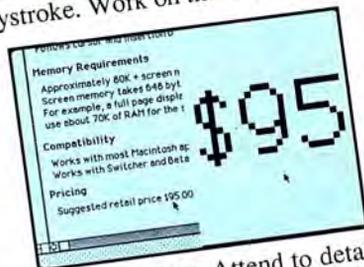
INTRODUCING  
**Stepping Out™**  
The Macintosh™ Screen Extender

**BIG SCREEN ON A DISK**

Don't feel confined by your Macintosh™ screen. Zip across entire pages in a single mousestroke, without scrolling.

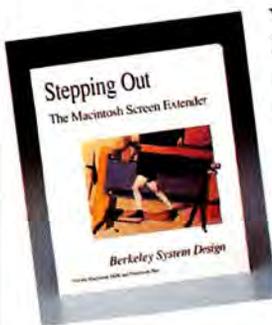


See the full page with a single keystroke. Work on the overall effect.



Zoom in anytime. Attend to details.

Ideal for desktop publishing and design.



Visit your local dealer or call:

**Berkeley System Design**  
1708 Shattuck Avenue  
Berkeley, CA 94709  
415/540-5536

Please circle 184 on reader service card.



# If you've ever outgrown your accounting software, it wasn't ours.

Because ours can't be outgrown.

That's right. The SBT Database Accounting Library is the first business software package that works just as well whether your business is small or big. Here's why.

One.

It's modular. You can start with the modules you need today. Then add more as your needs grow. And all the modules work together.

Two.

It runs with McMax and dMAN database management software (high-performance dBASE III work-alikes for the Apple Macintosh)\* So you get all the power and flexibility of the most advanced and best selling Database Accounting Software.

Three.

You can customize our software in just hours to fit your business. No matter what size or shape your business is. Because we give you the source code (the key to changing our software) absolutely free.

The SBT Database Accounting Library. Try to outgrow it. We dare you.

Call today for our demo disk and brochure. (415) 331-9900.

#### THE SBT DATABASE ACCOUNTING LIBRARY.

dProfessional	Time & Billing	\$395
dOrder	Sales Order Processing	\$295
dInvoice	Billing/Inventory Control	\$295
dStatement	Accounts Receivable	\$100
dPurchase	Purchase Order	\$295
dPayable	Accounts Payable	\$395
dPayroll	Payroll/Labor	\$395
dLedger	General Ledger/Finance	\$395
dAssets	Asset/Depreciation	\$295
dProject	Project/Job Accounting	\$395
dBackup	Menu/Backup	\$ 65

One Harbor Drive  
Sausalito, CA 94965 (415) 331-9900  
Telex 9102404708

**SBT**  
CORPORATION

Please circle 288 on reader service card.

# How to dramatically improve the way you manage meetings, ideas, time and people with MORE.™

If you're like most people your time is valuable. You believe you should, and could, be more effective managing your daily tasks. Perhaps you've even tried conventional methods of increasing efficiency—making lists of priorities, delegating, keeping diaries, etc.—only to find little has changed because you're still wasting valuable time.

That's why we wrote this guide. We want to explain four ways to improve the way you work by using the power of MORE and a Macintosh.

If you're too busy to read further, please skip ahead to the coupon and see how easy it is to receive our free time-saving booklets on **Managing Meetings, Preparing Business Plans, Creating Tree Charts and Organizing a Status Center.**

## 1 Start a revolution at your next meeting.

How often do you come away from a meeting satisfied with the results? Probably not as often as you would like. Here are some simple ways to get more accomplished at your next meeting:

- Have a specific objective in mind; as the meeting progresses, be sure you're still dealing with the same problem.
- Only cover things that cannot be put across in other ways—bulletins, manuals, direct contact with supervisors, etc.
- Don't try to cover more ground than time will permit. You can't solve the world's problems in a 30-minute staff meeting.
- Prepare for the meeting. Find out what the other people attending need to know before the meeting.

### Why MORE is so revolutionary in meetings.

Try taking a Macintosh and MORE into your next meeting. Start with an outlined agenda, develop the issues into a group action plan. The participants—even those who don't use a computer—can direct the content and organization of the plan. Graphic Tree Charts and Bullet Charts help you present the impact of your decisions. At any point, you can review what's been accomplished. Everyone gets a uniform set of meeting notes, on disk or printed. This frees the participants from having to take detailed notes. Everyone knows what was decided, so next time you sit down there won't be a debate. Spreadsheets started a revolution for people who work with numbers. MORE is starting a revolution for people who spend time in meetings.



What's different about this meeting? The Macintosh on the table is running MORE. With MORE in the meeting, ideas will be focused and presented better than ever before possible.

## 2 Manage people and projects effectively.

Managing people and projects can be very difficult. Some managers apply common sense, others learn by doing, others simply avoid the problem altogether. In an effort to simplify a complicated subject, here are a few things that will help any manager:

- Managing requires a great deal of talking and listening. It sounds easy, but it is a constant job that requires a concentrated effort.
- Job descriptions and boundaries should be provided for every person's job.
- Feedback on performance and encouragement improve motivation. Doing and saying nothing leads to stagnation.
- Find the best people you can and support them.

Now there's a way to manage people and projects better using MORE. Managers, executives, corporate planners and personnel staff can use MORE to outline their management ideas and instantly transform them into a Tree Chart. You can use Tree Charts for organizational charts, project flow-charts, decision trees, block diagrams or time lines. MORE also is a powerful tool for writing job descriptions and preparing employee reviews. As a project management tool, MORE is fast and flexible.

## 3 Create a time-saving Status Center.

The first step in becoming more time-efficient is to identify how you spend your time. Naturally, once you've figured how and why time is spent, you begin to do things that give you higher payoffs and more satisfaction.

For you, MORE becomes a convenient and powerful electronic notebook and card file. You collect and organize the details of



The next best thing to having a clock that runs backwards is having a Macintosh that runs MORE. With MORE you can set up a Status Center to organize the details of your daily work.



Some of the best ideas you have don't always happen in front of a computer. (That could change after you've used MORE.) For example, you can take your ideas from scraps of paper to a finished presentation in minutes.



daily work in an outline—your personal Status Center. You keep this outline up-to-date, using it to:

- List and organize your tasks
- Record names, addresses and phone numbers
- Keep your daily calendar
- Write and file notes and memos
- Track your expenses

MORE's power outlining lets you change and interconnect your lists with ease. You can use the Templates feature to store "boiler-plate" such as an address form and call it up at any time. The calendar feature will generate a daily schedule automatically. Most of your writing and word-processing work can be done right in MORE. You can even dial a phone, record the time and date, and calculate a sum—all by pressing a key. MORE is the ultimate tool for desk-top productivity.

## 4 Process your ideas, then present them.

If you've ever had to prepare a presentation in a hurry, you know how frustrating and time-consuming the task can be. Technique is an important part of presenting your ideas effectively. Here are some simple steps that will take you from rough ideas to finished presentations:

- Make a "laundry list" outline of basic ideas.
- Become uninhibited with your ideas—don't edit on your first pass.
- Be generous with headings, call-outs, charts and illustrations.
- Allow yourself the flexibility to change your presentation, even at the last minute.

### Now you can prepare a presentation quickly and professionally, even at the last minute.

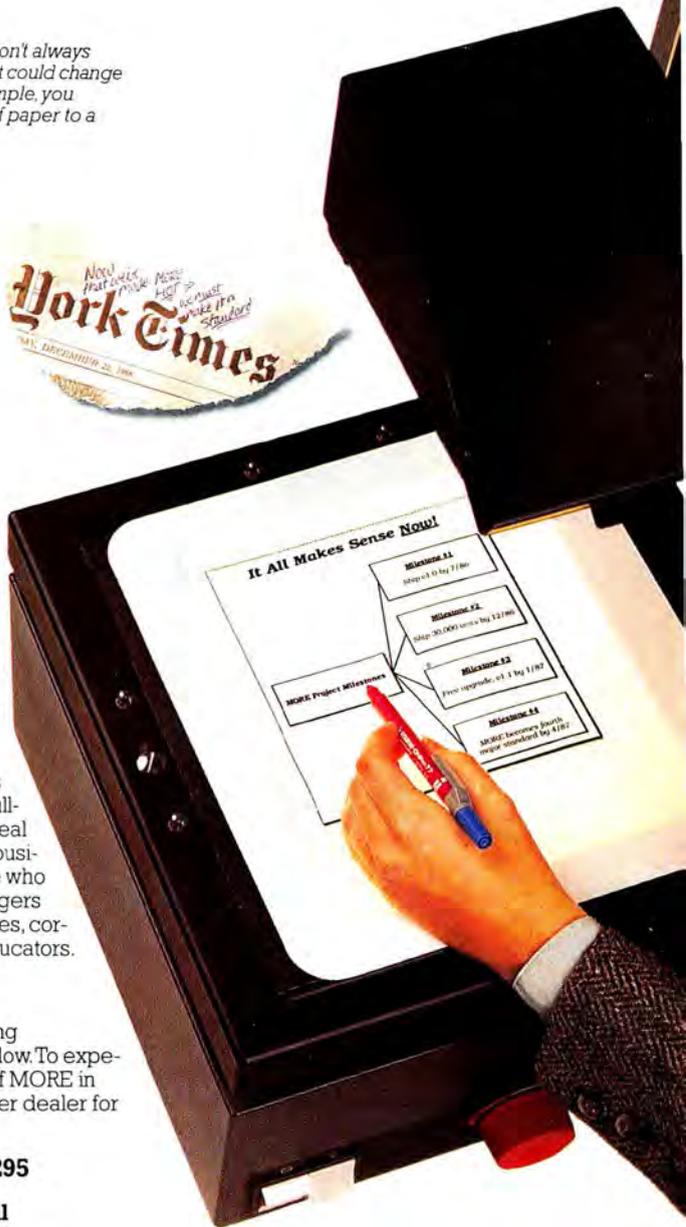
For the first time, MORE integrates idea processing with idea presentation. You can outline your ideas and quickly transform them into attractive Bullet Charts. Add Tree Charts and pictures, and you have a full-fledged slide show. MORE is ideal for the entrepreneur writing a business plan—and also for anyone who develops presentations: managers and decision makers, executives, corporate planners, sales staff, educators.

### There's more...

To receive your free time-saving booklets, fill out the coupon below. To experience the power and speed of MORE in person, visit your local computer dealer for a demonstration.

**Suggested retail price \$295**

**For Your Nearest Dealer Call  
1-800-822-3700,  
in California call 1-800-443-4310,  
in Canada call 415-964-6300.**



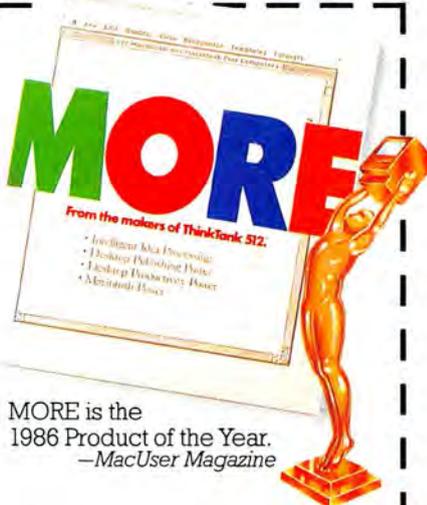
*Yes! Rush me the following copies of your MORE booklets.*

- Organizing a Status Center in MORE
- Managing a Meeting with MORE
- Presenting a Business Plan with MORE
- Creating Tree Charts in MORE

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone \_\_\_\_\_



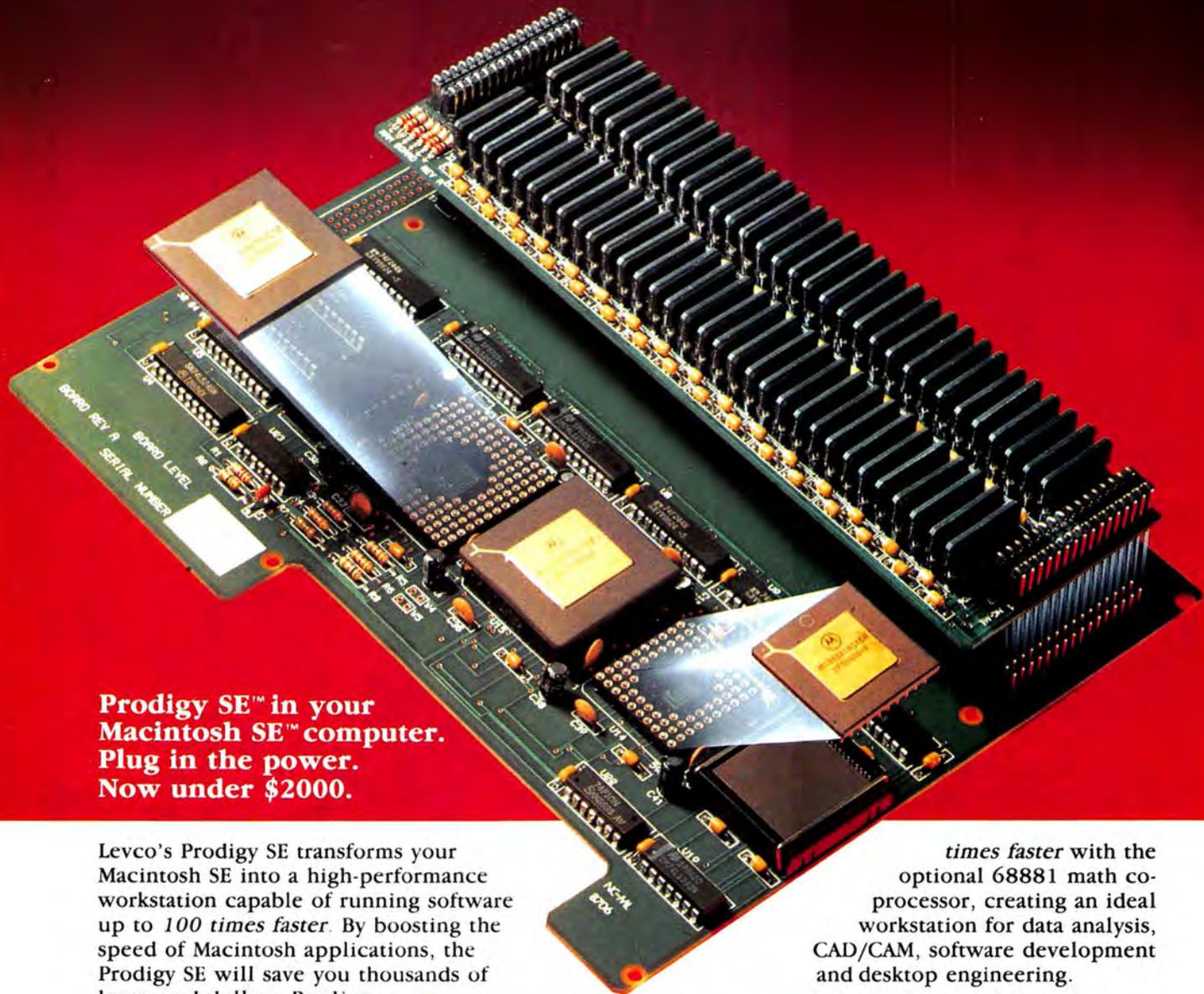
**LIVING VIDEOTEXT**  
2432 Charleston Road  
Mountain View, CA 94043



MORE is the  
1986 Product of the Year.  
—MacUser Magazine

*Offer good while supplies last. MORE is not copy protected. For all Macintosh systems with 512K or more. MORE, ThinkTank 512, ThinkTank 128, and ThinkTank are trademarks of Living Videotext. The names of the products above may be trademarks or registered trademarks.*





**Prodigy SE™ in your  
Macintosh SE™ computer.  
Plug in the power.  
Now under \$2000.**

Levco's Prodigy SE transforms your Macintosh SE into a high-performance workstation capable of running software up to *100 times faster*. By boosting the speed of Macintosh applications, the Prodigy SE will save you thousands of hours and dollars. Prodigy SE plugs into the Macintosh SE's internal expansion bus, and features specialized hardware options.

**68020 processor boosts software speed**  
Prodigy SE's true 32-bit, 16 MHz 68020 processor effectively doubles the clock speed and data path of the Macintosh SE. Standard applications run 4-8 times faster, revolutionizing the productivity of desktop publishers, consultants and business users.

**Math co-processor crunches numbers faster**  
Calculation-intensive software runs up to *100*

*times faster* with the optional 68881 math co-processor, creating an ideal workstation for data analysis, CAD/CAM, software development and desktop engineering.

**Expandable RAM and Memory Management**

Prodigy SE features one megabyte of RAM, and is expandable to 32 megabytes. The optional 68851 paged Memory Management unit provides the Macintosh with virtual memory capabilities previously available only on mini or mainframe computers.

viously available only on mini or mainframe computers.

**The complete system from a single source**

As an authorized Apple® VAR, Levco provides completely bundled Macintosh systems, authorized Apple service and product warranty.

# Go Ahead... Make the Most Powerful PC in the World



Authorized Value Added Reseller

Macintosh and Macintosh SE are trademarks of Apple Computer Inc



Levco  
6160 Lusk Blvd.  
Suite C-203  
San Diego, CA 92121  
(619) 457-2011



by Neil L. Shapiro

## Copyright— Copy Wrong

We all have secret weaknesses. One of mine (which will no longer qualify as a secret following this paragraph) is that I spend a lot of time in comic book stores. Going through the stacks on a hunt for an old "Uncle Scrooge," "Donald Duck" or other Carl Barks masterpiece, picking up the latest Dave Sim's "Cerebus" creation — this is how I unwind. But even these idyllic reveries have been interrupted by overhearing various conversations that yank me back to reality.

Conversations about computers, about software are becoming more and more prevalent among the high-school age kids who wonder who the old-looking guy by the back issues might be. Without meaning to, I have picked up a complete education on how these young people view the computer industry and, specifically, the software industry.

I have seen the future — and we might be in need of a few superheroes.

### TRUTH, JUSTICE, THE AMERICAN WAY

Every computer-oriented conversation I have ever heard in this circumstance involved the pirating of software. I have heard plans being laid for mass copying of disks on both school-owned and personally-owned computers; seen facsimiles of manuals swapped and have even heard one Mom chime in that she'd buy one of the kids a computer if the others would "share" the software.

Now these are not the sort of kids who you might be tempted to cross the street to avoid. Not one had a safety pin through his or her nose and they were paying cash up front for their comics.

They are not thieves, they are not dishonest and they are not stupid. But they certainly are software pirates.

How did they — and so many others — fall into this type of activity?

Well, I finally overheard one conversation wherein I knew one of the people involved. I had once had a long discussion with him about Carl Barks and how Walt Disney Studios had managed to

somehow keep "The Duck Man's" name from public view for so many decades.

Anyway, they (my young acquaintance and three of his friends) were talking about copying the latest game when they got home. Figuring that the worst that could happen is that I would obtain a neighborhood reputation as an old fogey, I politely interrupted and asked if they realized how wrong it is to copy software.

Well, I expected a number of replies. I figured that I would hear that software was too expensive so it was just asking to be copied; perhaps that copying is really "testing", or any number of rather hollow arguments I had heard so often before.

What I did hear astounded me.

### JOUSTING A DARK KNIGHT

The guys looked at me as if I was crazy. What, they wondered, could I possibly be talking about? How could it



be "wrong" to copy software? Hey, everybody does it.

*They had literally never been told before that copying software is ethically wrong.*

Never.

By anyone.

Sure, they understood that it was a violation of the copyright law. But so what?

We had a long discussion. I explained to them some of the realities behind software publishing, things that most people reading this editorial probably

already know. I told them that many authors depended on the software sales for income, and told a few personal stories I know about people who are trying to support families being such authors. I tried to get across that once the publisher meets costs and the distributor gets a cut there is just not that much left for the person who wrote the program.

I don't want to go into all of the reasons here because that isn't the point of this piece. You understand the reasons. I understand the reasons. Most of the people we know and work with understand the reasons.

*The kids don't understand the reasons.*

The software industry has failed to reach the people who do not read computer magazines or technical journals. The software industry has failed to reach the developing consumer market at the consumer level.

And, more, the schools have failed without even trying.

### A MARVELOUS IDEA...

These kids shouldn't have to wait for some old codger to wheeze up to them in a comic book store mumbling about the ethics of software piracy. They should already have learned this, the same places that they learned that other improper actions are ethically wrong. They should have learned it in their homes and schools — at least in their schools.

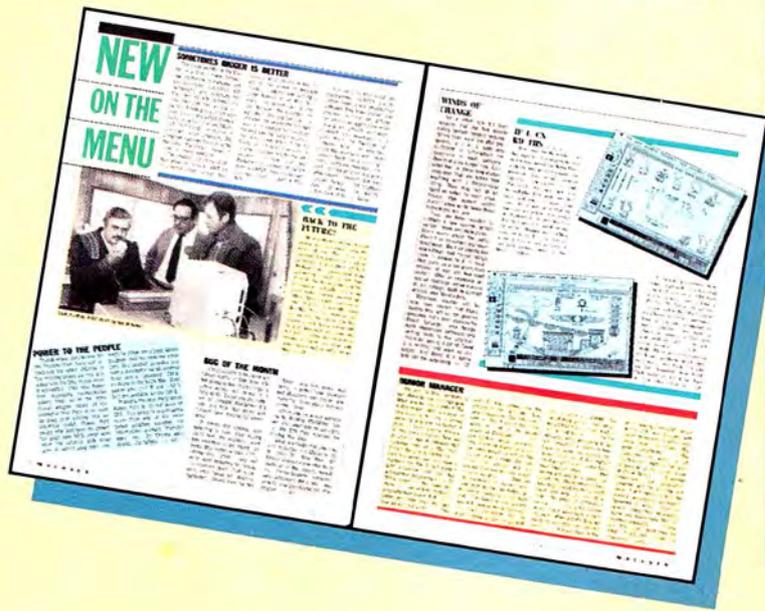
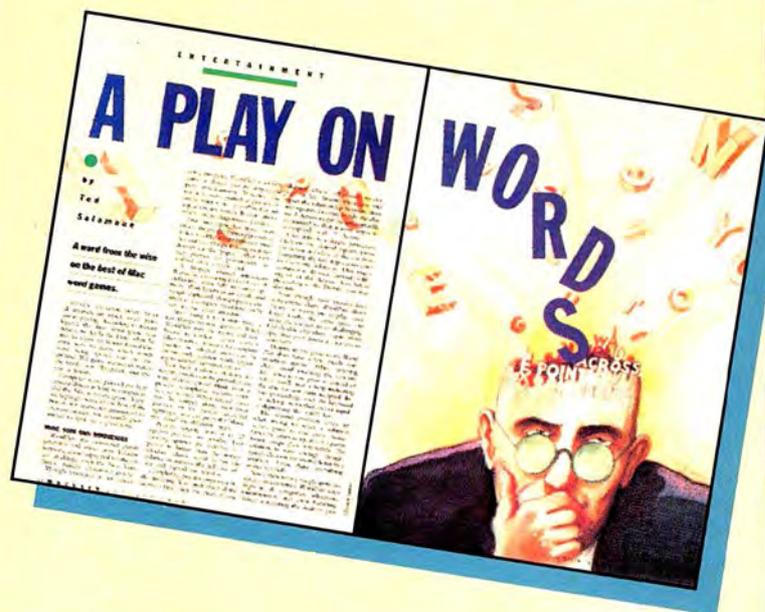
Many high schools have ethics in the curriculum. Today, someplace in the country, hundreds of high schoolers have had to answer test questions by describing what they would do in hypothetical situations involving everything from cheating to dating (and even cheating on a date).

Not one high schooler I know about has been asked today what he or she would do if confronted by the chance to copy a piece of software.

The reasons for not copying software deserve at least the same exposure in the school system as the reasons why we should all vote or why we should not steal candy. As computers become more and more a part of our society — led in this advance by easy to use and maintain computers such as our Macintosh — then society will have to recognize the role computers are now playing.

### AMERICAN SPLENDOR

Of course, one of the main drawbacks to this idea is that, as it now stands, teachers (as a class) are cited by the industry as being in the forefront of



# THIS IS WHAT WE DO BEST...

If you use your Macintosh for business, educational or game applications, you need MacUser—the Mac power resource! Every issue of MacUser delivers more than 250 product reviews, in-depth coverage of the MacPlus, Desktop Publishing, Programming, Graphics, Telecommunications and more, including Mac computing's most comprehensive collection of power user's hints, tips and tutorials.

MacUser provides you with special "MacHints" for increased productivity—how to do more in meetings—how to get the most out of your desktop publishing software—making your database files state-of-the-art—and directories to find what you need *fast!* You'll find that MacUser will provide you with 12 fact-filled issues a year to help you upgrade your system and increase the ways you work with and use your Mac.

**Increase your power and performance, subscribe to MacUser today and save up to 63% OFF the annual single copy price!**

**One year (12 issues) only \$19.97—SAVE 58%!**

**Two years (24 issues) only \$34.97—SAVE 63%!**

Savings based on annual single-copy price of \$47.40.

## MacUser

**FOR FAST SERVICE, CALL TOLL-FREE 1-800-852-5200!**

# We're going to turn our 50,000 satisfied customers into dissatisfied customers.



MacLightning™ has won a lot of friends for us at Target Software. It's become today's best-selling spell checker.

In fact, over 50,000 people couldn't be happier with this outstanding Desk Accessory.

We're about to change that.

We're introducing a brand-new program that is going to render all other spell checkers obsolete. Including our own MacLightning. It's so fast, so thorough, so superior in every way that we've even given it a new name. MacLightning 2 just won't do.

It's called Mentor.™ And just wait till you see what it will do.

Up to 140 words per second, for one thing. That's nearly twice the

checking speed of MacLightning.

Mentor™ also boasts a considerably larger dictionary. The 100,000-word Abridged Merriam-Webster 9th New Collegiate. What's more, you can add all the words or characters you want. Corporate jargon, foreign languages, scientific symbols or whatever.

It has a vastly improved grammar-checking capability, too. And, in addition to our Interactive and Batch Checking modes, it has a third mode that scans an entire document, stopping at every misspelled word.

To top it off, Mentor™ is network compatible, and can be made available to as many as 32 users.

Mentor. The best thing to hap-

pen to spell checking since MacLightning.

You can find it at your local dealer now.

For more information and upgrade policy, call us at 1-800-622-5483. In Florida: (305) 252-0892. Target Software, 14206 S.W. 136th Street, Miami, FL 33186.

**Mentor – \$99.95**

**Mentor Plus – \$199.95**  
(includes definitions)



**Mentor**

Please circle 195 on reader service card.

**Mentor.™ It's what MacLightning has become.**

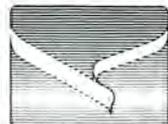


## WE SEE SOMETHING NEW IN YOUR FUTURE!

And that "something" is **RAMSnap™**, the most capable productivity improvement tool available for the Macintosh™ computer. **RAMSnap** is an integrated RAM disk and disk cache utility that allows you to take maximum advantage of processing power and available memory. And if you need more memory, MacSnap™ memory enhancement products from DOVE are an unbeatable combination with **RAMSnap** — more memory, more power, more speed, more productivity!

**RAMSnap** will work with all of your present software with no hardware changes and let you operate two to ten times faster! It automatically adjusts for MFS and HFS, mounts and unmounts volumes, creates savable configuration sets and allows for recovery from system errors. You can even launch an application from inside the RAM disk automatically. And you can benefit from **RAMSnap** using ANY Macintosh, from the 512K to the Macintosh II.

For an unbeatable combination of speed, power and productivity, look into your future now. Look into **RAMSnap** from DOVE COMPUTER CORPORATION. For more information about **RAMSnap**, MacSnap™ and our other quality products, contact your local DOVE dealer or call us at **1-800-622-7627**.



1200 North 23rd Street • Wilmington, NC 28405

Please circle 24 on reader service card.

# DOVE COMPUTER

software ripoff. It seems that most teachers would not think twice about cloning any number of disks for classroom use.

(OK, put down that word processor. I know that there are very honest teachers out there. You don't have to write to introduce yourself as one and you don't need to write me to defend your favorite pedagogue. I'm speaking of teachers as a class here — pun intended — and not saying every individual is guilty).

Well, I have to believe that if teachers were asked to present lesson plans on why software piracy is evil that they might do well to listen to themselves.

**T**hey are not thieves, dishonest or stupid. But they certainly are software pirates.

And if they don't, well, the kids would probably enjoy scenarios such as:

"Uh. Ms. Lurch? Remember when you said we shouldn't copy software? How come my *MacWrite* disk doesn't have a printed label?"

You can't send the whole world to detention.

Imagine a whole generation of high schoolers graduating school with a complete understanding of why software piracy is not a good idea but, instead, the road to ruin of what many have come to know and enjoy — computing. Imagine them going on through college and then into the working world.

I don't know for sure that this would work. But I think it has a much better chance of working than four-color ads that preach to the already converted.

But it is going to take some effort.

First, it will take effort on the part of the software industry to broach this idea officially. Then it will mean that many teachers will have to champion the cause in their own schools. But I think there's a good chance of bringing software ethics into the schools.

If you're a teacher who perhaps already has such a curriculum, we'd love to hear from you. Or, if you're a teaching professional with ideas, please share them.

Let's get this show on the road. The software authors of 1992 are counting on us. ☐

# Polish Up Your Mac



## The Madison Line Professional Series Macintosh Carrying Cases

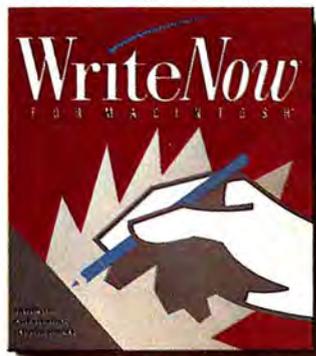
Computer luggage for those seeking the additional professional look & feel of ballistics nylon accented with glove tanned leather on the hand grip, shoulder pad, & identification pocket. The interior pocket for the keyboard is made with 3/8" laminated foam and in addition there are pockets for a modem, mouse & folders. Available in black or burgundy for the MacPlus & Imagerwriter II (these bags also fit the standard Macintosh & Imagerwriter I) and carrying a lifetime guarantee on materials & craftsmanship the Madison Line cases are the best we've ever seen at any price!

- Professional Mac(Plus) Carry Case ..... 99.50
- Professional Imagerwriter I (II) Carry Case ..... 89.50



## WriteNow by T/Maker

The next step in word processing. WriteNow for Macintosh combines the power you would expect from a dedicated word processing system



with the ease of operation that you are used to with MacWrite. WriteNow is very fast especially with large documents and you can do true WYSIWYG editing in *one, two, three, or four columns* directly on-screen. A fast on-line 50,000-word spelling checker is included that can create personalized dictionaries, has a handy guess feature, and can recommend the correct spelling of misspelled words. In addition you get graphics in the same line as text, unlimited open documents, and virtually any editing action can be undone!

WriteNow..... 99.00

"This is the word processor we built and designed Macintosh for..."  
Steve Jobs, NeXT Inc.

## Programs Plus Picks of the Month with Special Pricing!

(Good through April 31st 1987)

### Mirror Technologies Magnet 30X T/Maker ClickartLaser- Letters Bundle

The Mirror Magnet 30X (30Mb) hard drive offers 50% more storage for the price of competitive 20 meg drives. It's cooled by an extra quiet fan, sits beside your Mac so the system won't heat up, and can be daisy chained up to 7 units. The 30X is extremely quick, taking you from 0 to 60 pages in a heartbeat and comes preformatted with backup utilities, so just plug it in & run! When you order the Magnet 30X we are bundling with it Clickart Laser-Letters-Bombay, Plymouth, & Seville by T/Maker - a \$239.85 retail value at no additional cost. LaserLetters are high-quality downloadable LaserWriter font packages for the Mac and the LaserWriter or any PostScript compatible printer. A bundle with value that can't be beat!

Mirror Magnet 30X-T/Maker Laser- Letters Bundle... 945.00



### Lightspeed Pascal by Think Technologies



Finally you can harness the power of the Macintosh for your own needs. Using the popular Pascal Programming Language, Lightspeed Pascal lets you develop complete Pascal programs in less time than you ever thought possible (whether you are a novice or a professional) and has the kind of tools you want to quickly develop & test your programs. This is the fastest compiled development system available for the Macintosh with intelligent source level de-bugging that lets you examine & change your program as it runs. Let Lightspeed Pascal take care of all the time consuming programming details. Not only can it make you more effective it can actually change the way you work!

Lightspeed Pascal ..... 79.00

Peel Back This Page To See Our Long List of Mac Products At Great Prices To Help Your Mac Shine!

Monday-Friday 9-9

Only TOLL-FREE

1-800-832-3201

# Programs, Peripherals,

## Utility Software

<b>Apple Computer</b>		<b>Nevins Microsystems</b>	
Switcher Construction Set	14.00	TurboCharger (Version 2.0)	39.00
<b>Berkeley System Design</b> Stepping Out	59.00	<b>PBI Software</b>	
<b>Central Point Software</b>		HD Back-Up	
Copy II Mac (Includes MacTools)	20.00	(Backup for MFS & HFS)	29.00
<b>FWB Software</b> Hard Disk Util	57.00	<b>Personal Computer Peripherals Corp.</b>	
Hard Disk Backup or Hard		HFS Backup V2.0	35.00
Disk Partition	39.00	Eureka! (File Finding Accessory)	18.00
<b>Ideaform Mac Labeler (Version 2.2)</b>	29.00	Softstyle Printworks	42.00
DiskQuick (Disk Librarian)	26.00	Laserstart	59.00
<b>Infosphere</b>		ColorMate V2.1	49.00
MacServe (Network Software)	199.00	ColorMate Art	29.00
LaserServe	95.00	<b>SuperMac Software</b> SuperSpool	39.00
<b>MacMaster Systems</b>		SuperLaserSpool	99.00
Fedit Plus V2.0 (HFS Compatible)	36.00	<b>Think Technologies</b>	
<b>MacMemory, Inc.</b>		LaserSpeed (Single User)	69.00
MaxRam & MaxPrint	37.00	<b>Williams &amp; Macias</b>	
<b>Mainstay</b>		myDiskLabeler	25.00
Disk Ranger or MacSpool	32.00	myDiskLabeler w/ Color	34.00
N'cryptor	26.00	myDiskLabeler	
Flashback (Hard Disk Backup Utility)	39.00	w/ LaserWriter Option	35.00

## Desk Accessory Programs

<b>Affinity Microsystems</b> Tempo	56.00	<b>Imagine Software</b>	
<b>Batteries Included</b>		Smart Alarms & Appointment Diary	39.00
Battery Pak (9 Desk Accessories)	27.00	<b>Silicon Beach Software</b>	
<b>Borland</b>		Accessory Pak #1	21.00
SideKick with PhoneLink	59.00	<b>Solutions, Inc.</b>	
<b>Cortland</b>		SmartScrap & The Clipper	45.00
Top Desk (7 New Desk Accessories)	39.00		

## Languages

<b>Apple Computer</b> MacPascal	99.00	<b>TML Systems</b> TML Pascal V2.0	69.00
Macintosh 68000		TML Source Code Library	59.00
Development System	159.00	TML DataBase Toolkit	65.00
<b>Borland</b> Turbo Pascal	59.00	<b>True Basic, Inc.</b> True Basic	89.00
<b>Microsoft</b>		True Basic Runtime	89.00
Microsoft Basic Interpreter 3.0	59.00	Algebra, Pre-Calculus, Calculus,	
Microsoft Basic Compiler 1.0	125.00	Trigonometry, 3D Graphics,	
Microsoft Fortran Compiler 2.2	169.00	Discrete Math, Probability, &	
<b>Think Technologies</b> Lightspeed C	129.00	Chippendale utilities (each)	36.00
Lightspeed Pascal	Special!	<b>Zedcor, Inc.</b> ZBasic	65.00

## Communications Software

<b>Apple Computer</b> MacTerminal	99.00	<b>Software Ventures</b>	
<b>Compuserve</b>		Microphone	59.00
Compuserve Starter Kit	24.00	<b>Think Technologies, Inc.</b>	
<b>DataViz</b>		InBox-Starter Kit V2.0	
MacLink Plus with Cable	149.00	(3 Personal Connections)	239.00
<b>Hayes</b> Microcomputer Smartcom II	89.00	InBox-Additional Personal Connections	89.00

## DataBase Management

<b>Ashton-Tate</b> dBase Mac	309.00	<b>Microsoft</b> Microsoft File 1.04	110.00
<b>Blythe Software</b> Omnis 3 Plus	279.00	<b>Odessa</b> Double Helix	275.00
<b>Borland</b> Reflex	59.00	<b>ProVUE Development</b> OverVUE 2.0d	149.00
<b>Forethought</b> FileMaker Plus	159.00	<b>Telos Software</b> Business FileVision	199.00

## Business Software

<b>Apple Computer</b>		<b>Layered</b>	
MacProject	159.00	Notes For Jazz, Excel, PageMaker,	
<b>Batteries Included</b>		or Microsoft Works (each)	42.00
Isgur Portfolio System	105.00	<b>Lotus Jazz (Version 1.A)</b>	179.00
Time Link	29.00	<b>Micro Planning Software</b>	
<b>Crocket Software</b>		Micro Planner Plus	299.00
Crocket Graph	129.00	<b>Microsoft</b> Microsoft Works 1.0	189.00
<b>Data Tailor</b>		Microsoft Multiplan 1.1	110.00
Trapeze (Spreadsheet) Color		Microsoft Chart 1.0	72.00
Report Generator	175.00	Microsoft Excel 1.03	225.00

### Orders Only 1-800-832-3201

In Connecticut call 378-3662 or 378-8293  
Customer Service (203) 378-3662  
Monday thru Friday 9 A.M. to 9 P.M.  
Saturdays 10 A.M. to 6 P.M. (Eastern Time)

### Our Policies

- We Accept MASTERCARD and VISA with no added surcharge.
  - Your credit card is not charged until we ship.
  - If we must ship a partial order the shipment that completes the order is sent freight free.
  - If you are ordering by mail, we accept private and company checks. For fast delivery, send cashier's check, certified check, or money order. With MASTERCARD and VISA orders include card number and expiration date. Connecticut residents add 7.5% sales tax.
  - UPS Next Day Air & 2nd Day Air Available.
  - Sorry, we cannot accept COD orders.
- ### Shipping
- **Software Only:** Continental US: \$3.00 minimum charge for Shipping & Insurance. APO/FPO orders shipped 1st class mail, add 3% (\$5.00 Min.) Hawaii: Add 10% (\$15.00 Min.) Alaska: Add 6% (\$10.00 Min.) Canada: Add 12% (\$15.00 Min.) Foreign Orders: Add 20% (\$35.00 Min.)
  - **Hardware Items:** Please call for shipping charges.
  - All goods are new and are guaranteed by the manufacturer, but we cannot guarantee machine compatibility. Due to software copyright laws, all sales are final. Defective software will be replaced immediately by the same item. Defective hardware will be replaced or repaired at our own discretion. Call customer service at (203) 378-3662 to obtain a Return Authorization Number before returning goods for replacement. Products purchased in error subject to a 20% restocking fee. All items subject to availability. Prices subject to change without notice.

<b>Legisoft/Nolo Press</b> WillWriter V2.0	32.00	<b>Bulk Mailer Plus</b>	225.00
<b>Satori Software</b> Legal Billing	389.00	<b>Target Software</b>	
Project Billing	449.00	Memorandum (Attach Electronic	
Bulk Mailer	75.00	Notes to Files)	53.00

## Word & Outline Processors

<b>Ann Arbor Softworks</b> FullWrite	179.00	<b>OWL International</b> Guide	79.00
<b>Apple Computer</b> MacWrite	99.00	<b>Symmetry</b> Acta	39.00
<b>Firebird</b> Licenses Laser Author	109.00	<b>Target Software</b> Voila!	53.00
<b>Living Videotext</b> More	159.00	<b>T/Maker Company</b>	
<b>Microsoft</b> Microsoft Word 3.0	239.00	WriteNow	Special!

## Spelling & Grammer Checkers

<b>Aegis Development</b>		<b>EnterSet, Inc.</b>	
Doug Clapp's Word Tools	45.00	MacGas (with Glossary & Thesaurus)	55.00
<b>Aegis</b> Speed Speller	32.00	<b>Greene, Johnson Inc.</b>	
<b>A.L.P. Systems</b>		Spellswell 1.3 (60,000 word Dictionary!)	49.00
MacProof V2.0	99.00	<b>Lundeen &amp; Associates</b>	
<b>Batteries Included</b>		WorksPlus Spell	42.00
Thunder!		<b>Target Software</b> MacLightning 2.0	
(Interactive Spelling Checker)	29.00	w/ Merriam Webster Dictionary	53.00
<b>Creighton Development</b>		Additional Thesaurus Library	29.00
MacSpell+ (Requires 512K)	55.00	Medical Dictionary or Legal Dictionary	53.00

## Desktop Publishing

<b>Letraset</b>		Ready, Set, Go! Desk Design	Call
<b>The MacPublisher II</b>	139.00	<b>Orange Micro, Inc.</b>	
Mac-Hy-Phen	Call	Ragtime (Integrated Page Processing)	219.00
<b>MacIndexer</b>	62.00	<b>Solutions, Inc.</b>	
Ready, Set, Go! 3	Call	GLue ("Print to Disk" Capability)	42.00

## Accounting Packages

<b>BPI</b>		<b>Monogram</b> Dollars & Sense	81.00
BPI Entry Series-General Accounting	129.00	<b>Business Sense (GL/AR/AP)</b>	339.00
<b>Chang Labs</b>		<b>Palantir</b>	
New Enhanced Version III Modules!		GL, AR, or Inventory Control (each)	59.00
Rags to Riches GL, AR, or AP	125.00	<b>Peachtree</b>	
Rags to Riches Three Pack-		Back To Basics Three Pack	
(GL/AR/AP)	299.00	(GL/AR/AP)	129.00
<b>Inventory Control</b>	245.00	<b>Sierra On-Line</b>	
<b>Professional Billing</b>	245.00	MacOneWrite CD, AR, or GL (each)	39.00
<b>Professional Three Pack-</b>		MacOneWrite Three Pack	
GL/Professional Billing/ Payables	349.00	(GL/AR/CD)	59.00
<b>Digital, Etc.</b>		<b>Survivor Software</b>	
Turbo Accountant	275.00	MacMoney (Financial Planner)	49.00

## Statistics Packages

<b>BrainPower</b>		<b>Statware, Inc.</b>	
StatView 512 Plus	179.00	Stat80 (Professional)	279.00
<b>Crocket Software</b> Statworks	79.00	<b>Systat</b> Systat (Version 3.0)	459.00

## Graphics Software

<b>Altsys Corp.</b> FONtastic	27.00	<b>Innovative Data Design</b>	
<b>FONtastic Plus</b>	52.00	Paste-Ease (Volumes I & II)	35.00
<b>Fontographer 2.2</b>	249.00	<b>Miles Computing</b>	
<b>Ann Arbor Softworks</b> Full Paint	55.00	Mac The Knife Volume III	
<b>Apple Computer</b> MacPaint	99.00	or Volume IV	27.00
<b>Brainpower</b> Graphidex	69.00	<b>Mindscape</b>	
<b>Broderbund</b> Print Shop	39.00	ComicWorks or GraphicWorks	49.00
<b>Toy Shop</b>	39.00	<b>Silicon Beach Software</b>	
<b>Casady Company</b>		SuperPaint	57.00
Fluent Fonts (Two-Disk Set)	29.00	<b>Silicon Press</b>	
Fluent Laser Fonts	49.00	Springboard	42.00
Choice of: Bodoni, SanSerif,		Certificate Maker	36.00
Ritz & Right Bank, Monterey,		<b>Symmetry</b>	
Calligraphy & Regency, or Prelude		PictureBase V1.2	45.00
<b>Dubl-Click Software</b>		<b>T/Maker</b>	
World Class Fonts! Vol. 1 or Vol. 2	29.00	Click Art Letters or Personal Graphics	29.00
World Class Fonts! (Both Volumes)	49.00	Click Art Publications or Effects	29.00
<b>WetPaint</b> Vol. 1 or Vol. 2	29.00	Click Art Letters II or	
<b>WetPaint (Both Volumes)</b>	49.00	Click Art Holidays	29.00
<b>Hayden</b> VideoWorks	59.00	Click Art Business Image	29.00
<b>Foundation Publishing/Impulse</b>		Click Art Laser Fonts: Plymouth,	
The Comic Strip Factory	59.00	Bombay, or Seville (each)	52.00

## CAD Products

<b>Apple Computer</b> MacDraw	159.00	<b>Enabling Technologies</b> Easy 3D	69.00
<b>BrainPower</b> DesignScope	129.00	Professional 3D	199.00
<b>Challenger Software</b>		<b>Innovative Data Design</b>	
Mac 3D (Enhanced Version 2.0)	129.00	MacDraft (Updated Version 1.2)	169.00
<b>Crocket Software</b> Cricket Draw	179.00	<b>MicroSpot</b>	
<b>Dreams Of The Phoenix</b>		MacPlot	119.00
Phoenix 3D Level One	35.00	MacPlot Professional	234.00

## Educational/Creative Software

<b>Addison Wesley</b> Puppy Love	14.00	<b>Great Wave Software</b>	
<b>Baudeville</b>		KidsTime or TimeMasters	29.00
<b>Ted Bear</b> Discovers...Rainy Day Games	20.00	<b>Hayden</b> ScienceWorks	32.00
<b>Guitar Wizard</b>	20.00	Score Improvement System for the SAT	59.00
<b>Broderbund</b> Sensei Geometry	65.00	Score Improvement-Achievement Tests	59.00
<b>Compu-Teach</b>		<b>Kette Group</b>	
ArithMATIC, Word Pieces, or ABSCones	28.00	Studio Session	69.00
<b>Davidson &amp; Associates</b>		<b>Micro: Maps</b>	
Speed Reader II	39.00	MacAtlas U.S.A. or MacAtlas World	49.00
<b>Math Blaster</b> or Word Attack!	28.00	<b>Microsoft</b> Hands On Excel	32.00
<b>Electronic Arts</b> Pinball Construction Set	27.00	Learning Multiplan & Chart	39.00
<b>Deluxe</b> Music Construction Set V2.0	64.00	<b>Mindscape</b> Perfect Score SAT	
<b>First Byte</b>		w/ The Perfect College	47.00
Kid Talk, Speller Bee, or Math Talk	42.00	<b>Rubicon Publishing</b>	
<b>First Shapes</b>	32.00	Dinner at Eight	35.00

# Phenomenal Prices...

Silver Palate Collection	29.00	<b>Software Concepts</b>	
Dinner at Eight-Silver Palate Bundle	59.00	Concepts Computerized Atlas	39.00
Simon & Schuster Typing Tutor III	35.00	<b>Spinnaker</b> Typing Made Easy	32.00
Paper Airplane Construction Set	24.00	<b>Springboard</b>	
		Early Games for Young Children	29.00
		Easy as ABC	29.00

## Game Software

<b>Accolade</b> Hard Ball	25.00	<b>Mindscape</b> Balance of Power	30.00
<b>Activision</b> Shanghai or Hacker	27.00	Deja Vu: A Nightmare Comes True	33.00
<b>Hacker II: The Doomsday Papers</b>	32.00	Indiana Jones:	
Alter Ego (Male or Female Version)	36.00	Revenge of the Ancients	25.00
Tass Times In Tonetown	29.00	James Bond 007: A View To Kill	24.00
<b>Artworx</b> Bridge 4.0	21.00	James Bond 007: Goldfinger	24.00
<b>Avalon Hill</b> Mac Pro Football	32.00	King Of Chicago	30.00
<b>Broderbund</b> Ancient Art of War	27.00	Racter	27.00
<b>Bullseye Software</b>		Sinbad, S.D.I., or	
Fokker TriPlane Flight Simulator	35.00	Defender of The Crown	32.00
Ferrari Grand Prix	35.00	The Uninvited	30.00
<b>Electronic Arts</b> Autoduel	34.00	<b>Origin Systems</b> Exodus: Ultima III	38.00
ChessMaster 2000	31.00	<b>PBI Software</b>	
Patton vs Rommel or One-On-One	27.00	Strategic Conquest Plus	35.00
SkyFox, Archon, or Scrabble	27.00	<b>Practical Computer Applications</b>	
<b>EPYX</b> Winter Games	24.00	MacGolf 2.0	36.00
Temple of Aphai Trilogy	24.00	MacCourses	34.00
<b>Hayden Software</b> Sargon III	29.00	<b>Pision</b>	
<b>Infinity Software, LTD</b>		Pision Chess (3D & Multi-Lingual)	31.00
Grand Slam Tennis	28.00	<b>Q Ware, Inc.</b> OrbQuest	29.00
<b>Infocom</b>		<b>Sierra On-Line</b> Black Cauldron	25.00
Leather Goddesses of Phobos,		King's Quest I, II, or III (each)	32.00
Ballyhoo, Cutthroats, Hitchhiker's		<b>Silicon Beach Software</b>	
Guide, Moon Mist, Planetfall, Seastalker,		Enchanted Scepters	21.00
Trinity, Wishbringer, Enchanter,		Dark Castle	28.00
Zork I, or Witness (each)	24.00	World Builder	42.00
Zork II, Zork III, Sorcerer,		<b>Simon &amp; Schuster</b>	
Suspect, Infidel, or A Mind		Star Trek (The Kobayashi Adventure)	24.00
Forever Voyaging (each)	26.00	<b>Sir-Tech</b> Mac Wizardry	36.00
Deadline, Spellbreaker, Starcross		<b>Spectrum Holobyte</b> GATO	26.00
or Suspended (each)	29.00	Orbiter or Falcon	27.00
Invisiclues-Hint Booklets (each)	6.00	<b>Sublogic</b>	
<b>Microsoft</b> Flight Simulator 1.0	33.00	JET	35.00

## Disk Drives/Hard Disks/Upgrades

<b>AST Research</b>		<b>MaxPlus (2MB Upgrade</b>	
AST-2000	1795.00	w/MaxRam/MaxPrint/MaxChill)	259.00
20-MB External Hard Disk with		<b>MaxPlus 2x4 (2.5MB Upgrade with</b>	
20-MB Cartridge-Tape Backup		1MB Chips-Hyperdrive Compatible)	519.00
for the Macintosh Plus.		<b>MaxPlus &amp; MaxPlus 2x4 Bundle</b>	749.00
AST-4000	4699.00	<b>MaxSave (Internal Recoverable</b>	
74 MB External Hard Disk with		Ram Disk For the MacPlus)	75.00
60-MB Cartridge-Tape Backup		<b>MaxPack (MaxPlus and</b>	
for the Macintosh Plus.		MaxSave Bundle)	319.00
<b>Dove Computer Corporation</b>		<b>MaxPort ("SCSI" Port</b>	
MacSnap Model 524		for your Mac 512K)	139.00
(512K to 1MB Upgrade)	139.00	<b>Mirror Technologies</b>	
MacSnap Model 548		Magnum 800K External Drive	229.00
(512K to 2MB Upgrade)	389.00	<b>MagNet 20X (External 20MB</b>	
MacSnap Plus 2		Hard Drive w/Cable)	779.00
(Mac Plus to 2MB Upgrade)	259.00	<b>MagNet 30X (External 30MB</b>	
MacSnap Plus 2H (Mac Plus		Hard Drive w/Cable)	Special!
to 2MB Upgrade w/1MB Chips)	589.00	<b>MagNet 40/40 (40MB w/40MB Tape,</b>	
MacSnap Plus 4H (Mac Plus		MacServe Included)	2695.00
to 4MB Upgrade w/1MB Chips)	1169.00	<b>MagNet 85X (74MB w/40MB Tape,</b>	
MacSnap Toolkit (Wrench,		MacServe & Cable)	4495.00
Case Cracker & Grounding Set)	14.00	<b>Magnum Tape 20 (20MB Backup)</b>	929.00
<b>Elhman Engineering</b>		Fast Port ("SCSI" Port	
800K Disk Drive	199.00	for your Mac 512K)	139.00
20HD (20MB SCSI Hard Drive)	Call	<b>Personal Computer Peripherals</b>	
<b>Omega</b>		<b>MacBottom HD-21</b>	
Single Cartridge Drives		(20+Mb SCSI Hard Disk)	869.00
Bernoulli Box 10MB w/SCSI	1059.00	<b>MacBottom HD-32</b>	
Bernoulli Box 20MB w/SCSI	1199.00	(32Mb SCSI Hard Disk)	999.00
<b>Dual Cartridge Drives</b>		<b>MacBottom HD-40</b>	
Bernoulli Box 2-10MB w/SCSI	1599.00	(40Mb SCSI Hard Disk)	1289.00
Bernoulli Box 2-20MB w/SCSI	1899.00	<b>MacBottom 20 (20+Mb Serial Hard</b>	
10MB Cartridges (3 Pack)	159.00	Disk for Mac 512k & MacPlus)	869.00
20MB Cartridges (3 Pack)	239.00	<b>PKI</b>	
Head Cleaning Kit	69.00	McD 800K External Drive	189.00
<b>LoDOWN</b>		<b>ProAPP</b>	
LoDown 20/20 Combo		World's Fastest High-Capacity	
(20 MB Hard Disk w/20MB Tape)	1419.00	MacPlus SCSI Hard Disk System:	
LoDown-T20 (20 Meg Tape Drive)	709.00	ProAPP 40S Hard Disk System (Sub-	
LoDown-T50 (50 Meg Tape Drive)	939.00	30msec. Voice Coil Technology)	1469.00
LoDown-30 (30 Meg Hard Disk)	849.00	<b>ProAPP 20S Hard Disk</b>	
LoDown-40 (40 Meg Hard Disk)	1469.00	Subsystem (MacPlus SCSI)	739.00
<b>MacMemory, Inc.</b>		<b>Western Automation Labs</b>	
All Mac Memory products carry		Dasch External RAMdisk (1024KB)	349.00
a full two year warranty!		Dasch External RAMdisk (2048KB)	429.00

## Modems

<b>Hayes Microcomputing</b>		<b>Prometheus</b>	
Smartmodem 1200	379.00	Promodem 1200	
Smartmodem 1200 Mac		(Hayes Compatible)	279.00
w/Smartcom II & Cable	429.00	Mac Pack w/Procom M and Cable	
Smartmodem 2400	579.00	(Specify Mac or Mac Plus)	42.00
franet 1000-128K	269.00	<b>U.S. Robotics</b>	
franet 1000-512K	359.00	Courier 1200 (Hayes Compatible)	199.00
franet 1000 Mac Accessory Kit	31.00	Courier 2400 (Hayes Compatible)	419.00

## Blank Media

<b>Single Sided 3 1/2" Diskettes</b>		<b>Centech 3 1/2" SS/DD Color Disks</b>	
BASF 3 1/2" SS/DD Disks (box of 5)	9.00	(box of 10)	16.00
Bulk (Sony) 3 1/2" SS/DD Disks (10)	13.00	Fuji 3 1/2" SS/DD Disks (box of 10)	15.00
Sony 3 1/2" SS/DD Disks (box of 10)	15.00	Maxell 3 1/2" SS/DD Disks (box of 10)	15.00

Verbatim 3 1/2" SS/DD Disks (box of 10)	16.00	<b>Centech 3 1/2" DS/DD Color Disks</b>	
3M 3 1/2" SS/DD Disks (box of 10)	18.00	(box of 10)	23.00
C.Itoh Color Disks SS/DD (box of 10)	20.00	Sony 3 1/2" DS/DD Disks (box of 10)	23.00
<b>Double Sided 3 1/2" Diskettes</b>		Fuji 3 1/2" DS/DD Disks (box of 10)	23.00
BASF 3 1/2" DS/DD Disks (box of 5)	12.00	Maxell 3 1/2" DS/DD Disks (box of 10)	23.00
Bulk (Sony) 3 1/2" DS/DD (10)	19.00	Verbatim 3 1/2" DS/DD Disks (box of 10)	24.00
		3M 3 1/2" DS/DD Disks (box of 10)	25.00
		C.Itoh Color Disks DS/DD (box of 10)	26.00

## Digitizers

<b>AST</b>		<b>New Image Technology</b>	
TurboScan (Optically Scans &		Magic Digitizer (Mac 128/512k	
Digitizes at 300 Dots-Per-Inch)	1699.00	or MacPlus Version)	249.00
<b>Kette Group</b>		<b>Summagraphics</b>	
MacNifty Audio Digitizer w/SoundCap	99.00	MacTablet 6x9 size	289.00
<b>Koala Technologies Corp.</b>		MacTablet 12x12 size	379.00
KAT Graphics Tablet	139.00	<b>ThunderWare</b>	
MacVision (Digitizer)	175.00	Thunderscan V3.2	175.00
<b>LoDown</b> LoDown Image		Power Port (Required to use	
Scanner w/Software (MacPlus SCSI)	1239.00	Thunderscan on a Mac Plus)	29.00
<b>Magnum</b> Natural Sound Cable & Editor	89.00	Power Port to	
Sound Effects	26.00	ImageWriter II Cable	19.00

## Accessories

<b>A.M. Products</b>		ImageWriter or ImageWriter II Cover	9.00
3 1/2" Head & Computer Cleaning Kit	18.00	Macintosh (Plus) Dust Cover	9.00
<b>Bech-Tech</b> Fanny Mac	79.00	Mouse Cleaning Kit w/Pocket	17.00
<b>Cambridge Automation</b>		Mouse Pocket	8.00
Numeric Turbo	99.00	Mouseway (Mousepad)	8.00
<b>Curtis Manufacturing</b>		Polarizing Filter	34.00
Diamond-Surge Suppressor-SP1	29.00	Starter Pack (includes Tilt/Swivel)	59.00
Emerald-Surge Suppressor-SP2	36.00	Surge Protector	35.00
Ruby-Surge Suppressor-SPF-2	55.00	Tilt/Swivel	22.00
Sapphire-Surge Suppressor-SPF-1	47.00	Control Center	65.00
<b>Ergotron</b>		Printer Stand	18.00
MacTilt (with External Drive Bracket)	55.00	Copy Stand	24.00
MacBuffer 512K	329.00	<b>Kette Group</b>	
MacBuffer 1024K	429.00	MacNifty Stereo Music System	
<b>Hayes</b> CH Mach IV Joystick	59.00	MNS-200	75.00
<b>Innovative Concepts</b>		MacNifty Stereo Music System	
Flip 'n' File/Micro	9.00	MNS-300 (Dolby, Bass, Treble)	99.00
Flip 'n' File II/Micro	18.00	<b>Kraft</b> QuickStick III (3 Buttons)	49.00
<b>Innovative Technology</b>		<b>MacMemory, Inc.</b>	
Night Ryder (Portable Macintosh Cover)	24.00	MaxChill (Internal Piezo-Electric Fan)	37.00
The Pocket Pack (holds 6 disks)	9.00	Mousetrak MousePad 7" x 9" Size	8.00
The Disk Directory (holds 32 disks)	18.00	MousePad 9" x 11" Size	9.00
The Fasel (holds 20 disks)	12.00	<b>MPH Computer Products</b>	
The Library (Carousel-Holds 80 Disks)	29.00	MAC-B-COOL	99.00
<b>I/O Design</b> MacPlus Carrying Case	69.00	<b>Ribbons Unlimited</b>	
ImageWriter II Carrying Case	49.00	Available in Black, Blue, Brown, Green,	
<b>Kalmar Designs</b>		Orange, Purple, Red, Yellow, Silver & Gold	
Teakwood Roll-Top Disk Cases:		ImageWriter Ribbon-Black	4.50
Micro Cabinet (holds 45 disks)	15.00	ImageWriter Ribbon-Color	5.00
Double Micro Cabinet (holds 60 disks)	22.00	ImageWriter Rainbow Pack (6 Colors)	25.00
<b>Kensington</b> System Saver Mac	65.00	ImageWriter II-Four Color Ribbon	12.00
Turbo Mouse	89.00	<b>The Madison Line</b>	
A/B Box (Mac Plus Only)	65.00	Professional Series Carry	
Disk Case (holds 36 Mac disks)	19.00	Cases In Black or Burgundy	
Disk Drive Cleaning Kit	20.00	Mac(Plus) Carry Case	Special!
External Disk Drive Cover	8.00	ImageWriter I (II) Carry Case	Special!

## Positively A Plus!

**PROGRAMS PLUS**

75 Research Drive  
Stratford, Conn. 06497

Telephone Hours: Monday-Friday 9-9  
Saturday 10-6

Orders Only TOLL-FREE  
**1-800-832-3201**

Please circle 69 on reader service card.

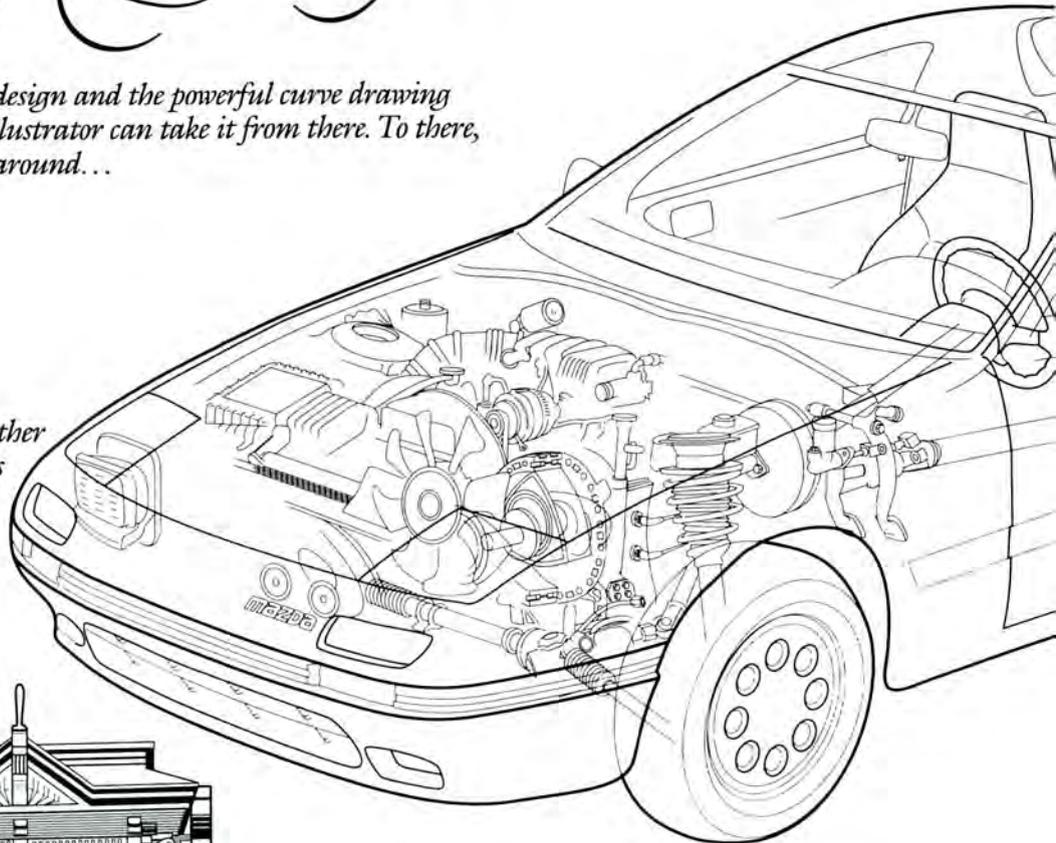
©Copyright 1987 Programs Plus, Inc.

# Artifactory

Other draw and paint program also let you add captions. But none of them can put those caption next to the sharpest, cleanest line and curves on the map.

Just rough out your basic design and the powerful curve drawing capabilities of the Adobe Illustrator can take it from there. To there, then back over there, then around...

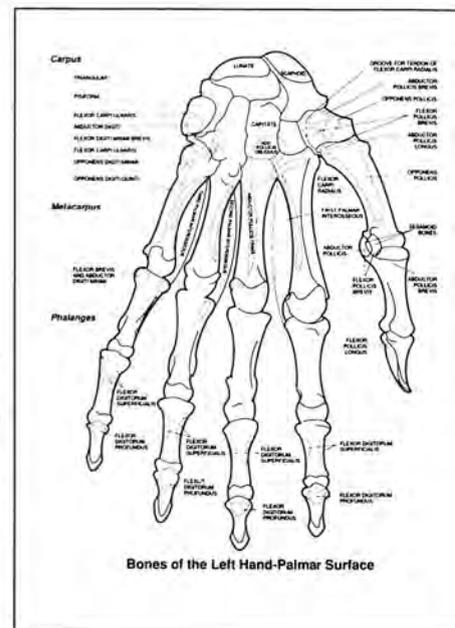
Share your drawing with other users. And if anyone wants to change it—no problem—the Adobe Illustrator can give you another perfect original. Fast.

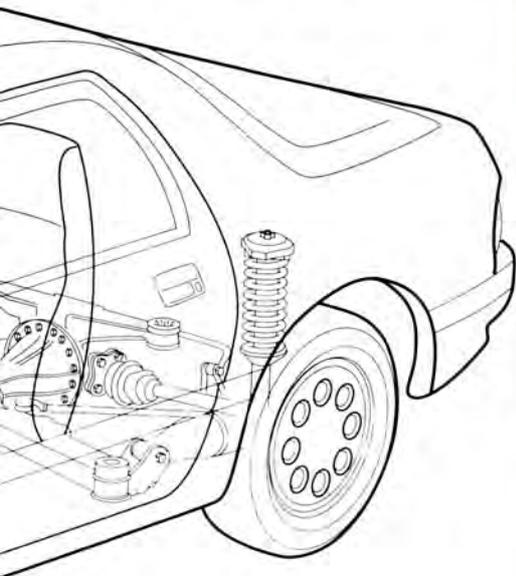


Start with a blueprint or just a dream and the Adobe Illustrator can help you build out the rest. Straight and true.



For producing the finest details, all kinds of line weights, even typeset captions with precise control, no other program can touch it.





Unlike other  
draw and paint  
programs, the Adobe  
Illustrator uses lines

and curves to form an image,  
instead of dots. So there's really no limit  
to the ideas you can hatch. Or cross-hatch.

**-GRAB A BITE-  
TONIGHT**

Change is the name of the game in  
logo design. And the Adobe Illustrator  
can make changes in a fraction of  
the time it would take by hand.  
And not a big fraction, either.

# NOW A WORK OF ART DOESN'T HAVE TO BE A LOT OF WORK.



Now it can be the work of  
the new Adobe Illustrator™. The  
most powerful and practical art  
production tool ever to grace  
a computer screen.

The Adobe Illustrator is a  
software program that, for the very  
first time, combines the control and fine detail of drawing by  
hand with the speed and mathematical precision of the  
computer.

The result is, well, you can see the results for yourself.

What you can't see, and can't possibly imagine, is how fast  
it is. How versatile. And how productive it can make you.

Instead of building an image with dots like other  
programs, the Adobe Illustrator uses precise *curves and lines*.  
So nothing looks like it was drawn by a computer. And you  
have infinite control.

The Adobe Illustrator won't limit your artistic license,  
either. On the contrary, you'll be able to do things with it  
you've never done before.

You don't have to build a drawing from scratch, you and  
your Macintosh™ can start with the scanned image of a photo,  
logotype, blueprint, a rough sketch, even something from  
your scrap file. Or use a document from MacPaint™ or com-  
patible software. You can even combine two or more images  
into a single image and work with that.

Once it's in the computer, you can manipulate it in ways  
possible only with a computer. Even share your work with  
other users.

But no matter where you start, or what you do to it,  
you'll be pleased to know the Adobe Illustrator will drive any  
POSTSCRIPT™-equipped printer from an Apple® LaserWriter®  
to a typesetter like the Linotype™ Linotronic™ 300. So you can  
get final art with resolution so high you'll get dizzy just  
looking at it.

So go see it. Call us at (800) 29-ADOBE, (800) 85-ADOBE  
in California, and (415) 852-0271 from Canada for the loca-  
tion of the Adobe dealer nearest you.

But do it soon. The first thing the  
Adobe Illustrator is going to draw is  
a crowd.

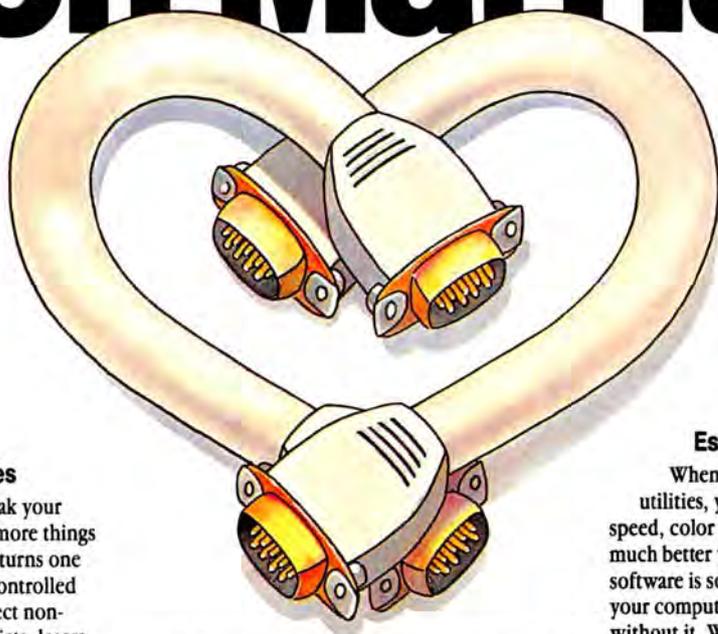


**ADOBE**  
SYSTEMS INCORPORATED

Adobe Illustrator is a trademark and POSTSCRIPT is a registered trademark of Adobe Systems Incorporated. Other brand or product  
names are trademarks or registered trademarks of their respective holders.  
© 1987 Adobe Systems Incorporated, 1870 Embarcadero Rd., Palo Alto, CA 94303.

Please circle 286 on reader service card.

# Open Marriage



## Our New MacEnhancer™ lets you consider all the possibilities

Open your Mac up to the world. Break your Mac's two port barrier and connect more things to your Mac. MacEnhancer instantly turns one port into four very smart ports, all controlled with the mouse. And, you can connect non-Apple printers like daisywheels, ink jets, lasers, even color plotters. Snap, zap, you're in business, without changing the way you use your Mac.

Get the most out of your Macintosh marriage. Use a modem, scanner, plotter, and laser, dot matrix, or daisywheel printers. Talk to IBM PCs or other computers, AppleTalk or more. MacEnhancer plugs into your Printer or Modem port and takes them on, four at a time.



*Now Mac Plus compatible. A port for any brainstorm: a standard Mac RS-422 serial port; two RS-232C serial ports; and a serial-to-parallel Centronics port for most IBM PC-compatible printers.*

## Comes with a dowry of software

MacEnhancer knows what turns on more than 30 printers. The new Driver Disk has most of SoftStyle's proven 'Start family of printer drivers, including Laserstart™ and Plotstart™ for HP laser printers and desktop plotters. Install your drivers for good with a click on your application or hard disks. And improve your communications

with the powerful, comprehensive communications software package included at no extra cost—hook up to data bases, tie into other computers, transfer files and emulate a main-frame terminal.

## Family ties

Hardware developed by Microsoft, software by SoftStyle. The new MacEnhancer is attractive, compact and completely mouse controlled. All you need to use a variety of Apple and non-Apple peripheral devices.

Changing devices is quick as a click because you have no switches to set or spaghetti to untangle. Now Apple's Chooser desk accessory controls it all. Want to expand later? Add another to get eight ports in all. With MacEnhancer, you and your Mac are open to all the possibilities.

Works with: Macintosh 512K, 512K Enhanced or Plus; Finder 5.3 or equivalent and Chooser; virtually all application software; AppleTalk plug compatible; Apple modem and Hayes Smartmodem or compatible; Apple ImageWriter and LaserWriter; selected daisywheel, ink jet and dot matrix printers from Brother, Diablo, Epson, Hewlett Packard, IBM, NEC, Star Micronics, Texas Instruments, and Toshiba; HP ColorPro, HP7475A, HP7550A plotters; HP LaserJet laser printer family; as well as numerous other devices. Upgrades available to registered owners of original MacEnhancer. Not copy protected. **\$245 complete.**

## Essential Software™

When you marry into SoftStyle's family of utilities, you inherit ease of use, power, speed, color and expandability. Discover how much better your applications can work. Our software is so basic and critical to performance, your computer will feel sluggish and incomplete without it. We call it Essential Software. You'll call it indispensable.

## Jointly developed by SoftStyle® and Microsoft®



## Get hitched quick

**Call 1-800-367-5600 to order.**

30-day money back guarantee on direct orders. If within 30 days you find that the product does not perform in accordance with our claims, call us and we will gladly arrange a refund.

**SoftStyle, Inc.** 7192 Kalaniana'ole Hwy., Suite 205, Honolulu, Hawaii 96825. Phone: (808) 396-6368.

Buy SoftStyle products at quality dealers who carry Essential Software.

 **SoftStyle®**

Trademark Acknowledgements: SoftStyle is a registered trademark and Essential Software, Laserstart and Plotstart are trademarks of SoftStyle Inc., MacEnhancer is a trademark licensed to SoftStyle by Microsoft. Microsoft is a registered trademark of Microsoft Corporation. HP, Hewlett-Packard, LaserJet and ColorPro are trademarks of Hewlett-Packard Company. Apple is a registered trademark, ImageWriter, LaserWriter and AppleTalk are trademarks of, and Macintosh is a trademark licensed to Apple Computer, Inc. Diablo is a registered trademark of Xerox Corporation. Hayes, Smartmodem are trademarks of Hayes Microcomputer Products, Inc. Brother, Epson, IBM, NEC, Star Micronics, Texas Instruments and Toshiba are registered trademarks of their respective companies.

Please circle 291 on reader service card.



Steven Bobker

We're always happy to hear from our readers (well, almost always), so keep sending your comments to Letters to the Editor, MacUser, 25 West 39th Street, New York, NY 10018. All letters become the property of MacUser and we reserve the right to edit any letters that we print.

### UNDER THE AEGIS

I have just completed reading the "No Applause For Clapp" comments in the Letters section of the January 1987 *MacUser*. There are several references to our upcoming product, *Doug Clapp's Word Tools* in those comments.

Although *DCWT* has been delayed for over 6 months, it is indeed a real product. With the surge in desktop publishing and the Macintosh user base, it is vital to make sure a product is "right the first time." *Word Tools* didn't pass our testing program with the marks we expected. We've put extra time, effort, money and coding into this product. As a result, the marketplace will get a remarkable program that will not require an update in order to make it "right." We have been testing each new test release with a series of beta sites, including *MacUser* magazine.

Further, it should be noted that Aegis Development has not advertised, issued press releases or otherwise promoted any product before a definitive release date has been determined. *Word Tools* is no different. Delayed? Yes. Vaporware? Hardly.

With regard to the writing abilities of Mr. Clapp, he is one of the most prominent writers in the Mac market. The comments by your readers indicate that Doug has stirred their emotions to the point of writing about it. Style is very subjective. Doug (and all good writers) are always looking for ways to improve, experiment and expand their writing horizons. *Word Tools* was his idea. I loved it. Thanks, Doug

DAVID BARRETT  
PRESIDENT, AEGIS DEVELOPMENT

We called Mr. Barrett for clarification of "definitive release date" and he told us that, while a definitive date had originally been agreed on, it subsequently became clear that *Word Tools* would not be ready by that date. It was too late to pull advertising that had already been placed, but a moratorium was placed on further advertising and promotion. Many of you have written in saying you have already paid for *DCWT* and are still waiting for the product. According to

Mr. Barrett, at least two — shall we say unscrupulous — mail order companies pirated early beta versions of *Word Tools*, photographed screens and advertised the program. They're the people who have your money, and you no doubt know who they are. Aegis Development has never taken an order for *DCWT*. We still can't say exactly when the program will actually appear, but we can tell this: the manuals are at the printers and the packaging is complete. The last major bug seems to be an inability to read *MacWrite* files. — LK

### DUNGEONS DOOMED?

On reading Dave Valliulis' article on John Raymond's *Dungeons of Doom* in your January issue, I got the impression that he highly recommended the game. Because I enjoy dungeon-type games, I decided to give it a try and I sent Mr. Raymond a request for a copy of the software. One week later I received an apologetic letter saying that the program was not available through him. He also mentioned that there would be a new, improved version under the name *The Dungeon Revealed*.

I would truly like to get a copy of either *Dungeons of Doom* or *The Dungeon Revealed*. Can you please tell me where and how this is possible?

MARK RAMBLER  
WOODCLIFF LAKE, NJ



*Dungeons of Doom* is available on CompuServe and quite a few local bulletin boards. If you don't have access to BBS, you might try a local users group; a lot of them offer shareware and public domain software on disk. If your local group doesn't have *Dungeons*, write to the Boston Computer Society's Mac group at BCS Mac, 1 Center Plaza, Boston, MA 02108. Dave tells us that the word on *The Dungeon Revealed* is that it is too big to put on a service, so you may have to wait awhile for that one. — LK

### THE REAL SECRET IS . . .

In "The Secrets of Pascal" in your December 1986 issue, Doug Clapp presents what is said to be a simple procedure for incrementing a variable. The routine as printed will do nothing but use up processor cycles; I'm sure it was an oversight. The following procedure accomplishes the increment:

```
Procedure AddOne(VAR x : INTE-
GER);
BEGIN
```

```
  x := x + 1
```

```
END;
```

MIKELL D. NELSON  
LEWISVILLE, TX

### GENERAL KUDOS

I happen to like Doug Clapp's "What's Hot — What's Not" article myself. In fact, the January 1987 issue was full of good articles. It seemed like everyone was humming; writing tight and brisk good stuff.

Dvorak was back in the saddle, after a series of puzzling fantasy articles. We may not always agree with Dvorak, but we *always* read him. I disagree with his idea that Sculley isn't cutting it as Apple's rep; Sculley is definitely Mac-militant and always quotable. The "Test Drive a Mac" campaign wasn't a failure, either. I know some hardline Mac veterans within this Mac-hostile corporation who had their first contact with the Mac because of that campaign. If not for that, there would be no Revolution here at all.

Neil Shapiro's "Big Brother and Newspeak" editorial was dead-aim, packing a devastating nuclear punch, as usual. Shapiro's clear-speak editorials like this are alone worth the cover price, especially to those of us in PC-crushed corporations. Thanks for the inspiration.

ARDEN HENDERSON  
ANGLETON, TX

I have been waiting a long time for Dvorak to hit a nerve and for all heck to break loose. So here are a few imperfect replies to all of those even more imperfect remarks in your December 1986 issue.

Sure, Dvorak is a bit off the wall and is an IBM user, but I don't know very many Macintosh users who have even come close to the IBM, either. You all say that the IBM is dumb, is hard to use, the Mac is #1, etc. I have used the IBM many times and I think that *both* computers have problems. Not major problems, but still problems.

The mouse always gets dirty and is always lost in a fast typing session, while

# MacCalc

## Speed, Style, Simplicity

**T**o be fast is not enough — the speed must be easy to use. We set out to make MacCalc fastest in this fullest sense ... and succeeded. MacCalc is blindingly fast — and that speed is available to the novice as well as the power user. And not only is MacCalc easy, we also included the most important "wish list" features, like cell notes, database search/sort commands, complete formatting with variable fonts/styles/sizes for any cell, variable row height and variable column width, and more. With full desk accessory support and Switcher-compatibility,

Complete formatting  
for any cell



MacCalc provides access to your favorite graph and keystroke macro programs. MacCalc is focused — simply the easiest and the fastest spreadsheet available...and if that's not enough, MacCalc is also the lowest cost! Ease, speed, style and simplicity. MacCalc.

MacUser Editor's Choice Award  
"The Best Spreadsheet"

- On-Line Help
- Full Undo for all operations
- Notes for any cell: create an audit trail or remember key assumptions
- Not copy-protected
- Reads/writes Lotus 1-2-3 files and SYLK data

- Supports Desktop Publishing: print publication-quality output or paste formatted tables directly into your page layout program
- Full choice of Format, Font, Style, & Size for any cell
- Variable row height & column width

"...[MacCalc] actually runs faster than Excel; and it clearly surpasses Multiplan in both speed and features... MacCalc is the clear value leader in the Macintosh spreadsheet market... it is difficult to rate [MacCalc] anything but excellent."

— *Infoworld* software review, 3 November 1986

"MacCalc's one of the best programs I've ever bought... It has an excellent manual... [Bravo] did a terrific job."

— a Financial Analyst in New York

"MacCalc is a well-designed and powerful product for those who require a full-featured spreadsheet... It is easy to learn, fast and efficient, and is a very good buy..."

— *MacWorld*, December 1986

**\$139**

(CA add sales tax)

Call to order, 8AM to 5PM P.S.T.

**800 345-2888**

c/o DPAS P.O. Box T Gilroy, CA 95021-2249

**BRAVO**

Bravo Technologies, Inc.

Dealer & Corporate Inquiries: (415) 841-8552

Trademarks: MacCalc/Bravo;1-2-3/Lotus;SYLK;Multiplan;Excel/Microsoft;Macintosh/Apple

Please circle 234 on reader service card.

cursor keys aren't exactly the easiest thing to use — depends on what you're not used to using. That's the main point. We can't really say a lot against Dvorak and his anti-Mac bias when we say so much against IBM. Face the facts, folks. We aren't perfect, either.

Now, I really get a kick out of his articles. I don't take them seriously. If I did, I would probably call him a snob and a jerk and maybe even a PROM-brained static pusher. I read his column every month, laugh at it for a while and go on to the next issue. Now why don't you Macintosh meatheads get your act together and just shut up. If you have anything to say, say it by writing for an IBM magazine.

MONTE PESCADOR  
KELSO, WA

*I was going to make some devastatingly witty point about this being, after all, a Macintosh magazine, but I'm still reeling from the news that Macintosh users are imperfect.* — LK

### OVERVUE MISSTEP

**D**ecember's "Answers From the Mac Team" column contained a response stating that *OverVUE* is incompatible with *Switcher*, and though your responses are usually right on, you missed the boat on that one. Granted, *OverVUE* has had its problems with *Switcher* in the past, but versions 2.0c and above are *Switcher*-compatible, and these versions have been available since October 1985.

There are, however, some traps to watch out for. *OverVUE* does not use the Clipboard for cutting and pasting; therefore, you cannot cut and paste between *OverVUE* and other applications. If you do convert the Clipboard into *OverVUE* from another application, *OverVUE*'s menus will freeze up. The best way to configure *OverVUE* under *Switcher* is with the Always Convert Clipboard box turned off. Then switching between *OverVUE* and, say *Word* — the ideal mail merge combination — is a piece of cake. If you have more than two applications installed under *Switcher*, you can still convert the Clipboard between them by holding down the Option key as you switch.

RUSS WYLLIE  
TECHNICAL SUPPORT  
PROVUE DEVELOPMENT CORP.

### PRIZE DISAPPOINTMENT

**I** was greatly disappointed on reading the Editors' Choice awards for 1986. For example, Best New Entertainment Program: Adventure — *Uninvited*. It is

# MegaScreen™

## The 526% Solution



Now available for  
the Macintosh™ SE  
From \$1,995.00

MegaScreen's 19.5" monitor gives you a 526% bigger picture than your Macintosh™ computer, at a new lower price! And MegaScreen is bigger, brighter, and features the highest resolution of any big screen on the market today.

Compatible with all standard Macintosh software, MegaScreen lets you see double page spreads, spreadsheets, drawings, plans, scans, CAD layouts, circuits, diagrams, medical files, and just about everything you ever wanted to see larger. 526% larger.

MegaScreen can be dealer-installed in just 15 minutes, features extra enhancements, user updates, and rock-solid reliability backed by the people who pioneered the first peripherals for the Macintosh.

Find out how you can double your productivity. Ask your local Apple Dealer for a demonstration, or give us a call.

*micrographic*  
IMAGES

20954 Osborne St., Canoga Park, CA 91304  
818-407-0571 • TX: 650-288-0349 MCIMAIL

Please circle 145 on reader service card.

# MGMStation™

Designers • Draftsmen • Engineers

Mainframe CAD Capabilities On A Macintosh™

- Floating Point Accuracy to 15 Decimal Places
- Fillets and Tangents Between Lines, Arcs
- Line Trimming, Extensions, Chamfering
- Contour and Open Offsets, Predefined Shapes
- Duplication & Rotation (to .0001 Degrees)
- Auto-Dimensioning Displays to .0001
- ANSI Y14.5 and ISI Dimensioning Standards
- Mirror Imaging of Entities & Groups
- Scale Drawing Up & Down, Zoom to 100x
- Definable Symbols and Libraries
- Hatching/Filling Within Any Area
- Invisible Layering, Up to 40 Levels
- Plotter Support for All Major Brands
- IGES 3.0 for PC & Mainframe Transfers

\$39.00 Demo Disks, VHS Video Tape and Literature available: (714) 951-7332



Please circle 94 on reader service card.

## COPY II<sup>®</sup> MAC

New!  
Version 6:  
Full H.F.S.  
Support

### BACKS UP PROTECTED SOFTWARE.

Copy II Mac does more than just sector copy. Its bit copy program has the built-in power and flexibility to handle most protection schemes automatically and supports single and double-sided drives. (We update Copy II Mac as often as needed to handle new protections; you as a registered owner may update at any time for \$15 plus \$3 s/h.)

### RUNS PROTECTED SOFTWARE FROM YOUR HARD DISK.

Copy II Mac makes using your hard disk (including the Apple hard disk-20) as convenient as it should be. No longer will you have to use the 3½" disk with some of the most popular business software. Call for current list.

### GIVE YOUR MAC MORE MUSCLE.

Copy II Mac can even repair some damaged disks and recover accidentally deleted files. System Requirements: 512 Macintosh or Macintosh Plus, 1 drive. (2 drives, all available memory and hard disks fully supported.)

Call 503/244-5782, M-F, 8-5 (West Coast time) with your   in hand. Or send a check for \$39.95 U.S. plus \$3 s/h, \$8 overseas.

**\$39.95**  
*Central Point  
Software*

INCORPORATED  
9700 S.W. Capitol Hwy., #100  
Portland, OR 97219

*Winner of A+ Readers' Choice Awards!*

Backup utilities also available for the IBM, Apple II, Atari ST, and Commodore 64/128.

**Now available!!!**

800K drives for Macintosh: \$195.00 (plus \$10 shipping/handling). Plugs directly into Mac & Mac Plus!

Please circle 105 on reader service card.

## L E T T E R S

an enjoyable game, but hardly the best. The most revolutionary game ever produced for a computer system was released in October 1986 by Silicon Beach — *Dark Castle*. The animation is smooth, the graphics are flawless and the storyline is gripping. I also disagree with the Best New Art/Graphics program as *FullPaint*. Again, I think Silicon Beach should have taken the prize with *SuperPaint*.

JOHN O'DONNELL  
PALOS HEIGHTS, IL

*Outside of the unavoidable fact that editors have their idiosyncratic bases for choice like everyone else, the chief reason neither of those programs made it in this year's awards is that they weren't available in released versions at the time of the vote (assuming you're referring to the 1.0 version of SuperPaint). And, while we all think Dark Castle is a pretty nifty piece of work, it wouldn't have been considered in the Adventure category anyway — it will probably show up somewhere under Best Entertainment Program: Arcade next year. — LK*

### THANKS FOR WRITING, HAVE A NICE DAY

Neil Shapiro's "Editor's Desktop" in your January 1987 issue was one of the most blatant examples of the amateurish slant that pervades much of the computer press these days. Granted this is a column/opinion that we're dealing with here, but boosterism has absolutely no place in any publication. Objectivity? Obviously, Mr. Shapiro has only a passing acquaintance with the word.

Don't misunderstand me. I, too, have enjoyed many hours playing *Smash Hit Racquetball*. Shilling for the company, any company, however, should not be the job of any writer, editor or cub reporter.

They may make "swell" gifts (come on, reach for a thesaurus and quit using these chatty, juvenile expressions that jump from the pages of *MacUser*. I surmise that Primera Software has already received its "swell" gift, a free advertisement. No, I won't "reward" a manufacturer for turning out an entertaining piece of software — isn't that what they're supposed to be doing? If it's cheap, great. If not, I have the choice of not buying it.

I feel no obligation or responsibility to support a company, regardless of its altruistic actions. If the game is great, say so, but please spare us such blatant shilling.

JACK BELL  
PATERSON, NJ

# Accountant, Inc.<sup>®</sup> Different where it counts.



**\$2,780:**

- General Ledger
- Accounts Receivable
- Accounts Payable • Inventory

**\$999:**

- General Ledger
- Accounts Receivable
- Accounts Payable • Inventory

**\$1,785:**

- General Ledger
- Accounts Receivable
- Accounts Payable

Out of the growing field of Mac Business Accounting software comes yet another contender—who's probably the winner. Up against glossy, high-priced packages, the \$299 **Accountant, Inc.** is a simple, affordable, no-nonsense solution.

The features are very impressive, indeed. **Accountant, Inc.** contains General Ledger, Accounts Payable and Accounts Receivable ledgers, *plus* an integrated inventory management module that can only be found in very few "high end" business accounting programs.

The support materials are excellent. Over 500 pages of explanation, training and tutorial are provided. There is even a course in accounting. But you'll probably be up and running without any help.

This software works so hard and so well, we marvel at its simplicity. The Order Entry system generates invoices and purchase orders as it updates your inventory. It keeps the General Ledger up to date; it makes the journal entries automatically.

And then you'll discover its extensive analysis capabilities.

The price tag may confuse users on the issue of quality. Don't let it fool you. We believe this software to be every bit as good as its expensive competition—and in some ways, even better.

**Accountant, Inc.** offers everything that the high-priced programs offer, except the high price. You need software that's simply powerful and a good value.

At \$299, **Accountant, Inc.** is the *must-buy* business accounting program for the Macintosh office. From Softsync. Please call or write for a free catalog.



**\$299:**

- General Ledger
- Accounts Receivable
- Accounts Payable
- Inventory Management
- Order Entry
- Financial Analysis
- and more!

**SOFTSYNC, INC.<sup>®</sup>**

162 Madison Avenue  
New York, NY 10016  
(212) 685-2080

\*Manufacturers' suggested retail price.  
Trademarks: Accountant, Inc., Softsync, Inc., Great Plains Accounting Series, Great Plains Software, Inc., Insight, Layered, Inc., Rags to Riches, Chang Labs, Inc.

# MAC INKER™

Re-ink any Fabric Ribbon automatically for less than 5 cents.

- MAC INKER IM (Imagewriter I/II) \$42.00
- Universal Cartridge or Spool MAC INKER (specify) \$68.50
- Multicolored MAC INKER (re-inks 4 color Imagewriter cartridges) \$80.00
- Heat Transfer MAC INKER \$70.00



Shipping \$4.00

■ Lubricated, Dot Matrix Ink extends print-head life, \$3.00/bottle, available in black, brown, red, green, yellow, blue, purple, orange, gold and silver.  
 ■ > 70,000 sold since 1982 (we are older than the MAC), > 8500 printers supported. ■ Imgwr. Cartridges top quality, life guaranteed, \$7.00. Heat Transfer \$9.00 (any color).

## MERCURY MODEM

Really 100% Hayes\* compatible  
 ■ 300/1200 baud. Speaker. Front Panel Lights. ■ 24 month warranty.



\$149.00

Quick Link Communications Software—fast, quick, easy to learn. \$29.95.

Shipping \$4.00

\* Hayes is a trademark of Hayes Microproducts.

## DATA SWITCHES (any type) MACINTOSH MULTIPORT SWITCH

(9 pin), (or 8 pin for MacPlus). Connect up to 4 peripherals to your printer or modem port.



\$50.00

Shipping \$4.00

Order Toll Free.

Call or write for free brochure.

1-800-547-3303

In Oregon 503-626-2291 (24 hour line)

We are and always will be your

# Computer Friends®

14250 N.W. Science Park Drive  
 Portland, Oregon 97229 Telex 4949559  
 Dealer inquiries welcome.

Please circle 200 on reader service card.

# L E T T E R S

Oh, I don't know. Any time we review any software — as a Quick Click or feature — we give our honest in our opinion of the product. Sometimes, like Neil, we get excited. It doesn't constitute "shilling" or anything morally or legally reprehensible. (In that context, you'll notice your more libelous comments have been edited out.) And while you may not intend to reward a manufacturer, that's pretty much what any customer does by buying a product — good or bad. — LK

## MANUAL ERROR

I renewed my MacUser subscription early and, true to your promise, you sent me Mr. Kottwitz' excellent book, *The Power User's Manual*. Thank you. It is full of useful information and has already proved its worth by clearing up a mystery which I, my dealer and others had been unable to fathom — why disks initialized on one person's Mac 512E did not always read properly on a Mac 512K.

However, there is an error on page 54 to which I wish to draw your attention. In regard to *Helix*, under the section entitled "Keeping Relations Efficient," it states "Remember that *Helix* allocates disk space in a record for every field that's defined in your relation, regardless of whether you've entered data into the field or not." As one of the primary designers of *Helix*, I can state unequivocally that this is wrong. All versions of *Helix* and *Double Helix* use NO disk storage for fields containing no data in a particular record. This is how *Helix* detects an "Undefined" field in record: It detects the fact that the record (or row in *Helix's* terminology) has no space allocated for a particular field and that therefore the field is undefined.

When you create a field (by tearing off a field icon) a certain amount of disk space is used (20 to 50 bytes depending upon type and the version of *Helix* in use). However, no additional disk space is used except when a row actually contains data for the field. The only place where unused field icons cost "extra" disk space (beyond the space used by their creation) is with indices. Here, an unused field icon costs two bytes per row in the relation.

I hope this error can be corrected in the next edition — and given the usefulness of *The Power User's Manual* and the rate at which the new Macintosh software seems to be created, I have no doubt that a next edition will come.

JONATHAN SCHNEIDER  
 NORTHBROOK, IL

FREE \$20  
 LIFETIME  
 MEMBERSHIP  
**SOFTWARE  
 LIBRARY**

## RENT

Ancient Art of War .....	\$ 8.99
Comprehensive Grammar II .....	8.99
daVinci Landscapes .....	8.99
Dinner At Eight .....	8.99
DoubleHelix .....	74.25
Fluent Fonts .....	8.99
Fluent Laser Fonts .....	9.51
Fullpaint .....	13.19
Graphics Magician .....	11.37
GraphicWorks .....	11.99
Jazz .....	89.75
Leather Goddesses of Phobos ....	8.99
MacDraft .....	35.50
MacMatbook Vol. I .....	16.24
MacLightning .....	14.86
M.U.D. ....	8.99
MicroTest II .....	19.95
PowerMath .....	13.79
ProAnalysis .....	44.25
Silicon Press .....	10.52
Sidekick .....	10.62
Time Link .....	8.99
ThinkTank 512 .....	26.32
True Basic .....	22.48
Typing Tutor III .....	8.99

## SUPER SALE

(Previously Viewed•While They Last)

Colomate .....	\$ 37.05
MacPublisher II .....	102.75
MacSpell+ .....	40.08
MS Basic 2.1 .....	74.00
MS Fortran 2.1 .....	135.00
Work•n•Print .....	15.00

650 More To Choose From

Sony Disks .....	SS-1 <sup>20</sup> / DS-1 <sup>79</sup>
Ribbons .....	Black-2 <sup>65</sup> / Col-2 <sup>99</sup>
MacOpener™ .....	14 <sup>36</sup>
PowerMath™ .....	63 <sup>44</sup>
Mac•Flip (Holds 80 Disks)....	14 <sup>40</sup>

## Try It First

Rental Applies To Purchase

Our Hats Are Off To:  
**Dennis Conner & The Crew  
 of "Stars & Stripes"**

Orders Only  
**1-800-847-5775**

Customer Service & Texas Residents

**1-713-529-1100**

P.O. Box 980305 • Houston, Tx. 77098



Checks  
 Welcome





## Automate

### One Keystroke = A Thousand Words.

**Touch-n-Go** is *the* answer to repetitive keyboard and mouse entry. Simple key combinations and short abbreviations eliminate tedious typing and lengthy sequences of mouse movements.

**Point and Click From the Keyboard.** With **Touch-n-Go** you can perform any mouse operation from the keyboard. You'll never have to move your hands to change fonts or scroll to the end of a document.

**Automate any multi-step procedure.** Open a MacWrite document, set-up margins and tabs, choose a font and style, then stamp the letterhead on the top of the page – all with a single keystroke!

**Touch-n-Go is simple to use.** In no time you'll customize keys to make menu selections, scroll through documents, enter formatted paragraphs of text – even combine tasks into other simple abbreviations.

- Create and edit your own glossaries of over 10,000 time-saving abbreviations
- Create entire libraries of customized commands for each of your applications
- Memory-efficient – only 15k
- Macros have never been so easy to use and so powerful
- Mac Plus compatible

**Touch-n-Go** \$39 When purchased separately.  
Just one of seven performance enhancing utilities from **TopDesk**.

**TopDesk** \$59.95  
Includes *Touch-n-Go*, *BackPrint* and five other outstanding utilities

## Lose Wait

### Print and Work at the Same Time.

**BackPrint** lets you continue to work without interruption while you print. Never again will you have to stare at a "Printing in Progress" message.

**Print High Quality Graphics.** *BackPrint* is especially designed for high quality background printing of text and graphics from programs like MacWrite, MacDraw, Microsoft Word, Excel, MultiPlan, File, and Aldus PageMaker.

**Superior Performance.** *BackPrint* eliminates both printer slowdown from heavy typing and typing slowdown from printing. And that's important because your background printing shouldn't be accomplished at the expense of working at full efficiency. And *BackPrint* is incredibly fast at formatting your documents. This comparison from MacUser (August 1986) tells the story best.

	Time required to format a 5-page Word file.	Time required to format a 5-page MacWrite file.
BackPrint	16 seconds	44 seconds
MacMate!	2 minutes, 8 seconds	9 minutes, 28 seconds
MacSpool	5 minutes	7 minutes, 40 seconds
MaxPrint	2 minutes 33 seconds	2 minutes, 58 seconds

- Queue up an unlimited number of pages from different documents to be printed in succession
- Prints any document that can ordinarily be printed in high quality, standard quality, best, or faster modes
- Memory efficient – only 6k
- Mac Plus compatible

"BackPrint is by far the fastest spooler" - MacUser (Aug 86)

**BackPrint** \$29 When purchased separately.  
Just one of seven performance enhancing utilities from **TopDesk**.

**CORTLAND  
COMPUTER**

P.O. Box 9916, Berkeley, CA 94709

Please circle 198 on reader service card.

See your Apple dealer or call 415-845-1142 to order.

EDITED  
BY  
LOUISE  
KOHL

## Heeere's Eddy!

For those of you who keep hearing his name but have never laid eyes on him, meet Eddy. More formally, the statuette awarded to the winners of our Editors Choice Awards at a fancy annual dinner. This year, Jean-Louis Gassée, Apple's Vice President of Product Development, kindly did the honors, presenting Eddies to 30-odd delighted recipients at the Four Seasons Clift in San Francisco. Trivia fans: Given that an Eddy weighs in at slightly more than a full-grown St. Bernard, how many pounds did Jean-Louis pump for *MacUser* that night?! Send answers on a postcard . . . — FD



## Apples and Oranges

Since the introduction of the Mac, there have been a number of products that have attempted to bridge the incompatibilities between the Mac and the Apple II. Products such as *Mac +II* allow Apple II owners to use the ProDOS 3.5-inch diskettes on their Macintosh. Three new products have recently been introduced to help supplement this emerging market.

Of these products, the only one intended for the casual user is *ProLink*. Developed by AL-Soft, Inc. (PO Box 927, Spring, TX 77383-0927, (713) 353-4090), *ProLink* is a Macintosh application that allows you to insert an Apple II 3.5-inch (ProDOS 8 and

16 only) disk into your Macintosh and have it read by the Mac for text file transfers. You are able to convert text type files (text, ASCII, DIF and SLYK) in both directions. The interface used is similar to the *Font/DA Mover*, with your Macintosh directory on the left side and the ProDOS directory on the right. The only restriction with this application is that it only does text file transfers. If you are in *MacWrite* (or *AppleWorks* for that matter), you must save the file as text and then do the transfer. *Multiplan* files, however, can be saved as SLYK files and then transferred. *ProLink* retails for \$39.95.

*Passport* is primarily a developers tool that provides Apple II and Mac developers with powerful file conversion facilities. *Passport* does the same as *ProLink*, but it goes much further. First, *Passport* allows Mac files to go to and from ProDOS and Pascal formatted diskettes. Conversion utilities that are included are transfer facilities to/from *AppleSoft BASIC*, *AppleWorks*, *MacWrite*, *Excel* and *Apple II Pascal* source, to name a few. Second, you must be a fairly proficient programmer to program conversion routines for *Passport* to handle other types of file conversions between the machines.

The *Passport* application was available at press time only in early test (alpha) form from the Apple Programmers and Developers Association (APDA) — 290 SW 43rd Street, Renton, WA 98055, (206) 251-6548 — and does have some bugs. You must first be a member of APDA (\$20/year) in order to purchase *Passport* for \$13.

The third new product to enter into the Mac/Apple II market is the *MACtoGS* cross develop-

## SuperMac At AppleWorld

SuperMac announced a series of very high resolution video cards for the Macintosh SE and Macintosh II, high performance disk drives for the Mac II and RAM upgrades for the Plus, SE and II at the AppleWorld Conference in Los Angeles.

The most dramatic of the cards, with the codename "Wizard," offers 640 X 480 resolution in 1, 2, 4 and 8 bits per pixel (the same as the Apple video card) and it can also display up to 1024 X 768 resolution in 1, 2, 4 or 8 bits per pixel, in color or monochrome. Fully configured with RAM, SuperMac expected this board to sell in the \$700 to \$1000 range. A slightly less expensive card called "Toto," for users who don't need color but do want the greater resolution, offers up to 1K X 768 resolution by 1 bit for black and white. SuperMac will also package two RGB monitors, a 15-inch and a 19-inch model.



The third video card, called "Scarecrow" at press time, is similar to Toto, but for the Macintosh SE. It gives the SE 1480 X 1024, black and white resolution, and will drive virtually any monochrome monitor. Toto and

Scarecrow should sell for under \$500.

SuperMac's RAM upgrade products use 1-megabit chips in 1-megabyte SIMMs. These are available in 1-, 2- and 4-megabyte configurations. — MDW

# Kick some tires with a mouse.

*Sent in Card  
5-2-87*

Let Buick Dimension take you on an interactive shopping trip for a new Buick right on the screen of your Macintosh. It's a brand-new software program that's as informative as it is fun. And it's free from Buick.

You'll click your way around the showroom with your mouse and do more than just kick tires. Buick Dimension can answer thousands of questions about any new Buick with data, diagrams and animated graphics.

Compare Buick with the competition, dimension by dimension. Equip your

dream car any way you want it, and Buick Dimension's electronic spreadsheet will tell you the price, even work out what your monthly payments would be. And it will issue you a personal invitation to a test drive, redeemable with no obligation at your Buick dealer.

System requirements are an Apple Macintosh with 512K memory.



An ImageWriter™ permits hard copies of your own personal spreadsheets, price sticker and test-drive invitation.

When you boot up Buick Dimension on your Macintosh, you'll discover that Buick has a better way to shop for your new automobile. To get your free copy, just send the postage-paid response card opposite this ad. Please allow 3-4 weeks for delivery. Offer good in USA, while supply lasts.

™ Macintosh and ImageWriter are trademarks licensed to Apple Computer, Inc.

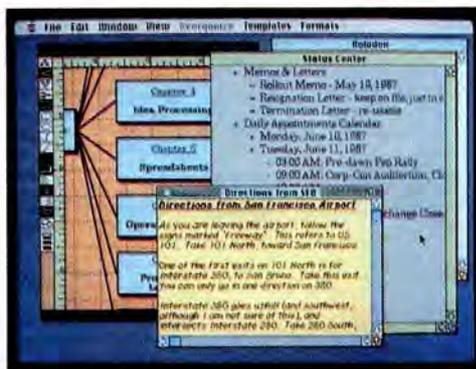
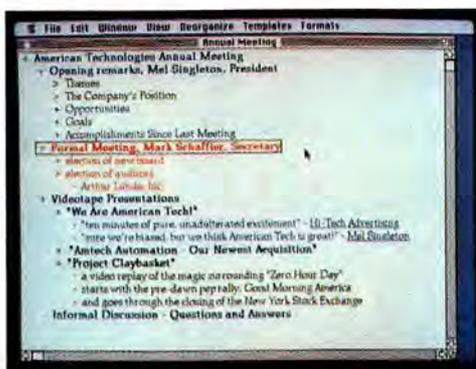


Where better really matters.

B U I C K

ment system. A cross development system is where you use another computer (that is usually more powerful) to develop software for your target computer. In this case, you are able to use the speed and larger storage capacity of the Macintosh to cross develop assembly language (6502/65C02/65816) applications for the Apple II family, primarily the Apple IIGS.

*MACtoGS*, by Consulair Corp. (140 Campo Dr., Portola Valley, CA 94025, (415) 851-3272), is the first cross development system using the Mac as the developing machine. The assembler source code for *MACtoGS* is compatible with *Apple II Programmers Workshop* (APW) which runs on the Apple IIGS. *MACtoGS* lists for \$195 and includes *Passport*. — DS



## MORE Color

Most people, when they think of color on computers, probably think of games or art. Who would have guessed that one of the first places we'd see support of the new Mac color would be in a desktop presentation pro-

gram (or idea processor, if you will)? *MORE's* 1.1 upgrade also comes in a 1.1C version that is compatible with both the Mac II and the SE. The price is \$295, same as for the black-and-white version. Living Videotext is plan-

ning to provide the program to registered users who purchase a Mac II. For more information write or call Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043; (415) 964-6300. — LK



## Prints Charming

All that media hype about desktop publishing last year got a lot of desktops into the publishing business. One of the more attractive new offerings is *Verbum*, a quarterly personal computer art magazine edited and published by Michael Gorney. In the early issues at least most of the art is Macintosh-generated, and includes high-res 3-D, digital photography and bit-mapped abstracts. For information about subscriptions, write to *Verbum*, PO Box 15439, San

Diego, CA 92115. Subscriptions are \$28 per year.

Another Mac-produced effort is *American Window Cleaners Newsletter*. *AWCN* is the brainchild of Rod Woodward and Richard Fabry. The latest issue we saw has an editorial tracing the etymology of such words as "clean" and "water". *American Window Cleaners Newsletter*, PO Box 5653, Berkeley, CA 94705. We were assured this is the only newsletter of its kind, and we believe it. — LK

## RUMOR MANAGER

Hardware totally dominates the latest rumors. Apple has lots of new goodies almost ready for release. PostScript has been added to the low-cost (\$1795), low-speed Personal LaserWriter (the one with the Kyocera engine) and it will be out very soon, if it's not already available. That was sort of expected. What's not is the third Mac of 1987. This is a Mac II with everything built-in and then some. Special deals have been cut with many third party vendors and many applications will be built into the 2 megabytes of ROM. This professional workstation machine will list at \$9999 with software and a 17-inch square corner color monitor.

Latest codename we heard was Honda. . . .The recent wave of takeovers (of which we were part of) will continue unabated as some of the bigger players go after some equally big players (no more just big companies snatching up little companies). There is sure to be one real shocker soon and possibly two. . . .The add-on board market is doing just what everyone expected and then some. RAM cards abound including many using the new (and pricey) 1-megabit chips. (It might be wise to hold off on added memory until later in the year when prices will fall.) The 16-megabyte barrier has fallen and 64-meg cards can't be far off. The few at-

tempts at adding hard disks to actual cards (the current rage in IBM PCs) have not been impressive. And they've been small, generally 10 megabytes. Stick to the big external units. Speaking of which, that gigabyte plus unit from the midwest, codename SuperPerson, is really impressive. Handles any workgroup with ease. . . .ROM cards (software in ROM) will appear very soon. The performance benefits are impressive, but the concept only works for stable, thoroughly debugged software. So far there are two cards that we'll loathe to return when their loan periods expire. . . .There are at least two winners among the rash of third-party keyboards due. One is

clearly better than both Apple units. . . .The Apple System software will finally stabilize by mid-July (their prediction, not ours). Keep tuned. . . .The software arena is dominated by one major question: Will my program run on a Mac II? The answer has been yes in a surprisingly high number of cases, although fixed window sizes on bigger screens are still causing major problems for some people. . . .Page layout programs continue to pop up from surprising sources, and most of them are surprisingly good. That's more than we can say about the new word processing programs (with one very notable exception).



# DOES MAIL ORDER RIGHT

OPEN: 9AM-9PM M-Thurs, 9AM-6PM Fri, 10AM-6PM Sat, Noon-6PM Sun EAST COAST TIME



## FAST SERVICE - FEDERAL EXPRESS

### SOFTWARE BUSINESS & PRODUCTIVITY

Ann Arbor			
Full Print	\$59.95		
Arrays			
Home Accounting	\$51.00		
Batteries Included			
Battery Pack	\$27.00		
Thunder	\$29.00		
TimeLink	\$29.00		
Homepak/Mac	\$29.00		
Isgr Portfolio	\$119.00		
Blyth Software			
Omnis 3+	\$279.00		
BPI			
General Accounting	\$219.00		
Central Point			
Copy II Mac	\$24.00		
Chang Labs			
Rags to Riches	\$259.00		
Creighton			
MacSpell - w/Free Game	\$49.00		
MacSpell-Office Bundle	\$49.00		
Cricket			
Cricket Graph	\$129.95		
Statworks	\$79.95		
Desktop Software			
1st Base	\$94.00		
1st Merge	\$147.00		
1st Port	SCALL		
Digital Etc.			
Maccountant 2.0	\$99.00		
Turbo Maccountant	SCALL		
Dubl-click			
Calculator construction set	\$59.00		
ESOFF			
Color Print	\$24.95		
Color Chart	SCALL		
Forethought			
Factfinder	\$47.00		
Filemaker	SCALL		
Kensington			
Fonts	\$29.00		
Fonts for Headlines	\$40.00		
Layered			
Front Desk	SCALL		
Living Videotext			
More	\$159.00		
Thinktank 512	\$97.95		

Softstyle			
Deosion Map	\$79.00		
Softsync			
Personal Acct.	\$52.00		
Software Ventures			
Microphone	\$59.95		
Springboard			
Certificate Maker	SCALL		

### GAMES & EDUCATIONAL

Acolade			
Hardball	\$27.95		
Avalon Hill			
MacPro Football	\$29.95		
Broderbund			
The Toy Shop	\$39.95		
Print Shop	\$49.95		
Electronic Arts			
Archon	\$26.95		
Autoduel	\$33.95		
Chessmaster 2000	\$29.95		
D-Music Constr. Set 1.C	\$33.95		
D-Music Constr. Set 2.G	\$67.95		
Financial Cookbook	\$33.95		
Golden Oldies Vol. 1	\$23.95		
One-On-One	SCALL		
Patton vs Rommel	\$26.95		
Pinball Constr.	\$26.95		
Scrabble	SCALL		
Seven Cities of Gold	\$26.95		
Sky Fax	\$26.95		
Starfleet 1	SCALL		
Ultima III	\$39.95		
Ultima III Cluebook	\$ 9.95		
Infocom			
Leather Goddess	SCALL		
Moon Mist	SCALL		
Zork II or Zork III	\$26.00		
Zork II, Seastalker, Enchanter, Hitchhikers Guide, Planetfall, Washbnger, The Witness, Cutthroats	\$23.00		
Microsoft			
Entrepreneur	\$31.00		
Flight Simulator	\$32.95		
Miles Software			
Harner Strike Mission	\$29.00		
Macatack	\$29.00		
Overbads	SCALL		
Fusillade	SCALL		
Macwars	SCALL		
Mindscape			
Balance of Power	\$30.00		
Crossword Magic	SCALL		
Defender of the Crown	SCALL		
Deja Vu	\$29.00		
Goldfinger	SCALL		
High Stakes	SCALL		
Indiana Jones	SCALL		
King of Chicago	SCALL		
Luscher Profile	SCALL		
Racer	\$26.00		
Rambo	\$24.00		
SAT	\$45.00		
SDI	SCALL		
The Mist	\$24.00		
Uninvited	SCALL		
View to Kill	\$24.00		
P.C.A.I.			
Mac Golf	SCALL		
Silicon Beach			
Airborne	\$19.95		
Dark Castle	\$29.95		
Enchanted Sceptre	\$22.00		
World Builder	\$47.95		
Simon & Schuster			
Great Paper Airplane Kit	SCALL		
Spectrum Holobyte			
GATO	\$28.00		
Orbiter	\$34.95		
Telstar L1	\$28.00		
Telstar L2	\$44.95		

Software orders over \$50.00 will be shipped FEDERAL EXPRESS (yes, even at these prices) you only pay TCP's standard shipping charge of \$4.00 per order. This offer also valid on peripherals and accessories under 8 pounds. Orders arriving before 11:00 AM our time will be shipped out same day.

# TOLL FREE 1-800-468-9044

INFORMATION AND PA ORDERS 814-234-2236

### DRIVE A HARD BARGAIN!

Get the Lowest Price Around on MAC HD's from TCP!  
ALL HARD DRIVES SHIPPED FEDERAL EXPRESS FOR \$4.00



MacBottom HD21 ..... \$869.00  
MacBottom 20 ..... \$879.00  
Call for Price on NEW MacBottoms  
Versions w/Internal Modems available soon!!

### HERE'S THE LoDOWN ...

20 Meg HD ..... \$725  
50 Meg HD ..... SCALL  
50 Meg Tape Bkup .. \$979  
Tape 20 and 20/20 .. SCALL



Magnet 20X ..... \$759.00  
Magnum 800K ..... \$209.00  
Magnet 40/40 ..... \$2295.00  
Call for our low price on the following  
Mirror Tech products

- Magnet 30x ■ Magnet 85x or 172x
- Magnum Tape Backups
- Fast Port Option

Other Brands of HD's in Stock  
If a product you want is not advertised,  
please call - it might be in stock

### EDUCATIONAL and CORPORATE ACCOUNTS:

We offer a full line of services catering to you. Including: quick turn-around, personal service, and the flexibility to serve your organizations needs. Credit Approval in 24 hrs for any organization with a good D&B rating. To reach our Educational and Corporate Sales Department directly, Call 1-800-533-1131. Inside PA Call 814-234-2236

### HARDWARE

Assimilation			
MacPort Adapter	\$75.00		
MacTurbo Touch	\$77.00		
Numeric Turbo	\$129.00		
Beck-Tech			
Fanny Mac	\$79.95		
Microsoft			
Printer Enhancer	\$149.00		
MODEMS			
Prometheus			
Promodem 1200m	\$327.00		
(includes software)			

Prentice			
Popcorn X-100	\$251.00		
Kensington			
300 Baud Portable	\$84.00		
PRINTERS			
EPSON			
All models in stock			
CALL FOR LOWEST PRICES !!!			
PANASONIC			
1091i	\$249.00		
1092i	SCALL		
1080i	\$199.00		

### ACCESSORIES

Blohard			
MACFAN	\$99.95		
I/O Design			
MAC+ Bag	\$69.95		
Imagewriter Bag	\$49.95		
Imagewriter II Bag	\$54.95		
Innovative Concepts			
Flip-n-File Micro (holds 25)	\$7.95		
Flip-n-File (holds 40)	\$15.95		
Innovative Technologies			
Easel (holds 20 disks)	\$14.00		
Disk Directory (holds 32)	\$19.95		
Pocket Pack	\$9.95		
Library	\$29.95		
Compubag for Mac 512, 128	\$54.00		
(has enough space for hard drive)			
Compubag for Mac+	SCALL		
Mousepad	\$5.95		

3 1/2" DISKS BOXED IN 100			
# OF BOXES	1-4	5-9	10+
SONY			
SS/DD	13.95	13.45	12.95
DS/DD	19.95	19.45	18.95
MAXELL			
SS/DD	13.45	12.95	12.45
DS/DD	19.95	19.45	18.95
FUJI			
SS/DD	13.45	12.95	12.45
DS/DD	18.45	17.95	17.45
VERBATIM			
SS/DD	14.45	13.95	13.45
DS/DD	19.95	19.45	18.95

### MICROSOFT

The High Performance Software™  
EXCEL ..... \$219.00  
FILE ..... \$109.00  
WORD V3.0 ..... SCALL  
WORKS ..... SCALL

### Target Software

MacLightning \$52.00 Medical  
Thesaurus ..... \$32.00 or Legal  
Volla ..... SCALL Dictionary \$67.00

cricket software GRAPH ..... \$129.95  
STATWORKS ..... \$87.95  
CRICKET DRAW SCALL

Tempo FROM AFFINITY  
..... \$57.00

Ashton-Tate  
Dbase Mac ..... SCALL

### BLYTH SOFTWARE

OMNIS 3+ ..... \$279.00  
Executive Asst ..... SCALL

### BORLAND

Reflex/Mac ..... \$59.00  
Turbo Pascal/Mac ..... SCALL  
Sidekick w/phone lnk ..... \$54.00

- If through some oversight we don't have the lowest price, we would appreciate the opportunity to beat it. If we can, you will get the benefit of our Federal Express shipping on software orders over \$50.00.
- We accept Mastercard, Visa, COD and mail orders
- Purchase orders are accepted from qualified corporations and institutions. Minimum order of \$500.00 required.
- No sales tax on orders outside of PA
- Buy with confidence. We honor manufacturers warranty.

To order by mail: We accept money order, certified check, personal check. Allow 2 weeks for personal check to clear.  
Shipping: \$4.00 for software and accessories/ \$10.00 for printers and color monitors/ \$8.00 for disk drives and other monitors/ Add \$3.00 per box shipped COD. Call for other shipping charges. Additional shipping required on AFO, FPO, AK, HI, and foreign orders.  
Terms: ALL PRICES REFLECT CASH DISCOUNT, ADD 1.9% FOR MASTERCARD OR VISA. All products include factory warranty.  
ALL SALES ARE FINAL. Defective items replaced or repaired at our discretion. Pennsylvania residents add 6% sales tax. Prices and terms subject to change without notice.



# TUSSEY COMPUTER PRODUCTS

P.O. BOX 1006  
STATE COLLEGE, PA 16804

# Ring Around The Font

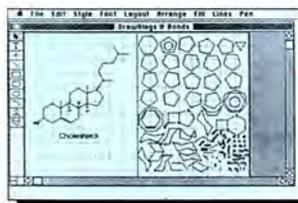
Lots of chemical scientists and chemistry students have started flocking towards the Mac in hopes of making their work easier. Among the more time-consuming tasks that they often do is producing organic chemical structures. For most, *MacPaint* and *MacDraw* were a blessing. The ability to draw the complex structures and easily manipulate them made the charting of structures go much more quickly.

A new product, *Organic Fonts*, by Modern Graphics, makes the job even easier still. *Organic Fonts* is actually several products in one. The first font, *OrganicFont*, includes both simple ring and aliphatic portions of

organic compounds. *OrganicFont* is designed to be used with word processing programs. It's a unique font in that a number of key combinations will type behind the cursor, altering the character that was previously typed. This allows you to overlay a ring that had just been typed (e.g., adding a bond to the top or bottom of a symbol). Even though *OrganicFont* takes a bit of learning, you'll later be able to place the resulting organic structures directly into your text.

The other two fonts included with *Organic Fonts* are primarily for use with painting and drawing applications. The fonts, *RingFont* and *AliphicFont*, are

exactly as their names imply. Each is loaded with basic structures and symbols used in chemical compounds. *AliphicFont* can be used to create formulas in addition to structures, as Greek characters and direct, easy-to-input super- and subscripted



numbers are provided. The *RingFont* provides you with over 30 basic ring structures that are just a single keystroke away.

The final part of *Organic Fonts*, *DrawRings* and *Bonds*, is a set of object-oriented rings (at various rotations) that can be accessed by any object-oriented drawing program. These rings are provided in a *MacDraw* document as well as in a *Scrapbook* file. These files are provided for users who wish to get optimal *LaserWriter* output from drawn compounds.

If your livelihood involves building organic structures, *Organic Fonts* is a piece of software that you must have. *Organic Fonts* can be purchased for \$79.95 (10% educational discount) from Modern Graphics, P.O. Box 21366, Indianapolis, IN, 46221, (317) 253-4316. —DS

## UPDATES

Programs, like people, change over time. To get the most out of your programs, you should be using the most recent versions. Here's a list of the current version numbers (as of press time) of many popular programs. The version number of a program

can usually be found by running the program and checking the About... item at the top of the Apple menu.

Apple System software is special. Unless you have a 128K Mac, you should be running *System 3.3* and *Finder 5.4* (128K

owners should continue to use *System 2.0* and *Finder 4.1*). If you don't have the latest *System* and *Finder* you can get them free from an authorized Apple dealer. Be sure to bring in a blank disk or two, though.

The meanings of the codes in

the right column are as follows: CP or NCP, copy protected or not; +, known to be HFS compatible; —, known not to work under HFS; S, shareware (try before you buy software); and 5, requires at least 512K of RAM. —SB

Acta	1.2	NCP,+	Font/DA Mover	3.2	NCP,+	Mac + ]]	3.0	NCP,+	Quick & Dirty Util.,		
Aztec C	1.06H.1	NCP,+	Fontographer	2.1	CP,+5	MacProject	1.1	NCP,+	Vol. 2	1.0	NCP,+
Back to Basics	1.03	CP?,+	Front Desk	3.0	CP,+	MacProof	2.0	NCP,+	Rags to Riches	3.0	CP,+
Balance of Power	1.03	CP,+	FullPaint	1.0	NCP,+5	MacServe	2.1	CP,+	Ragtime	1.0	CP,+
BatteryPak	1.23	NCP,+	Gato	1.43	CP,+	MacSpec	1.3	CP,+	ReadySetGo	3.0	NCP,+
Business Flevision	1.1	CP,+	Hard Disk 20	1.1	NCP,+	MacSpin	1.1	CP,+	Record Holder	2.1	NCP,+
CalendarMaker	2.2	NCP,+S	Hard Disk Utility	2.0	NCP,+5	MacSpool	2.1	NCP,+	REdit	1.2	NCP,+
Chooser	3.0	NCP,+	Helix	2.0r11	NCP,+5	MacTerminal	2.0	NCP,+	Red Ryder	9.4	NCP,+S
ColorChart	1.3	NCP,+	Helix, Double	DH1r35	NCP,+5	MacTools			Reflex	1.0	NCP,+
ColorMate	2.1	NCP,+	HFS Backup	2.0	NCP,+5	(MFS/HFS)	6.3	NCP,+	ResEdit	1.1	NCP,+
ColorPrint	2.03	NCP,+	HFS Locator Plus	1.4	NCP,+	MacWrite	4.5	NCP,+	Sargon III	1.0	CP,+
ComicWorks	1.0	NCP,+	ImageWriter	2.3	NCP,+	Mac Zap Copier	4.5	NCP,+	SideKick	2.0	NCP,+
ConcertWare+	3.1	CP,+	ImageWriter, Apple-			MailManager	1.0	CP,+	Silicon Press	1.1	NCP,+
Copy II Mac	6.3	NCP,+	Talk	2.3	NCP,+	Measure Test	5.7	CP,+S	Slide Show Magician	1.3	CP,+
Copy II HD	6.3	NCP,+	InTalk (was inTouch)	2.11	CP,+	MicroPhone	1.0	NCP,+	Smartcom II	2.2B	NCP,+
Cricket Graph	1.1	NCP,+5	Jazz	1A	CP,+5	Micro Planner Plus	5.7	CP,+	SoundCap	4.3	CP,+
DesignScope	1.14	NCP,+5	Just Text	1.1	NCP,+5	MindWrite	1.0	NCP,+	SpellNow	1.0	NCP,+
Desk Accessory			Laser Prep	3.1	NCP,+	miniWriter	1.3	NCP,+S	Spellswell	1.3	NCP,+
Mover	1.4	NCP,—S	LaserWriter	3.1	NCP,+	MockPackage+	4.3.4	NCP,+S	StatView 512+	1.0	NCP,+
Disk Express	1.10	NCP,+5	LightSpeed C	2.01	NCP,+	MORE	1.01	NCP,+	StatWorks	1.2	NCP,+
Disk First Aid	1.0.1	NCP,+5	LightSpeed Pascal	1.0	NCP,+	MS BASIC	3.0	NCP,+	Studio Session	1.2	CP,+
DiskInfo	1.43	NCP,+S	Lode Runner	1.0	CP,+	MS Chart	1.0	CP,+	SuperPaint	1.00	NCP,+5
Disk Ranger	2.6	NCP,+	Mac-3D	2.0	CP,+	MS Excel	1.03	NCP,+	Switcher	5.1	NCP,+5
Dollars & Sense	1.4	CP,+	MacASM	2.0	NCP,+	MS File	1.02	CP,+	System (MFS-128K)	2.0	NCP,+
Dungeons of Doom	4.0	NCP,+S	MacBillboard	4.01	NCP,+S	MS Fortran	2.2	CP,+	System (HFS)	3.3	NCP,+
Easy3D	1.01	NCP,+	Mac C	5.0	NCP,+	MS Word	3.0	NCP,+	Tempo	1.1	NCP,+
Edit	2.0	NCP,+	MDS	2.0	NCP,+	MS Works	1.0	NCP,+	ThinkTank 512	1.3	NCP,+
ExperLisp	1.5	NCP,+	Mac Disk Catalog II	2.1.1	NCP,+	Multiplan	1.1	CP,+	Thunder!	1.0.1	NCP,+
ExperLogo	1.1	NCP,+	MacDraw	1.9	NCP,+	MusicWorks	1.1	CP,+	ThunderScan	3.2	NCP,+
Fedit Plus	2.0	NCP,+	MacDraft	1.2a	CP,+	myDiskLabeler	2.11	NCP,+	TML Pascal	2.01	NCP,+
FileMaker	1.0	NCP,+	MacGolf	2.0	CP,+	Omni III Plus	3.24	CP,+	TMON	2.585	NCP,+
FileMaker Plus	2.0	NCP,+	MacInTalk	1.1	NCP,+	OverVUE	2.0d	NCP,+	Top Desk	2.1	CP,+
Flevision	1.0	CP,+	MacLabeler	2.3	CP,+	PackIt III	1.2	NCP,+S	TurboCharger	2.0, RevD	NCP,+
Finder (MFS-128K)	4.1	NCP,+	MacLightning	2.0	NCP,+	PageMaker	1.2	CP,+	VersaTerm	3.0	CP,+
Finder (HFS)	5.4	NCP,+5	MacLink	1.14	CP,+	PictureBase	1.1	NCP,+	VersaTerm Pro	2.0	NCP,+
FlashBack	1.4	NCP,+	MacMoney	2.02	NCP,+	QUOTE	1.54	NCP,+	VideoWorks	1.1	NCP,+
Flight Simulator	1.0	CP,+	MacNosy V2	2.41	NCP,+	Quick & Dirty Util.,			Word Handler	1.6	NCP,+
FONtastic	2.7	NCP,+	MacPaint	1.5	NCP,+	Vol. 1	1.6	NCP	WriteNow	1.0	NCP,+
			MacPascal	2.1	CP,+				ZBasic	3.02	NCP,+

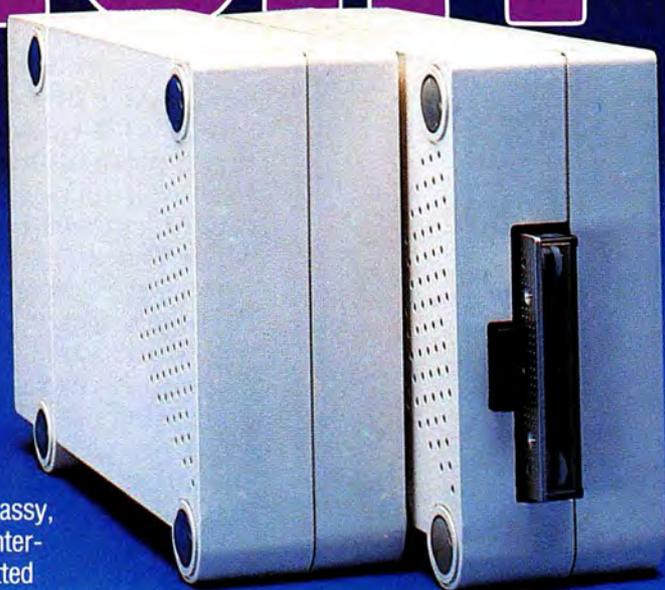
*New for the Mac Plus!*

# SMALL BUT MIGHTY!

## CIRRUS 40FD 40MB FAST DISK

Get the hard disk performance for the MAC PLUS that's as fast as it comes! The CIRRUS 40FD delivers 28ms seek time and 40MB of storage in a small, classy, package that's feature rich. Two SCSI interfaces. Auto park. Locking heads. Formatted and ready to run. The CIRRUS 40FD supports password protection, multiple volumes on a single disk and can treat multiple hard disks as one volume. That means you can daisy chain up to 7 CIRRUS hard disks and treat them as one. The CIRRUS 40FD is cool, quite, reliable.

Also available:  
CIRRUS 21D 21MB Hard Disk  
CIRRUS 30D 30MB Hard Disk  
CIRRUS 60D 60MB Hard Disk



## CIRRUS 40T 40MB TAPE BACKUP

This small wonder can do everything the CIRRUS Hard Disks can do. In fact it operates identically. That's why it's so incredibly easy to use. The CIRRUS 40T gives you image and file by file backup and restoration.

You can even restore file by file from an image backup. Each system includes two SCSI interfaces. Tapes are formatted and support volumes and password protection. And, there's full data correction on the tape. Cool. Quiet. Diminutive. Your data is safe with the CIRRUS 40T.

## DISK-LEAGUE BACKING FOR POWER USERS

Get the power...power users want! We build high quality, high performance equipment designed to meet the needs of serious users. So if you're a power user now, or ready to become one, call or write today for more information about the CIRRUS 40FD,

21D, and 40T. And, don't forget to ask about our first class warranty and service protection. We're seasoned experts in mass storage with more than 15,000 systems installed in the field. And, we stand behind every product we sell.

**CALL TO ORDER TODAY: 800-522-2237** • In Oregon and Alaska call: 503-626-6877

VISA & MASTERCARD accepted • OEM & Dealer inquiries welcome

**Kammerman  
Labs**

7861 SW Cirrus Drive, Beaverton, OR 97005 • 503-626-6877 • Telex 501 886

Price not included. Specifications and prices subject to change without notice. Mac Plus is a registered trademark of Apple Computers, Inc. Copyright © 1986 Kammerman Labs.

Please circle 274 on reader service card.

# SIX REASONS TO TEACH YOUR MAC TO READ.



If these look anything like the papers piling up in your office, you need PC Scan Plus,™ the new intelligent scanner from DEST.

It's the fastest way to get information off your desk and into your Macintosh™ Plus, where you can use it.

You see, PC Scan Plus can read a typed page into your Macintosh's word processing program, completely formatted, in less than a minute.



PC Scan Plus works with MacWrite,™ Microsoft™ Word, and the others. It can read most office typescripts, including dot matrix, with accuracy no other scanner can touch.

What's more, if you're a desktop publisher, PC Scan Plus can do even more.

Besides words, you can scan photographs, line art, logos and other images into all the top desktop publishing software. PageMaker,™ Ready, Set, Go!™ and the rest.

And if all this isn't reason enough to take a closer look at PC Scan Plus, just give your in-box a quick scan.

Then call us for a free brochure or a demo.



800-538-7582

In California, 408-946-7100.  
CIRCLE 296 ON READER SERVICE CARD

There's no smarter, faster input device than PC Scan Plus. It can read words, illustrations or photographs into your Macintosh word processing or desktop publishing programs in seconds. At the click of a mouse. And it can do the same for an IBM® PC.

10 Retail Outlets for Consumer Electronics  
Shift away from the "Big Three" Department

OUTLET	SALES (\$000)
1. RADIO SHACK	\$2,200
2. K-MART	\$1,800
3. SEARS	\$640
4. MILITARY PXs	\$600
5. MONTGOMERY WARD	\$500
6. SERVICE MERCH.	\$500
7. TARGET	\$450
8. BEST PRODUCTS	\$450
9. J.C. PENNEY	\$450

The latest figures released by the Consumer Electronics Association indicate that the industry is moving away from the "Big Three" department stores and into smaller outlets. The biggest news is the shift to the number one slot by Radio Shack. A fairly new entrant, Radio Shack has shown remarkable growth in 1985. The number of stores increased from 7 in '84 to 17 in '85. Another interesting move is the Military PX. Last year, the Military PX was especially popular. This year, that popularity has not faded. PX electronics sales have surpassed Montgomery Ward, one of the "big three" department stores. Best products does service electronics as well. J.C. Penney's recent decline in sales on their line of electronics has apparently had little effect on their sales. They are again in the top place with sales remaining about the same as last year. When sales per store are examined, the most impressive performance is further down the list. Circuit City's sales breakdown of their equipment reveals a video equipment (includes VCR and video cameras) to be their largest

Now you can learn a quick and easy way to manage with confidence, without feeling apprehension or over-demanding. Learn how to give orders that are fulfilled—how to make sure people follow through with assignments without undue threatening—Learn to delegate tasks without oversteering about your own popularity—How to refuse to say "no"—All this and more in our new seminar...

# HOW TO BE A PROGRESSIVE MANAGER

Attend This Seminar of Inevitable Ideas and



- The power of spiritual leadership
- Use new approaches to use new approaches
- How to manage with strength
- How to direct when necessary
- How to cause resentment
- How to direct when necessary
- Communicate your most
- Communicate your most
- Communicate your most

**J&J Seminars by J&J Associates**  
A Division of Omega Control, Inc. - Denver  
Toll Free 1-800-476-9971



**ALUMA-FORM, INC.** 1500 W. MacArthur Blvd, West Lynn, MA 01876 209/783-2037

## NEW PRODUCT PROPOSAL - DOOR SHIELD

**Background:** We must determine whether the manufacture and distribution of a pre-formed aluminum door shield is an opportunity for existing mobile home after-market.

**The Market:** Currently there exists a method of flashing usually done by the mobile home set-up crew, or by an after-market remodeler. This is done with about 1000 gal. of caulk and forms for each door. A pre-cut, roll-formed molding would save the same purpose.

1. Homeowners currently spend an average of \$75 to have custom flashing applied.

2. The product can be manufactured in our Boston plant with existing equipment to retail for \$30 plus installation.

3. Installers, remodelers and homeowners would accept a roll-formed molding.

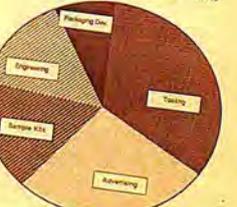
**The Product:** A 4-1/2" roll-formed piece to serve as door flashing. Made of anodized 6061 aluminum and .040 baked enamel aluminum in white and Bark Brown. Available in twelve standard lengths to fit the standard factory-installed Silverstar, Brentwood and Silver Staruses (all models) entry doorways.

Year	Silverstar	Brentwood	Silver Star	AP Sales	TOTAL
1983	1278	789	877	5%	152
1984	1878	1430	700	7%	287
1985	1432	1590	778	7%	287
*1987	1775	1620	804	7%	428
1988	2800	1700	800	10%	265
*1989	3400	1800	800	25%	1325
	3700	2000	900	35%	1800

The above denotes total number of units shipped and candidates for retrofit work. The 5th column shows the percentage of units for which we can expect to supply retrofitting and remodeling materials. Our real market exists for the 1987 models and on. From these units we can expect set-up, retrofit and remodel business.

**Launch Expenses**

1. Tooling	\$10,000	33%
2. Advertising/Marketing	8,000	27%
3. Sample Kits	5,000	17%
4. Engineering	4,500	15%
5. Packaging Development	2,500	8%
<b>TOTAL</b>	<b>\$30,000</b>	<b>100%</b>



**Production Costs**

1. Aluminum coil. If our current aluminum source can be maintained, and if we can increase our credit line, we can buy at 20,000 lb. quantities. This will bring our cost of base metal down to .039/lb. for .020 and .05 for .040.

2. Labor. It is estimated that cutting, roll-forming and packaging will take an average of 3.5 minutes per package.

3. Packaging. We will offer bulk packaging in distributor quantities.

Each panel will be paper wrapped. Quantities of 20, 40 and 60 panels will be cartoned for distributors. Dealer packaging will be in lots of five. Cartons will be our standard paper wrapped corrugated, printed in two colors. End caps will be used for all bulk packaging, fold-in ends for dealer packaging. Poly foam sheets will be needed for

**NEWSLETTERS.** Anyone in your office can create pages with **punch!** With Ragtime's ease of use and flexible capabilities, newsletters like this are a snap.

**FLYERS.** Got a creative idea? Let Ragtime capture it before it gets away. Save the time and expense of typesetting with Ragtime and your own initiative.

**PROPOSALS.** Everyone needs a business advantage. When your presentations include spreadsheets and graphics to make your points, you'll be noticed!

# Word Processing is Obsolete!

Presenting **RACTIME™**

### Page Processing; A New Breed

Word Processing has served you well for over two decades, and has now been replaced by a new, superior application—Page Processing. It's called Page Processing because it contains all the necessary tools for creating exciting pages and professional documents. Gone are the limitations of words without pictures and text without numbers.

Ragtime, the premier Page Processor for the Macintosh computer, is the first to combine the functions of **word processing, spreadsheets, page layout** (also known as desktop publishing), **business forms generation** and **graphics management** all in one complete package. Effective businessmen need these combined functions to create truly professional documents such as proposals, manuals, financial presentations, newsletters, and advertisements.



### The Page Processing Advantage

If you are using separate software packages for word processing, spreadsheet and desktop publishing, you are not achieving your full potential. A new standard in top-quality business documents has been established with the integrated power of Ragtime Page Processing.

As an example, consider a typical business proposal, like that pictured above right. Only with the power of Ragtime Page Processing can you create the entire page layout (including columns, hairlines, headers, and the like) and simultaneously word process *all* your required text. Next, you can build in a persuasive spreadsheet with all the facts and figures (a requirement in any business proposal), all without leaving the application. Then bring in the graph that illustrates your data (a picture is worth a thousand words processed). *Voilà*, you and Ragtime have produced your most professional proposal ever. All this at a fraction of your previous efforts and costs. This is the Page Processing advantage.

### Commitment to Innovation and Excellence

Orange Micro has spent over six years providing innovation to Apple users all

over the world. To date, we have sold over 500,000 Apple enhancement products, and gained the support and respect of the industry.

### Special Opportunity to Try Ragtime

We would like to give you an opportunity to experience the power of Ragtime Page Processing on your own Macintosh, at your convenience. Complete the coupon below and discover Page Processing for yourself.

### FILL OUT AND MAIL TODAY!

Send a check or money order for \$10 with this completed form and receive:

- Ragtime Evaluation Disk
- Sample Documentation
- \$10 Manufacturer's Rebate coupon redeemable with Ragtime purchase
- Free Mouse pad (\$10.00 retail value)

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone (\_\_\_\_) \_\_\_\_\_



1400 N. Lakeview Ave., Anaheim, CA 92807  
(714) 779-2772 Telex: 5101001014 ORANGE MICRO

## Sounding Off

One of the easier choices in our 1986 Editors' Choice Awards was for the best music application, *Studio Session*. In our review (Dec '86) we had found the documentation to be the one of the most disappointing parts of this innovative program. Since that time a final manual has been completed and sent out to all registered users. Now that an

excellent manual exists, we have added a half a mouse to the program's rating, bringing it to four and one half mice.

The developers of *Studio Session*, Bogas Productions, are offering two add-ons, on their own. The first is a set of two diskettes (with more forthcoming) of *Studio Session* songs. One diskette is all country music, while the

other features early heavy metal.

The second product is not really a product at all, but an audio sampler. It's a free audio cassette that features *Studio Session* sounds and songs. The hope is that after hearing *Studio Session* play you will run to your local dealer to get it. When sending for your free cassette be sure to send a self-addressed,

stamped (No. 10) envelope.

To obtain the free cassette or the \$19.95 (each) song diskettes, contact Bogas Productions, 1520 Pacific Ave., San Francisco, CA 94109, (415) ED-BOGAS. To purchase the *Studio Session* program (\$89.95), contact Impulse at 6860 Shingle Creek Pkwy., Minneapolis, MN 55430, (800) 328-0184. — DS

## DIALOG BOX OF THE MONTH



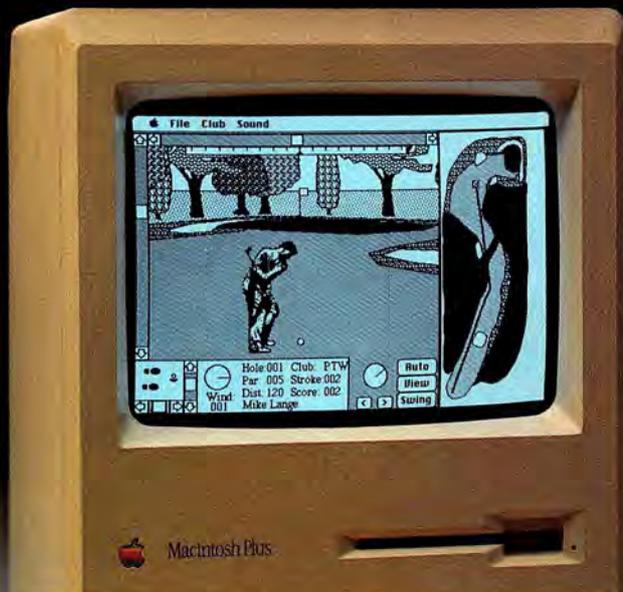
**I must have amnesia! The date can't possibly be correct. We'd both be really happy if you'd fix it with the Control Panel.**

OK

A number of users of *MacServe* networks have reported this alarming dialog box. It will appear if the clock in a Mac on the *MacServe* network becomes set to an obviously incorrect date and time. The clock in a Macintosh can reset (to January 1, 1904) by simply removing the battery and turning the computer off and on. A powerful surge of electricity can also cause the

clock to show the wrong time. This problem can be corrected by changing the date with the *Alarm Clock* DA. From the looks of this man, a surge seems a possibility.

If you've stumbled over any unusual dialog boxes recently, we'd like to see them. Send them to MacUser Dialog Box, 25 West 39th Street, New York, NY 10018.



# The MacGolf™ Challenge.

Sit down, boot up and find yourself surrounded by the sights and sounds of the fairway — with MacGolf, the premier simulation golf game for Macintosh™ users.

MacGolf challenges beginners and experts with 3-dimensional animated

golfers and graphics, realistic (digitized) sound effects, and two 18 hole golf courses. Up to four people can play.

MacGolf works on a 512K or Macintosh Plus and costs only \$59.95. Get MacGolf at your nearest dealer

today. Or call Practical Computer Applications at (612) 427-4789.

## MacGolf™

Macintosh is a trademark licensed to Apple Computers, Inc. MacGolf is a trademark of Practical Computer Applications, Inc.



# BUG OF THE MONTH

*Cricket Graph*, version 1.1, has a rather serious bug that many people, except for Professor H. Kroemer of Santa Barbara, have overlooked.

*Cricket Graph* does not properly graph data points in a list in the order in which they occur in that list. Rather, the application graphs data points in the order of increasing X-coordinate (or Y-coordinate, if you interchange

axes). This makes it impossible to draw any curve along which both the X values and Y values change in their direction.

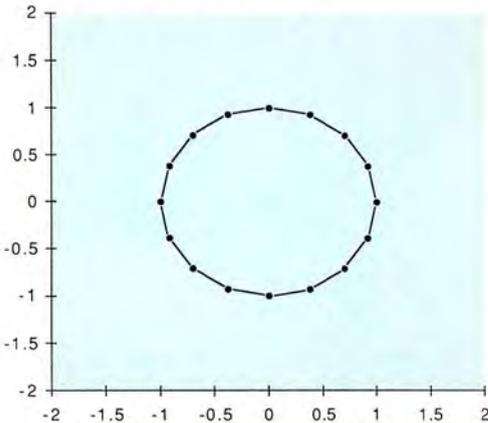
Examine the example below. Shown is the data along with a chart of that data from both *Excel* and *Cricket Graph*. Notice how *Excel* draws the circle that is called for while *Cricket Graph* plots its lines progressively in the direction of the X axis.

For discovering this bug, Professor Kroemer, of the University of California will be receiving \$25. Send any bugs that you may have stumbled upon to Bugsy, c/o MacUser, 25 W. 39th St., New York, NY 10018. Always remember to include all of the gory details, including *Finder/System* versions, what additional DAs, etc., and exactly how you found your bug. — DS

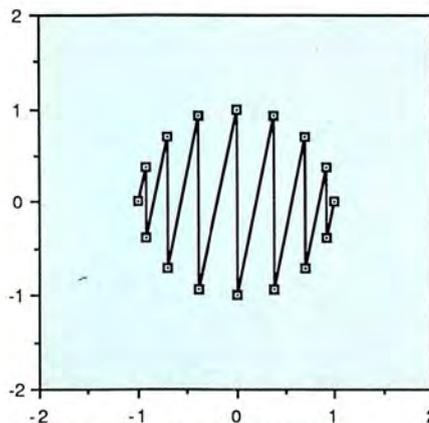
	A	B
1	1	0
2	0.9238795	0.3826834
3	0.7071068	0.7071068
4	0.3826834	0.9238795
5	0	1
6	-0.3826834	0.9238795
7	-0.7071068	0.7071068
8	-0.9238795	0.3826834
9	-1	0
10	-0.9238795	-0.3826834
11	-0.7071068	-0.7071068
12	-0.3826834	-0.9238795
13	0	-1
14	0.3826834	-0.9238795
15	0.7071068	-0.7071068
16	0.9238795	-0.3826834
17	1	0

THE ORIGINAL DATA

Shown is the data that was plotted by both *Excel* and *Cricket Graph*. Notice that *Excel* was able to draw the proper graph (a circle), while *Cricket Graph* plotted data in the incrementing X axis only.



EXCEL CHART



CRICKET GRAPH CHART

## Tired of pulling down menus?

A new generation of user interface enhancers will be here soon...

Call us  
TOLL FREE  
For more details  
(800) 628-2828  
ext. 751

S O L F T W A R E

Olduvai Software, Inc. (305) 334-1404  
830 NE Pop Tilton's Place • Jensen Beach • Florida 33457

Please circle 119 on reader service card.

ONLY \$34.95  
To order call:  
(800) 628-2828  
ext. 751  
or send check or M.O.  
for \$34.95 + \$3.5 S.H.

KEEP THEM ALIVE IN AN EVER CHANGING WORLD!!!!

**Maze Survival**  
FEATURING FRITZKUN DIGITIZED SOUND EFFECTS

Distributed exclusively by:  
Olduvai Software, Inc. (305) 334-1404  
830 NE Pop Tilton's Place • Jensen Beach, FL 33457

Please circle 120 on reader service card.

# “MindWrite?”



# Baaaah!"

*"It's too easy to use."*

*"They make a big deal out of features we can't find on the standard comparison charts."*

*"And at \$125, it's suspiciously inexpensive. How can we take MindWrite seriously?"*

If you make up your mind about MindWrite™ software without looking beyond the obvious conventional criteria, you'll miss the point, too.

## **The more you write, the more you'll like MindWrite.**

Like no word processor before, MindWrite focuses the power of the Macintosh™ on the creative part of the writing process.

MindWrite goes farther than any product since the Macintosh itself to simplify and speed up the process of turning nebulous notions into matchless manuscripts.

Unlike any other software—including any other that touts "integrated outlining"—MindWrite lets your finished piece evolve smoothly and naturally from your outline.

Because whether you like to work from a quick list of catchwords or a precisely detailed blueprint, you can move effortlessly between outline and draft at any time. It's a simple matter of selecting a display option.

So if an effervescent phrase flashes off your fingertips, you're word processing. If you need to note three ideas for the ending, you're outlining.

And if you think nothing can be this simple, you're almost right. Nothing else is this simple.

## **The more you rewrite, the more you'll like MindWrite.**

If you want to move a MindWrite paragraph, for example, just select it with the mouse and drag it to its new location.

If you want to make identical changes to several headings or paragraphs, just select them all at once—even if they're separated by other text—and make them italic or bold or whatever.

Or drag them to a new location—where they'll appear in the order you selected them.

Nothing else is this foolproof, either. MindWrite's exclusive "accumulating clipboard" stores everything you've cut until you're sure you won't need it.

Numbered sections are automatically renumbered when you move them.

If you're writing to fill a certain space, the word-count feature keeps you posted.

And time-and-date stamping lets you mark changed paragraphs, so it's now much easier to review complex revisions. Speaking of which:

## **The longer you write, the more you'll like MindWrite.**

Now you can navigate through long or complex (or long *and* complex) documents faster than ever before.

No more tedious scrolling. A tap on the mouse-button shows the entire manuscript in outline form. Click on the chapter, section or subsection you want and it opens. Work, click back to the outline, and move on.

Of course, you can view outline and text in separate windows, too. And have as many windows as you want.

## **Don't let the low \$125 price pull the wool over your eyes.**

MindWrite is full-strength Macintosh word processing. With easy learning. Integrated graphics. Its own unique features. Plus more we don't have space for here.

It's guaranteed, too: if within 30 days of purchase you find it doesn't live up to our claims, you can call us for a refund.

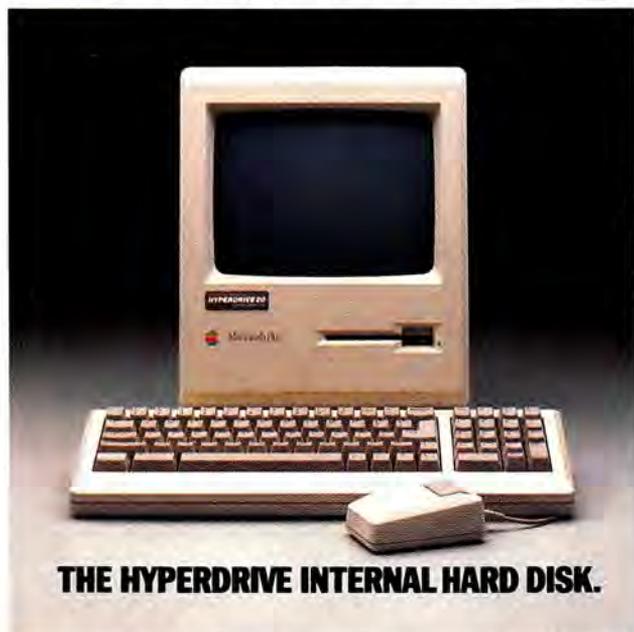
So ask for MindWrite at your dealer. Or order directly from us at 800-367-4334. (800-654-5599 in CA.) We accept Visa and MasterCard.

And if you must pay more for a word processor, that's okay. We'll take more.



**MINDWRITE**  
Macintosh word processing  
for creative individuals

# HIGH PERFORMANCE FOR INTROVERTS.



**THE HYPERDRIVE INTERNAL HARD DISK.**

If you're among the inner-directed, we can mold a Macintosh in your own image.

Through HyperDrive 20—the first hard disk to be installed *inside* the Mac or Mac Plus and connected directly to its microprocessor.

The resulting Macintosh can, in its own quiet and unobtrusive manner, out-perform any other Mac in its class.

It can not only store as much information as 50 diskettes. But it will also reduce power-up time by 66% over a Mac Plus. Load Aldus' PageMaker 150% faster. Microsoft's Excel 250% faster. And so on.

Which should more than satisfy any-one's need for speed. Unless, of course, you

need something "lightning fast," which is how Macworld described HyperDrive 2000.

This internal hard disk system also includes an additional microprocessor and a floating-point processor—turning the Macintosh into an authentic number-cruncher. In fact, a Mac with HyperDrive 2000 can perform computations from 10 to an astonishing 250 times faster than a Mac Plus.

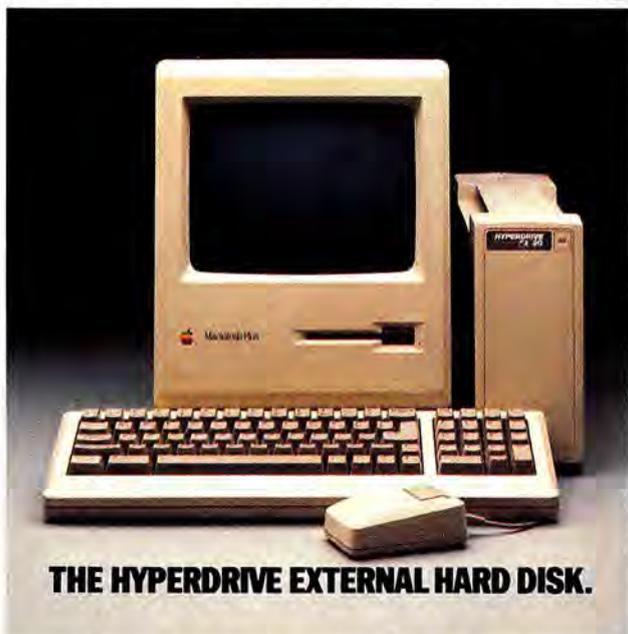
Both HyperDrive 20 and 2000 can share their vast hard disk storage with regular Macintoshes through HyperNet 2.0. Our new networking software that's universally compatible with any Macintosh and any hard disk, internal or external.

But sheer speed aside, what distinguishes all HyperDrives is the software they're equipped with. Which you can learn more about by consulting the ad on the right.



**GENERAL  
COMPUTER**

# HIGH PERFORMANCE FOR EXTROVERTS.



**THE HYPERDRIVE EXTERNAL HARD DISK.**

The FX/20 and FX/40 are the most outgoing members of the HyperDrive family.

They spend their time on desktops, in the company of other office tools, connected to any Macintosh with an SCSI port.

The resulting Macintosh is extremely fast, which will come as no surprise to anyone familiar with HyperDrives. (If you aren't familiar, see the fourth paragraph of the ad to the left.)

Nor is it surprising that our FX series is extremely accommodating, providing a vast 20 or 40 megabytes of storage.

The real surprise, at least for those familiar with external hard disks, is all the software the FX comes with.

Such as a program that protects your documents by making back-up copies of them onto diskettes.

Another program protects your documents from certain excesses of sociability—denying access to anyone who doesn't know the password you choose.

Still another program automatically queues up documents for your ImageWriter or LaserWriter. So you can go on to other jobs without waiting for your printer.

In short, no other external hard disk does everything that HyperDrive FX/20 or FX/40 does. Which is a distinction it shares with the internal HyperDrives on the left.

Over 1200 authorized General Computer dealers will be happy to help you establish a meaningful relationship with either. For the dealer nearest you, call (800) 634-9737\*.



**GENERAL  
COMPUTER**

are trademarks of Microsoft Corp. ImageWriter and LaserWriter are trademarks of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Please circle 81 on reader service card.

# FileMaker Plus From Forethought

Now, the only Mac database ever to get both *MacUser's* and *InfoWorld's* highest ratings does even more, with even more ease.

Humble, ordinary-but-necessary forms like mailing labels, purchase orders, invoices, credit memos or packing lists. Pain-in-the-rear forms like expense reports and insurance inventories. Hard selling forms like proposals and quotations. Indispensable forms like phone messages, address books and sales contact records.

Filemaker™ Plus lets you do these any way you want, or does them *for* you if you want. An extra disk full of templates gives you a whole set of typical formats, so all you have to do is fill in the blanks.

And in addition to doing what a database is supposed to do — calculations, summary reports, sorting — FileMaker Plus does everything you *wish* a database would do. View multiple records on a

screen. Pull information from different files together. Include graphics in your fields and reports. Print mailing labels 3 or 4-up, or more.

Your information takes much more human form. It makes more than sense. It makes an *impression*.

With FileMaker Plus, you can put information *in* any way you want, without arbitrary limitations. It automatically indexes every word, number and date. You design your output right on the screen, so you can see exactly what you (and your clients, staff, suppliers, publishers, board of directors) are going to get.

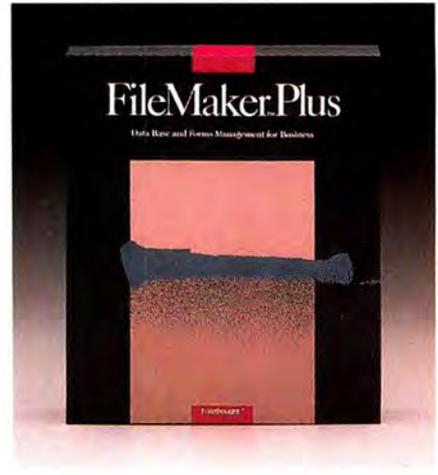
You can exchange information with other programs, like MacWrite™, MacPaint™, MacDraw™, Microsoft® Word and Microsoft Excel. You can share applications or formats you've created with other members of your team, or consolidate group efforts into one database. And FileMaker takes full advantage of the Macintosh™ family, including the Mac Plus, Mac 512, Imagewriter and LaserWriter.

So, for a mere \$295, you can watch as your data takes on all kinds of interest-

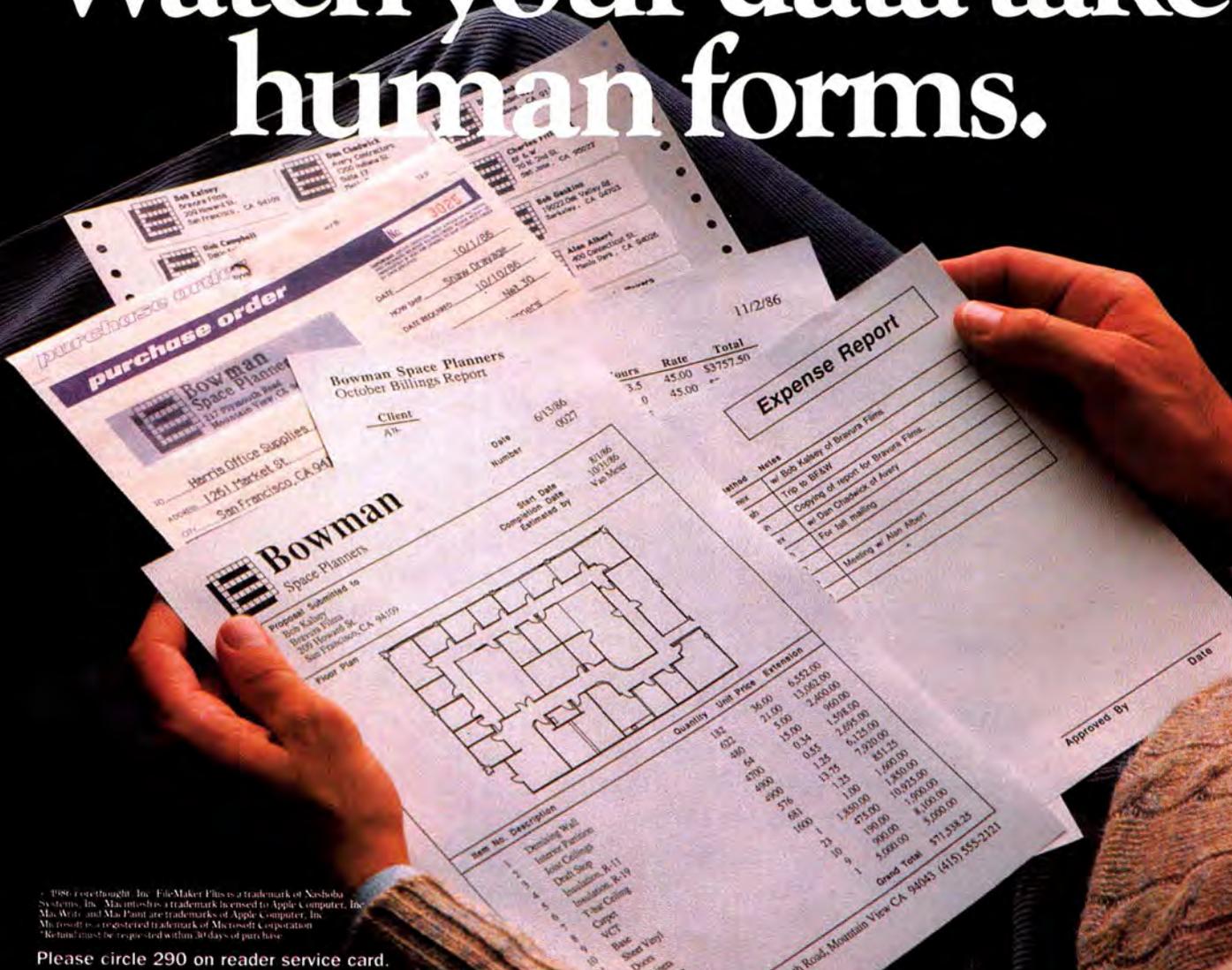
ing and profitable new forms. Call 1 800 MACWARE today for the name of your nearest dealer.

**We guarantee it.**

If FileMaker Plus doesn't completely fulfill your expectations, call 1 800 MACWARE and we'll solve your problem or arrange a refund.\* From Forethought®, Inc.



# Watch your data take human forms.



© 1987 Forethought, Inc. FileMaker Plus is a trademark of Nexbit Systems, Inc. Macintosh is a trademark licensed to Apple Computer, Inc. MacWrite and MacPaint are trademarks of Apple Computer, Inc. Microsoft is a registered trademark of Microsoft Corporation. \*Refund must be requested within 30 days of purchase.

Please circle 290 on reader service card.

1251 Market St., San Francisco, CA 94102  
 415-555-2121



by Robert R. Wiggins

## Walking The Floor

Walking the floor of the San Francisco Mac Expo for three days in January made it clear that the rest of the world has finally started to realize what you and I have known all along: The Macintosh is a business computer. There were plenty of people in suits, both working in booths and on the floor. And there were very few games on display. Most of the booths were showing "serious" software and hardware. While there were no announcements from Apple, many developers used the show to announce new products, and in several cases released new products at the show.

Redgate Communications honored the "Mac 100" — people, companies and software that are or were significant to the Macintosh community (and there was as much talk about who was *not* on the list as there was about who was on); and *MacUser* had a dinner to formally present its Editors' Choice Awards (the Eddies) that were featured in our January issue.

Here are some of the highlights of the show:

**Word Processing/Page Layout** — the second and third generation word processors now starting to come out add enough features of page layout programs to blur the line between them and force me to lump them together. *MacAuthor*, er, *Laser Quill*, er, *Laser Author* finally debuted for real at this show and is now shipping, but it had plenty of vaporware (software that is announced but is as yet as elusive as vapor) competition from *Word 3.0*, *FullWrite Professional* and *Word Perfect*. All of these are promised soon, and all had some impressive demos. We've come a long way from the days of *MacWrite* and *Word 1.0*.

Aldus *PageMaker 2.0* was also talked about at the show, but *ReadySetGo 3.0* got more floor space since both Manhattan Graphics and LetraSet had it up and running.

*Laser Author* is the same full-featured product previously available in England and in addition to its style sheets and unique "frames," it has features such as the ability to open *MORE*, *Acta* and *MacWrite* files. Microsoft was demoing *Word 3.0*, which adds features like confi-

gurable menus, hyphenation, spell checking and index and table of contents generation. It's still not WYSIWYG (What You See Is What You Get), but it has a page preview mode that lets you see in reduced form on the screen approximately what the page will look like. Ann Arbor was showing a demo of *FullWrite Professional*, direct from the programmers, with just about every feature found in any word processor, with quite a few page layout capabilities thrown in, such as the ability to wrap text around irregularly shaped pictures.

Aldus wasn't showing *PageMaker 2.0* to just anyone, so the traffic at their booth was lighter than it would have been if they had been showing continuous demos. LetraSet's acquisition of *ReadySetGo 3.0* made for a bit of excitement, and many people now swear by it, as, unlike *PageMaker 2.0*, it is available now. In fact, some people seemed quite disturbed that the new *PageMaker* will be available on the IBM-PC before the Macintosh version is out.

So you can judge for yourself — all of these products are promised by April or May, just about the time you'll be reading this, so check around and see who did and did not make their deadlines.

**Spreadsheets** — *Excel 1.03* made a quiet bow at the Microsoft booth (it's only a minor update, after all, although those with big screens like the Radius won't find it so minor — it now works on these screens). The big splash was made by *Trapeze* from Data Tailor, an

innovative concept in spreadsheets that's hard to explain but fairly easy to use once you get used to it. *Trapeze* is a marvel that can produce gorgeous output (including pictures), and better yet, it's available right now. It may not be for you, as it's a bit more complicated to use than a "normal" spreadsheet, but it's worth looking into.

**Graphics** — While *SuperPaint* and *Cricket Draw* were on display, the graphic product drawing the biggest crowds was Adobe's *Illustrator* (so big that they demoed it at the Radius booth in addition to their own booth), a sort of full-page *FONTographer*. *Illustrator* allows graphic images to be imported and then traced over with curves and lines that will have full LaserWriter resolution, and gives access to some PostScript features that up to now have been difficult or impossible to get to from most applications. Two drawbacks (aside from expense): it's not ready yet, and it's probably going to be copy protected. Cricket drew pretty good crowds with *Cricket Draw*, which was available, and which has a lot of extra features to allow access to PostScript capabilities which have been unavailable in previous drawing programs like *MacDraw* and *MacDraft*.

**Elsewhere On The Floor** — *MORE* from Living VideoText gets the award for best upgrade, with a free upgrade to version 1.1 which adds "Undo" and several other nifty features (not to mention bug fixes) making *MORE* an even better program. Symmetry also announced an upgrade for *Acta* to 1.2, which adds features like printing and "intelligent cut and paste." Smethers-Barnes demoed *Prototyper*, a program for programmers who want to prototype their applications quickly and easily. And my personal favorite (and possibly least business-related) product introduced at the Expo: *DiskTop* and its accompanying program *Widgets* from CE Software (the Mock people), which performs a number of handy and sometimes odd little functions I've always wanted to be able to do easily (like disable the LaserWriter startup page).

### SCENES WE'D LIKE TO SEE

With the business orientation of the Macintosh becoming more and more apparent and its growing acceptance by big (and small) business, it may not be too long before a scene like this is played out in corporate America:

"Boss, I found a great computer and I need authorization for the purchase order."

"Not so fast, Jenkins. Does this com-



# FREE ★ FREE

## Media-Mate 3

with purchase of any 100 diskettes  
(Boxed in tens)

**SONY** 3 1/2" SS/DD.... 1.09 Ea.  
3 1/2" DS/DD.... 1.69 Ea.

Boxed in tens — minimum order 20 (FREE Media-Mate 3 with each 100)

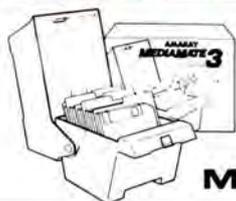
**maxell** 3 1/2" SS/DD..... 1.09 Ea.  
3 1/2" DS/DD..... 1.69 Ea.

Boxed in tens — minimum order 20 (FREE Media-Mate 3 with each 100)

**BASF** Or **Nashua** 3 1/2" SS/DD..... 1.09 Ea.  
3 1/2" DS/DD..... 1.49 Ea.

Boxed in tens — minimum order 20 (FREE Media-Mate 3 with each 100)

MAC PAC's	Boxed in 50's	50+	100+	400+	MAC PAC's
<b>SONY</b>	3 1/2" SS/DD....	1.09 ea	1.05 ea	.99 ea	<b>BOXED</b> in 50's
	3 1/2" DS/DD....	1.45 ea	1.39 ea	1.35 ea	
<b>maxell</b>	3 1/2" SS/DD....	1.14 ea	1.09 ea	1.04 ea	<b>Includes</b> Labels
	3 1/2" DS/DD....	1.49 ea	1.44 ea	1.39 ea	
<b>BASF</b> Or <b>Nashua</b>	3 1/2" SS/DD....	1.09 ea	1.04 ea	.99 ea	
	3 1/2" DS/DD....	1.39 ea	1.34 ea	1.29 ea	



Holds 30 3.5"

**\$8.95**

With Lock

**\$10.95**

**MediaMate 3**

**Deluxe Roll-Top File**



Holds 55 3.5"

**\$15.55**

With Lock

**\$17.95**

**Mouse-Pad**

**\$5.95**

Red - Blue - Gray - Brown



Imagewriter Ribbons  
Black (2-5) 3.45 (6+) 2.95  
Color Packs 20.70

**Glare/Guard**  
by CCLi

- Cuts 94% of Screen Glare
- Enhances Contrast
- Optically Coated Glass

**\$34.95**

**ORDER NOW 1 800 351 - BEST (2378)**

1 800 451 - BEST (in California)



2148-A Bering Drive  
San Jose, CA 95131  
(408) 435-3866

Visa, Mastercard, C.O.D. or Prepaid. Corporations rated 3A2 or better, government agencies and schools may send in purchase orders on a net 30 basis. Minimum order \$25.00. Shipping charges are \$3.00 per 100 diskettes (minimum shipping order \$3.00) (within the continental U.S.), APO, FPO, AK, HI, PR and Canada Orders add 10% to cover PAL and Insurance. All other countries add 20%. C.O.D. Orders Add \$4.00. No Sales Tax outside California.

**Satisfaction guaranteed on all products.**

Please circle 31 on reader service card.

puter have a standard user interface across applications?"

"Well, no, Boss, but..."

"Pull-down menus? Easy to understand dialog boxes?"

"Well, a few programs do, but..."

"Does this computer of yours support desk accessories?"

"Well, there are these memory-based kind of..."

"How about standard formats for data interchange between programs?"

"Not exactly, Boss, but..."

"No cut, copy, and paste at all?"

"Well, some programs sort of..."

"Do applications for this computer

**The San Francisco Mac Expo in January made it**

**clear that the world has finally started to realize that the Macintosh is a business computer.**

support Undo in case you make a mistake?"

"Well, no, Boss, but..."

"Jenkins, does it run Excel?"

"Well, no, Boss, but..."

"Jenkins, exactly what kind of computer are you trying to foist off on this company, anyway?"

"Well, Boss, it's an IB...oh, never mind. It's not really what we need anyway."

**PINSTRIPES PICKS**

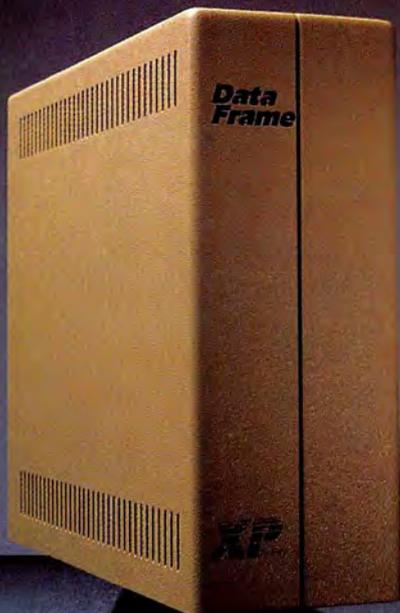
The pick of the available products shown at the Expo:

**Trapeze:** as described above, it's worth investigating. It may not be for you, but again, it may be exactly what you've been looking for.

**Cricket Draw:** it still has a few kinks, but it is an amazing drawing tool for use with PostScript devices like the LaserWriter.

**Laser Author:** as described above, a very powerful hybrid of word processing and page layout, although complicated enough to make it difficult to use at times.

**Fluent Laser Fonts:** CasadyWare has done it again, with several impressive new fonts.



**SPECIAL OFFER**  
Save on your choice of upgrade with the purchase of any XP. See insert card for details.

# Total Eclipse.

Introducing DataFrame XP,<sup>™</sup>  
the SCSI hard disk that eclipses all others.

DataFrame's superiority has been clear since Apple chose it to introduce the speed and performance of the Macintosh Plus. And now, while other manufacturers are still working to emulate our best selling DataFrame 20, SuperMac Technology<sup>™</sup> is proud to introduce *the second generation hard disk that clearly outshines*: DataFrame XP.

**The fastest SCSI under the sun.** DataFrame XP's advanced SCSI technology delivers virtually twice the speed of any other full SCSI drive—including Apple's recent release. Every program runs *faster*. And the programs that make frequent use of the disk run *much* faster.

**Reliability that overshadows all others.** DataFrame is far and away the critic's choice. *The MACazine* gave Data-

Frame its highest rating. And *Macworld* says "DataFrame was one of the few completely trouble-free drives tested."

Unbeatable reliability is the reason SuperMac offers the only full one-year warranty in the business.

**A design so simple, it's brilliant.** DataFrame XP comes with all the features of the original DataFrame. Preformatted for immediate set up and use, just stand the XP beside your Mac and plug it in. And it comes with free backup, print spooler, and self-test software *plus* free lifetime software upgrades.

DataFrame XP always stays cool because its vertical 'chimney' design efficiently vents heat without use of a fan (that's why it's quiet!). The XP sits beside your Macintosh, not inside or under it, so the drive won't heat your system.

**How to make your Mac shine.**

Just add a DataFrame XP. Or upgrade your existing DataFrame to XP performance. Both are every bit the DataFrame *The MACazine* called "the best buy for a SCSI hard disk considering price, product quality, performance, warranty and technical support."

Compare the rest of the SCSI drives. Then test the XP. And prepare for something overpowering: A total eclipse.

SuperMac Technology  
950 N. Rengstorff Ave.  
Mountain View, CA 94043  
(415) 964-8884

 **SUPERMAC**  
TECHNOLOGY

With Insight accounting software, you not only capture the numbers, you can interrogate them.



You need some serious cash by next Friday.

Can you get it in time from receivables?

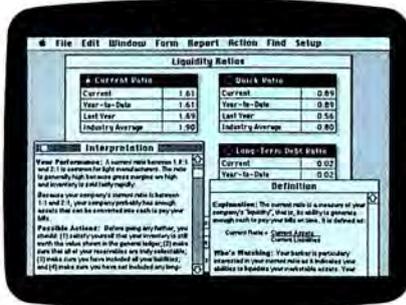
Do some of your customers owe you a big chunk of money this week? If so, are they good for it?

If not, can you get it from the bank? Your credit's been okay; but how will they view this current problem?

Speaking of which, just what caused it? Or who?

With Insight, you'll know. It's the accounting software that not only keeps track of your numbers, but gets them to talk.

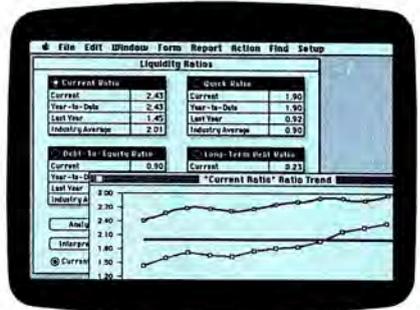
For example, Insight tells you who's going to pay you and when—based on their actual payment history. So you'll be dealing with realistic projections, instead of pie in the sky.



The Interpretation window compares your results with industry norms for service firms, manufacturers, distributors; flags potential problem areas and people responsible, and suggests action you can take to improve your results.

The Definition window not only tells you what things mean (like "ratios") but also who's watching them (like your banker), and what accounting and business factors affect them.

Insight goes on to define and analyze your financial information and suggests possible actions to take. For example, Insight lets you know that your current ratio—your short-term assets compared with liabilities—is good and getting better for a company like yours. Yes, you could use a loan. But because Insight



The Graph window shows you trends over the last 12 months of your key financial indicators, comparing them with last year's and with industry norms.

makes it clear that your inventory is turning nicely, your banker knows he's dealing with a temporary blip, not a lost cause.

Insight's Accounts Receivable and Billing, General Ledger, and Accounts Payable packages are "packed with high-power capabilities guaranteed to satisfy any accountant's inborn need to analyze," says *InfoWorld*. "In fact, we haven't seen any IBM® or PC packages ... this powerful."<sup>\*</sup>

Insight's innovative and unique capabilities have also impressed the world's biggest accounting firm, Peat Marwick, who wrote the book on how to choose, implement, and make the most out of a small business accounting system. For a free copy of their book, as well as a free demonstration of Insight, call 1-800-262-6620 (or in Massachusetts, 617-423-9041) for the dealer nearest you.

And see what getting some real insight into your business is all about.



**INSIGHT**  
ACCOUNTING SOFTWARE BY LAYERED  
Please circle 21 on reader service card.

<sup>\*</sup>*InfoWorld*, October 20, 1986

© 1987 Layered, Inc. Layered, and the Layered logo are trademarks of Layered, Inc. IBM is a registered trademark of International Business Machines Corporation.

# Money

## DIG IN.

Here at Warp Nine, we manufacture Macintosh products that excel in 3 areas: Price, quality and price. You see, we refuse to sell through computer stores. Instead, we sell direct. Saving you about 40%.

But when we left out the dealer's mark up, we didn't sacrifice the quality. For example, every Warp product comes with our Quality and Assurance Report detailing each step of production, signed by the person responsible for that step.

Our commitment to quality continues with our special fans. They keep our drives cool as a cucumber. Some manufacturers think fans are too expensive to install. That's why you can fry an egg on their drives. And Warp drives are delivered preformatted, ready to go. Just give them some juice and take off.

So if you're hungry for some big savings, roll up your sleeves, lick your lips and feast your eyes on these prices. They're awfully easy to swallow.



### THE NEW MACINTOSH SE

As you know, the new Mac SE and Mac II are here. Well we at Warp Nine want to be among the first to say, "welcome." And we also want to assure you that our products not only work well with them, but better yet, they make beautiful music together.

\* The Warp Nine PlusPort adapter puts a MacPlus type SCSI port on the back of your Mac 512K. It is included with each 512K price. This adapter allows you to connect our SCSI hard drive and tape back up to your 512K and transfer data at the high speed that the MacPlus does. No modifications. No soldering. Just Clip on. Very simple to install.



THE PHOTON 20, 30 AND 40

**\$569 \$789 \$949**

A 21, 31 or 41Mb external SCSI hard drive. HFS and MFS compatible. Supports all your Mac software. Each can daisy chain up to seven SCSI devices. The 41Mb is the newest in our line of hard drives. Designed for power users who need more than a 20Mb or 30Mb. Perhaps the best megabyte per dollar value of any large hard drive on the market. Average seek time under 50 milliseconds. Photon 20, 30 and 40 prices: For MacPlus-\$569.00, \$789.00, and \$949.00. \*For 512k with our PlusPort-\$699.00, \$939.00 and \$1099.00.

### TWO NEW MEMORY UPGRADES FOR THE MACPLUS

Simply clip on with no modifications necessary. Fully compatible with all your software.

**DataRam**—2Mb upgrade. Expandable to 4Mb. **\$259.00**

**MonsterRam**—2.5Mb upgrade for the MacPlus. Uses 1 Megabit chips and SIMM technology. Compatible with internal hard drives and large screens. Low power consumption. Expandable to 4Mb. **\$595.00**



THE PHASER 800

Whisper-quiet 800K double sided disk drive. **\$199.00**  
Compatible with 128K, 512K, MacPlus and HFS. No hardware or software modifications necessary. Distinguishes 400K and 800K diskettes and will read and write to them accordingly. Features push button and automatic electronic ejection. Cable included. All models. **\$199.00**

# Hungry?

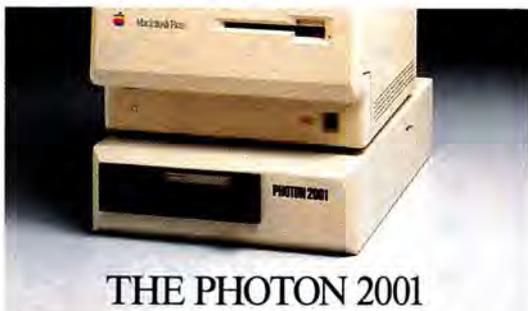
## INTRODUCING OUR SOFTWARE PRODUCTS.

**New! LaserSprint.** The best print spooler for the LaserWriter. Never have to wait for the printer. Manages all jobs while you work. Observe all work in printing queue. All spooled documents protected. Works with Pagemaker. Compare at \$149.00 **Our price \$59.00**

**FullBack.** Hard disk backup program. Backs up text and graphics from hard disk to floppy disk. Volume, file-by-file, incremental. **\$39.95**

**PrintSprint.** A great Imagewriter spooler. **\$29.95**

**Special Bundle Prices.** Buy any Warp product and get FullBack/LaserSprint, **\$69.95** FullBack/PrintSprint, **\$39.95**



THE PHOTON 2001

A 21Mb SCSI hard drive and a 20Mb tape back up in one convenient unit. Store data on the hard drive then back it up onto your tape. Will back up a full 20Mb of data in under twelve minutes or changes in your files in as little as three minutes. Priced over \$1,000 less than the AST 2000. MacPlus version. **\$1495.00**  
\*512K with our PlusPort. **\$1645.00**



THE TRANSPORTER 20

A 20Mb SCSI tape drive. Back up and restore the valuable data from your hard drive onto cassette tapes. Ensures safekeeping of all your applications and data (both text and graphics). Features volume, file-by-file, and incremental back up. With the incremental feature, back up daily files in as little as three minutes. MacPlus version. **\$795.00**  
\*512K with our PlusPort. **\$945.00**

**\$795.00**

## IF YOU'RE NOT HAPPY, WE'RE NOT HAPPY.

If you don't absolutely love your Warp product after 30 days, send it back and receive a full refund. What's more, if you have problems with your drive within 90 days, it's completely covered by our warranty. Return it and we'll send you a brand new unit. Immediately. And if you'd like a full one-year warranty, that's available for the asking, too.

All our products are also backed by a hand-picked technical support team. If you run into problems, just give them a call. Toll free. Each of them is a Mac expert, and they're here to answer your questions.

Please circle 178 on reader service card.

## MACINTOSH CARRYING BAGS.

The same high quality that goes into every Warp product goes into our Mac and Imagewriter I and II carrying bags. Made of sturdy, tear-resistant cordura. Look at these unbeatable prices.

Macintosh, **\$64.00**  
Imagewriter I or II, **\$48.00**

Available in black only.



## EASY TO ORDER. FAST DELIVERY.

Call any of these toll free numbers with your questions or an order. 1-800-654-5294 or 1-800-328-6795 ext. 433. In MN, call collect 612-426-9769.

We accept MasterCard or C.O.D. orders. If you'd like a copy of our free brochure, send in this coupon along with your mailing address.



NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DAY PHONE \_\_\_\_\_

EVE. PHONE \_\_\_\_\_

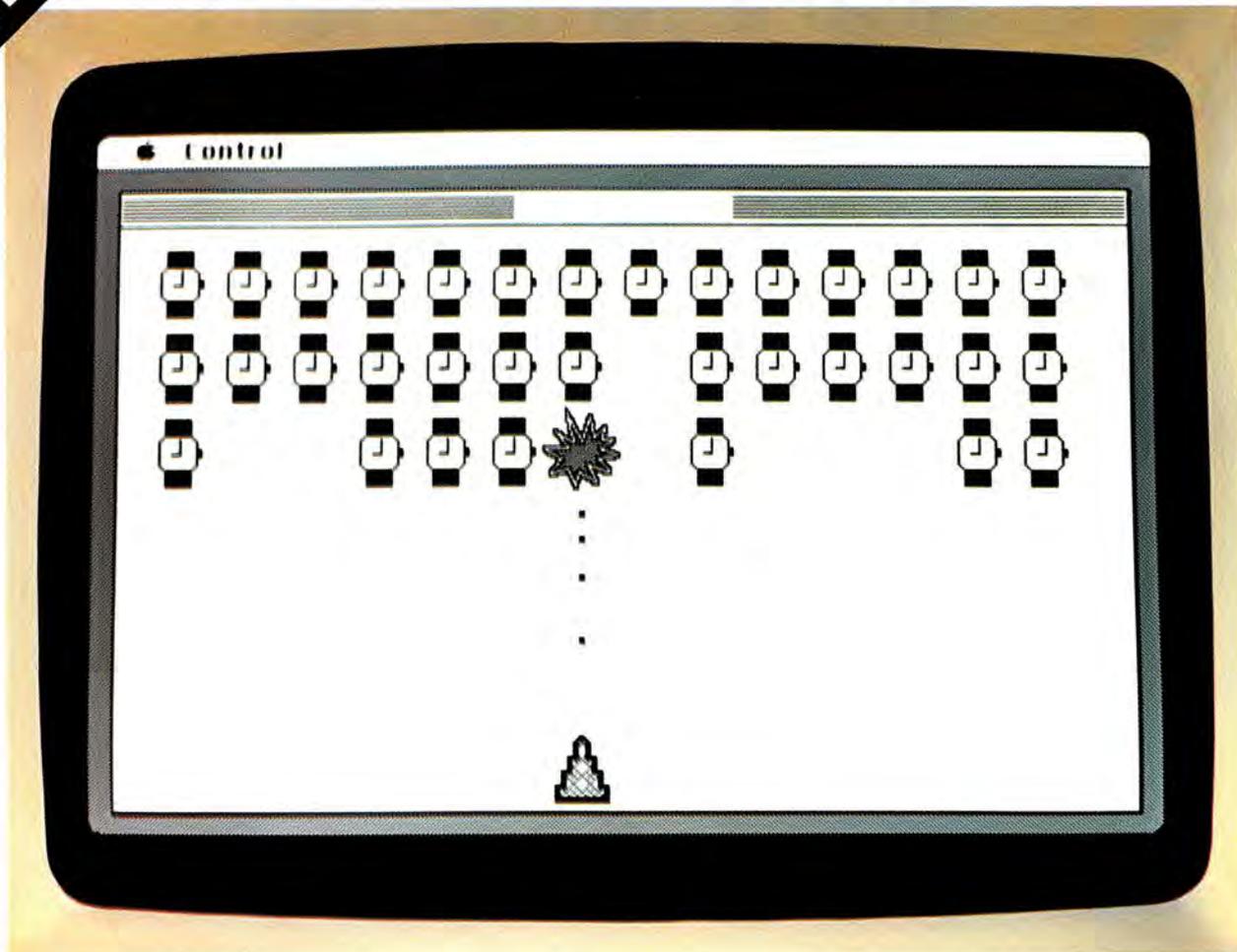
**WARP NINE**  
**ENGINEERING INC.**

1751 W. County Road B. Suite 107, St. Paul, Minnesota 55113

Warp Nine, Warp 20 and Photon 30 are trademarks of Warp Nine Engineering Inc. Macintosh and HD 20 SC are trademarks of Apple Computer, Inc. Dataframe is a trademark of SuperMac.

Now compatible with  
**Appleshare™**

# Beat the clock.



On your Macintosh Plus, it's the one thing that comes between you and a finished job.

You can win, though. With the Rodime 20 Plus™ hard disk.

Data retrieval is eight times faster on the Rodime 20 Plus and its SCSI connection than with the Mac Plus's regular diskette drive. And six times faster than with any hard disk that uses the floppy port.

So you'll be doing spreadsheet recalculations and database sorts in seconds.

And, of course, there's storage. 20 megabytes – that's 25 floppy disks' worth – on the 20 Plus. And over twice as much on the Rodime 45 Plus™. All in a package that fits right under your Mac Plus.

Best of all, it's made by Rodime. The acknowledged leader in hard disk technology and reliability.

There is more. Like software that makes it easy to back up an entire disk, or any documents, onto floppies. And the one-year limited warranty.

But those things will seem like extras after you see the speed.

Because the Rodime 20 Plus lets you work instead of wait.

And that beats all.

## **RODIME** SYSTEMS

RODIME, INC. PERIPHERAL SYSTEMS DIVISION • 29525 CHAGRIN BLVD. • PEPPER PIKE, OH 44122 • 216-765-8414

Now available through SOFTSEL, Quality Components and Schweber Electronics.

Rodime products are available at these and other authorized dealers:  
ComputerCraft, ComputerLand Canada, The Computer Shoppe, Heath-Zenith Electronics Stores,  
Wabash Computer Systems and Inacomp Computer Centers.

Please circle 10 on reader service card.



by Michael D. Wesley

## The Wild (Rainbow) Yonder

The title and concept of this column, West Coast Report, sometimes get stretched a little bit — as a columnist, I have the freedom to get carried away sometimes. But the fact is that in this month's column I am going to stick to the concept like *Glue* and report on what's happening on the West Coast, in as much detail as I can.

This might be tricky, because the West Coast is going nuts. Usually at this time of year there is a lot of activity because of the many new products announced or shown at the MacWorld Expo in January. Winter is a time for companies to finish and ship products introduced at the Expo. The spring and early summer are a little bit quieter, then people gear up again for major announcements in the fall. We editors/writers/columnists usually get a chance to catch our breath between shows.

Those days are gone, at least for this year. As usual, many new products were shown at the Mac Expo, including *Stepping Out* from Berkeley System Design; *Quark Xpress*; *FullWrite*, from Ann Arbor Softworks; *Illustrator* from Adobe; a 9600 baud modem from AST; more hard disks; *Super Laser Spool* and *Disk Fit* from Supremac; *Guide* from OWL Systems; *LabView* from National Instruments; *Trapeze* from Data Tailor; *Works-Plus Spell* from Lundeen and Associates — and more, more than I can even remember. Add to these the list of products already announced that will be coming soon — *PageMaker 2.0*, *dBase Mac*, *Word 3.0*.

But this year developers didn't stop at the Mac Expo. We barely had time to sort through the new products before another show came along. A bunch of developers announced major products at the Seybold Desktop Communications Conference in January, showing a tremendous amount of key third-party support for Apple's file server and the main AppleTalk ingredient, the Apple File Protocol. (You can get a more detailed discussion of this in the Desktop Communications Supplement in this issue.)

These two events by themselves would

have been more than enough to keep the press extra busy, but the activity didn't stop at Seybold, either. Apple led the way with new product announcements at Seybold and also at the AppleWorld Conference in Los Angeles. And third parties, excited as !#@\$ about the new Macintosh machines, have leaped into the spotlight with new products: add-on cards; high speed, large capacity hard disks from everyone and his brother; monitors to take advantage of the new Mac's display abilities, and in fact to enhance them; colorized versions of existing software and hints, at least, of outrageous software to come.

It seems that I've spent at least as much time out of the office looking at new products as I have in the office trying to write about them. It's an incredibly exciting period, if a bit tiring and somewhat nerve-wracking. Every time I think I've just seen the Greatest Product Ever Sold, someone else sneaks up on me and says "We have a new product that we think you'd like to see."

While the almost whirlwind activity has made life crazy for the press, it's actually quite wonderful for you, the Macintosh user. Over the next several months you'll have an enormous range of choices in hardware, software and peripherals. You'll be able to do more with a Macintosh than many people ever dreamed possible.

### WHAT'S COMING

I don't usually like to make predictions except in the privacy of my own home, but I've gotten lucky the last couple of times out so I'm going to look ahead to the rest of this year. Remember that I'm writing this in January, so the whole year looms for me, even if you're reading it in May.

### DESKTOP PUBLISHING

The Macintosh family of computers will get a lot of competition in the marketplace, from Xerox, IBM and others, but Apple will assert its position as the quality leader. Even though software and systems from other manufacturers will sell well, Apple will stay on top because other machines are just catching up to where Apple has been for a year, and the new Macs — the SE and the Macintosh II — will see huge advances in software that can't be matched by the other machines.

### DESKTOP COMMUNICATIONS

Macintosh networks will link Macs to damn near anybody's personal computer, minicomputer or mainframe system, so

Macintosh networks will spread to every level of business. This will mean that more and more people will be exposed to Macintosh, and, as has happened before, be converted to the Macintosh way. Macintosh II will be the premiere communications machine.

### DESKTOP PRODUCTIVITY

Thanks to *Excel* and recent inroads from data base products such as *Omnis 3* and *Helix*, Macintosh has started to be recognized for the amazing productivity tool that it is. This year new products, including *PowerPoint* from Forethought, will redefine this category.

### DESKTOP ENGINEERING

Let's face it, CAD and engineering on the Mac has been pretty stagnant because even the Mac Plus lacks the speed and power to do hardcore simulations and drafting. This area, just waiting to explode, is going to go bananas in 1987 because Macintosh II has the power and the speed. What happened to typesetting will happen to CAD — a previously specialized field, limited to a few highly trained experts, will become more accessible to everyone. The university community, which embraced the Macintosh early, will continue to do astounding things. I can't wait to see what happens when you put a Macintosh II in the hands of Mac fanatics who feed on raw computing power.

### MACINTOSH BY GOSH — THE OVERALL VIEW

IBM is always a force to be reckoned with, but in an article in *Computer Reseller News*, an unnamed third party developer who has spent some time with Macintosh II was quoted as saying that Macintosh II is now where the 386 machine everyone's waiting for will be in two years. I think IBM will be lucky to catch up at all. The Mac SE, now Apple's mainstream business machine, is fast,



I don't want to spend 30 hours learning **WORD**

Then get **LEARN WORD**

What's that?

Self-paced courses on Word that you can complete in about an hour

How do they work?

Instructors on the **LEARN WORD** audio tape guide you through the lessons while you use Word with the **LEARN WORD** practice disk.

You mean I can be using Word in an hour

Sure can!

Without reading the manual?

Yes—Just call **408-559-8635** for more information

**Available Courses:**

**Learn Word Series**

- 1 Beginner
- 2 Intermediate
- 3 Advanced

**Excellerate Series**

- 1 Fundamentals of Excel
- 2 Creating Business Graphs
- 3 Adding power to your Spreadsheet
- 4 Building & Using Databases
- 5 Building & Using Macros
- 6 Linking and Consolidating Spreadsheets

**Personal Training Systems**  
Dealer Inquiries Welcome

Word is a trademark of Microsoft Corporation. Learn Word is a trademark of Personal Training Systems

Please circle 60 on reader service card.

flexible and extremely capable. Macintosh II is phenomenal, and as I write this, work has already begun on Apple's new CPUs for 1988 and beyond.

I think that Mac sales will more than double over this year. Apple will have sold the 1,000,000th Macintosh sometime in March of 1976. The 2,000,000th may well come before the end of the year. Some of this growth may well be at the expense of the Apple II line, but some of it will erode the position of Big Blue. Apple is already gearing up its corporate sales efforts for a full-scale attack. Rumors have been floating about very large sales pending to an unnamed aircraft company and a military arm of the US government.

The growth of Apple and Macintosh will also mean increased sales of Macintosh software and peripherals, and I think these areas will also more than double over the next year. There will be a lot of takeovers in 1987, with small developers consolidating and larger companies taking a firmer position in the market. Let's hope there will still be room for the small innovator.

John Sculley's autobiography will out-sell Lee Iacocca's and Mr. Sculley's name will be bandied about as a possible presidential candidate.

I'm not really on anything, just a Macintosh believer who happens to be very excited about what's happening and what's going to happen. Of course, something could go wrong. Apple certainly isn't perfect — they made some odd design decisions with the new machines that will come back to haunt them, and if there are serious delays in shipping the SE or the Macintosh II, disregard everything said to this point.

### THE MELLOW WEST

Anyone outside of California who thinks the West Coast is a mellow place should be here now. Sure, business is often conducted in relaxed settings and casual clothing, but that's mainly because nobody has time to go home and change clothes. Ask anyone at Apple what the past few months have been like. Ask Lisa Van Horn, a superstar in Apple's public relations department, who gave up 22 hours on a Sunday so our photographer could shoot pictures of Apple's new equipment, then turned around and did it again for another publication the following day.

Things aren't going to calm down for a while, and that's great. Great for you, great for Apple, great for Macintosh, great for me, even great for my office cat, Mac-Beethoven. ☹

# Take Outlining Seriously

With **Acta™**, the Outline Processor Desk Accessory from Symmetry.

Acta is so powerful and so convenient, you'll use it to prepare and organize your manuscripts, reports, journals, seminars, documentation, schedules and for almost any other kind of writing. And because it's a desk accessory, you can now add the power of an outline processor to MacWrite™, Microsoft Word, or almost any other application.

Even if you've never used an outline processor before, you'll find Acta helps you write better by allowing you to organize your thoughts as well as your words, *while* you write.

## Acta

List Price: \$59.95

See your dealer or call us toll free:

**1-800-624-2485**

(In Arizona 602-844-2199)

Also available - PictureBase™  
The Art Management System

**Symmetry**  
CORPORATION

761 East University Drive  
Mesa, Arizona 85203

Acta is a trademark of Symmetry Corp. MacWrite is a trademark of, and Macintosh is a trademark licensed to Apple Computer, Inc. © 1986 Symmetry Corp.

Please circle 3 on reader service card.

In today's computerized world, the concept of craftsmanship is still very much alive.

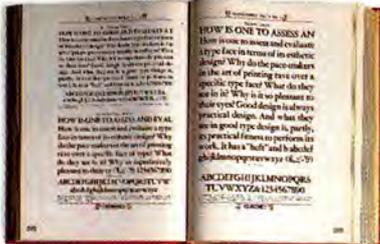


*At Adobe, man and computer work as a team to craft type true to the originals.*

Because at Adobe, we still strive to meet time-honored standards.

A good example is the Adobe Type Library.

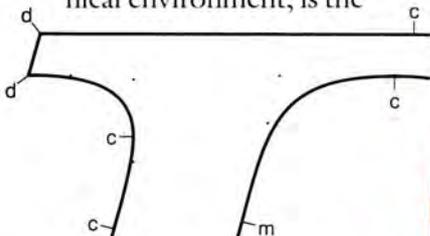
The Adobe Type Library is created in a modern setting, using sophisticated computer software. And



*To ensure that each type face in the Adobe Library is true to the original, we carefully study a wide range of historic type reference material.*

the people who perform this task are much like the "punch cutters" of another era... each letter in a type family is painstakingly examined, manipulated and refined until, at last, it's as close to the original as humanly possible.

Indeed, the human factor, even in a highly technical environment, is the

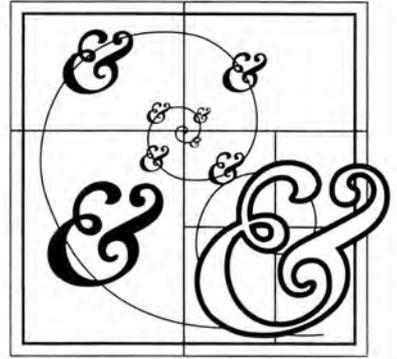


*The weight, curve, and overall appearance of a letter is painstakingly examined, manipulated and refined by Adobe craftsmen using specialized software.*

# Craftsmanship in the electronic age.

driving force in creating a type library that is true to the originals.

Naturally, this takes time. But it's time well spent because you can be sure that each Adobe typeface not only looks and feels like the original, it reproduces perfectly,



*Regardless of type size or resolution of the POSTSCRIPT printer you use, Adobe type faces are always true to the originals.*

regardless of the resolution of your POSTSCRIPT printer.

We often do not realize how much time is spent to achieve perfection. At Adobe, we spend hundreds

## Type is to read.



*Ask for our free calendar, "Type is to Read." It illustrates many fine points on the art of type, design, and craftsmanship. Just call Adobe at 415-852-0271.*

of hours practicing an art that has been performed for centuries.

Craftsmanship does have a place in the electronic age. Because at Adobe we practice it every day.

**ADOBE**  
SYSTEMS INCORPORATED

Adobe Type Library  
for POSTSCRIPT® Printers.  
The Original.

# For people who aren't afraid of heights

If in the race to the top, you are not averse to taking major shortcuts, then we have something to talk about:

Microsoft® Excel for the Macintosh.™

A financial analysis tool of unprecedented power, Microsoft Excel is first of all the most formidable spreadsheet ever to run on a

personal computer.

A spreadsheet which is in turn linked in harmony with an extraordinary graphics program and a highly capable data filing application.

These already considerable powers

For the name of the nearest Microsoft dealer, call (800) 426-9400.  
In Washington State and Alaska, (206) 882-8088. In Canada, call (416) 673-7638.

Microsoft and the Microsoft logo are registered trademarks of Microsoft Corporation. Apple is a registered trademark of and Macintosh is a trademark of Apple Computer, Inc.



are magnified geometrically by the capacity called macros. Which give Microsoft Excel the capacity to learn your most complex routines. And then activate them at a single keystroke.

Yet for all its ability, Microsoft Excel is simple to learn, simple to use. We don't give you arcane commands to memorize. Or expect you to buy vast libraries on the subject of our program. Or require you to take classes.

The only thing we expect you to take is advantage. Of Microsoft Excel's simply potent capacity to make mountains of numbers mean something.

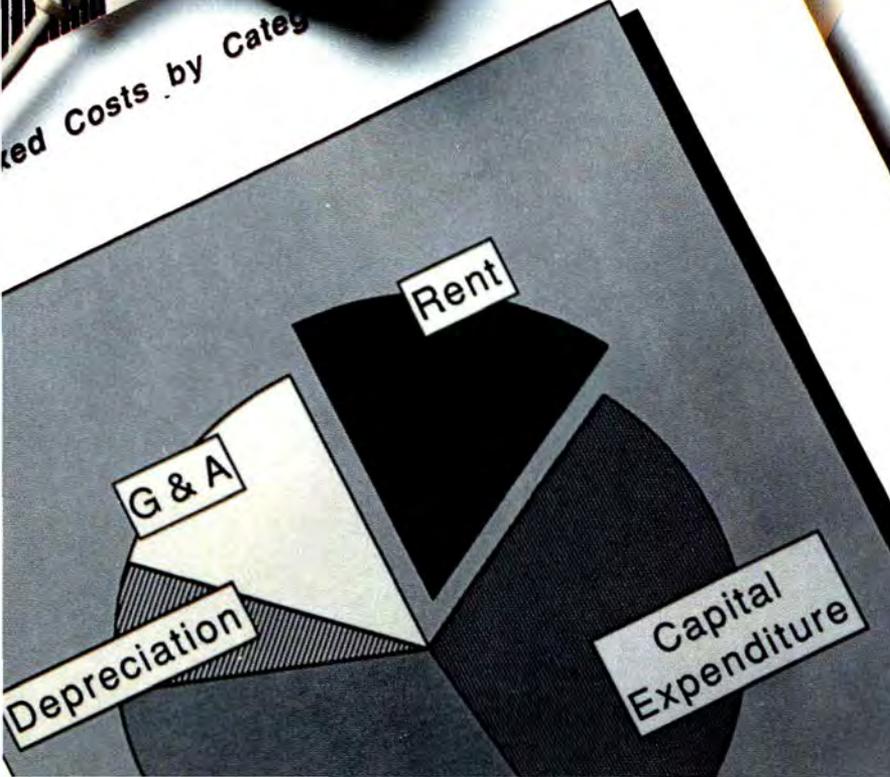
If you can imagine how such powers could accelerate your ascendancy, see your dealer for a demonstration of Microsoft Excel.

Once you've tried it, you'll never look down.

**Microsoft®**



Fixed Costs by Category



*Pricing Analysis for New Model In*

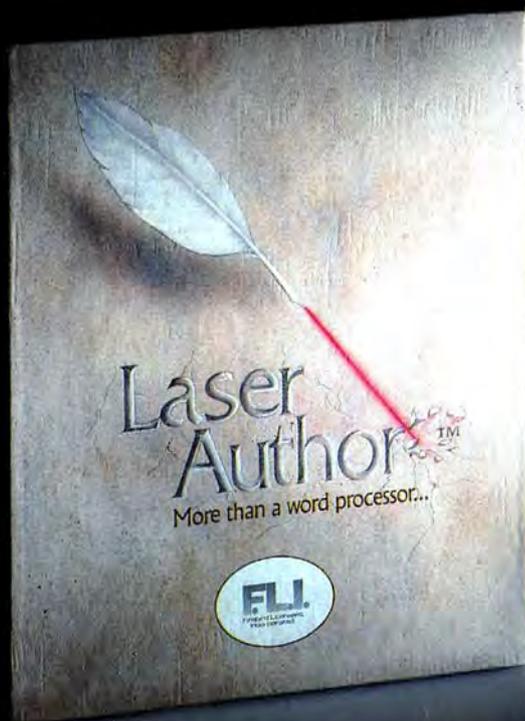
Prepared by John Ward  
Marketing Department

Category	Amount
Variable Cost	\$1.25 per unit
Fixed Costs:	
Rent	\$120,000
Capital Expenditure	\$65,000
Depreciation	\$25,000
Advertising and Promotion	\$125,000
General and Administrative	\$50,000
<b>Total Fixed Costs</b>	<b>\$385,000</b>

This table presents the projected contribution from the new model at various prices and volumes.

Volume	Price	Revenue	Variable Costs	Contribution
500,000	\$1.85	\$925,000	\$625,000	\$300,000
550,000	\$1.85	\$1,017,500	\$687,500	\$330,000
600,000	\$1.85	\$1,110,000	\$750,000	\$360,000
650,000	\$1.85	\$1,202,500	\$812,500	\$390,000
700,000	\$1.85	\$1,295,000	\$875,000	\$420,000
750,000	\$1.85	\$1,387,500	\$937,500	\$450,000
800,000	\$1.85	\$1,480,000	\$1,000,000	\$480,000
850,000	\$1.85	\$1,572,500	\$1,062,500	\$510,000
900,000	\$1.85	\$1,665,000	\$1,125,000	\$540,000
950,000	\$1.85	\$1,757,500	\$1,187,500	\$570,000
1,000,000	\$1.85	\$1,850,000	\$1,250,000	\$600,000

# NOW YOU KNOW WHY YOU BOUGHT A MAC...



## Laser Author.™ A NEW ERA IN WORD PROCESSING.

Laser Author™ is the Macintosh™ page and word processor that everyone has been talking about. Each function has been created to ensure that you get a word processor to suit your specific needs. Text and graphics can be contained in frames so that you can create multi-column documents (like brochures or news sheets) and place diagrams alongside the text (at last, a technical word processor!). Strikethrough, kerning, seven levels of sub and superscript, and 698 page document facility ensure that whether you are a lawyer, or an engineer, a mathematician or a club secretary, or simply someone who needs the most powerful and flexible word processor yet created, then Laser Author is there for you. And at \$199.99 **you** can afford it.

**Defining and editing styles**—You can create your own styles for paragraphs, headings and text, using Laser Author's powerful and unique Style Editor. Each Style has its own margins, tabs, justification, font, font-size, line and paragraph spacing. If you later wish to change, say, the sub-paragraph style, you simply edit the style definition and the document is automatically reformatted to take this into account.



**Multiple windows and frames**—Work on up to four documents at the same time. Use copy and



paste to transfer text, even illustrations, from one window to another. Need an illustration alongside your text? Use the mouse to drag open a frame of the shape and size you require, release the mouse button and paste the illustration into the frame.

SO NOW YOU KNOW WHY YOU BOUGHT A MAC.



Laser Author™ and F.L.I.™ are registered trademarks of British Telecommunications plc.

P.O. Box 49  
Ramsey, NJ 07446 (201) 444-5700

Macintosh™ is a registered trademark of Apple Computer, Inc.

Please circle 293 on reader service card.



by Doug Clapp

# In On The Ground Floor

First, two stories.

When Edison invented the phonograph, he thought his invention would be used primarily by lawyers, whose clients could give phonographic accounts of their legal wishes. Edison never imagined that music would fill those wax platters. He didn't foresee the birth and boom of the "record industry."

When Bell invented the telephone, it didn't make much of a splash. The *London Times* called it "The latest American humbug." Bell offered to sell the telephone rights to Western Union — a mammoth "communications company."

Western Union snickered at the idea. Thanks to Gabriel D. Ofiesh for those anecdotes. They're from his article "The Seamless Carpet of Knowledge and Learning" in the book *CD ROM: The New Papyrus*, published by Microsoft Press.

That's what I've been doing the past few nights: reading *CD ROM: The New Papyrus*. The book has been out for months. I've almost bought it many times. I didn't, until now, because it's... well, thick. And it looks boring. And the title is a masterpiece of pretension. The new papyrus? Even "The rest are history" can't approach that line!

But I had to read it. CD ROM articles keep showing up. They, too, look boring, so I haven't read them. And Pournelle keeps harping about CD ROM.

The kicker was the rumor that the "new machines from Apple" would be "CD ROM compatible," whatever that means. That was the last straw. I began reading.

First the bad news. CD ROMs won't be everything to everybody. Nothing is ever as good as you hope. Great expectations lead to harsh realities. The duck quacks softly over the barn.

For starters, a CD ROM drive will probably be slow. Faster than a floppy, granted, but slower than a hard disk. Noticeably slower. The reason is that data on current CD ROM disks is laid down like tracks on a record. Disk drives put data in pie shaped wedges. It's faster to get to a wedge.

That means you won't watch CD ROM movies. Pictures, yes; movies, no. The individual frames can't be read in, one after the other, fast enough.

But that's okay. "Wedge-CD ROMs" are in development. And disk caching and other software tricks will speed up CD ROM reading. It can be done. Remember the *Finder 1.0*?

The killer, as I'm sure you know, is writing to CD ROM disks. You can't. They're read-only.

If you wade into the literature, you'll find that WORM disks (for "Write Once, Read Mostly") and DRAW disks (for "Direct Read After Write") and other acronymic platters are being feverishly worked on. WORM drives do exist, but they're expensive. When CD ROMs arrive, expect to read only.

That's okay by me. I'd kill to have the *Encyclopedia Britannica* an electron spurt away. Or *Webster's* or *Roget's* or *Larousse Gastronomique* or the *Yellow Pages*. Come to think of it — why not the *National Yellow Pages*? What a concept!

But the rest of the market may not be as easily swayed. You know why Apple (and everybody else) doesn't like new product leaks, right? It's because the rumors kill sales of existing products. Why buy today's ho-hum reality when tomorrow's sizzler will soon arrive?

So with write-able CD ROMs. If we all wait to write, the read-only market may fizzle. CD ROMs probably won't be a Good Idea That Didn't Make It — there's too much momentum already for that to happen. But if we all wait, it won't help.

But enough gloom. Here's the good news.

CD ROMs will probably be cheap. CD ROM drives will be similar to — but simpler than — CD audio players. You can buy a CD audio player today for less than \$200. To make a computer CD ROM drive, you take stuff out. Less, not more, hardware. Cheap.

How much data on a CD ROM disk? About 500 megabytes. The same as twenty-five 20-megabyte hard disks. The same as a mountain of floppies. *Grolier's Encyclopedia*, as I remember, takes up less than 15 percent of a CD ROM disk.

Or look at it another way. Audio data takes up a tremendous amount of disk space. One second of sound, sampled at 22 kilohertz, requires 22,000 bytes of storage. The quality of CD audio disks is even higher, which requires even more disk space. The result, on an audio CD, is about one hour of music — extremely high quality music.

But what about lower quality, which



takes less room? If you're willing to accept "telephone quality" sound, a CD can hold about 35 hours of sound!

Or graphics. A CD ROM could hold about 10,000 full-page *MacPaint* files.

Or all three: programs, sound and graphics. Imagine *Helix*, *Filevision* and the *Talking Moose* rolled into one application. On second thought, don't.

And with luck, there won't be a fight over formats. Phillips and Sony have already agreed on a standard. Microsoft has blessed it. Apple will give its blessing. That helps.

Not that Apple needs to do much. Macintosh already has a CD ROM port. Apple calls it a SCSI port.

Given that, developers will be all over CD ROMs. Apple will make the market, Microsoft will build the tools. Macintosh proved that the race goes to the swiftest developer — at least in the beginning. Lots of track shoes are being laced as you read this.

Even now, you can buy CD ROM applications. *FileMaker*, which hasn't achieved much success, may make it yet, if CD ROMs come out — quick. *Guide*, from OWL international, is an amazing program for creating "hypertext." When CD ROMs arrive, *Guide* won't be amazing; it'll be awesome.

But all the above may be chauvinism. CD ROMs may be more than another computer peripheral. Maybe, just maybe, it'll be the other way around: computers may become CD ROM peripherals.

There's already talk of "viewers": Dyna book contraptions built around a CD ROM drive, a flat screen and easy ways to navigate through millions of megabytes of information.

Someday, history may record what we knew all along: to make the computer a household appliance is easy. Just get rid of that damned keyboard. ☞

# The Desktop Publishing Revolution Continues.



**AST Research Announces The AST TurboScan.™** It's the perfect addition to your Macintosh™ desk-top publishing system.

AST TurboScan optically scans and digitizes photographs, artwork, handwriting, text... anything that can be rendered on paper. It allows you to incorporate such images into newsletters, reports, letters, artwork... any type of document.

### A Revolution In Resolution!

AST TurboScan's 300 dots-per-inch (dpi) resolution matches your LaserWriter's® dpi for optimal visual clarity. So you can scan and print at near half-tone quality. And we've included AST TurboScan Utility™ software to let you enlarge, reduce and merge scanned images



with text and other graphics.

You can scan in either of three modes: Line Art Mode for images that are black and white without shading; Halftone Mode for photographs and other images with continuous shading; and, Mixed Mode for a combination of Line Art and Halftone modes. There's also resolution, contrast, brightness and gray scale controls. And advanced data compression reduces scanning time and saves disk storage.

**AST—Leading The Revolution!** At AST we're in the vanguard of creating new solutions. And AST TurboScan is just one of the many quality products we offer to improve

or enhance the performance of your Apple® computer.

Contact your nearest AST-authorized Apple Products Dealer today! Or send the coupon to AST Research, Inc., 2121 Alton Ave., Irvine, CA 92714-4992. Phone: (714) 553-0340. BBS: (714) 660-9175. FAX: (714) 660-8063.

Name \_\_\_\_\_  
 Title \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Telephone \_\_\_\_\_

Send to: AST Research, Inc., 2121 Alton Ave., Irvine, CA 92714-4992, Attn: Apple Enhancement Products Group

AST and the AST logo registered trademarks and TurboScan and TurboScan Utility trademarks of AST Research, Inc. Apple and LaserWriter registered trademarks of Apple Computer, Inc. Macintosh trademark of McIntosh Laboratory, Inc., licensed to Apple Computer, Inc., and used with the express permission of the owner. Copyright © 1986 AST Research, Inc. All rights reserved.



# Finally, The Drive That Matches Your Ambition.



To succeed in business, you bought an ambitious, hardworking Macintosh™ Plus. Now you need mass storage that can satisfy your need for speed and convenience. AST delivers the solution with two high-performance storage subsystems—the AST-2000™ and AST-4000™

**AST-2000 For 20 to 60 MB of High-Speed Storage.** The AST-2000 SCSI subsystem eliminates the need for tedious floppy disk swapping so that you can spend more time accomplishing your goals and less time waiting. Our 20 MB disk drive with 20 MB tape backup provides the speed and storage to increase productivity in a wide range of business and personal applications, including data base management, word processing, spreadsheet analysis and desktop publishing. For additional storage, simply plug in an expansion unit with single or dual 20 MB hard disks.

**Fast and Easy Data Insurance.** Archiving files and backing up information from disk drives is no longer a chore. In less than nine minutes the AST-2000 backs up 20 MB of data onto a single 20 MB tape cartridge.

**AST-4000 for 74 to 370 MB of High-Speed Storage.** The AST-4000 picks up where AST-2000 capacity ends with a 74 MB disk drive and 60 MB cartridge tape. And with its 30 millisecond average disk access time, 5 MB per minute tape transfer rate, SCSI interface and expandability to 370 MB, the AST-4000 provides unparalleled performance in single-user or multi-user AppleTalk™ network environments.

**One Clear Choice—AST.** Consider your alternatives: 1. Internal drives: if service is required, you must give up the use of your computer. 2. Floppy drives or drives connected to serial ports: painfully-low performance. 3. Plain wrap drives: don't include essential features, such as a tape backup. 4. Here today, gone tomorrow drives: offered by companies that have no history, or may soon be history.

No other disk and tape solution comes close to offering the same performance, features or product reliability as the AST-2000 and AST-4000.

**AST Quality and Reliability.** AST Research, Inc. has earned a worldwide reputation for reliable, high-quality products that

ensure customer satisfaction. And every AST-2000 or AST-4000 subsystem comes with a six-month warranty.

For more information about the clear choice for data storage, contact your nearest AST-authorized Apple® Dealer or call the AST Apple Products Group at (714) 553-0340. BBS: (714) 660-9175. FAX: (714) 660-8063. AST Research, Inc., 2121 Alton Avenue, Irvine, California 92714-4992.



Yes, I want more information about AST's ultimate storage solutions for the Macintosh Plus.

AST-2000       AST-4000

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Phone \_\_\_\_\_

AST Research, Inc. 2121 Alton Avenue, Irvine, CA 92714-4992  
ATTN: Apple Products Group

**AST**  
RESEARCH INC.

# With Trapeze™, There Are No Limits To What You Can See With A Spreadsheet.



Trapeze™ is being called the next generation spreadsheet. Here's why:

**No Row and Column Grid**—Trapeze organizes your information into blocks. You refer to these blocks by name, rather than by cryptic row and column references. Blocks can be moved

Macintosh fonts, styles, and sizes—even color—in any block. With Trapeze, you can mix calculations, text, pictures, and charts—all on the same worksheet. And you can link together up to 32 worksheets.

**Unmatched Power**—The real power of Trapeze is its more than

utilize various regressions, even create amortization tables with a single function. Trapeze supports the Motorola 68881 floating point coprocessor chip, and takes full advantage of *all available memory* in your Macintosh.

Trapeze is available now for \$295. To order, contact the dealer nearest you or call **1-800-443-1022** today. Once you begin using Trapeze, there's no limit to what you can see.

**Revision 1.1 Available In May '87  
Mac II Version In Summer '87**

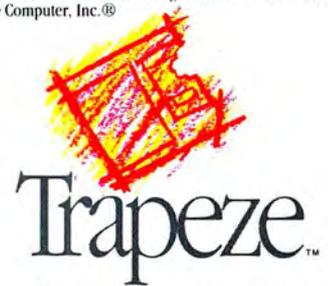
Minimum system requirements—Macintosh 512K with external drive or enhanced Macintosh 512K.  
Supports Laserwriter™ and Imagerwriter™ I and II.  
© 1987 Data Tailor, Inc.™ All rights reserved.  
Trapeze and the Trapeze logo are trademarks of Data Tailor, Inc. Macintosh, Laserwriter and Imagerwriter are trademarks of Apple Computer, Inc.®

*With Trapeze, you have the power to analyze your information, and the flexibility to give it a professional appearance.*

anywhere on the page and still retain their relationships. And they automatically adjust in size when you make additions or changes.

**Unprecedented Flexibility**—Trapeze lets you use all of the

125 built-in functions. In addition to standard financial spreadsheet applications, Trapeze supplies a wide range of statistical, engineering, and scientific functions. You can solve simultaneous equations, perform matrix operations,



The spreadsheet without limits.

Data Tailor, Inc.—1300 S. University Drive—Suite 409  
Fort Worth, Texas 76107

Please circle 103 on reader service card.

# State of the Art Back-Up for the State of the Art Computer...

## MacUser The Macintosh Resource



No matter what your RAM or why you use a Macintosh, the most you can get out of it is equal to what you put into it.

Otherwise all you have is an expensive desk-top paperweight.

*That's why you need the state-of-the-art Macintosh magazine, MacUser.*

Every monthly issue delivers over 250 product reviews—to help you select the hardware and software that will do the jobs you need done. You'll find hands-on tutorials and coverage on important applications including desktop publishing, graphics, telecommunications, networking—to help you increase the performance of your Mac and you'll find a comprehensive collection of power user hints and tips to provide you with new computing skills!

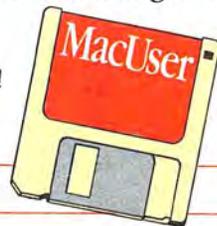
Subscribe today, save up to 63% and get the **MacUser Program and Utilities Disk FREE** with your paid subscription! This special disk, compiled by our editors will provide you with useful applications and utilities—and it's yours FREE!

Give *MacUser* to a friend or colleague and provide valuable information month after month and save 63%!

## For Increased Power

**Yes! RUSH my FREE MacUser Program and Utilities Disk and begin my subscription to MacUser for:**

- One year (12 issues) for \$19.97. A 58% SAVINGS!
  - Two years (24 issues) for \$34.97. A 63% SAVINGS!
- Savings based on single-copy price of \$47.40.



MR./MRS./MS. \_\_\_\_\_ Please print full name

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ 4N039

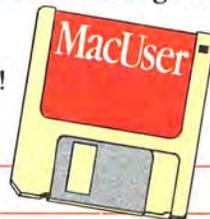
Payment enclosed     Bill me later

Your FREE program and utilities disk will be shipped upon payment. Please allow 30 to 60 days for delivery of first issue. Add \$12 per year for postage in Canada and all other foreign countries, US currency only. Basic annual subscription price is \$27.00.

## For Greater Performance

**Yes! RUSH my FREE MacUser Program and Utilities Disk and begin my subscription to MacUser for:**

- One year (12 issues) for \$19.97. A 58% SAVINGS!
  - Two years (24 issues) for \$34.97. A 63% SAVINGS!
- Savings based on single-copy price of \$47.40.



MR./MRS./MS. \_\_\_\_\_ Please print full name

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ 4N039

Payment enclosed     Bill me later

Your FREE program and utilities disk will be shipped upon payment. Please allow 30 to 60 days for delivery of first issue. Add \$12 per year for postage in Canada and all other foreign countries, US currency only. Basic annual subscription price is \$27.00.

## For a Perfect Gift

**Yes! RUSH a FREE MacUser Program and Utilities Disk and begin a Gift Subscription for:**

- One year (12 issues) for \$19.97—A 58% Savings.
- Two years (24 issues) for \$34.97—A 63% Savings.

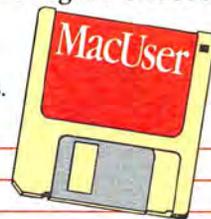
**TO:**

MR./MRS./MS. \_\_\_\_\_ Please print full name

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_



**SEND GIFT CARD FROM AND BILL:**

MR./MRS./MS. \_\_\_\_\_ Please print full name

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ 4N047

Please allow 30 to 60 days for delivery of first issue. Add \$12 per year for postage in Canada and all other foreign countries, US currency only. Basic annual subscription price is \$27.00. Savings based on single-copy price of \$47.40.



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT #66 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

MacUser

P.O. Box 52461  
Boulder, CO 80321-2461



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT #66 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

MacUser

P.O. Box 52461  
Boulder, CO 80321-2461



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

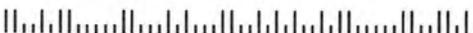
**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT #66 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

MacUser

P.O. Box 52461  
Boulder, CO 80321-2461



**Plug More Power  
into Your MAC  
Every Month with  
*MacUser* and  
Save Up to 63%!**

- Over 250 product reviews in every issue!
- Hands-on tutorials!
- In-depth coverage of *all* Macintosh applications including desktop publishing, graphics, telecommunications *and more!*
- Comprehensive and useful power user tips and procedures!

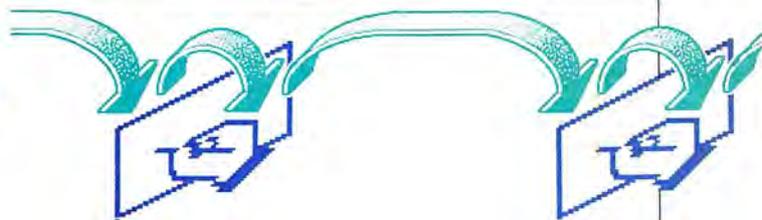
Subscribe to *MacUser* today and save up to 63% OFF the single-copy price!

**SPECIAL OFFER FOR NEW SUBSCRIBERS!** We will send you the **MacUser Program and Utilities Disk FREE** with your paid order. This special disk, not available in any stores, contains applications and utilities that will add more power and flexibility to your system—and *it's yours FREE!*

Give MacUser as a gift! Deliver a friend or colleague a valuable desktop accessory and save up to 63% on your gift!

**MacUser**

# QUICK CLICKS



## SCRIPTOR

List Price: \$295 licensing fee. Published by Screenplay Systems, 348 East Olive Avenue, Suite F, Burbank, CA 91502. (818) 843-6557. Version 1.4. Copy protected.

The Hollywood screenplay format was perfected nearly 50 years ago, soon after Al Jolson first spoke in "The Jazz Singer." Sans graphics or font changes, the classic screenplay is a stark, bare-bones blueprint. Its precise indentations, punctuation and transitional phrases make all scripts equal; they clock in at the one page per minute of screen time.

*Scriptor* is a standalone application that makes scripts look the way they should. It operates on *Word* files, and reforms them into standard screenplay format.

That's a tall order. Some of the rules are: "Action" descriptions run the full width of the page; dialogue margins cover about one-third the page width. Character names are never separated from their dialogue. Speeches are never broken in mid-sentence. When dialogue is broken, you must repeat the character name followed by a (CONT'D), atop the next page. And so on.

*Word* will do a lot toward getting you there. You can "keep lines together" in the format box (COMMAND-M), to lock names and dialogue. You can indent text by using the glossary to call up pre-set formatting.

But when it comes time to break dialogue, insert all those "continueds," and eliminate unwanted "white space"—a 120-page script can be a massive job. And if you later make changes . . . well, you've got to do it all over again.

Enter *Scriptor*. It opens your *Word* files, executes intelligent page breaks, inserts all names, transitions, scene and page numbers. It then strings your files together and prints them as one seamless document.

And when you add new material, *Scriptor* will reformat, renumber and reprint the whole screenplay—automatically.

*Scriptor* has some very powerful features. You can manipulate your margins, widening the dialogue a few characters, let's say, to shorten the overall script by several pages. You can tell it to Create A and B pages (page 17a, 17b, etc.) for your new material, while keeping the old page breaks. You can add or delete scene numbers, change line spacing and insert Act Breaks (for TV)—all without touching *Word*.

*Scriptor* has three primary modes:

1. The Desktop or Layout Mode. Here, you access a series of what might be called "Ultimate Page Set-Up" windows—where you designate indents, margins, scene number positions, etc. You save all this info as a template, or "layout."

2. The Project window. Here you choose the *Word* files you'd like to link together—and in what order—to format and print as one script. You also designate which layout to use, which fonts and other options.

3. The Format and Print Modes. Formatting is nearly as much fun to watch as your movie. Your script scrolls by, as each page break is viewed.

Switch from "Auto" to "Ask," and it consults you about each dialogue break. You can accept *Scriptor*'s recommended break, or choose your own.

Meanwhile, a Status display tells you the page number, the scene number, which *Word* file you're in—the works.

The Print window offers all the usual Mac options, plus the ability to find and print strings of miscellaneous pages (e.g., 4a, 15-17, 26b), or pages featuring a particular character, location or other keyword.

*Scriptor* prints faster than *Word*; it is a joy to behold. Daisywheel printers are supported, as well as the LaserWriter and ImageWriter.

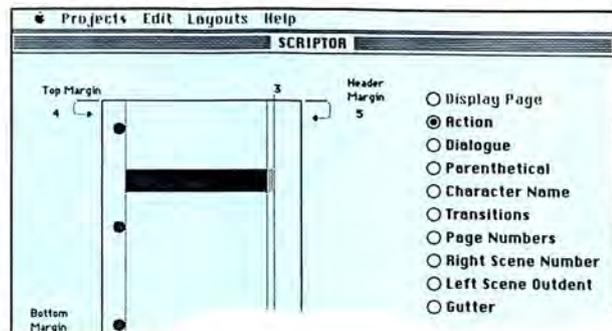
*Scriptor* does not yet support proportional fonts; a version that will is planned for later this

year. Actually, screenplays are best left mono-spaced, to format out at the correct page length. (Again, standard screenplay format is for a good reason.) I recommend Courier 12 on the LaserWriter.

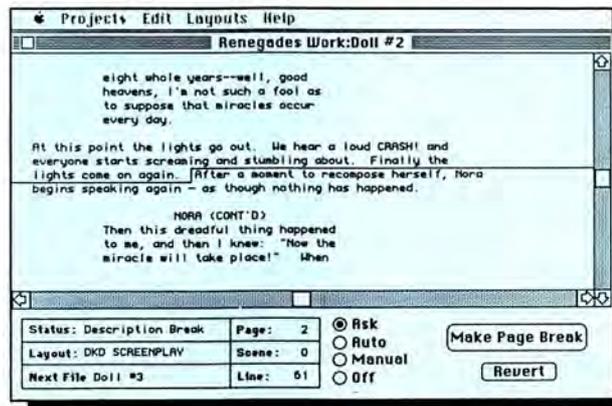
The program takes some getting used to. The biggest problem is the interface. It is not entirely Mac-like. For instance, the Layout menu offers you all the options: margins, headers, scene numbers and so on. But the New Layout command is under the Edit menu. Curious.

The Project window always looks the same, whether you're selecting, formatting or printing files. Except that you must leave it, return to the layout level, and then return again to format or print. This is confusing.

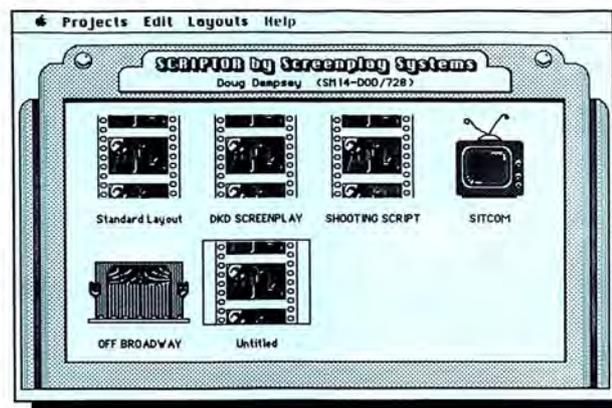
The Margin Moving feature, when activated,



The Blueprint window. The cursor becomes a handle that can grab the margin lines, and move them. As you shift the margins, the new values appear. Click a new item, i.e., Dialogue, and the blueprint reflects the settings for that item. Changes here will be saved to the currently selected "layout" when you click OK.



*Scriptor*'s Formatting window. The "action" description will be broken as indicated—unless the user moves the "break indicator" by scrolling up/down or left/right. REVERT returns the break to *Scriptor*'s recommendation.



*Scriptor*'s desktop, the Layout window. You call up a new layout, choose type (Feature, Theatrical or Television) and then name it. Once selected you can modify the layout's settings under the File menu, you can choose to open a project and formatting and/or printing. Note user's name and serial number.

# A Message to Creative People Everywhere: Your Software is Finally Ready!

*Introducing LaserPaint, The Integrated Graphics Workshop.*

Now, for the first time, it's possible to DRAW, PAINT, WRITE & PASTE-UP with professional quality results using just one program. LaserPaint provides the creative tools you are familiar with and goes on to introduce many new capabilities never before seen on a Macintosh.

Import Paint, Scanned Bit-maps, Pictures and Text; manipulate, alter and arrange them, and then output the result in pure PostScript to the LaserWriter, Linotronic or any other PostScript device for printing in resolutions of 300-2540 dpi.

Discover the speed and control of producing your own in-house 4-Color, 2-Color, and Line-Color Separations with the LaserWriter or Linotronic. The creative possibilities are endless.

Interested?  
See your local computer dealer or call:  
800-367-6898. (Toll Free)  
415-453-9500. (In Calif.)

LaserWare, Inc.  
P.O. Box 668  
San Rafael, CA 94915

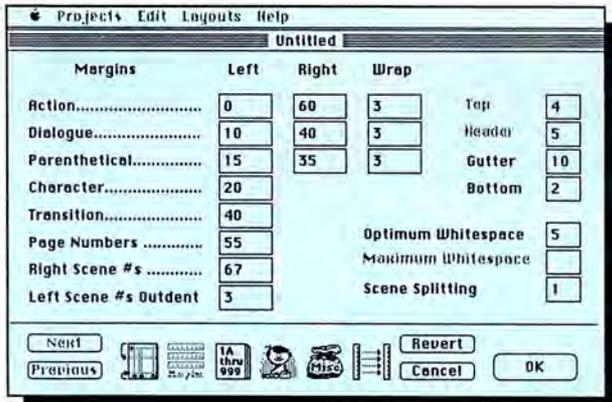
**LASERPAINT™**

The Integrated Graphics Workshop  
DRAW • PAINT • TEXT • PASTE-UP

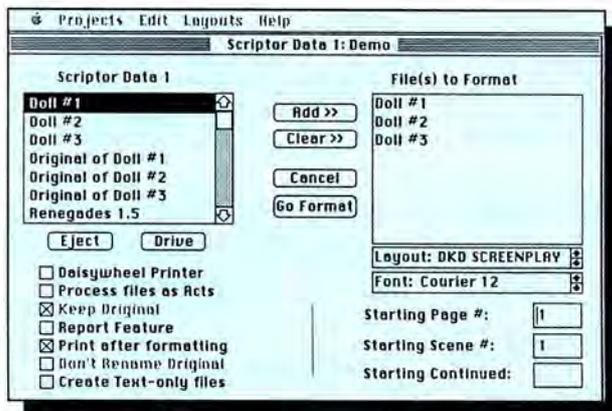
LaserPaint is a trademark of LaserWare, Inc. Macintosh and LaserWriter are trademarks of Apple Computer, Inc. PostScript is a registered trademark of Adobe Systems Incorporated. Linotronic is a trademark of Allied Corporation. Copyright © 1987 LaserWare, Inc.

Please circle 276 on reader service card.

# QUICK CLICKS



The Margins window. Each value represents a left indent, in P10 increments on the Word ruler. Note the icons at bottom; these are the other layout options.



The Project window. You enter it once to select Word files and options. You enter the window again, via the Format command, to begin formatting. You enter it once again, via the Print command, to commence printing.

doesn't only change your margins during that one format/print session—it permanently alters the numbers in the layout you're using. In effect, you've created a new layout—from your old one. An inconvenience.

The Report feature, which is supposed to print out a list of your scene headings and numbers, is unpredictable. And there are a few other quirks, like a buggy scrollbox in the Project window.

However, I did look at a beta copy of version 1.5—due out in early '87—and these bugs seem to have been fixed. Also, 1.5 will support HFS (1.4 does not).

Scriptor is fast, accurate . . . and undeniably ingenious. But it takes some effort to learn. You've got to read the manual. Scriptor is not a toy; it's for serious users.

Scriptor was written by Stephen Greenfield and Chris Huntley, two USC Film School grads who actually work in Hollywood. They know what they're doing, and their support is refreshing. When you've got a question, you call Screenplay Systems and get Greenfield on the phone. He'll walk you through the problem—and if it's really a bug, he'll start working on the fix.

Scriptor comes with a screenplay glossary for Word, various fonts and a hard disk installer. Scriptor is copy protected, and asks for the key disk. Also, your name is installed in the Desktop by Screenplay Systems.

For the screenwriter, sitcom writer, playwright — for Producers and Independent Filmmakers—anyone who must wrestle with this arcane format—Scriptor looks to be boffo box office. — Douglas Dempsy

## TRAPEZE 1/2

List Price: \$295. Published by Data Tailor Inc., 1300 S. University Drive, Fort Worth, TX 76107. (800) 443-1022; (817) 332-8944. Version 1.0E Not copy protected.

Have you ever been working in a spreadsheet and wanted to change the font in one cell? Or wanted to put a picture or logo somewhere on the page? Or to intermingle charts and data on the same page? Or wanted to move a clump of cells slightly to the left and maybe down a little? If so, Trapeze may be the program you've been searching for.

Trapeze bills itself as "the spreadsheet without limits." While this may be advertising hyperbole, it does give a hint of what Trapeze offers. A Trapeze worksheet starts out blank. No cells, no nothing. On this worksheet you place things called blocks, in a manner similar to page layout programs. Blocks can contain normal spreadsheet-type cells, as many rows or columns as needed; or text; or pictures; or special graphics like boxes or underlines. Blocks are aligned to a user-definable grid, and can be sent to the back or brought to the front if they overlap.

You manipulate blocks using tools from a pop-up menu in the icon bar in the left part of the edit window. This new menu appears immediately under the menu bar. There are tools to create standard blocks, data base blocks, text blocks and graphic blocks; to move blocks; or to change the size of all cells in a block. There's also an edit

box pop-up menu to allow selecting/changing block names, to show or change cell contents, to show or change block formulas, and to view or edit comments about a block.

Understanding Trapeze requires understanding how blocks work. The basic unit of most spreadsheets is the cell, but in Trapeze it's the block.

	1989	1990	1991
Revenue	1,000	2,000	3,000
Cost of Goods	200	400	600
Gross Margin	800	1,600	2,400
Labor Expense	200	200	200
Overhead Expense	200	1,500	3,000

Cells cannot contain formulas, only blocks can contain formulas, and the formula applies to every cell in the block. For example, if revenue for 5 years is in a block named "Revenue" containing one row and five columns; and expenses are in a block named "Costs" the same size; then the block called "Net Income" would contain the formula "Revenue-Costs" and would automatically be five cells wide. If another column is added later to Revenue and to Costs, Net Income would automatically grow, too. This behavior has a lot of advantages, but some

disadvantages, too. If a specific year's revenue is needed in a formula, a function needs to be used to extract it. And if enough cells need to participate in multiple formulas without the rest of the block, a worksheet can end up with lots and lots of single cell blocks that have to be individually created, placed and named (since formulas can only refer to blocks by name).

But what formulas can be created! Since Trapeze treats blocks with multiple rows and columns as matrices, there are a number of built-in functions such as matrix inversion, matrix multiplication, linear regression, multiple linear regression and polynomial regression that won't be found in standard spreadsheets. There are financial functions (amortization, present value and the like), statistical functions (averages, standard deviation, sample variance and more), string manipulation functions, logical functions, conversion functions and even a large set of transcendental functions (logarithms, geometric formulas and then some).

Overall, Trapeze is very rich in function, and can produce very attractive output. It is not easy to learn, but once mastered is fairly easy to use. It may still require occasional visits to the manual which is fairly comprehensive—although it could be improved. The original version had some bugs, but Data Tailor quickly shipped out a free upgrade to registered owners, and hopefully will continue this kind of behavior. Trapeze is not for the faint of heart, but power users should find it to be right up their alley.—Robert R. Wiggins



MacBuffer LW

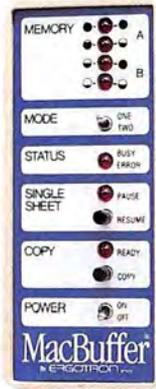
# Stop Waiting for Your LaserWriter

The Apple Macintosh and LaserWriter created Desktop Publishing and made high quality graphics a cost-effective reality. This also marked the advent of a new form of office bottleneck, "waiting for the LaserWriter." This means that, while printing, the Macintosh is held hostage, needlessly waiting for the LaserWriter to complete the complex calculations necessary to produce the finished page. In fact, every Mac on the network is forced to wait for a single print job.

operator on the network can send MacBuffer LW their print jobs and get back to work.

MacBuffer is compatible with most of the major Macintosh software packages and the most popular desktop publishing programs such as PageMaker. It comes in 1 and 2 megabyte models and connects via Appletalk.

mode. Get the most out of your Imagewriter I or II with MacBuffer



MacBuffer

## Stop Waiting for Your Imagewriter

If you are an Imagewriter user, MacBuffer for the Imagewriter will dramatically reduce the time the Macintosh spends waiting for the Printer. In addition to less time spent waiting, MacBuffer enables two Macs to share one printer and has a Local Copy and Single Sheet

MacBuffer LW; MacBuffer; and MacTilt, the professional workstation for the Macintosh (pictured above), are all designed to help you get more done in less time.

For more information, contact your local Apple Dealer or **ERGOTRON**, P.O. Box 17013, Minneapolis, MN 55417, (800) 328-9839/(612) 854-9116, Telex #4310015

**PageMaker®**  
Compatible

Ergotron's MacBuffer LW brings productivity to desktop publishing by eliminating needless waiting. Productivity means that every

PageMaker is a registered trademark of Aldus Corp. LaserWriter, Macintosh, and Imagewriter are trademarks of Apple Computer Inc. MacTilt, MacBuffer, and MacBuffer LW are trademarks of Ergotron Inc.

Please circle 183 on reader service card.



# Manx Aztec C

## The C for the Macintosh

### Frees the Genius in You

You want results. You want to solve a problem or create something no one has ever done before. You don't want to get bogged down in administrative details, or waste time chasing elusive problems. You don't want to wait for slow compilations, or spend days shaving bytes and milliseconds from programs.

Manx **Aztec C** produces the results you want, minus these distractions and hassles. This comprehensive development system is loaded with features that cut through the non-creative tedious tasks, giving you the time and freedom to put your genius to work.

With Manx **Aztec C**, you quickly produce fast-executing compact code every time. **Aztec C** has a built-in optimizer which does the squeezing and trimming for you. Whether at the compile or assemble phase, **Aztec C** will give you the efficient, professional results you expect.

And **Aztec C** includes many of the timesavers which you previously enjoyed on larger computers only.

You'll wonder how you ever handled a large project on a microcomputer without the ingenious **make** utility to coordinate the changes for you. **Make** follows the project "blue



**Manx Aztec C turns un"bear"able programming tasks into child's play.**

print" and quickly and accurately executes only the required compilations and utilities in just the right sequence.

With **sdb**, Manx's Source Debugger, you'll be able to create complex macro breakpoint routines, display variables, records, and structures by name or even change source code on the C language level.

As a final check, you can use the **Profiler** to quickly and accurately find any possible program "hot spots." You can change an algorithm, redesign a subroutine, and your program will soar.

#### You Be The Judge

All **Aztec C** systems purchased directly from Manx have a 30-day satisfaction guarantee. If you don't like it, send it back.

Find out today, why Manx **Aztec C** has one of the highest user satisfaction ratings in the industry.

#### Portability

Moving software to new systems is a breeze with Manx **Aztec C**. Only **Aztec C** is available for PC/MS-DOS, CP/M-86, Amiga, Macintosh, Apple II, TRSDOS, and CP/M-80. New systems are added on a regular basis.

#### Reviews

*"An excellent effort . . . blows away the competition for pure compile speed, code size and run time."*

Computer Languages April '85

*"Aztec C is the most comprehensive and professional package of the five in our test group . . . Aztec C offers features and advantages that the others cannot begin to touch."*

BYTE November '85

*" . . . the best C compiler / assembler / linker available for developers."*

MacUser May '86

**Features:** excellent HFS and Mac Plus support • Source Debugger • Optimized C MDS Support • MPW Support • 68881 support • 68k Asm • Overlay Linker • UNIX make • create clickable applications and desk accessories • 32 character variable names • unlimited data size • RAM disk • Resource maker • many source examples including RAM and Terminal emulator • Z (vi) editor -c • Library Source -c • One year of updates -c

Items marked -c are supplied only with Aztec C68k-c.

#### Prices

Aztec C68k-c	\$ 499
Aztec C68k-d	\$ 299
C' Prime (C + Asm + Linker + Lib + Shell)	\$ 99

To order, or, for information

Call Today

**1-800-221-0440**

Telex: 4995812

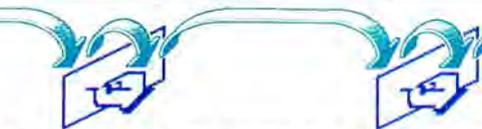
In NJ or outside the USA call (201) 542-2121

MS is a registered TM of Microsoft, Inc. CP/M TM DRI HALO TM Media Cybernetics. PANEL TM Roundhill Computer Systems, Ltd. PHACT TM PHACT Assoc. PRE-C. Plink-86 TM Phoenix, db Vista TM Rama Corp. C-Interp. PC-Int. TM Gimpel Software. C-free TM Faircom, Inc. Windows for C TM Creative Solutions. Apple II, Macintosh TM Apple, Inc. TRS-80 TM Radio Shack. Amiga TM Commodore Int'l

# MANX

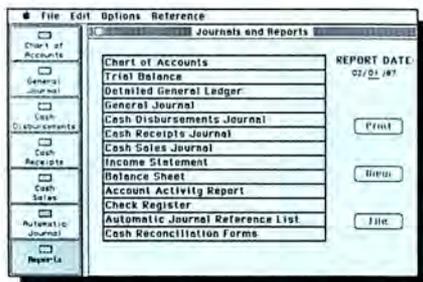
Manx Software Systems  
One Industrial Way  
Eatontown, NJ 07724

# QUICK CLICKS



not allow you to save a record that is not balanced. The general ledger can be used alone for cash basis accounting or in combination with the other two linkable modules for accrual basis accounting.

A filing cabinet with labels on the drawers replaces the expected menu bar for choosing



where in the set of accounts you want to be. The deviance from the Mac interface might be excusable because of the complexity of the choices, but I still would like command keys to speed things up. Also, I would like to see a transfer menu item added to allow transfer between the three modules of the program without going back to the desktop.

Data entry is fairly fast and efficient. The program fills in as much as possible automatical-

ly. There are methods provided to void most errors. There is no on-screen help, but there are numerous dialog boxes constantly reminding the user when to make back-ups or when saving will prevent further modification of entries. In fact, there are so many dialog boxes, the experienced user is certain to wish for the option of turning them off.

The report capabilities are amazing. I printed out 25 pages just by following the tutorial. *Back to Basics* generates so much paper, there is a danger of being inundated. With time, the user will presumably learn to be judicious in regard to printing.

The reports are saved as *MacWrite* documents, so they are available for import by other programs. One such use might be to dress up their formatting. All *Back to Basics* reports are printed in plain draft mode. This is disappointing for those of us grown accustomed to the elegance of formatting offered by other Macintosh programs.

The program will print both mailing labels and checks. Invoices can be printed on plain paper or preprinted forms. In fact, in the package Peachtree includes an order form for eight separate stationery items to be used with the software.

The large, full-color manual is excellent. There is even a 38-page section on "Accounting Principles" by a professor emeritus from Harvard Business School. There are tutorials for each

module, numerous examples, and discussions of where a user has some discretion in setting up accounts. Forty pages of sample reports are included as are 34 pages entitled "Business Situations." There is an excellent index and a glossary.

The manual has one problem. It refers to copy protection not present in version 1.03 of the program. Also, it does not mention the HFS filing system and assumes you are using 400K disks.

With 800K disks, you can put monthly data files for all three modules on one disk. Strangely enough, *Back to Basics* will still run on a 128K machine, though I couldn't recommend such a configuration. Much better would be a Mac Plus with a hard disk.

With over two dozen accounting packages available on the Mac, choosing just the right one is a difficult task. For any program of this cost, complexity and importance, I would strongly recommend renting it and making sure this is the program for you. Let your accountant see it, too. Chances are you'll both be impressed.

Peachtree offers a 30-day money back guarantee for those who buy direct from the firm (subject to a restocking charge of \$20 if the disk envelope has been opened). This is a very generous offer, allowing you adequate time to make certain that this is the accounting package for your business. An additional module, Invoicing, is due out this spring. — *Scott Beamer*

## PORTFOLIO: DESIGNS FOR NEWSLETTERS

List Price: \$79.95. Published by Aldus Corporation, 411 First Avenue South, Suite 200, Seattle, WA 98104. (206) 622-5500. Requires 512K (512K Enhanced to use Wyzzy DA) or Mac Plus; PageMaker. Not copy protected.

Desktop publishing has brought the page layout into the electronic age for thousands of Macintosh users and *PageMaker* has been the application leading the pack. Unfortunately, owning *PageMaker* doesn't mean you know what to do with it.

Aldus has taken a step toward alleviating that problem by publishing the *Portfolio: Designs for Newsletters*. This two-disk set, accompanied by excellent documentation, provides over 20 different basic designs for laying out a two-page newsletter. Each template is a set of dummy pages, with preset columns and place-holding headlines, graphics and captions already in place. The designs range from simple two-column formats to complex five-column layouts with variable column widths.

All you need to do to use one of these templates is to open it. After saving it with a new file name, replace the masthead and graphics with your own, highlight the headlines and captions and retype them, and then pour your text. Changes, such as removing a graphic, extending a line, and so on, are easily made, because the basic page structure is already there.

The documentation is a tutorial in the best sense of the word: It is actually a short course in page design. An early chapter walks you through using templates to create a newsletter.

There is a wealth of information in this book. You are taught the most efficient order in which to lay out the elements on a page, how to select an attractive combination of typeface, type style and point size, how to work most effectively with rulers and guidelines



Later chapters each show three completed templates and discuss the particular design elements that distinguish them. Here, too, there are numerous hints on how to produce documents that will strike the right balance between visual impact and simplicity.

Aldus also provides end users with a complete set of Adobe's screen fonts for Times and Helvetica — separate screen fonts for Plain, Italic, Bold and Bold Italic. These fill up the font list (and your *System* file) rather quickly, but they have several advantages. They look better on the screen; they allow the screen image to more precisely match the printed output; they result in tighter copy fit and they are easier to edit, especially the italic styles.

It would have been nice if Aldus had provided the screen fonts for the full set of Apple Laser-

Writer Plus fonts, rather than just Times and Helvetica. Users of Palatino, Bookman and the like will continue to have the same problems with these fonts as with previous versions of Times and Helvetica. (If you want the LaserWriter Plus screen fonts, you'll have to get them from Adobe — fifty bucks for the full set.)

And Aldus should have issued a warning to hard disk users: Once these screen fonts are in your *System* file, they affect all the programs on your hard disk. Fortunately, this is not likely to cause problems except with *MacDraw*, but there may be some unexpected results with previously created files in other programs. You could also be in for a rude shock using these screen fonts if you output at a service bureau which doesn't have them. Bring a system disk with the new fonts along, just in case.

Along with the screen fonts comes a new version of *Aldus Prep* and a wonderful new DA called *Wyzzy*. With *Wyzzy* installed and turned on, you will get the maximum benefit from the new screen fonts, and your on-screen copy fit will be optimized. The bad news: *Wyzzy* only works with *PageMaker*; it can crash other applications. More bad news: Aldus has no plan to make *Wyzzy* available to *PageMaker* owners who don't buy the *Portfolio*. The good news: *PageMaker* 2.0 should correct the problems that created the need for *Wyzzy* in the first place.

The *Portfolio* is an impressive package and recommended to anyone who has tried to harness the power of *PageMaker* without quite hitting the mark. The price is a little steep after plunking down the money for *PageMaker*, but if you're someone who could use the help — and you know who you are — it's probably worth it. — *Henry Bortman*

# Still making presentations the hard way?



## Finally. Desktop Publishing Software Created for Professional Communicators

**STORYBOARDER™** — Doing film, television, advertising or A/V communications? Plan on-screen with Storyboarder. View output as real-time animatics with zooms, wipes and dissolves, or print out *superb* storyboards. Fast, friendly and inexpensive. Like having a design studio, animation house and video editor on your desktop!

**SCRIPTWRITER™** — A superlative single- and dual-column word processor which complements Storyboarder, and stands on its own to support the professional writer. Does your intelligent page-breaking or dual-column alignments on the fly. Terrific!

**INTERACTIVE TEACHER™** — Create dynamic, great-looking courseware without any programming. All materials you create with Interactive Teacher will become part of your own learning system for presentation, testing or publication!



American Intellware  
*The Professional Choice*

350 S. Gresham Blvd.  
P.O. Box 6980 □ Torrance, CA 90504  
(213) 533-4040 / (800) 222-SOFT

Scriptwriter, Storyboarder, Interactive Teacher, and the AI logo are registered trademarks of American Intellware Corporation. Apple, MacWrite, ImageWriter, and LaserWriter Plus are trademarks and Macintosh is a trademark licensed to Apple Computer, Inc.

Copyright © 1986, 1987 American Intellware Corp. All rights reserved. Developed, produced, and printed in U.S.A.

**Please circle 185 on reader service card.**

# QUICK CLICKS

## QUARK XPRESS (★★★★★)\*

List Price \$695. Published by Quark, Inc., 2525 West Evans, Suite 220, Denver, CO, 80219. (303) 934-2211. Prerelease version reviewed. Mac 512E or Plus required, hard disk recommended. Not copy protected.

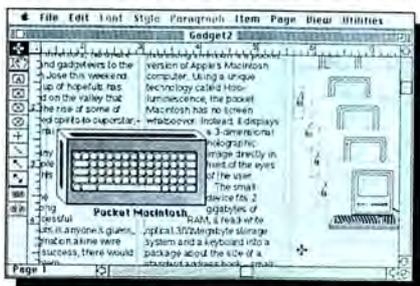
Quark Xpress is a superb product that represents a major step forward in the evolution of desktop publishing. Developed by a company in Denver previously known for a few very high quality software products on Apple IIs and Apple IIIs, Xpress is light-years ahead of where desktop publishing was a year ago.

PageMaker, MacPublisher and ReadySetGo! made people aware of what the Macintosh could do with presentation text and graphics. But anyone who has spent a good deal of time with these products knows their limitations and drawbacks. Although new versions keep getting more functional and easier to use, it has been very difficult to do certain things, such as proper kerning, using display-size typefaces, flowing text and graphics easily around one another and from page to page or column to column.

Xpress makes true, professional quality page layout easy. Other page layout programs let you work in typefaces from 0 to 127 points (a limitation set within QuickDraw). Xpress has a range from 0 to 500 point typefaces, in 1-point increments. Xpress contains a full-featured word processor with built-in spell checking, manual or automatic hyphenation and an exception dictionary. Xpress handles left, right, center and decimal tabs and reads text files as well as files formatted in MacWrite and Microsoft Word.

You can screen text in any of six gray levels. The program also offers color support so you can print text in any of seven colors on a color printer.

Graphics are displayed in boxes, with either square, rounded corner, circular or oval shapes. Text flows automatically around a picture box—move the picture someplace else and the text



automatically adjusts. Boxes can be transparent, in which case text can wrap around the shape of a graphic itself, or continue to conform to the box. Graphics can be imported from MacPaint, PICT or TIFF files, but the program has the built-in ability to draw lines, arrows and frames. A custom Frame Editor application lets you design your own frames for text or graphic boxes.

You can pipeline text from one area to another, with tag lines that let you know where the text went. Simply type in your tag and a command key for "Next Page." The tag line will register the correct page number of the continuation text. A similar tag "From page..." can be added at the beginning of the continuation box. The page references are relative—if either portion of the

pipelined text is moved, the tag lines automatically update to show the correct placement.

Xpress offers extraordinary control over the look of text on the page. It has global kerning capabilities, using the kerning pairs stored in Apple's font files. Xpress also has manual kerning, but unlike other programs that kern by points, Xpress kerns in increments of 1/100 of an em space. Besides being much more precise, this method assures that text will retain the proper kerning even if you change the style or size of the font. Xpress also does horizontal tracking in increments of 1/100 of an em space. Of course you don't have to move in such small steps—you can set a numeric distance as well.

On top of these features, Xpress also allows you to program PostScript devices from within Xpress documents, giving you even more control over the final output.

The program does have a few peculiarities. It offers a command key equivalent for almost every conceivable action, which is fine, but the choices are sometimes odd and take a little getting used to (COMMAND-SHIFT-B for bold, instead of COMMAND-B, for example). There is an excellent on-line help facility that smooths things over, though. Xpress seems a little slow at times, even on a Mac Plus, until you realize just what it is the program is doing and how long it would have taken with any other program. Give it a powerful Mac with lots of RAM and watch it sing.

Xpress is a real find and a very good value at \$695.—MDW

\*[Editor's Note: This product's rating is provisional. Even at the date of the review, with the product in final beta test, it is a 5-mouse program.]

## MAGIC DIGITIZER (★★★★★)

List Price: Digitizer with Magic software, \$399.95; RCA TC-1501 video camera, \$150; LaserMagic software, \$49.95. New Image Technology, Inc., 10300 Greenbelt Road, Seabrook, MD 20706. (301) 464-3100. Requires 512K+. Not copy protected.

New Image Technology has come close to perfection with their Magic digitizer and LaserMagic software. The digitizer proper is a black box (actually, it's beige) which converts video images into MacPaint files at 72 dots per inch. A companion RCA video camera can be purchased as an option, but the lens on this camera is not the greatest. New Image recommends that you buy a C-mount adapter which will let you use standard camera lenses (Nikon, Canon, Minolta, etc.) instead. You can also use a home video camera/VCR as a video source.

The power of the system lies in the software. The standard Magic software gives you complete control over gray scales—anything from high contrast black and white to 38 levels of gray. A number of different MacPaint-like pattern palettes are provided, any of which can be brought in and "mapped" into the gray scale. If you don't like any of the palettes that come on the disk, you can create one of your own in MacPaint and use it instead. There is also a way to produce a "trace-edges" effect, with the outlines in the image keyed to the patterns in the gray scale.

LaserMagic, the updated software, with a companion program ShowImage, takes a giant step forward. It allows images to be digitized at a full 300 dpi, retaining up to 256 levels of gray-scale information for each picture. This makes it possible to take advantage of the full resolution both of the LaserWriter (300 dpi) and of higher resolution devices like the Allied Linotron (1270/2540 dpi). Unfortunately, the ability to manipulate the gray scale on-screen at this resolution is currently limited to simple brightness and contrast controls. However, the image can be saved as a PostScript file.

LaserMagic burns up disk space at a rapid clip. A full-sized image stored with 256 gray levels requires over 250K. Saving a PostScript file requires an additional 500K. If you plan to do serious work with LaserMagic, you'll probably want to use a hard disk.

The user interface is very complex. There are 33 different controls packed onto the Control Screen, and the relationships among them are not always clear. Particularly disturbing is the fact that, while all the controls on the standard Magic screen are present in LaserMagic, none of them affect the way a LaserMagic image is stored. The control screen also departs significantly from the Macintosh standard—there's no menu bar.

The manual provides a reasonably good tutorial, but it's a poor reference guide. Part of the problem lies in the complexity of the user

interface, but the manual has some shortcomings all its own. For example, there is neither a parts list nor an adequate diagram of how to hook all the pieces together. As a result, it took



half an hour of head-scratching before I realized that the unit I received was shipped without a crucial adapter.

Some people are going to dive in with Magic and start making beautiful pictures right away. Others may never understand it. Most of us, somewhere in between, will need practice. But if you want to work with digitized images, and are willing to meet the software half way, you will be more than pleased with this product. If you need more convincing, go watch it run. Sales are direct from the manufacturer, but they will give you the names of satisfied users in your area.

—Henry Bortman

# Another Round Of Cricket

CRICKET DRAW IS THE MOST advanced and powerful graphics application you can buy for the Mac.

"Did he really say that? What about *FullPaint*? *GraphicWorks*? *SuperPaint*? *Cricket Draw* doesn't do half the things any one of them can do."

True. But *Cricket Draw* does PostScript. PostScript is the page description language that makes the Apple LaserWriter tick. You know all those great special effects you've seen in the sample book that sits next to the LaserWriter demo unit in your local computer store? PostScript. Without PostScript, a LaserWriter is just another Canon copier. And *Cricket Draw* gives you more PostScript power than any other Mac application can shake a stick at. This is an application easy enough for anyone to use, but packing power that professionals have been anxiously waiting for.

## SEEING IS BELIEVING

To draw, you must start with drawing tools, and *Cricket Draw* has a full complement of them. The top half of the tool palette contains the familiar standards: straight lines, rectangles with square or rounded corners, ovals and circles, arcs, polygons and freehand shapes. As you move down towards the bottom of the palette, things get more exciting (see Figure 1).

A new diamond-shaped tool gives you parallelograms. The "grate" tool allows you, with a single drag of the mouse, to draw a series of either parallel straight lines or concentric circles. The straight lines can have

## Cricket Draw adds

## PostScript to object-

## oriented drawing and

## shoots to the head of

## the class.

either linear or logarithmic spacing. The bezier curve tool lets you plot curved line segments that can be twisted and reshaped in bizarre and wonderful ways by dragging their control points. (Previously, this type of tool has been available only in font-generation applications like *Fontographer* and *LaserWorks*.) And the starburst tool creates just what its name implies, a set of lines radiating from a common center.

Yet *Cricket Draw*'s new tools reveal only a hint of what the program can do. *Cricket Draw* also allows you much greater freedom to fine tune the appearance of what you draw. For example, any object can be rotated and/or skewed (tilted) to any angle, selectable in 1 degree increments. By comparison, *MacDraw* can't do either; *MacDraft* can do rotation, but not skewing.

Double-clicking on an object invokes a dialog box that gives you very precise control over the line width, gray intensity and dash pattern of its outline, as well as the gray intensity of its interior, if it's a filled object (see Figure 2). Have you ever

wished you could make a line just a wee bit thicker or thinner than one of the half-dozen or so choices usually offered? Now you can — any thickness from 0.05 points to 99 points, in 0.05 point increments.

Ever longed for a shade of gray somewhere in between the ones available on the drawing palette? How does 0% to 100% in 1% steps sound? It's yours. Tired of trying to create dashed lines with diagonal-pattern "ink"? *Cricket Draw* offers you nine different dash patterns. And they don't get lost going around corners.

Depending on the type of object you select, you may get additional controls specific to that object type. For example, the dialog for a grate lets you set the style of grate (linear, log or radial) and the number of lines it contains. All open-ended objects, including curves, can have arrowheads on one or both ends. And wait until you see the precision with which you can control the corners on rounded rectangles.

Polygons and freehand shapes can be set to display and print smoothed or unsmoothed. And the smoothing is... smooooth. So smooth, in fact, that you may find smoothed polygons more practical to work with than bezier curves. Bezier curves, noted for their exceptional smoothness, are by definition limited to exactly four points. A smoothed polygon, however, can have as many points as you like, and looks just as good.

There's more. Any closed object can be filled with a graduated gray scale, known as a "fountain" (see

BY HENRY BORTMAN

Figure 3). Both the initial and final gray intensities of the fountain can be specified, as can its orientation. In addition, an object can be given a shadow, extending any desired distance and in any direction, in any shade of gray or graduated range of grays. Shadows work on open-ended objects as well as closed ones. You haven't seen anything like this anywhere before. Guaranteed. It's worth buying the program just to watch it draw fountains and shadows.

*Cricket Draw* has no pattern palette. This may seem strange for a high-powered drawing program, but remember that it's optimized for the LaserWriter. Bit-mapped patterns can't take advantage of the LaserWriter's resolution. In fact, they slow down printing. This is why Cricket Software opted instead to concentrate on an expanded gray scale. In contrast to bit-mapped patterns, true gray fills — both solid and graduated — are significantly improved by LaserWriter printing, and get even better when printed on a Linotronic.

However, if you still want patterns, there is something you can do. Using undocumented techniques, specifically the line screen (discussed in the sidebar "How to Get What You Don't See"), you can produce an infinite variety of fill patterns composed of horizontal, vertical and diagonal lines. Try playing around. Higher gray fill intensities will give you thicker lines. Higher frequencies will give you more lines per inch.

### SHAPING YOUR VISION

Editing in *Cricket Draw* is far more versatile than in other drawing programs. To edit an object, select it and type **COMMAND-E**. For objects that can be edited — ovals/circles, lines, rounded rectangles and starbursts can only be resized — the standard resizing handles will disappear and a new set of editing handles will be displayed, one at each vertex or control point. Dragging one of these handles will reshape the object.

Using this technique, you can reduce or extend the angle subtended by an arc. You can move the corners of a grate around to create perspective-like effects. If you **OPTION-CLICK** on one of the edit handles of a

polygon, a second, independent, edit handle appears. This is referred to as "cusping." The best part of this feature is that if you cusp a vertex in a smoothed polygon, it squares off. This means that you can have both straight and smooth line segments in the same polygon. **SHIFT-OPTION-CLICK** will delete an edit handle from a polygon.

These editing abilities are further enhanced by zooming: You can enlarge a portion of a drawing up to eight times its original size, or reduce it down to one-eighth of its size.

### A THOUSAND PICTURES FROM A SINGLE WORD

If you are a frustrated user of other drawing programs, you may now be wondering, "All right, so it does fancy pictures. What about text?" Good question. The inability to manipulate text on the screen while retaining the integrity of the character outlines of PostScript fonts has been the most limiting aspect of drawing programs to date. *Cricket Draw* meets the challenge.

You want text rotation? Skewing? Reflection on X and Y? Text in any shade of gray, instead of just black



# ANOTHER ROUND OF CRICKET

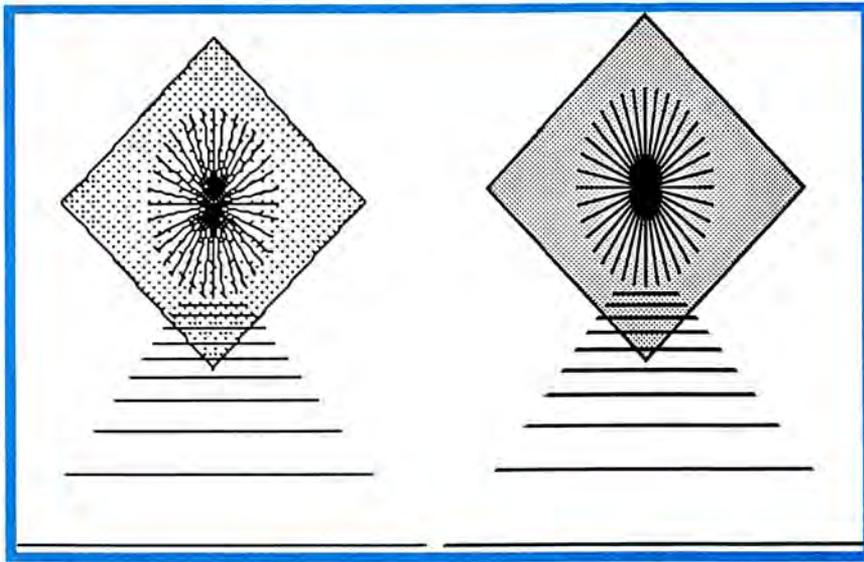


Fig. 1 *Cricket Draw's* new tools allow the drawing above to be made with only three objects. The diamond is a basic *Cricket Draw* shape, not a rotated rectangle. While both the starburst and grate contain multiple lines, each can be drawn with a single drag of the mouse. On the left, the drawing as it appears on the Mac screen; on the right, LaserWriter output.

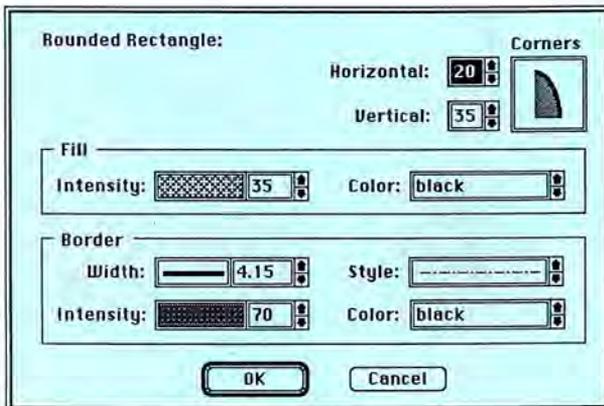


Fig. 2 When you double-click on any object you have drawn on the screen, a dialog box appears in which you can set line width and intensity, fill intensity (for closed objects), dash pattern and other attributes of the object's appearance. Shown here is the dialog box for a rounded rectangle.

and white? Shadow text, with graduated gray scales in the shadows? *Cricket Draw* lets you have it all.

Anything else? How about text placed along an arbitrary path, such as an arc, a bezier curve, an open-ended polygon or freehand shape? No problem. Just select a text block and any open-ended object simultaneously and choose the BIND TEXT option from the Special menu. It's done. You won't see a full representation of the bound text on screen. QuickDraw simply can't handle it. Instead, an area filled with diagonal lines will show you where on the printout the text will appear. You'll have to wait until you print your drawing to see the actual text in position along the path.

Each text block is fully editable; just press COMMAND-E. Numerous different font, size and style combinations can appear side by side within a single block. It's even possible to edit rotated or skewed text. It will straighten up while you work on it, then pop back to its previous orientation. To edit path-bound text, you must first unbind it.

Unfortunately, text editing, while powerful, is confusing. There are five different ways to get at text. (1) The selection tool (arrow) lets you resize a block of text or move it around on the page. (2) The text tool lets you draw a new text edit box; or, if the cursor is over an existing text block, it lets you edit. (3) The EDIT TEXT choice on the

Edit menu (COMMAND-E) also lets you edit text, if the block is already selected. (4) The SET TYPE choice on the Edit menu (COMMAND-T) displays a dialog box that lets you make font, style and point size changes on text that is selected. (5) There are command key equivalents for changing style and point size (but none is available for font changes). This all works quite differently than similar functions in other drawing programs (*MacDraw*, *MacDraft*, the draw layer of *SuperPaint*), and takes some getting used to. At first, you may feel the program is working against you.

## POSTSCRIPT AND MORE POSTSCRIPT

*Cricket Draw* does PostScript and I've discussed a number of ways in which the program gives you unprecedented interactive access to PostScript's power. But *Cricket Draw* really does PostScript. We're talking code.

You can see the PostScript code for any drawing you make by selecting NEW from the File menu and clicking on the PostScript button. This will open an editing window. Choose GENERATE POSTSCRIPT from the Goodies menu and the PostScript code for the frontmost drawing window will appear in the PostScript window.

The contents of a PostScript window can be saved either in brief form — just what's in the window — or in complete form, which includes Cricket's PostScript header as well. This header is a wealth of information for anyone interested in the language. Cricket has revealed exactly how they accomplished every one of their PostScript techniques. And it's reasonably readable code, unlike some other PostScript headers that the hackers among you may have tried to decipher.

You can modify the code in a PostScript window — it's simply a text file. Your changes are not reflected on the screen, but you can download the contents of the window directly from *Cricket Draw* and see their effects on the resulting printout. If you don't like what you see, just try again. You can use the code generated by *Cricket Draw* as a building block for your own pro-

grams, making only minor modifications; or you can get as elaborate as you want. There is also a complete on-line PostScript help function, which shows you the proper syntax for and a short description of nearly every operator (primitive command) in Adobe's PostScript Reference Manual.

We really have to hand it to Cricket Software for providing this feature. Many developers would have stopped at the boundary of the drawing window and said, "We've given the user enough." You would never have seen their hard-earned PostScript secrets, and if you did, they'd be virtually unintelligible. Instead, Cricket went the extra mile and provided a full-scale PostScript laboratory as well as a great drawing application. It's a welcome change to see software done with the user in mind.

If, on the other hand, you have no interest in the hidden mysteries of PostScript, you can ignore this part of the application altogether. You'll still have all the power of the drawing program at your command. The two operate independently.

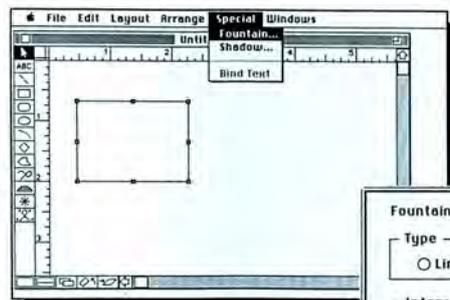
## DOT TO DOT

Although *Cricket Draw* is optimized for PostScript, it is fully compatible with the ImageWriter. Of course, while a PostScript printer will often improve on the screen image, the printout from an ImageWriter will mirror the screen pixel for pixel. Text effects like rotation and skewing, in particular, which require better than 72 dpi to show their stuff and which therefore look ragged on the screen, will look equally rough when printed on an ImageWriter.

However, there is one distinct advantage *Cricket Draw* offers to those with an ImageWriter II: color. Color, along with line width, gray intensity, and so on, is one of the attributes that can be selected from the dialog boxes that appear when you double-click on an object. Gray intensities, fountains and shadows all work with color as well as with black and white. Of course you can't see color on the screen — not yet, anyway — but you can create four-

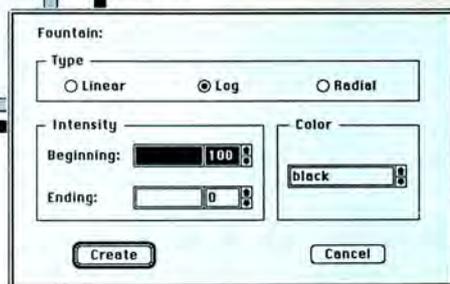
## How To Get What You Don't See

*Cricket Draw*, like many other Mac applications, has hidden treasures waiting to be discovered by the adventurous. My favorite is accessed by OPTION-CLICKING the fill control in the lower left corner of the screen. Normally when you click on this control (without the Option key depressed), you get a dialog box that lets you modify the intensity of the gray fills for any closed objects currently selected or subsequently drawn. But if you hold down the Option key while clicking, with one or more gray-filled objects selected, you will get a dialog box which will give you access to a number of additional options that affect the way grays will appear. The examples here show you some of what can be achieved.



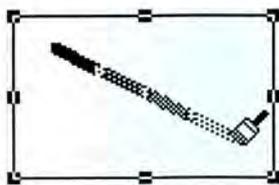
a.

**Fig. 3** Filling a closed object with a graduated gray scale (fountain) and giving it a custom-designed shadow are a snap in *Cricket Draw*. (a) Draw a closed object, select it, and choose FOUNTAIN from the Special menu.



b.

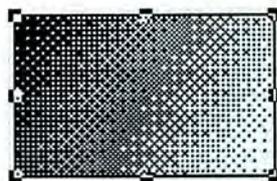
(b) Choose the fountain type, beginning and ending intensity and color.



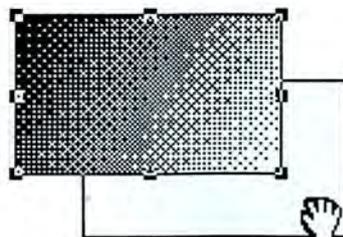
c.

(c) Drag the paintbrush cursor across the object at any angle.

(d) A fountain will fill the object.

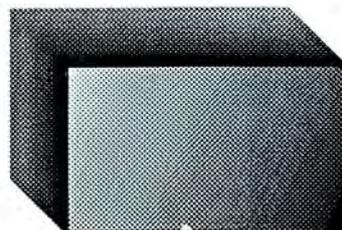


d.

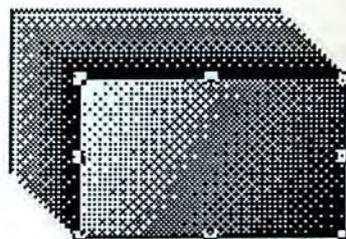


e.

(e) Choose SHADOW from the Special menu and set the appropriate options in the Shadow dialog box (not shown). Use the hand cursor to drag a shadow out from "behind" the object, in any direction and any distance from the original.



g.



f.

(f) The shadow will display on the screen and (g) the final product, printed on a LaserWriter.

# ANOTHER ROUND OF CRICKET

color graphics on an ImageWriter directly from within *Cricket Draw*. No additional utility program is required to generate color output.

Many early users of *Cricket Draw* reported problems when trying to print their files, particularly when printing to Linotronics. I had this experience myself with one file that printed fine on a LaserWriter but thumbed its nose at me when I tried to get Lino output. Cricket has been working feverishly to overcome these problems since *Draw*'s initial release. As we went to press, they had just released an upgrade, version 1.01, which they claim has resolved most of the reported problems. This new version was not yet available for testing at press time. It is being sent free to all registered owners.

## TO SEE IS TO KNOW

*Cricket Draw*'s user interface is excellent. In designing a user interface for Macintosh software, it's easy to get carried away. It's hard to create a good balance between power and simplicity. Decisions about things like the organization of the menus, the assignment of command keys and the use of dialog boxes must be made carefully. Otherwise, the interface will end up obscuring a program's capabilities, rather than providing easy access to them. There is one area in *Cricket Draw* — text editing, already mentioned — that can use some improvements. But on the whole, the *Cricket Draw* interface is so well done that anyone who understands the distinction between bit maps and objects, can, if given the simple advice "Try double-clicking," learn 90 percent of *Cricket Draw* in 30 minutes — without the manual.

A program's user interface and its written documentation are two sides of the same coin. They both contribute to or detract from the ease with which the user can get a job done. Cricket has done a solid job on both. The manual has clear, accurate explanations. It is well organized and extremely well illustrated. There are a few places where there could have been a bit more explanation — not because what's there is inadequate, but because you get the feeling that

## Now You See It, Now You Don't

Standards are a wonderful thing. The computer world is full of them. Like the RS-232 "standard." Or "standard" ASCII text files. The Macintosh has graced us with yet another, the "standard" PICT file format. There are several different programs that generate PICT files, among them *MacDraw*, *MacDraft*, *SuperPaint*, and now *Cricket Draw*. Others, such as *PageMaker* and *ReadySetGo* can't produce PICT files but can read them.

PICT is supposed to make it easy to move graphics from one application to another. But reality isn't always as accommodating as the paper world in which standards are written. So here's the low-down on what works and what doesn't with the initial release of *Cricket Draw*. The most reliable transfer is from *MacDraw* into *Cricket Draw*. This can be successfully done either with *MacDraw* files themselves or with PICT files created in *MacDraw*. The only surprise is that, since *Cricket Draw* has no fill patterns, *MacDraw* objects filled with patterns other than shades of gray will be converted into gray-filled objects in *Cricket Draw*.

*MacDraft* files cannot be read directly by *Cricket Draw*. PICT files created by *MacDraft* can be read by *Cricket Draw*, but the fill patterns will not transfer at all; filled objects will all become unfilled.

If you try to read a *SuperPaint* PICT file into *Cricket Draw*, the system will crash.

And in the "oops" department: *Cricket Draw* (version 1.0) can't read its own PICT files. So, if you save a *Cricket Draw* drawing in PICT format for export to another application, save a second copy of it in *Cricket Draw* format. Otherwise, you will not be able to make any further changes to it.

So much for bringing PICT images into *Cricket Draw*. Going the other way, the most reliable transfer is into *ReadySetGo* 3.0. I am told — although I didn't have a copy to test it myself — that *Cricket Draw* PICT files can be ported to *ReadySetGo* 3.0 with no problem, and that they will print properly. A handy hint: When you create the PICT file, hold down the Option key while you click on the Save button. This will generate a PICT file in which the screen image is a bit-mapped image, rather than an object-oriented image. The bit-mapped screen image will scroll much more rapidly in *ReadySetGo* than its object-oriented counterpart. You will still get the full benefit of the LaserWriter's resolution when your drawing prints, since the PostScript commands are exported to *ReadySetGo* along with the bit-mapped screen image.

As for *PageMaker*, wait until version 2.0, which will be fully compatible with *Cricket Draw* PICT files. Since version 1.2 uses Aldus Prep instead of Laser Prep (like everyone else does), and since Aldus Prep was not designed to handle the PostScript that is embedded in *Cricket Draw* PICT files, the latter can be read into *PageMaker*, but will not print properly.

there has to be more to the story.

Cricket is planning to release an ongoing series of technical notes about *Cricket Draw*, with pointers on how to get the most out of the product, and, alas, workarounds for any bugs that crop up. These notes will be uploaded to a number of subscriber bulletin boards (CompuServe, MCI, AppleLink) and will be made available free to Macintosh user groups. Registered owners who want to be sure to get them all, on a monthly basis, can subscribe for \$25 a year. The first set of such notes, detailing changes that were made in the software after the manual was printed, is included in the *Cricket Draw* package.

Registering will also guarantee that you'll be notified of upgrades. These will be available for a nominal fee (\$10 for minor versions, more

when major new features are added). Cricket has already planned to publish a version early in 1987 that fixes any bugs found in the initial release.

There is one last thing that should be mentioned. The largest drawing you can make with *Cricket Draw* is one page. You can have lots of windows open at once, but only one page apiece. When we asked the developers about this, they said that they had discussed the subject with a lot of people who use other drawing programs, and found that the overwhelming majority of them create multipage drawings for the sole purpose of reducing them in order to achieve an effective increase in the resolution of their final images. Very few people outside of the CAD world actually need to make large final drawings, which requires taping pages together.

Fig. 4 The 1270 dpi resolution of the Linotronic 100 yields a smoother gradation of grays in fountain-filled objects (bottom strip) than does the LaserWriter with its 300 dpi resolution (top strip).

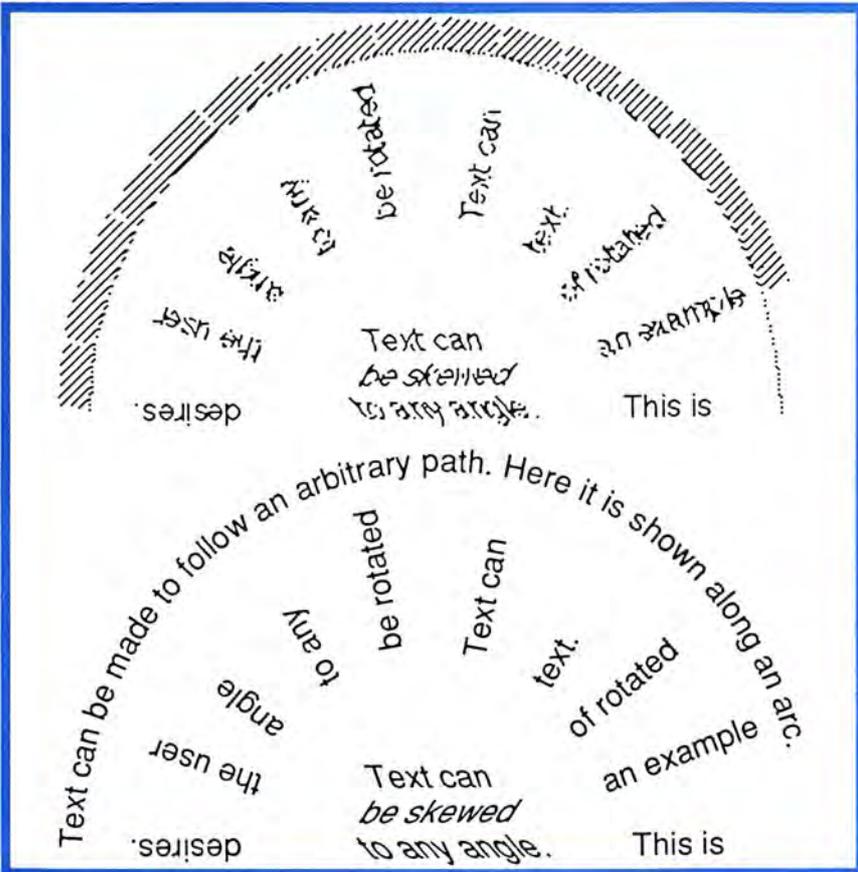
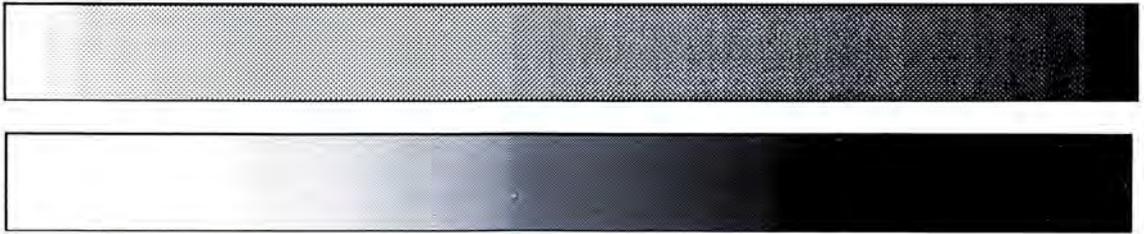
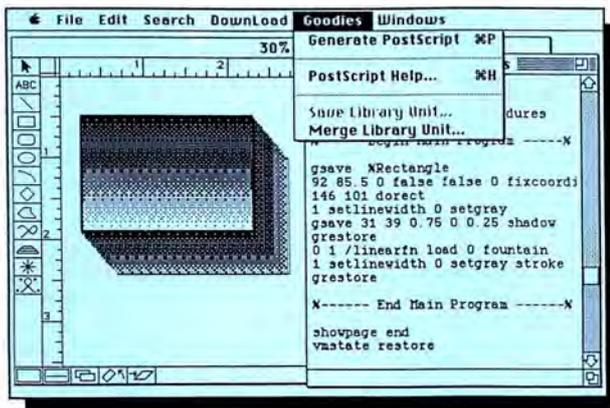


Fig. 5 Text can be rotated or skewed to any angle in one degree increments. It can also be placed along any arbitrary path. On the Top, the modified text as it appears on the screen. On the bottom, LaserWriter output.

Fig. 6 You can see the PostScript code for a *Cricket Draw* drawing by opening a PostScript window and choosing GENERATE POSTSCRIPT from the Goodies menu. What appears in this window can be saved on disk as a text file. It can also be edited — if you know PostScript — and downloaded to a printer directly from within *Cricket Draw*.



Since *Cricket Draw* is not a CAD program, a single page was deemed adequate. Those who are looking for increased resolution can achieve it in *Cricket Draw* by setting the reduction percentage in the Page Setup window to less than 100% (25% is as low as you can go). This expands the rulers in the drawing window proportionally, allowing you to draw on a piece of "virtual paper" as large as 30" wide X 40" high (or 27" X 50" if you choose legal size paper). When you print, however, it will be reduced to a single sheet.

#### DRAWING TO THE END

*Cricket Draw* is hot, and anyone with an interest in serious drawing or playful drawing or general playing should consider buying this program. Take a long look at what it can do and I think you'll see what we mean. 🖱

HENRY BORTMAN IS A SAN FRANCISCO-BASED FREELANCE WRITER AND AN ENGINEER FOR US SPRINT.

### Cricket Draw

Overall Rating	👍 👍 👍 👍
Follows Mac Interface	👍 👍 👍 👍
Printed Documentation	👍 👍 👍 👍
On-Screen Help	Only in PS window
Performance	👍 👍 👍 👍
Support	Too early to tell
Customer Value	👍 👍 👍 👍

**Comments:** High-powered object-oriented graphics, optimized for PostScript printers. A tad expensive, but worth it. **Best Features:** Unbelievable screen displays; rotation and skewing of text in 1-degree increments; graduated gray fills and shadows. **Worst Features:** Text editing is confusing. **List Price:** \$295. Requires 512+. Published by Cricket Software, 3508 Market St., Suite 206, Philadelphia, PA 19104. 1 (800) 345-8112. Not copy protected.

# Get ahead with

## SOFTWARE

**NCP denotes not copy-protected.**  
**CP denotes copy-protected.**

<b>Affinity Microsystems ... NCP</b>		<b>DrawArt Vol. 2 (MacDraw clipart, req. 512k) \$45.</b>		<b>Layered ... CP</b>	
Tempo (power user's macro utility) . . . . .	\$59.	<b>Digital, etc. ... NCP</b>		Notes for...Excel, Microsoft Works, or PageMaker . . . . .	each \$42.
<b>ALSoft ... NCP</b>		Maccountant (integrated accounting) . . . . .	99.	<b>Legisoft/Nolo Press ... NCP</b>	
DiskExpress (maximize disk performance) . . . . .	27.	Turbo Maccountant (full-featured) . . . . .	275.	WillWriter 2.0 (prepare your own will) . . . . .	32.
<b>Altsys ... NCP</b>		<b>Dow Jones ... CP</b>		<b>Linguist's Software ... NCP</b>	
Fontastic (create your own fonts) . . . . .	27.	Straight Talk (access News/Retrieval) . . . . .	62.	Tech (1000 different symbols) . . . . .	59.
Fontographer (Laserwriter font editor) . . . . .	249.	Spreadsheet Link . . . . .	65.	<b>FOREIGN LANGUAGE FONTS</b>	
<b>Ann Arbor ... NCP</b>		Market Manager PLUS 1.5 . . . . .	159.	MacCyrillic . . . . .	39.
FullPaint (open four documents at once) . . . . .	55.	<b>Dreams of the Phoenix ... NCP</b>		SuperFrench/German/Spanish . . . . .	39.
<b>Batteries Included ... NCP</b>		Day Keeper Calendar . . . . .	35.	MacHieroglyphics, MacKana/Basic Kanji, MacSemitic/Coptic/Devanagari, MacKorean, MacGreek, MacHebrew . . . . .	each 59.
The Mac BatteryPak (9 desk accessories) . . . . .	27.	Quick & Dirty Utilities . . . . .	each 35.	SuperGreek New or Old Testament . . . . .	79.
Time Link (electronic calendar/diary) . . . . .	29.	Twelve-C Financial Desk Accessory . . . . .	35.	MacGreek/Hebrew/Phonetics . . . . .	89.
Thunder! (50,000 word spelling checker) . . . . .	29.	<b>Dubl-Click Software ... NCP</b>		LaserGreek . . . . .	79.
Isgur Portfolio (investment manager) . . . . .	109.	World-Class Fonts! Vol. One or Vol. Two . . . . .	29.	LaserFrench/German/Spanish . . . . .	79.
<b>Berkeley System Designs ... NCP</b>		World-Class Fonts! (both Volumes) . . . . .	49.	LaserCyrillic . . . . .	115.
Stepping Out (requires 512k) . . . . .	65.	Calculator Construction Set . . . . .	39.	<b>Living Videotext ... NCP</b>	
<b>Blyth ... CP</b>		<b>EDO Communications ... CP</b>		ThinkTank 512k (outline processor) . . . . .	99.
Ormnis 3 Plus . . . . .	call	Laserworks (requires 512k, Laserwriter) . . . . .	229.	More (outlines, windows, & tree charts) . . . . .	159.
<b>Borland International ... NCP</b>		<b>Electronic Arts ... CP</b>		<b>MacMemory ... NCP</b>	
Sidekick 2.0 . . . . .	59.	Deluxe Music Construction Set 2.0 . . . . .	65.	MaxRam & MaxPrint (Ramdisk, spooler) . . . . .	39.
Reflex (information management analysis) . . . . .	59.	<b>Enabling Technologies ... NCP</b>		<b>Magnum ... NCP</b>	
Turbo Pascal (HFS compatible) . . . . .	59.	Easy3D (create solid 3D objects) . . . . .	79.	Natural Sound Effects . . . . .	27.
<b>BPI Systems ... NCP</b>		<b>1st Byte ... CP</b>		Natural Sound Cable & Editor Disk . . . . .	89.
General Accounting (full-featured) . . . . .	135.	First Shapes (preschool learning tool) . . . . .	32.	McPic - Volume 1 or Volume 2 . . . . .	29.
<b>BrainPower ... NCP</b>		Speller Bee . . . . .	32.	The Slide Show Magician 1.3 (CP) . . . . .	35.
Think Fast (improves recall) . . . . .	23.	KidTalk, or Mathtalk . . . . .	32.	<b>Microsoft</b>	
StatView (statistics package) . . . . .	35.	Smoothtalker (speech synthesis) . . . . .	32.	Flight Simulator (the Mac takes flight, CP) . . . . .	32.
Graphidex (DA graphics organizer) . . . . .	75.	<b>Forethought ... NCP</b>		Learning Multiplan and Chart (2 disks, CP) . . . . .	39.
Designscope (electronic circuit design) . . . . .	129.	Factfinder (free-form info organizer) . . . . .	49.	Basic Interpreter 3.0 (NCP) . . . . .	65.
StatView 512+ (req. external drive, 512k) . . . . .	179.	FileMaker (custom forms & reports) . . . . .	79.	Chart 1.0 (42 chart styles, CP) . . . . .	72.
<b>Broderbund ... CP</b>		FileMaker Plus (feature-packed database) . . . . .	159.	Multiplan 1.1 (63 col. by 255 rows, CP) . . . . .	111.
Print Shop (create cards and memos) . . . . .	49.	<b>FWB Software ... NCP</b>		File 1.04 (flexible data manager, CP) . . . . .	111.
Geometry (over 350 problems!) . . . . .	65.	Hard Disk Backup (protect hard disk info) . . . . .	39.	Basic Compiler 1.0 (NCP) . . . . .	119.
<b>CAMDE ... NCP</b>		Hard Disk Partition (speeds up hard disk) . . . . .	39.	Fortran 2.2 (compiler, NCP) . . . . .	169.
Nutricalc (diet & nutrition analysis) . . . . .	49.	Hard Disk Util (program backup) . . . . .	57.	Works 1.0 (integrated tool, NCP) . . . . .	189.
Nutricalc Plus (dietician's delight) . . . . .	175.	<b>Great Wave Software ... NCP</b>		Excel 1.03 (power spreadsheet, NCP) . . . . .	225.
<b>CasadyWare ... NCP</b>		KidsTime (educational, ages 3-8) . . . . .	29.	Word 3.0 (word processor, NCP) . . . . .	239.
Fluent Fonts (two-disk set) . . . . .	29.	TimeMasters (learn about time, ages 4 & up) . . . . .	29.	<b>Miles Computing ... NCP</b>	
Fluent Laser Fonts (Vols. 1-15) . . . . .	each 49.	ConcertWare+ (music composition) . . . . .	29.	Mac the Ripper (req. Paint program) . . . . .	27.
<b>Central Point Software ... NCP</b>		ConcertWare+ MIDI . . . . .	75.	Orchestra of Fonts Vol. 4 (30 different fonts) . . . . .	27.
Copy II Mac (includes MacTools) . . . . .	20.	<b>Greene, Johnson ... CP</b>		<b>Mindscape ... CP</b>	
<b>Challenger Software ... NCP</b>		Spellswell (spelling checker) . . . . .	52.	The Luscher Profile (personality profile) . . . . .	24.
Mac3D (3D graphics, CAD features) . . . . .	129.	<b>Hayden Software ... CP</b>		The Perfect Score: SAT (w/College) . . . . .	47.
<b>Chang Labs ... CP</b>		I Know It's Here Somewhere (handy filer) . . . . .	20.	ComicWorks (create your own comics) . . . . .	49.
Rags to Riches Ledger . . . . .	125.	Hayden:Speller (for Word & MacWrite) . . . . .	27.	GraphicWorks (newsletters, ads, posters) . . . . .	49.
Rags to Riches Receivables (req. 512k) . . . . .	125.	MusicWorks (songs for your Mac) . . . . .	32.	<b>Monogram ... NCP</b>	
Rags to Riches Payables (req. 512k) . . . . .	125.	DaVinci Building Blocks (NCP) . . . . .	46.	Forecast (tax planning) . . . . .	41.
Rags to Riches Three Pak . . . . .	299.	Home Design (NCP) . . . . .	49.	Dollars & Sense (home, small business) . . . . .	81.
Inventory Control . . . . .	245.	Score Improvement for the SAT . . . . .	59.	<b>New Canaan MicroCode ... NCP</b>	
Professional Billing . . . . .	245.	Score Improvement: Achievement Test . . . . .	59.	MDCFinder (requires 512k) . . . . .	20.
<b>Cortland ... CP</b>		VideoWorks (animation) . . . . .	59.	Mac Disk Catalog II (requires 512k) . . . . .	32.
TopDesk (7 new desk accessories) . . . . .	35.	<b>Ideaform ... NCP</b>		<b>Odeta ... NCP</b>	
<b>Creighton Development ... NCP</b>		MacLabeler (print disk labels) . . . . .	29.	Helix (req. 512k, external drive) . . . . .	105.
MacSpell+ (spell checker, req. 512k) . . . . .	55.	DiskQuick (catalog floppies & hard drives) . . . . .	29.	Double Helix (relational, custom menus) . . . . .	279.
<b>Cricket Software ... NCP</b>		<b>Imagine ... NCP</b>		<b>OWL International ... NCP</b>	
Statworks (statistical package) . . . . .	79.	Smart Alarms (DA reminder system) . . . . .	39.	Guide (hypertext, free-form info) . . . . .	89.
Cricket Graph (multiple windows) . . . . .	129.	<b>Impulse ... NCP</b>		<b>Palantir ... CP</b>	
Cricket Draw (advanced draw capabilities) . . . . .	179.	Comic Strip Factory (create cartoons) . . . . .	65.	MathFlash, WordPlay or MacType . . . . .	26.
<b>Data Tailor ... NCP</b>		<b>Industrial Computations ... NCP</b>		Inventory Control, GL, or AR . . . . .	each 49.
Trapeze (spreadsheet, reqs. 512k) . . . . .	179.	Powermath (equation solving tool) . . . . .	59.	inTalk (communication to emulation, NCP) . . . . .	79.
<b>DataViz ... NCP</b>		<b>Infosphere ... CP</b>		<b>PBI Software ... NCP</b>	
MacLink Plus (transfer Mac/IBM data) . . . . .	159.	LaserServe (network software) . . . . .	65.	Icon Switcher (customized icons) . . . . .	14.
<b>Desktop Graphics ... NCP</b>		MacServe (network software) . . . . .	175.	Icon Fun & Games or Business Libraries . . . . .	14.
DrawForms (requires MacDraw) . . . . .	30.	<b>Innovative Data Design ... NCP</b>		HFS Locater (DA organizer for HFS) . . . . .	27.
DrawArt (MacDraw artwork, req. 512k) . . . . .	29.	Paste-Ease (requires Paint program) . . . . .	35.	Hard Disk Backup (supports MFS, HFS) . . . . .	29.
		MacDraft (new updated version, 512k) . . . . .	159.	<b>Peachtree ... CP</b>	
		<b>Kensington ... NCP</b>		Back to Basics GL, AP, or AR . . . . .	each 89.
		Graphic Accents (req. Paint program) . . . . .	29.		
		Type Fonts for Text (16 new fonts) . . . . .	29.		
		Type Fonts for Headlines (req. 512k) . . . . .	42.		

# Drafting Made EZ

BY FRANK CONFORTI

Don't overlook the  
Mac if computer-aided  
drafting is part  
of your business.

EZ-Draft offers  
professional quality  
CAD on the Mac



# Mac products from

<b>Personal Computer Peripherals ... NCP</b>	
HFS Backup	\$39.
<b>ProVUE Development ... NCP</b>	
OverVUE 2.0 (power-packed database)	149.
Mail Manager Template	29.
Personal Finance Template	29.
<b>Rubicon Publishing ... CP</b>	
Silver Palate Collection (NY's finest!)	29.
Dinner At Eight (recipes to wines)	35.
Dinner At Eight-Silver Palate Bundle	59.
<b>Satori ... NCP</b>	
BulkMailer (mailing lists)	75.
BulkMailer Plus (up to 90,000 names)	225.
Legal Billing (attorneys to accountants)	389.
Project Billing (architects to engineers)	449.
<b>Silicon Beach Software ... NCP</b>	
Accessory Pak 1 (useful utilities)	21.
Silicon Press (printer utility, 512k)	42.
SuperPaint (advanced graphics program)	55.
<b>Simon &amp; Schuster ... NCP</b>	
Mac Art Department (req. Paint program)	24.
Paper Airplane Construction Kit	24.
Typing Tutor III (learn to type!)	35.
J. K. Lasser's Income Tax	59.
<b>SoftStyle ... NCP</b>	
Colormate Art (Colormate images)	29.
Colormate (color printing utility)	49.
Laserstart (Hewlett-Packard Laserjet)	59.
Decision Map (make better decisions, CP)	79.
<b>Software Discoveries ... NCP</b>	
Record Holder (data manager)	42.
<b>Software Ventures ... NCP</b>	
Microphone (communications)	59.
<b>Solutions, Inc. ... NCP</b>	
SmartScrap & The Clipper	42.
Glue (creates "print to disk" capability)	42.
<b>Springboard</b>	
Art a la Mac Vol. 1-People & Places (NCP)	23.
Art a la Mac Vol. 2-Variety Pack (NCP)	23.
Easy as ABC (ages 3-6, letters, CP)	29.
Early Games (ages 2-6, counting, CP)	29.
<b>State of the Art ... CP</b>	
Electric Checkbook (print checks)	29.
<b>SuperMac Technology ... NCP</b>	
SuperSpool	39.
<b>Survivor Software ... NCP</b>	
MacMoney (financial planner)	42.
<b>Symmetry ... NCP</b>	
Acta 1.2 (outline/writing desk accessory)	39.
PictureBase (clip art manager, 512k)	45.
<b>T/Maker ... NCP</b>	
ClickArt Personal Graphics	29.
ClickArt Effects	29.
ClickArt Publications	29.
ClickArt Letters Vol. 1 or Vol. 2	29.
ClickArt Holidays (Easter)	29.

## MacConnection Special of the Month through May 31, 1987

### T/MAKER Write Now

Steve Jobs claims "this is the word processor we built and designed Macintosh for..." Write Now is a fast, general-purpose word processor with simple page layout capability. Easy to learn and use, Write Now can accommodate any size Mac (512k recommended for spelling checker).

- Not copy-protected
- Extensive Undo feature
- On-screen multi-column editing
- Built-in spelling checker with 50,000 word dictionary

Write Now ..... \$99

ClickArt Business Image	29.
Bombay, Plymouth, or Seville Laser font	59.
Write Now (word processor)	special
<b>Target Software ... NCP</b>	
Merriam Webster's Thesaurus	29.
MacLightning (interactive spell checker)	53.
Medical or Legal Dictionary	53.
Voila! (desk accessory outliner)	53.
<b>Telos Software ... NCP</b>	
Business Filevision (512k, external drive)	199.
<b>Think Educational ... CP</b>	
MacEdge II or Mind Over Mac	28.
<b>Think Technologies ... NCP</b>	
Laserspeed (Laserwriter utility)	69.
Lightspeed Pascal (includes debugger)	89.
Lightspeed C (top-rated C Compiler)	129.
<b>TML Systems ... NCP</b>	
TML Source Code Library	59.
TML Database Toolkit	65.
TML Pascal (compiler, req. 512k)	69.
<b>TrueBasic ... NCP</b>	
True BASIC (fast, flexible & portable)	89.
Algebra II, Pre-calculus, Calculus, Trigonometry, 3D Graphics, Discrete Math, Probability & Chippendale utilities	each 36.
TrueSTAT (statistics)	59.
Runtime (create stand-alone applications)	59.
<b>Unicorn ... CP</b>	
Animal Kingdom (ages 6-12)	29.
Decimal Dungeon (math, ages 9 and up)	29.
Fraction Action (arcade style math game)	29.
Mac Robots (pre-school program)	29.

Math Wizard (math games, ages 5-10)	\$29.
Read-A-Rama (reading, ages 5-8)	35.
<b>William &amp; Macias ... NCP</b>	
myDiskLabeler (design & print labels)	25.
myDiskLabeler w/Color (req. Imagemaster II)	34.
myDiskLabeler w/Laserwriter option	39.

### GAMES

<b>Accolade ... CP</b>	
Hardball (baseball simulation)	27.
<b>Activision ... CP</b>	
Championship Star League Baseball	22.
Mind Shadow (Who am I?)	27.
Hacker (you're on your own!)	27.
Hacker II (breach Russian computer)	30.
Borrowed Time (murder mystery)	27.
Shanghai (Mah Jongg strategy)	27.
Alter Ego (male or female version)	36.
<b>Addison-Wesley ... CP</b>	
Puppy Love (your dog will love it!)	15.
<b>Ann Arbor Softworks ... CP</b>	
Grid Wars (3D graphic arcade)	22.
<b>Artworx ... CP</b>	
Bridge 4.0 (sharpen your skills)	21.
<b>Avalon Hill ... CP</b>	
MacPro Football (req. 512k)	32.
<b>Blue Chip ... CP</b>	
Millionaire (stock market)	35.
Tycoon (commodities)	35.
Baron (real estate)	35.
Squire (personal finance, req. 512k)	35.
<b>Broderbund Software ... CP</b>	
Lode Runner (over 150 levels)	24.
Ancient Art of War (military strategy)	27.
Toy Shop (create working models)	39.
<b>Bullseye ... CP</b>	
Ferrari Grand Prix (Formula One racing)	35.
Fokker TriPlane Flight Simulator	35.
<b>Electronic Arts ... CP</b>	
Archon (arcade strategy, req. 512k)	27.
Skyfox (3D graphics)	27.
Seven Cities of Gold	27.
One on One/Dr J vs Larry Bird (req. 512k)	27.
Patton-vs-Rommel (req. 512k)	27.
Pinball Construction Set	27.
<b>Epyx ... CP</b>	
Rogue (strategy dungeon classic!)	24.
Temple of Apshai (4 levels)	24.
Winter Games (Olympic events)	24.
<b>Hayden Software ... CP</b>	
Perplexx (scrabble-type game)	24.
Sargon III (9 levels of chess)	29.
<b>Infinity Software ... CP</b>	
Grand Slam (tennis, req. 512k)	28.
<b>Infocom ... CP</b>	
Leather Goddesses of Phobos (standard)	24.

1-800/Mac&Lisa 700U

# MacConnection™

MacConnection, 14 Mill Street, Marlow, NH 03456 800/622-5472 603/446-7711

©Copyright 1987 PC Connection, Inc. MacConnection is a division of PC Connection, Inc. MacConnection is a trademark of PC Connection, Inc.

All items subject to availability. Prices subject to change without notice.

\*Defective software replaced immediately. Defective hardware replaced or repaired at our discretion. Some items have warranties up to five years.

# MacConnection.

Hitchhiker's Guide, Trinity, Moonmist, Ballyhoo, (standard) . . . . .	each \$24.
Invisiclues (hint booklets) . . . . .	each 6.
<b>MacroMind ... NCP</b>	
Maze Wars+ (play via modem or network)	32.
<b>Miles Computing ... CP</b>	
Harrier Strike Mission (3D flight simulation)	27.
MacWars (3D space simulation) . . . . .	27.
<b>Mindscape ... CP</b>	
Racter (converse with your Mac!) . . . . .	27.
Balance of Power (world politics) . . . . .	30.
King of Chicago (req. minimum 512E) . . . . .	30.
Brataccus (great graphics, req. 512k) . . . . .	30.
Uninvited (mystery adventure) . . . . .	30.
Deja Vu (murder mystery) . . . . .	33.
<b>PBI Software ... CP</b>	
Strategic Conquest (multi-user) . . . . .	35.
<b>Psion ... CP</b>	
Psion Chess (3D and multi-lingual) . . . . .	31.
<b>QWare ... CP</b>	
Orb Quest (graphic fantasy adventure) . . . . .	29.
<b>Sierra On-Line ... CP</b>	
Championship Boxing (knock 'em out!) . . . . .	25.
<b>Silicon Beach Software</b>	
Airborne! (CP, the classic!) . . . . .	20.
Enchanted Scepters (CP, over 200 scenes)	21.
Dark Castle (NCP, arcade action) . . . . .	28.
World Builder (NCP, program creator) . . . . .	42.
<b>Simon &amp; Schuster ... CP</b>	
Star Trek—The Kobayashi Adventure . . . . .	24.
<b>Sir-Tech ... CP</b>	
Mac Wizardry (high-rated fantasy) . . . . .	36.
<b>SPHERE, INC. ... NCP</b>	
(Formerly Spectrum Holobyte)	
GATO (submarine simulation) . . . . .	26.
Orbiter (space shuttle simulation) . . . . .	27.
Tellstar II (No. & So. hemispheres, req. 512k)	32.
<b>XOR ... NCP</b>	
NFL Challenge (be the coach!) . . . . .	79.

## HARDWARE

Manufacturer's minimum limited warranty period is listed after each company name. Some products in their line may have longer warranty periods.

<b>Apricorn ... 1 year</b>	
ApriCord Mac (Mac Plus parallel interface)	75.
<b>AST Research ... 2 years</b>	
AST 2000 (20 MB, 20 MB tape) . . . . .	1795.
AST 4000 (74 MB, 60 MB tape) . . . . .	4695.
<b>Curtis Manufacturing ... lifetime</b>	
Diamond (6 outlets) . . . . .	29.
Emerald (6 outlets; 6 ft cord) . . . . .	36.
Sapphire (3 outlets; EMI/RFI filtered) . . . . .	47.
Ruby (6 outlets; EMI/RFI filtered; 6 ft cord)	55.
<b>Dove Computer ... 1 year</b>	
MacSnap Memory Upgrades	
Mac Snap 524 (512k to 1 Meg) . . . . .	149.
Mac Snap Plus 2 (Mac Plus to 2 Meg) . . . . .	269.
Mac Snap 548 (512k to 2 Meg) . . . . .	389.
<b>Ehman Engineering ... 1 year</b>	
800k External Disk Drive . . . . .	219.
<b>Ergotron ... 1 year</b>	
MacTilt (includes external drive bracket) . . . . .	75.
MacBuffer 512k . . . . .	call
MacBuffer 1024k . . . . .	call
<b>Hayes ... 2 years</b>	
Smartcom II (communications software) . . . . .	89.

Smartmodem 1200 or 2400 . . . . .	call
InterBridge (connect Appletalk networks) . . . . .	599.
<b>IOMEGA ... 90 days</b>	
Bernoulli Box (dual 10 MB w/SCSI) . . . . .	1649.
Bernoulli Box (dual 20 MB w/SCSI) . . . . .	1895.
Bernoulli Box (dual 10 MB, Appletalk) . . . . .	2195.
<b>Kensington ... 1 year</b>	
Appletalk Cable Clips or Connectors . . . . .	each 1.
Mouseway (mouse tracking pad) . . . . .	8.
Mouse Pocket (for your idle mouse) . . . . .	8.
Mac Plus System Saver Cover . . . . .	9.
Imagewriter (II) Dust Cover . . . . .	9.
Mouse Cleaning Kit w/Mouse Pocket . . . . .	17.
Disk Case (holds 36 Mac disks) . . . . .	19.
Disk Drive Cleaning Kit . . . . .	20.
Tilt/Swivel . . . . .	22.
Universal Copy Stand . . . . .	24.
Polarizing Filter . . . . .	34.
Surge Suppressor . . . . .	35.
A-B Box (for the Mac Plus) . . . . .	65.
Control Center . . . . .	65.
System Saver Mac (complete with fan) . . . . .	65.
Turbo Mouse . . . . .	89.
<b>Koala Technologies ... 90 days</b>	
KAT Graphics Tablet . . . . .	169.
MacVision (digitizer) . . . . .	175.
<b>Kraft ... 1 year</b>	
3 Button QuickStick . . . . .	49.
<b>Mirror Technologies ... 1 year</b>	
Magnum 800k External Drive . . . . .	229.
MagNet 20x (w/MacServe) . . . . .	849.
Magnum 20 Tape Backup . . . . .	929.
MagNet 30x (w/MacServe) . . . . .	995.
MagNet 40/40 (40MB, 40MB tape) . . . . .	2695.
MagNet 85x (w/40MB tape) . . . . .	4595.
<b>Personal Computer Peripherals ... 1 year</b>	
MacBottom Hard Drive 20MB (serial) . . . . .	879.
MacBottom Hard Drive 20MB (SCSI) . . . . .	879.
MacBottom Hard Drive 30MB (SCSI) . . . . .	999.
MacBottom Hard Drive 40MB (SCSI) . . . . .	1295.
<b>Summagraphics ... 90 days</b>	
MacTablet 6" x 9" (stylus driven) . . . . .	299.
MacTablet 12" x 12" (sketching) . . . . .	389.
<b>Systems Control ... 2 years</b>	
MacGard (surge protection) . . . . .	55.
<b>Thunderware ... 90 days</b>	
Thunderscan (high-resolution digitizer) . . . . .	179.
<b>Western Automation ... 1 year</b>	
DASCH RAMdisk 2000k . . . . .	459.

## DISKS

<b>Single-sided Diskettes</b>	
<b>Sony 3 1/2" Disks (box of 10)</b> . . . . .	15.
<b>MAXELL 3 1/2" Disks (box of 10)</b> . . . . .	15.
<b>Fuji 3 1/2" Disks (box of 10)</b> . . . . .	15.
<b>Verbatim 3 1/2" Disks (box of 10)</b> . . . . .	16.
<b>3M 3 1/2" Disks (box of 10)</b> . . . . .	18.
<b>Double-sided Diskettes</b>	
<b>Sony 3 1/2" Disks (box of 10)</b> . . . . .	23.
<b>MAXELL 3 1/2" Disks (box of 10)</b> . . . . .	23.
<b>Fuji 3 1/2" Disks (box of 10)</b> . . . . .	23.
<b>Verbatim 3 1/2" Disks (box of 10)</b> . . . . .	24.
<b>3M 3 1/2" Disks (box of 10)</b> . . . . .	25.

## INFORMATION SERVICES

<b>Compuserve</b>	
Compuserve Information Service . . . . .	24.

<b>Dow Jones</b>	
Dow Jones News/Retrieval Membership Kit	\$24.
<b>Source Telecomputing</b>	
The Source (subscription & manual) . . . . .	30.

## ACCESSORIES

<b>Clean Image Ribbon Co.</b>	
Clean Image Ribbon Kit . . . . .	12.
<b>Computer Coverup</b>	
External Disk Drive Cover . . . . .	4.
Imagewriter (II) Cover . . . . .	8.
Mac (Plus) & Keyboard (two covers) . . . . .	10.
<b>Diversions</b>	
Underware Ribbon (iron-on black transfer) . . . . .	9.
Multi-color Transfer Ribbon . . . . .	19.
<b>I/O Design</b>	
Imageware II (Imagewriter II carry case) . . . . .	59.
Macinware Plus (Mac Plus carry case) . . . . .	69.
<b>Innovative Concepts</b>	
Flip & File Micro (holds 25 disks) . . . . .	9.
Flip & File (holds 40 disks) . . . . .	18.
<b>Innovative Technologies</b>	
The Pocket Pak (holds 6 disks) . . . . .	9.
The Easel (holds 20 disks) . . . . .	13.
The Disk Directory (holds 32 disks) . . . . .	18.
The Library (carousel, holds 80 disks) . . . . .	29.
<b>Kalmar Designs</b>	
Teakwood Roll-top Case (holds 45 disks) . . . . .	15.
Teakwood Roll-top Case (holds 90 disks) . . . . .	22.
<b>Magnum</b>	
Mouse Mover (let your mouse ride!) . . . . .	14.
<b>Moustrak</b>	
Moustrak Pad (standard 7" x 9") . . . . .	8.
Moustrak Pad (large 9" x 11") . . . . .	9.
<b>Ribbons Unlimited</b>	
Imagewriter Black or Color Ribbons . . . . .	5.
Imagewriter Ribbons Six Pack . . . . .	25.
<b>Smith &amp; Bellows</b>	
Mahogany Disk Case (holds 90 disks) . . . . .	28.

## OUR POLICY

- We accept VISA and MASTERCARD.
- No surcharge added for credit card orders.
- Your card is not charged until we ship.
- If we must ship a partial order, we never charge freight on the shipment(s) that complete the order.
- No sales tax.
- All U.S. shipments insured; no additional charge.
- APO/FPO orders usually shipped 1st Class Mail.
- Allow 1 week for personal and company checks to clear.
- UPS Next-Day-Air available.
- COD max. \$1000. Cash or certified check.
- 120 day limited warranty on all products.\*
- To order, call us anytime Monday thru Friday 9:00 to 9:00, or Saturday 9:00 to 5:30. You can call our business offices at 603/446-7711 Monday through Friday 9:00 to 5:30.

## SHIPPING

**Note:** Accounts on net terms pay actual shipping.  
**Continental US:** For printers and drives add 2% for UPS ground shipping (call for UPS Blue or UPS Next-Day-Air). For all other items, add \$2 per order to cover UPS shipping. We will automatically use UPS 2nd-Day-Air at no extra charge if you are more than 2 days from us by UPS ground. **Hawaii:** For printers and drives, actual UPS Blue charge will be added. For all other items, add \$2 per order. **Alaska and Outside Continental US:** Call 603/446-7711 for information.

# Artificial Intelligence.

Guess who's coming to dinner?

You're having a party, right? And you need someone to round out a guest list. How about a person with real presence, let's say twentieth century, male, perhaps a bit controversial? Diamond Jim Brady? P.T. Barnum? I know—Albert Einstein. He'd be perfect! Relatively speaking. What a conversation piece!

Just call our latest contest winner, Robert Dorfman. He's got AI right on the shelf. He's maybe a little bald, and could use some arms and legs, but that's nothing Mr. Dorfman can't take care of with a little vinyl, plastic, fiberglass and some genuine human hair. But we should warn you—the famous professor won't come cheap. After all, in Mr. Dorfman's line of work, everyone has a price on their head.

## Double or nothing.

We've finally found a winner who's head and shoulders above the other entries. Mr. Dorfman's father started creating lifelike figures over thirty years ago, and now Dorfman Museum Figures can be found in exhibitions from Cape Cod to Singapore. There's even one of the boss himself, which he takes a few hairs off



each year to maintain the resemblance to his own distinguished, but receding pate.

Fortunately, Mr. Dorfman is no dummy. He uses *OverVUE* to categorize his 700 different heads, as well as to keep up with his 2000 contacts in museums all over the world. *Excel* comes in handy for budgeting, sales, and for creating detailed cost analyses on each figure.

## Contest Winner #6

**Name:** Robert Dorfman

**System:** Two Mac 512's;  
two MacPlus'

**Applications:** Maintains  
a database of 700 human  
heads.

And, what about you? How does your Mac help you get ahead? Your story could be worth \$500 in free add-ons and software. Write away!

# MacConnection™

"Our Connection."

14 MILL STREET, MARLOW, NH 03456 1-800/Mac&Lisa or 603/446-7711

©Copyright 1987 PC Connection, Inc. MacConnection is a division and trademark of PC Connection, Inc., Marlow, NH.

Please circle 82 on reader service card.

RECENTLY *COMPUTERGRAPHICS World*, a trade journal for the computer graphics industry, editorially asked "Where has Apple gone?" They were highlighting the fact that Apple has so far been a no-show in micro-based computer-aided design (or drafting)(CAD) software. They pointed out that Apple had everything going for it in the Macintosh with its high-resolution screen, its uniform user interface, its mouse, and so on. The editorial chided Apple for not being in the CAD marketplace where it belonged.

Until recently micro-based CAD software available has run exclusively on the IBM PCs and PC clones. And

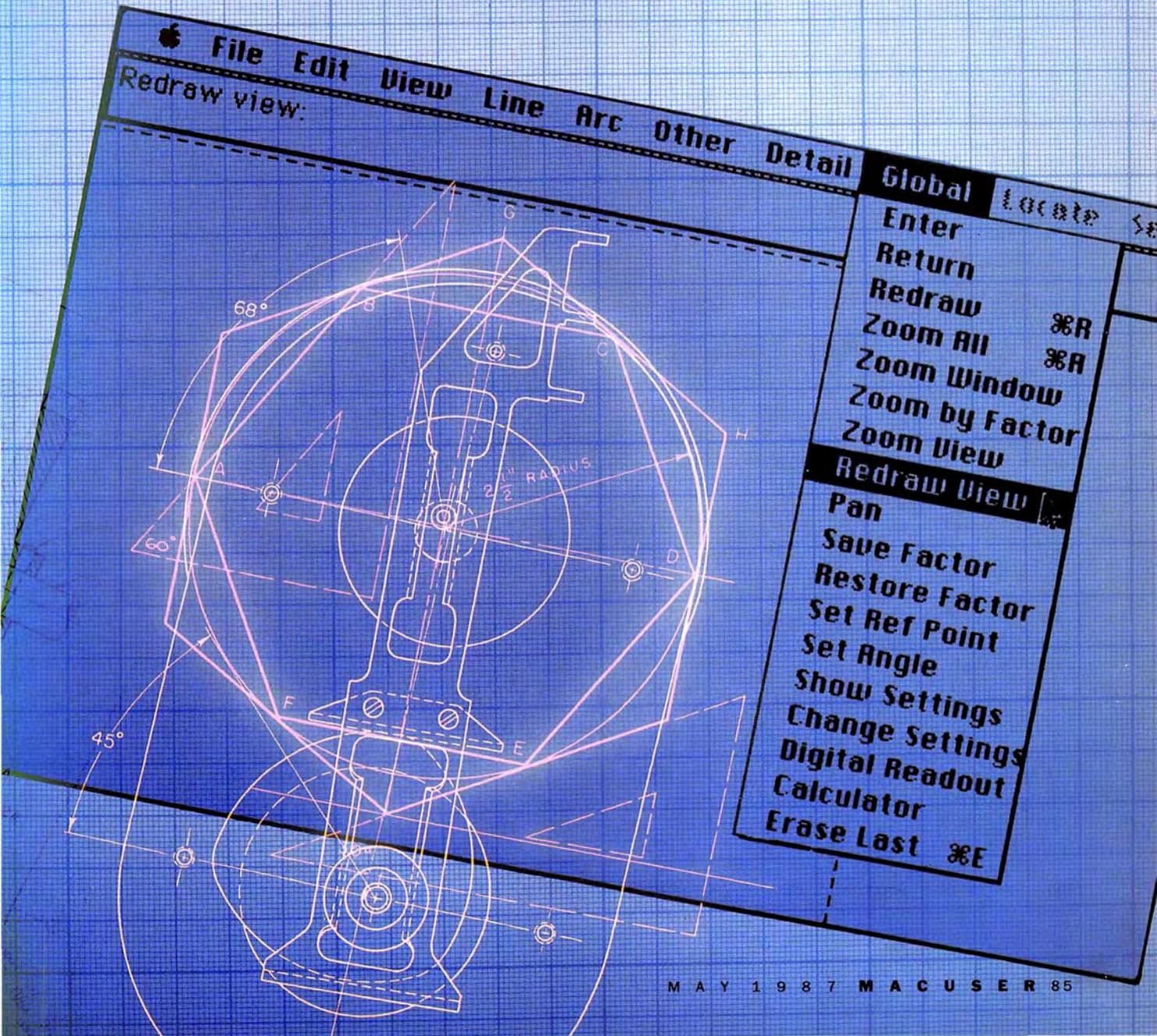
some of these software packages have become very sophisticated. Thanks to programs like *Autocad*, the industry leader, many "big" CAD companies have felt the impact of micros and mice on their market.

Now there's *EZ-Draft*, a \$2500, full-featured computer-aided drafting package by Bridgeport Machines. Bridgeport is a company well known for its large, numerical-controlled (read "computerized") milling machines that are used to create all kinds of metal shapes from car fenders to jet engine parts. This program should silence the critics about Apple's lack of "Real CAD" (Real draftsmen don't do FatBits?)

**WHAT ABOUT MACDRAW?**

Many Macintosh users who work with *MacDraw* think of it as a computer-aided design program. In reality it's more like a computer-assisted pencil when compared to dedicated CAD system capabilities. The main difference between *MacDraw* and *EZ-Draft* is the latter's ability to manipulate individual drawing elements with a greater degree of accuracy and flexibility. There is an analogy to this in the contrast between computer-aided drafting and "person-aided drafting" (i.e., pushing a pencil).

In computer-aided drafting there are usually 200 or more command



# DRAFTING MADE EZ

combinations to aid the designer. Everything from "insert line" to "create line tangent to a circle and perpendicular to a line." In PAD there are only two commands: place line and erase line.

When using PAD all calculations must be performed manually by the designer to ensure the accuracy of the resulting drawing. Once the drafter has laid down some graphite (drawn a line) there is little that can be done with it. *MacDraw* falls somewhere between CAD and PAD.

*EZ-Draft*, on the other hand, is a full-blown computer-aided drafting package. It allows you to create complex geometrical drawings without resorting to calculating and drawing the position of every line, arc or circle in a drawing. *EZ-Draft* also includes a very complete set of dimensioning commands to help create a finished drawing. In fact one of the main strengths of this package lies in its dimensioning abilities.

CAD consists of two distinct drawing phases: geometry construction and detailing. Geometry construction is the job of creating the object you are describing in picture form, using a series of primitive elements such as lines, arcs and circles. Detailing is adding notes, callouts, sectioning, creating auxiliary views and so on.

A word of caution is needed here. Unlike most Mac applications, *EZ-Draft* is not immediately user friendly. For example, take the procedure necessary to install it on a hard disk (and programs this complex really require hard disks, even if they'll run from floppies). To install *EZ-Draft* on an Apple HD-20 requires no fewer than ten steps. If you miss one the software will not work! Once you manage to install it correctly things get a little easier.

*EZ-Draft's* command structure is not as intuitive as many other Mac drawing programs. In defense of *EZ-Draft* note that in order to perform the many tasks required to create real working drawings, the program must contain hundreds of command combinations. *EZ-Draft* started out as a software package running on other computer systems including Apollo CAE workstations and the

File	Edit	View
New...	Erase	Set Work View
Open...	Move	Define New View
Close	Rotate	Change View Border
Save	Mirror	Change View Origin
Save as...	Scale	Change View Scale
Revert to Saved	Remove Segment	Change View Angle
Quit $\mathbb{Q}$	Remove Except Segment	Move View
Current Symbols	Divide At	Align Origin
Purge Symbol	Divide Equal	Align Border
Save Symbol	Trim End	Match Border
Open Symbol	Change Features	Delete View
Plot	Change Dimensions	Merge View
DoubleClick Off	Edit Line	Transfer View
From Clipboard	Edit Arc	List View
To Clipboard	Edit Curve	Name On-Off
Rectangular Grid	Edit Text	Border On-Off
Polar Grid	Edit Dimension	Layers On-Off
Show Grid On-Off	Blank	Colors On-Off
Snap Grid On-Off	Unblank	View On-Off
Set Trap Value		Detail View

Every cover for CAD work is provided with the *EZ-Draft* menus. The program has so much command flexibility that each pull-down menu has its own pop-up menu.

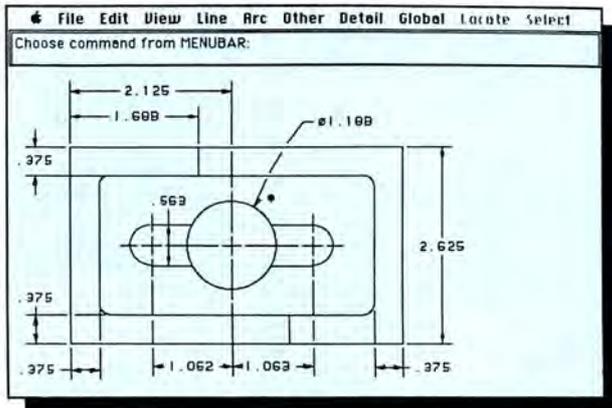
Line	Arc	Other
Lines To	Fillets	Points
Lines From-To	Circles	Curve
Rectangular Boxes	Concentric Circles	Ellipse
Drafting Lines	Circle By 2 Points	Slots
Double Lines	Circle Thru 3 Points	Hex by Size
Chamfer	Circle In 3 Lines	Hex by Flat
Infinite	Circle Edges	Polygon by Flat
Implied	Circle Center-Edge	Polygon in Arc
From-To	Circle Tangent-Edge	Create Symbol
Horizontal	Circle Tangent-Center	Create Instance
Vertical	Enter by Diameter	Change Instances
Angled Lines	Enter Clockwise	Smash Symbol
Parallel-Distance	Arc Thru 3 Points	Projections
Parallel-Point	Arc Ctr-SP-EP	Measure Distance
Perp Thru Point	Arc SA-IA-R-D	Angle by Points
Tangent-Perp	Arc SA-EA-R-D	Angle by Lines
Tangent Thru Point	Arc SP-EP-R-D	List Line or Arc
Tangent-Tangent	Arc SP-IA-R-D	Calc Perimeter
Tangent-Angle	Arc SP-EA-R-D	Calculate Area
	Arc SP-EP-R-D-Side	

Detail	Global	Locate	Select
Notes	Enter	Digitize	Any
Notes from File	Return	Endpoint	By Type
Notes to File	Redraw $\mathbb{R}$	Center	By Layers
Cross-hatch	Zoom All $\mathbb{R}$	Point On	By Color
Standard	Zoom Window	Intersect-1	By Group
Chained	Zoom by Factor	Intersect-2	All
Datum	Zoom View	Interpolate	All Visible
Horizontal Linear	Redraw View	Percent Of	Chain
Vertical Linear	Pen	Existing Point	All In Win
Parallel Linear	Save Factor	Angle On	All Out Win
Radial	Restore Factor	Angle Perp	Part In Win
Diametral	Set Ref Point	Angle Hor-Lock	Part Out Win
Angular	Set Angle	Angle Ver-Lock	Clear Last
Label	Show Settings	Angle Int-With	Clear All
Balloon	Change Settings		
Feature Control Symbol	Digital Readout		
Dynamic Dim On-Off	Calculator		
Set Similar to Dim	Erase Last $\mathbb{E}$		

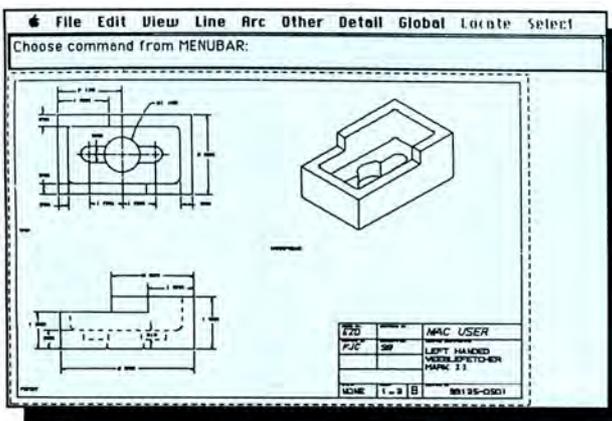
NEC APC computer system. It was ported over to the Mac. As such it brings along some of these other-system quirks.

When *EZ-Draft* is first launched you are presented with a pop-up menu that lets you select a standard drafting paper sheet size. In *EZ-Draft* you are always working on a drawing, so selecting drafting paper is always the first item of business. You don't have to open a blank sheet though, you can also select a previously saved drawing.

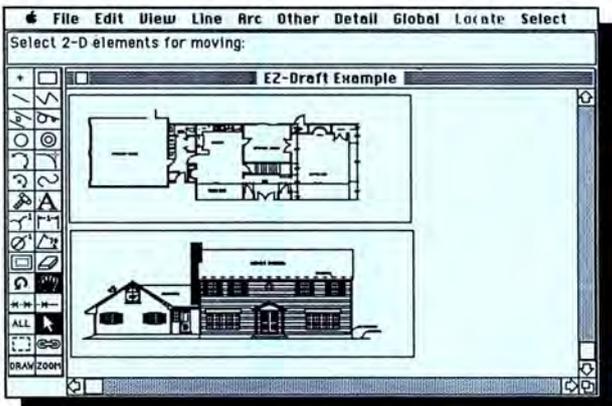
*EZ-Draft* also uses the Macintosh's pull-down menus. There's a problem in that there are not enough menus to go around. To solve this problem the folks at Bridgeport utilize what they call a pop-up menu system in conjunction with the standard pull-down menus. All commands have a series of options associated with them. For example, when you activate the Circle command from the Arc menu, a set of suboptions appears. These options work as command extensions, allow-



The zooming features of *EZ-Draft* allow control so that the designer may work close to the geometry of the drawing.



An example of a mechanical drawing showing the multiple orthogonal views containing both construction elements and detail elements (i.e. dimensions). Note the drawing border outline.



An architectural drawing of high detail shown under version 2.0, soon to be released.

ing the user to enter precisely the information needed by the command. Here's another example: If you select the Two Point option under the Circles command, *EZ-Draft* continues the command with the statement "of dist(ance) between." This option allows you to choose the radius of the circle by specifying two digitizes (digitized values) or some other XY coordinates.

This points up another difference between *EZ-Draft* and *MacDraw*.

The options available to enter the all-important coordinate information are not restricted to just mouse clicks on the screen; they also include explicit entry from the keyboard, and calculations from other elements already placed.

Keyboard input takes two forms: absolute coordinate entry and incremental coordinate entry. Absolute entry refers to a point on the drawing referenced back to the X and Y axes (i.e., X0 Y0). *EZ-Draft* refers to this as "explicit point entry."

Incremental entry refers to a difference in distance from some point on the drawing previously identified. This distance is commonly called the "delta" distance. *EZ-Draft* refers to this as "implicit point entry." *EZ-Draft* can accept polar coordinates (i.e., radius and angle) as well as Cartesian coordinates (i.e., X and Y).

## TAKING IN THE VIEWS

Once in the drawing the user must set up the "views" needed to create the geometry. View is a concept that will be familiar to anyone who has taken any courses in drafting. Views are analogous to the orthogonal projection views used to describe a three-dimensional object with a two-dimensional drawing. In fact, *EZ-Draft* uses standard orthogonal names such as Front, Right and Bottom for its view names.

When you define a view you must define its position and size on the drawing sheet — where X0Y0 is located and what the view name is going to be. A scaling factor can be applied to each view independent of all other views. This is another example of true CAD.

Almost all drawings are created in some scale other than one to one. Architects, for example typically work at scales of 1 inch = 8 feet or 1 inch = 4 feet. If the view size turns out to be too small or the scale selected was either too big or too small for the sheet, *EZ-Draft* makes it easy to change all of the view parameters. A whole menu is devoted to view manipulation and control. Views can have different scale values on the same drawing sheet.

## ALL KINDS OF GEOMETRY

Now on to the job of "layin' down some lines." Once a view has been created and selected as the work view you begin to create the graphics or geometry by using commands found on the Line, Arc and Other menus. There are lots of choices available. In the case of the Line menu there are 30 different ways to insert a line. Lines can be inserted as in *MacDraw*, using the mouse or by explicit input from the keyboard. One of the more interesting line insertion modes is the Double Lines command. This

# DRAFTING MADE EZ

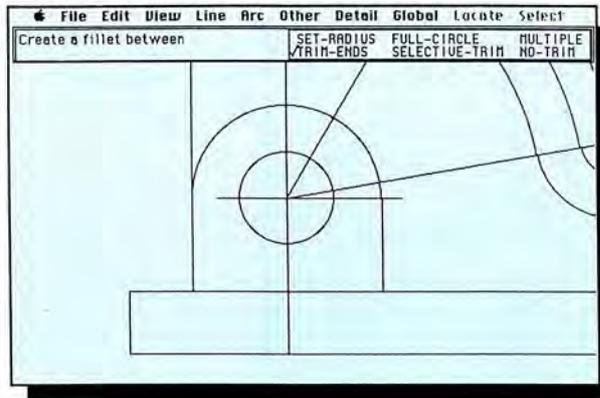
command allows creation of a pair of lines a set distance apart, handy for creating walls on architectural plans.

Lines can be drawn horizontally, vertically or at set angles, the angles being entered by either keyboard or calculated. Lines can be inserted with respect to other elements such as circles using commands such as Tangent-Tangent that draws a line tangent to two arcs or circles.

The Arc menu has a rich set of commands to create all manner of arcs and circles. Some commands, such as Circles, are straightforward. You provide a radius or diameter and a center point, and *EZ-Draft* draws a circle. A pop-up menu offers you three options as to how to enter the radius or diameter.

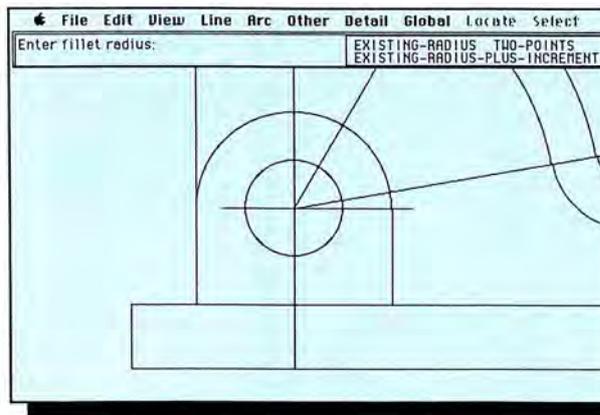
Arcs are among the most difficult of all drawings elements to place, because they have not only radii and origins, but also endpoints, like a line. The way this information is entered can be very confusing. Some large CAD systems give the user more than 30 different ways to enter an arc! *EZ-Draft* doesn't have quite that many, but there is still a dizzying array of arc commands. At the bottom of the Arc menu there is a series of commands followed by letter pairs. These letter pairs represent the parameters of the arc generated by that particular command. It can be a bit intimidating trying to keep up with all of the command combinations, especially without so much as rudimentary on-screen help. In this area *EZ-Draft* could really use some improvement. Virtually every other major CAD system has some sort of on-line help facility.

One very useful and well thought out Arc command is the Fillets. This command places a tangent arc at the intersection of two elements. The power of this command is demonstrated by the kinds of modifications you can do while placing your fillets. When you select the command, you're presented with a pop-up menu that includes such items as set radius (a very important aspect of a fillet), as well as how the command is to treat the two elements to which the fillet is to be applied. You simply identify the two target elements, the quadrant the fillet is to occupy and



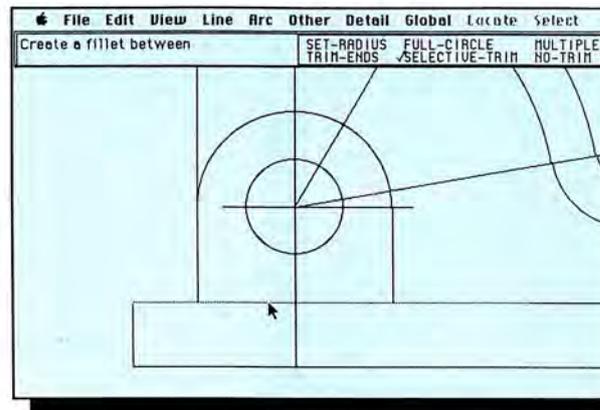
1

A step through of the Fillet command. After choosing FILLETS from the Arc menu, you are presented with further command selections on a pop-up menu. These allow the designer to direct how the Fillet will be inserted.



2

The Fillet's arc-radius must be set using the SET RADIUS option from the pop-up menu. The radius can be set by the options given in the pop-up menu or directly from the keyboard.



3

The lines or arcs that "mate" to the Fillet are identified by mouse selections. Note the highlighted line that was just selected.

the elements the fillet command is to trim.

The third element insertion menu is the Other menu. This menu contains commands for those element types other than lines or arcs, as well as commands to generate symbols.

Points (from the Other menu) are just that, points in space (or as they are sometimes known, zero length lines). These are handy to have around for complex constructions. Curves are similar to the curves available in *MacDraw*, although they

are actually Bezier splines here. These are mathematical curves similar to the French curves used in manual drafting. Bezier splines are very advanced elements and their existence in *EZ-Draft* says much about the maturity of this product. Other commands in this menu include Ellipse, Hex, Polygon and Symbols.

## AH YES, SYMBOLS

Symbols are a way to create uniform drawings. A symbol is a group

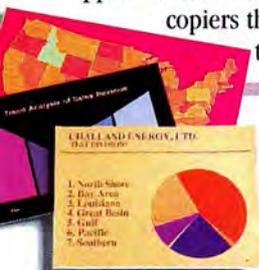


# The Power of Color.

## Until now desktop publishers could only dream of it.

Great minds create powerful ideas in color: Their thoughts may be blue sky, wave a red flag or make the competition green with envy. But, somehow the reports and graphics that spring from these color ideas rarely convey the life and energy of the original thoughts.

Kroy® brings the power of color to desktop publishing and business communications with a simple process compatible with virtually every laser printer, including the Apple™ LaserWriter, and most photocopiers that apply dry toner to the page.



*Presentation graphics like these are created on a laser printer, then enhanced for visual impact with KroyKolor.*

To bring your idea to life, add KroyKolor™ to the message. There are 60 vivid colors and shimmering metallic foils to match the mood and add impact to your business communications.

The matte and gloss colors range from a cool blue, to a blazing, fire-engine red. Especially exciting are the 14 metallic

foils that perfectly simulate foil stamping on your logos, invitations, letterhead, presentation folders, newsletter, artwork and mock-ups. The dazzling metallics range from polished gold and silver to burnished aluminum and copper.

*Signs and display graphics of all types can be created on a printer or copier, enhanced with KroyKolor, then laminated with clear plastic or mounted into a Kroy sign frame.*



Applying KroyKolor is an easy (and amazing) process.

After your original has been printed on a laser printer or photocopier, you insert it into a sheet of KroyKolor transfer film, feed it through the processor, peel away the transfer film and you have vibrant color in seconds.

The real fun begins when you create multi-color business graphics (such as a pie chart with each slice a different color). To do this, cut pieces from various colors of transfer film and place the pieces onto the areas of the graphic you wish to highlight. That's how the multi-colored examples shown in this ad were produced. It's possible to produce multi-colored presentation graphics in a few minutes which would have taken

several days (and several hundred dollars) to produce at a print shop.

Kroy, a leader in graphics technology for 27 years, also provides quality papers to make your color presentations look even better.

Fulfill your dream of desktop publishing in color today for just \$995, the suggested retail price of the KroyKolor processor.

KroyKolor film is available in boxes of 10 or 100 sheets and is priced at about 50¢ per sheet.

For information or to place an order call toll free:

**800-521-4997**

In Arizona 602-951-1593

Weekdays 8am-5pm MST



*The KroyKolor processor accepts materials up to 12" wide. KroyKolor transfer films are slightly larger than an 8½-11" page, providing edge-to-edge coverage.*

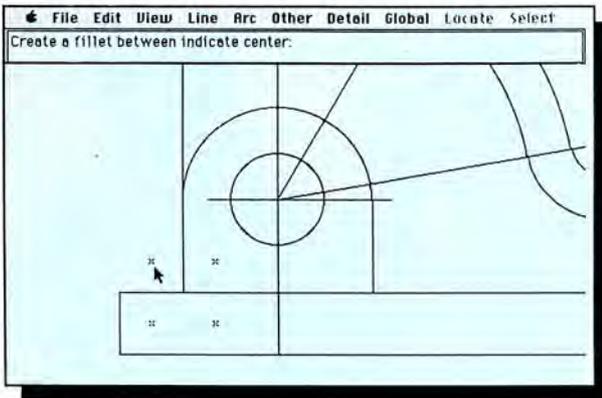
## KroyKolor™

A product of Kroy Sign Systems  
7560 East Redfield Road  
Scottsdale, Arizona 85260

Apple LaserWriter is a trademark of Apple Computer Inc. Kroy and KroyKolor are trademarks of Kroy Inc. Arizona residents add applicable sales tax. Prices do not include UPS shipping. KroyKolor is available from computer retailers and Kroy Copy Centers. Dealer inquiries welcomed.

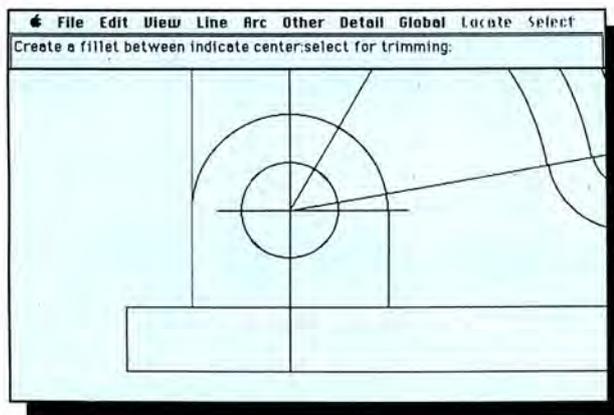
Please circle 294 on reader service card.

# DRAFTING MADE EZ



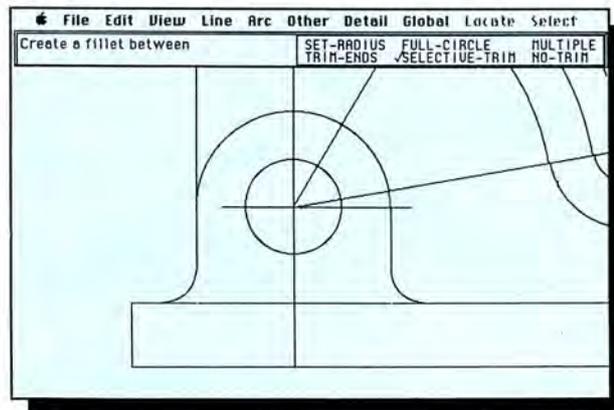
4

The quadrant in which the Fillet is to be built is selected by clicking at one of the four indicators. In this case we are choosing the upper left point.



5

The designer is now prompted to select the line that needs to be trimmed back to the end of the Fillet.



6

The final result of the Fillet command used twice. Note the trimming of the two vertical lines to the arcs' tangent point.

of elements representing an object such as a door or a valve that is used repeatedly. In other systems symbols are called as cells, library parts or figures.

Symbols are used similarly to the Clipboard/Scrapbook technique of *MacDraw* and *MacPaint*, the main difference being in how the program keeps track of the symbol contents and locations. In *MacDraw*, when you paste something into the drawing, all of the elements in the Clipboard are copied into the drawing.

With *EZ-Draft* symbols, only key information is stored each time the symbol is inserted. Key information includes such things as the scale at which the symbol was inserted, the angle and the XY location. The actual elements of the symbol are stored in the library area of the drawing. This allows the program to update the screen quicker, and gives you more flexibility.

Let's say a hex bolt pattern was stored in the drawing's symbol library and the hole drawn was too

small. The Change Instances command allows you to change the elements stored in the library for a particular symbol. All occurrences are updated.

Another important command on the Other menu is Projections. This command allows you to project key elements from one view into another view, working with the orthogonal names given to each view. The major problem with it is its complexity. In order to properly project an element into another view you must set up such parameters as depth of projection, whether edges are to be created, and so on.

## DETAILS, MERE DETAILS

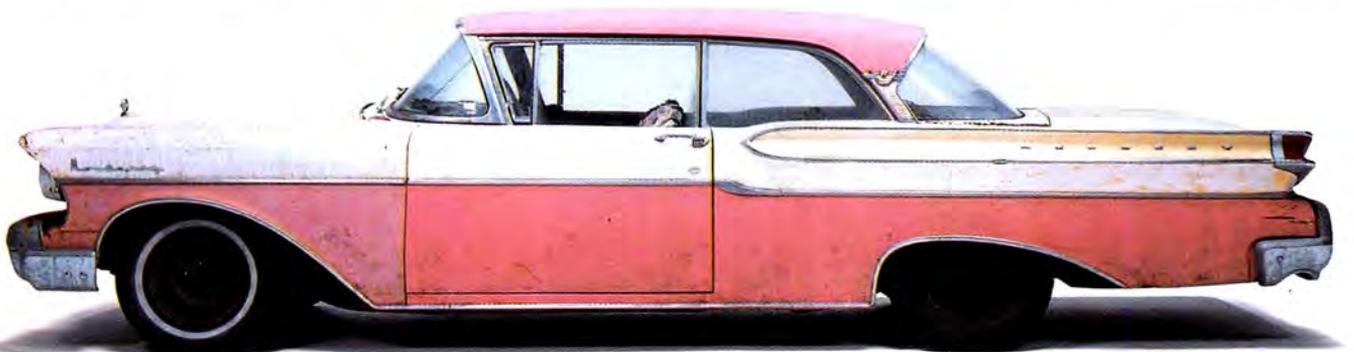
Once the geometry has been created, the next step is detailing the drawing. To speed up a usually tedious part of drafting, *EZ-Draft* has a whole menu full of useful commands. Straight text is handled with two commands: Notes and Notes from File. Notes allows you to insert text freeform, anywhere on the drawing, much like the text mode of *MacDraw*. Note, however, that the text is entered in the command area of the screen and is often cut off from view before you can see all of it. This can cause problems when trying to judge where to break text.

Notes from File accepts text from a text file on disk. The only drawback to this command is the text file must have the filename extension ".TXT" to work properly, an indication of *EZ-Draft's* "big system" heritage. Text inserted into the drawing can be modified by the Edit Text command of the Edit menu. Text height, width, slant (i.e., italics), justification and text content can be changed. But you can't change fonts! You're stuck with the default font. The ability to specify and change fonts is very important, and should be near the top of Bridgeport's wish list for the next version.

The most important part of the whole drawing process is dimensioning. It must be done with the greatest care. Nothing scares a job leader more than finding a worker applying a ruler or scale to a blueprint.

Dimensioning is an area where  
*(continued on page 192)*

**YOU  
WOULDN'T  
DRIVE A  
CLUNKER TO  
THE OFFICE.**



# SO WHY DRIVE O

What BMW has done for the automotive industry, Mirror Technologies has done for the hard drive industry. We don't simply crank out drives to meet current demands. We carefully engineer them to exceed yours.

Our products are extremely quick — taking you from 0 to 60 pages in a heartbeat. They handle like a dream as they wind through deskloads of information. And their reliability is unmatched. Built to go full throttle day after day. So you can overtake the pack. Instead of just running with them. So don't settle for a hard drive riddled with compromise. But rather, choose a drive built by a company that looks on compromise as a 4-letter word.

## WE'VE GOT A GREAT TRACK RECORD.

Before you buy a drive from a company, you should take a look at their history. Ours is quite impressive.

We were the first to introduce an 800k drive for the Macintosh. First with the 20 meg tape backup. And first with the 85 meg, 172 meg and 340 meg hard drives.

Our products are selling to companies like Honeywell, AT&T, 3M and Apple. Yet we've also pleased some companies that you probably haven't heard of. Like Don's Dog Service, Anderson's Nursery and Himalayan Expeditions. Who knows, maybe now that they have the right tools, these companies, too, will become household words.

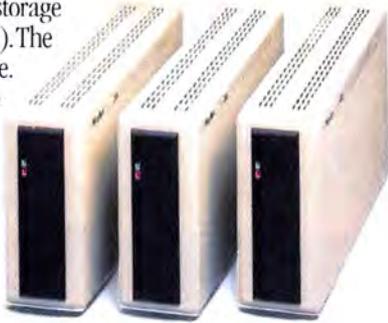
## MAGNET 20X, 30X AND INTRODUCING THE 40X.

Here are all the choices for storage you need (20, 30 and 40Mb). The 20X, perfect for everyday use.

The 30X, 50% more storage for the price of our competitor's 20 meg drives. And introducing the 40X, offers all the storage you need for power computing. All cooled by our extra-quiet fan. They sit beside your Mac, so the system won't heat up.

Daisy chain up to 7 units. They come with backup utilities and optional MacServe networking software (a \$250.00 value).

Preformatted, so just plug them in and run.



## MAGNUM TAPE 20. INTRODUCING THE MAGNUM TAPE 40.



For the serious user who can't afford to lose data. These "safety nets" keep a portable, permanent record of your data. So reliable, the Library of Congress uses us to backup their most critical data. Free software update policy so your tape drive can be updated as we update ours. We're the only one to deliver file by file, volume and

incremental backup. With incremental, you backup *only* the data you've changed since your last backup. These totally secure systems run silent and cool. When we designed the new Tape 40, we worked side by side with Apple and 3M so it would be compatible with any products released by Apple in the future.

## THE MAGNUM 800.

The first 800k drive introduced for the Mac. Thousands of satisfied customers worldwide. Offers great speed and value. It's quiet and comes with a one-year warranty. Push button eject mechanism. Compatible with the Mac 128, 512 and Plus. Reads and writes 400K, 800K diskettes.



# E IN THE OFFICE?

## THE MAGNET 40/40.

A very fast 40 Meg hard with a dependable 40 Meg tape backup as a "safety net." Sits under your Mac so it doesn't take up extra space. The premier drive/tape backup combination in the market. Backup file by file, volume or incrementally. With incremental, you can usually backup your daily data in under 4 minutes. Comes standard with MacServe (\$250.00 value) to allow you Multiuser, Multitasking. This drive is based on the NEC drive and the 3M Tape 40 — two leaders in their respective industries.



## WHEN YOU WORK IN THE FAST LANE, YOU CAN'T AFFORD TO BREAK DOWN.

To win in today's fast and furious corporate arena, you need a drive that can survive the grueling pace. You need a well built machine.

Well you'll be happy to know that our drives are so well built that we were the first to introduce a full-year warranty. And of course this warranty is still policy today. Plus each unit comes with a Quality Assurance Report detailing every step of production. And finally, before a drive is allowed out the front door, it is tested for 24 continuous hours to insure its durability.

Our "pit crew" is equally dependable. If you ever have a problem, we have trained experts standing by. Just give us a call, toll free. And we'll have you up and running in no time. Flat.

## WE'RE REVVING UP FOR THE FUTURE.

The Macs of tomorrow are just around the corner. And with Mirror Technologies, you can hit the ground running when they arrive.

Currently, we're shipping more drives than any other company except Apple. Like the 85X, 172X, the MagNet 40/40 and tape drives, too.

When File Servers hit the streets in January, we were there with big enough hard drives to tie dozens of Macs together. Other drives would blow an engine trying to do that.

And it's no secret that Apple is about to introduce bigger and better machines. We're ready for them, too. Because we're not waiting for the future to come to us. We're going out half way to meet it. That way, we come back with products that'll let you blow the doors off all those who remained standing still.

## MIRROR TECHNOLOGIES Inc.

2209 Phelps Road, Hugo, Minnesota 55038 612-426-3276

Please circle 188 on reader service card.

Peripherals Plus, Inc.  
350 des Erables, Lachine,  
Quebec, H8S 2P9  
(514) 367-3060

## MAGNET 85X, 172X AND INTRODUCING THE MAGNET 340X.

Three times faster than standard hard drives because we use voice coil technology. These combine blistering speed, enormous capacity with tape backup and Multiuser, Multitasking software (includes MacServe, a \$250.00 value). All 3 are combination drives with integrated tape backup. Powerful, compact, quiet alternatives to the AST 4000. The 172 offers twice the capacity for the same price. (Based on the November 1986 suggested retail pricing.)

AST 4000 is a trademark of AST Research Inc. Macintosh is a trademark of Apple Computers Inc.



# Banking On Your Mac

Nothing will ever take  
all the sting out of  
taxes, but MacMoney  
can certainly help  
reduce the pain.



BY BONNIE L. WALKER

EVERY YEAR AS TAX TIME approaches, a lot of people are hunched over stacks of paper and receipts spread over their dining room tables. This year was probably no exception and next year, thanks to the new tax laws, promises to be even more fun. I, on the other hand, spend tax time merely copying totals from a neat pile of printouts generated by *MacMoney*. Maybe it's time for you to think about taking an easier way out, too.

*MacMoney* is a fine-tuned version of an already highly rated financial management package, *Home Accountant for the Macintosh* (see "Bread and Butter Budgeting," *MacUser*, April 86). The authors of both programs, Mike Farmer, Colin Jameson, George W. Lee and John Tinsman had previously licensed the code to Arrays, Inc./Continental. Now they've rescinded that license, refined their program, revised the documentation and released the improved product under a new name.

Superficially, *MacMoney* looks very much like *HAMac*; however, more than 30 changes have been made. The changes that are particularly significant to current *HAMac* owners and potential buyers are:

- *MacMoney* requires a 512K Mac; *HAMac* could be used with a 128K Mac and an external drive.

- *MacMoney* works with the Mac Plus;

- LaserWriter support is included.

- If you have a Mac Plus and a two-sided disk, you can increase the number of transactions in one year from 3000 to 6000.

- *MacMoney* is not copy protected. The original *Home Accountant* was, although the protection was removed from the most recent version.

#### SMALL FIX FOR A BIG PROBLEM

Perhaps the most important change is a small bug fix that you might never notice. If, for some

reason, you exit *MacMoney* without selecting QUIT there is now a 90 to 95 percent chance that your data will remain intact. The reason is *MacMoney's* new data base integrity which runs a check when you start up the program to make sure your End of File markers are in the right place.

### NOT JUST AN ELECTRIC CHECKBOOK

*MacMoney* is much more than an electronic checkbook or ledger; it is a financial management system with powerful planning tools. Its three categories are: data entry, data retrieval (reports), and "what if's." And you get the program's power without complexity. *MacMoney* is faithful to the Macintosh interface so it's easy to get started. All of the data entry prompts are logical and in plain English.

*MacMoney* is a standard double entry accounting system, that all related files are properly updated when you enter data. For example, if you write a check to a credit card company, *MacMoney* deducts the amount from the checking account's balance.

### GETTING STARTED

New users can pick up their checkbook stubs, boot up *MacMoney*, put in a blank disk for data, select the default category "Personal Checkbook" and immediately start to enter information. Checks are automatically dated and numbered, (deposit slips are also numbered automatically) and your current balance is always displayed. You enter the payee, amount and category information — category and amount are required entries. I don't recommend this, but if you want to, you can create categories "as you go."

One of the more convenient new features is that the date of the last transaction appears on the check when you open an account instead of defaulting to the current date. Since I always start where I stopped, it's much less bother.

Also new in this version are different backgrounds for the check and the deposit slips to help people remember which they are entering. In the old program they looked a lot alike. This helps when you've just

recorded a deposit and then forgotten to switch back to the withdrawals to resume entering. The only solution in the earlier version of the program is to use the Transaction Register to change all the deposit amounts to zero and then re-enter the information correctly. The different backgrounds should at least give you fair warning to switch to the appropriate part of the program before you get bogged down in a time-consuming workaround.

### CATEGORIES

Although you can create categories on the fly, it makes more sense to sit down before you start entering data and make a list. *MacMoney's* manual includes suggestions to help you get started.

*MacMoney* allows you to create up to 200 categories of seven types. Each one must be designated as expense, bank account, credit card, asset, liability, cash or income. Once created, their names can be changed, and balances can be changed by selecting ADJUSTMENTS from the Transaction menu. The only thing you cannot do is delete a category once a transaction has occurred involving it. You will have to decide which type you want each category to be, and it's not always cut and dried. For example, you might assign the type "credit card" to your gasoline cards. The problem is that *MacMoney* doesn't include credit cards in your Income and Expense reports. To get around this, create a credit card category for each card and other categories called "Gasoline," "Maintenance," etc. to assign to each credit card transaction.

You can also prepare a budget for a category. Just select the category from the list and type COMMAND/B. If you decide to prepare a budget, your reports and graphs will show you whether you are over or under budgeted amounts.

Most people write checks to cover more than one type of expense. *MacMoney* provides a means for dealing with these situations through split transactions. At the bottom of each check or deposit transaction, there is a Split button which expands the transaction form to accommodate up

to ten separate amounts and categories. Use Split transactions when you pay your mortgage or other loans so that you can keep track of how much you are paying on the principal and how much goes to interest or insurance.

Another common Split Transaction is when you write checks at the grocery store, partly for food and partly for cash. Recording this as a Split Transaction gives you a more reasonable idea of how much you're really spending on groceries.

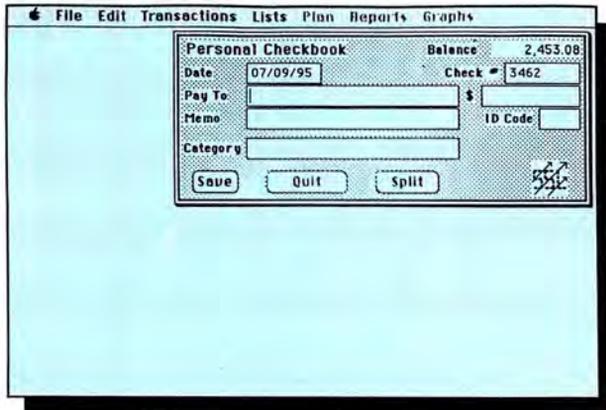
A major problem with Split Transactions is the lack of a space for a memo or ID code. Also, a transaction must be entered as split the first time it's entered, even if you don't have the correct information at that time. You won't be able to come back later and split up the information, although you can, of course, come back and correct it.

One of the nicest features of *MacMoney* is that it allows you to save data by the month without closing a previous month's transactions, as the old Apple II version of *Home Accountant* required you to do. When statements come in from past months, simply enter the appropriate date and the information. The register lists all items, checks, deposits, charges in the order that you entered them. The Custom Transaction Report, however, will allow you to sort items by date.

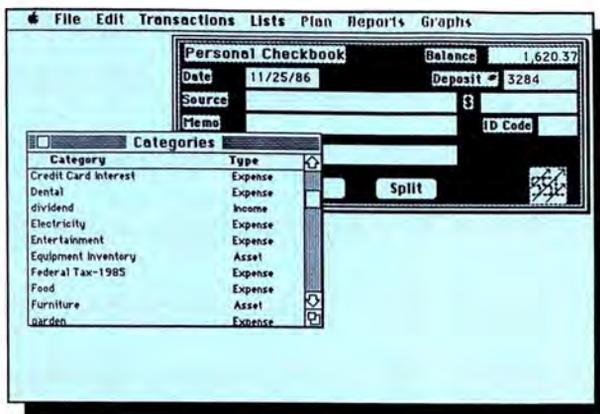
One important feature under the File menu is Start New Year. *MacMoney* transfers the previous year's data to the new System, as well as all your categories, names, ID codes and budget information. At the start of each year, it's important to review categories and make any changes before starting new transactions. Once a transaction is made, the category cannot be deleted. *MacMoney* saves the totals from the previous year in each category for each month and the year as a whole to use in comparisons in the reports and graphs.

Each time you launch *MacMoney* you'll be told when you last used the program, how many automatic transactions from the list you previously created are due and how full your transaction file is.

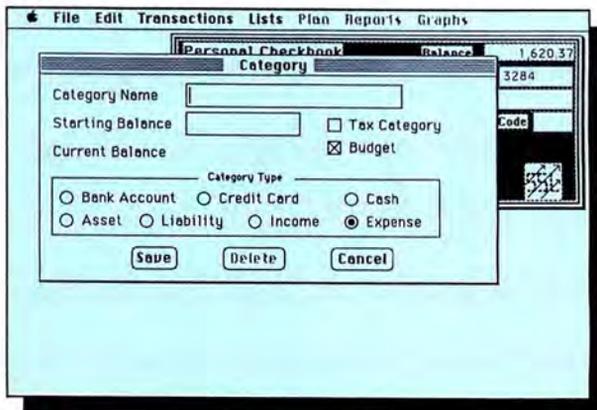
# BANKING ON YOUR MAC



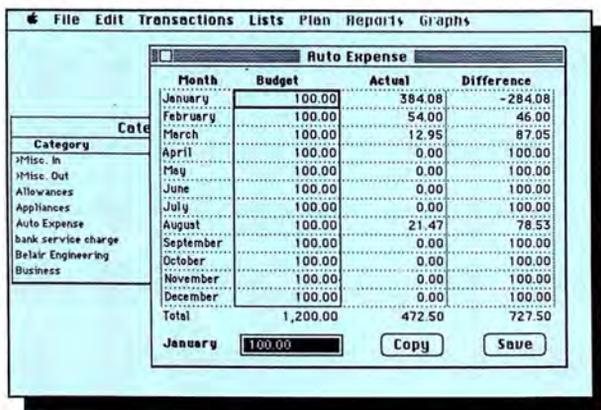
Select a bank account such as Personal Checkbook, one of the system's default categories to begin using *MacMoney*. Each transaction must have an amount and a category. Click on the Split button to assign amounts to as many as ten different categories.



Because the deposit slip is similar to the check, the background pattern is different to help users distinguish between them. Deposit transactions can also be assigned an ID Code and can be Split among as many as 10 categories. Category lists can be kept on display for easy reference. Click on a category and it automatically appears in the category frame on the check or deposit slip.



Type a unique name and enter a starting balance if desired. Select a type and click Save to create a category. Category types cannot be changed, and once a transaction has been made affecting the category, it cannot be deleted.



Enter an estimated budget amount for each month in which you expect an expense to occur. When you assign a transaction to the category, *MacMoney* will post the information here. Reporting options allow you to compare "actuals" to budgeted amounts. You can also use the budgeting feature to calculate the amount you expect your assets will appreciate or depreciate.

For those bills you pay each month in the same amounts, *MacMoney's* Make Automatic feature serves two purposes. First, it's quicker; second, it provides *MacMoney* with information so that it can remind you when bills are due. Ideal expenses to make automatic are mortgage and loan payments, insurance premiums and bank charges.

You create your Automatics at the time you write a check. You fill in all the details (payee, amount, category, etc.) and then select MAKE AUTOMATIC from the bank account menu. You'll also indicate which days and months the account normally comes due. Every time you open *MacMoney* after that, it will notify you if there are any Automatics due. Select AUTOMATICs from the Transaction menu and *MacMoney* will fill out the checks, deposits or service charges for you. Keep in mind that *MacMoney* selects the next check in your register and numbers it accordingly. However, you can edit the check number, amount and other data if it becomes necessary.

## READ IT AT YOUR LEISURE

Reporting is one of *MacMoney's* strongest features. In fact, creating the many varieties of pie charts and bar graphs that are possible can get to be addictive. One handy feature is the ability to plot trendlines on all your graphs. Simply select TRENDLINE from the Report menu, and a trendline will appear on all graphs you create. *MacMoney* senses even slight trends and can alert you that your utility bills are on the rise far before you'd ordinarily notice.

There are several default reports that you get simply by pulling down menus and clicking buttons. These include the Income and Expense Statement, the Personal Balance Sheet, This Month's Activity and a Bill Payment Summary. The Bill Payment Summary lists all your Automatics and the status of each.

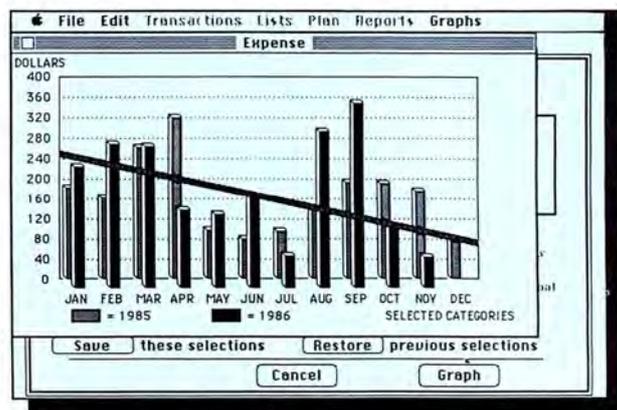
You can also create customized reports and graphs. You might wish to list out all medical transactions or all charitable contributions, for example, and use these reports as attachments to your income tax return.

One of *MacMoney's* few limita-

Click on the Split button and the Split window appears. Enter up to 10 categories and amounts. The total must add up to the amount entered. You may enter amounts and let *MacMoney* total the list for you. Then click in the transaction's amount window to record the total.

*MacMoney's* opening screen informs the user the date the System was last used, the number of automatic transactions due and the status of the transaction file.

To create an automatic transaction enter information on a check and then select MAKE AUTOMATIC. Select the day of month and months when the payment is due.



*MacMoney* compares utility bills for two years. The graph depicts obvious weather differences between the two years. April 1985 was cold and so were October and November. In 1986, July was cool while August and September were unseasonably hot. *MacMoney* also senses a downward trend in the overall cost of utilities as illustrated by the Trendline.

tions is that Cut, Copy and Paste work with text and with calculator results but not graphics. The only way to capture a screen graphic for use elsewhere is to save the window as a *MacPaint* document, using COMMAND-SHIFT-3.

## PLANNING THE FUTURE

Although you'll mostly use *MacMoney's* data entry and reporting features to keep your actual books, there are planning features to make the true finance-a-holic burn the midnight oil. Some of the "what if" capabilities include Retirement Planning and Future Value/Goal.

Even the most down-to-earth user will appreciate the Plan's menu Loan Planning option. It lets you quickly calculate the payment and cost of loans with various amounts, lengths and interest rates, and print out accurate amortization tables that you can use to split mortgage and loan payment into appropriate categories. *MacMoney's* current formula produced a loan schedule for me which was accurate to the penny when matched with my bank's figures.

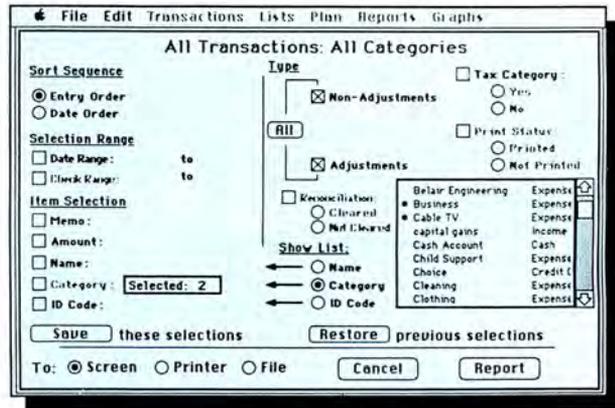
## TRADING IN DATA

Small business owners will appreciate *MacMoney's* new ability to export data to several popular Macintosh applications. Each report offers three options for presenting the data: screen, printer and file. *MacMoney* text files can be opened and displayed within *MacWrite*, *Word*, *Multiplan 1.1*, *Excel*, *ReadySetGo* and *Helix*. Specific instructions for each application are included in the manual.

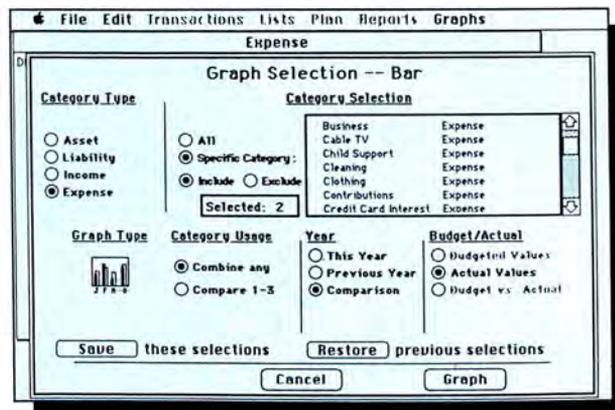
Also, any previously entered *HA-Mac* data is completely compatible. Just start up *MacMoney* with your old data disk. *MacMoney* will make the required conversions. Even if you have completed last year's transactions before you convert to *MacMoney*, you'll want to "Start New Year" with the previous year's data files to make yearly comparisons.

One of the best things about a financial package is help in preparing your tax returns. You set up the categories and enter the information, and *MacMoney* will report your income, withholding taxes and other

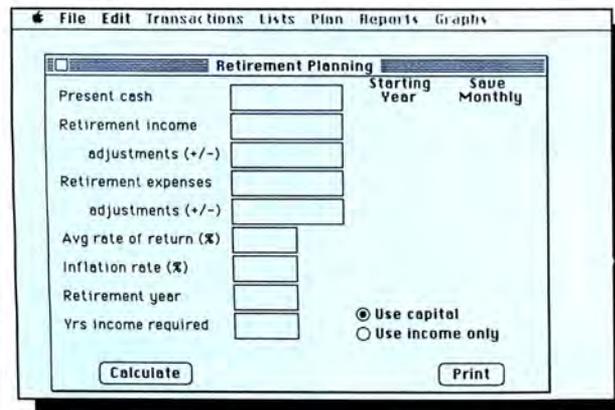
# BANKING ON YOUR MAC



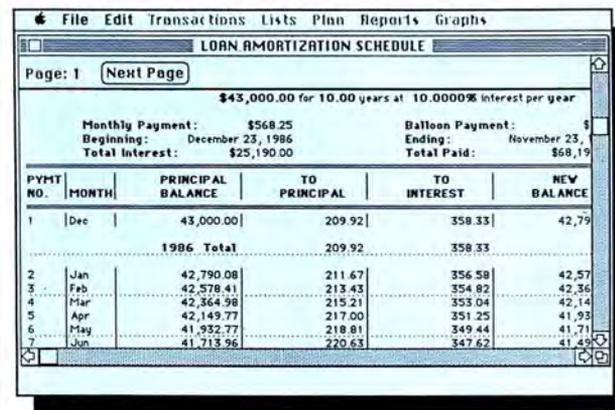
Customized reports and graphs are easy to set up and provide many options. Select a category type, a specific category or several categories. Compare data to a previous year or to budgeted values.



Custom Reports provide great flexibility. Print out all transactions, transactions in one or more categories or transactions which took place during a particular period of time. Search and print transactions by Memo, Amount and Name.



Supply the information about your situation and in seconds *MacMoney* will tell you exactly how much you must save each month to make your retirement plans a reality.



*MacMoney* calculates an accurate amortization schedule. You type the loan amount, the length in years or months and the interest rate. The program calculates monthly payments and the total interest you will pay. It also totals the amount of interest you will pay each year of the loan and the current account balance.

deductible items or categories. For additional help at tax time, financial planners will be happy to know that *MacMoney* is also compatible with the 1986 *MacInTax*.

## THE CRASH OF '87

Customer support for your financial package may be more important than for other kinds of applications. Over the years as I used *Home Accountant* on my Apple II, then on the Macintosh, I've twice had occasion to call for help because I lost data and didn't want to enter nearly an entire year's transactions over again. (No one can emphasize enough how important backing up is with financial data.) A system crash has the potential for wiping out not only the data you just entered but making the entire disk unusable.

Even though it's usually your fault if you lose a year's work just before taxes are due, good customer support is available by telephone. Survivor Software loses a couple of points because they don't have a toll-free number. They gain points, however, because the authors themselves answer the phone and take a sincere interest in your problems.

*MacMoney's* user friendliness derives from the fact that the authors are constantly using information they receive from their customers and other sources to enhance and update their product. Prior to the current update, they reviewed all the suggestions made through customer support requests. From that list, they initiated approximately 30 of the most-needed changes in *MacMoney*.

Since they are making a list for their next upgrade, customers should let them know what kinds of changes they'd like. Here's my wish list.

- Make it possible to sort and print transactions right from the checkbook. I'd like to see my transactions in order by date, even though I don't enter them that way.

- Give the user the option to decide whether to use budget figures from the previous year or the actuals from that year. This was a feature in the Apple II version of *Home Accountant* that I miss. According to the authors, some people did not like

(continued on page 194)

**\$39  
Trial**

# Value Line's new software: For the complete investor.

Value Line's software lets you get the whole investment picture in clear focus.

Simply awesome  
—T.J.M.

Amazingly  
complete —B.A.L.

A quantum leap  
forward —J.A.H., Jr.

A valuable, easy-to-  
use, foolproof tool  
—C.R.R.

Well done and very  
useful—R.S.E.

Editor's Choice-PC Magazine



VALUE/SCREEN Plus packs a lot of investment power into one integrated investment package. **Stock Selection:** You can instantly screen the entire VALUE/SCREEN Plus database for all the stocks that meet your unique, demanding investment criteria. **Stock Reports:** You can get stock reports, just as fast. **Portfolio Management:** You can enter your own stock ownership information to create a powerful computer-driven portfolio. You can even track hypothetical investment portfolios to evaluate stock selection criteria. **Report Generator:** You can get formatted or customized reports up to 230 columns wide. **Spreadsheet Files:** You can load any of this data into spreadsheets.

Microsoft Excel and Jazz are among the popular spreadsheets to which VALUE/SCREEN Plus can be linked.



Excel is a trademark of Microsoft, Inc. Jazz is a trademark of Lotus Development Corp. VALUE/SCREEN Plus is a registered trademark of Value Line, Inc.

**\$39 Trial** If you act right now, we'll send you the complete software package—which regularly sells for \$95—for only \$39. And we'll include 2 monthly data disks worth \$29 each, absolutely free. There are no timesharing charges, since up-to-date data is mailed to you regularly on disk.

**800-521-5257**

- I have an Apple Macintosh, 512K or Plus, and want to take the \$39 two-month trial.
- Please send information on the [ ] IBM or [ ] Apple version.
- My check for \$39 is enclosed (NY residents, add sales tax)
- Please bill my (circle one)  
 Visa MasterCard American Express

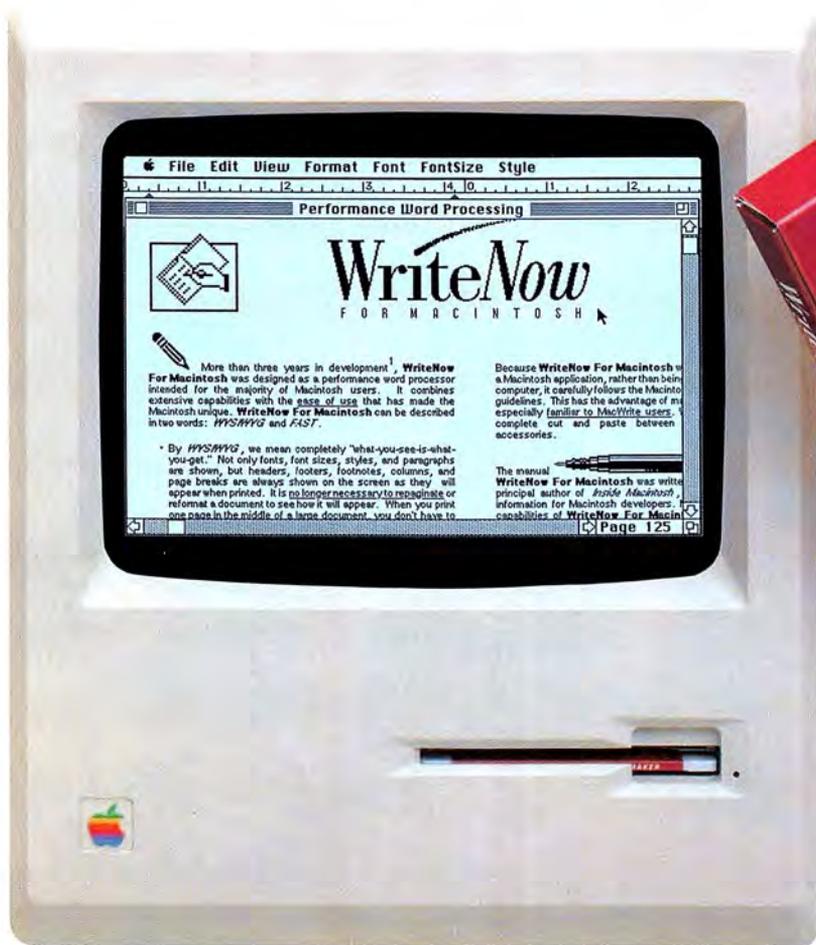
Account# \_\_\_\_\_ Exp. Date \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City, State, Zip \_\_\_\_\_

Tax-deductible if used in managing your investments. Purchase is nonassignable.  
**Value Line Software**  
 711 Third Avenue  
 NY NY 10017



Please circle 90 on reader service card.

# Best New Word Processor for the Macintosh...



*"This is the word processor that we designed and built Macintosh for."*  
**Steve Jobs**

**Introducing WriteNow™ For Macintosh™**, the next step in word processing. WriteNow For Macintosh combines the power you would expect from a dedicated word processing system with the ease of operation that you're used to with MacWrite™.

**□ Performance.**

This program is fast. Very fast. *Especially with large documents.* Saving, scrolling, finding and replacing, and printing happen *lightning-fast*. Regardless of document size, repagination is automatic and reformatting is instant.

**□ On-Screen Multiple Columns.**

You can do true *WYSIWYG* (What-You-See-Is-What-You-Get) editing in *one, two, three, or four columns* directly on-screen. Page breaks and characters from 4-127 points are displayed on-screen as well.

**□ 50,000-Word Spelling Checker.**

A fast, on-line 50,000-word spelling checker is included. You can add or delete words and create "personalized" dictionaries. The spelling checker also has a handy "guess" feature that recommends the correct spelling of misspelled words.

**□ Headers, Footers, and Footnotes.**

Now you can display a unique header and footer for each page. Footnotes can be automatically numbered and edited on-screen as well.

**□ Unlimited Open Documents.**

Open as many documents as memory allows, making cutting, pasting, or reviewing between windows a breeze.

**□ Embedded Graphics.**

Graphic images can be part of a sentence,

part of a paragraph, or a separate paragraph, and can be proportionally or freely sized.

**And Much More.**

To learn more, contact your local computer dealer today.

*Suggested Retail: \$175  
 Runs on any Macintosh.  
 (Macintosh 512K or  
 larger recommended  
 for spell checking.)*

**T/Maker**  
**T/Maker Company**  
 1973 Landings Drive,  
 Mt. View, CA 94043  
 (415) 962-0195

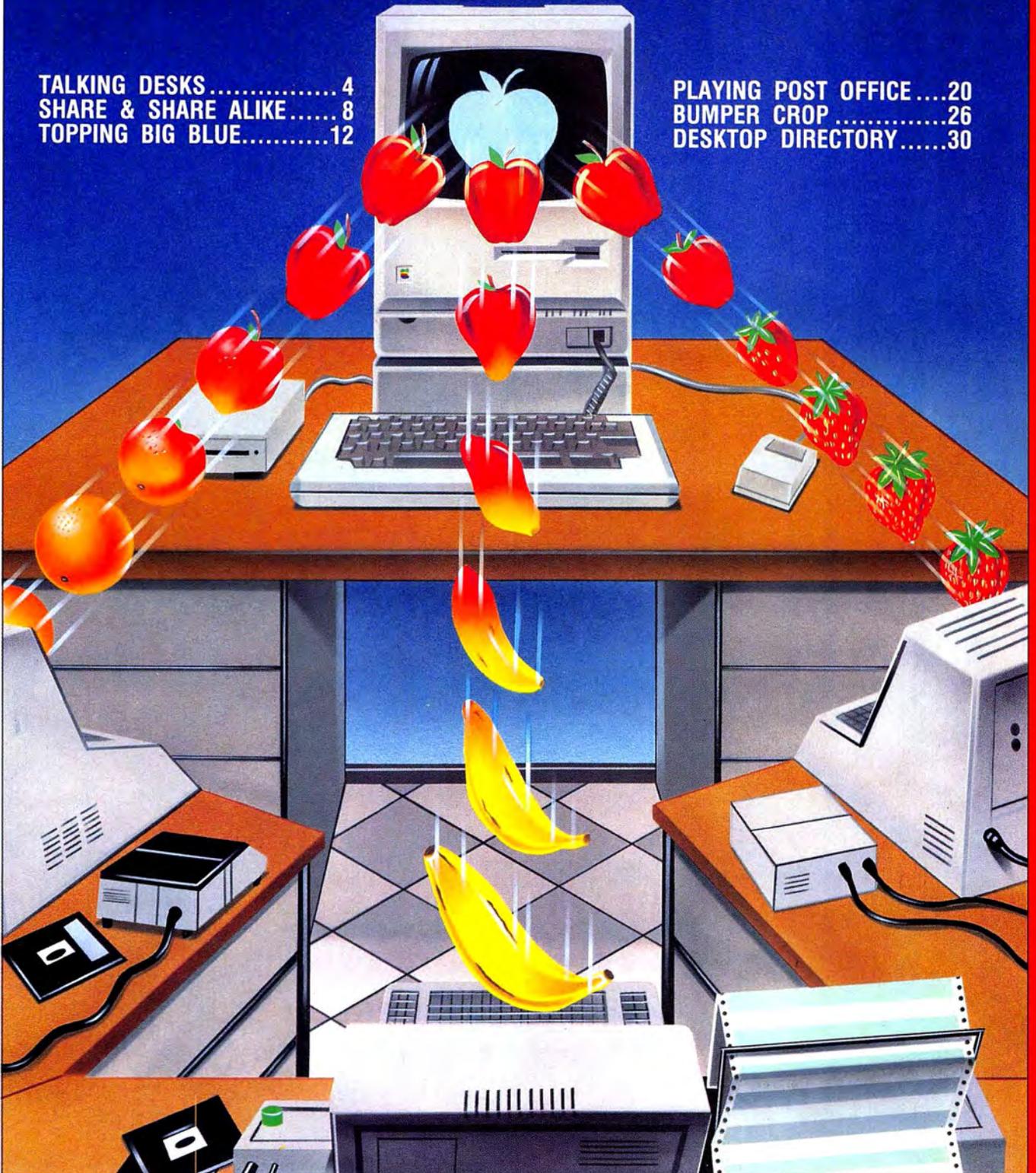


**Best  
 New  
 Word  
 Processor**  
*MacUser  
 Magazine  
 1986*

# Desktop Communications

TALKING DESKS ..... 4  
SHARE & SHARE ALIKE ..... 8  
TOPPING BIG BLUE ..... 12

PLAYING POST OFFICE .... 20  
BUMPER CROP ..... 26  
DESKTOP DIRECTORY ..... 30



# It Took Over 50,000 How To Impro

Improving on the program that started the desktop publishing revolution was not an easy task.

So, before we began working on it, we added a few people to our programming team: the 50,000 or so folks who use PageMaker® to produce everything from annual reports to zoo brochures. Many of them took the time to write to us with suggestions on how we could improve PageMaker. We took the four most-requested features, added quite a few of our own, and made them all a reality.

The result is a program that sets new standards for ease of use and professional-looking output.

Introducing PageMaker Version 2.0 for the Macintosh™ Desktop publishing's next generation is here.

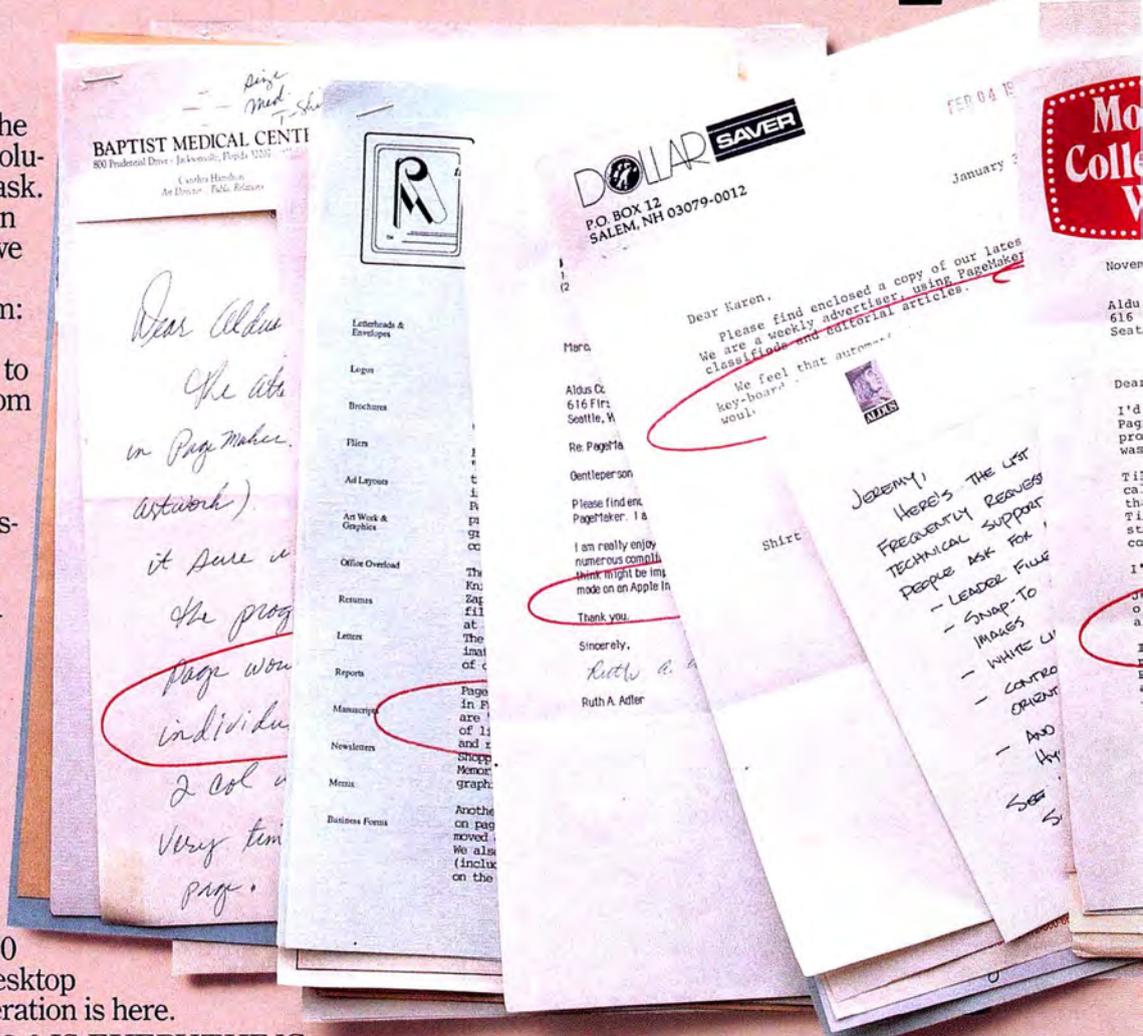
## PAGEMAKER 2.0 IS EVERYTHING YOU'VE HOPED FOR. AND MORE.

Like the version it replaces, PageMaker 2.0 lets you work from a screen resembling a layout table. But now you have even more control over the finished page.

To make double-page spreads easier to design and lay out, the new PageMaker 2.0 allows you to work on the text and graphics of two facing pages at once.

We've added automatic hyphenation and justification with a 110,000-word dictionary from

© 1987 Aldus Corporation. PageMaker is a registered trademark of Aldus Corporation. Macintosh is a trademark of Apple Computer, Inc.



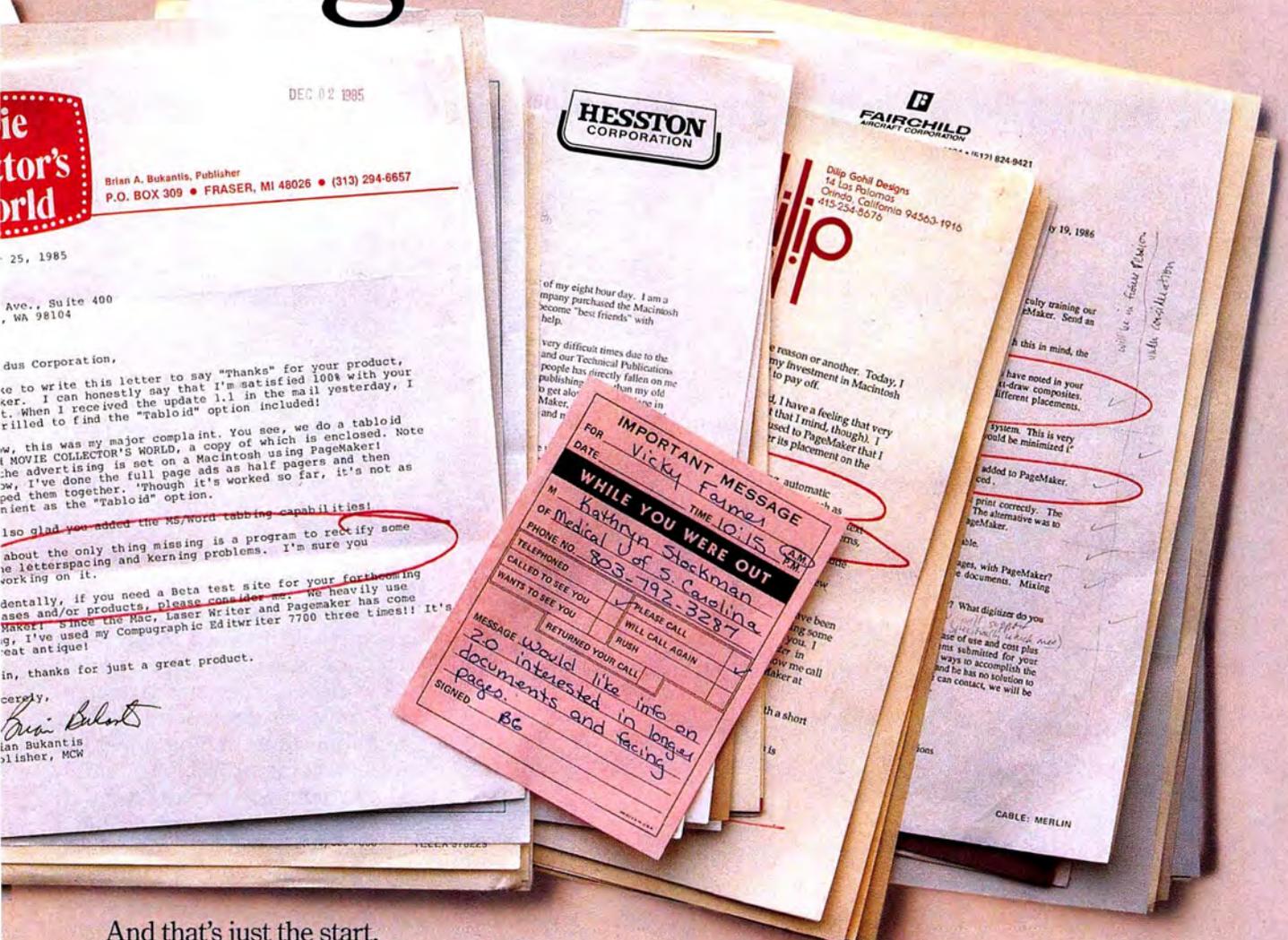
Houghton Mifflin.

So now PageMaker can hyphenate your text to tighten up pages.

New kerning and typographic controls let you adjust spacing between the letters or words in your copy. Which means everything from headlines to fine print will look like it's been set by a professional typesetter, without any accompanying type bills.

You'll also be able to put even more work in a file, up to 128 pages. Plus, a new four-digit page numbering system allows you to combine files into publications of up to 9,999 pages.

# People To Figure Out PageMaker.



And that's just the start. In total we've added over 20 improvements, all with the same benefit: they make desktop publishing easier and more professional than ever.

So, if you've been waiting for desktop publishing software to get more sophisticated, stop waiting.

**WE EVEN HAVE A VERSION THAT RUNS ON YOUR VCR.**

You won't need to go any farther than your TV set to see a full demonstration of what PageMaker can do. Just call toll-free 1-800-33-ALDUS and for \$9.95 we'll send you a 20-minute VHS tape that shows how easy it is to put PageMaker through its

paces. Or write for a free copy of our brochure.

And, of course, the best way to experience PageMaker's power for yourself is to visit your authorized Aldus dealer.

So get your hands on the new PageMaker today. And see what happens when 50,000 people put their minds to making something good even better.

411 First Avenue South, Seattle, WA 98104 (206) 622-5500



**ALDUS**

*PageMaker*®

# Talking Desks

No matter what other computer you have to deal with, chances are the Mac speaks your language.

BY MICHAEL D. WESLEY



THE CORPORATE WORD FOR 1987, at least in the computer industry, is "connectivity." Unlike last year's corporate word — "leverage" used as a verb with little regard for meaning — connectivity indicates a specific and significant concept. Connectivity (correctly pronounced with emphasis on the first and third syllables, by the way) is a marketing term for the ability of different computer systems to talk to one another. For Apple Computer, connectivity is one way to bash down the doors of America's corporate buyers and further ensconce the Macintosh and other Apple equipment in the offices of Fortune 1000 companies.

Two major computer companies, Digital Equipment and Apple, are "leveraging" their ability to connect to other systems in order to make assaults on IBM. DEC and Apple are in fact working closely together to provide "solutions" (another corporate word) for big businesses with widely varied needs. For Apple, connectivity forms the backbone of their networking and communications marketing thrust, called desktop communications.

## HOOK 'EM UP, RAWHIDE

Networks. When I was a retail computer salesman and trainer a few years back, one of the biggest problems I had was explaining to customers what personal computers *couldn't* do. At the time, it was not at all uncommon for people from small- and medium-sized businesses to come into the store looking for a network. I remember particularly well, two owners of a small import/export business in New York. They desperately needed a system to control inventory, handle their billing and other accounting functions and generally keep track of their business.

When they came into the store, they knew pretty well what they needed — a large data base application residing in a central location, with files that could be accessed by data entry people in the separate areas of sales, accounting and shipping/receiving. They needed a network with multiuser software, and, having read about all the new tech-

nology in networks, they came to see what was available. Unfortunately, at that time, there was nothing available for their needs short of a mini-computer system costing many thousands of dollars. For a while, we had to educate our customers away from personal computer networks because they really couldn't do the job.

The education process continues, but the problem is now reversed. Personal computer networks are real — computers from different manufacturers and with different operating systems can talk to each other. The Macintosh and other personal computers can connect to minicomputer or mainframe systems, acting as intelligent terminals. With the introduction of a boatload of new products at the Seybold Desktop Communications Conference in January and the AppleWorld Conference in March, Apple and third party manufacturers are striving to make networking the Macintosh almost as simple as cut and paste, and to educate consumers about the potential benefits of Macintosh networks.

### SEE-THROUGH NETWORKS

One goal of the Macintosh was to provide transparent and easy access to information. To accomplish this, Macintosh required a unique melding of hardware and software with a standard set of operations to provide a simple and consistent user interface. From Apple's point of view, a network should provide a transparent and easy way for people to access, use and control the *communication* of information. A Macintosh network requires an even more complex melding of hardware architecture, software protocols and "enabling technologies" with a standard set of operations to provide transparent access to information and at the same time maintain the Macintosh user interface.

### TALKING APPLES

If you've been using an AppleTalk network to share a LaserWriter or run an electronic mail program, you may wonder what the big deal is. After all, aren't you already networked? In fact, aren't there more than 50,000 AppleTalk networks in

use now? What's so complicated about networking? You just plug the AppleTalk connectors into your Mac and the LaserWriter and it all works. Maybe it's a little slow sometimes, but it works.

AppleTalk works as easily as it does because most of what it's doing is invisible to the user. This is what Apple means by transparent access. All the hard work has gone into the system before you ever see it. AppleTalk is much more than a set of cables and small white boxes. In fact, as Apple Computer is quick to point out, AppleTalk (the network) is a distinct entity (a concept and an architecture, nothing physical at all) from *The AppleTalk Personal Network*, which consists of the familiar white connecting cables and boxes. A confusing distinction, to be sure.

In order to make the concept of Macintosh work, Apple had to establish a set of standards that third party developers could follow in order to keep their products consistent. Initially, with the Macintosh a closed, self-contained system, it was fairly easy to establish and maintain those standards. The user benefits by having a variety of packages with a similar look and that work in a consistent fashion.

With networks there is much more groundwork and supervision that must be done by Apple, because now there are other computers in-



# TALKING DESKS

volved, with their own methods, operations and standards. This is one reason that Apple's file server (announced as hardware in January 1985 and delivered as software in early 1987) was delayed for so long. A file server of generic variety could have been finished long ago, according to Gursharon Sidhu, the project leader for AppleTalk. But to make it work with the ease and style that is associated with the Macintosh took much longer than expected. What Apple has been able to do in that time, though, is strengthen the AppleTalk base to provide a communications framework.

## CABLE CAR TO HELL

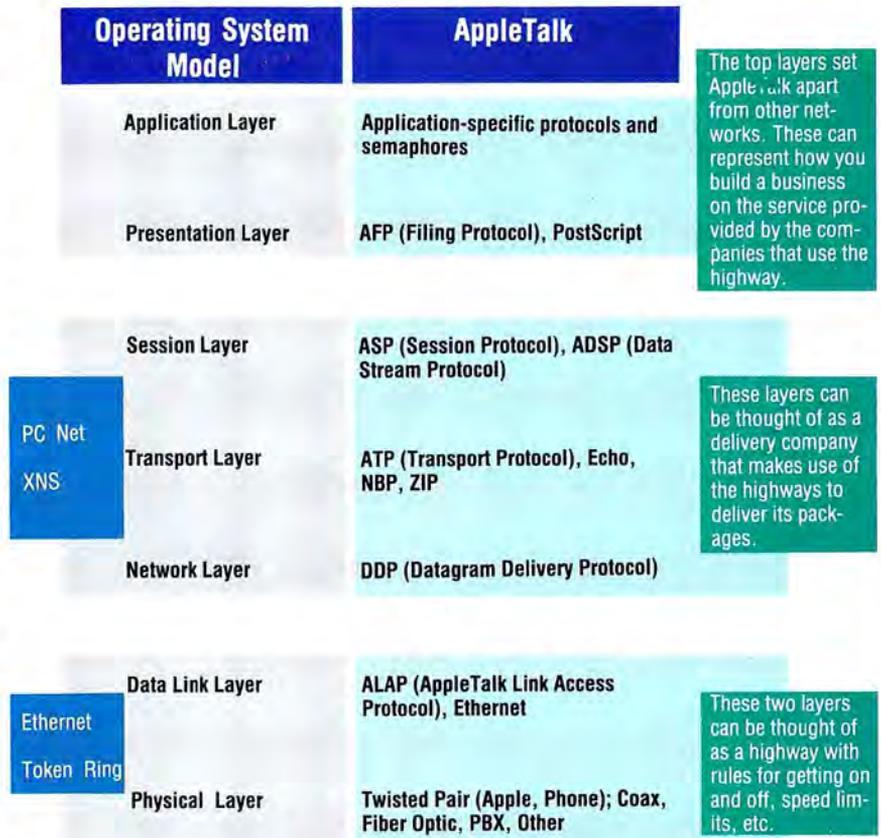
People often get caught up in cables when they mess about with networks, worrying intensely about the differences between twisted pair wiring and coaxial cable. Networking actually requires much more than the proper set of cables. In fact, this physical layer is actually just the base of a much larger structure that starts with cables but extends all the way up to network-intelligent applications.

AppleTalk, for example, is more than a set of cables, it is a standard communications system that fills needs in all levels of the network structure (see Figure). As we have discovered with PhoneNET and other optional carrier systems, AppleTalk doesn't need the Apple connectors to work. In fact, AppleTalk can use almost any structure as a carrier, including coaxial cables, fiber optic cables and PBX systems. You can run AppleTalk on 3Com's Ethernet, a widely installed network in the PC world.

AppleTalk can also be run on IBM's Token Ring network, across PCNet. And with the assistance of a product called *AlisaServer* and *AlisaTalk*, AppleTalk can provide the Macintosh with very high level connectivity with DEC systems. Odesta even has a DEC version of the *Helix* multiuser data base that uses Macs as a front end to a VAX system.

## WHAT! ME NETWORK?

The sharing of information is critical to the smooth running of any



Adapted from materials prepared by Peter Friedman, Apple Computer

business. Decision makers need the most up-to-date and accurate data they can get in order to keep up with today's fast-paced world. If you use an AppleTalk network, you may be one of the people crying out for a file server because you saw the potential there while recognizing that the most important links were missing.

The key links are a file server that can keep files in a central location and provide access to the network users, and software that recognizes the network and knows how to deal with more than one user. For some applications, the software must allow more than one user to access an application or a file at the same time.

With the arrival of Apple's file server, the upgrading of AppleTalk to support true file sharing and accessory products from Apple and third parties, the links are now in place — and the benefits are enormous. It's now possible to link more than one Macintosh and share files. With an AppleTalk PC card you can now link IBM PCs or clones and Macintoshes on the same AppleTalk network and share the same files; put

a Macintosh II with a third party coprocessor on the network and you can use the same applications.

And Apple has made it possible for developers of hardware and software to provide the quick, easy and transparent access to necessary information by maintaining the consistency of the Macintosh interface and by providing similar standards of operation for networking. The support third parties have shown for the AppleTalk Filing Protocol (AFP) standard is phenomenal.

Is there a network in your future? If you are a member of a work group of almost any size or type, the answer is almost certainly yes. There are too many advantages to networking to let the opportunity go by. Just start chanting "connectivity" and watch what happens. But don't stop using "leverage" either. Sprinkle it liberally throughout your conversation and you'll be amazed at how far leveraging your connectivity can get you. ☛

MICHAEL WESLEY IS MACUSER'S WEST COAST EDITOR.

# MacBottom SCSI Hard Disk Drive

The compact that takes you and your Macintosh for a ride in the fast lane.

## Get more (and less).

You've always heard that good things come in small packages—here's the proof. Available in 20 and 40 MB models, the MacBottom arrives completely formatted and ready to use; unpack it, plug it in, and turn it on. It comes with easy-to-use software including a print spooler for the ImageWriter and the LaserWriter; FloppyCopy, a floppy disk duplicator; and other MacBottom disk utilities. You also get PCPC's HFS Backup™, the popular archive and restore program, and Eureka, the desk accessory that locates misplaced files. And you don't have any surprise purchases in store when you buy a MacBottom. The cables, terminators, push-button SCSI address selection, and an additional SCSI port are built right into the compact case, as is the whisper-quiet fan that helps you keep your cool.



**You CAN take it with you.** The MacBottom is so lightweight and compact, you can take it anywhere. It weighs less than five pounds, and it's just two inches tall, so it fits under your Macintosh as perfectly as it fits into your attache case or your Macintosh Plus carrying case. More importantly, the MacBottom is designed to withstand the rigors of travel — it's not just small, it's sturdy.

**All this and a modem, too!** Reach out and explore the wealth of information available via telecommunications. You can buy a MacBottom SCSI with our optional Hayes™-compatible, 300/1200 baud modem built right in! Buy it now or add it later; the choice is yours.

**Depend on it.** As Macintosh hard disk pioneers, we have consistently set the industry standards. We provide unlimited technical support as well as a comprehensive upgrade policy that allows all MacBottom owners to take advantage of our latest developments. We're so confident in our drive that we give you a full one year limited warranty that includes all parts and labor.

**Call your dealer today.** Featuring the ultimate in speed, engineering excellence, outstanding software, long-term customer support, and portable reliability, the award-winning MacBottom SCSI hard disk is a combination you can't beat. It's only two inches tall, but no other hard disk stacks up.



**Personal Computer Peripherals Corporation**  
6204 Benjamin Road • Tampa, Florida 33634  
800-MACBUTT • 813-884-3092

Please circle 50 on reader service card.

# Share & Share Alike

LONG AGO AND FAR AWAY (AT least from our New York City offices), Apple Computer announced their soon-to-be ready file server — a piece of serious business hardware, with serious (and necessary) business software built in. And a Mac community that was just finishing an exciting, but rough, first year rejoiced. For a file server was a real business tool. There's nothing fun or toylike about one. The next two years were spent speculating about the soon-to-be-available file server and exactly when it would make it to dealers' shelves, but it was never seen outside of Apple. Software difficulties and rapid changes in hardware technology combined to keep the file server constantly "under development."

Now, just as we went to press, Apple's file server was finally released. It's called *AppleShare* and it's a software-only package that buyers combine with their own (dedicated) Mac and hard disks. Various versions of it have been floating around since late last fall, but only with its release version were all its features locked in enough to be tested.

*AppleShare* is not the product announced two years ago, but an entirely different and much improved product. Gone is the emphasis on the box and the connections, replaced by the more useful idea of information sharing in small groups. *AppleShare* is simply software that facilitates this operation. It's intended for small local workgroups.

While Apple claims that *AppleShare* handles networks of up to 25

---

**Apple's long-awaited  
file server,**

---



---

**AppleShare, lets  
groups of Macs share  
information and  
applications.**

---

users simultaneously, don't take that claim too seriously. Given the limits of the AppleTalk Personal Network (required as the physical connecting mesh) and the limits of version 1.0 of *AppleShare*, you'll see performance degradation with as few as six users accessing the network regularly. In fact, *AppleShare* seems designed for and nearly ideal for the workgroup size (three to ten people) that Apple has identified as being most common in the workplace.

*AppleShare* also lacks many of the bells and whistles of larger mini- and mainframe packages. However, it works (and works well), is relatively cheap (even when the cost of the necessary hardware is factored in), and has a very full complement of features in areas that are important, like security.

## THE DETAILS OF SHARING

*AppleShare* comes on two disks and has two distinct parts. One disk

has the actual server software and is used by the network administrator to set up the whole system and the other disk is copied by each user on the network and used to install the workstation software in each machine on the network.

Special server software must be installed on a dedicated Mac Plus, Mac SE or Mac II (if you have a spare). Also required is a hard disk. You can add as many hard disks as your system will allow to the server Mac, but all storage units must be attached to the server Mac. And the whole network must be tied together by an AppleTalk protocol connecting system (AppleTalk, EtherSC, AppleTalk Optical, PhoneNET, etc.). And there should be a system administrator (see "AppleShare for All?" below).

The user interface at workstations is simply the *Finder* (or whatever *Finder* substitute you use). The designers' goal was to make *AppleShare* as transparent to the ordinary user as possible, and they've been very successful in that respect.

The first step is to get *AppleShare* software installed on your work *Systems*. It's a simple operation. You simply run an installer program that places *AppleShare* in your System folder and at the same time updates your System software to *System 3.3* and *Finder 5.4*. Those versions (or higher numbered ones, as they are released) are required to be on every station connected to the server. The process is quick and relatively painless as long as you have a hard disk or a spare 100K or so on your

BY STEVEN BOBKER

System floppy. If neither is the case you're going to have to create a System disk with the required amount of room.

Once the software has been installed, access is easy. Just select the *AppleShare* icon in the *Chooser*, the desk accessory also used to select printers on the AppleTalk network. Selecting a server will not affect any current printer selections; they also remain in effect. (*AppleShare* can also be accessed from other AppleTalk networks that are bridged to it). Then enter a single password to use the server. Once you've correctly identified yourself, *AppleShare* manages all further access.

### ISSUES OF ACCESS

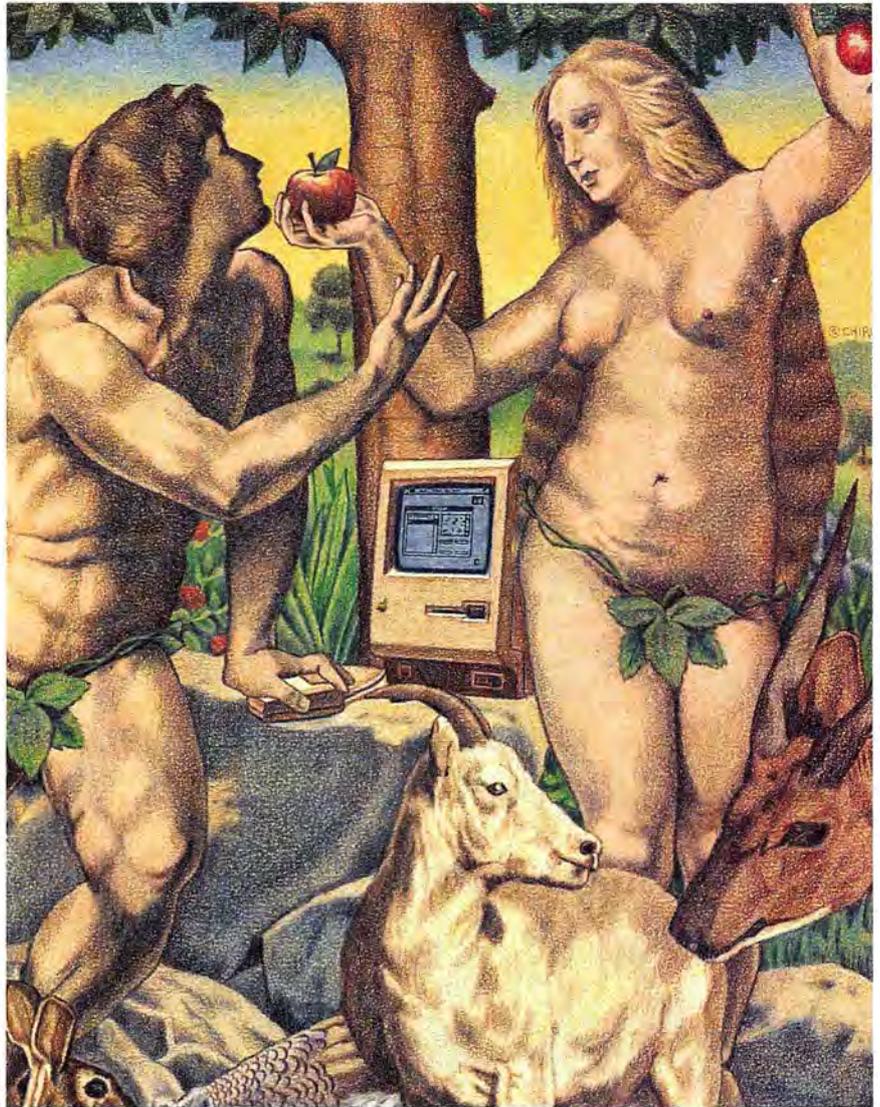
The access control features in *AppleShare* allow each user to selectively share the information stored on the server. Users can determine by looking at the folder icons in the *Finder* what the restrictions are for each folder on the server. The access controls are easy to use since both the *Finder* and a new desk accessory called *Access Privileges* provide the ability to edit access privileges.

Users control their own folders, deciding what information they want to share and with whom — whether it be everyone on the network, a select workgroup or no one at all. Access levels can be controlled as well, with some users being able to modify information in a folder while others are only allowed to read the information.

One useful form of special access is the drop folder. This is a folder where any person on the network can put documents, but only the person with owner privileges can retrieve, see and use them. For example, a supervisor could use a drop folder to collect private comments from all the workgroup members.

### SHARING SOFTWARE

*AppleShare* is compatible with most of the software currently available for the Macintosh. In the future, new applications taking full advantage of *AppleShare's* capabilities will be available. Two examples are



multi-launch applications that can be used by several users simultaneously and multi-user applications that allow several users to update the same data file at the same time, using their own application software. Necessary features such as file and record locking and security are a part of the various applications, not of the server software. Some applications already fall into these categories, and more are appearing on a weekly basis.

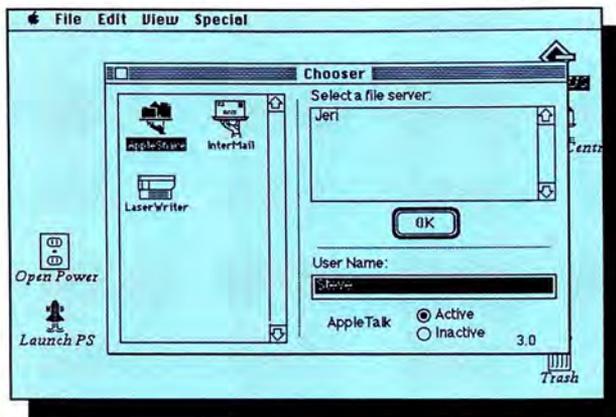
The ability of many users to access and use a single application does pose some legal problems. Most applications are licensed or sold for use by one user on one computer. *AppleShare's* ability to let all users use

applications seems to violate these agreements. Whether these agreements will hold up remains to be tested. Meanwhile several vendors (see "Bumper Crop" in this Supplement) have announced special versions of their software that will be usable, both physically and legally, by all *AppleShare* users on a single network.

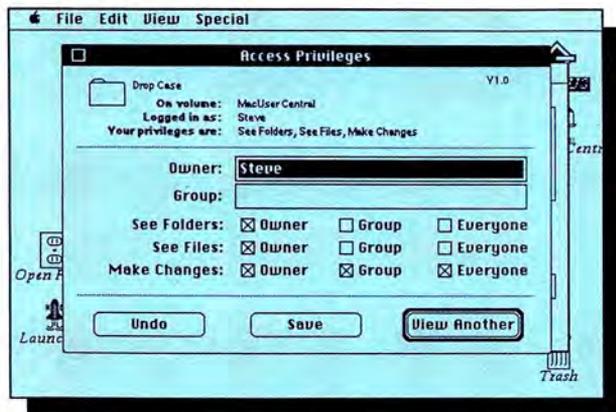
### APPLESHARE FOR ALL?

Apple has chosen not to mass market *AppleShare*. It will be available only from specially selected and trained dealers and VARs (value added resellers). The 300 or so dealers will be required to have all their *AppleShare* selling personnel attend a

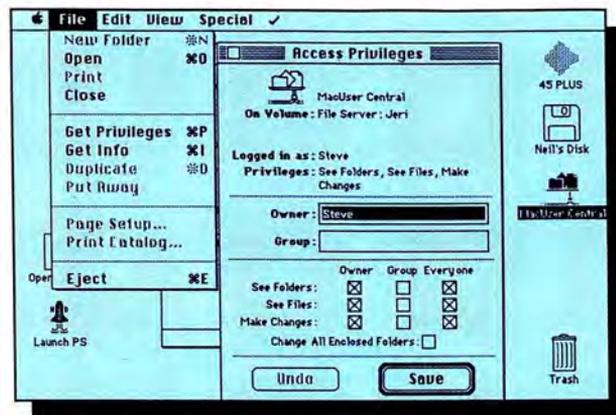
# SHARE AND SHARE ALIKE



The new *Chooser* (version 3.0) can select printers, file servers, modem servers, mail systems and more. To enter your workstation in an *AppleShare* network, select its icon here, then select a server. You'll then be asked for a password. Once you have entered that correctly, simply close the *Chooser* and the *AppleShare* icon will appear.



If you need to check on or change folder privileges while working in an application, select the *Access Privileges* DA. This is what it looks like. Here a drop folder, where others can leave you private notes, has been created.



In the *Finder*, privileges are checked and changed by selecting the *GET PRIVILEGES* command in the File menu.

special Apple course. They will also offer a special network administrator's course for customers.

While a network administrator is not a strict necessity, you should plan on having one person assume that role. It's by no means a full time job, even with a large network, and should take only a few hours a week (mostly doing backups). John Sculley has said that if you don't accept the need for a network administrator, then you haven't fully accepted the need for networks.

*AppleShare* software lists for \$799 and requires at least a dedicated Mac Plus and hard disk. At current street prices, a used Mac Plus and new 20-meg hard disk can be bought for about \$1750. Add in some AppleTalk or PhoneNET connectors and you're looking at \$2600 to \$3000 investment for a medium-size workgroup. Considering the power of the system, that's not a bad price.

## HOW BIG A SERVER?

Disk space requirements tend to

grow exponentially. Thus, *AppleShare*'s ability to use as many SCSI hard disks as can be daisy chained to the server Mac becomes very valuable. You can add storage space as your needs grow. *AppleShare* helps by effectively using disk space. It automatically allocates and recovers disk space on server volumes to obtain maximum space usage efficiency. This allows users to start small, increasing their storage capacity as needed by adding more hard disks.

You might want to consider starting with one of the bigger drives though. For example, Mirror Technologies offers very quiet 85- and 172-meg drives, designed specifically for server use. They're a specially good deal now since (for a limited time) Mirror will rebate the full cost of *AppleShare* software to purchasers of the 172-meg drive and half to those buying the 85-meg unit.

You'll need to check that any SCSI hard disks you currently have work with *AppleShare*. Apparently not all do. The Apple units obviously do as do the big Mirror units. We'll be publishing full drive compatibility lists as we develop that information over the next few months.

STEVEN BOBKER IS THE EDITOR IN CHIEF OF *MACUSER* AND ALL THAT THAT ENTAILS.

## AppleShare

<b>Overall Rating</b>	★★★★
Follows Mac Interface	★★★★
Printed Documentation	★★★★
On-screen Help	None
Performance	★★★★
Support	Varies by dealer
Consumer Value	★★★★

**Comments:** Good true file server with a nearly transparent user interface. **Best Feature:** So transparent that you forget it's there. **Worst Feature:** Slows down noticeably under heavy load. **List Price:** \$799. Published by Apple Computer, Inc., 20525 Mariani Avenue, Cupertino, CA 95014, (408) 996-1010. Requires dedicated Mac Plus and hard disk, connects to network via AppleTalk protocol devices. Version 1.0 reviewed. Not copy protected.

- ▶ to other Macintoshes in your office
- ▶ to Macintoshes anywhere in the world

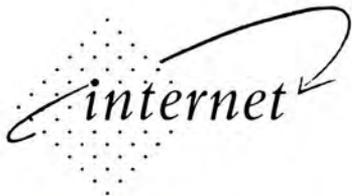
# Make Your Apple **TALK**

- ▶ to IBM PC's and compatibles
- ▶ to Telex machines worldwide
- ▶ to mini & mainframe computer systems

## Heard a lot about desktop communications lately?

Well, *intermail* is the integrated desktop communications solution for your Macintosh and IBM PC compatible computers. *intermail* enables you to quickly and easily compose and send notes, memos, phone messages, graphics, reminders and files of any type and size to anyone in your office or anywhere else in the world. Better yet, *intermail* allows you to send documents of any sort for receiving, copying and printing, even if the recipient doesn't have the originating application! And best of all, *intermail's* power is available from within all of your favorite applications.

*intermail*, the exciting *new* standard in AppleTalk electronic mail.



*intermail* by *internet*, the oldest Macintosh systems house around

*internet* and *intermail* are trademarks of Interactive Network Technologies, Inc. Macintosh is a trademark licensed to Apple Computer, Inc. AppleTalk and AppleShare are trademarks of Apple Computer, Inc. IBM and IBM PC are trademarks of International Business Machines Corporation.

## Take a look at just a few of the reasons why:

True background operation requires NO dedicated hardware

Unlimited network zones and multiple *intermail* servers are fully supported

Completely transparent server to server communications

Autodial option for reliable office to office mail delivery

Open architecture design allows for third party expandability

Completely compatible with the AppleShare environment

Send \$10.00 for a demo disk and see for yourself or call 617-965-5239 for more information.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

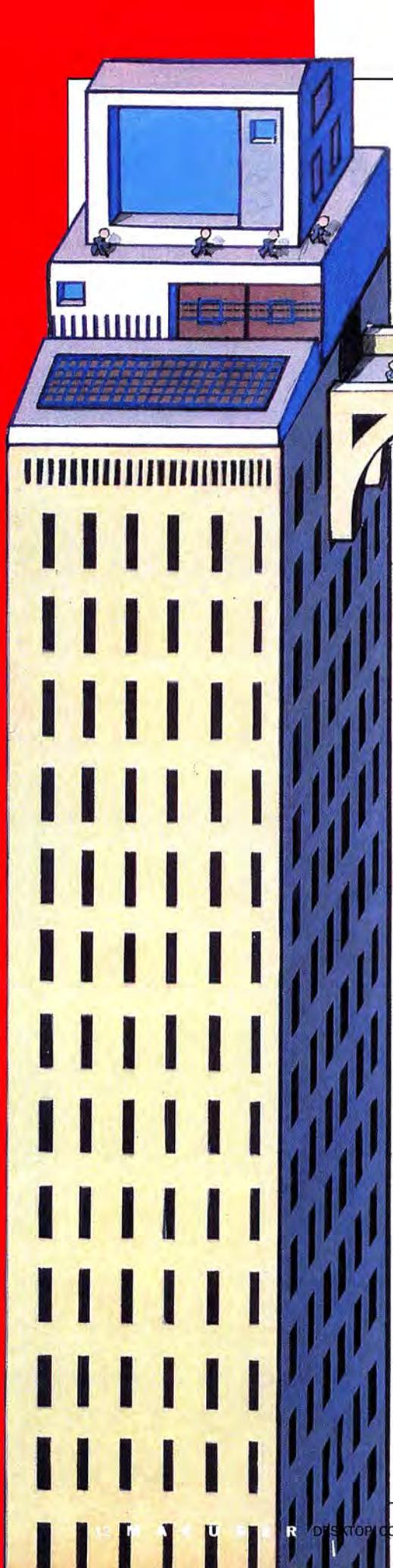
State \_\_\_\_\_

Zip \_\_\_\_\_

Phone \_\_\_\_\_

Mail to:  
*internet*  
20 Amy Circle  
Waban, MA 02168  
Mass. residents  
add 5% sales tax.

Please circle 73 on reader service card.



# Topping Big

## The Mac and the IBM PC can work together digit-to-digit.

FROM THE VERY FIRST GASP OF the Mac in its 128K infancy we have been raised to regard IBM as the Alien Empire, and it was an empire to strike back at—as was shown in Apple's famous "1984" TV commercial. And today? It's time to kiss and make up. The Macintosh Plus has won a growing acceptance by the business community, and it's no longer unusual to see Macs cheek-to-cheek with PCs in offices.

The next Macintosh generation (covered in *MacUser* last month) finally have slots that can accept MS-DOS coprocessors, enabling them to recognize and run many IBM PC programs. Instead of fighting, they'll be able to switch.

### SO LET'S TALK

This new revisionist diplomacy is already operative, and it's the *TOPS*. *TOPS* for the Macintosh is a local area network (LAN) and translating system that can act as a distributed file server for multiple Macs. It's a software program and permits machines linked over AppleTalk to share any hard disk or printer on the network. Now, with the availability of the *TOPS* hardware/software package for the IBM PC, Macs and PCs can talk, swap and share data in almost any configuration. It's as if the Berlin Wall were suddenly made of Swiss cheese.

### TOPS FOR THE MACINTOSH

*TOPS* resides as a desk accessory on the Macintosh. Your Mac remains a standalone machine until you activate *TOPS*, and then it becomes a Mac station that can communicate with other machines or stations on the network. Installing *TOPS* in the *System* on a floppy or a hard disk is both quick and simple, although the documentation is not as clear as it might have been on performing the hard disk installation process.

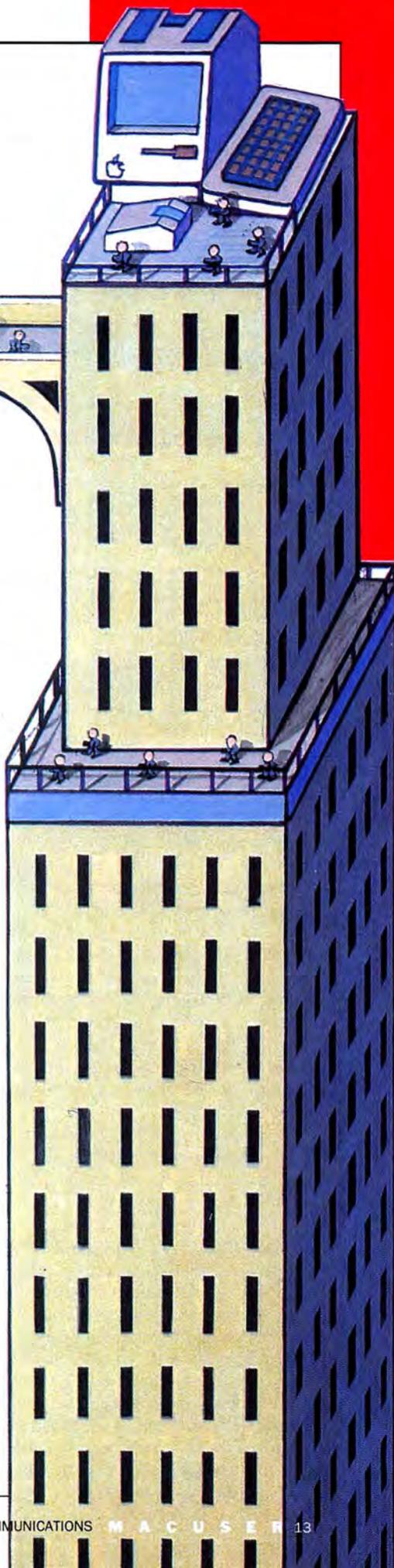
When you open *TOPS*, you are asked to "sign on" the network, and the name you choose will be seen by other stations on the network as another "client." You will need a separate, original copy of *TOPS* for each station. If you copy the application on another station and then attempt to sign on, a warning box will appear admonishing you that "another copy of this *TOPS* (serial# — ) is already in use."

One of the other things you will notice upon opening *TOPS* is a reference to *InterBase*, with its tree-chart icon. *InterBase* is the "ambassador" function that mediates between Macs and IBMs. Without it, your intermachine dialog will be very limited. If you are working with a Mac-only network, you can save a bit of memory by deleting *InterBase*.

From the very beginning, the transparency, straightforwardness and ease of use of *TOPS* is impressive, especially considering that more horror stories have emerged from the information management and networking worlds than any others in the industry. With *TOPS*, what you see is what's really there, and you can usually get at what you see.

# Blue

BY TONY REVEAUX



The *TOPS* desk accessory dialog box is just what you'd expect. On the left is a directory of the volumes within your station, on the right you'll see a list of the servers on the network and those volumes in the station you choose to select. In the center are the command buttons, for Open, Copy, Mount, Publish and Help.

## HELP AT THE TOP

Six help screens are always available. They're valuable not only for using *TOPS*, but also provide inside information on any selected volume you choose. They can reveal its system type, size and condition. A sample of the data is usually included. Though it's not always legible as text, it can help identify the nature of the data, and assure that "something is in there."

By choosing what files you "publish," you determine what you wish to be accessible to other clients on the network. When you publish a volume, its icon changes to the *TOPS* symbol, and will be seen that way by other stations. It's just as easy to "unpublish" a volume by invoking a similar command, or dragging its disk icon from the desktop to the trash.

You can publish a folder of files, a volume of folders or an entire hard disk with one command. You cannot publish a single file alone. If one file is all you want to put out there, create a new folder or volume with a publishable name to wrap around it.

If you want to know which clients are using one or more of your published volumes, select it and then click on HELP. One of the Help windows provides a Client List. If

you select your station name, the list will extend to reveal the users of each of your volumes. There are few secrets on the *TOPS* network.

## WHAT'S THE PASSWORD?

Foreseeing the concern for security, one of the major issues of networkers, *TOPS* includes a password system. If you hold down the Option key when you click on the PUBLISH button, the password dialog box will appear, offering three levels of access restriction. You can choose to make your document write-protected, limit it to one writer or leave it open to many. The system isn't perfect, and there have been reports that files can be invaded, and even passwords changed in some instances.

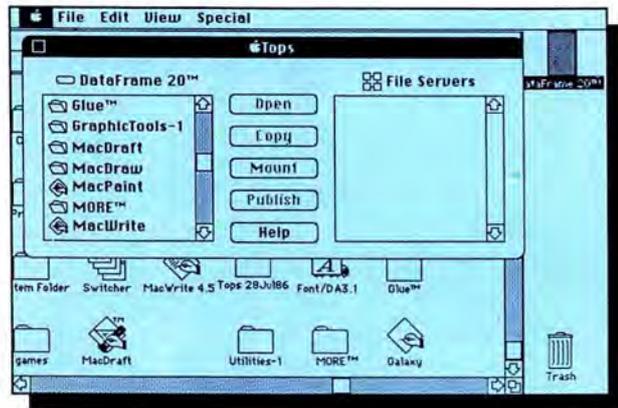
To access a file or application from another station that is published, you select MOUNT from the Command menu. If the file is not restricted, the act of mounting connects you to that document.

If you decide that you want a copy of a volume, folder or application within the memory of your own station, then the Copy command will perform that function. Not only can you copy a published remote file to one of your local disks, you can copy one of your files out to a remote disk that is open. Holding down the Option key when copying will bring up the *TOPS* copy conversion box, enabling you to choose to strip the control characters from an MS-DOS document, allowing it to be accepted as a Macintosh text file.

## TOPS FOR THE PC

IBM PCs and their compatibles are certainly different from Macs. It's

# TOPPING BIG BLUE



The basic *TOPS* window lets you select the folders and files you want to publish.

umes, hard disks and even RAM disks and mainframes for storage and backup has made *TOPS* valuable for many organizations. But even if the hard disk on your Mac is full of many megabytes of files from an MS-DOS program like *Ventura Publisher* or *Symphony*, you can't actually use them there. You can use Mac-compatible files that are residing in a PC's storage if the application is somewhere on the *TOPS* network, and vice versa.

It is an eerie experience to see *MacWrite* copied to a PC through *TOPS*, then trashed from the original Macintosh host. You'll still be able to create and use *MacWrite* files on the Macintosh even though the application itself is floating in a remote PC.

While most programs are compatible, within the constraints of storage and use, there are some that become cranky and unreliable in *TOPS*. A "smart" application like *Excel* can open, read and write to a *Lotus 1-2-3* file on a different machine type. But anything that influences the system or resources of the Mac, like *ResEdit*, *Font/DA Mover* or *Switcher*, should be invoked well outside *TOPS*.

Centram's telephone support, when these issues and others crop up, is always helpful and detailed.

## MR. AMBASSADOR: MACLINK PLUS

If your Mac to IBM diplomatic needs go beyond the basic character-stripping of *TOPS*' conversion function, there is a powerful and versatile ally that you can enlist. *MacLink Plus* is a file transfer and translation utility that cuts through the thicket of word processing programs that usually present insurmountable barriers between the Mac and the IBM PC. In fact, it can be equally valuable in translating between programs within the same machine environment.

*MacLink Plus* can tie together Macs, but its specialty is uniting a Mac and a PC. The complete package includes software for the Mac, the PC and a cable with an adapter for a 512K Mac or a Mac Plus. Since we already had our machines networked with *TOPS*, all we had to do was install the *MacLink Plus*

a lot more work to tell them what to do, and they often need some prodding to reveal whether or not they have actually done it yet. But *TOPS* for the PC is as comparatively easy to install as *TOPS* for the Macintosh.

The first big difference is the addition of printed circuit board that must be installed inside the computer.

For those of you who are seasoned Apple II veterans, plugging in a board will seem like old times. For the rest of us, let's consider it as practice for the shape of Macs to come. We took the cover off the CPU unit of our PC clone, and the *TOPS* board inserted cleanly into an empty expansion slot. Its socket was at the rear panel for connection to an AppleTalk compatible cable. Your PC will need at least 512K of RAM for the *TOPSKRNL* memory-resident routine, and could really use 640K to run large applications without strain. As with the Mac version, *PC TOPS* can be installed on a hard disk or operate off a floppy, and is not copy protected, but is serial number protected.

Installing the *TOPS* program in a PC is smooth and rational. DOS programs need to reside in files, but the *TOPS* installer goes about creating and housing the necessary files automatically, all cued by on-screen prompts, concluding with the *TOPSMENU* screen. Like so much of the newer PC software, this is somewhat Mac-like in its menu-driven interface. There is also direct access to DOS commands for those already fluent in PC-ese.

From the *TOPSMENU*, most of the functions that you mouse with the Mac—showing server names, se-

lecting a server and seeing the volumes published by that server—are accessed from the PC's keyboard. The Menu Instructions on-screen Help window provides a list of basic commands. On the Mac you publish a volume with a couple of mouse-clicks. The PC requires typing in a command like; "TOPS PUBLISH d:/path AS vol [/R|RW] [/P [password] ] [/U]." It's actually pretty easy, except that one character out of place invalidates the command.

Files from other PCs on a *TOPS* network appear as other volumes and directories, and Mac files appear as additional disk drives. Mac names longer than eight characters will be compacted, but at the volume-viewing level, there is a menu command for seeing "the long names of Mac files."

## TRADING PLACES

Now that you have two different species of machine talking to each other, how good is the conversation? *TOPS* enables the Mac and the PC to share information, but there are limits. It is best at straight text files without specialized formatting. *TOPS* acts as a basic character-stripper (removing all the formatting information), accepting and moving files from one word processor to another. Once received, the unformatted file can be formatted to conform to the needs of the final output. Some programs manage to keep the formatting intact. For example, with *MacLink Plus*, a file conversion utility from DataViz, users have reported being able to even transfer desktop publishing documents intact.

The ability to utilize remote vol-

# “BULLET PROOF”

“Despite our best efforts to disrupt MacServe, we failed. MacServe's automatic crash recovery system was able to recover from the worst network disasters we could throw at it and never lost any data. We could reestablish network connections quickly and without any elaborate recovery procedures. This is a remarkable achievement for such a complex product with so many opportunities for data loss.”

“We are impressed and can't imagine what more could be done to make MacServe bullet proof.”

*INFOWORLD  
November 17, 1986*

## MacServe™

Information Sharing Without the Worry

That's what makes us the  
leader in AppleTalk solutions.  
Ask your Apple dealer for MacServe,  
LaserServe, and ComServe.

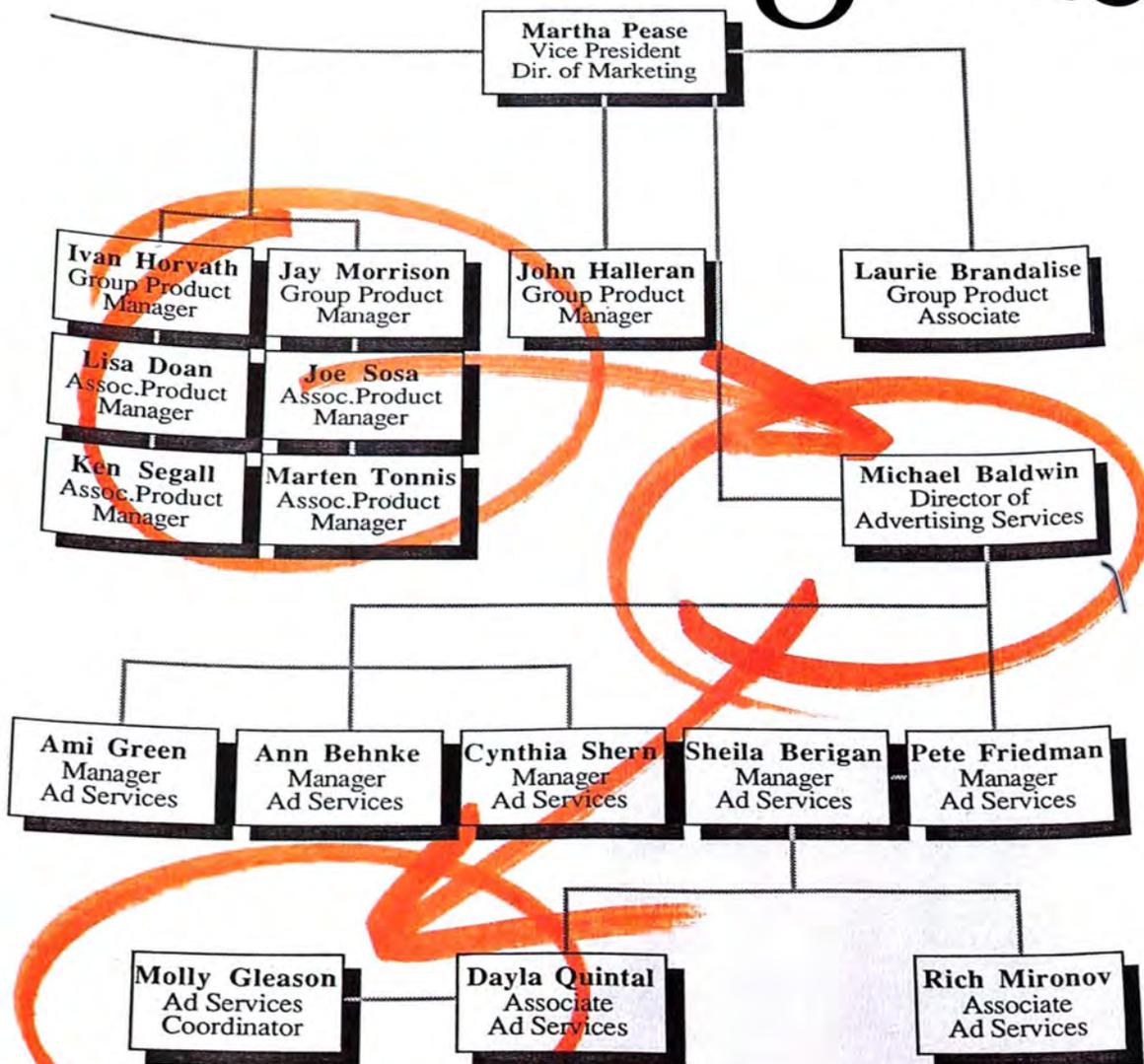
**NOSE**®

4730 SW Macadam Avenue  
Portland, Oregon 97201  
503 226-3620

Please circle 110 on reader service card.

**Ask  
your  
dealer  
about our  
MacServe System  
Rebate Offer!**

# How to get people who work together to work together.



## INTRODUCING APPLESHARE.

You've heard the talk about the future of personal computing.

About how Desktop Communications will change the way we work together. Let us share important documents. And allow us instant access not only to information, but to each other.

Well, enough talk.

AppleShare™ is here today.



*All for one and one for all. With the AppleShare system, the workgroup's documents are yours for the asking.*

It's a new file-serving system designed to build on the power of the AppleTalk® network. So each person can share information with other individuals, groups of people or everyone in the organization.

But what's truly revolutionary is how it works—just like a Macintosh™ personal computer.

The system utilizes a Macintosh with virtually any hard disk as a file server, so sharing is easy. Simply

## THE FREEDOM OF INFORMATION ACT.

Every time you create a document, AppleShare lets you decide how (or if) it's to be shared.

Thanks to AppleShare access control, you can grant rights to specific individuals, at three different levels: 1) see folder, 2) read documents within a folder and 3) make changes.

And each folder will contain the most recent versions of the work within. Because the system is constantly updating itself.

### ALL TOGETHER NOW.

Apple Desktop Communications can do wonders for productivity, beyond merely sharing folders.

Using a program like InBox, one person can easily send electronic mail to

anyone on the network. Or just as easily, to a pre-defined list of people. And these messages can include complete documents, such as those created by Microsoft Word or Excel.

With this new power, Apple Desktop Publishing becomes a whole new ballgame. Because quickly and electronically, you can collect the information you want to publish. Even from people who don't use Macintosh.

too can become an active part of the AppleTalk network.

Then, using a program like InBox PC, ideas that are conceived



*Now even your MS-DOS computer can become a card-carrying member of the AppleTalk network.*

in the MS-DOS world can be painlessly transferred to a Macintosh.

Where they can be analyzed more deeply. Studied more insightfully. And, with the able assistance of an Apple LaserWriter® printer, presented far more brilliantly.

### TURN KNOWLEDGE INTO POWER.

Once you've begun sharing information within the workgroup, you'll likely thirst for greater power.

Which, as it just so happens, is readily available.

You can bring others into the group, via AppleTalk cabling, phone lines or fiber optic cabling. Link a number of workgroups together with options like Hayes InterBridge.

Or, with FastPath and EtherSC, even tie the whole company together on Ethernet cabling.

The full power of Apple Desktop Communications can be yours today.

And to get going, there's only one thing you have to do.



*With Apple Desktop Communications, you can share information amongst a group of computers, including even those of the MS-DOS variety.*

put a document into a folder, and it's available on the network. Instantly.

In fact, to use AppleShare, you need only a fleeting familiarity with two of the most basic Macintosh skills.

Pointing. And clicking.

## INTRODUCING THE APPLETALK PC CARD.

Now you can communicate with other forms of intelligent life.

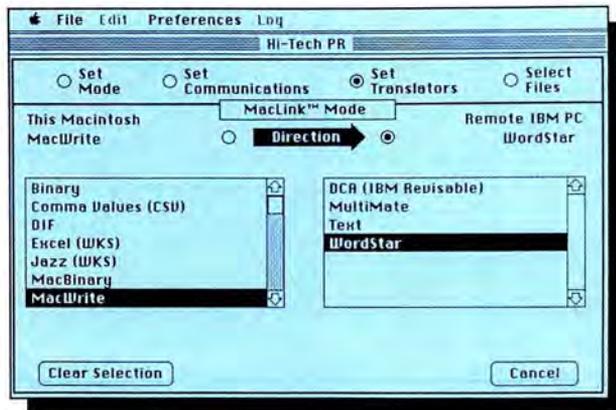
Just plug our PC Card into an MS-DOS-based computer, and it

Start communicating:  
Call 800-538-9696, Ext. 700,  
for the name of a participating Apple dealer near you.



**The power to be your best.™**

# TOPPING BIG BLUE



MacLink lets you transfer different file formats. The MacWrite file here will be received as a WordStar file.

ments. There will be some adjustments you will have to make for programs that do not share certain structures, but *MacLink Plus* is a welcome addition to the brave, new and more open world of desktop communications.

## GETTING DOWN TO BUSINESS

The computer systems of most big businesses are not totally interconnected, visions of corporate Big Brother notwithstanding. Computing tends to be distributed in a variety of local work group environments of from ten to fifteen users. It's not unusual for an employee in one group to know more about what's happening in Afghanistan than to know what colleagues in a work group in the next building are doing.

Many Macs, after being invited in the door for their desktop publishing talents, have been quickly utilized for other office tasks. The need for a means of sharing work between them and the established IBM PC systems becomes more and more urgent. ☐

TONY REVEAUX IS THE EDITOR OF COMPUTER PUBLICITY NEWS, AND WRITES THE "MACINTOSH EXPLORER" COLUMN IN *COMPUTER CURRENTS* IN THE BAY AREA.

software for the Macintosh, where it resides as an application.

Once the remote IBM PC is up as a station open on *TOPS* and has volumes that are published, *MacLink Plus* can mediate between the two. You can select and control the translation processes through four different windows.

The Mode Selection window lets you choose between *MacLink*, Local Desktop or Special Communications Modes. The *MacLink* mode is the default for Mac-to-PC, and the Communications window sets transfer speeds and additional settings necessary for linking machines by modems.

The Set Translators and Select Files are the windows you will use the most. In Translators, the real

magic is revealed. You can choose the direction between machines that you want the translation to go. The menus look like a United Nations of computer languages, but just click on your choices—for example, a translation between *MacWrite* and *WordStar*—and the alternatives are automatically shown.

In the Select Files window you choose the source and destinations for the translation, often creating a named but empty file as a receptor for a straight translation. Otherwise, just wait for the New File Name dialog box to appear after you have clicked the CONVERT AND TRANSFER button. In most cases, the translation will be effected with all formatting of the original file intact, including desktop publishing docu-

## TOPS For The Mac



<b>Overall Rating</b>	↑ ↑ ↑ 1/2
Follows Mac Interface	↑ ↑ ↑ ↑
Printed Documentation	↑ ↑ ↑ ↑
On-Screen Help	↑ ↑ ↑ ↑
Performance	↑ ↑ ↑ ↑
Support	↑ ↑ ↑ ↑
Consumer Value	↑ ↑ ↑ ↑

**Comments:** A file server and network system that links groups of Macs and/or PCs together, sharing files and peripherals. **Best Feature:** Clarity and transparency of use. **Worst Features:** Disk backup utility not provided, relies on remote storage. Documentation adequate but not complete in some areas. **List Price:** \$149 per Mac. Published by Centram Systems West, 2650 Ninth St., Suite 220, Berkeley, CA 94710, (415) 549-5900. Version 1.00 reviewed. Not copy protected, but electronically registered for one station.

## TOPS For The IBM PC



<b>Overall Rating</b>	↑ ↑ ↑ 1/2
Follows MS-DOS Interface	↑ ↑ ↑ ↑
Printed Documentation	↑ ↑ ↑ ↑
On-Screen Help	↑ ↑ ↑ ↑
Performance	↑ ↑ ↑ ↑
Support	↑ ↑ ↑ ↑
Consumer Value	↑ ↑ ↑ ↑

**Comments:** An add-on board and a software program which provides a file server and network system that can link groups of PCs and/or Macs together, sharing files and peripherals. **Best Feature:** Clarity and transparency of use. **Worst Features:** Relies on remote storage rather than disk backup utility. Documentation adequate but not complete in some areas. **List Price:** \$389 per machine. Published by Centram Systems West. Version 1.02 reviewed. Not copy protected, but electronically registered for one station.

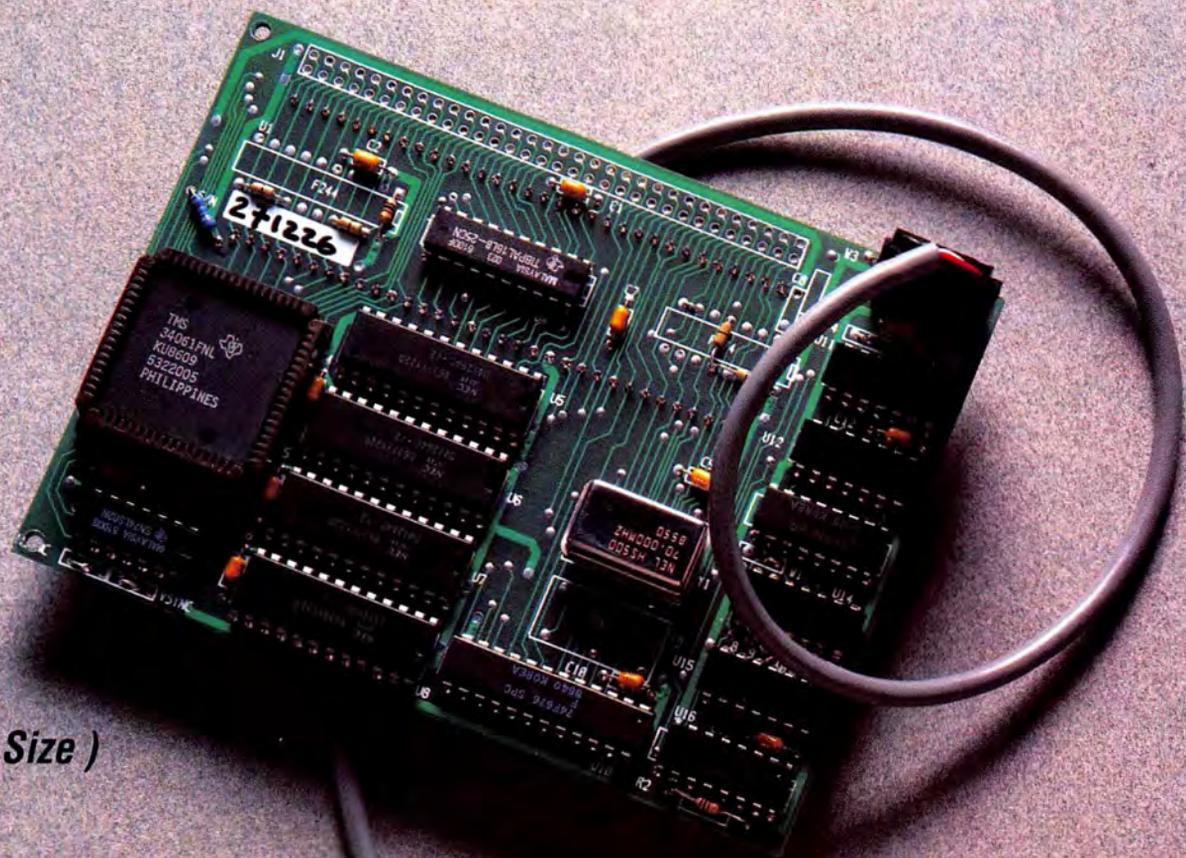
## MacLink Plus



<b>Overall Rating</b>	↑ ↑ ↑ ↑
Follows Mac Interface	↑ ↑ ↑ ↑
Printed Documentation	↑ ↑ ↑ ↑
On-Screen Help	↑ ↑
Performance:	↑ ↑ ↑ ↑
Support	↑ ↑ ↑ ↑
Consumer Value	↑ ↑ ↑ ↑

**Comments:** File transfer and translation software that can link two Macs or a Mac and a PC together for data transfer. **Best Feature:** Clarity of use and versatility. **Worst Feature:** Mac disk-only package not offered. Documentation adequate but does not cover use with other compatible products. **List Price:** \$155 with cable; \$125 without cable. Published by DataViz, 16 Winfield St., Norwalk, CT 06855, (203) 866-4944. Version 1.0 reviewed, Not copy protected.

# BIGGER JUST GOT EASIER



( Actual Size )

With The BIG Screen™ you can now get a 19 inch, 1024x932 flicker free pixel display, to make your job easier and more accurate.

Our system is based on a newly developed user installable miniaturized card that's only 3"x 3.9", by far the smallest on the market today.

Although it's small, our card delivers some big benefits for the Desktop Publishing Professional.

#### OUR BIG BENEFITS

Full page display of PageMaker™, ReadySetGo3!™, MacDraw™ and a host of other new programs now being developed for the Macintosh™.

Built in screen saver and screen toggle software.

5 minute user installation that simply clips on with no soldering, power supply or fan necessary and leaves room for a drive.

The same card powers our 15" Full Page Display and 13" Overhead Projector.

One year Warranty and complete Tech support.

Contact your nearest authorized dealer and get The BIG Story.

415 386.0575



Network Specialties  
4444 Geary Blvd.  
Suite 308  
San Francisco, Calif. 94118

Macintosh and MacDraw are licensed trademarks of Apple Computer Inc. PageMaker is a trademark of Aldus Corp., ReadySetGo3! is a trademark of Letraset USA

The BIG Screen is a trademark of Network Specialties. Please circle 250 on reader service card.

*If you play your cards right !*



*We think it's smart to choose The Big Screen™ and so did the staff of the "Yale Daily News" who will be publishing the oldest daily college newspaper on The BIG Screen™ this year.*

# Playing Post Office

**Electronic mail is  
addictive. You don't  
realize it until you try it  
and can't give it up.  
InterMail and inBox  
lead the pack.**

THERE IS AN UNPUBLISHED BUT visually verifiable statistic about office work that electronic mail companies should exploit in their advertising campaigns. It makes electronic mail a clear and present necessity. Simply stated, the amount of paper consumed for interoffice communications increases exponentially for each person in the office — after the first two.

After our company used *inBox* and *InterMail* for several weeks — even though there were a few hitches — no one, from the receptionist to the president, would be willing to go without an electronic mail system. It's not perfect — we still shout at people over the tops of cubicle walls if they don't pick up their messages right away — but the savings we've made in the number of Post-It pads purchased makes it all worthwhile.

## MAIL BOXING

*InterMail* and *inBox* have the same basic capabilities. They both let you send messages electronically from Mac to Mac across an AppleTalk network. Every Macintosh user on the network has his or her own

mailbox, to which any other user can send memos, phone messages, and files. Both programs will alert the recipient when a message comes in, and both will store messages for later reference. If the addressee isn't on the network when the message is sent, the message will be held until the addressee logs in.

Although they do the same thing, *InterMail* and *inBox* have somewhat different personalities. *InterMail* is a plain, utilitarian program that seems best suited to the fast paced style of a young company on the move. *InBox*, on the other hand, is refined and elegant, more likely to be at home in the offices of the Fortune 500.

## REGISTERED MAIL

Installation of *InterMail* is simple. It requires all the Macs that are to be hooked up to be on an AppleTalk network. Once the network is set up, Apple's *Font/DA Mover* is used to install the *InterMail* desk accessory into the *System* file of each Macintosh on the net. Then the *InterMail* file from the *InterMail* master disk is copied into each *System* folder.

Next, one Macintosh is set up to act as the mail server for *InterMail*. The mail server is the host for all *InterMail* traffic. It (and its hard disk — electronic mail quickly overwhelms regular disks) stores all messages and coordinates mail activity for all the other Macs on the net. Busy as it is, the server Mac can still be used for other work because *InterMail* runs in the background. You'll notice some drop in performance level when mail activity is going on, but otherwise the server works just like any other Macintosh.

Setting up the server is as easy as copying the *InterMail Server* from the *InterMail* distribution disk into the *System* folder of the designated

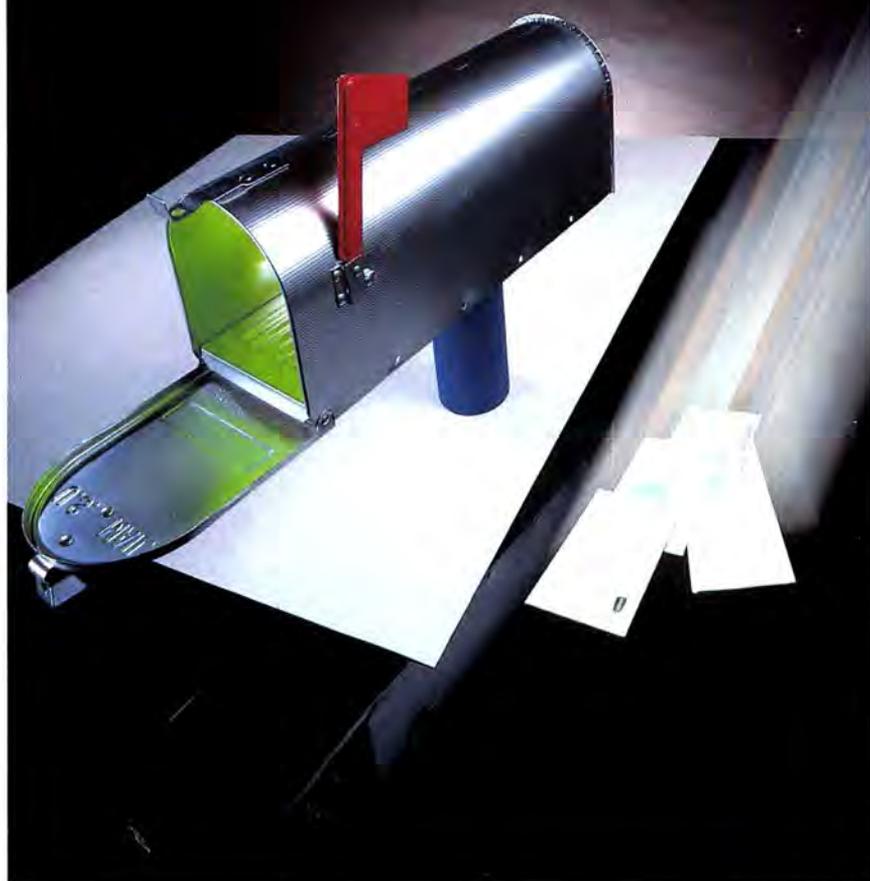
Macintosh and restarting the machine. Although InterNet says you can use a floppy based Mac as a server, you'll definitely need a hard disk. After just a few days use on our small network, *InterMail's* data file had grown to over a megabyte.

After installing the server, the network manager (it can be anyone on the net) sets up the mail center by naming all the users on the net and assigning them passwords (if desired). If possible, the user names should be the same name that is specified in the *Chooser* DA as the user name. It took no more than half an hour to install and configure an *InterMail* system for ten users.

*InterMail* takes up about 54K on each user's diskette. It consumes 34K of memory in each user's machine, and an additional 60K in the server's RAM. The amount of space on the server's disk dedicated to *InterMail* varies, but expect it to use a megabyte or two.

Setting up *inBox* is a little more difficult, but it should be easy enough for anyone with Macintosh experience. *InBox* is also AppleTalk-based. However, the current version requires a dedicated Mac as the server machine. (Future versions, which should be out by the time you read this will let you put the server on any Mac on the network that has sufficient disk space available.) *InBox* requires you to start up the mail center before you can do anything else. Unlike *InterMail*, *inBox* has two different kinds of disks, Administrator disks and Connection disks. You must use the Administrator disk to do any system maintenance. To get things going you'll have to enter a password. The password is saved onto your master disk, and there's no going back, so don't forget it. I did and it took me some frantic phone

BY LÉO LAPORTE



calls to Think Technologies to crack the code and get my mail system running again.

Once the administrator password is entered and a data file created for *inBox*, it's time to set up the address list. Every list starts with a bulletin board that all users have access to, and each list can contain up to 100 more names. Each name has a corresponding password for security.

As with *InterMail*, you can create routing lists. For example, you can designate a Shipping Department address that, when selected, will send a message to each of the people in Shipping who are connected to the network.

After the address list is built you'll have an opportunity to set the date and time and enter a news flash. Everyone on the net sees the news flash when they first log in.

Until *inBox* 2.0 ships, once the *inBox* message center is running, you might as well put your mail server Macintosh in a closet away from tampering hands. It will continue to run the message center, and only the

message center, until it is turned off. Even the system administrator must maintain the message center remotely from his or her own machine.

The next step in the installation of *inBox* is to obtain Personal Connection disks for each Macintosh on the network. The Personal Connection disks are serialized, so you'll need to purchase a separate disk for each user. Like *InterMail*, *inBox* installs as a desk accessory.

Installing *inBox*'s Personal Connection on a disk takes up about 90K. *InBox* consumes 40K of RAM on every machine on which it's installed. The server disk will require 50 to 100K of disk space for each user.

#### P.O. BOX MAC

Although *inBox* and *InterMail* do pretty much the same thing, each has features the other lacks. For example, *inBox* has a bulletin board address for public messages. It also lets you customize its phone message form to add check boxes that best suit your needs. (That can be done in

*InterMail* only as an extra cost option.) *InBox* can automatically print all the phone messages from any station. And it supports network wide log-on notices.

On the other hand, *InterMail* provides an additional message type, the assistance request. It's designed to help a user get assistance from the Network Manager. For an additional cost *InterMail* can also support graphic messages, a network reminder system and cross zone messaging.

*InBox* messages can be 30 (smallish) pages long — *InterMail* messages are limited to 32,000 characters. It comes to about the same thing. For both programs, longer messages can be created with a word processor and sent as an attached file. But both systems only allow you to send one file with any given message.

*InBox* and *InterMail* have slightly different ways of alerting you to an incoming message. *InterMail* rings a European style tone, opens an alert window, and flashes a small icon in the upper right hand corner of the screen. *InBox* rings a bell and scrolls a message across the menu bar. You can turn any of these features off in both programs. *InBox* does support repeated reminders for waiting messages — a feature missing (but perhaps not missed) in *InterMail*. Both programs support return receipts and the familiar "While You Were Out" telephone messages.

*InBox* and *InterMail* can each display a directory of messages waiting in your mailbox. *InBox*'s window gives you a good deal more information about the messages, though. It will tell you if a return receipt has been requested for a message (*InterMail* keeps it a secret). *InBox* also marks messages you've sent yourself and messages you have yet to read.

# PLAYING POST OFFICE

*InterMail* only shows whether the message is a memo or a telephone message.

When all the features are tallied up, *inBox* has a slight lead.

## EASE OF USE

*InBox* is a more attractive and polished program, and so seems easier to use. It's also a little harder to trip yourself up with *inBox*. For example, if you try to close a message window before sending the message, *inBox* will warn you that you are about to lose the message, and give you a chance to backtrack. *InterMail*, on the other hand, swallows the message whole without a word.

*InterMail* also has a problem with attached files. If you receive a message with a file attached and delete the message before saving the file, there's no way to recover the file. You'll have to ask your correspondent to re-send it, and the way the *InterMail* window is set up it's very easy to lose a file.

In general, *InterMail's* user interface isn't as well thought out as *inBox's*, so score this round in favor of *inBox*.

## PRINTED MATERIAL

*InBox* comes with two kinds of manuals, one for the system administrator, and one for each user. Even though both manuals are small, they contain most of the information you'll need. Each is indexed and liberally illustrated. It's a nice touch to have a manual for each user.

*InterMail*, on the other hand, comes with a single, unindexed manual intended for the network manager alone. But *InterMail* solves the problem of having only one manual by putting a very complete tutorial on-line for each user.

Although *inBox* scores for its quality manuals, *InterMail's* built-in tutorial is a strong point in its favor. Score this round a draw.

## THROUGH RAIN OR SLEET OR SNOW

When you add any program on top of a network, it's important that the program be reliable, because a crash could bring down more than just your computer, it could bring

down the entire net. Both *InterMail* and *inBox* seem fairly reliable on this count. They never affected network operation, and were easily able to handle the loss of any client system on the net. Of course, neither program will work when the mail server goes down, but they won't crash your net, either.

One program that can give electronic mail fits is *MacWrite*. It won't tolerate having a dialog box pop up while characters are being typed. It crashes when that happens. So if you use *MacWrite* a lot, disable the dialog box alert in *InterMail*.

Neither program is without flaw, however. The *inBox* desk accessory does not work with *Excel*, *Jazz*, *ThinkTank* or *OverVUE*. Think Technologies doesn't consider this a bug, but it's definitely not a feature. *InterMail* seems to work with all programs that support desk accessories. *InBox* can also be tough to install and run off old (64K) ROM machines without hard disks. It will work, but often wants more space than is there.

For its part, *InterMail* 1.0 has a serious bug that can cause your system to crash. For some reason if an

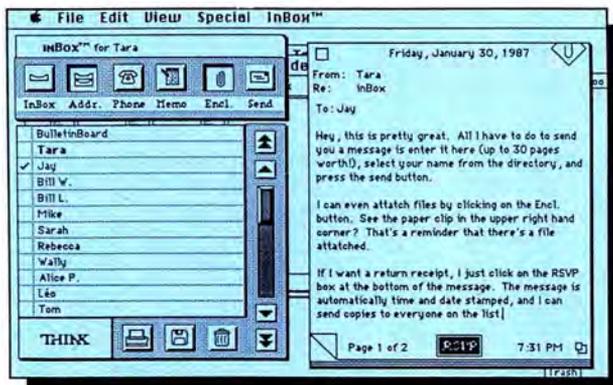
incoming message alert window is ignored, *InterMail* will start devouring your memory at the rate of about 1K per second. Eventually your Macintosh will run out of memory and bomb. This bug is easy enough to work around — just turn off the alert window feature — but it's a little scary.

Aside from that one bug, *InterMail* seems pretty reliable. It's a much newer program than *inBox*, though, so you can expect to see a few more kinks in the program.

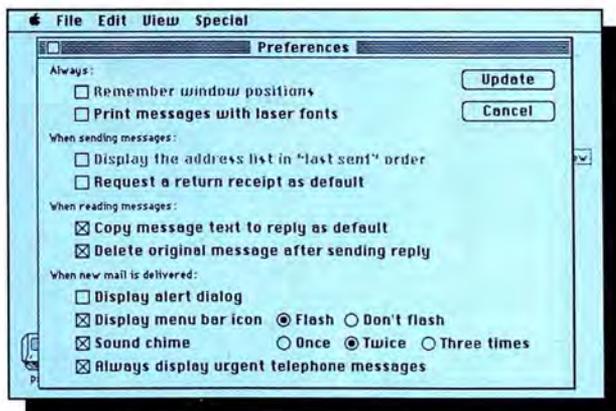
Both programs peacefully coexist with file servers running on AppleTalk. We tried them with *MacServe*, *TOPS*, and *HyperNet* running, and experienced no difficulties attributable to the presence of the network software. We have a variety of machines on our network, ranging from unenhanced Macintosh 512s, to Macintosh Pluses with and without SCSI hard disks attached, to Hyper 2000 Macintoshes with high-speed 68000s, floating point processors and 2 megabytes of RAM installed. Both programs worked equally well on all machines. Their memory requirements are too much for the old 128K Macintosh models, however.



The *inBox* Message Center acts as a server for the system. If you dedicate a Mac as a server, required by *inBox* 1.0, the Mac screen stays like this until the message system is shut down.



A sample *inBox* message. *InBox* screens are more attractive, carry more information than *InterMail* screens. Icons indicate the type of message being sent. Below them is the address list.



An *InterMail* user can customize the local responses by setting *InterMail* preferences.



*InterMail* — messages waiting.

## A LOCKED BOX

*InBox* and *InterMail* each prevent unauthorized access to the message base through the use of passwords. Neither program requires you to use passwords if you don't feel they're necessary.

Think Technologies claims the copy protection on *inBox* is also for your security. In this case they may be right. Although it's an annoyance, it does add an extra layer of protection. Even someone with the system administrator's password, won't be able to log in without the key disk.

Both passwords and copy protection can be easily bypassed by someone who is clever enough, so neither mail system should be considered absolutely secure. If security is an issue for you it might be a good idea to encrypt messages before transmitting them.

## COST OF MAIL GOING UP

As befits products that will be used on a large number of machines, both *inBox* and *InterMail* are expensive. The *inBox* Starter Set contains one Administrator disk and manual

and three Personal Connection disks and manuals, and sells for \$299. Each additional Personal Connection costs \$75.

*InterMail* works a little differently. The *InterMail* programs themselves are preconfigured for the number of users you've licensed. For one to four users the price is \$299.95. Five to ten users cost \$499.95, 11 to 20 cost \$749.95, and for 21 or more users *InterMail* costs \$949.95. No matter what your configuration you'll get one 800K diskette and one manual. Your disk can be upgraded at any time for the difference in price. InterNet also offers several optional features ranging from \$59.95 to \$199.95 per server.

*InterMail* works out to be much less expensive, about \$50 per node compared to \$75 per node for *inBox*. There's no question this round goes to *InterMail*.

## ELECTRIC PONY EXPRESS

Both programs do the job they are intended to do, and do it well. Any difficulties encountered in the use of these programs are more than offset

by the convenience and efficiency of an electronic mail system.

The *inBox* interface is definitely superior, and it has the advantage of maturity and a strong company behind it. On the other hand, we've decided to stick with *InterMail* in my office. It does the job we need to do with a minimum of fuss, and it's more economical. Nor were we blind to the fact that *InterMail* works with *Excel*, while *inBox* does not.

By the time you read this, both companies plan to have released new versions of their programs which will fix bugs and add new features. InterNet plans to add Telex and modem autodial capability to *InterMail*. *InBox* 2.0 will eliminate the requirement for a dedicated Macintosh, and combined with *inBox* PC will allow Macs and IBM PCs to communicate over AppleTalk.

Whichever system you choose, the improvements in interoffice communications will be dramatic. The electronic office doesn't entirely eliminate paper, but you can certainly reduce the number of little yellow message pads used. ☹

LÉO LAPORTE IS A SAN FRANCISCO AREA WRITER. HE ALSO RUNS THE MACQUEUE BULLETIN BOARD IN THE BAY AREA.

## inBox



### Overall Rating



Starter Set, with one Administrator disk and manual and three Connection disks and manuals, \$299. Additional connections cost \$75 each. Published by Think Technologies, Inc., 420 Bedford Street, Lexington, MA 02173, (617) 863-5590. Serialized and copy protected.

## InterMail



### Overall Rating



Programs preconfigured for the number of users licensed. One to four users, \$299.95; 5 to 10 users, \$499.95; 11 to 20 users, \$749.95, 21 or more users, \$949.95. InterNet also offers several optional features ranging from \$59.95 to \$199.95 per server. Published by Interactive Network Technologies, Inc., 20 Amy Circle, Waban, MA 02168, (617) 965-5239.

**FINALLY  
A STANDARD WAY TO SHARE  
YOUR GRAPHICS**

# GLUE

The **ONLY** way to send Macintosh pictures electronically without the recipient owning all the programs you used to make the graphic. Send pictures, spreadsheets, charts, etc. by e-mail, file server, bulletin board or office network.

*"The utility opens up new possibilities for sharing electronic documents—whether by disk, file server or telecommunications."*

**INFOWORLD** • November 1986  
Score: 8.5

*Glue will be a boon for companies that have production at one location and printing facilities at another.*

**MACUSER** • December 1986

# GLUE

The **ONLY** standard way to combine full page graphics from any Macintosh program with any other Macintosh program . . . a spreadsheet with a newsletter, a chart with a drawing package.

*"Revolutionizes the way we handle and transfer documents. . . . Glue is a utility which belongs in every Macintosh user's software library."*

**MACazine** • October 1986  
*"a best buy of the month"*



Available from leading dealers or direct from:

**Solutions International**  
P.O. Box 989, B4  
Montpelier, Vermont 05602  
802 229 9146

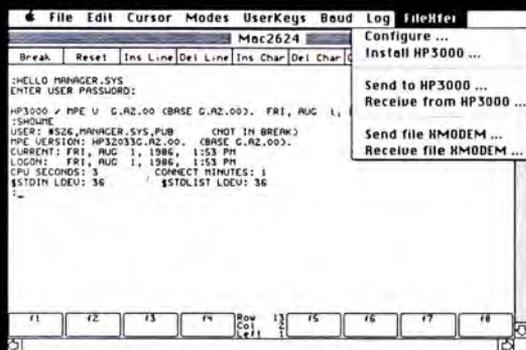
**GLUE is \$59.95 plus \$4 shipping and handling.**

Visa, MC, check, COD or PO from D&B rated US Corporations. Runs on 128K, 512K, Macintosh Plus or Mac XL.

GLUE is a trademark of Solutions, Inc.  
Macintosh is a trademark licensed to Apple Computer, Inc.

Please circle 2 on reader service card.

**"Mac, meet HP 3000.  
HP, this is Mac."**



**Mac2624™** brings together two great computers, with Hewlett-Packard block mode terminal emulation.



*Tymlabs*

Tymlabs Corporation  
211 East 7th Street  
Austin, Texas 78701  
(512) 478-0611 Telex: 755820

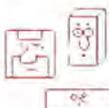
Wick Hill Associates Limited  
42A-44 High Street  
Egham, Surrey, U.K. TW20 9DP  
0784-38441 Telex: 268764

Please circle 52 on reader service card.

# Now You Can.

**Kent Marsh Ltd. brings you powerful password security to protect your files.**

**MacSafe** protects your valuable information from roving eyes and curious double-clicks. Move files and applications into your own **safe** on any disk! Additional levels of security include: a secret compartment **"drop box"** and file **encryption** using the American National Standard for Data Encryption (the DES). It's the advanced Security Standard for Macintosh! \$69.95 until June 1.



**The NightWatch** features **startup** password security for all types of disks! Turn on your Mac and The NightWatch asks you for your name & password. Renders the disk **unuseable** unless you're recognized. Includes an **audit trail**, assigned ownership of MacSafe **safes**, and an unlimited number of users & passwords. \$79.95 until June 1.

**How to Order**

Call your favorite dealer or **KML at 800-325-3587**

(713-623-8618 in Tx). Use your MC/Visa, check, m.o.

**Kent Marsh Limited**  
1200 First Oak Blvd • Suite 210  
Houston • Texas • 77056

Trademark/Owner: MacSafe, The NightWatch  
KML, Macintosh, Apple Computer, Inc.

Please circle 238 on reader service card.



# Check your in-box.

## Now check ours.

THINK Technologies proudly presents InBox,<sup>™</sup> winner of the MacUser Editors' Choice Award for 1986 as the best new desktop communications package. The InBox family of products can be used on AppleTalk<sup>™</sup> and NetBIOS LANs to transfer spreadsheet, word processing, database, graphics, publishing and other files from Mac to Mac, Mac to PC, PC to Mac and PC to PC. You can also create, send and receive memos and phone messages. All while running other applications. Plus, new Version 2.0 supports multiple message centers for larger networks and no longer requires a dedicated Mac. Now you can share information, communicate more and meet less. For more information or the name of the dealer nearest you, call 1-617-863-5595. Or write to us at the address below.



### **THINK Technologies, Inc.**

420 Bedford Street, Lexington, Massachusetts 02173

InBox is a trademark of THINK Technologies, Inc.  
Macintosh is a trademark of McIntosh Laboratory, Inc. and is used  
by Apple Computer, Inc. with its express permission.  
AppleTalk is a trademark of Apple Computer.

# THINK

Please circle 182 on reader service card.

# Bumper Crop



The AST Mac86 is an 8086-based coprocessor board that enables users to run MS-DOS application software on the Macintosh SE as well as moved back and forth between the two environments.



The AST-ICP is an intelligent communications processor that offloads communications functions from the Macintosh II to increase system performance, speed and efficiency.



Designed to complement the Macintosh II computer, the AST-RM4 memory expansion board provides up to four additional megabytes of memory.



The AST Mac286 is an 80286-based microcomputer that allows a user to run MS-DOS applications at IBM PC AT speeds on the Macintosh II computer.

## The arrival of the new Macs has brought forth flourishing third-party support.

THERE HAS BEEN AN EXTRAORDINARY amount of product development going on recently, including a huge showing of support for Apple's file server, *AppleShare*, and the AppleTalk protocols that make *AppleShare* possible. A large number of companies have announced support for AFP, Apple's Filing Protocol, and the Apple Communications Framework, both at the Seybold Conference on Desktop Communications, and to coincide with the launch of the Macintosh SE and Macintosh II computers.

Although the following list is not exhaustive, we wanted to let you know about as many of the products as we could. Company addresses and phone numbers can be found in the supplement directory.

### Alisa Systems

Alisa Systems announced support of AFP in the next release of their file server for VAX/VMS. The Alisa product, called *AlisaServer*, is part of the *AlisaTalk* package currently marketed to users of DEC VAX systems who want to put their VAX superminis on AppleTalk networks. *AlisaTalk* is connected to AppleTalk via 3COM's Ethernet network and Fast-Path bridges, from Kinetics.

### Apple Computer

The biggest announcement at the Seybold Conference was *AppleShare*, the Apple file server. *AppleShare* is a workgroup file server that provides transparent and easy access to shared

information over AppleTalk networks. *AppleShare* is now available and costs \$799.

Apple also announced the AppleTalk PC Card, a half-size printed circuit card for MS-DOS systems that lets MS-DOS machines access the Apple LaserWriter via AppleTalk networks. The AppleTalk PC card contains a 65C02 microprocessor (same one found in the Apple IIc and IIe), and has AppleTalk protocols in ROM.

Apple and several third parties announced plans to develop software for the AppleTalk PC card that will let MS-DOS computers access *AppleShare*. Included with the PC card is software that converts MS-DOS generated text to PostScript. The card supports *WordStar*, *1-2-3*, *MultiMate*, *Word*, *Diablo 630*, ASCII and PostScript file formats. The AppleTalk PC card sells for \$399.

Along with *AppleShare*, Apple announced a LaserWriter print spooler called *LaserShare*, which offloads the laser print queue to the server, returning control of your Mac quickly even if there are several documents queuing up to be printed. *LaserShare* should be available in the second quarter of this year at a price of \$299.

Apple, obviously a very busy company lately, also announced DCA Filter Software that translates MS-DOS word processing documents to *MacWrite* format. DCA, Document Content Architecture, is IBM's standard for word processing docu-

BY MICHAEL D. WESLEY

ments. Available through a special release in the second quarter to coincide with Apple's announcement of a card, external disk drive and software that let the Macintosh II read IBM PC data disks, there is no charge for the DCA product (no kidding — no charge).

Again from Apple comes a product called *AppleLine 3270 File Transfer*, a utility for transferring files from an IBM 3270 mainframe environment and Macintosh via Apple's protocol converter, *AppleLine*. Scheduled to be available in the second quarter, this product will sell for \$99.

Finally, Apple will be offering, through participating Apple dealers, a Network Administrator's Course. This will be a two-day, \$1200. course to teach non-technical people how to act as a network administrators, maintaining an AppleTalk network on a daily basis.

### Applied Micronetics

Applied Micronetics announced the availability of version 1.30 of *Office Productivity System (Ops)*, an integrated invoicing, job costing and accounts receivable system that utilizes *AppleShare* to provide for multiple concurrent users of a single large database. *Ops* sells for \$475.

### AST

AST, a very important company in the IBM PC add-on market, announced several multifunction boards for the Macintosh SE and Macintosh II.

The first board, MacPack — for the SE — is similar to the popular 6-pack card for the IBM PC. MacPack offers 1 to 3 megabytes of RAM on board, with a buffered connection for a daughter board. AST will publish the specifications of the daughter board, and hopes to use MacPack as a platform for themselves as well as other developers to generate additional cards for the SE.

The first additional card will come from AST themselves. It will be a daughter board with two serial ports and an optional 5 1/4 -inch floppy disk controller.

AST also announced the Integrated Communications Processor



The *AppleShare* file server configuration is flexible and expandable — consisting of a Macintosh Plus with virtually any hard disk.



Apple's new *AppleTalk PC Card* connects MS-DOS personal computers to the *AppleTalk* network and the *Apple LaserWriter*, enabling Macintosh — MS-DOS information sharing and *Apple Desktop Publishing* with MS-DOS personal computers.

Board for the Macintosh II. This card works with UNIX and will allow a user to hook up to four dumb terminals to a Macintosh II running UNIX.

Another board for the Mac II, the RM4, is a memory board, offering 1 to 4 megabytes of RAM that is available not to the user directly, but to other cards in the NuBus slots (UNIX, for instance). It could also be used to provide extra RAM support for optical scanners and other devices that require large memory.

Perhaps the most interesting cards from AST, though, are the coprocessor cards which will allow the Macintosh SE and Macintosh II to run MS-DOS. For the SE, AST announced the Mac 86 card, an 8086-based card with a 5 1/4 -inch floppy controller on board. The Mac 86 will not have any memory of its own, but will provide MDA and CGA type graphics support.

The Mac 286 provides an 80286 coprocessor option for the Macintosh II. Like the Mac 86 card, the Mac 286 will have a floppy disk controller on board. But the 286 also provides 1 megabyte of its own RAM, a DMA, and is slotted for an optional 80287 math coprocessor. Mac 286 supports MDA, CGA and Hercules graphics options.

AST will offer MS-DOS with the boards, either bundled or for an

extra charge. Prices had not yet been decided at the time of writing.

### Centram

Centram Systems announced full support of Apple's communications framework, and the *AppleTalk PC card*. In addition, Centram announced two other significant products. The first, *TOPS REPEATER*, is a box that extends the maximum length of and number of machines on an *AppleTalk* network by receiving incoming network signals, regenerating them and retransmitting them at full voltage.

The second is *TOPS STAR*, which transforms bus networks, like *AppleTalk*, into a star configuration. It is designed to sit in a company's phone closet and connect directly into the building's telephone lines. *TOPS REPEATER* sells for \$189; *TOPS STAR*, \$1500.

### 3COM

3COM has announced the signing of a letter of intent to acquire Centram, with plans to market *TOPS* as entry level distributed server. They also announced 3+ Mac, a dedicated file server offering file service, name service, print service and 3+ electronic mail to users on *AppleTalk* and *EtherNet*. 3+ Mac will allow Macs to connect to 3+ networks with IBM PCs. Users will be able to

# BUMPER CROP

dial into and access the network from a remote location via modem. 3+ Mac automatically maps MS-DOS file extensions (.xxx) to Macintosh file creator types, making it easy to pass files. Users can bridge *AppleShare* and 3+ networks, and 3COM will offer a token ring board for the server that will hook Macs into a token ring (IBM's standard) network.

## Corvus

Corvus announced that OmniNet will provide full support of Apple's Filing Protocol and *AppleShare*. This will allow OmniNet users to access all AppleTalk software and should be available in mid-1987.

## Diversified I/O

Diversified I/O announced *SoftBackup* software that supports AFP. *SoftBackup* allows users of individual Macs or Macs on a network to backup files to tape or diskette. It backs up at volume, folder and file levels. Features include timed backups, so the *System* can back up automatically, and scripts for repeated backups of selected items. *SoftBackup* is scheduled for an April ship date at a cost of \$69.95 for the standalone version, \$139.95 for the AppleTalk version.

## DuPont

DuPont announced a fiber optic LAN (local area network) for AppleTalk. Developed for their own in-house use, the DuPont fiber optic LAN is modular, connecting each computer through an optical/electric signal converter. The fiber optics cabling allows users to add fiber optic links to an existing copper wiring network, or design one that is completely fiber optic.

There are several advantages to fiber optics, including increases in speed, distance and number of users. More than one hundred stations can be linked with individual nodes as far as 4900 feet apart. The system gives network designers the freedom to configure AppleTalk networks through walls, across floors and between buildings. It will be available at selected dealer outlets and directly from DuPont.



Key components of Du Pont's fiber optic local area network are, (from L to R), the concentrator, wall plate and converter.

## Farallon

Farallon, the PhoneNET people, announced the PhoneNET Star controller, software and management card that allows very large AppleTalk networks to be set up in star topologies using a building's existing telephone wiring.

Farallon also announced the PhoneNET Repeater, a box that boosts signals on AppleTalk networks, and *TrafficWatch*, a set of network analysis and debugging utilities.

## Flexware

Flexware announced a full range of multi-user high-end accounting applications supporting AFP and *AppleShare*. *Flexware Accounting* works across Macintoshes, IBM PCs and VAX minicomputers running the VMS operating system.

## GCC

General Computer Company redefined the existing *HyperNet* distributed file serving software as compatible with and co-existent with *AppleShare*, and announced plans to extend *HyperNet's* capabilities to cover all leading hard disks, not just HyperDrive.

## Imagine

Imagine Software, makers of *Appointment Diary* and *Smart Alarms*, announced *Multi-User Appointment Diary with Smart Alarms*. *Multi-User Appointment Diary* will work as a desk accessory, and will allow everyone on an AppleTalk network to write and/or view schedules for up to 21 people in an office, and still set personalized reminders. The product will work with *AppleShare*, *MacServe*

and other server software. The price is \$149.95 plus \$10 per node.

## Infosphere

Infosphere announced *ComServe*, an AppleTalk Modem Server. *ComServe* lets many users on a network share modems and other serial devices over AppleTalk. The cost is \$195 per server and the product should be available in the second quarter. Infosphere also announced support of AFP and said that they will add AFP support to *MacServe*.

## Layered

Layered announced that *Insight* accounting software will be made multi-user, fully supporting *AppleShare* and AFP.

## Letraset

Letraset announced full support of AFP and said that future releases of *ReadySetGo! 3* will be fully compatible with *AppleShare*.

## Microsoft

Microsoft, a company riding high these days, announced that *Word 3.0* will take full advantage of *AppleShare*, making it the first word processor optimized to take advantage of Apple's networking strategy. *Word 3.0* is designed to work in a networked environment, which means that it will support file sharing, as well as the ability to share style sheets, glossaries and dictionaries across a network. *Word 3.0* sells for \$395.

## MindWork

MindWork announced that *MindWrite* supports the Apple communications framework, and that *Mind-*

*Write* is fully compatible with *AppleShare*.

### Odesta

Odesta earlier announced a VAX version of *Multi-User Helix*. At the Seybold Conference, Odesta also announced plans to provide support of MS-DOS in its *Helix VMX* application. *Helix VMX* runs on any VAX computer under the VMS operating system, with Macintoshes as intelligent "guests" of the host server. It provides distributed processing for data base applications.

Odesta also announced that *Multi-User Helix*, *Double Helix* and *Helix VMX* will support AFP and *AppleShare*. *Multi-User Helix* will run concurrently with *AppleShare*.

### PCPC

PCPC, makers of MacBottom hard disks, announced a multi-user version of their *HFS:Backup* hard disk backup utility for *AppleShare*.

### Reach Technologies

Reach Technologies announced NUCLEUS, a family of network servers. NUCLEUS contains a microprocessor, memory and software for \$1595. A NUCLEUS 20 MB server will sell for \$2595 and the 40MB model for \$3395. Both have external SCSI ports so you can add on additional SCSI hard drives. Reach also announced that NUCLEUS family and Keeper Plus will fully support AFP.

### SoftView

SoftView announced the release of an update that makes *MacInUse* compatible with AFP and *AppleShare*.

### Solana Engineering

Solana Engineering showed a network cluster controller that lets you link Macs on a network to a variety of peripheral devices or other networks. The Solana cluster controller will sell for \$595.

### Solutions

Solutions announced that *Glue*, their image sharing software, will let users "print" reports from most Mac applications directly to the file server

disk. Reports will then be available to all users of the server.

### SuperMac Technology

Like Apple, SuperMac Technology has been extremely busy in the past few months. At the Seybold Conference, SuperMac Technology announced full support of AFP for their line of hard disk products. SuperMac Software announced a multi-user version of *DiskFit*, a hard disk backup utility shown first at the MacWorld Expo in January; multi-user *SuperLaserSpool*, a LaserWriter spooler also announced in January, and *Sentinel* file encryption software.

### Tangent Technologies

Tangent announced *PC/Mac-Bridge AFP*, software that allows IBM PCs to access *AppleShare*. Available in March for \$150, it works with *PC/MacBridge* ATB, an AppleTalk board that includes *PC Print* software.

### Think Technologies

Think Technologies announced *inBox 2.0*, an upgraded version of their electronic mail package that doesn't require a dedicated Mac to act as the mail center. Think also announced *inBox PC*, an IBM PC version of *inBox* that supports AppleTalk and *AppleShare*, and connects Macs and PCs over AppleTalk. *InBox PC* sells for \$195 per connection.

### WOS Systems

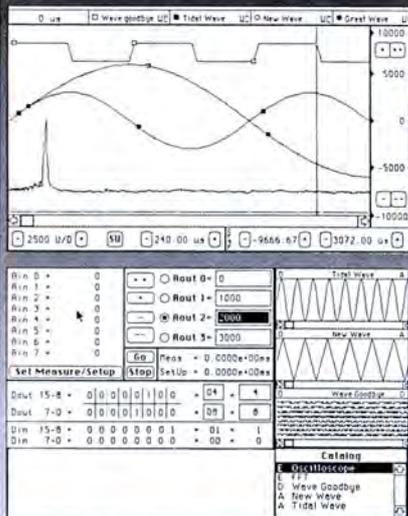
WOS Systems announced *WOS/CTB/McGraw Hill Fund Accounting*, a multi-user fund accounting system for *AppleShare*.

Although many of these products may seem esoteric right now, networking applications will be the norm in the near future. And the amount of support shown by third party developers for the Apple networking framework bodes well for increased large business support of Macintosh. And this is only the beginning of what Apple and the Macintosh community will reap from the opening up of Macintosh.

MICHAEL WESLEY IS MACUSER'S WEST COAST EDITOR.

# Data Acquisition

Point and click your way to data acquisition with the GW Instruments MacADIOS™ and the Apple® Macintosh™ computer.



## Hardware

- 4 Voltage outputs
- 8 Voltage inputs
- 16 digital in and out
- Timer and clock
- 20 KHz sample rate

## Software

- Speech Analysis
- Oscilloscope
- XY Recorder
- Spectrum Analyzer
- MacADIOS Manager™
- Control from BASIC
- Control from C
- Sonogram
- Spectrogram

Send \$10 for a demonstration diskette and documentation. Call or write for a free brochure.



**GW Instruments**

PO Box 2145 • Cambridge, MA 02141  
(617) 625-4096

Please circle 203 on reader service card.

# Directory ■ Directory ■ Directory ■

THE FOLLOWING LIST DOES NOT include the full range of modems and telecommunications software for single users, but is a gathering of multi-user, networking applications for desktop communications.

**AlisaTalk**, file server package for DEC VAX, AppleTalk. Alisa Systems, 221 E. Walnut St., Suite 230, Pasadena, CA 91101. (818) 792-9474.

**AppleShare File Server**, \$799. **AppleTalk PC Card**, \$399. **DCA Filter Software**, no charge. **AppleLine 3270 File Transfer**, \$99. **Network Administrator's Course**, \$1200 from participating Apple dealers. Apple Computer, 20525 Mariani Avenue, Cupertino, CA 95014. (408) 996-1010.

**(Ops) Office Productivity System**, integrated multi-user accounting system, \$475. Applied Micronetics, 3 Burnt Oak Circle, Lafayette, CA 94549. (415) 283-4498.

**MacPack**, multifunction expansion card for Macintosh SE (No price announced at press time.) Daughter board for **MacPack** with 2 serial ports and an optional 5 1/4-inch external floppy disk controller. (No price announced at press time.) **Integrated Communications Processor Board**, lets you attach up to four dumb terminals to a Macintosh II running UNIX. (No price announced at press time.) **RM4** for the Macintosh II offers 1 to 4 megabytes of RAM for use by other NuBus cards. (No price announced at press time.) AST Research, 2121 Alton Ave., Irvine, CA 92714. (714) 863-1333.

**Omnis 3 Plus AFP**, multi-user data base and applications generator. (No price announced at press time.) Blyth Software, 2929 Campus Drive, Suite 425, San Mateo, CA 94403. (415) 571-0222.

**TOPS**, distributed file server for Macintosh and IBM PC. \$149 for Macintosh, \$389 for PC with add-on card. **TOPS REPEATER**, booster box to extend AppleTalk networks, \$189. **TOPS STAR**, controller box that lets you run AppleTalk in a star configuration using existing telephone wiring, \$1500. Centram Systems West, 2560 Ninth St., Berkeley, CA 94710. (415) 549-5900.

**3+ Mac**, file server and **Ethernet Local Area Network** system for Macintosh that connects to 3+ networks using PCs. (No price announced at press time.) 3COM Corporation, 1365 Shorebird Way, Mountain View, CA 94043. (415) 961-9602.

**OmniNet**, Local Area Network providing high speed transmission, up to 64 nodes and up to 4000 feet between stations. Corvus Systems, Inc., 2100 Corvus Drive, San Jose, CA 95124. (408) 559-7000.

**MacLink Plus** provides file conversion from Mac to a variety of systems, including IBM DCA format documents, Wang. (No price announced at press time.) DataViz, 16 Winfield St., Norwalk, CT 08655. (203) 866-4944.

**FT100** contains a half-height, IBM-compatible floppy disk drive. Allows file transfer directly from IBM data disks to Macintosh applications. (No price announced at press time.) 50 S. Main St., Salt Lake City, Utah 84144. (800) 531-0600.

**SoftBackup**, networking version of hard disk backup utility, \$139.95. Diversified I/O, 1008 Stewart Drive, Sunnyvale, CA 94086. (408) 730-2171.

**FastNet**, hardware device that provides an intelligent connection between SCSI ports and Ethernet or other Local Area Networks. (No price announced at press time.) Dove Computer Corporation, 1200 N. 23rd St, Wilmington, NC 28405. (919) 763-7918.

**Fiber Optics Local Area Network** for AppleTalk. Allows over a hundred stations per network, more through bridges. Nodes can be up to 4900 feet apart. (No price announced at press time.) DuPont Connector Systems, 515 Fishing Creek Rd., New Cumberland, PA 17070. (717) 938-6711.

**PhoneNET**, AppleTalk cabling system using telephone wiring and modular jack connectors. \$49.95 per node. **PhoneNET STAR** controller, software and management card lets you connect an AppleTalk network in a star topology using a building's existing telephone lines. **PhoneNET REPEATER**, a booster that extends AppleTalk networks. **TrafficWatch**, a set of network analysis and debugging utilities. (Prices for the last three items not announced at press time.) Farallon Computing, 1442A Walnut St., #64, Berkeley, CA 94709. (415) 849-2331.

**Flexware**, multi-user accounting software. (No price announced at press time.) Micro-financial Flexware, 15404 East Valley Blvd., City of Industry, CA 91746. (818) 961-0237.

**HyperNet**, distributed file server for HyperDrive, other hard disks. (No price announced at press time.) General Computer, 215 First St., Cambridge, MA 02142. (617) 492-5500.

**InterBridge** bridges multiple AppleTalk networks, also allows access to AppleTalk via modem from a remote location. (No price announced at press time.) Hayes Micro-computer Products, 705 Westech Dr., Norcross, GA 30092. (404) 449-8791.

**Multi-User Appointment Diary with Smart Alarms**, a networking version of the popular scheduling and reminders desk accessory. Works with a variety of networking software, including **AppleShare**, **TOPS**, **MacServe**. \$149.95, plus \$10 per node. Imagine Software, 19 Bolinas Rd., Fairfax, CA 94930. (415) 453-3944.

**MacServe** converts a Mac and a hard disk into a disk and print server on AppleTalk, \$250. **LaserServe**, LaserWriter spooling software that works as a desk accessory. \$125 per node. **ComServe**, AppleTalk modem server. Lets multiple users on a network share a single modem. \$195 per server. Infosphere, 4730 SW Macadam Ave., Portland, OR 97201. (503) 226-3515.

**InterMail**, electronic mail software for AppleTalk networks. Prices range from \$299.95 for 1 to 4 users to \$949.95 for 21 users and up. Interactive Network Technologies, Inc., 20 Amy Circle, Waban, MA 02168. (617) 965-5239.

**EtherSC** is a hardware box plus software that provides direct connection from a Mac Plus SCSI port to 3COM's Ethernet network, \$1250. **FastPath** is a similar box used to bridge AppleTalk networks to Ethernet, \$2500. Kinetics, 2500 Camino Diablo, Walnut Creek, CA 94596. (415) 947-0998.

**MacMENLO** software includes a variety of packages that connect Macintoshes to Tandem Computers, and Tandem to AppleTalk networks. Menlo Business Systems, 334 State St., Los Altos, CA 94022. (415) 948-7920. Software is also supported and marketed directly by Tandem.

**Multi-User Helix** and **Helix VMX**, high end relational database and applications management software for Macintosh, Mac to VAX. **Multi-User Helix** sells for \$695, including **Double Helix** and three multi-user nodes. Additional nodes are \$100 each. Odesta Corporation, 4966 El Camino Real, Suite 205, Los Altos, CA 94022. (415) 962-8661.

**AllegroServer** software for Macintosh that connects Macs and other personal computers to the Wang VS Office System. Sold in a variety of options. Prices begin at \$495.

# Directory

OmniGate, 351 California St., Suite 1000, San Francisco, CA 94104. (415) 781-6464.

**Multi-user HFS:Backup**, hard disk backup utility for **AppleShare**, AppleTalk networks. (No price announced at press time.) PCPC, 6204 Benjamin Rd., Tampa, FL 33634. (813) 884-3092.

**Keeper Plus** file server, a true dedicated file server for AppleTalk networks. **NUCLEUS** file server with microprocessor, memory and software for \$1595. **NUCLEUS 20 MB** file server for \$2595, **NUCLEUS 40 MB** for \$3395. Reach Technologies, PO Box, 9802, Suite 925, Austin, TX 78766. (512) 280-1977.

**Multi-user Project Billing and Legal Billing II**, network versions of time billing packages that allow simultaneous entry of time and expenses by any user on **AppleShare**. (Prices not available at press time.) Satori Software, 2815 2nd Ave., Suite 590, Seattle, WA 98121. (206) 443-0765

**Multi-user DiskFit**, backup software for hard disks on **AppleShare**. \$395. **Multi-user SuperLaserSpool** LaserWriter spooling software for AppleTalk networks. \$395. SuperMac Software, 950 N. Rengstorff Avenue, Mountain View, CA 94043. (415) 964-8884.

**PC/MacBridge AFP**, software that lets IBM PCs access **AppleShare** on AppleTalk networks. \$150. Tangent Technologies, 5720 Peachtree Parkway, Suite 100, Norcross, GA 30092. (404) 662-0366.

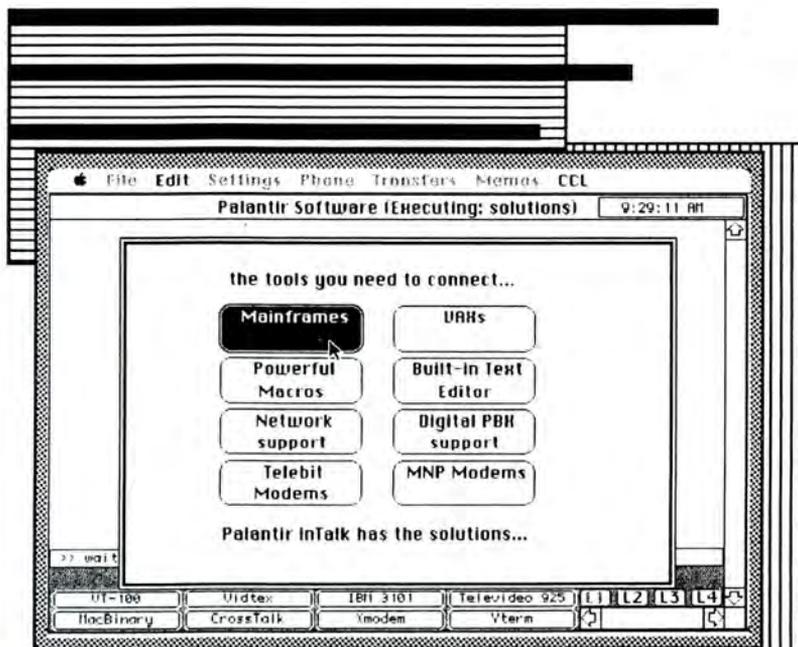
**InBox 2.0**, upgrade of **inBox** electronic mail software that is **AppleShare** compatible, no longer requires dedicated Mac. \$350 for a starter kit and \$125 per connection. **InBox PC**, electronic mail for PC on AppleTalk. \$195 per connection. Think Technologies, 420 Bedford St., Lexington, MA 02173. (617) 863-5590.

**Netway 1000A**, 3274 Gateway provides IBM host system access for Macs on an AppleTalk network. Software options provide terminal emulation and file transfer support. (No price announced at press time.) Tri-Data, 505 East Middlefield Rd., Mountain View, CA 94043. (415) 969-3700.

Desktop Communications is a special supplement from the May 1987 issue of *MacUser* magazine. Copyright © 1987 Ziff-Davis Publishing Co., a division of Ziff Communications Co. All rights reserved. Business and Editorial offices: 25 West 39th Street, New York, NY 10018. Telephone (212) 302-2626. *MacUser* is an independent publication, not affiliated in any way with Apple Computer, Inc. Printed in the USA.

Desktop  
Communications  
for Power Users

inTalk™  
for the Macintosh™



### inTalk supports:

- Information Services
- Mac to Mac
- Mac to MS-DOS
- Digital PBX Networks
- High Speed Modems
- Mainframe Communications

Suggested Retail Price - US \$195.00  
Windows inTalk™ also available for MS-DOS

**PALANTIR**  
SOFTWARE

for the dealer nearest you call (800) 368-3797 or (713) 955-8880.

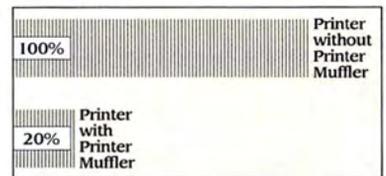
Please circle 283 on reader service card.

## Extraordinary new Printer Mufflers Peace and quiet for as little as \$59.95!



New from Kensington, the Printer Muffler™ 80 (only \$59.95) and the Printer Muffler™ 132 (only \$79.95) are the perfect solutions to a noisy ImageWriter®.

Molded from durable high-impact styrene, the Printer Mufflers are lined with sound-absorbing foam for maximum effectiveness. They reduce printer noise by 75% to 85%!



The Printer Mufflers' sturdy lids not only keep noise in, they keep dust out. And they're transparent, too. After all, printers should be seen, even when they're not heard.

The Printer Muffler 80, above, fits the standard ImageWriter and ImageWriter II, and the Printer Muffler 132, at left, fits wide-carriage printers.

Also from Kensington, the Printer Muffler Stand lets you raise both your printer and Printer Muffler to allow for convenient paper storage underneath. Only \$29.95.



For more info, call (800) 535-4242. In NY, call (212) 475-5200. Please circle 144 on reader service card.

**KENSINGTON™**

# See what you've been missing.

NOW INSTALLABLE  
IN MINUTES AT YOUR  
RADIUS AUTHORIZED DEALER.

Full page views of your documents, for example. Unobstructed displays of several windows simultaneously. And dozens of other applications for which the Macintosh™ has been able to give you only a part of the story. Until now, that is.

## Introducing the Radius Full Page Display.

The Radius FPD™ works side by side with your Macintosh to make creating, editing, and laying out documents easier than ever — by letting you see a full 8 1/2" by 11" page.

That means less scrolling. Less enlarging and reducing. And, because your Macintosh doesn't sit idle, a much more useful way to work.



FPD extends your investment in the Macintosh.

Print out a page on the FPD, for example, while the Macintosh holds tools, palettes, desk accessories, and other windows. Or treat the two screens as a single, contiguous display, viewing large, horizontal documents. You can drag text or graphics between the two.

The FPD is in every way an extension of your Macintosh, from the electronics to the aesthetics. But then, there's a good reason for that.

The team that developed the Radius FPD is the same team of experts that designed and built the original Macintosh. Which means you're assured of the highest-quality product, from top to bottom.

Want to find out more? Contact your nearest authorized Radius dealer to get the full story. (Or call us at 415-732-1010 for the name of the dealer nearest you.)

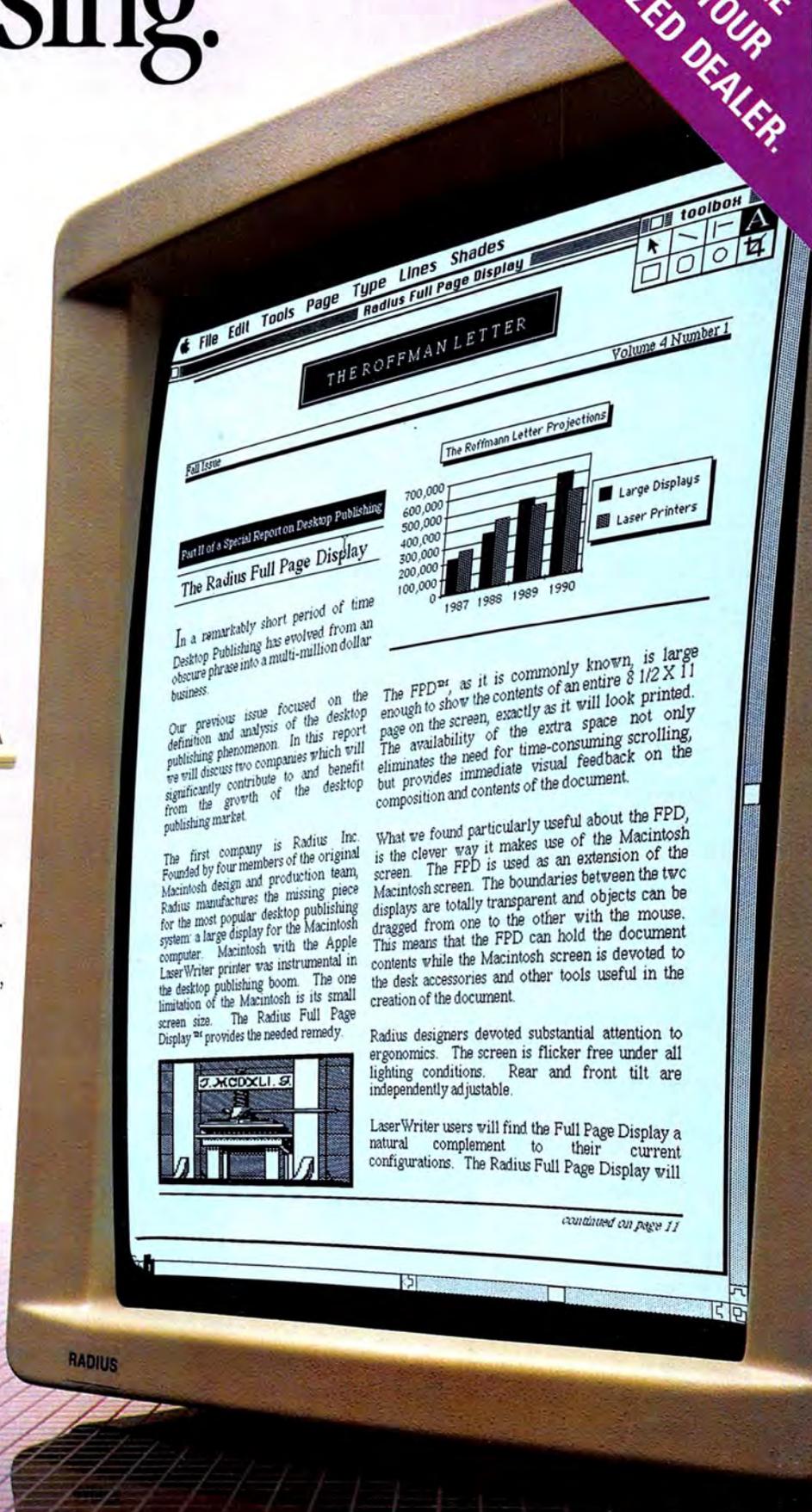
See what you've been missing.

## RADIUS

Radius, Inc.  
100 East Duane Avenue, Suite F  
Menlo Park, CA 94026

FPD is a trademark of Radius, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

See circle 154 on reader service card.



### Part II of a Special Report on Desktop Publishing

#### The Radius Full Page Display

In a remarkably short period of time Desktop Publishing has evolved from an obscure phrase into a multi-million dollar business.

Our previous issue focused on the definition and analysis of the desktop publishing phenomenon. In this report we will discuss two companies which will significantly contribute to and benefit from the growth of the desktop publishing market.

The first company is Radius, Inc. Founded by four members of the original Macintosh design and production team, Radius manufactures the missing piece for the most popular desktop publishing system: a large display for the Macintosh computer. Macintosh with the Apple LaserWriter printer was instrumental in the desktop publishing boom. The one limitation of the Macintosh is its small screen size. The Radius Full Page Display™ provides the needed remedy.



The FPD™, as it is commonly known, is large enough to show the contents of an entire 8 1/2 X 11 page on the screen, exactly as it will look printed. The availability of the extra space not only eliminates the need for time-consuming scrolling, but provides immediate visual feedback on the composition and contents of the document.

What we found particularly useful about the FPD, is the clever way it makes use of the Macintosh screen. The FPD is used as an extension of the Macintosh screen. The boundaries between the two displays are totally transparent and objects can be dragged from one to the other with the mouse. This means that the FPD can hold the document contents while the Macintosh screen is devoted to the desk accessories and other tools useful in the creation of the document.

Radius designers devoted substantial attention to ergonomics. The screen is flicker free under all lighting conditions. Rear and front tilt are independently adjustable.

LaserWriter users will find the Full Page Display a natural complement to their current configurations. The Radius Full Page Display will

*continued on page 11*

# THE SAVING



## WE CARRY OVER 900 PRODUCTS FOR THE MAC

### Accessories

<b>AMERICAN COVERS</b>	
MOUSE MAT BLUE, RED, GRAY	7.00
<b>C- ENTERPRISES</b>	
CUSTOM MADE CABLES	11.00- 22.00
<b>C.ITOH</b>	
SINGLE SIDED	14.75
DOUBLE SIDED	19.75
SINGLE SIDED 10 COLORS	21.00
DOUBLE SIDED 10 COLORS	28.00
<b>BULK DISKS, QTY OF 50</b>	
SINGLE SIDED PER DISK	1.25
DOUBLE SIDED PER DISK	1.50
<b>ERGOTRON</b>	
MACTILT	64.00
<b>HONEYWELL</b>	
QUADLYNX TRACKBALL	129.00
<b>INNOVATIVE TECHNOLOGY</b>	
DIRECTORY HOLDS 32 DISKS	19.00
EASEL HOLDS 20 DISKS	13.00
<b>KENSINGTON MICROWARE</b>	
CONTROL CENTER	65.00
SYSTEM SAVER	70.00
<b>MACPACKS</b>	
Colors in Wine, Blue, Grey	
MAC PLUS BAG	60.00
IMAGE WRITER I&II BAGS	45.00
<b>MAGNA</b>	
MACSTATION II	75.00
<b>MAGNUM</b>	
MOUSE MOVER	13.50
<b>SAVING ZONE</b>	
6 OUTLET SURGE	
NOISE PROTECTOR	24.50
IMAGE WRITER RIBBONS	4.50
<b>SMITH &amp; BELLOW'S</b>	
CHEST HOLDS 96 DISKS	
MAHOGANY	27.00
BASSWOOD	19.00
<b>SONY</b>	
DOUBLE SIDED DISKS	26.00
SINGLE SIDED DISKS	16.00

### Business

<b>ANN ARBOR SOFTWARES</b>	
FULL WRITE	CALL
<b>BATTERIES INCLUDED</b>	
ISGUR PORTFOLIO	120.00
<b>BLYTHE SOFTWARE</b>	
OMNIS 3+	395.00
MULTI USER OMNIS 3+ FOR ALL NET WORKING SYSTEMS	CALL
<b>BORLAND</b>	
REFLEX	69.00
TURBO PASCAL	69.00
<b>BRAVO</b>	
MAC CALC	83.00
<b>BRODERBUND</b>	
GEOMETRY	65.00
<b>BUTTON DOWN SOFTWARE</b>	
PROFIT STALKER II	150.10
<b>COMPERSVCO</b>	
STARTER KIT	25.00
<b>CRICKET SOFTWARE</b>	
CRICKET GRAPH	124.00
STAT WORKS	77.00
<b>DATA TAILOR INC.</b>	
TRAPEZE	188.75
<b>DATA VIZ</b>	
MAC LINK PLUS	134.50
<b>DIGITAL ETC SOFTWARE PRODUCTS</b>	
TURBO MACACCOUNTANT	315.25
MACACCOUNTANT 2.0	90.25
<b>DREAMS OF PHOENIX</b>	
DAY KEEPER CALENDAR	27.50
<b>FORETHOUGHT</b>	
FILEMAKER PLUS	195.00
<b>GREEN JOHNSON INC</b>	
SPELLSWELL	49.00
<b>HAYES</b>	
SMARTCOM II	86.00
<b>INFOSPHERE</b>	
LASER SERVE	112.00
MAC SERVE	225.00
<b>LEGISOFT/NOLO PRESS</b>	
WILL WRITER	28.00

<b>LIVING VIDEO TEXT</b>	
MORE	165.00
<b>MAINSTAY</b>	
TYPENOW	27.00
<b>MICRO PLANNING SOFT</b>	
MICRO PLANNER + PROJECT EXCHANGE	298.00 68.00
<b>MICROSOFT</b>	
CHART	71.25
WORD 1.05	135.00
FILE	111.00
MULTI PLAN	111.00
EXCEL	224.50
WORD V.3.0 W/ BUILT IN SPELLING CHECKER WORKS	CALL 194.00
<b>MONOGRAM</b>	
BUSINESS SENSE	CALL
DOLLARS & SENSE	86.25
FORECAST	40.20
<b>ODESTA</b>	
DOUBLE HELIX	283.00
<b>OPEN SYSTEMS</b>	
OPEN FOR BUSINESS II	495.00
<b>OWL</b>	
GUIDE	90.00
<b>PERIPHERALS, SUPPLIES, &amp; CO.</b>	
VERSA TERM	85.00
<b>PERSONAL BIBLIOGRAPHIC</b>	
PRO. BIBLIOGRAPHIC SYT	209.00
<b>PROVUE</b>	
OVERVUE	169.75
<b>SIMON &amp; SCHUSTER</b>	
TYPING TUTOR III	34.47
<b>SOFTVIEW</b>	
MACINTAX FEDERAL 86	60.00
<b>SOFTWARE VENTURES</b>	
MICROPHONE	CALL
<b>SURVIVOR</b>	
MAC MONEY	44.98
<b>T-MAKER</b>	
WRITE NOW	118.00
<b>TARGET SOFTWARE</b>	
MAC LIGHTNING 2.0	57.00
THESAURUS	33.00
LEGAL OR MEDICAL DICTIONARY	57.00
VOILA	60.00
<b>TELOS</b>	
BUSINESS FILEVISION	227.00

### Creative Education

<b>ALTSYS</b>	
FONTASTIC	30.10
FONTGRAPHER	237.20
<b>CONQUEST PRODUCTIONS</b>	
"HOW TO DO VIDEO" ON DESK TOP PUBLISHING USING READY SET GO 3.0	48.00
<b>DAVIDSON &amp; ASSOC.</b>	
SPEED READER II	40.22
MATH BLASTER	28.50
<b>FIRST BYTE..</b>	
KID TALK	45.75
SMOOTHALKER	56.75
SPELLER BEE	45.50
<b>GREAT WAVE SOFTWARE</b>	
TIMEMASTER	24.25
LOC	29.75
KIDS TIME	30.00
<b>HAYDEN</b>	
SAT. COMPLETE	57.47
<b>MINDSCAPE</b>	
S.A.T.	47.00

<b>SIMON &amp; SCHUSTER</b>	
PAPER AIRPLANE	22.97
<b>UNICORN SOFTWARE</b>	
FUTURA & UTOPIA, each	25.00
FRACTION ACTION & MATH WIZARD each	27.00
DECIMAL DUNGEON	27.00
READ A RAMA	35.00

### Games

WE CARRY THE LATEST  
AND BEST GAMES BY:

<b>ACCOLADE</b>	
HARDBALL	28.00
<b>ACTIVISION</b>	
SHANGHAI	28.50
<b>BRODERBUND</b>	
ANCIENT ART OF WAR	28.00
LODE RUNNER	22.75
<b>BULLSEYE</b>	
FERRARI G PX	35.00
FOKKER TRIPLANE	35.00
<b>EPYX</b>	
WINTER GAMES	25.00
<b>FIREBIRD</b>	
THE PAWN	27.00
<b>INFINITY</b>	
GRAND SLAM TENNIS	28.00
<b>HENDERSON ASSOC.</b>	
REAL POKER	27.00
<b>INFOCOM</b>	
ALL GAMES	CALL
<b>MICROSOFT</b>	
FLIGHT SIMULATOR	32.00
<b>MILES COMPUTING</b>	
DOWN HILLRACER	28.75
MAC ATTACK	28.17
<b>MINDSCAPE</b>	
BALANCE OF POWER	31.00
BRATACCUS	28.00
DEJA VU	31.60
FORBIDDEN CASTLE	23.50
RACTER	25.85
THE LUSCHER PROFILE	23.50
SHADOWGATE	CALL
UNINVITED	31.75
<b>PBI SOFTWARE</b>	
STRATEGIC CONQUEST	
MULTUSER VERSION	39.00
<b>PRACTICAL COMPUTER APP.</b>	
MAC GOLF	36.00
<b>QWARE</b>	
ORB QUEST	32.00
<b>SILICON BEACH SOFTWARE</b>	
DARK CASTLE	30.00
WORLD BUILDER	48.00
ENCHANTED SCEPTORS	23.10
<b>SIR TECH</b>	
WIZARDRY	34.50

<b>SPECTRUM HOLOBYTE</b>	
GATO	26.00
ORBITER	26.00
TELLSTAR II	54.95
<b>STRIDER SOFTWARE</b>	
POSTER MAKER	29.00
TEMPLATE 1	16.00
TEMPLATE 2	16.50

### Graphics & Design

<b>ANN ARBOR SOFTWARES</b>	
FULL PAINT	60.00
<b>BRODERBUND</b>	
PRINT SHOP	50.00
<b>CASADY</b>	
FLUENT FONTS EACH	30.25
LASER FONTS VOL 1 - 15	42.30
<b>CENTURY LASER FONTS-</b>	
10 PACK	CALL
4 PAK W. S. C. T SYMBOLS, CONGO, MAINSTEE, MICROFONTS, NEOSHO, SHADOW EFFECTS SPOKANE, STYX, THAMES, TRENT, WILLAMETTE, TECHNICAL & BUSINESS EACH	22.00
<b>COMPUCRAFT</b>	
FULL LIBRARY	120.00
INDIVIDUAL DISKS	21.00
<b>COMPUTER SHOPPE</b>	
MAC PLOT 2	250.00
<b>CRICKET SOFTWARE</b>	
CRICKET DRAW	177.00
<b>DOUBLE CLICK SOFTWARE</b>	
WET PAINT VOL 1	23.00
WET PAINT VOL 2	23.00
WORLD CLASS FONTS 1	23.00
WORLD CLASS FONTS 2	23.00
<b>DREAMS OF THE PHOENIX</b>	
PHOENIX 3D LEVEL 1	27.50
<b>ENABLING TECHNOLOGIES</b>	
PRO 3D	225.00
<b>INNOVATIVE DATA DESIGN</b>	
PASTE EASE VOL 2	30.00
MACDRAFT	161.40
<b>KOALA</b>	
MAC K.A.T.	160.00
MAC VISION	218.75
<b>MANHATTAN GRAPHICS</b>	
READY SET GO V3.0	CALL
<b>MILES COMPUTING</b>	
MAC THE RIPPER	28.00
<b>MINDSCAPE</b>	
GRAPHIC WORKS	49.00
COMIC WORKS	49.00
<b>NEW IMAGE TECHNOLOGY</b>	
MAGIC VIDEO DIGITIZER	275.00
DIGITIZER CAMERA	185.50
<b>POLARWARE</b>	
GRAPHICS MAGICIAN	45.75
<b>SILICON BEACH SOFTWARE</b>	
ACCESSARY PACK #1	23.00

## NETWORKING WITH YOU!!



THE SAVING ZONE IS COMPLETELY NETWORKED ON THE MAC USING THE REACH KEEPER™, PHONENET™, & OMNIS 3+™. OUR EXPERIENCED STAFF SPECIALIZES IN PROVIDING FOR THE NEEDS OF CORPORATIONS & SMALL BUSINESSES.



# A FULL SERVICE MACINTOSH SOFTWARE & HARDWARE VENDER



## SPECIALS

SILICON PRESS	46.00
SUPER PAINT	60.00
<b>SIMON &amp; SCHUSTER</b>	
MAC ART DEPT	22.97
<b>SOFTSTYLE</b>	
COLORMATE	54.75
<b>T-MAKER</b>	
LASERLETTERS	
BUSINESS IMAGE	28.75
CLICK ART EFFECTS	28.72
CLICK ART LETTERS 1 or 2	28.75
CLICK ART PUBLICATIONS	28.72
BOMBAY	47.75
PLYMOUTH	47.75
SEVILLE	47.75

<b>INBOX PERSONAL CONNECTION VS 1.5</b>	
THINK TECHNOLOGIES INC.....	93.75
<b>INBOX STARTER KIT VS 1.5</b>	
THINK TECHNOLOGIES INC.....	262.50
<b>MAC LINK PLUS W/ CABLE DATA VIZ.....</b>	134.25
<b>BASIC COMPLIER VS 1.0 MICROSOFT.....</b>	111.00
<b>BASIC INTERPRETER MICROSOFT.....</b>	85.50
<b>MAC MONEY SURVIVOR SOFTWARE.....</b>	44.98

SYSTEM	70.00
MAC NIFTY AUDIO	
DIGITIZER	105.00
STUDIO SESSION	56.25
<b>MARK OF THE UNICORN</b>	
PROFESSIONAL	
COMPOSER	395.00
PROFESSIONAL	
PERFORMER	245.00
<b>MINDSCAPE</b>	
BANK STREET MUSIC	
WRITER	22.97
<b>OPCODE</b>	
WE CARRY ALL OPCODE PRODUCTS	
PROFESSIONAL	98.00
PROFESSIONAL PLUS	138.00
SEQUENCER 2	150.00
SEQUENCER 2.5	198.00
STUDIO PLUS	175.00

### Hardware

<b>ADON</b>	
30/40 MEG SCSI HD	
TAPE BU	2,395.
40 MEG SCSI TAPE B/U	1,295.
<b>AST RESEARCH</b>	
AST 2000	2,340.
AST 4000	4,895.
<b>BIZCOMP</b>	
1200 BAUD MODEM	299.00
<b>CAPETRONICS</b>	
ADC 1200 MODEM	220.00
<b>CORVUS</b>	
DISK SERVERS	CALL
<b>CAUZIN</b>	
STRIP READER	185.00
STRIP SOFTWARE	19.00
<b>ERGOTRON BUFFERS</b>	
MACBUFFER LW 2MEG	2,399.
MACBUFFER LW 1MEG	1,950.
<b>GTCO</b>	
CURSUS STYLIS	89.00
DIGITIZER	348.00
<b>HAYES</b>	
SMART MODEM 1200	400.00
SMART MODEM 2400	629.00
TRANSIT 1000/512K	410.00
<b>IOMEGA</b>	
BERNOULLI BOXES	
10MG SCSI	1,125.
20MG SCSI	1,331.
2-10MG SCSI	2,475.
2-20MG SCSI	2,650.
FILE SERVER	2,455.
<b>KILLY CORP.</b>	
PHONENET	47.50
<b>LOGIC ARRAY</b>	
30 MEG SCSI	828.00
67 MEG SCSI	CALL
<b>LOWDOWN</b>	
MS 300 SCANNER	1,350.
<b>MACMEMORY</b>	
2X4 UPGRADE	
MAXPORT SCSI PORT	153.75
MAXPLUS 2 MEG BOARD	325.00
MAXSAVE 1 OR 2	78.00
TURBO CHARGER	CALL
<b>MICROGRAPHIC IMAGES</b>	
MEGASCREEN PLUS	2,225.
MEGASCREEN 2	1,768.
<b>MICROTEK</b>	
MS 300 SCANNER	2,095.
<b>PCPC</b>	
MAC BOTTOM 21 MEG	
512K	900.00
MAC BOTTOM 21 MEG	869.00
WITH 1200 BAUD MODEM	1,020.

MAC BOTTOM 32 MEG	1,020.
WITH 1200 BAUD MODEM	1,150.
MAC BOTTOM 40 MEG	1,298.
WITH 1200 BAUD MODEM	1,458.
<b>REACH TECHNOLOGIES</b>	
KEEPER+ 10MEG - 120MEG	CALL
THE BRAIN	
A TRUE FILE SERVER 68000 CPU & 512K MEM.	1,095.
<b>RELAX TECHNOLOGIES,</b>	
HARD 20+ W/MASTER	
CONT	635.00
MAC MAT 20 MEG SCSI	600.00
MAC CONTROL	68.00
<b>U.S. ROBOTIC MODEMS</b>	
1200 BAUD	248.00
2400 BAUD	498.00
9600 HST	855.00

<b>C.AZTEC C68K-P</b>	
PERSONAL	165.00
DATA BASE W SOURCE	330.00
<b>TML</b>	
MINI EDIT SOURCE	
CODE DISK	17.00
DATA BASE TOOL KIT	62.50
PASCAL	69.00
SOURCE CODE LIBRARY	59.00
MAC EXPRESS	176.00
<b>THINK TECHNOLOGIES</b>	
LIGHT SPEED-C	97.00
LIGHT SPEED PASCAL	97.50
<b>ZEDCOR INC</b>	
Z BASIC	70.00

### Utilities

<b>AFFINITY</b>	
TEMPO	60.00
<b>ALSOFT</b>	
DISK EXPRESS	28.25
<b>BATTERIES INCLUDED</b>	
MAC BATTERY PAK	28.72
<b>BORLAND</b>	
SIDEKICK 2.0	62.00
<b>CENTRAL POINT SOFTWARE</b>	
COPY II MAC	23.00
<b>CORTLAND</b>	
TOPDESK	36.00
<b>DREAMS OF THE PHOENI</b>	
QUICK & DIRTY UTIL	
VOL #1 OR #2	27.50
TWELVE -C FINANCIAL	
DSK ACCESS	27.50
<b>FWB SOFTWARE</b>	
HARD DISK BACK UP	36.00
HARD DISK PARTITION	36.00
HARD.DISK UTIL	55.00
<b>HAYDEN</b>	
M.U.D. DISC	28.50
<b>IMAGINE SOFTWARE</b>	
SMART ALARMS	38.75
<b>MACMASTER</b>	
FEDIT+	28.00
<b>MAINSTAY</b>	
N'CRYPTOR	27.75
MAC BOOSTER	34.50
MACASM	86.25
TELESCOPE	86.25
TURBO DOWN LOAD	27.00
MAC SPOOL	34.25
DISK RANGER	34.25
<b>MICRO ANALYST</b>	
MACZAP	41.50
<b>PBI SOFTWARE</b>	
HARD DISK BACKUP	31.00
HFS LOCATOR	23.00
<b>PCPC</b>	
HFS BACKUP	28.75
<b>SOFT STYLE</b>	
JET START	26.00
LASER START	54.75
EPSTART	26.00
PLOTSTART	72.00
PRINTWORKS	43.20
<b>THINK TECHNOLOGIES</b>	
INBOX PERSONAL	
CONNECTION V 1.5	93.75
INBOX STARTER KIT V 1.5	262.50

### Music

<b>ELECTRONIC ARTS</b>	
DELUXE MUSIC CONST	
SET	60.00
<b>GREAT WAVE SOFTWARE</b>	
CONCERT WARE +	39.95
CONCERT WARE + MIDI	79.75
CONCERT WARE + MIDI	
CABLE	47.75
MUSIC VOL 1-5 EACH	9.00
<b>HAYDEN</b>	
MUSIC WORKS	45.97
<b>KETTE GROUP</b>	
MAC NIFTY STEREO	

### Languages

<b>MICROSOFT</b>	
FORTRAN COMPLIER	182.00
BASIC INTERPRETER	85.50
BASIC COMPLIER	111.00
<b>MANX</b>	
C AZTEC C 68K	
COMMERCIAL	425.00
C AZTEC C68K	
DEVELOPERS	250.00

## ORDERING INFORMATION

We accept VISA, MASTERCARD AND DISCOVER CARD  
NO SERVICE CHARGE ADDED.

AMERICAN EXPRESS add 2.5%. For quickest service call us.  
If ordering by mail, send cashier's check, certified check or money order, or credit card number and expiration date for fast service. If sending ck. or M.O., please call to obtain shipping cost! Except Fortune 500 and Governmental checks, allow two weeks for check to clear.

WA residents please add 8.1% sales tax.  
For first time purchase orders, please enclose references with phone numbers.

.....OUR POLICY.....  
Software: Due to Federal regulations, all sales are final. Defective software will be replaced with like item. Any other return will be subject to 20% restocking fee, against credit. All returns must have an authorization number. Call 206 883-1975.

Shipping Charges: The standard is UPS. ground..CALL. MAIL: Air, Insured. US Postal, APO, FPO add 3%, \$5.00 min. Alaska or Hawaii, add 6%, \$10.00 min. Canada, add 10%, \$15.00 min. Foreign: \$25.00 MIN All prices are subject to change without notice, ad published for your convenience only.

7102 180TH AVE. NE. REDMOND, WA. 98052

FOR ORDERS ONLY

IN WA. STATE

FOR INFORMATION OR ORDER STATUS

**1-800-248-0800 1-800-243-4200 1-(206) 883-1975**

MON THRU FRI, 6AM TO 8PM PST. SAT, 6AM TO 6PM PST

THE SAVING ZONE BULLETIN BOARD: 1200, 300 BAUD MODEMS...CALL (206) 881 3421 8PM TO 6AM

**THE SAVING ZONE: PERSONAL ATTENTION, HANDS ON EXPERTISE!**

# Do, Re, Mouse

MUSICAL APPLICATIONS WERE probably not foremost in the minds of the earliest software and hardware developers — certainly it fell way behind such things as analyzing election returns and flowcharts. Computers were obviously the province of science; no one ever expected the arts to move in and take over to the extent that they have. There are several programs that support more or less formal musical composition; now there's one that lets you jam.

*Music Mouse* is the kind of application that leaves you feeling completely charmed. Created by Laurie Spiegel, who has worked at some of the great citadels of computer music (such as Bell Labs), it turns your Mac into a unique musical instrument. Laurie describes *Music Mouse* as "an intelligent instrument." Most of you will call it just plain fun. This is a music program unlike any other ever written for personal computers. *Music Mouse* is computer-assisted improvisation, automating parts of the improvisation process, leaving you free to shape and direct the flow of the music.

Unlike *MusicWorks* or the *Deluxe Music Construction Set*, this is not a

**Music Mouse gives you  
computer-assisted  
improvisation and  
leaves you free to jam.**

notation program, or a sequencer (note storage and playback program). *Music Mouse* is a real-time performance application. Launch it, grab your mouse, and you're immediately involved in playing music. You'll be drawn into it before you know what's happened. Even if you've never touched a musical instrument before, you'll be able to make all kinds of interesting musical sounds right away. If you have some musical background, you'll be able to get still more out of it.

Laurie Spiegel is a composer of avant-garde leanings, so *Music Mouse's* forte is not melodies like "Jingle Bells" or "Three Blind Mice." Although you can use *Music Mouse* to play tunes, that's not its intended purpose. What *Music Mouse* does

most naturally and idiomatically is to create abstract sound patterns. As you play, you control, shape and direct those patterns in real time. With an unusual degree of insight, Spiegel has made some musical choices that restrict the range of possibilities, keeping you from making truly ugly sounds. At the same time, the remaining choices permit you to express your musical feelings spontaneously. It is, after all, an intelligent instrument.

With *Music Mouse*, you can play complex four-voice sounds and all the notes are within the pitch set selected — no "wrong" notes. You can play slow, arching melodies with rich harmonic accompaniment. Or you can play glittering, shimmering textures with rapidly cascading inner patterns. The *Music Mouse* helps you express yourself by selecting the right notes for the chords, and by generating the automatic melodic patterns, leaving the driving to you and your mouse.

## KEYBOARDS, STRINGS, REEDS, MICE

*Music Mouse* is especially admirable because it is not a keyboard-based application. Almost all other



BY STEVE BIRCHALL



# DO, RE, MOUSE

music software forces you to use a keyboard to play it. Even the *Deluxe Music Construction Set*, which lets you drag notes onto a two-staff piano notation template, basically behaves like a piano. *Music Mouse*, however, is the kind of electronic musical instrument meant for diehard old analog knob twisters. One of the first things that attracted me to electronic music back in the 1960's was the fact that twisting knobs on control panels could produce meaningful music. The keyboards came later, when the academic types, and still later, the rock bands, took over. After that, every new electronic musical instrument ended up as a glorified electronic piano.

Keyboards limit your musical imagination to the things that keyboards do. Every instrument has its own unique, idiomatic way of being played. Thus composers must write differently for the violin, bassoon or the piano. What's easy to play on the clarinet, for example, might be impossible on the piano.

That's the point. Keyboards alone are not the complete answer. Music has many other expressive possibilities besides what keyboards provide. All are useful, and have an important place in the way we express musical thoughts. *Music Mouse* opens up some new ways to control your instrument — including MIDI instruments.

## HANDS-ON MOUSING

The Mac-turned-intelligent-instrument offers simple two-handed operation. You control pitch by moving the mouse with one hand. Four voices are available, and you



## MIDI Connections

If you have a MIDI port on your Mac, and a MIDI synthesizer, *Music Mouse* turns your Mac into an extremely flexible MIDI instrument, with an alternative controller. All the MIDI sound modification devices are usable (if your synthesizer has them): foot pedals, modwheels, breath controllers, and so on. All the MIDI expression parameters are available too — vibrato, tremolo, key touch sensitivity, portamento, sampled sounds and instrument definitions. Once you've gained access to MIDI, a whole new world of sounds, and more elaborate control over them, becomes possible.

Some synthesizers have expander modules, which are less expensive than the complete instrument with keyboard. *Music Mouse* can control those expander boxes directly. Also, since MIDI synthesizers are still playable while they are being operated by MIDI commands, one person can play the synthesizer normally, while another plays it from the Mac, using *Music Mouse*. If you're searching for new ways to make music, *Music Mouse* offers a dramatically new approach to controlling your synthesizers, and playing them in real time. Its "computer-assisted improvisation" approach is for performing music, not for notating it, so it can make improvising on a MIDI system easy and enjoyable by giving you a helping hand.

can divide them up with two voices controlled by horizontal movement and two by vertical motion, three against one, or one against three. A trackball is recommended instead of the mouse if you want really fine control over the individual notes.

With the other hand on the Mac keyboard, you can adjust everything else: volume, tempo, tone quality, pitch collection, transposition, and all the MIDI parameters. On the keyboard, the commands are always single keystrokes, with no Option, Command or shifted key combinations, making it truly a one-handed operation.

Speigel has grouped the key controls together to make them easy to remember, though most are arbitrary and not mnemonic. The pull-down menus remind you of key functions if you forget, but pressing the keys is preferable, because moving the pointer up to the menu bar would disrupt your music-making. The keys change the sounds instantaneously

and without causing any obnoxious switching noises.

The notes are distributed between the X and the Y axes, and you play the instrument by moving the mouse inside the two-dimensional universe of sounds they provide. If you don't like your current universe, you can change it by pressing one of the Mac's keys. *Music Mouse* has a very pleasurable high-touch, kinesthetic response. Moving the mouse makes music. Motion equals change. Very quickly, you learn how to become a part of this feedback loop, and you find yourself totally immersed in the process of creating music.

## TRAINING YOUR MOUSE

As with any instrument, though, practice improves your performance. A good beginning exercise, using the default settings, is to keep the horizontal voice constant while moving the three vertical voices melodically. Listen to the changing pitches and relate them to the amount of distance you have to move the mouse to get that change. After awhile, the relationship becomes instinctive. Then, reverse the process and keep a three-voice chord constantly droning while playing solo melodies on the horizontal voice. For the more daring, the next step is to change the chords occasionally, after every few notes of melody. Later, you can experiment with the effects created by moving the mouse in various curves, circles, and other patterns. All the time you're doing these exer-

**M**usic Mouse is the kind of electronic musical instrument meant for diehard old analog knob twisters.

cises, the most wonderful and pleasing sounds are pouring out of your Mac. Practice is pleasurable!

### ON YOUR OTHER HAND

The Mac's keyboard is divided into eight groups as follows:

1. **q w e r t y**: Pitch collection controls the possible notes played by the mouse, and rejects those outside the pitch collection. Among the pitch collections are pentatonic (like all the black keys on the piano); diatonic (all the white keys); chromatic (both the black and white keys), a Middle Eastern scale; the cycle of fourths, and a continuous (or microtonal) pitch set.

2. **z x c**: Transposition by half-steps up, down and clear (return to normal).

3. **a 1 2 3 4 5 6 7 8 9 0**: Substitutes melodic patterns for static pitches. Each numbered key has a different pattern, and the "a" toggles them on/off. Pressing the mouse button will stop the repeating patterns until you release it.

4. **s d f g**: Voicing. The "s" key toggles between parallel and contrary motion for the voices added by the numbered keys. The "d" key toggles the motion for the mouse-controlled voices. The "f" key changes the format (two voices

against two, or one against three) as controlled by the mouse. The "g" key controls the grouping (all voices play together when on, each voice plays alone when off).

5. **u i o p**: Expression and tone quality. The keys select a waveform, square wave (like a clarinet) or saw-

**M**usic Mouse is computer-assisted improvisation, automating parts of the process, and leaving you free to shape and direct the flow of the music.

tooth wave (string and brass sounds). For MIDI instruments, the "o" and "p" keys turn vibrato and portamento (sliding between notes) on and off.

6. **Spacebar < > / :** Volume. The spacebar turns the sound on and off. The "<" and ">" keys turn the

volume down and up (shift not necessary). The slash key toggles between legato (smooth connection between notes) and staccato (broken connections).

7. **- +**: Tempo. These keys slow down and speed up the tempo of the melodic patterns added by the num-



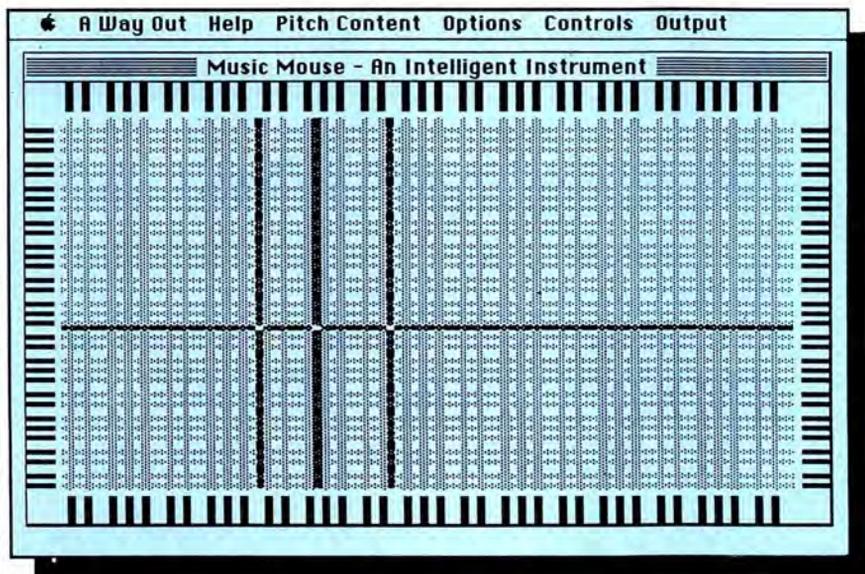
bered keys (shift unnecessary for the "+" key).

8. **vb hj nm kl**: MIDI controls for key velocity, modwheel and foot controllers.

That's an enormous amount of musical flexibility to have under your fingertips while you're pushing the mouse around. Despite the relative simplicity of the design, *Music Mouse* does quite a lot of different things. By pressing just one key, you can make a dramatic or a subtle change in the sound without interrupting the flow of your improvisation. For each of these eight sets of controls, there's a default setting so you can begin playing immediately. To return to the default settings, just press the SHIFT-I combination (the only exception to the no shift key rule).

Before you realize it, you are playing a rather pleasant form of avant-garde music. On this instrument, the main variables are not pitch and loudness, but tempo and articulation. What's really fun is discovering how easily you can express yourself in this non-traditional way. Many other conceptual instruments are possible, and you can move from one to another effortlessly.

Pushing a single key can make a



The main (and only) screen uses a four-line cursor controlled by the mouse. You can change the relationships so that you have two pairs of voices, or three against one, or one against three, or make them move in contrary motion instead of parallel motion. The display, though, is only a guide, and not really necessary. The best way to use *Music Mouse* is to listen as you play.

# DO, RE, MOUSE

big difference in the sound — instantaneously. For example, the slash key (“/”) changes the articulation from legato (connected) to staccato (detached). The plus and minus keys speed up and slow down the tempo. Just playing with the tempo and articulation keys without moving the mouse can do some amazing things when you have the automatic pattern generators turned on. Just punch a key and you’ve changed the way your instrument operates.



Used strictly with the Mac, *Music Mouse* is amazing. You don’t need to remember all the different controls available — if you forget, you can press buttons until you find the one you want. After all, this is for improvisation and fun, not for playing Bach or Beethoven. If you make a mistake, you may find the sound interesting enough to go off in the direction it leads you, instead of where you intended to go. That’s the fun of improvising. But *Music Mouse* is even more powerful as a controller for MIDI instruments.

*Music Mouse* works either with the Mac’s internal sound generator, or it can control any MIDI instrument through a MIDI interface. If you use only the Mac’s audio circuits, hook it up to your stereo system, a pair of self-powered external speakers, such as the AR Partners or the Bose RoomMates, or a unit like Impulse’s MacNifty Stereo Music System. The Mac’s tiny one-inch internal speaker is intended mostly to produce the beeps and chimes that programmers use to tell you that something has gone wrong, or that an important operation is about to take place.

## AGAIN, LATER

*Music Mouse* can’t save your better (or worse) efforts, but *Tempo* can. *Tempo* is a desk accessory for creating macros, or strings of commands initiated by a single command. Also, *Tempo* will record all your keystrokes and mouse movements, and replay them, so you don’t have to think too hard to create your macros. For recording *Music Mouse* improvisations, that’s just the ticket. With *Tempo*, you can record a long series

**O**n this instrument, the main variables are not pitch and loudness, but tempo and articulation.

of mouse movements and have them played back automatically. During playback, you can slow down *Tempo*’s tempo. If you punch keys on the Mac during the recording, *Tempo* will reproduce all of the changes they create — or you can punch keys during the playback for added thrills and chills. Since *Tempo* macros can call other *Tempo* macros, you can nest lots of short macros to create really complex effects, all played back automatically.

*Music Mouse* also works with *Switcher*, so you can transfer the MIDI data it generates over to other MIDI applications, such as note storage and editing programs. And, since *Music Mouse* only occupies 26K, you can put it into a *Switcher* set with a word processor or a data base manager. When your regular work gets tedious and boring, you can switch applications. Take a break and have fun playing some music.

## DOWN SIDE OF THE MOUSE

*Music Mouse* would be even more interesting if you could alter some of the presets. For example, the ten melodic patterns available from the

numeric keys are fine as they stand, but a more creatively inclined user might prefer to edit them or substitute completely different ones. Also, the durations of the notes in these melodic patterns are equal note values. The real fun comes when you can create interesting rhythms for these sequences. The preset pitch sets are good choices and present plenty of possibilities. But, the ability to substitute other pitch sets of your own choosing would be a nice addition. Spiegel, who is in real life a busy composer, hopes to find time to write enhancements such as these.

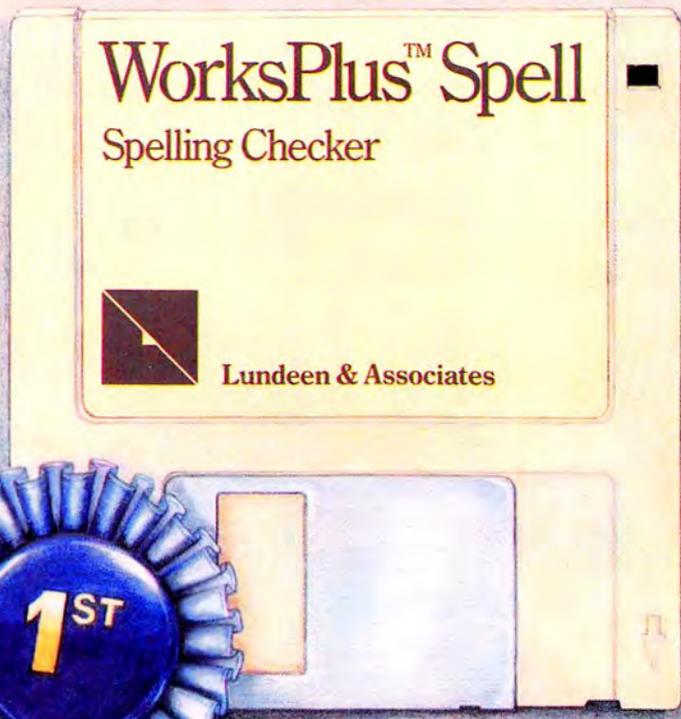
You can’t record, within the Mac, the things you play. You can of course, record the audio output on any tape recorder, but being able to play another mouseful of sounds along with a previous recording would be a nice capability. According to Spiegel, the Amiga’s multitasking environment can run several copies of *Music Mouse* simultaneously, and that makes extremely dense, complex sounds possible. The same would be possible on the Mac if a multitasking *System* and *Finder* were available. 

STEVE BIRCHALL IS A COMPOSER, TECHNICAL WRITER AND FORMER EDITOR-IN-CHIEF OF DIGITAL AUDIO. HE IS DIRECTOR OF PUBLISHING SERVICES FOR KOTTWITZ & ASSOCIATES IN MERRIMACK, NH.

## Music Mouse

Overall Rating	★★★★
Follows Mac Interface	★★★★
Printed Documentation	★★★
On-Screen Help	★★★★
Performance	★★★★
Support	★★★★

**Comments:** One of the more innovative music programs available for any personal computer. **Best Feature:** Immediately immerses you in the act of making music. **Worst Feature:** You can’t edit the ten melodic patterns, or create new pitch sets. **List Price:** \$59.95. Compatible with all Macs, *System* 3.2 and *Finder* 5.3, as well as *Switcher* and *Tempo*, it occupies only 26K. Published by OpCode Systems, 444 Ramona, Palo Alto, CA 94301, (415) 321-8977. Not copy protected.



## For those who didn't place first in the Spelling Bee...

### and even for those who did.

You bought Microsoft® Works to save time and unnecessary effort. So, let WorksPlus Spell track words for your Works!

WorksPlus Spell is the fastest spelling checker on the market—**10 times faster** than any other. Spell checks a two-page memo in 1 second; a 50-page proposal in less than 30 seconds!

Ever have trouble remembering the spelling exceptions? "I before e..."??? Spell doesn't. It knows all those endless rules as well as verb tenses, plurals, adjectives, and adverbs.

Can't remember a word's spelling? Spell can look it up for you. Simply type a command key and the first few letters and Spell will insert the correct word right into your document.

Spell can also check each word as you type without slowing your speed. A gentle beep warns you of a misspelling or typo. Just choose the correct alternative and continue typing!

Its main directory contains 70,000 words. If you need more, you can add

words to either the main dictionary or a document's personal dictionary. Or, you can delete words.

But Spell is more than a spelling checker. Its Glossary feature saves you typing the same phrases over and over. Just abbreviate those frequently-used phrases. Spell will automatically insert the complete phrase for you. You can also use its automatic hyphenation feature to give your documents a compact, professional appearance.

WorksPlus Spell is *the* spelling checker to use with your Macintosh™ and Microsoft Works program. Spell is so well integrated that even the Works Help

file is updated to include it. Now you can write, check, and print a document **without ever leaving** the Works program.

We're so sure that you'll win every time you use Spell that we'll include a blue ribbon with your purchase! In addition, Spell comes with a 30-day money-back guarantee so you can't lose.



**Lundeen & Associates**  
P.O. Box 30038  
Oakland, CA 94604

Please circle 173 on reader service card.

### WorksPlus™ Spell

Send me \_\_\_ copies of WorksPlus™ Spell at \$59.95 each \$ \_\_\_\_\_  
In the USA & Canada, add \$3.00 per copy for shipping and handling \_\_\_\_\_  
Outside the USA/Canada, add \$10.00 per copy for shipping and handling \_\_\_\_\_  
CA residents add sales tax \_\_\_\_\_  
Amount enclosed \$ \_\_\_\_\_

Method of payment:

VISA  MasterCard  Check

\_\_\_\_\_ account number \_\_\_\_\_ exp. date

\_\_\_\_\_ signature

Ship to:  
name \_\_\_\_\_  
address \_\_\_\_\_  
city \_\_\_\_\_  
state \_\_\_\_\_ zip code \_\_\_\_\_

# The word processor you have



By the time you read this ad, Microsoft® Word 3.0 for the Mac should be at a store near you. Like the IBM program from which it was derived, it's a significant advance in word processing technology. Unfortunately, it's just not good enough.

Why? Because FullWrite Professional™ is about to be shipped, and compared to Word 3.0, FullWrite Professional is a superior word processor, at a better price. With all the standard features Word 3.0 has, including a spell checker, outlining, mail-merge, style sheets, table of contents, index and a glossary. And much more.

Simply put, FullWrite Professional is the

most powerful word processor available, combined with desktop publishing layout features and graphics generation. Everything you could want and can't get with Word 3.0.

Based on information released at the 1987 MacWorld Expo in San Francisco, here's some of what you'll get with FullWrite Professional that you won't get with Word 3.0.

- *WYSIWYG multi-column display.*

What you see on the screen as you're editing is everything that prints on the page. Word 3.0 makes you switch out of the editing mode to see what you'll get. And unlike Word 3.0, all special features

(endnotes, etc.) are displayed as you type.

- *Automatic repagination as you type.* Not the slow, cumbersome exercise of Word 3.0.

- *Full desktop publishing look.* Automatic wrapping of columns of text around any shaped object. And multiple column sizes on one page.

- *A MacDraw™-like drawing environment* with laser resolution bit maps. No changing programs or disks to create or edit graphics right in the page you're working on.

- *Hyphenation as you type.* Word 3.0 makes you manually initiate hyphenation

# waited years for is finally here.



## Don't buy it.

(Here's why.)

Microsoft® Word 3.0 is a registered trademark of Microsoft Corporation.  
™ MacDraw is a trademark of Apple Computer, Inc.  
The prefix Full, FullWrite, and FullWrite Professional are trademarks of Ann Arbor Softworks.  
IBM is a registered trademark of International Business Machines.

after you've entered text.

- **Thesaurus.** Of course.
- **Posted Notes.** A brilliant feature that lets you add comments or observations right to the document for reference during editing.
- **Highlighted revisions.** FullWrite Professional automatically highlights changes you've made to a document between drafts.
- **Browser.** Lets you browse through posted notes, footnotes, table of contents, endnotes, headers, footers, bibliographies, pictures, sidebars, or index entries separately from the body of the document.

- **Search and replace by any attribute:** Text, font, type style, case, type size and justification.

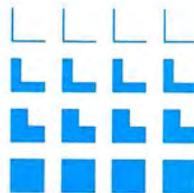
That's just a sample of what makes FullWrite Professional a faster and easier-to-use product than its slightly older competitor. There are other, equally unique

features that are well worth checking into.

FullWrite Professional. We'll be at your store within 60 days.

And we're going to change serious writing.

Forever.



## FULLWRITE PROFESSIONAL

### ANN ARBOR SOFTWORKS

2393 Teller Road • Suite 106 • Newbury Park, CA 91320  
Phone: (805) 375-1467

Please circle 34 on reader service card.





# Not So BASIC

**Microsoft BASIC branches off in two directions: a new Compiler and version 3.0 of the interpreter.**

BACK IN THE JULY 1986 ISSUE OF *MacUser*, you were warned: Microsoft would release its *BASIC Compiler* and let you think you had a development tool in your hands — but you wouldn't, really, because you would also need the machine language libraries from Clear Lake Research to get at the Mac's Toolbox. Well, the *Compiler's* here, and guess what? So is the 3.0 version of *BASIC*, which includes — you guessed it — the CLR Toolbox libraries. Microsoft apparently reads *MacUser*.

Okay, so you might have a developer's tool now, but how good is it? Let's take a look at both the *Compiler* and the 3.0 *BASIC* upgrade.

## THE COMPILER

A compiler has to be reviewed on two counts: the process and the end product. With this compiler, the end product is very good, but the process is...well, "dismal" comes to mind. How anyone could write a compiler for the Mac without ever reading *Inside Macintosh* is beyond me. Or, maybe they read it and decided to break every Macintosh interface rule on purpose.

Here's what you have to put up with for the thrill of creating a double-clickable application of your own from a BASIC listing. You run

the compiler and you're faced with ...nothing. There's just an empty gray screen and a File menu. When you realize you ought to do something, you select OPEN from the menu and choose a BASIC program to compile. A window opens with your compile options, and you find yourself in (gasp!) a modal environment. That means you're in the window only: no File menu choices, no desk accessories available, nothing. You're in the *Compiler* for better or for worse. You check your options (more about them later) on or off, and press the COMPILE button.

As the program compiles, you get ongoing reports in the window. (How can you trust an application that prints only in Monaco?) If you have more than a few errors, the window starts scrolling — and you can't scroll it back. A list of errors can be saved to the disk for later printing, and you can pause the scrolling (with an unfriendly COMMAND-S and COMMAND-Q for pause and continue) but neither of these options is as direct as a scrollable window.

Okay, so you have only one minor error in the "source code" — the original listing. How can you fix this minor error? Quit the *Compiler*, open *BASIC*, fix and save the program; quit *BASIC*, open the *Compil-*

**BY SHARON ZARDETTO AKER**

# NOT SO BASIC

er, and try again. Of course, you can set yourself up in *Switcher*, or use the TRANSFER command in the File menu to bypass the desktop to make it a little easier on yourself. If you're smart, you'll get a DA editor like *MockWrite* from CE Software or *miniWriter* from Maitreya Designs, and do the text editing from under the Apple menu (when you can get at it, after the compile errors are listed).

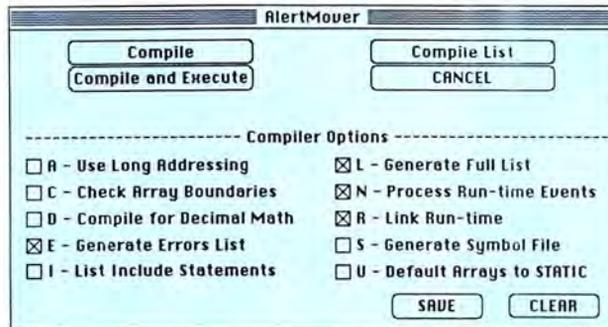
There are lots of other interface insults: you can wait all day, but never see the wristwatch icon; when compilation is complete, there's no way of knowing except by observing that the printout has stopped; creating a Compile list (a list of programs to be compiled in one fell swoop) is an exercise in computerese that's archaic on the Mac, full of slashes, semicolons and cryptic single-letter commands.

So much for the *Compiler's* environment — you get the idea. It's like working on any computer other than the Mac. Still, what the *Compiler* does is probably more important than how it does it (although I'm not entirely convinced of that).

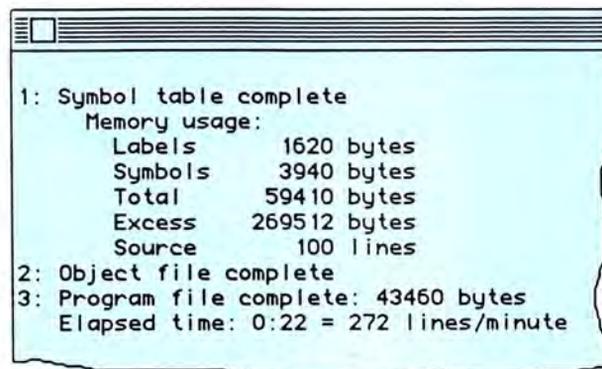
## WORKING WITH THE COMPILER

To compile a simple program listing, all you have to do is: run the *Compiler*, select the *BASIC* program with the OPEN command, click the COMPILER button, and sit back and wait a few seconds or a few minutes depending on the length of the original program. If there were no errors found in the program you compiled, the disk has a completed double-clickable application created from your BASIC listing. It can be as easy as that.

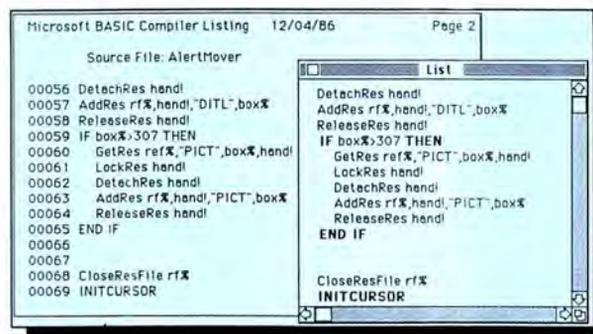
Of course, it can also be a lot more complicated, even if you don't encounter errors. The compiler offers ten options for the compilation process itself, for instance. And, there are four "metacommands" that you can include in your listing to direct the compiler's actions. In addition, there are a few "extensions" to *BASIC* that the compiler can handle that the interpreter can't: Case Select structures and recursive subprograms. So, although a simple pro-



The *Compiler* window is a modal window: you can't select from any menu as long as it's open.



At the end of the compilation, a report like this is displayed; if errors are encountered, they are listed after these statistics. The window has no scroll bar, so long error lists scroll right off the screen.



The *BASIC* listing that serves as the source code, and the optional *Compiler* listing. The *Compiler* numbers all the lines regardless of the listing's line numbers or labels.

gram can be run through the compiler with little or no alteration, and few or no options activated for compiling, there are also a lot of things that can go into the preparation of source code.

## METACOMMANDS

Elementary preparation of your listing for the *Compiler* consists of getting rid of a few commands that make no sense in a compiled application: LIST, for instance, or STOP or TRON. More sophisticated preparation of the source code includes the

use of metacommands.

Metacommands are commands embedded in the *BASIC* listing that the interpreter ignores because they are preceded by a REM statement, but the *Compiler* uses as instructions in the compilation process. The metacommands are:

- **SINCLUDE**, which directs the compiler to stop compiling the current code, compile a named file and insert it into the main code, then return to the main code to finish it.

- **SIGNORE ON/ SIGNORE OFF** instructs the compiler to ignore

# Add It Up, And You'll Buy Only Software That Fits™!



## The Right Program at The Right Price

Thousands of customers have found that they can buy exactly the right software every time. And pay far less than retail prices.

With our trial use plan, you select programs you'd like to buy, and run them on your machine, under your conditions. Not just an hour or so in a store, and not just with a "demo" disk. We'll send full working originals, with manuals.

You run the programs, and pick the winners. If you like a program and you decide to keep it, all you pay is the discounted balance. When you add up the trial and balance prices, you're paying substantially less than manufacturers' suggested retail prices.

If you don't like a program, all you do is send it back. The trial saves you making a wrong purchase. And, that could save you hundreds of dollars.

## Nearly 600 Titles in Our Free Catalog

Make head-to-head comparisons between competing programs such as Superpaint/Fullpaint, Macdraft/Macdraw, Ragtime/ReadySetGo, Double Helix/Omnis3, or any of hundreds of others. We offer all the most popular Mac software. You pick the program, and you only pay for the trial. You decide whether it's worth buying. If it fits, keep it, and pay the discounted balance. If it doesn't, send it back. Either way, you'll know for sure!

## Which One Fits?

No matter how many reviews you read, or how many "experts" you consult, there's only one way to know if a program is right for you . . . run it on your machine, with your data.



## Call and Check Our Prices, Now

What are you waiting for? Pick your programs from any that we offer, and call us for prices. Get a hands-on tryout for a fraction of the purchase price . . . then, whatever you decide to keep, all you pay is the discounted balance.

When you add it up, it's the only way to make sure you get software that fits.

## Software That Fits™

**1-800-972-3018**

(713) 540-2300



## Save on Sony Disks!

(SS) boxes **\$1.10** (SS) 100 bulk \$ **.98**  
(DS) boxes **\$1.56** (DS) 100 bulk **\$1.26**

*Why Pay More?*

*Save on disk drives and ribbons, too! Call us.*

**MacRENTALS™** P.O. Box 4028 • Humble, TX 77347

Please circle 152 on reader service card.

# NOT SO BASIC

any statements between the ON and OFF statements; this lets you use interpreter-specific commands in a listing that will later be compiled.

●**\$OPTION** is used to turn compiler options on and off within the listing so they affect part of the source code regardless of the options set in the compiler itself. Although this can be an extremely useful tool, its implementation is poor, since it uses such cryptic syntax. If, for instance, your **\$OPTION** statement is to indicate that array-boundary checking is off and long addressing mode is on, the command in your listing would read:

'**\$OPTION -C** or '**\$OPTION +A** instead of something simple like: **ARRAY ON** or **ADDRESS ON**

●**\$PAGE** is an embedded command in a source code that will force a page break at that spot when you print a compiler listing file.

## OPTIONS

There are ten options presented in the main compiler window, any of which can be used for a compilation, and any combination of which can be stored as the default combination for other compile procedures. Of these ten options, the **N** option and the **R** option are probably the most important.

The **N** option is the option to process RunTime events. You can hardly write a Macintosh program without using this option, since it refers to such things as errors and menu, mouse and dialog events. Even if you were willing to do

without error checking (in which case you'd be in trouble when the disk was full or the printer wasn't turned on), the other events aren't event traps (**ON MOUSE...**, **ON DIALOG...**), but any use of an event check (**WHILE MOUSE(0)=0...**). Using the **N** option slows down the running of the completed program somewhat, as does using event traps in the interpreter, since the computer is constantly checking for specific events in between other statement executions.

The **R** option is the option to include the "RunTime modules" within your application. If you do, you have a standalone program. If you don't, you have an ersatz double-clickable application that needs the RunTime library file at its beck and call all the time. You might wish to have the RunTime file separate, however, if you were creating a group of programs that would all be on the same disk. Instead of enlarging each by the RunTime module sections they need, they could share the single, separate file from the disk. This is probably not much of a consideration in these days of 800K disks.

## THE END PRODUCT

If all you want from a compiled version of your program is a standalone application, you'll be happy with the final product. If what you were looking for was a lot of extra speed, your happiness quotient may depend on the kind of program you compiled; the *Compiler* speeds up

some things more than others (see sidebar).

There's one major problem with the overall look of your compiled application, and a few minor ones. When your application runs, the first thing you get is a menu bar with Default File and Edit menus showing on the menu bar; an Untitled document window flashes open, changes to your application's title, and then the window closes and your program begins. This is tantamount to putting a disclaimer in front of all of your programs ("Hi. I was written in BASIC and then compiled"). There's absolutely no excuse for this set-up — the interpreter begins programs this way, too, but that is not an acceptable excuse.

A nice touch that might turn into a minor problem is the fact that the compiler creates an About box for each application; you'll find it under the Apple menu when you run your program. The menu item says "About Application" and the dialog box that comes up says "Created by BASCOM" (*BASIC Compiler*). These are minor details that you can fix in *ResEdit*, but no mention is made of it in the documentation.

The *Compiler* apparently is not meant for the dilettante programmer. Aside from the outrageous \$199 price tag, the environment is not Mac-ish enough, and the documentation assumes a certain level of expertise. On the other end of the spectrum, serious developers probably won't mind the hostile environment, but they won't like the default menus and windows flashed at the opening of their programs, or the fact that the code won't boil down into something that can be used as a desk accessory, or a library that can be called from BASIC. Some middle-of-the-spectrum programmers might be happy enough with the compiler as it stands, but, speaking as one, I'm annoyed by both sets of problems.

## TOO LITTLE, TOO LATE?

If the *Compiler* had come out a year or two ago, it might be forgiven some of its flaws; if it were less than half the price that's being charged,

## How Fast Is Fast?

A compiled program runs faster than an interpreted one, but how much faster? It depends what's in the program. The interpreter versus compiler times, in seconds, are:

●The famous Sieve of Eratosthenes benchmark that searches for the primes in a given range of numbers (ten iterations): interpreter: 667; compiler: 56.

●Looping through 50,000 empty FOR-NEXTs: 26 vs 5.

●String concatenation — joining two strings 30,000 times: 63 vs 39.

●Disk access — 5000 reads, 5000 writes to a sequential file: 24 vs 5.

●Disk access — 5000 reads, 5000 writes to a random file: 61 vs 44.

●Math — 100,000 multiplications: 100 vs 1 in Binary BASIC; 204 vs 1 in Decimal BASIC.

●Graphics — repeated ROM LINE calls: 23 vs 10.

●Graphics — repeated CIRCLE statements: 38 vs 38.

●Graphics — repeated PSETs: 82 vs 52.

# Ten thousand pages, take it or leave it.

For those of you going places, here's a little something that solves big storage problems in the time it takes to say "who has the Farnsworth financial files?"

Introducing Totem.™

A rather revolutionary Bering 20 mb Bernoulli compact disk drive system for Macintosh computers. And, the first truly *portable* 5¼" system. One that lets you tote around 10,000 pages of data on a sleek cartridge about the size of a piece of bread.

Translated, that's 25 times the storage you get on one standard floppy.

Yet unlike floppies, the Totem is no slouch for speed. It's just as fast as a hard disk. In fact, your computer will think it's a hard disk. You can even share it with co-workers. And its advanced Bernoulli aerodynamics make it resist head crashing. If you've ever used hard disks, you know what a pain that can be.

But the real beauty of Totem is that it fits perfectly right under your Mac. No mess. No fuss. And no extra hardware to buy. To add storage, just pick up another Totem cartridge.

Last, but certainly not least, there's a whole family of Totem drives to choose from. They're all in the brochure. To get yours, write or call Bering Industries, Inc., 280 Technology Circle, Scotts Valley, CA 95066. Inside California, call 800 533-DISK. Call 800 BERING 1 outside California. Just say "I'll take it."

**BERING**  
A MOUNTAIN COMPUTER, INC. COMPANY



# NOT SO BASIC

that also might be a saving grace. But, being both long-awaited and expensive means it should be a lot better than it is. Buying *BASIC* and the *Compiler* runs about \$300 retail. *TML Pascal* and *Turbo Pascal* are a third of the price and can do more serious, heavy-duty program development. What it comes down to is how much you're willing to pay (monetarily and psychologically) to be able to develop in *BASIC*, the language we all know and many of us even love.

## BACK TO BASIC

The version number for the latest *BASIC* has jumped from 2.1 to 3.0 not because of the intrinsic changes to the interpreter, but because of the addition of Clear Lake Research's machine language libraries to the package (see sidebar). In fact, there's so much to the upgrade, it comes on two disks, with a third available direct from Microsoft for registered users. Besides the usual two versions of *BASIC* (decimal and binary) and the Toolbox libraries, you get *Run-Time BASIC*, a run-only utility that you can give out with your programs so people without *BASIC* can run your programs. Yes — you're allowed and encouraged to make copies and give them away.

The changes in the interpreter are not immediately apparent, except for

the *TRANSFER* command in the File menu that lets you bypass the *Finder* — presumably to launch the *Compiler*. Unfortunately, the environment hasn't been tweaked a bit; not that it's awful, but it sure would be nice to use cursor keys in a List window. There are a few new commands, however, and some 2.1 problems were fixed.

*BASIC* now works fine under HFS. You can access files nested down in folder levels, and the *FILES* function returns a complete pathname to the chosen file. You can also print with the LaserWriter from *BASIC*.

## NEW STATEMENTS

In addition to the terrific routines available from the Toolbox disk, there are a few new ones in *BASIC* itself. By far the best addition is the block *IF-THEN* statement which lets you nest *IF-THENS*, and list the commands to be executed in a given condition.

There are four new "types" of edit fields. The current four types (1 to 4) are various combinations of framed/unframed and Returns allowed/not allowed. The four new types, numbers 5 to 8, use the same combination of attributes but do not highlight the default string in the field when it is created.

Other new keywords are special-

ized for more advanced programming, like *SADD*, to get a hold of a changeable string address, and *CHDIR* (change directory) to set the default volume to something other than the disk that *BASIC* is running from.

*BASIC*, like any language, is continually evolving. This latest step in its evolution is terrific. 

SHARON ZARDETTO AKER IS A MACUSER CONTRIBUTING EDITOR AND AUTHOR OF MANY GREAT COMPUTER BOOKS. HER LATEST IS *MACBITS: UTILITIES AND ROUTINES FOR THE BASIC PROGRAMMER*.

## Compiler

<b>Overall Rating</b>	
Follows Mac Interface	
Printed Documentation	
On-Screen Help	None
Performance	
Support	
Consumer Value	

**Comments:** Poor interface and high price bring the overall rating down a lot, even though the compiler does almost everything you want it to. The documentation is not for beginners. **Best Feature:** It works. **Worst Feature:** Disgraceful Mac interface; default windows and menus in compiled application. **List Price:** \$199. Published by Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. (206) 882-8080. Requires 512K+. Not copy protected.

## The Toolbox Libraries

The machine language libraries provided with *BASIC*, and with the *Compiler*, add about 150 new statements to the language, providing such things as scroll bars, Command-key equivalents in the menus, and control over resources — icons, pictures, cursors, alerts and dialog boxes. There are additional routines beyond those in CLR's original *ToolLib* package, such as:

- An enhancement that lets you slow down the scrolling done with the scroll bars; this is handy now, and will be a necessity with the new, faster Macs. (The scroll bar is the only complaint I have about the Toolbox libraries; the strings in the scroll area are spaced too far apart, and the final line of pixels in letters with descenders are not selected properly when the string is highlighted.)

- *CmdKey* and *SetItemStyle* routines that let you add keyboard equivalents and use type styles in your menus.

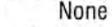
- *GetMouse* gets the current mouse coordinates without using the *MOUSE* function.

- A group of statements lets you manipulate Dialog boxes, putting them on the screen and checking what the user has input or selected. You can't, however, create Dialog boxes except with *ResEdit*.

- *PtInRects* lets you test if a point is in any of a number of rectangles. (This is in addition to the original *PtInRect* command.)

The Toolbox library will keep you busy for a long time, but when you need more additions, CLR is still selling their *MathStatLib* package and a new collection of routines that lets you use *VideoWorks* movies in your programs.

## BASIC 3.0

<b>Overall Rating</b>	
Follows Mac Interface	
Printed Documentation	
On-Screen Help	None
Performance	
Support	
Consumer Value	

**Comments:** *BASIC* still needs some polishing in its interface, but it's the friendliest language around. **Best Feature:** The addition of the Toolbox Library, block *IF-THEN* statements, and the *RunTime* module. **Worst Feature:** Frustrating lack of cursor control in the List window. **List Price:** \$95 (\$25 upgrade fee from 2.0 or 2.1). Published by Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. (206) 882-8080. Requires 512K+. Not copy protected.



# Your future is history.

The business software you've wanted for your Macintosh has been running on the IBM PC for years. It's written in dBASE, but now you can run it on your Macintosh.

With McMax™

McMax runs dBASE programs up to 4 times faster and gives you an outstanding choice of existing applications. Accounting, order entry and inventory control systems. Time billing, estimating and taxes. Payroll, personnel and mailing lists. Just transfer what you need to your Mac and it's yours.

If you'd rather do it yourself, you'll find that McMax is just what you need.

Pull-down menus and an Assist mode help you manage your data with no programming experience. And whenever you want to, you can take control with a rich set of English-like commands that you use interactively or in your own custom programs.

Whatever your mind can conceive, McMax makes it easier to achieve. It's the business database management standard, made better. To learn more, write Nantucket Corporation, 12555 Jefferson Blvd., Los Angeles, CA 90066.

Or call (213) 390-7923 today. Because today, McMax means business.

**McMax™**  
means business.

 Nantucket.

In Europe: Nantucket Corporation (Europe) 2 Bluecoats Avenue, Fore Street, Hertford, Herts SG14 1PB Telephone 0992 554621.

Please circle 224 on reader service card.

# Memorandum™

## You might want to make a note to yourself.

You know those sticky yellow notes you're always making to yourself. Well, now you can do the same thing electronically. With Memorandum™ from Target Software.™

Memorandum lets you attach electronic sticky notes to documents and files.

You can use it for spreadsheets, reminding yourself of the

D MAR	E APR
\$4,283.56	\$8,952.37
\$1,366.82	\$1,544.40
\$2,155.10	\$2,155.10
\$198.66	\$215.15
\$13,850.00	\$13,850.00
\$755.77	\$669.50
\$487.43	\$332.26
\$1,354.24	\$980.27
\$24,451.58	\$28,699.05
\$56,331.59	\$56,331.59
\$31,880.01	\$27,632.54

details of a specific expenditure. Memorandum attaches itself to a spreadsheet cell, so it stays in place through repeated calculations.

It's also a great aid in word processing documents and database files. Because you don't have to stop work to check a source or verify data. Just make a note and attach it.

Notes are stored in a separate file. A single command can show all notes at once. Or a note on a specific cell.

Make a note to yourself to check out this invaluable Desk Accessory soon. It's just \$99.95. And it's compatible with Excel™ Multiplan™, Jazz™, Works™ and loads of others.

See your local dealer or call us at 1-800-622-5483. In Florida (305) 252-0892. Or, write Target Software, 14206 S.W. 136th Street, Miami, FL 33186.

Supplies	\$381.7
Oil	\$13,850
ing	\$1,112
ing	\$58
es	\$1,2
ENSES	\$30
ENUE	\$56,331.59

**The note-worthy new program from Target Software.**

Please circle 199 on reader service card.

Excel™ Multiplan™ and Works™ are registered trademarks of Microsoft Corporation. Jazz™ is a registered trademark of Lotus Development Corporation.

# TIP SHEET

COMPILED BY DAVID SCHARGEL

Found a trick, shortcut or smarter way to get something done with a program? Share your hints by sending them to **The Tip Sheet**, c/o MacUser, 25 West 39th St., New York, NY 10018. We pay at least \$25 for every hint we publish, plus we'll print your name and hometown.

## MACWRITE

 The widest right margin that can be used in *MacWrite* is 8 1/4 inches. Due to a problem with *MacWrite*, this margin can only be used temporarily. Printing will work OK, but the document will never save properly.

Expand the *MacWrite* window to its largest size, where you are able to see the 8-inch ruler mark. This is done by dragging the window to the left and enlarging the window as far to the right as possible. Now drag the right margin icon (on the ruler) to 8 inches (where it will automatically stop). Then click on the very bottom right corner of the icon and it will move 1/16 of an inch to the right. Do this three more times and the

right margin will be set to 8 1/4 inches.

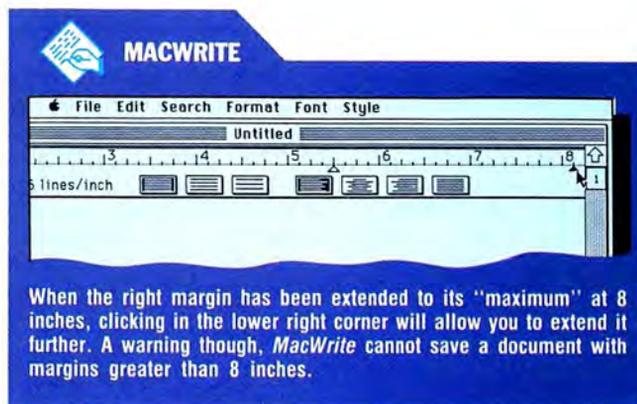
You can print the document with this ruler, but you cannot save the ruler or document successfully. Everything will seem normal the first time you save the document. However, when you attempt to reopen it you'll get a bogus I/O error. To get around this, set the ruler and print the document. Then, set the right margin back to 8 inches (or below) before saving the document.

TIM NEVELS  
RAYTOWN, MO



Using *MacWrite*, or any word processor, there are times that you are not able to get all of the words you want on one line, with the last word wrapping to the next line as you type the last letter. Instead of changing your margins and hoping for the best, select the spaces in between the words and reduce the font size (of the spaces) as small as possible. This works most of the time.

JEFF FIBER  
WANTAGH, NY



## MICROSOFT BASIC



When you paste in a large segment of code, you can easily lose track of where the newly inserted code begins and ends. You can avoid possible confusion by inserting a dummy label prior to pasting in the new code. Later, you can find the block of code by typing "LIST label" in the Command window. For example, insert the label "NEWCODE:" prior to pasting, and you can find the new source code by typing "LIST NEWCODE" in the Command window.

H. DOUG MATSUOKA  
HONOLULU, HI

## THUNDERSCAN



The *ThunderScan* software allows for a direct transfer to *MacPaint* by choosing it under the Tools menu. If, however, you use *FullPaint*, *ComicWorks* or another painting application, change the name of your application to *MacPaint* and it will be launched directly from *ThunderScan*.

This can only be accomplished if *ThunderScan* and the application are on the same disk (or in the same folder for HFS).

BILL BALDRIDGE  
RIVERDALE, MD

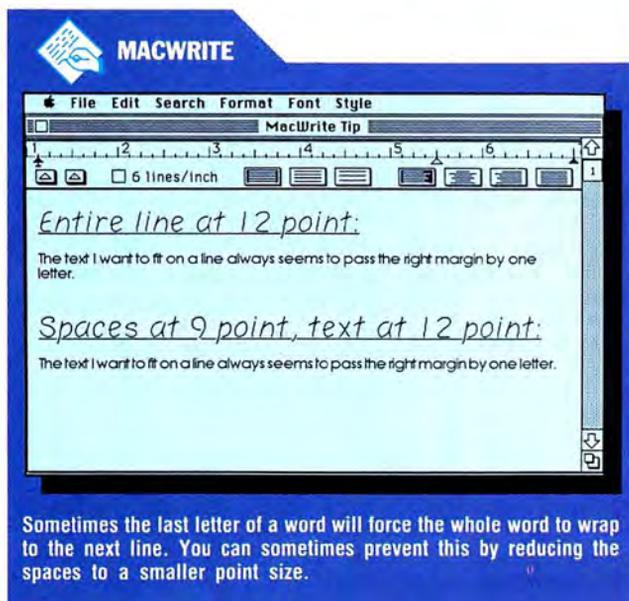
## PAGEMAKER



*PageMaker* does not allow you to easily create dotted lines between text, such as might be used in a table of contents. Most fonts will not print dots a fixed distance apart.

A simple workaround to this problem is to use the box drawing tool. Draw a box as short vertically as possible, its length being the desired dotted-line length. Choose NONE from the Lines menu, and choose one of the "vertical strip" patterns from the Shades menu. You have just produced a line of fine dots. Change the size of the box and the patterns to get the dots to your liking.

CARL A. SCHUETZ  
BALTIMORE, MD



## SUPERPAINT



You can get LaserWriter quality output without having to use the memory hungry LaserBits function. First, paint your graphic at four times the desired size. Select the image and select COPY TO DRAWING from the Edit menu. Then, on the drawing layer, select the image and scale it to 24%. This will maintain the proper ratio of 72 pixels per inch on the screen to 300 pixels per inch. Although the screen version of the graphic won't always look good, the LaserWriter output will be sharp.

JIM MCSPIRITT  
SAYREVILLE, NJ

**MACDRAW/LASERWRITER**



The following walk-through tip will show you how to use *MacDraw* and an Apple LaserWriter to produce professional quality disk labels. Additionally, you will require the *MacDraw* document discussed, Laser Disk

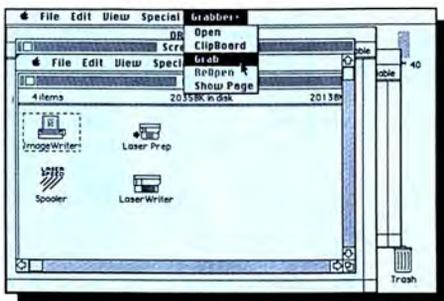
Labels. You can obtain this document either in this month's Strip Show (which requires a Cauzin Softstrip reader) or through the CompuServe, GENie or Delphi computer networks. The other required materials can be acquired at most major art supply stores. The following list of materials have been

found to be the best, however you may substitute.

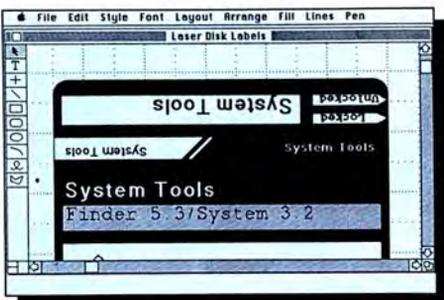
You will need:  
 An application or DA that allows you to copy information from a *MacPaint* document, Pantone paper in the color(s) you desire, 3M double coated transfer tape (3M 465), clear mat spray or a clear "fixative."

*[Editor's Note: Due to some idiosyncrasies of LaserWriter fonts and various versions of MacDraw, you might find that your file does not look exactly like ours. It is possible that you have to change the fonts and/or move the text into position. Correct the disk label to your liking. We used the Helvetica and Courier fonts for our label.]*

**1** In the *Finder*, obtain a screen dump of the disk contents using COMMAND-SHIFT-3. Enter into a paint application or DA and individually copy each icon you want on your label and place it onto the Scrapbook. Attempt to lasso the icon, eliminating the "white space." When you bring the icon bitmaps into *MacDraw* you can resize them as desired. If *MacDraw* and the painting program are on different disks you must now move the Scrapbook File to the *MacDraw* diskette.



**2** Enter *MacDraw* and open the file "Laser Disk Labels." Notice that all of the items, including text, are enlarged to twice the size of a normal disk label. Before printing confirm that Page Setup... has the reduction set to 50% so that the label prints at normal size. In addition, note that on the edge of the label the name of the disk is printed right side up and upside down. This is so the disk name is always visible regardless of whether the disk is in the floppy drive or in storage.



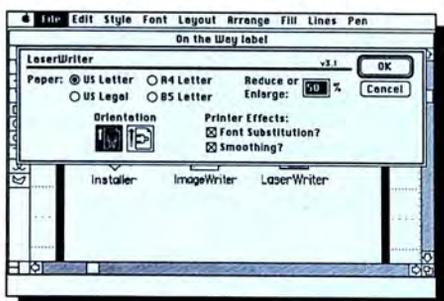
**3** Start by changing the disk name. There are four places on the label where the disk name appears. Two of these four are upside down. The ones that are upside down must be rotated two times (to the right or left) in order to edit the text. After the four titles are changed, rotate the two upside down items back to their proper orientation. You will probably have to adjust the text's position within the label due to the fact that the disk name is a different size than originally. In the grayed area, change the text to a short description of the disk contents.



**4** Remove the icons found in the center of the label. Open the Scrapbook file and cut and paste each icon into the document. After all of the icons have been pasted into the document, resize each as large as possible and align them in the icon area. Make sure to make the icons as large as possible because this document is twice the size of the actual label.



**5** You now have the label ready for printing. Before printing, check that the LaserWriter is selected for printing (using the *Chooser* DA) and make sure that the reduction in Page Setup... is set for 50%. You should print sample labels and make corrections as desired. Use Save As... to save your finished label under a different name so that the template is not altered.



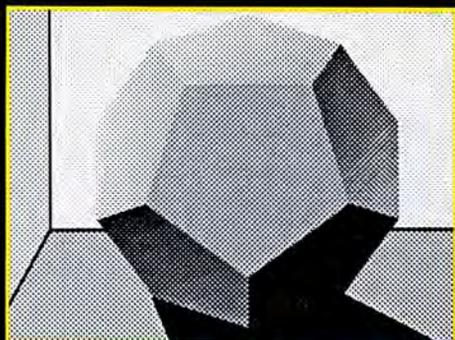
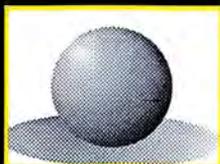
**6** Cut the Pantone paper, resizing it so it may be fed into the LaserWriter. Print your label on the Pantone paper. In the future, due to the costs of the paper, you may wish to include multiple labels for printing on the paper. Cut the label to size and attach the double-coated adhesive tape to the underside. Finally, use a clear "fixative" or clear mat spray to give the label a finished look. The spray should not be sprayed anywhere near the computer or printer. Most sprays stay airborne and travel great distances.





# ACHIEVE THE ULTIMATE.

*You've probably felt the frustration.* All of that graphic power just waiting to be tapped, without software to unleash the potential. Frustrate no longer – Cricket Draw is here.



## cricket DRAW



*Runs in color on the Mac II!*

Cricket Draw is an object-oriented drawing program that brings a whole new dimension to the WYSIWYG environment.

WYSIWYG is great but the end result is limited by the Mac's display resolution (approximately 5,000 dots per square inch). Cricket Draw, through the magic of PostScript,™ lets you take full advantage of the LaserWriter's superior resolution of 90,000 dots per square inch. The final product is sensational artwork that will bring a new level of professionalism to your work. With Cricket Draw WYGIBTWYS (What You Get is Better Than What You See).

**Unrestricted Creativity.** Cricket Draw liberates your creativity by providing an unprecedented range of tools, like tilting and free rotation of any object. You can shade with a gray scale (0-100%), create shadows, fountains (graded tints), starbursts, grates, and smoothed curves. And that's just the beginning.

Precisely set type then add any of a number of special effects. Place type on any arbitrary path, rotate, tilt, shade, shadow – the possibilities are limitless.

**Achieve Your Ultimate.** Settle for nothing less than your ultimate. It's within your grasp with Cricket Draw.

Requires Macintosh Plus or New ROMS

**cricket**  
*software* Anything Less Isn't Quite Cricket

30 Valley Stream Parkway  
Great Valley Corporate Center  
Malvern, PA 19355  
(215) 251-9890 1-800-345-8112

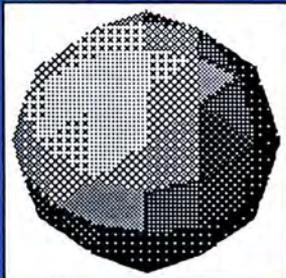
Macintosh is a trademark of Apple Computer Inc.  
LaserWriter is a trademark of Apple Computer Inc.  
PostScript is a trademark of ADOBE Systems, Inc.

Please circle 132 on reader service card.

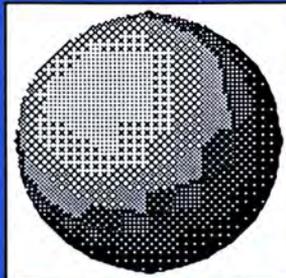




PRO 3D

Light  
Custom Lighting...

SPHERE 2



SPHERE 3

Instead of getting the normal Sphere 2 when you choose CUSTOM LIGHTING from the Light menu, hold down the Command key while selecting it to get Sphere 3.

**WORKS**

When using the word processing module for a paper with a title page, the manual neglects to tell you that even though choosing TITLE PAGE from the Format menu eliminates the first page number (for the title page), your next page will be page number two. It is simple to get the first page of text to be page number one. Here's how.

Make sure to SET PAGE # from the Format menu and set the number to zero (0). This will invisibly set the title page to zero and number (visibly) the first page to one.

KEVIN C. BRISLIN

WHITEFORD, MD

**HFS**

If you are using the Finder and want to make a backup of a 400K HFS disk, you must hold down the Option key when you confirm the "Completely Replace Contents..." dialog box. If this is not done, your backup disk won't be a HFS disk.

If the source disk is a MFS disk and you hold down the Option key when you are given the "Completely Replace Contents..." dialog box, the destination disk will have HFS on it.

PHILIP BORENSTEIN  
BRIGHTON, MA**MACPASCAL**

When doing a large number of remarks, one after another, hit the Return key after the end of each line, instead of typing a right brace. *MacPascal* will automatically type the right brace as well as the left one for the new comment line on the line below.

JIM MCSPIRIT  
SAYREVILLE, NJ**ANCIENT ART OF WAR**

After a unit has entered combat both its food and, more importantly, condition are lowered. This can be rectified by detaching one man from another unit that has a higher condition and have him join (absorb) all of the weaker

unit. The new unit that is created will now be at the strength of the detached man.

ARTHUR HENRICK  
PALO ALTO, CA**GLUE**

What if you own *Glue* and you want someone who doesn't to view your output? If they own *MacWrite*, you can use the following steps to give them any *Glue* output in *MacWrite* form.

1) Print to disk any output, using the *Glue ImageSaver*.

2) Open the image with the *Glue Viewer*.

3) Select the entire page and copy it to the Clipboard or Scrapbook.

4) Open *MacWrite* and paste the copied Clipboard or Scrapbook image into a *MacWrite* document.

*MacWrite* owners should now be able to view/print any documents.

BRUCE LONG  
TEMPE, AZ**PRO 3D**

If you use the custom lighting feature, but are not satisfied with the resolution of the sphere that is drawn (Sphere 2), hold down the Command key while selecting CUSTOM LIGHTING from the Light menu. *Pro 3D* will now produce a Sphere 3 so you may fine-tune the lighting.

GORDON CARSKADON  
STARKVILLE, MS

If you wish to issue a number of commands, you have to wait for the drawing to redraw after every command. When you hold down the Command key as you choose menu items, *Pro 3D* will not redraw the screen after each command. Constantly holding down the Command key will allow you to do a number of things without waiting for

the screen to refresh itself. To get the screen to draw itself again, click on the Redraw icon.

GORDON CARSKADON  
STARKVILLE, MS**RESEDT**

Hold down the option key to override *ResEdit's* templates to open all resources in hexadecimal format. For example, hold down the Option key while double-clicking a ICN# resource to get the hexadecimal representation, instead of the icon editor.

PHILIP N. LEROY  
DORAVILLE, GA**ACTA DA**

It is easy to split off a portion of a long topic in a single keystroke. Simply click at the start of the text to be split off, then press OPTION-ENTER.

BILL LAYMAN  
LACRESCENTA, CA**MINIWRITER DA**

While using the "Smart Quotes" feature in *miniWriter*, you can force *miniWriter* to type standard quotes without having to open the "Options..." dialog to turn off the Smart Quotes feature. You can override the Smart Quotes feature by holding down the COMMAND key while typing a quote (") or a double quote (").

BILL LAYMAN  
LACRESCENTA, CA

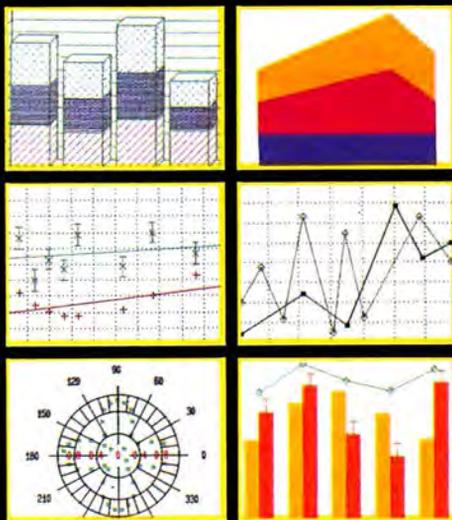
Don't just sit there waiting for us to get around to your problem or question. Copies of the deluxe, spiral bound edition of *The Power User's Manual: Over 1,000 Hints and Tips for the Macintosh* are now available for a mere \$19.95, which includes shipping and handling. The manual has two cross-referenced indexes to help find tips fast and covers over 100 of the most popular Mac programs and peripherals. It's worth its weight in gold mice, and just happens to be published by the same folks that bring you *MacUser*. Make your checks payable to Power User's Manual and send the order to: Power User's Manual Offer, 831 Federal Road, Brookfield, CT 06804. Bulk rates for clubs, organizations and schools are available from the same address.

# ACHIEVE THE ULTIMATE.

*Our data is everything.* It represents the culmination of all of your efforts... your accomplishments. So when it comes to turning your data into graphic presentations, you can't afford to settle. You need the power to achieve the ultimate. You need Cricket Graph.

**cricket**

# GRAPH



Only Cricket Graph gives you the ability to transform your data into brilliant color presentations. Choose from 12 of the most popular graphs and charts. Plot 2000 data points per series. Import data in many popular formats. Then enhance your graphs with text and a full range of patterns, symbols, and colors. Even add a three dimensional look. When completed, you can print your work on any of the popular Mac compatible printers.

It's elegance defined - powerful, yet easy. No wonder Cricket Graph was voted "Best Business Graphics Package of 1986" by the Editors of MacUser.

Don't allow the limitations of your software to prevent you from achieving the ultimate. With Cricket Graph, your potential is limitless. Only \$195 at dealers everywhere.

Requires a 512K Enhanced Macintosh or a Macintosh Plus

**cricket**

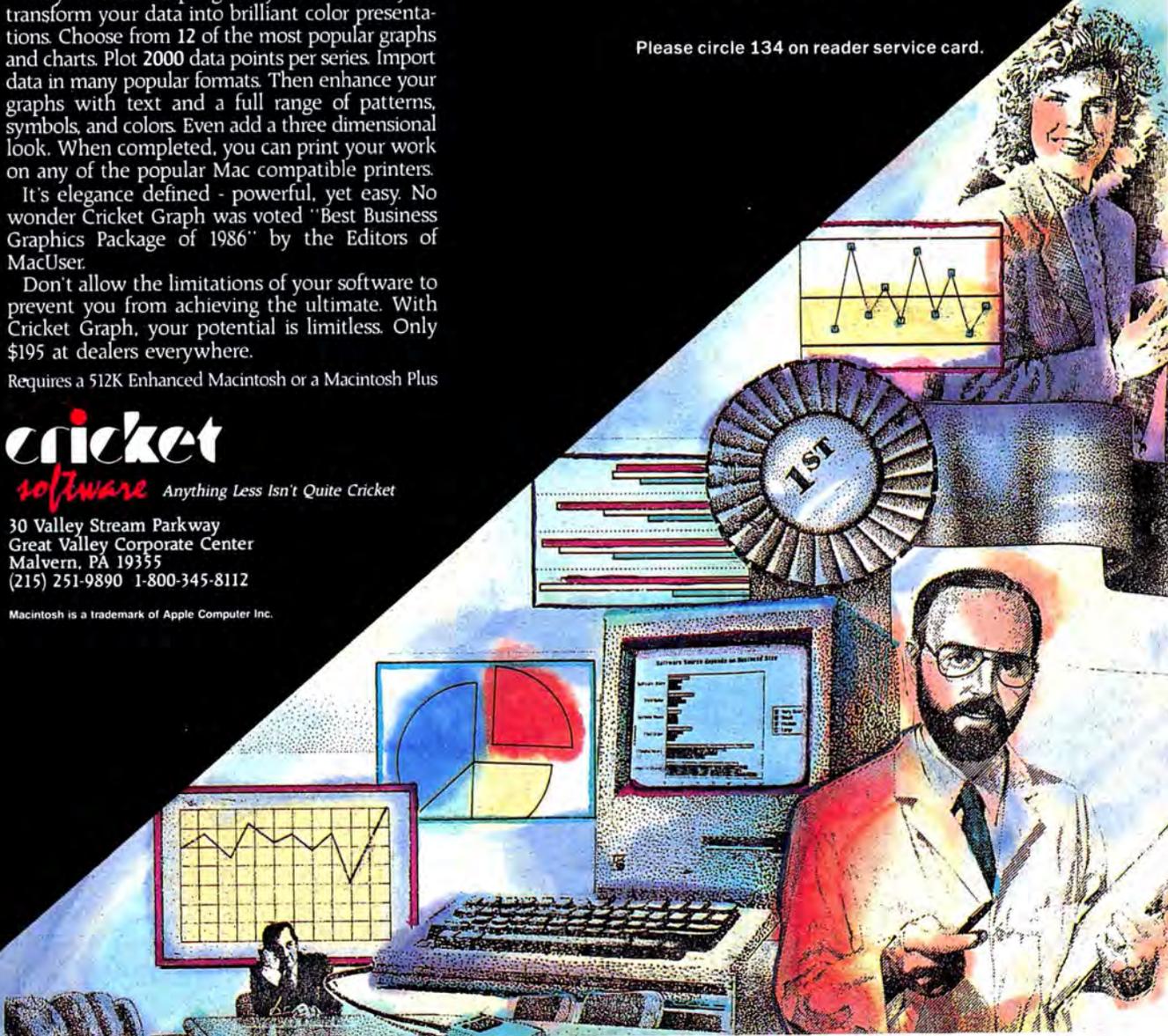
*software* Anything Less Isn't Quite Cricket

30 Valley Stream Parkway  
Great Valley Corporate Center  
Malvern, PA 19355  
(215) 251-9890 1-800-345-8112

Macintosh is a trademark of Apple Computer Inc.

*Runs in color on the MAC II!*

Please circle 134 on reader service card.



# GIVE YOUR SOFTWARE A GOOSE.

Now that software companies have discovered Mac's graphics interface, their products have become a lot more useful. Because now you can add pictures to your documents. And you know what they say about one picture.

That's where ThunderScan® really becomes valuable. Because ThunderScan can turn most printed images into high-resolution Macintosh graphics. Which means you can insert quality graphics into your files. Making your programs perform like never before.



ThunderScan and MacDraw



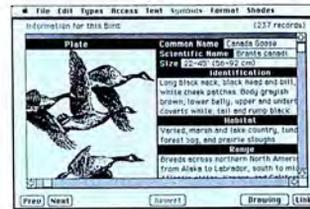
ThunderScan and PageMaker



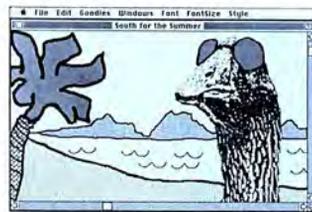
Programs like PageMaker™, GraphicWorks™ and ReadySetGo™ for desktop publishing. With ThunderScan you don't have to rely on your own artistic abilities or someone else's clip art disk. Instead, you can illustrate your words with just the right graphics (even one-of-a-kind items like your logo or your own portrait). Improving both the professional appearance and

readability of your publications.

Use ThunderScan with Business Filevision®, dBASE® Mac or Filemaker™ Plus to add pictures and photographs to your data, for more complete, more informative databases. It's perfect for research, real estate portfolios, personnel files — any time you're working with more than words or numbers.



ThunderScan and Business Filevision



ThunderScan and FullPaint

ThunderScan's powerful image enhancement software, you can really get wild with SuperPaint and FullPaint™

And that's just the start.

ThunderScan can boost the performance of

MacDraw™, MacDraft™, MacPaint™— Mac-

Anything! Plus Thunderware's

new optional \$29 connector

makes ThunderScan Mac Plus

compatible without a wall plug. So

if you want to make the best of Mac software

even better, take a gander at ThunderScan. At just \$229

there's no better way to give your software a goose.

Filevision is a registered trademark of Telos Corporation. GraphicWorks is a trademark of Mindscape, Inc. MacDraft is a trademark of Innovative Data Design, Inc. Filemaker is a trademark of Nashoba Systems, Inc. dBASE is a registered trademark of Ashton-Tate Corporation. FullPaint is a registered trademark of Ann Arbor Softworks. Macintosh is trademark licensed to Apple Computer, Inc. Mac, MacPaint and MacDraw are trademarks of Apple Computer, Inc. ThunderScan, Thunderware and the Thunderware logo are registered trademarks of Thunderware, Inc.

© 1986 Thunderware, Inc.



Thunderware®, Inc.  
21 Orinda Way  
Orinda, CA 94563  
(415) 254-6581



by Dan Cochran

# Answers From the Mac Team

Got a Mac problem? Something that you'd like explained? Something you can't find the answer for anywhere else? Apple's Dan Cochran will answer your questions every month in this space. When the questions are too tough for him, he'll get the answers from other members of the Mac team. So ask what you need to know and get your answers straight from the source! Send your questions to Dan care of MacUser, 25 West 39th Street, New York City, NY 10018. Dan will read all of your questions, but, unfortunately, he may not be able to answer individual queries.

## HD-20 PROBLEMS

**Q.** I have a 512K Macintosh with an external disk drive and an Apple HD20 hard disk. To use the HD20, I have to insert the HD20 Startup disk in the internal drive when I start up the Mac.

Until recently, the Startup disk would automatically eject after the HD20 started as the manual says it will. Now it has stopped ejecting. If I select "Eject" from the File menu it will eject but requires me to reinsert the Startup disk before I can use an application. As long as the Startup disk is in the drive the HD20 works fine. Do I have anything to worry about or should I just go ahead and use the HD with the Startup disk in the drive?

Two weeks ago I called the local Apple office and was referred to my Apple dealer for help. I called the dealer and they said they'd get me an answer. I have received no answer.

E. R. LUTER  
DALLAS, TX

**A.** I'm assuming you have a standard 512K "Fat Mac," not a 512K Enhanced. The HD20 Startup disk includes a System folder that contains the Finder, a System file, an ImageWriter Driver, and the HD20 Driver that allows the Macintosh and the HD20 to communicate with each other.

When you boot your Macintosh with the HD20 Startup disk, the startup software

will look for your HD20 and then it will look for a copy of the HD20 Driver on the hard disk. If it finds this file the startup floppy will eject and transfer control to the HD20. At this point you no longer need to have the Startup disk inserted in your internal drive as the HD20 contains the software necessary for your Mac and hard disk to communicate. If the HD20 Driver file isn't present on your hard disk, or if it can't be found, the startup disk in the internal drive must remain mounted. For some reason your HD20 Driver file can't be located by the startup software. You've either trashed it, it's buried in some obscure folder, or you have multiple copies of your System folder on your hard disk.

You could certainly continue to work with this arrangement but performance will suffer and you won't have easy access to the internal drive without having to swap disks all the time. Fortunately the fix is easy. First, you probably have an old HD20 Startup disk with outdated versions of the



System, Finder and HD20 files. Go to your dealer and get a copy of System 3.2, Finder 5.3, ImageWriter 2.3, and HD20 1.1.

Put all these files on a newly initialized 400K disk in a folder called "System Folder." This will be your new HD20 Startup disk.

Boot up your Mac and HD20 with your new Startup disk. Open up your HD20 and throw away your current System folder as well as any other versions of the Finder, System or HD20 files that are on the disk. Now copy the entire System folder from your newly created Startup disk to the HD20. Despite what the HD20 manual says, make certain that you only have one System folder on your HD20. When the copy is complete reboot your machine using the newly created Startup disk. The startup software will find the HD20 Driver on your hard disk, your disk will eject and you'll be back in business.

If you get tired of using the Startup disk

you can have your dealer transform your 512K Mac into a 512K Enhanced. Your 400K drive will get swapped for an 800K drive and you'll get new ROMs that can boot directly from the HD20 without the need for the Startup disk. A relatively minor and inexpensive operation with very worthwhile results.

## MAC PLUS COMPATIBILITY

**Q.** I am a new member of the Macintosh family, with a brand new Mac Plus. As I learn about software, I find that I am not sure what programs are compatible with it. Even reviews are confusing at times. For example, in the Quick Clicks section of the December 1986 issue, the review for *Thunder!* says that 512K+ is required. Does this mean that the minimum memory requirement is 512K and, thus, it works with the Mac Plus? Can I assume that other programs with this designation mean the same thing? Other reviews, like those for *MicroPlanner Plus*, don't even mention requirements; others, like *CalendarMaker*, say Mac Plus compatible.

My confusion extends into the review articles and the MiniFinders as well. How can I know which programs are available for my Mac Plus? Would it be possible to include some uniform requirement designation in your reviews? It would sure help me.

LOGAN JONES  
CHAPEL HILL, NC

**A.** With one megabyte of memory the Mac Plus is Apple's flagship product. As such, most any program that will run on a 128K or 512K machine will certainly run on a Mac Plus. Your confusion is rooted in historical basis and since you are a relative newcomer to the Mac scene I can easily see where it comes from.

When Apple introduced the Mac Plus we also introduced a new System and Finder (the software files you see contained in your System folder), and radically changed the software contained within the ROM chips on the machine itself. As a result of these changes a number of programs that used to work on the old 512K machines would not operate properly with the Mac Plus. The new System software was responsible, rather than the increase in memory.

During this transition period, when some software authors were struggling to make their programs compatible with the new machine, reviewers as well as advertisements would often explicitly state whether or not the program in question was Mac Plus compatible. As they say, "Time heals all wounds," and by now any program written for the Macintosh had better be Mac Plus

compatible if the author wants to stay in business. I think you can safely assume that all of the products you see featured in magazines like MacUser are Mac Plus compatible. Not necessarily useful, but compatible.

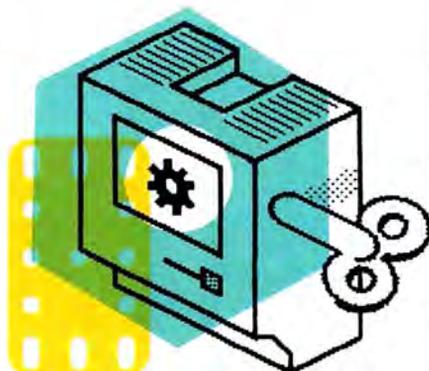
[Editors' Note: Good answer, Dan. 512K+ means that the program will not run on a 128K Mac. Those reviews that still mention Mac Plus compatible generally mean that some earlier version of the program was not Mac Plus compatible, and the current version is compatible.]

**USE LOGS & PROGRAMMING**

**Q.** We need a utility program that will keep track of the time users spend on each document or each program throughout the day. Then at the end of the day we could print out a sheet with information such as: Document name, Program name, Time Open, etc. Do you know of such a program?

Also I am interested in programming, but I know zero about this subject. Where do I begin? Books? Programs? Languages?

KIRK CHANDLER  
SEVIERVILLE, TN



**A.** SoftView, authors of my favorite (and indispensable) tax preparation program MacInTax, have a new program called MacInUse that does exactly what you want. The program installs on any floppy or hard disk and runs silently in the background. Every time you use any application, MacInUse records the application name, date, start time, and duration into a file which you can later print out. You can also include a comment whenever you quit an

application. The comment is also added to the usage file. I haven't used it personally so I can't vouch for the program. [Editors' Note: We have, and it works beautifully.] I can, however, vouch for the company. You can reach Softview at 4820 Adolph Lane, Suite F, Camarillo, CA 93010. Their phone number is (805) 388-2626.

Another option is a desk accessory called Time Logger written by Lofly Becker. Recent versions come with an accessory (called an INIT) that causes the DA to always be active. Time Logger functions much like MacInUse, although it's a bit simpler in its reporting abilities and a bit more work to install. It's shareware, which means you can get it from a friend, a users group or an electronic bulletin board, and try it out. If you keep it, you should send \$10 to the author. If you want the latest version and documents, send him a \$15, a blank disk and a stamped (39c), self-addressed envelope. Lofly can be reached at 41 Whitney Street, Hartford, CT 06105.

Programming is a wonderful discipline whether it's your hobby or your profession. Although there are many intricacies, tricks and magic to the art, the basic concepts are easily learned and once mastered can be

## Sequoia mb

**Orders: (800) 648-7171**  
**Customer Service: (818) 793-7858**

**SOFTWARE**

**ANN ARBOR SOFTWARES**  
Full Paint 55.00

**Blythe Software**  
Omnis Three Plus 278.00

**Chang Labs**  
Rags to Riches —  
AP, AR, GL 120.00  
Business 3-Pak (AP, AR, GL) 290.00  
Inventory 228.00  
Professional Billing 228.00

**Consular**  
Mac C/Mac C Toolkit 245.00

**Cricket Software**  
Cricket Draw 177.00  
Cricket Graph 128.00

**Green, Johnson**  
Spellswell 48.00

**Manhattan Graphics**  
Ready, Set Go! Three 165.00

**Micro Planning Software**  
Micro Planner Plus 290.00

**Microsoft**  
Chart 71.00  
Excel 225.00  
File 110.00  
Flight Simulator 30.00  
Multiplan 110.00  
Word Works 185.00

**Odesta**  
Double Helix 275.00

**Paragon Courseware**  
TechFonts  
ElectroFonts 65.00  
SciFonts 35.00

**Silicon Beach Software**  
Dark Castle 29.00  
Super Paint 55.00

**HARDWARE**

**DIGITIZERS**  
New Image Technology  
Magic Video Digitizer 245.00

**DISK DRIVES/TAPE BACKUP**  
**AST Research**  
AST-2000 (20mb SCSI Hard Disk) Call  
AST-2000 (20mb Winchester HD/  
20mb Tape Backup) 1760.00  
AST-4000 (74mb Winchester HD/  
60mb Tape Backup) 4675.00

**LoDown**  
LD-T20 (20mb Tape Drive) 700.00  
LD-20 (20mb Hard Disk) 720.00  
LD-20/20 Combo 1375.00

**Western Computer**  
Big Mac Twin Pack Call  
(20mb HD/20mb TB)

**MODEMS**  
**Anchor Automation**  
Signalman Express 1200 230.00  
Signalman Lightning 2400 330.00

**PRINT BUFFERS**  
**Ergotron**  
MacBuffer 256K 245.00  
MacBuffer 512K Call  
MacBuffer 1mb Call

**SURGE PROTECTORS**  
**Network**  
The Wire Tree 45.00  
The Wire Tree Plus 65.00  
**PTI**  
DataShield S85 55.00  
DataShield S100 65.00

**DISKETTES**  
**Centech**  
Rainbow Pack — 3 1/2" DS/DD 20.00  
(Box of 10)

**SOFTWARE RENTALS**  
Evaluate software under our rental program. Call for prices.

Sequoia mb  
350 S. Lake Ave., Box 106-117  
Pasadena, California 91101

Prices and availability subject to change

# LASER PRINTER LABELS!

Avery. The world's only supplier of address labels for **desktop laser printers**. Available wherever computer and office supplies are sold. Ask for product numbers 5260, 5261 and 5262. Call (800) 535-3232, X30 for the nearest dealer in your area.

**Avery®**  
Avery International  
Consumer Products Division

Please circle 297 on reader service card.

Please circle 138 on reader service card.



## FORGET BACKUPS!

With Peak Systems' hard disk and tape drive units, you get automatic, "set it and forget it" backups of all your hard disk data.

---

Just set the time you want a backup to take place (midnight, for example) and Peak Systems' unique software-controlled tape backup system makes a complete copy of all the files on your hard disk. It's the most painless way ever to make those important backups of your valuable information. You'll have the backups you need without all the hassle of backing up to floppies and without using up boxes of disks.

Peak offers a wide selection of SCSI-based hard disk drives and tape backup systems. If you like, you can start with an inexpensive hard disk now and add the tape drive later. (We've even got an add-on SCSI port that lets you use Peak drives and tape units with your 512K Enhanced Macintosh™.)

Peak's PLUS™ Drives are single hard disk drives in 20, 30, 45 and 65 megabyte capacities. Our PLUS-20T tape drive backs up any hard disk drive you use

with your Macintosh. And if you want both a hard disk and tape now, consider the SIERRA™—our newest addition that offers a hard disk and a tape system in one compact cabinet.

All Peak Systems hard disk drives come complete with utility software to perform data backup and system diagnostics. Our products are 100% Macintosh-compatible (including AppleTalk™ applications such as MacServe™), have FCC approval and are covered by a one year warranty.

For the dealer nearest you, call Peak Systems at **800-225-7509**. In Texas call **512-329-1020**

Requirements: Macintosh Plus or Macintosh 512K E with SCSI port.

Apple is a trademark and Macintosh is a trademark licensed to Apple Computer, Inc. PLUS and SIERRA are trademarks of Peak Systems, Inc. MacServe is a trademark of Infosphere, Inc.



---

## PEAK SYSTEMS

Call 800-225-7509  
in Texas (512) 329-1020  
P.O. Box 161404 Austin, Texas 78716-1404

Please circle 63 on reader service card.

applied to any programming language. The subject of which programming language to use is as volatile a topic as religion or politics. I still think that Pascal and BASIC are great for beginners.

Many people can pick up the fundamentals on their own but I recommend you enroll in a beginning Pascal or BASIC programming course at a local community college. From there you'll have enough of the fundamentals to explore on your own. If you decide to study Pascal as your first language pick up a copy of Macintosh Pascal, a gentle yet powerful introduction to the language. If you end up studying BASIC I'd recommend ZBASIC, Microsoft BASIC, or True BASIC, all of which are available for the Macintosh. The documentation provided with any of these language products should be sufficient to get you started.

Good luck!

#### TOP OF FORM

**Q.** I have a Mac Plus and ImageWriter II. I've noticed that when using certain software such as *Word* or *Excel*, I have to assume a different Top of Form position than with other software such as *MacPaint*. I contacted Microsoft

and they assured me the problem was in the software printer driver. I'm using the latest *System* and *ImageWriter* driver (*System* 3.2 and *ImageWriter* 3.2). Can you give me any assistance in getting some consistency in printing?

ROSS FRID  
CADILLAC, MI

**A.** *Top of Form* is under the control of the individual application and really has nothing to do with the printer driver. If you have two applications that seem to use identical *Top of Form* settings it's either a coincidence or they were written by the same company (as are *Word* and *Excel*). My only suggestion is to manually adjust the printer or fudge with your document before printing.

#### DAISYWHEEL CHAPTER

**Q.** Several months ago I purchased an Epson DX-10 daisy wheel printer to use with my Macintosh. I also have a serial to parallel converter. For software, my dealer recommended the *Mac Daisywheel Connection* from Assimilation Process.

The software works enough to indi-

cate that the hardware is probably OK, but the results are far from satisfactory. I have contacted Assimilation and received no satisfaction. The dealer can't make the software work either.

Does this software work? Can it be fixed? It certainly seems that a sophisticated machine like the Macintosh could run a simple daisywheel printer.

GEORGE E. GLASS  
BOULDER, CO

**A.** I don't have pleasant news. Assimilation is out of business and the Daisywheel Connection doesn't work properly with the new Macintosh System 3.2. You may have some luck if you go back to using an earlier version of the *System* file. Microsoft offers a variety of printer drivers for daisywheel support. Check the drivers that come with *Word*. Microsoft also produced a device called the *MacEnhancer* that serves as a multiple printer connection box as well as a serial to parallel converter. It contains drivers for several daisywheel printers. I don't think it is still being made, but you should still be able to find one at a good price. Remember to try it out at your dealer before you buy it.



BarMath  
CoinWorks  
Naval Battle  
Alphabetizer  
Early Elementary 1

FlashWorks  
Preschool Disk  
WordSearch

BodyWorks  
EarthWorks  
ClockWorks  
Shape Works  
Lemonade Stand

**MacKids™**

Educational Software for Children

**\$34.95**

each

To order Software or Catalog call or write:

**Nordic Software**

3939 No. 48th Street  
Lincoln, NE 68504

Toll Free: 800-228-0417  
In Nebraska: 402-466-6502

## Before this happens, call SAFEWARE

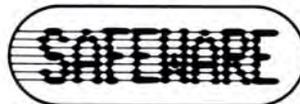
800/848-3469

(In Ohio, call 614/262-0559)

Protects your computer against theft, fire, power surges and other accidental losses. Insures your entire system for as little as \$39 a year — depending on the value of your hardware, software, and media. Full replacement after a low \$50 deductible.

We're SAFEWARE,® the first name in computer insurance. Tens of thousands of satisfied customers. Call toll-free for rates or immediate coverage.

SAFEWARE, The Insurance Agency Inc.  
2929 N. High Street  
P.O. Box 02211  
Columbus, Ohio 43202



Please circle 227 on reader service card.

Please circle 285 on reader service card.

# MacUser Back Issues

Now you can finally round out your necessary Macintosh documentation with those missing issues of **MacUser**. Order soon, because once these back issues are gone, they're MacHistory, and quantities *are* limited.

For more "hands-on" Macintosh information, get your hands on the **MacUser** collection. At \$6.00 each, they're probably the best investment you can make for your Mac.



## HOW TO ORDER

Send \$6.00 for each back issue ordered (\$7.00 Foreign/Canada, U.S. currency only) to:

**K. Armstrong  
MacUser Magazine  
Ziff-Davis Publishing Co.  
One Park Avenue  
4th Floor  
New York, NY 10016**

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

ZIP \_\_\_\_\_

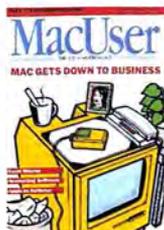
- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> October 85 (Premiere) | <input type="checkbox"/> September 86 |
| <input type="checkbox"/> November 85           | <input type="checkbox"/> October 86   |
| <input type="checkbox"/> December 85           | <input type="checkbox"/> November 86  |
| <input type="checkbox"/> February 86           | <input type="checkbox"/> December 86  |
| <input type="checkbox"/> March 86              | <input type="checkbox"/> January 87   |
| <input type="checkbox"/> May 86                | <input type="checkbox"/> February 87  |
| <input type="checkbox"/> June 86               | <input type="checkbox"/> March 87     |
| <input type="checkbox"/> July 86               | <input type="checkbox"/> April '87    |
| <input type="checkbox"/> August 86             |                                       |

I'd like to pay with:

- Check     Money Order



**NOVEMBER '85**  
Hard Disks • Mastering MacDraw • PageMaker review • OverVUE an overview • Animating with VideoWorks - Basic Pt. 1 • Delivering a Fat Mac • Icon Cookbook Pt. 2



**DECEMBER '85**  
Accounting software - Excel Macros • Is it Just Text? • Novels of the Mind - Beginners guide to telecommunications • MIDI to the Macs - Basic Pt. 2 • QuickSet, Sidekick & BatteryPak reviewed



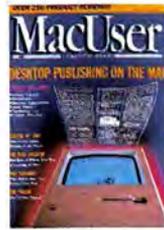
**JANUARY '86**  
Best products of 1985 - ThinkTank the creative way - Deja Vu review - The Great Language Face-Off - MUG Line—users group • Crunch • Beyond the ImageWriter - Basic Pt. 3



**FEBRUARY '86**  
Power User's Manual • The Laser-Writer Revealed • Function Keys • Apple's HD20 & HFS • MacDraft vs. MacDraw • Business Fi-veision - Rogue • 3 flight simulators reviewed • Basic Pt. 4



**MARCH '86**  
The Mac Plus • Helix • Sargon III vs. Psion Chess • Omnis 3 • MacProject and Micro Planner review • Multiplan - C Pt. 1 • Clipboard, Note Pad and Scrapbook revelations



**APRIL '86**  
Softstrip reader - ReadySetGo 2.0 • Astronomy software roundup • The Home Accountant • The Cheat Sheet • The Ancient Art of War - Interface — a relational Bargain - C Pt. 2

**JUNE '86**  
Special Desktop Publishing Issue • Newsletters - Fontographer and Laser-Writer fonts • PageMaker 1.2 • Directory • MacSpin • Switcher and RAM disks • TML Pascal • Wizardry - C Pt. 4



**MAY '86**  
Upgrading your Mac • Secrets of Word • StatWorks & StatView - Easy 3D • Tee off with MacGolf • Borrowed Time • Kids games with Slide Show • Magician and VideoWorks - C Pt. 3



**SEPTEMBER '86**  
Professional Desktop Publishing Issue • Effective Charting • Power Word Processing • The Linotronic Connection - MacPublisher II • SCSI hard disk roundup • MORE - Uninvited



**AUGUST '86**  
Mac systems in the office • Your First Utilities • Radio Shack Model 100 and Mac • Software print spoolers • The colors of Silicon Press • On-line services • Pascal Pt. 2



**DECEMBER '86**  
MacUser looks at the IIGS • InBox — AppleTalk Electronic Mail • Inside Insight • Studio Session • PhoneNET • OrbQuest • Secrets of Pascal • ZBasic • StatView 512K+ • Smart Games



**NOVEMBER '86**  
Radius monitor • Works • Power PageMaker techniques • Beginners telecommunications • Cricket Graphing • Flight Simulator • Orbiter • StoryBoarder • Shanghai surprise • Pascal Pt. 4



**DECEMBER '86**  
MacUser looks at the IIGS • InBox — AppleTalk Electronic Mail • Inside Insight • Studio Session • PhoneNET • OrbQuest • Secrets of Pascal • ZBasic • StatView 512K+ • Smart Games



**JANUARY '87**  
Special Desktop Productivity Issue • Jazz vs. Microsoft Works • 2nd Annual Editor's Awards • Desktop Publisher of the Year • MapMaker • GrayPaint • Dungeon of Doom



**FEBRUARY '87**  
Dynamac preview • Is SuperPaint super-HardBall, a great baseball game • Get more out of MORE • SCSI drive comparison • Design your own Mac screen • LightSpeed Pascal

**MARCH '87**  
Word processors round-up • Word 3.0 • WriteNow • dBase Mac preview • Financial and tax programs • Buffers go head to head • Mac Pro Football review • Prolog — AI for the Mac •



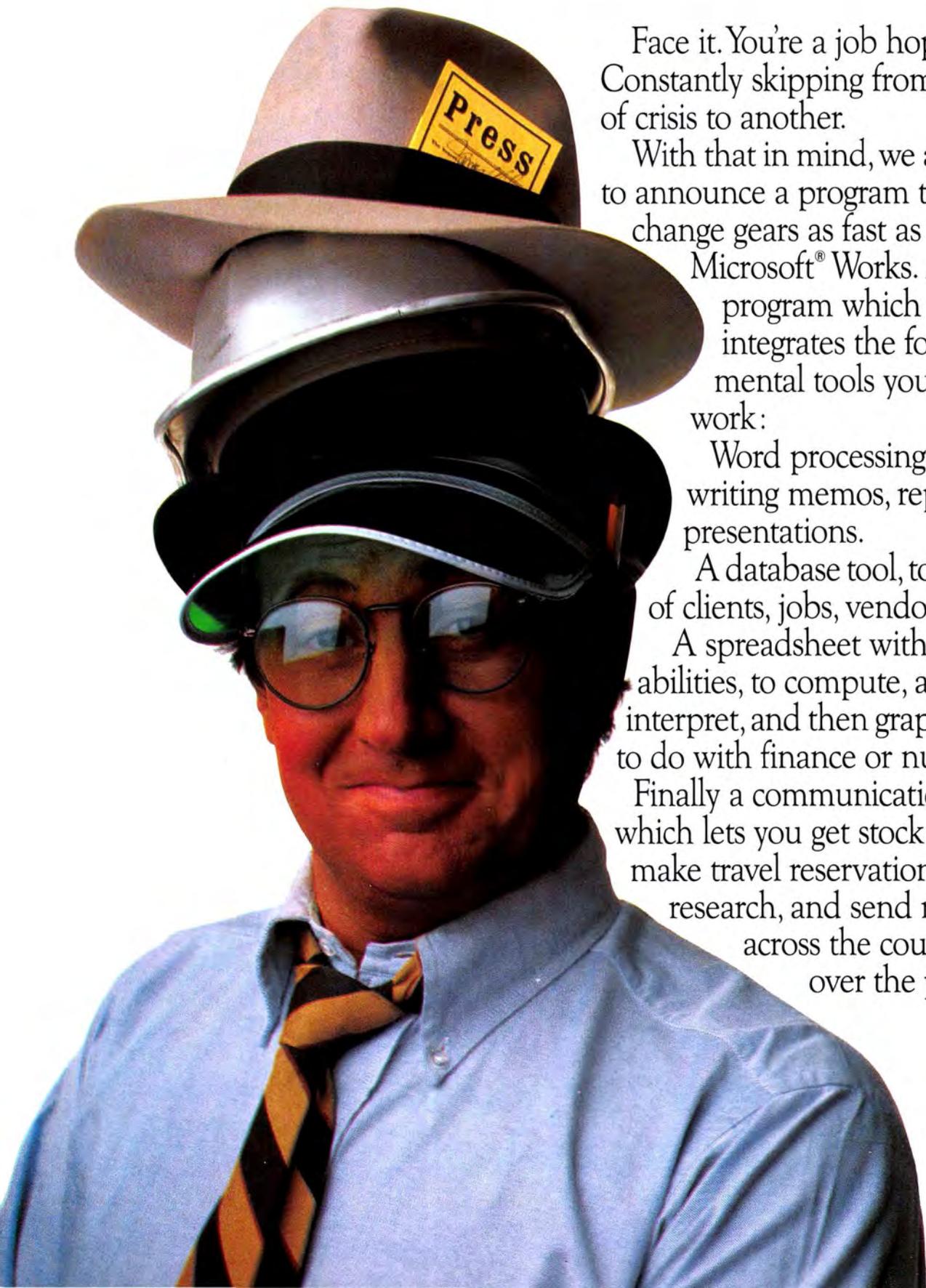
**APRIL '87**  
Two new Macs • Page processing with Ragtime • Guide review • Clean copy with MacProof • Create a world with World Builder • Dark Castle review • DAS galore • LightSpeed C review •



**APRIL '87**  
Two new Macs • Page processing with Ragtime • Guide review • Clean copy with MacProof • Create a world with World Builder • Dark Castle review • DAS galore • LightSpeed C review •

See What You've  
Been Missing!

# We'll make it easy



Face it. You're a job hopper. Constantly skipping from one kind of crisis to another.

With that in mind, we are pleased to announce a program that can change gears as fast as you do:

Microsoft® Works. A one disk program which gracefully integrates the four fundamental tools you need at work:

Word processing, for writing memos, reports, presentations.

A database tool, to keep track of clients, jobs, vendors.

A spreadsheet with charting abilities, to compute, analyze, interpret, and then graph anything to do with finance or numbers.

Finally a communications tool which lets you get stock quotes, make travel reservations, do research, and send reports across the country, right over the phone line.

# for you to change jobs.

Microsoft Works lets you juggle all these jobs, move swiftly and easily between them, while transferring and combining their information as you please. Because you do all these jobs with one, easy to learn, totally integrated program.

## Quick study. Quick change.

The first job is the easiest. Learning to use Microsoft Works.

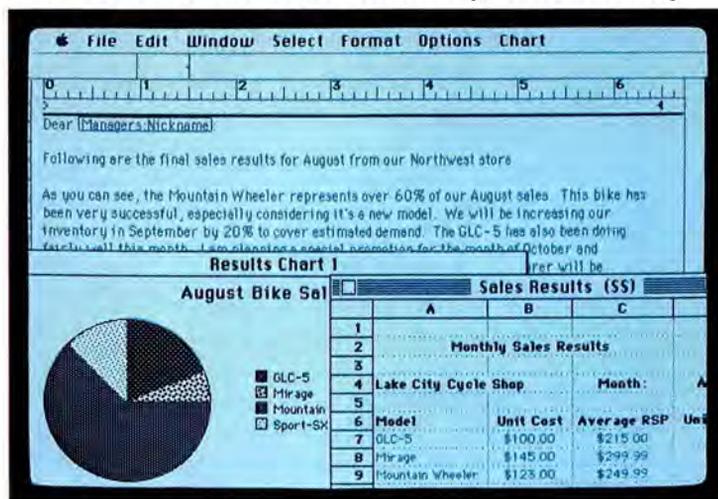
It's a snap. The overall program and each tool within runs Macintosh™ style. Which, as you probably know, is a natural, common sense, point-at-what-you-want system.

And Microsoft Works is seamlessly melded together. You can have all four tools on screen at once. Jump instantly from one to another. And later combine work done in each part of the program on a single printed page.

This easy exchange of data makes jobs go faster and easier. One practical example being mass

mailings of form letters where you need to combine names from the database with text written in the word processor.

All in all, Microsoft Works is a superb solution for day to day, get-it-done problems. An inspiring display of convenience, efficiency, and utility.

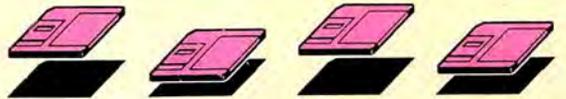


And, of course, it's a product of Microsoft, the preeminent developer of programs for the Macintosh. Which is not a claim, it's a fact.

If you're in a business that won't let you stick to one thing, check out Microsoft Works. The program that can change jobs as fast as you do.

## Microsoft® Works

# MINIFINDERS



charts from spreadsheet data. Documentation is adequate, but not too well organized. \$199. Haba Systems, 6711 Valjean Ave., Van Nuys, CA 91406. CP

Have you often wished for a personal assistant to help in picking software? These MiniFinders may not breathe and move, but they do tell you what products are hot and, better, what these products do. Each of these items has been carefully reviewed and selected by the MacUser editorial staff. Each has been rated from 1 to 5 mice. Ratings are relative within categories, and they can change as categories expand and new products advance the state of the art. You won't see many low ratings or bombs, since we're telling you about the cream of the crop, but we will warn you about the really bad products so that you don't spend your money on them. **Red names indicate this month's additions.** The letters at the end of the entries indicate whether a product is copy protected (CP) or not (NCP). CP? indicates that we don't know. If a product has been reviewed or QuickClicked in MacUser, the date of the review is shown. Next time you have to find products you can count on, count on MacUser!

## MINIFINDER INDEX

<b>BUSINESS ACCOUNTING</b> .....	<b>166</b>
<b>COMMUNICATIONS</b> .....	<b>172</b>
<b>DATABASES</b> .....	<b>167</b>
<b>DESK MANAGERS</b> .....	<b>176</b>
<b>EDUCATION</b> .....	<b>183</b>
<b>ENTERTAINMENT</b> .....	<b>184</b>
<b>GRAPHICS &amp; DESIGN</b> .....	<b>167</b>
<b>HARDWARE &amp; ACCESSORIES</b> .....	<b>188</b>
<b>INTEGRATED SOFTWARE</b> .....	<b>166</b>
<b>LANGUAGES</b> .....	<b>178</b>
<b>MUSIC</b> .....	<b>188</b>
<b>NUMBER CRUNCHING</b> .....	<b>167</b>
<b>ORGANIZATIONAL TOOLS</b> .....	<b>174</b>
<b>PERSONAL FINANCE</b> .....	<b>166</b>
<b>UTILITIES</b> .....	<b>177</b>
<b>WORD PROCESSING</b> .....	<b>174</b>

## INTEGRATED SOFTWARE

**Crunch** is an icon-driven relational spreadsheet that features **||||** versatile charting and database capabilities. Strong financial logic, date and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. \$195. Paladin, 2895 Zanker Rd., San Jose, CA 95134. CP (Jan 86)

**Excel** is THE power spreadsheet. Of the Mac, of the world. Has **|||||** 256-column by 16,384-row capability. Features include a powerful macro function (with a recorder to make creation simple) and elaborate charting facilities. 512K+ Mac and external drive required. \$395. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (Prem)

**Jazz** provides well integrated modules for word processing, graphs, **||||** worksheets, databases and communications. HotView, is best feature. Requires 512K+ and external drive. Version 1A requires 800K drive. \$595. Lotus, 55 Cambridge Parkway, Cambridge, MA 02142. CP (Prem)

**Microsoft Works** is an integrated application that includes word **|||||** processing, database, spreadsheet and telecommunications functions. The telecommunications module includes background uploading and downloading. \$295. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. NCP (Oct 86)

**Quartet** is an integrated program that works on a 128K Mac, built **||||** around a powerful spreadsheet with a full range of functions. It can also be used as a database and provides good quality

## BUSINESS ACCOUNTING

**Back to Basics Accounting** is a powerful double-entry accounting **||||** software package for the small business user with GL, AR and AP modules. Exhaustive manual with numerous examples. Report capabilities are excellent. \$199. Peachtree, 4355 Shackelford Rd., Norcross, GA 30093. NCP (May 87)

**BPI General Accounting** is an easy to use system. Six journals, **||||** AR, AP, Payroll and GL on one disk. Offset amounts automatically post to ledgers. Up to 8000 accounts. Detailed records, wide range of reports. Switcher and HFS compatible. \$425. Requires 512K+. BPI Systems, 3001 Bee Cave Rd., Austin, TX 78746. NCP (Aug 86)

**CheckMark** is a Ledger with five preset journals: Cash Disbursements, Receipts, General, Sales, and Purchases. Menus and data entry are very straightforward. Flexible summary reports are built in, but customer and vendor information is very minimal. \$295. CheckMark Software, PO Box 860, Fort Collins, CO 80522. CP

**Hardisk** is a complex integrated hard disk system that does not **||||** use Mac interface. Manual is detailed but complicated, with a few pages that make it Mac-specific. Requires hard disk and printer. \$695 per module. Great Plains, Box 9739, Fargo, ND 58109. CP (Dec 85)

**Insight** is a high-powered accounting program for the small to **|||||** medium size business. At present, two modules are available: Accounts Receivable and General Ledger; others are in the works. Requires 512K and hard disk. \$595. Layered, 85 Merrimac St., Boston, MA 02114. NCP (Dec 86)

**Rags to Riches** integrated accounting modules (General Ledger **|||||** and Accounts Receivable) uses Mac interface to the hilt. Information entered in one window automatically transfers. No detailed or flexible reporting. Very easy to use, but it can be confusing with several windows on screen. Requires 512K+ and printer. \$199.95 per module. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. CP (Dec 85)

**Rags to Riches Professional Billing** tracks and bills professional **||||** services. Batches activities for individual timekeepers. Use as standalone, or integrate with R to R modules. \$399.95. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. 512K+, printer. NCP (Feb 87)

**Strictly Business** General Ledger features clear, well-outlined **||||** set-up procedures and operations. Very flexible, up to 99 profit centers with up to 100 departments each; and customized reports. Program print spools. Requires 512K+, printer and external drive. \$395. Future Design, 13681 Williamette Dr., Westminster, CA 92683. NCP (Dec 85)

## PERSONAL FINANCE

**Dollars & Sense** is a bookkeeping program. Easy to use, with a **||||** good manual and excellent on-screen help. Will handle up to 120 separate accounts or money categories. Uses standard double-entry accounting techniques. Will work on 128K. \$149.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP (Mar 87)

**Forecast** is a tax estimating and what-if program designed to work **||||** with and use Dollars & Sense files. Straightforward, easy to use program. \$69.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP

**MacInTax** is an excellent tool for preparing tax forms. Intuitive, **|||||** easy to use. Accepts data from leading personal finance programs. Good built-in help. Liberal upgrade policy for current owners. California forms set also available. \$99 federal; \$45 California. SoftView, 4820 Adohr Lane, Suite F, Camarillo, CA 93010. NCP (Mar 87)

**MacMoney** is a complete and easy to use personal financial **|||||** system. Intuitive data entry. Integrates with MacInTax.



Requires 512K+. \$74.95. Survivor Software, 11222 La Cienega Blvd., Inglewood, CA 90304. NCP (May 87)

**Market Pro** is a comprehensive portfolio management program for the generation of fundamental data as well as technical charts and graphs. Requires 512K+, external drive and Hayes-compatible modem. \$395. Pro Plus Software, 2830 E. Brown Rd., Mesa, AZ 85203. NCP (Nov 86)

## DATABASES

**Business Filevision** is a masterpiece of Macintosh programming. **||||** the only true graphic database on any micro. Much more powerful than the original, accepts *MacPaint* graphics. \$395. Telos Software, 3420 Ocean Park Blvd, Santa Monica, CA 90405. CP (Feb 86)

**Double Helix** is an environment to generate custom applications **||||** built around a data base-type framework. Contains enhancements to *Helix 2.0*. Includes custom menus, sub form windows, password protection and a universal dump and load parser. Ability to store pictures as data fields. \$495. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Oct 86)

**File** is a flexible data manager. Creates files for a variety of data, **||||** including simple graphics. Files are created in simple row/column format, but reports and forms are easily customized by moving field names around on a blank form. \$195. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. CP

**FileMaker Plus** retains features of *FileMaker* and reads *FileMaker* **|||||** data, also displays up to 8 files, uses "lookup" to retrieve data from other files. Enhanced calculation with many additional functions. Scripts automate a sequence of actions. Mac Plus compatible. \$295. Requires 512K+. Forethought, 250 Sobrante Way, Sunnyvale, CA 94086. NCP (Nov 86)

**Filevision** is a simple database that can change the way you think **|||** about data and data organization. Records are based around user created graphics screens. Screens and records can be linked in complex ways. \$195. Telos Software, 3420 Ocean Park Blvd., Santa Monica, CA 90405. CP

**Helix** is a relational database that makes extensive use of icons. **||||** Setup is easy due to adherence to the Mac interface. The manual is clear, thorough and well-indexed. Complicated for simple database applications, excellent where a relational power is needed. Requires 512K+ and external drive. \$395. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Mar 86)

**MacRelax** is a relational list manager that stores data in a column **||** format. Files can be related by sharing a common field. Flexible design for reports. Screen display is sometimes strange. Easy to use but not obvious to learn. \$99.95. 512K required. Arrays, 6711 Valjean Ave., Van Nuys, CA 91406. NCP (Jan 87)

**Omnis 3** is a power database, featuring concurrent multiple file **||||** management. Can handle 24 files, 12 at a time, and is fully relational. Create custom environments including user-defined menus, commands and dialogs. \$495. Blyth, 2655 Campus Dr., San Mateo, CA 94403. CP (Mar 86)

**OverVUE** is a power-packed relational database that has extensive **|||||** sorting, summarizing and report generation capacity. Has macros and a charting function. Good manual. It can exchange files with a very wide variety of other programs (including IBM software). \$295. ProVUE, 222 22nd St., Huntington Beach, CA 92648. NCP (Nov 85)

**Professional Bibliographic System** is a specialized data base **||||** storing and retrieving bibliographies. Redesigned templates (20) simplify creation. Version 2.6 offers improved speed, flexible formatting. \$295. Personal Bibliographic Software, Box 4250, Ann Arbor, MI 48106. CP (Feb 87)

**Record Holder** is a flexible, easy-to-use form-oriented data **|||** manager. Set up is particularly simple and the search features are powerful. \$49.95. Software Discoveries, 99 Crestwood Rd., Tolland, CT 06084. NCP (Apr 86)

**Reflex For The Mac** is a flexible relational database. Excellent **|||||** report generator gives full control over appearance, style of output. Requires 512K+, second drive or hard disk. Highly recommended. \$99.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Nov 86)

**Writer's Workshop** maintains orderly records for writers. It can **|||||** track manuscripts, income and publisher. Based on and includes *Runtime Helix*. \$99.95. Futuresoft System Designs, PO Box 132, New York, NY 10012. NCP (Apr 87)

## NUMBER CRUNCHING

**DesignScope** is a construction kit for digital and analog circuits. **||||** Up to 254 components can be utilized in a single circuit, and the equivalent of a dual trace oscilloscope plots output in real-time. Good for testing basic (and not-so-basic) circuitry without touching a breadboard. \$249.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

**MacCalc** is a fast, competent, full-featured spreadsheet with **||||** impressive built-in functions, font control, on-line help, ability to expand columns and rows and read/write SYLK or WKS files. The worksheet is 125 columns by 999 rows. Cell names, printing power make *MacCalc* a very flexible pure spreadsheet. \$99.95. Bravo Technologies, c/o DPAS, PO Box T, Gilroy, CA 95021. NCP (Sep 86)

**MacSpin** is a unique and powerful graphic data analysis program. **||||** Handles multivariate data in a highly visual manner. Nothing else like it for any micro. \$199.95. D2 Software, PO Box 9546, Austin, TX 78766-9546. CP (Jun 86)

**Mindsight** is a professional level decision support and business **||||** planning package. Can work with IFPS on mainframes, and is able to transmit models in both directions. Powerful and easy to use. Requires 512K+. \$195. Execucom Systems, PO Box 9758, Austin, TX 78766. CP

**Multiplan**, the first Mac product from someone other than Apple **|||||** is beginning to show age. Still a very capable basic spreadsheet with simple sorting, 63 columns by 255 rows, many built-in functions, other standard spreadsheet features. \$199.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (Mar 86)

**StatView 512+** is a very intuitive statistical analysis program with **|||||** tools needed to understand any set of data. Holds data in a spreadsheet-like form. Full-featured, fast and accurate. Extremely wide range of analyses possible. Requires a minimum of 512K of RAM & 800K of disk space to operate. \$349.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (Dec 86)

**StatWorks** is a general-purpose statistics package that is both **||||** powerful and easy to use. Handles all standard tests and procedures. Single variable and multivariate statistics are supported. \$125. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (May 86)

**Trapeze** is a very powerful spreadsheet program that functions **|||||** through use of blocks similar to page layout programs aligned on a user-definable grid. Blocks can contain the usual spreadsheet-type cells, rows or columns, text, pictures and any type of special graphics. Includes financial, conversion and transcendental functions. \$295. Data Tailor, 1300 S. University Dr., Fort Worth, TX 76107. NCP (May 87)

## GRAPHICS & DESIGN

**CalendarMaker** creates monthly calendars in a variety of formats. **|||||** Users can incorporate their art and daily notes. Note files can be imported from a variety of DA calendars and outliners. Shareware and prelicensed versions available. \$30. CE Software, 801 73rd St., Des Moines, IA 50312. NCP (Dec 86)

**Chart** can easily create area, bar, column, line, pie, scatter and **|||||** combination charts. A total of 42 styles are provided. Limited to 100 data items (64 in a series) on a 128K Mac,

# MINIFINDERS



approximately twice that on a 512K Mac. \$125. Microsoft, 16011 NE 36th WAY, Redmond, WA 98052-6399. CP

**ClickArt Special Effects** is a *MacPaint* enhancement desk accessory. Allows the user to distort, stretch, rotate and use perspective on *MacPaint* documents. A necessary addition for all serious users of *MacPaint*. \$49.95. T/Maker, 2115 Landings Dr., Mountain View, CA 94043. NCP (Apr 86)

**ColorPrint** allows you to print *FullPaint*, *MacPaint*, *MacDraw* and *MacDraft* documents in color using the ImageWriter II or ImageWriter I. *Paint* files set up as overlays are read into *ColorPrint*, and the program controls proper positioning registration. \$29.95. I/O Design, PO Box 156, Exton, PA 192341. NCP (Mar 86)

**ComicWorks** is a graphics wonder. Manipulate bit mapped graphics as independent objects, with up to 64 layers of matting. An airbrush, multiple page capacity, full-screen drawing, and two disks of gorgeous artwork round out this package. Needs better LaserWriter support. \$79.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. NCP (Nov 86)

**Cricket Draw** is an object-oriented drawing program that will produce stunning, high-quality output. Designed to print on PostScript-compatible devices, such as the LaserWriter. Making shadows and flowing fountain effects are just a point and click away. \$295. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (May 87)

**Cricket Graph** easily generates 12 graph types. Multiple windows can be displayed. *Graph* prints in up to 8 colors with up to 16 patterns. Self-generating macro formatting. *Switcher*, HFS, LaserWriter and plotter compatible. \$195. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (Jun 86)

**Easy3D** is a three-dimensional, solid modeling masterpiece. Four variable light sources, powerful sculpting tools and an exquisite user interface make this a must-have for graphics enthusiasts. Requires 512K+. Enabling Technologies, 600 S. Dearborn, Chicago, IL 60605. NCP (May 86)

**EZ Draft** is a high-level CAD application. Does things usually only found on minicomputer programs. Uses "pop-up" menus to supplement a full set of pull-down menus. Comes with an additional set of printer/plotter/monitor drivers. A real powerhouse. \$1995. \$500 for IEGS module to link to other CAD programs. Bridgeport Machines, 500 Lindley St., Bridgeport, CT 06606. CP (May 87)

**Fluent Fonts** is a two-disk collection of fonts. Forty-nine different items are included. All install easily in user Systems. Most are well executed and some are extraordinarily nice. This is a real bargain for font lovers. \$49.95. Casady, PO Box 223779, Carmel, CA 93922. NCP

**Fontastic** is the best font editor now available for the Mac. Features a large editing window with a grid to make positioning easy. Select letters to edit by clicking on a matrix of the font. Allows scaling of existing fonts and previewing the various styles (italic, bold, etc.). \$49.95. Altsys, PO Box 865410, Plano, TX 75086. NCP (Dec 85)

**Fontographer** is a complex, but excellent laser font creator. The fonts created have 300 bits per inch resolution. The fonts are actually downloadable PostScript files. \$395. Altsys, PO Box 865410, Plano, TX 75086. CP

**FullPaint** is an expanded version of *MacPaint*. Features include full-screen drawing, multiple documents open simultaneously, brush editing, movable tool palettes, special text effects and much more. It fills the gaps left by *MacPaint*. \$99.95. Ann Arbor Softworks, 308½ State St., Ann Arbor, MI 48104. NCP (Jun 86)

**GraphicWorks** is a powerful bit-mapped graphics program using easels for drawings, balloons for text and panels to contain both. Confusing interface and the manual could be improved. Requires 512K+. \$79.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. NCP (Apr 87)

**Graphidex** indexes *MacPaint* and *MacDraw* format graphics without removing them from their original documents. Indexed graphics are retrieved via the *Graphidex* DA. Can modify an indexed graphic without affecting the original. Best for bit-

mapped (*Paint* format) images but the design is questionable and the execution imperfect. Requires 512K. \$124.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (May 87)

**GridMaker** is a tool for artists who use perspective. The program automatically generates a series of three-dimensional plane sets that can be pasted into *MacDraw*. Sizes and viewing vantage point are easily modified. \$49. FolkStone Design, Inc., PO Box 86982, North Vancouver, BC V7L 4P6, Canada. NCP (Nov 86)

**Japanese Clip Art** is a two-disk set of extraordinary Japanese clip art. Consists of *MacPaint* documents and separate fonts. Volume I, Heaven, covers mythological subjects; Volume II, Earth, has secular subject matters. \$69.00 each volume; \$149.95 set. Enzan Software, 150 W. Acton Rd., Stow, MA 01775. NCP (Apr 87)

**LaserFonts** are new fonts for the LaserWriter. Users download them to their machines. Very high quality and very simple to use. *Willamette* looks like *Avant Garde*. *MicroFonts* provides tiny, expanded and condensed versions of the LaserWriter's own fonts. \$29.95 each. Century Software, 2306 Cotner Ave., Los Angeles, CA 90064. NCP

**LaserWorks** is a high-resolution font and graphics editor, producing LaserWriter-compatible end products. Its numerous well-designed features make it suitable for users of all levels, from beginners to pros. Requires 512K+ and external drive or hard disk. \$299. EDO Communications, 63 Arnold Wayh, W. Hartford, CT 06119. CP (Sep 86)

**The Mac Art Dept.** is a collection of over 150 graphic images ranging from foods to hands holding signs to borders. Best suited for letterheads, memos, other business use. \$39.95. Simon & Schuster, Computer Software Div., 1230 Ave. of the Americas, New York, NY 10020. NCP (Mar 86)

**Mac-a-Mug** is an Identikit type program for creating faces and facial feature files. Uses scroll bars that are slow and jerky. Lots of creative fun. 512K+ Mac required. \$59.95. Shaherzadam, PO Box 27731, Milwaukee, WI 53226. CP (Jul 86)

**MacDraft** is an object-oriented graphics program. It sports advanced features such as variable scaling, single degree rotation, complex arcs and a FatBits-like magnification mode. Best used to complement *MacDraw*, not replace it. \$239. Innovative Data Design, 1975 Willow Pass Rd., Concord, CA 94520. CP (Feb 86)

**MacDraw** is an object-oriented structured graphics program. Can be used to design forms, create presentation materials and do technical illustrations. Drawing sizes up to 8 feet by 10 feet are possible. Text can be easily generated and integrated in the graphics. \$195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

**MacModel** is an economical 3D package with shading. Somewhat sketchy Mac interface, shading speed slow (but acceptable), grainy image resolution. On-line help screens are a welcome addition. Frequent updates and low price make this a reasonably good buy. \$40. A.P.P.L.E. CO-OP, 290 SW 43rd St., Renton, WA 98055. NCP (Aug 86)

**MacPaint** is the graphics program that started a whole new genre. Still the best freehand graphics tool. Version 1.5 supports 512K+ Macs and the LaserWriter. Multiple tools, patterns and features too numerous to describe. A work of art for artists. \$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

**Mac3D 2.0** is a feature-laden 3D program with a *MacDraw*-like interface. PostScript-resolution shading with six variable light sources, user-definable tools, and many more features make this a graphic powerhouse. \$249.95. Challenger Software, 18350 Kedzie Ave., Homewood, IL 40430. NCP (Jan 87)

**MapMaker** produces maps and analyses of related geographical data. Additional data disks available. Documentation could be better. Requires 512K; second drive recommended. \$295. Select Micro Systems, 2717 Crescent Dr., Yorktown Heights, NY 10598. NCP (Jan 87)



**DiskEnsure™** lets you survive this and gives you the "peace of mind" of having a reliable backup.



Your data is in jeopardy every time you use your hard disk. Why? Because if an application presents the dreaded bomb, the power flickers, or your hardware fails, you can damage your disk directory. Over half of the HFS formatted hard disks in daily use have some directory damage. Eventually this will cause you to lose from one to all of your files. The only way to prevent data loss is to have a second (backup) copy of your files.

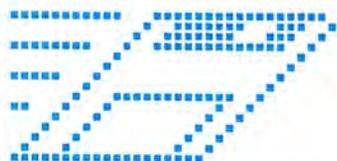
DiskEnsure will make you feel safe and secure. Use it as needed to make backup copies of your files to 400K or 800K floppies - even large or "invisible" files that the Finder cannot copy to a floppy. With DiskEnsure's unique desktop interface you can specify backup by volume, folder, or file and exclude specific files from the backup. Subsequent volume backups are performed incrementally. This means that it only copies those files that have been modified since the last backup and removes those files from the backup disks that have been deleted from the hard disk.

Of course, DiskEnsure can restore backup files to the hard disk. It can completely restore the hard disk or only specific folders and files. And to further guard against loss, DiskEnsure can rejuvenate your hard disk.

Supports MFS and HFS formatted Apple and non-Apple hard disk drives with 400K or 800K Apple floppy drives connected to a Macintosh XL, 512, 512E, Plus, SE, and II.

**\$39.<sup>95</sup>**

plus \$3 s/h add \$2 for COD or foreign orders. Texas add 6 1/4%. Sorry, no P.O.s can be accepted for DiskEnsure



**DiskExpress™**

will keep your drives running at peak performance.

The more you use your floppy or hard disk the slower it becomes. Why? Because as you use a disk, the files on it become more and more fragmented. All disks are divided into a number of areas called blocks with each block holding as little as 1/2K of data. The Macintosh stores files by breaking them into block-size pieces and writing them into unused blocks wherever they are available. Over time, virtually every file can be scattered around in different places. Starting applications, opening documents, sorting databases, and compiling programs all become slower and slower because your drive has to move its head from block to block as it retrieves the pieces of your files.

DiskExpress puts maximum performance back into your disk. It gathers all the pieces of files and puts them into contiguous blocks. Then your drive head need only move to the beginning of a file where it can continue to read sequentially. All the unused blocks are also placed together so that MacServe users will no longer suffer from the "disk too fragmented" message when attempting to create new volumes. It supports floppy and hard disks with either MFS and HFS formats running on Macintosh XL, 512, 512E, Plus, SE, and II.

**Bonus Features:** Finds media and directory errors, recovers missing blocks, compacts the desktop file, and secures deleted data.

**\$39.<sup>95</sup>**

plus \$3 s/h add \$2 for COD or foreign orders. Texas add 6 1/4%. Sorry, no P.O.s can be accepted for DiskExpress

Please circle 240 on reader service card.

**WOULD YOU PAY \$49 FOR A LIFETIME RIBBON SUPPLY?**



**Why Buy Expensive Ribbons When You Only Use The Ink? This Bede Tech Ribbon Inker Quickly Pays For Itself!**

**Re-Ink Your ImageWriter Ribbons Over and Over For Just Pennies Each Time!**

The ribbon area struck by the pins of your printer head is very small compared to the total ribbon. On a freshly inked ribbon, ink migrates back into the area hit by the pins. As the ribbon dries out, however, print quality grows worse and worse.

With our motorized Ribbon Inker, your fabric ribbon is always freshly inked and print quality is always at its best.

Our customers love the quality, simplicity and savings. And so will you.

**Bede Tech Bonus - FREE 4 oz. Bottle Black Ink -Lasts 50-100 Inking! FREE Roller and Roller Cover**

ImageWriter I & II Ribbon Inker Kit **BEDE TECH DIRECT \$49**  
Reg. \$67 Value

**Epson Ribbon Inker Kit** Call  
FAST Same Day Shipment  
30-Day Satisfaction Money-Back Guarantee

Send Me a FREE Catalog

SEND RIBBON INKER \$49.  
Shipping & Handling \$ 1.50  
(Canada, Hawaii, Alaska \$4.50 S&H)  
Ohio residents add 6.5 % Sales Tax \$ \_\_\_\_\_  
TOTAL ORDER \$ \_\_\_\_\_  
Send check, money order, or charge it.  
 VISA  MasterCard Exp. Date \_\_\_\_\_  
Card No. \_\_\_\_\_  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

**bede tech** 8327 Clinton Road  
Cleveland, OH 44144  
216/631-4214  
Member, The Bede Companies, Est. 1976

**Call Toll Free 800-772-4536**

ImageWriter is a registered trademark of Apple Computer, Inc. Macintosh and MAC are trademarks licensed by Apple Computer, Inc. 1987 Bede Tech

Please circle 126 on reader service card.

**YOUR  
SOURCE  
For**

**Macintosh™  
SOFTWARE AND  
ACCESSORIES**

**BRAND NAME  
MAC products at  
DISCOUNTED  
PRICES.**

**SOFTWARE  
HARD DRIVES  
MODEMS  
DISKETTES  
DISKETTE CASES  
PRINTERS  
CARRYING BAGS  
...AND MORE!**

New products are being added to our inventory weekly. Call today for our latest list and prices.

**(404) 446-2295**

or

**MAIL THE COUPON BELOW**

Please send me your latest list of products for the "MAC", along with your discounted prices.

NAME \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
PHONE \_\_\_\_\_

**DESKTOP**

**software center**

DESKTOP SOFTWARE CENTER  
4115 FRANK NEELY RD., NW  
NORCROSS, GA. 30071

Please circle 48 on reader service card.



**ProLink™**

copies text files to and from  
Apple // 3.5" ProDOS disks!

Want to use your AppleWorks and other Apple // data files on your Macintosh or Macintosh data files on your Apple // ? With ProLink you simply insert a 3.5" ProDOS disk directly into a Macintosh 800K disk drive and select the text, ASCII, or DIF files you want copied to or from any directory on the ProDOS disk.

- Use data from AppleWorks, PFS, MacWrite, Word, Excel, Microsoft Works and others on either your Apple // or Macintosh.
- Supports any Macintosh floppy or hard disk in either MFS or HFS formats.
- Supports 3.5" ProDOS 8 and 16 disks from the Apple //e, //c, and //GS.
- No need for complicated transfers using communications programs, protocols, cables, etc.

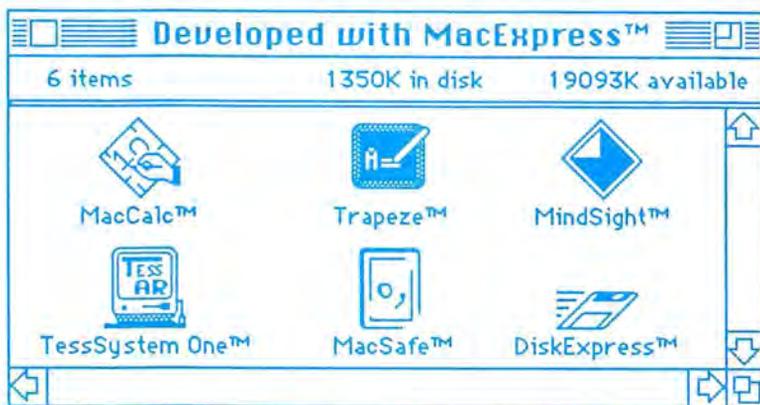
Requires a Macintosh 512 with external Apple 800K disk drive. Or 512E, Plus, SE, II with second drive (hard or floppy).

**\$39.95**

plus \$3 s/h add \$2 for COD or foreign orders. Texas add 6 1/4%. Sorry, no P.O.s can be accepted for ProLink

**MacExpress™** slashed their program development time. It can do the same for you.

Equally important, it will add user interface features you thought impossible to implement in your development schedule. If you would like to see for yourself, take a look at what MacExpress has done for the user interfaces of these applications.



MacExpress implements the main event loop, menu handling, panels, views, splitting, scaling (1-2000%), resizing, setting aside of windows and desk accessories into icons, and much more. Best of all, it is written in lightning fast assembly language and only occupies from 15K to 34K. MacExpress is used in conjunction with Pascal, C, or 68000 assembly, and is more than a simple library or skeletal program. Its powerful features are being used to develop many more applications from major software companies. Join the programmers world-wide who are using MacExpress.

MacExpress supports the entire Macintosh family including the Macintosh SE and Macintosh II. There are currently versions for MPW Pascal, MPW C, LightspeedC, Lightspeed Pascal, and TML Pascal.

**\$195**

plus \$5 s/h add \$2 for COD or foreign orders. Texas add 6 1/4%.

No royalties  
or  
license fees



**ALSoft, Inc.**  
**(713) 353-4090**

**Dealer Inquiries  
Invited**

P.O. Box 927, Spring, Tx 77383-0927

Please circle 298 on reader service card.

# MINIFINDERS



**MGMS: Professional CAD for Macintosh** offers more than 200 **||||** functions. Very complete, capable program. Powerful tools like Groups, Dimension, Libraries etc. are standard. Sometimes confusing to follow—designed for experienced, professional CAD user, not the novice. Full plotter support. Good manual and tech support. 512K, Mac Plus or Lisa/Mac XL. \$799. Micro CAD/CAM, 5910 Noble, Van Nuys, CA 91411. CP

**MockPackage+** is a set of extremely powerful DAs. Includes a **||||** text editor, text printer (supports LaserWriter), charter, terminal and EZmenus. HFS compatible. \$35. CE Software, 801-73rd St., Des Moines, IA 50312. NCP (Mar 87)

**PageMaker** is an advanced layout and makeup program. Can **||||** easily create multiple page documents. Output is optimized for LaserWriter. Good documentation. \$495. Aldus, 411 First Avenue South, Seattle, WA 98104. CP (Jun 86)

**Phoenix 3D** is an economical 3D drawing package, with features **||||** that belong in a more expensive program. Multiple light sources, fine object placement and orientation control, and a good selection of shapes. \$39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Oct 86)

**PictureBase** is a program and accompanying desk accessory for **||||** organizing *MacPaint* and *MacDraw* files. Graphics are organized into libraries, and can be searched for by keywords. \$69.95. Symmetry Corporation, 761 E. University, Mesa, AZ 85203. NCP (Jun 86)

**Portfolio: Designs for Newsletters** provides over twenty **||||** templates for 2-page newsletters with pre-set columns, headlines, graphics and captions. Documentation provides excellent tutorial in page design. Includes DA called *Wyzyz* that optimizes screen fonts and copyfit. 512K (512K E to use *Wyzyz* DA) or Mac Plus; *PageMaker*. \$79.95. Aldus Corp., 411 First Avenue South, Suite 200, Seattle, WA 98104. NCP (May 87)

**The Print Shop** makes it easy to create greeting cards, banners, **||** letterhead and signs in minutes. Offers full access to fonts, styles, graphics. Can pull images from *MacPaint* files or off the Clipboard. Don't get near a hard disk. \$79.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Dec 86)

**Ragtime** is an "Integrated Page Processor" with text, graphics and **||||** built-in spreadsheet. Flow text automatically from one frame to another. Spreadsheet has a full set of functions. Excellent, easy to use program. Requires 512K+. \$395. Orange Micro, 1400 N. Lakeview, Anaheim, CA 92807. CP (Apr 87)

**Slide Show Magician 1.3** is useful for creating full screen audio-visual presentations on the Mac. Frame branching, improved **||||** editing capabilities, external cassette recorder synchronization and digitized sound capabilities make this much more powerful than the original. \$59.95. Magnum, 21115 Devonshire St., Chatsworth, CA 91311. CP (Mar 86)

**Storyboarder** produces working animated storyboards for use in **||||** film and video production. Imports graphics from *MacPaint*; allows screen masking to simulate television, 35mm or 70mm screen widths. \$495. American Intellware, PO Box 6980, Torrance, CA 90504. CP (Nov 86)

**Sunshine Graphics Library** is a collection of 36 400K disks (to **||||** date) with a wide variety of high-quality digitized images stored as *MacPaint* files. Each disk comes with a laser catalog. \$20/disk; discounts scale for multiple purchases. SunShine, Box 4351, Austin, TX. NCP (Feb 87)

**SuperPaint** is a powerful, easy-to-use graphics program with all **||||** the best features of *MacPaint* and *MacDraw*—and then some. Among the new features, *LaserBits* provides 300 dpi magnification and there are 40 editable brush shapes. Requires 512K+. \$99. Silicon Beach, 9580 Black Mountain Rd., PO Box 261430, San Diego, CA 92126. NCP (Feb 87)

**World-Class Fonts!** comes in two volumes of three disks each. **||||** Includes all the *Mac the Knife* fonts and a lot more, including 2 useful utilities. This is now the best collection of *ImageWriter* fonts available. Each volume: \$39; both volumes: \$59. DUBL-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Dec 86)

## COMMUNICATIONS

**AppleShare** is the long awaited file sharer from Apple. Software- **||||** based, *AppleShare* requires you to dedicate a Mac and a hard disk to run it. Allows users on the network to protect things from other users on the folder level. Interface to network is provided at a revised *Finder*. \$799. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (May 87)

**HomePak** is a package consisting of *HomeTerm*, an excellent **||** simple telecommunications program with strong macro features; *HomeFind*, an electronic filer as bad as *HomeTerm* is good; and Apple's *Edit*, a simple, non-HFS-compatible text-file editor. \$49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario L4B 1B5, Canada. NCP (Aug 86)

**InBox** is an easy to use mail system. It's called up from a desk **||||** accessory. Has a very slick interface. Current version requires a dedicated Mac to run as storage for the mail. \$299 for starter set which includes one Administrator disk and three Connection disks. Additional Connections cost \$75 each. Think Technologies, 420 Bedford St., Lexington, MA 02173. CP (May 87)

**InTalk** comes with its own communications command language **||||** able to do unattended sessions. Supports Xmodem and MacBinary. Has a macro key function. Many sample set up documents and command language files provided. \$145. Palantir, 12777 Jones Rd., Houston, TX 77070. CP (Prem)

**InterMail** is an electronic mail system that runs under *AppleTalk*. **||||** Supports file transfers across the mail system. Full on-line help facility. Also includes "While you were out" messages. Desk accessory based. Prices determined by number of users licensed. One to four users, \$299.95; 5 to 10 users, \$499.95; 11 to 20 users, \$749.95; 21 or more users, \$949.95. Interactive Network Technologies, 20 Amy Circle, Waban, MA 02168. NCP (May 87)

**MacTerminal** provides basic telecommunications and terminal **||||** emulation for the Mac user. Doesn't have macros nor any sort of auto redial/auto logon capability. Best for those needing faithful VT100 or IBM 3278 emulation—it is superb at those. \$99. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Prem)

**Microphone** is a high-powered terminal program that's easy **||||** enough for novices. Very powerful command language allows full automation of communications, if desired. \$74.95. Software Ventures, 2907 Claremont Ave., Berkeley, CA 94705. NCP (Jun 86)

**Red Ryder** is a full-featured telecommunications program that **||||** supports MacBinary, Xmodem and Kermit. Remote service procedures, auto procedure writer and keyboard macros allow automation of many operations. It is shareware and a real bargain. \$40. The FreeSoft Corp., 10828 Lacklink, St. Louis, MO 63114. NCP (Jun 86)

**Smartcom II** balances power and ease of use. Capable of **||||** unattended operation and has a very powerful command language. Supports MacBinary, Xmodem, and Hayes Verification protocols. The large screen buffer can easily be archived. \$149. Hayes, 5923 Peachtree Industrial Blvd., Norcross, GA 30092. NCP (Prem)

**Telescope** is the power telecommunicator's terminal program. Can **||** be configured to emulate any terminal. \$125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Jun 86)

**TOPS** is a file server that is designed to network computers with **||||** different operating systems. The current system will support Macs, MS-DOS compatibles and UNIX. Access to files and subdirectories is transparent to the user, they appear as Mac folders. Only handles ASCII or Text files. \$149 for Mac version. \$389 for PC's (comes with add-on card). Centram Systems West, 2560 Ninth St., Berkeley, CA 94710. Serial number protected. (May 87)

**VersaTerm** features include DEC VT100 and VT52, Tektronix 4014 **||||** graphics terminal and Data General DG200 emulation.

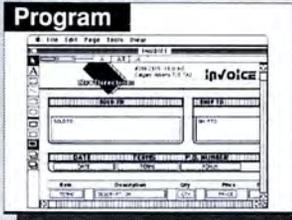
New from NewDirections Software:

**How many times have you had to quit your program just to start up another to type a letter, address an envelope, or print an invoice or form?**

**Introducing the solution.**

If you are like most other Macintosh users, your answer to this question is probably "Too Often!". FastForms Construction Kit consists of two programs: a powerful drawing application that lets you create forms, letterheads, newsletters and about a zillion other documents, and a convenient desk accessory that provides you with instant access to any of your FastForms creations. The drawing program features nifty tools such as grey screens, foreground and background drawing planes for visible and invisible objects, text editing, interactive fields, hairlines, and some unique object alignment and distribution tricks. Once your document has been created, the desk accessory can retrieve it from FastForms own built in hierarchical file system from within any other program. From the desk accessory, tab to move from field to field entering in data. Then print, file and get back to work. Type a letter complete with letterhead graphics and print with the LaserWriter, add a loaf of bread to your shopping list, create an on-line help file, write and print a cheque (FastForms can even balance your bank account!) or fill out an invoice that totals all items, plus adds tax - all without interrupting your regular work! You could even scan your forms and trace over them with the drawing program, then fill them out with the desk accessory and print. What could you use FastForms construction kit for? **Explore the possibilities and get your FastForms Kit today!**

**FastForms!**  
construction kit



Design your own professional forms with the drawing program. Specify interactive fields for entering information. Create letterheads, invoices, labels and much much more!



Use the desk accessory for instant access to your forms. Enter data into fields then print to the LaserWriter or ImageWriter, all without quitting the program you were working with!

**FREE TEMPLATE DISK!**

Order FastForms Construction kit now, and you receive a free template disk complete with ready to use templates from the desk accessory!

Call to order - only \$89  
VISA, MasterCard, AmEx  
or ask your dealer  
**1-800-661-9410**



by NewDirections Software #206, 2915 - 19th Street N.E. Calgary, Alberta Canada T2E 7A2 (403) 250-1969  
All trademarks acknowledged

Please circle 272 on reader service card.

*Would you believe us if we told you that these pages are from PageMaker?*



**PAGES!**  
by image club

That's right! The documents that you see in this ad were printed directly from PageMaker Pages! by Image Club are truly remarkable template pages with the neatest PostScript special effects that you just have to see to believe!

Pages! by Image Club are ready to use template pages - all you do is add text! Pages! special effects were created with unique downloadable PostScript files and MacDraw graphics for superb printed results with the LaserWriter or the Linotronic

Features These Templates: reports, letterheads, brochures, posters, advertisements, cards, newsletters, and tons more! Pages! also includes a handy on-the-screen 68 page user's guide. Use Pages! for practically anything!

Your imagination is your only limitation. Pages! is also available in ReadySetGo 3 format. Push your LaserWriter to the limit and see what it can really do. Pages! by Image Club - You won't believe it! Order now by calling our toll free number, VISA, M/C and AmEx cards accepted, or ask your dealer.



by image club

**Pages! 2 disk set ONLY \$79.00**  
Image Club Graphics #206, 2915 - 19th St. N.E. Calgary, Alberta T2E 7A2 (403) 250-1969

Toll Free Order Desk **1-800-661-9410**

Please circle 272 on reader service card.

# MINIFINDERS



Supports Xmodem and MacTerminal Xmodem protocols and MacBinary. *VersaTerm* is easy to use and well documented. \$99. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. CP (Prem)

**VersaTerm-Pro** is a very powerful terminal program with several special features. Does one of the best VT100 emulations available and specializes in high-quality Tektronix 4014 and 4105 emulation. A pro's tool. Requires 512K+. \$295. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. NCP (Apr 87)

## WORD PROCESSORS

**Document Compare** allows users to compare any two *MacWrite* 4.5, ASCII or MDS documents. Differences in spelling, punctuation, formatting and wording are detected. Documents can be printed out with differences highlighted. \$99. The Model Office Company, 49 Wellington Street East, Toronto, Canada M5E 1C9. CP (May 86)

**Document Modeler** can automate much of a professional office's correspondence. Comes in two parts: *Template Maker* and *Document Maker*. Initial set-up requires time and is complex. \$299.95. The Model Office Co., The Gooderham Flatiron Bldg., 49 Wellington St. E., Toronto, Ontario M5E 1C9, Canada. NCP (Mar 87)

**Just Text** is a professional level word processor and page makeup program that generates PostScript output. Comes with a set of LaserWriter utilities that allow total manipulation of art and text. Requires LaserWriter or other PostScript compatible output device. \$195. Knowledge Engineering, GPO Box 2139, New York, NY 10116. NCP (Dec 85)

**Laser Author** is a high-powered, technically oriented word processor. Good math setting capability. Has style sheets, word count and page layout capability. \$199.95. Firebird Licenses, PO Box 49, Ramsey, NJ 07446. NCP (Mar 87)

**Liberty Spell Checker** is a fast, effective interactive checker. The dictionary is smaller than average, but well chosen. Unfortunately, it has a few misspelled words. \$59.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Oct 86)

**MacGAS** is a DA spelling checker with both a small and extended dictionary. Its best point is the excellent thesaurus, provides antonyms & glossary. A slow checker. \$99. EnterSet, 410 Townsend St., San Francisco, CA 94107. CP (Oct 86)

**MacLightning** is an interactive spelling checker in desk accessory format. Text can be checked on the fly or by selection. Works within many applications, and options include a thesaurus, medical and legal dictionary. \$99.95. Target Software, 14206 Southwest 136th St., Miami, FL 33186. NCP (Oct 86)

**MacProof** is a grammar, style and spelling checker that's like having your own personal copy editor. Grammar rules are fixed, and you may not agree with the choices. The program only suggests corrections, it doesn't make them for you. And the checking process can be slow if your document is long. \$195 for standalone version; \$2500 for networked version. Automated Language Processing Systems, 190 West 800 North, Provo, UT 84604. NCP (Apr 87)

**Macspell+** (version 1.10) is a spelling checker that installs as a desk accessory. Works easily with *MacWrite* 4.5 and 2.2 and *Word*, but has some drawbacks. New version just available. Requires 512K+, two drives or hard disk. \$99. Creighton Development, 16 Hughes, Irvine, CA 92718. NCP

**MacWrite** is the basic Mac word processor. While it doesn't have every bell and whistle, it is more than adequate for most users. \$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

**MindWrite** is an outliner-based word processor of considerable power. Besides outlining, it allows multiple documents and multiple selections. Excellent if you like to outline your writing first. \$125. MindWork Software, PO Box 222280, Carmel, CA 93922. NCP (Mar 87)

**QuickWord** is a word processing accessory that adds sophisticated glossaries to *MacWrite*. Simple to install and use, yet

powerful and efficient. \$49.95. EnterSet, 410 Townsend St., San Francisco, CA 94107. NCP

**Scriptor** is designed for producing standard format scripts. Starts with a *Word* document. As you change your *Word* document, *Scriptor* will reformat, renumber and reprint the script. Supports LaserWriter and daisywheel printers. \$295. Screenplay Systems, 348 E. Olive Ave., Suite F, Burbank, CA 91502. NCP (May 87)

**Spelling Champion** is a fast and accurate batch-type spelling checker. Backup feature allows you to undo corrections in a paragraph. Works only with *MacWrite* 4.5. \$39.95. Champion Software, 5201 South Hill Dr., Madison, WI 53705. NCP (Oct 86)

**Spellswell** is an effective and powerful standalone spelling checker. It has many advanced features such as capitalization and homonym checking and comes with a large, well-chosen dictionary. \$59.95. Greene, Johnson, 15 Via Chualar, Monterey, CA 93940. NCP (Oct 86)

**Thunder!** is the best spelling checker currently available. Has a 50,000-word dictionary. Features Learned Words (a superb glossary) and statistics. A very fast DA, it works interactively and in selection mode. Requires 512K+. \$49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, Canada L4B 1B5. NCP (Dec 86)

**Word 3.0** is the most feature laden word processor now available. Has a spelling checker, hyphenation, some page layout, style sheets and more. Also has Microsoft's somewhat unusual view of what the Mac interface is. Requires 512K+ and at least 1200K of external storage. \$395. Microsoft, 16011 NE 36th Way, Redmond, WA 98073. NCP (Mar 87)

**Word Handler** is a word processor with elements of *MacWrite* and *Word*. Can delete, rename, etc., without quitting. Has case change, flexible printing options and glossary. Slow. \$79.95. Advanced Logic Systems, 1283 Reamwood Ave., Sunnyvale, CA 94089. NCP (Oct 86)

**WriteNow for the Macintosh** has many of the features of *MacWrite* and then some, including the ability to work in columns. Has built-in spelling checker with 50,000-word dictionary. \$175. T/Maker, 1973 Landings Dr., Mountain View, CA 94043. NCP (Mar 87)

## ORGANIZATIONAL TOOLS

**Acta** is an outline processor in desk accessory format. It has practically all the power of a standalone program, and then some. Can save files as *Acta* outlines, *MacWrite* or text files. A must-have for those who do outlining. \$59.95. Symmetry, 761 E. University Dr., Mesa, AZ 85203. NCP (Jul 86)

**Callope** is a new type of outlining program. Chunks of information are manipulated as small "light bulbs" containing text. Related elements can be graphically connected, and their text information viewed in hierarchical order. Text files can be created for *MacWrite* editing. \$59.95. Innovision, PO Box 1317, Los Altos, CA 94023. NCP (Sep 86)

**DecisionMap** organizes data to facilitate decision making. Unique weighting abilities make this a powerful tool. The decision analysis process is long and some times complex, but never difficult. \$145. 'SoftStyle, 7192 Kalaniano'le Hwy., Honolulu, HI 96825. CP

**Design** is a powerful organizational tool. It goes beyond mere flowcharting. Complex, detailed program aimed at software pros. \$200. Meta Software, 55 Wheeler St., Cambridge, MA 02138. NCP (Apr 87)

**Guide** allows you to "cross-reference" from within a document using hypertext. You can set up words or sections of the document so that double-clicking brings up explanatory material, graphics and other useful items. The word processing and formatting functions, however, are limited. \$135. OWL International, 14218 NE 21st St., Bellevue, WA 98007. NCP (Apr 87)

**MacProject** allows a user to plan and track a project from beginning to end. Uses CPM to produce schedules with start

# MACSPIN™

**"MacSpin [is] an incredible data analysis program..."**

*John C. Dvorak  
MacUser, November 1986*

**When two dimensions leave you flat, enter the world of MACSPIN, and discover the hidden depths of your data!**

MACSPIN can help anyone who needs to analyze and understand complex numerical data.

**\$199.95**

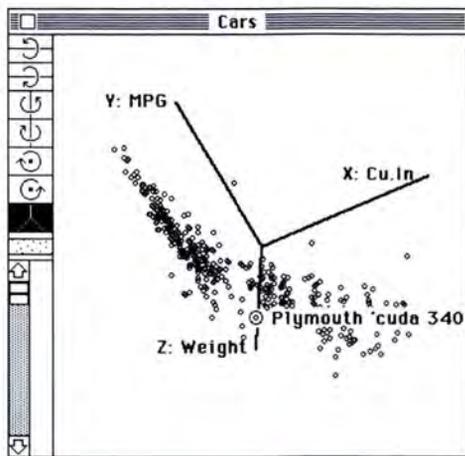
Visa/MC/Amex, COD, POs  
Dealer Inquiries Welcome

**D<sup>2</sup>SOFTWARE**

3001 N. Lamar Blvd. #110  
Austin, TX. 78705  
(512) 482-8933

MACSPIN is a trademark of D<sup>2</sup> Software, Inc.

**The only way you'll ever look at data again!**



Please circle 176 on reader service card.

# Still Searching?

MAC Version

now  
available

What does the Bible say? And where?

We offer an integrated family of software products that allow you to search the Bible as never before.

With "THE WORD Processor" software (which includes the complete text of the KJV or NIV Bible) you can create indexes on key words, phrases, even concepts, as well as search, display or print, for just \$199.95. Greek and Hebrew Transliterator products which include Strong's Concordance are also available. Or choose from a host of other exciting Biblical software products available in varying price ranges.

So if you're still searching, give us a call. We're anxious to show you how your PC can help you access your Bible as never before.

**BIBLE RESEARCH SYSTEMS**  
2013 Wells Branch Parkway, Suite 304  
Austin, Texas 78728 (512) 251-7541

Include \$3.00 for postage and handling. For Apple, IBM PC, Commodore 64, TRS80, Macintosh, CPM 2.2, MS-DOS.

Please circle 97 on reader service card.

# 1-800-MAC-LINE

## THE MACLINE

### Monthly Specials

Mec-In-Tax	59.00
DataFrame 20	749.00
128K to 512K Upgrade	109.00
Phone Net	37.00

### Software

(30-Day Money-Back Guarantee)

Trapeze	195.00	Glue	39.00
MORE	159.00	PageMaker	399.00
SuperPaint	58.00	MS Works	189.00
Lightspeed Pascal	89.00	Spellswell 1.3	59.95
Lightspeed C	125.00	WriteNow	119.95
Dollars & Sense	95.00	Micro Planner	295.00
MacMoney	54.00	GraphicWorks	63.95
Thunder	37.00	MacDraft 1.2	149.95
Ormnis3+	279.00	Mac3D	119.00
Medical Dictionary	75.00	Reflex	59.00
FONTastic	25.00	MacLightning	54.00

### Upgrades

(30-Day Money-Back Guarantee)

512K to 1024K	179.00
SCSI Port	99.00
68020	699.00
MacPlus 2MB	269.00

### Hardware

Dataspace 800K	225.00	MacFan	89.00
PC-Mac Keyboard	119.00	Turbo Mouse	85.00
DataFrame Hard Drives		The Keeper	
20MB XP	849.00	The Brain	1295.00
40MB XP	1325.00	20MB	1795.00
Cauzin Reader	175.00	Thunderscan	174.95

### Diskettes

Sony SS Boxed	10.90	Fuji SS Boxed	10.50
Sony DS Boxed	15.90	Fuji DS Boxed	15.50

### Accessories

Magic Pad	10.95	Disk Directory	19.00
Pocket Pack	8.00	Disk File/30	6.95
The Macintosh Bible	21.00	Mouse Feet	3.95
The Easel	14.00	MacTilt	25.00
The Library	23.00	Black Ribbons	2.50
MacPlus Bag	59.00	Colored Ribbons	4.50
Image II Bag	55.00	Batteries	7.95

### Ordering Information

<b>National</b>	<b>In Texas/Information</b>
Call 1-800-MAC-LINE	1-512-477-LINE
Hours: 8am-6pm CST	\$25 minimum on all orders.
Add \$3.50 for Shipping	

Visa, MC, C.O.D., PO's, Checks  
Texas residents add 7 1/4% sales tax.  
Returns may be subject to a restocking fee.

**ASK FOR OUR FREE CATALOG.**

## THE MACLINE

804-A West 31st, Austin, Texas 78705

Please circle 161 on reader service card.

# MINIFINDERS



and finish dates for each task. Can report on resource interdependencies and generate all needed printed reports. \$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Mar 86)

**MacSpec** is a specification writing tool, a cross between word and outline processors. Can automatically number and indent headings, and renumber everything when lines are moved. Text under headings is handled and formatted as though in a simple word processor. HFS-compatible. \$199.95. LM Software, PO Box 93, Belmont, CA 94002. NCP (Oct 86)

**Micro Planner Plus** is a great project management system with a major enhancement to *Micro Planner*. Outstanding analysis capability. Memory based, making it much faster than the original. Includes a font menu. Even saves reports out in *MacDraw* format for further work. Uses standard print drivers. HFS compatible. Micro Planning Software USA, 235 Montgomery St., San Francisco, CA 94104. CP (Dec 86)

**MORE** is an incredibly powerful outline processor with gobs of great features: instant charts, math capabilities, multiple windows, font and style control, templates and more. Prints outlines in any of several standard formats, even in color. Requires 512K+. \$295. Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043. NCP (Sep 86)

**ThinkTank 512** is a very fast and intuitive organizational tool. Full keyboard control is possible. Can store and paste graphics into outlines. Slide show features allows high-quality presentations to be created. Good report formatting and printing capability. \$195. Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043. CP (Jan 86)

**Vollal** is a full-featured outliner in desk accessory format. Headlines can be edited like normal text. Reads and writes text files, *Word*, *MacWrite*, *ThinkTank* and *MORE* documents. An excellent value. Requires 512K+, 800K drive or external

400K drive. Mac XL not supported. \$99.95. Target Software, 14206 SW 136th St., Miami, FL 33186. NCP (Mar 87)

## DESK MANAGERS

**BatteryPak** is a set of 9 handy desk accessories including scientific and RPN calculators, a background text file printer and a 250-page note pad with search and phone dialing capabilities. \$49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, L4B 1B5, Canada. NCP (Dec 85)

**Executive Office** is a jack of all trades office application. Good data base, word processing, graphics and minispreadsheet. Available on 400 or 800K disks; get the 800 if you can. \$249.99. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Mar 87)

**Front Desk** lets small businesses and offices easily keep track of personnel schedules, activities and payments. The program can keep track of up to 15 employees, functioning as a day-, week- and month-at-a-glance calendar. \$149.95. Layered, 85 Merrimac St., Boston, MA 02114. CP (Dec 85)

**My Office** lets you handle your files and papers in much the same way you did before you got a computer. Excellent use of graphic symbols makes this program the easiest to use of its type. \$129.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Prem)

**Quickset** is a set of desk management and organizational tools that can be used as desk accessories or applications. Functions include note filer, card filer, calendar, phone dialer, financial and statistical calculators and a file encryptor. \$49.95. EnterSet, 410 Townsend St., San Francisco, CA 94107. NCP (Dec 85)

**Sidekick** is a set of desk organization applications and accessories. Functions include phone dialer and logger, desk

## A New Method of Visual Thinking

# design

\$200 + \$5 shipping

An object-oriented graphics program with many unique features that make it the best tool available for structured graphics.

### Applications:

- Flow charts
- Top-down, hierarchical system design
- Presentation and publication graphics
- Organizational diagrams
- Symbolic idea processing
- Source code documentation
- Communication networks
- Simulation and analysis diagrams

### Unique Features:

- Connected objects stay connected
- Hierarchical, multi-page diagrams
- Palette of user-defined objects
- Editing on objects and groups
- Full alignment facility
- Text associated with each object
- Hypertext links across pages
- Page, document, hypertext search



**Meta Software**  
55 Wheeler Street  
Cambridge MA 02138 USA  
617.576.6920

*design* is available for the Apple\* Macintosh\* 512, 512E, and Plus.

\*trademarks owned by, or licensed to, Apple Computer, Inc.

© 1987 Meta Software Corp.

Call for information and pricing on our vertical products based on *design*:

### *design* Open Architecture Development System

A programmable system that lets you develop the final application. We provide an extensive library of functions that gives you access to the internals of *design*. You write the application, link it with *design*, and you have a finished application. Excellent for implementing system design methodologies (E-R, SSD, CASE), simulation programs, graphical programming environments, and front-ends for databases, to name a few.

### *design*+DA

A development system that lets you write Macintosh Desk Accessories which interact with a special version of *design*. These Desk Accessories are *mini-applications* which extend the functionality of *design* (for example, to control the grammar of graphics operations or to analyze the content of a diagram).

Please circle 268 on reader service card.

# MINIFINDERS



accessory terminal, calculator, clock, editor and more. When resource files are included modules take up a lot of disk space. \$84.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Dec 85)

**Smart Alarms** is the best reminder system for the Mac. Easy to use, versatile, and, well, smart. This self-running DA automatically reminds you of anything you enter into its Reminder file, giving you a wide range of useful advance warning options. \$49.95. Imagine Software, 2000 Center St., Berkeley, CA 94704. NCP (Oct 86)

**Top Desk** is a set of 7 self-installing (and self-removing) DAs. Menu Key adds Command key sequences to programs. View allows looking at and moving data between up to 8 MacWrite documents, BackPrint, Shorthand, Blank, Encrypt, and Launch. \$59.95. Cortland Computer, PO Box 9916, Berkeley, CA 94709. NCP (May 86)

## UTILITIES

**Accessory Pak 1** is a set of useful applications and utilities. **Paint Cutter** alone is worth the price. That program allows users to browse and manipulate full page MacPaint documents. \$39.95. Silicon Beach, PO Box 216430, San Diego, CA 92126. NCP (Nov 85)

**Copy II Mac** does efficient sector and bit copies and in its latest version can back-up virtually all Mac software. Features graphic displays of copy progress. Comes with MacTools, a multi-use utility that can recover many damaged files. \$39.95. Central Point Software, 9700 SW Capitol Highway, Portland, OR 97219. NCP (Apr 86)

**DiskExpress** unfragments disk volumes by reorganizing data into continuous sectors and arranging files to slow down further fragmentation. Works with MacServe, floppy drives and most

hard drives. Requires 512K+. \$29.95. ALSoft, Box 927, Spring, TX 77383. NCP (Feb 87)

**Disk Librarian** is an easy to use shareware cataloguing program. Criteria selection option for generating subcatalogs. Requires 512K+. \$20. Little Bit, 469 Edgewood Ave., New Haven, CT 06511. NCP (Apr 87)

**Disk Ranger** is a speedy cataloguing program that doubles as an efficient labelmaker. Comes with pinfeed labels. Works with regular and hard disks. Can catalog HFS systems. \$49.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Mar 86)

**Dubl-Click Calculator Construction Set** lets users design personalized calculators with a variety of standard and special functions. Finished calculators can be saved as installable desk accessories or as clickable applications. \$59. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Apr 86)

**Fedit Plus** is the file and disk editor for everyone, from newest Mac owner to oldest. It can do more for your disks and files than any other application. Can recover deleted MFS files. \$49.95. MacMaster Systems, 939 E. El Camino Real, #122, Sunnyvale, CA 94087. NCP (Sep 86)

**FlashBack** is a utility to backup HFS hard disks onto floppies. A unique graphic display of the HFS directory facilitates file selection. The program can handle files larger than 800K. \$59.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Nov 86)

**Glue** adds a print-to-disk capability to many programs. **ImageSaver** installs as printer driver. **Viewer** allows copying and printing of Glue files. Handy utility for desktop publishers. \$59.95. Solutions, Box 989, Montpelier, VT 05602. NCP (Dec 86)

**Hard Disk Util** uses patch files to allow users to mount and run unspecified programs on their hard disks. The list of patches is

# N-Squared Explains Cables & Accessories

If you're looking for the right cables and accessories for your computer, here's everything you need. Please call us for fast answers and fast service!  
*Dealer Discounts Available.*

## Cables

Mac Plus to Serial Printer (Works with Imagewriter I printer)	88-1004	\$27.95
Mac Plus to Modem (Mac Plus to Hayes Modem)	88-1005	\$27.95
Mac Plus to DB-9 Adapter	88-1024	\$19.95
Mac Plus to Imagewriter II (Also works with Apple Modem)	88-1026	\$27.95
Mac Plus SCSI Drive Cable (DB25 to 50 pin)	88-1029	\$32.95
SCSI M-M Expansion Cable (50 pin male to 50 pin male)	88-1030	\$45.05
SCSI M-F Extender Cable - 1 meter (50 pin male to 50 pin female)	88-1031	\$46.55
SCSI M-F Extender Cable - 2 meter	88-1031-1	\$59.50
Mac - Printer Cable (Mac to serial printer - 6 ft.)	88-1000	\$29.95
Mac - Modem Cable (Mac to Hayes Modem - 6 ft.)	88-1001	\$29.95
Mac - Imagewriter II (Mac to Imagewriter II/Apple Personal Modem - 8 ft.)	88-1022	\$27.95

Call us about new Macintosh cables and our complete line of other Apple and IBM cables.

## Switch Boxes

RS-232 Switch Box (Serial DB-25 Female)		
A-B	88-2001AB	\$65.00
A-B-C	88-2001ABC	\$79.00
A-B-C-D	88-2001ABCD	\$95.00
X-Over	88-2001X	\$99.00
Centronics Switch Box (Parallel-Centronics 36 Female)		
A-B	88-2002AB	\$74.00
A-B-C	88-2002ABC	\$85.00
A-B-C-D	88-2002ABCD	\$99.00
X-Over	88-2002X	\$106.00
DB9 Switch Box (DB9 Serial Female)		
A-B	88-2003AB	\$60.00
A-B-C	88-2003ABC	\$72.00
A-B-C-D	88-2003ABCD	\$83.00
X-Over	88-2003X	\$95.00

Call us about our expanding line of Switch Boxes.

## Printer Buffers

Printer Buffers (64k & 256k Parallel to Parallel)		
64k one CPU to one printer	88-4000	\$300.00
64k with A-B Switch Box	88-4001	\$365.00
64k upgradeable to 512k		
4 CPU's to 4 Printers	88-4002	\$999.00
256k one CPU to one printer	88-4003	\$470.00
256k with A-B Switch Box	88-4004	\$500.00

We have cables and accessories for the NEW Macintosh SE & Macintosh II!

## New Products

### Mac Video Converter

- Mac to VCR
- Mac to VHS Projector
- Mac to TV



### • Mac to Monitor

Turn your Mac into a presentation center! Run up to 10 monitors at once. Perfect for Meetings and Classroom situations. Easy to install. 88-2010 \$950.00

**NEW**  
**MacFan** Cools Mac by 58 degrees to a safe 122 degrees F. Quiet, with surge protection. 88-3000 \$129.95

Send More Information Today!

Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Mail Stop/Suite/Dept./Bldg./Apt.#: \_\_\_\_\_  
 Street Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Send to: N-Squared Products, Inc. 2681 Kelvin Ave. Irvine, CA 92714

**N<sup>2</sup> PRODUCTS, INC.**  
 A Sierra Vista Technologies Company

Call toll-free 1-800-346-2225 • In California call 714-474-7950 or 619-243-3632

Please circle 109 on reader service card.

# MINIFINDERS



constantly expanding. \$89.95. FWB Software, 2040 Polk St., San Francisco, CA 94109. NCP

**HFS Backup** ranks as one of the preferred hard disk backup utilities. Backup by file/folder or last changes. Backup specifications can be saved as templates. Good graphic interface. Reliable program. \$49.95. PCPC, 6204 Benjamin Rd, Tampa, FL 33614. NCP (Dec 86)

**HFS Locator Plus** is the essential HFS desk accessory. It can search for a file by name or date of creation, create folders, move files from one folder to another, set a program to launch while in an application. \$34.95. PBI Software, 1111 Triton Dr., Foster City, CA 94404. NCP (Sep 86)

**LaserServe** is a printer spooler for AppleTalk networks. After installation all operations done via a desk accessory. Works with both MacServe and TOPS. Requires 512K+ and 800K drive or hard disk. \$125 per node. Infosphere, 4730 SW Macadam Ave., Portland, OR 97201. NCP (Feb 87)

**Mac Disk Catalog II** is a utility that will quickly organize a moderate size disk library. Easy to use with powerful reporting and label-making features. \$49.95. New Canaan MicroCode, 136 Beech Rd., New Canaan, CT 06840. NCP (Dec 85)

**MacFlow** is a design tool created for programmers. Traditional flowcharting symbols are linked together, and a symbol can be connected to a separate flowchart file. Symbols can't be edited, precluding using MacFlow for other applications. \$125. Mainstay, 5211-B Derry Ave., Agoura Hills, CA 91301. NCP (Apr 87)

**MacInUse** tracks time spent in applications and saves info as text files. Installs on any disk, works in background. MFS, HFS compatible. Extremely valuable for tax purposes, client records, etc. \$49. SoftView, 4820 Adohr Lane, Camarillo, CA 93010. NCP (Jan 87)

**MacLabeler** lets users instantly index and print labels for all the disks in a burgeoning collection. Choose border type and orientation of your label; index by folder or document. Starter set of labels is included. \$49.95. Ideaform, PO Box 1540, Fairfield, IA 52556. CP (Prem)

**MacLink** lets users transfer data between Macs and PCs. Can do special format transfers such as 1-2-3 to Multiplan and WordStar to MacWrite. Contains both Mac and PC disks, interface cable is optional. Has Mac and MS-DOS disks. \$125, \$155 with 8-ft interface cable. DataViz, 16 Winfield St., Norwalk, CT 06855. NCP

**MacNosy** is a global disassembler. A very advanced user can use this program to look into the code of virtually any program. This advanced tool can take you places no other Mac program could dream of going IF you have the skill to guide it. The documentation is sparse. For pros only. \$85. Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025. NCP

**Mac + II** lets you run Apple II software on the Mac. Emulation speed is only 35 to 45 percent of a real Apple II, so graphics especially suffer. Games also run slow. Runs AppleWorks (Apple II integrated software). Good for ex-Apple II owners who have large software collections. \$149.95. Meacom, PO Box 272591, Houston, TX 77277. CP

**MacSafe** is a data file security program that allows you to place multiple files into a "safe", and then you can further protect them through two types of encryption (including DES). Flexible and very easy to use. \$69.95. Kent Marsh Limited, Inc., 1200 Post Oak Blvd., Houston, TX 77056. CP (Mar 87)

**MacServe** converts a Mac and a hard disk into a disk and print server. Uses the AppleTalk network and is easily hooked up. Users can partition the hard disk into multiple volumes. Runs in the background, so users can work on all machines in the network. \$250. Requires 512+ or Mac XL. Infosphere, 4730 SW Macadam, Portland, OR 97201. CP

**MacZap** is a three-part disk and memory utility. It can be used to recover some damaged files and disks, compare disks, analyze disk structure and make back-up copies of most disks. \$60. Micro Analyst, 2505 Roxmoor, Austin, TX 78723. NCP (Jan 86)

**myDiskLabeler** is an excellent label making program. It can read directories, or use large or small icons, or anything else the user desires. Comes with 54 precut labels on pinfeed paper. HFS compatible. \$44.95; with color printing ability (on the ImageWriter II), \$54.95. Williams and Macias, PO Box 19206, Spokane, WA 99219. NCP (Aug 86)

**'Ncryptor** is a simple, safe program that lets users password their files. The same program is used for encoding and decoding. This is the best product in its category. \$39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

**Packit III** is an essential utility. Primarily used to temporarily "glue" files together, it can also compress and encrypt. Feeware. \$10, \$10 for printed manual. Harry R. Chesley, 1850 Union St., San Francisco, CA 94123. NCP (Jan 87)

**Quick & Dirty Utilities, Volume One** is a disk chock full of the handiest programs you have ever bought. Included are a super disk cataloguer, a desk accessory mover and more. Several desk accessories including a menu bar clock and a terminal are on the disk. \$39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Nov 85)

**Switcher** is Andy Hertzfeld's contribution to Mac productivity. This program lets users run several programs at once (up to 8 on a 1-megabyte or larger machine). Switching between the programs is near instantaneous. Requires 512K+. \$19.95 from Apple, free from BBSs, included with some third-party applications. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

**Tempo** is a desk accessory that allows most Mac commands to be intelligently recorded and played back. Capabilities include pausing, conditional branching and macros that work between applications. \$99. Affinity Micro Systems, 1050 Walnut St., Boulder, CO 80302. NCP (Jul 86)

**TMON** is the debugger for the Mac. This isn't open to question. TMON is simply the best. Comes with the latest version of Darin Adler's Extended User Area. \$100. ICOM Simulations, 626 Wheeling Rd., Wheeling, IL 60090. NCP

**TurboCharger 2.0 rev. D** is a RAM cache utility for 512K and larger. Works on most hard disks and Mac XLs. Dramatically improves any program you use that heavily accesses the disk, like MacPaint. \$69.95. Microsystems, PO Box 1249, Capitola, CA 95010. NCP (Jan 87)

**TurboDownload** is a desk accessory designed specifically to increase the speed of Xmodem data transfers from national databases to your Mac. Speed increases range upward from 50% to over 300% at 2400 baud. \$39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

**Twelve-C Financial Desk Accessory** brings all the power and functionality of a Hewlett-Packard 12C programmable calculator to your desktop. Can be programmed and all registers can be viewed while calculator is running. \$39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP

**II in a Mac** is a graphically oriented Apple II emulator with unique features, such as text and graphics copy from Apple screen to Mac Clipboard. Suffers speed problems associated with "virtual machine" emulation. \$69. Micro-W Distributing, 1342B Route 23, Butler, NJ 07405. CP

**TypeNow** is a desk accessory that allows the Mac and ImageWriter to function as an electronic typewriter. Type can be placed into blanks in complex forms easily. Typing can be recorded and played back. \$39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Jan 86)

## LANGUAGES

**AAIS Prolog** is a fast standard Prolog with excellent debugging and error handling. Good for serious program development. Documentation is not as good as the program. \$150. Advanced AI Systems, PO Box 39-0360, Mountain View, CA 94039-0360. NCP (Mar 87)

**Aztec C** is a C language that will appeal to users with a UNIX background. It uses many UNIX conventions and in the more expensive versions comes with standard UNIX utilities,

## Now on the Macintosh...

### Mac Features:

- Pull-down menus
- Clipboard
- Cut, Paste, Scroll
- Mouse control of spreadsheet
- Desk Accessories
- 400K, 800K, HFS compatibility

### SYSTAT Capabilities:

- Full screen spreadsheet data editor
- Missing data, arrays, character variables
- Unlimited cases
- Process hierarchical files and variable length records
- Rectangular and triangular files
- Relational database management and report generation
- Character, numeric, and nested sorts
- Merge and append large files
- Unlimited numeric and character transformations
- Interactive or batch
- Read and write text and external files
- Subgroup processing in statistical modules with SELECT and BY
- Value labels
- RECODE statements for quick multiple codes
- Scatterplots, contours, histograms, stem-and-leaf, boxplots, bar charts, quantile, probability plots
- Basic statistics, frequencies
- T-tests
- Multi-way crosstabs with log-linear modeling, association coefficients, PRE statistics, asymptotic standard errors
- Pairwise/listwise missing value correlation, SSCP, covariance, Spearman, Gamma, Kendall Tau, Euclidean distances

- Linear, polynomial, multiple, stepwise, weighted regression
- Extended regression diagnostics
- Multivariate general linear model
- Multi-way ANOVA, ANOCOVA, MANOVA, repeated measures
- Post-hoc tests
- Principal components with rotations and scores
- Multidimensional scaling
- Multiple and canonical discriminant analysis, Bayesian classification
- Canonical correlation
- Cluster analysis (hierarchical, single, average, complete median, centroid linkage, k-means, cases, variables)
- Nonparametric statistics (sign, Runs, Wilcoxon, Kruskal-Wallis, Friedman two-way ANOVA, Mann-Whitney U, Kolmogorov-Smirnov, Lilliefors, Kendall coefficient of concordance)
- Time Series (smoothing, seasonal and nonseasonal ARIMA, ACF, PACF, Cross-correlation function, transformations, forecasting, Fourier analysis)
- Nonlinear estimation (non-linear regression, least absolute values regression, logit, probit, maximum likelihood estimation, iteratively reweighted least squares)

SYSTAT operates on the following machines: IBM-PC/XT/AT,™ Apple II,™ Apple Macintosh,™ Kaypro,™ HP 150,™ HP 9000,™ DEC Rainbow,™ VAX,™ Alpha Micro,™ MS-DOS,™ CP/M™ and UNIX.™

Single copy price:  
\$595 USA and Canada  
\$695 Foreign  
Site licenses and quantity prices available

Call or write for additional information

**SYSTAT, Inc.**  
2902 Central Street  
Evanston, IL 60201  
312 864.5670

# SYSTAT

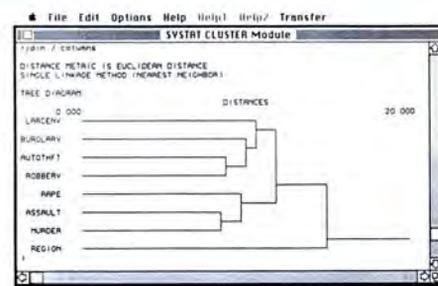
The system for statistics

Please Circle 36 On Reader Service Card.

CASE#	F1000	HEREJAN	CLASS	PRGCR	OTHER
1	38 000	82 000	1 000	1 000	2 000
2	52 000	44 000	2 000	2 000	2 000
3	75 000	75 000	2 000	2 000	2 000
4	42 000	45 000	2 000	1 000	1 000
5	90 000	75 000	2 000	1 000	1 000
6	70 000	61 000	2 000	2 000	2 000
7	35 000	51 000	1 000	2 000	1 000
8	70 000	62 000	2 000	1 000	2 000
9	70 000	64 000	1 000	1 000	1 000
10	80 000	67 000	2 000	1 000	2 000
11	59 000	44 000	1 000	1 000	2 000
12	85 000	65 000	1 000	2 000	1 000
13	56 000	60 000	2 000	2 000	2 000
14	45 000	95 000	1 000	2 000	2 000
15	94 000	58 000	1 000	2 000	2 000

General help	Tab
TABULATE	DP
MODEL	PROB
USE	1
SAVE	845
SUBMIT	1
OUTPUT	729
NOTE	1
PAGE	1 000
FORMAT	40 161
PRINT	22924
HELP	22617
BY	45 163
SELECT	23225
WEIGHT	22075
QUIT	22974
	22679
	80090
	01514

File	Module
Use SYSTAT file	Use
Edit SYSTAT file	WE
Edit new	WE
Get ASCII file	WG
Put ASCII file	WP
Put ASCII file as...	WP
Submit file of SYSTAT commands	WS
Quit	WQ

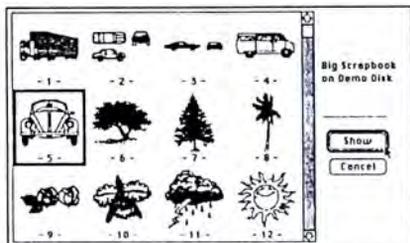


# A BETTER SCRAPBOOK & A SCALING AND CROPPING TOOL!

## SmartScrap & The Clipper

SmartScrap: a replacement for your old scrapbook accessory. With SmartScrap you can:

1. Find pictures easily in any scrapbook with a unique pictorial table of contents.



2. See all of your scrapbook pictures with horizontal and vertical scrolling.

3. Select any rectangle of a scrapbook picture for copying.

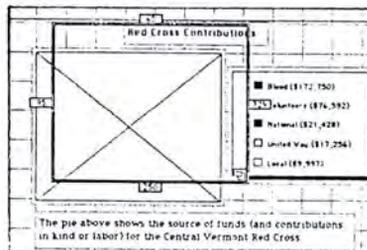
4. Open any scrapbook file on any disk without moving or renaming.

5. Create new scrapbook files with unique names (SmartScrap works with your old scrapbook files as well.)

## SmartScrap & The Clipper

The Clipper: a cropping and scaling tool. With The Clipper you can:

1. Determine the exact dimensions of an area where you are going to paste a picture with The Clipper's amazing transparent window.



2. Trim and scale a picture to the exact dimensions you need before pasting.

3. See the contents of the clipboard even from applications which don't support Show Clipboard.

## A Pair of Elegant Desk Accessories

Available from leading dealers or direct from:

**Solutions International**  
P.O. Box 989, B4  
Montpelier, Vermont 05602  
802 229 9146

**SmartScrap & The Clipper**  
\$59.95 plus \$4 shipping and handling

Visa, MC, check, COD or PO from D&B rated US Corporations.  
Runs on 512K, Macintosh Plus or Mac XL. SmartScrap & The Clipper are trademarks of Solutions, Inc.

Please circle 265 on reader service card.

# KINETICS

2500 Camino Diablo • Suite 110 • Walnut Creek, CA 94596

**FastPath:**  
AppleTalk - Ethernet  
Gateway

**EtherPort SE:**  
Ethernet Controller  
for the Macintosh SE

**EtherSC:**  
SCSI - Ethernet  
Interface

(415) 947-0998

Please circle 299 on reader service card.

## Mac Zap

Don't let a crashed disk ruin your Day.



Mac Zap \$60  
Protection Book \$30  
MFS/HFS Struct. \$20  
Shipping \$03  
Overseas \$10

Mac Zap comes with the programs below and a 55 page manual.

Micro Analyst Inc. Phone  
P.O. Box 15003 (512) 926-4527  
Austin, Tx 78761 Visa/MC COD

Books → Software Protection on Micro Computers  
HFS and MFS Disk Structures



Recover Files from crashed Floppies, Hard Disks, and SCSI Disks. MFS and HFS supported. Yes, HFS hard disks!! We also support logical file volumes such as Mac Serve™.



Unlock the power of your Hard Disk. Install Protected Programs to a Hard Disk. No Master disk is needed after the program is installed. Easy to use, Point to a Patch File and Click.



The most powerful File and Disk Utility available for the Mac. HFS & MFS. Disk & File & Memory Editor, Maps, Dissassembly, Resource List & Map, Graphics, File Attrib. Full SCSI Access.

Please circle 143 on reader service card.

# KNOWLEDGE + INFERENCE = INTELLIGENCE



Knowledge is a strategic resource of individuals and of corporations. Properly managed the impact can be tremendous. The substantial investment in developing expert systems has paid off in corporate savings of many millions of dollars to such companies as Digital Equipment, Westinghouse Corporation and Texas Instruments.

MacSMARTS™, the Intelligence Amplifying Software for the Apple Macintosh, was designed to facilitate similar successes in a wide range of businesses and professions using the new knowledge management techniques but with a much reduced investment.

## EASY TO USE

The innovative Logic Worksheet of MacSMARTS is laid out like a spreadsheet, with columns for FACTS, RULES and CONCLUSIONS. In its operations, users of Excel, Jazz or other Macintosh spreadsheet processors will feel quite at home. You don't need to master a complex syntax just to get started. And with the click of a mouse and a menu selection you can link graphics and text to rules and conclusions to elaborate and advise with geological maps, engine diagrams, or architectural plans; key contract paragraphs, laboratory protocols or balance sheets.

## PRODUCTIVE

By making it easy to construct a knowledge base—consisting of facts, rules and examples—in the Logic Worksheet you can use deductive and inductive inferencing techniques to diagnose and advise, plan or trouble-shoot.

Some typical applications include:

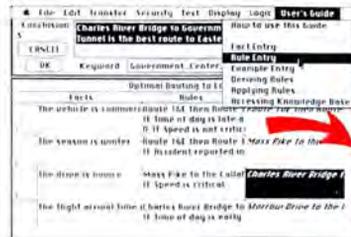
- A partner in a major law firm is using MacSMARTS to advise a junior associate on the finer points of corporate law.
- A real estate developer used a MacSMARTS program to make certain no considerations were missed in the decision to build a new office complex.
- A medical laboratory director found that a MacSMARTS program could assist new technicians in performing diagnostic tests.
- A marketing director will use a MacSMARTS program to configure the best components to meet a customer's requirements.

 **Cognition Technology™**

The Intelligence Amplifying Software™  
55 Wheeler Street, Cambridge, MA 02138

Copyright ©1986 Cognition Technology Corporation  
Apple is a registered trademark of; and Macintosh is a trademark licensed to Apple Computer, Inc. Jazz is a trademark of Lotus Development Corporation. MacSMARTS, the MacSMARTS icon, the Cognition Technology logo and Intelligence Amplifying Software are trademarks of Cognition Technology Corporation, 55 Wheeler Street, Cambridge, MA 02138, (617) 492-0246.

**Step-By-Step Tutorial  
And Examples Included**



## Technical Specifications and Features

- Prolog Inference engine
- Integrates both logical rules and examples
- Up to 4000 rules per knowledge base
- Up to 1000 examples per schematic rule
- Linkage of multiple knowledge bases
- Editor for easy revision of knowledge bases
- Context-sensitive help screens available at all times
- Import/export gateways
- Modular compilation of knowledge bases



- Password protection of sensitive knowledge
- Query-the-user facility linked to text and graphics files
- Works on hard disks for faster operation
- Compatible with HFS and the Macintosh Plus

- A financial consultant saw that a MacSMARTS program could assist him in strategic portfolio planning for more clients.
- An MIS director uses a MacSMARTS program to assist programmers to track down problems in systems software.
- A doctor is using a MacSMARTS program to analyze the implications of tests on his visually-impaired patients.
- The possibilities are bounded only by logic and human imagination. Our customer base spans two continents and a wide range of professions and businesses from individual consultants to the Fortune 500.

## AFFORDABLE

Artificial intelligence is one of the most significant developments in the history of computer technology. Now you can access the power of this new technology and put it to work with MacSMARTS. MacSMARTS has the features of programs costing hundreds or even thousands of dollars more yet costs only \$149.95. As a limited introductory offer order MacSMARTS direct risk-free now for only \$99.95. A small price to put you ahead of the competition and into the 21st Century. If MacSMARTS does not boost your personal productivity over the first 60 days, send it back for a full refund—no questions asked. We guarantee your satisfaction!

**YES, I want to innovate today. Please send me MacSMARTS™!**

MacSMARTS Not Copy-Protected Quantity: \_\_\_\_\_ @ \$99.95 = \_\_\_\_\_  
 60-Day Money-Back Guarantee Shipping and Handling MA res. add \$5.00 sales tax per copy = \_\_\_\_\_  
 Canada \$ 5.00 per copy = \_\_\_\_\_  
 Other \$10.00 per copy = \_\_\_\_\_  
 Payment: \_\_\_\_\_ Total Amount = \_\_\_\_\_  
 Check  Money Order  MC  VISA

**To order by Credit Card call toll-free (800) 255-5550, Ext. 353**

Credit Card Expiration Date \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
 Card # \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Shipping Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Telephone: \_\_\_\_\_

CODs and Purchase Orders WILL NOT be accepted. **For the 512K Mac, MacXL and Macintosh Plus. MUI5/87**

Please circle 84 on reader service card.

# MINIFINDERS



including the VI editor. \$199 basic system, \$299 development system, \$499 commercial system. Manx Software Systems, PO Box 55, Shrewsbury, NJ 07701. NCP (May 86)

**Basic Compiler** is the long awaited compiler for *Microsoft BASIC*.  
 ⚡⚡⚡ The interface is unfriendly, but it gets the job done. Compiled programs run faster, but you can still tell they are written in BASIC. \$199. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. NCP (May 87)

**ExperLISP** is a very buggy, but still incredibly useful, programming language for high-level programmers. The more you use it, the more you'll figure out about it. System crashes are too common for a language this useful and expensive. \$495. Requires 512K+. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108. CP

**ExperLogo** is a version of the popular teaching language, Logo. Features three-dimensional graphics using "bunnies" rather than usual "turtles." Very speedy, smooth program. Comes with an excellent manual. \$149.95. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108. CP

**ExperProlog II** is a Prolog based on the new Prolog II standard. Has the ability to handle infinite trees and allows user-defined functions that operate conditionally. Documentation is not the best and Mac interface is nonstandard. \$495. ExperTelligence, 559 San Ysidro Blvd., Santa Barbara, CA 93108. NCP (Mar 87)

**LAP MacProlog** is a flexible program that supports several Prolog syntaxes, producing a rich programming environment. However, the program's implementation and documentation are both poor. \$295. Programming Logic Systems, 31 Crescent Dr., Milford, CT 06460. NCP (Mar 87)

**Lightspeed C** provides an integrated environment for the development desk accessories, applications and code resources in C. The editor works with the compiler for searches and file

management. Can get awkward if you need something outside the environment. \$175. Think Technologies, 420 Bedford St., Lexington, MA 02173. NCP (Apr 87)

**Lightspeed Pascal** is a fast, powerful development system for Pascal programming. Fully integrated Mac-like environment. Requires 512K+. \$125. Think Technologies, 420 Bedford St., Lexington, MA 2173. NCP (Feb 87)

**MacAsm** is a software development system that allows programs to be written in assembly language. Programmers can assemble, edit and test software, and an integrated resource compiler lets independent applications run from their own icons. \$125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

**Mac C** is a good, highly Mac-oriented implementation of this popular development language. Assembler and linker included. \$425. Consulair, 140 Campo Dr., Portola Valley, CA 94025. NCP

**MacExpress** is a development environment or shell. Programmers use it to save time and effort when developing standalone applications for the Mac. \$195. ALSoft, PO Box 927, Spring, TX 77383. NCP (Feb 86)

**MacForth** is an implementation of the popular Forth programming language. Level 1 is a simple, introductory version. Level 2 supports the Mac Toolbox fully. Level 3 extends the language to allow standalone applications. \$149 (Level 1), \$249 (Level 2), \$499 (Level 3). Creative Solutions, 4701 Randolph Rd., Rockville, MD 20852. NCP

**Mach II** is a multitasking implementation of Forth that allows local variables and text files. Can create standalone applications. Several windows can be up with different operations in each, operating concurrently. Execution is fast. \$99.95. Requires 512K. Palo Alto Shipping, PO Box 7430, Menlo Park, CA 94026. NCP (Apr 86)



**PROJECT-A-MAC™**  
**VIDEO PROJECTION SYSTEM**  
 Clearly reproduces any Mac display including fine text and high-res graphics onto screens up to 20 feet wide. An image as sharp as your Mac's. Controls for brightness and contrast adjust for room lighting conditions. Includes everything you need: projector, PDS External Video Card, 25' video cable, and complete instructions.  
**COMPLETE SYSTEM \$4,495.00**

**BIG MAC MONITOR™**  
 Delivers 23" of sharp high resolution black and white display, enclosed in a durable, attractive Apple-beige cabinet. Will clearly reproduce any Mac screen image, including fine text and high-res graphics. Several can be connected in series where multiple displays are required. Includes everything you need: the Monitor, a PDS External Video Card for the Mac, 25' video cable, and complete instructions.  
**COMPLETE SYSTEM \$1,595.00**

**FREE EXTERNAL VIDEO CARD INCLUDED:**  
 The PDS External Video Card for the Mac is specially designed to work with our systems, providing the highest possible resolution

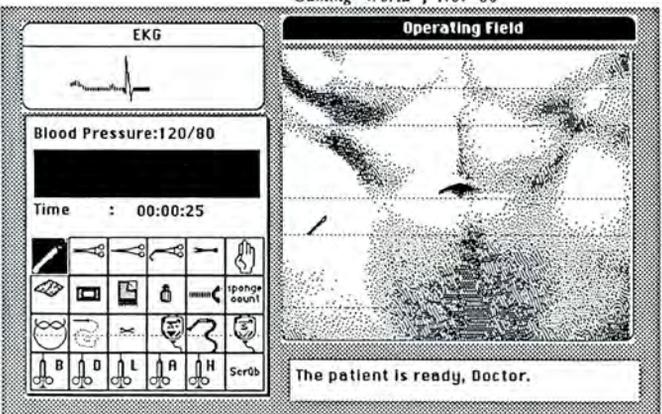
Available now from: **PDS VIDEO TECHNOLOGY, INC.**  
 Specialists in Video Display Systems for the Macintosh  
 1152 Santa Barbara St. • San Diego, CA 92107  
**ORDER HOTLINE: (619) 222-7900**

Please circle 139 on reader service card.

## The SURGEON

"Scary in its accuracy and detail ...the experience is unusually compelling" - *Ezra Shapiro, Byte*, Dec 86

"Pushes the envelope...Easily the most realistic depiction of surgery ever available for a microcomputer...A very solid, complete, and playable game." *Frank Boosman, Computer Gaming World*, Nov 86



Have you ever wanted to try your hand at being a surgeon? The skill, the pressure, the split-second life or death decisions, this program has it all. Operate in real time and deal with the complications of the surgery. Keep an eye on the EKG monitor and the patient's blood pressure while you exercise your skill. Feel the satisfaction of a successful operation!! The SURGEON is also educational!! While performing the surgery you will learn the parts of a human body, medical terminologies and the actual steps involved in performing the surgical correction of an aortic aneurysm.

For more information or for order call...  
 ISM, Inc.  
 P.O. Box 247  
 Phoenix, MD 21131  
 Ph: (301)-666-2672

Price \$60.00  
 Requires Minimum 512K Macintosh  
 Visa and Mastercard accepted  
 Dealer inquiries welcome

Please circle 20 on reader service card.

# MINIFINDERS



**Macintosh 68000 Development System** is a fairly traditional assembly language package. The two-disk set provides an editor (*Edit*), an assembler, a linker, an executive and a resource compiler. \$195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

**Macintosh Pascal** is Apple Computer's version of this very popular programming language. Loaded as it is with innovative teaching features, this interpreter is an excellent introduction to Pascal. \$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. CP

**MacScheme** is a LISP dialect with "artificial intelligence" capabilities. Has a large appetite for RAM. Interpreted language with Toolbox access limited to a small part of QuickDraw. \$125. Semantic Microsystems, 4470 S.W. Hall St., Beaverton, OR 97005. NCP (Jun 86)

**Megamax C** is an easy to use, full version of C. Has a compiler, linker, disassembler, editor and much more. Good for beginners. Excellent documentation. \$299.95. Megamax, PO Box 851521, Richardson, TX 75085. NCP

**Microsoft BASIC** was the Mac's first programming language. This interpreter (it's not a compiler) now supports the Toolbox and the whole Mac interface can be implemented in your programs. For nonprogrammers there are lots of programs available to run. \$150. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. NCP

**Personal Prolog** is an inexpensive and well-documented program. Has no debugging or search and replace facilities, making it a more appropriate tool for learning than development. Documentation and use of Mac interface are excellent. \$64.95. Optimized Systems Software, 1221 B Kentwood Ave., San Jose, CA 95129. NCP (Mar 87)

**Prolog/m** is a solid Prolog following the Edinburgh standard. Has extensive debugging facilities, but you may need separate

*Toolbox* disk with 58 additional predicates. No true editing or printing facilities. \$99.95. Chalcedony Software, 5580 La Jolla Blvd., La Jolla, CA 92037. NCP (Mar 87)

**QUED (Quality Editor for Developers)** is the ultimate source code editor. Loaded with useful and well thought out features, it will make any programmer's life much easier. It is not a word processor, however. \$65. Paragon Courseware, 4954 Sun Valley Rd., Del Mar, CA 92014. NCP (Mar 86)

**TML Database Toolkit** is an ISAM type database that provides fast and efficient administration of large data files in applications developed with TML compiler. Supports open multiple index files simultaneously. \$89.95. TML Systems, PO Box 36126, Melbourne, FL 32936. NCP (Dec 86)

**TML (MacLanguage Series) Pascal** is a good Pascal compiler, capable of producing standalone programs. Can use most existing Lisa Pascal programs with only slight modification. Requires 512K. \$99.95. TML Systems, PO Box 361626, Melbourne, FL 32936. NCP (Jun 86)

**TML Source Code Library** shows how to write programs that use custom definition routines, speech, serial drivers, split bars and other topics. Provided on three 400K diskettes. Requires TML Pascal. \$79.95. TML Systems, PO Box 361626, Melbourne, FL 32936. NCP (Dec 86)

**ZBasic** is a fast, interactive compiler capable of creating standalone applications that takes advantage of Mac's unique features and abilities. Includes *Edit*, *RMaker*, and *MacIntalk*. Requires 512K. \$89.95. Zedcor, 4500 E. Speedway Blvd., Tucson, AZ 85712. NCP (Dec 86)

## EDUCATION

**ChipWits** is a combination game and teaching tool. Players create programs to maneuver robots through a set of 8 mazes. The

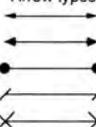
## MiniCad 3.0 Computer Aided Design

The Only True CADD system developed exclusively for the Macintosh!

### Minicad Standard Features

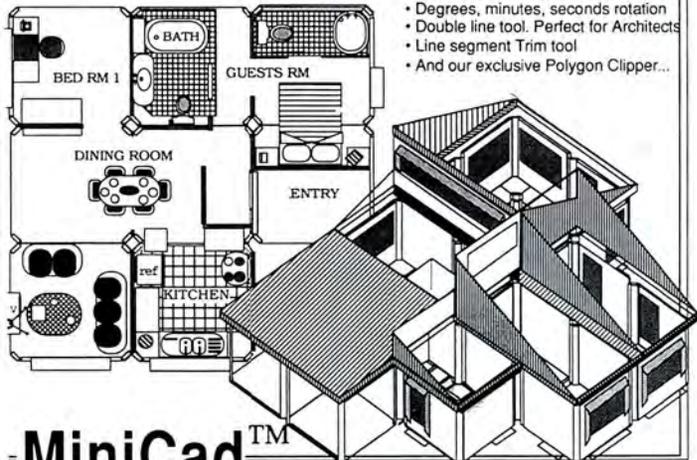
- 9 decimal precision (1.000000000)
- Center Lines, Dashed lines, & more
- Draw by Tools or Data Entry Boxes
- Unlimited User-Defined Scales
- Display & Type Coordinates, Unlimited Zooming
- Total 2D/3D Integration
- Read & Write Pict Files
- 40 Color & Acetate Layers

### Arrow types



### New Features on 3.0

- Advanced automatic alignment
- Multiple window / Multiple document
- Symbol editor with search & replace.
- Preset Architectural Scales
- Text rotates at 90° increments
- Detach text from dimension lines
- Advanced Auto-Dimensioning with witness lines
- 66 Fill & Pen Patterns, 32 editable
- Auto Scroll
- User-Defined Snap & Visual Grid
- Degrees, minutes, seconds rotation
- Double line tool. Perfect for Architects
- Line segment Trim tool
- And our exclusive Polygon Clipper...



**MiniCad**™

Diehl Graphsoft Inc.  
8370 Court Ave, Suite 202  
Ellicott City, MD 21043 301-461-9488

Only \$495

Demo available

# Total Control



For maximum comfort, the MEKU Workstation for Mac gives you control of the Mac's height, incline, and rotation plus instant control of keyboard height, incline, swivel, and extension. Solid oak knobs and palm rest with neutralizing Static Control Pad. So to feel better and be more productive, call 1-217-897-6644 for a catalog and/or your nearest dealer. MEKU PO Box 9 Rt 136 East Fisher, IL 61843



Advanced Design for Total Control

Please circle 278 on reader service card.

# MINIFINDERS



programs are written in *ChipWit's* built-in icon-based programming language (IBOL). \$49.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

**KidsTime** is a package of five quality educational programs for children between the ages of 3 and 12. The programs all have adjustable difficulty levels. Some use speech and one is a nice introduction to musical notes. Sparse documentation. \$49.95. Great Wave Software, PO Box 5847, Stanford, CA 94305. CP (Oct 86)

**MacEdge** and **MacEdge II** each contain 8 reading or math drill programs for basic skills. Programs follow one of three formats, a bit contrived. Contrivances are design flaws. \$49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP

**MacType** offers structured typing instruction. Can teach both standard and Dvorak keyboards. Features include certificates for reaching certain levels. Can be used in a multistudent environment. \$49.95. Palantir Software, 12777 Jones Rd., Houston, TX 77070. CP

**MasterType** is proof that learning to type can be fun. In this arcade-style action game words descend from four corners towards the center ship; the user must type them correctly. Features 18 skill levels, tracks errors, recommends lessons and provides comparison scores. \$49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP

## ENTERTAINMENT

**A Mind Forever Voyaging** is a departure in text adventure games. It has a more extensive vocabulary and a more involved story than most of the genre. The story here is gripping, but there are only a few puzzles to solve. Requires 512K+. \$44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP (Apr 86)

**Alter Ego** simulates the entire lifetime of a fictional character. The player's reaction to each multiple-choice event shapes the character's future relationships, job, health, etc. Spectacular the first time you play; after that there are too many similarities to previous characters. \$59.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Jun 86)

**The Ancient Art of War** gives users a chance to refight some famous campaigns on both strategic and tactical levels. Campaigns can also be designed from scratch. Very playable, addicting game. Requires 512K+ Mac. \$49.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Apr 86)

**Archon** pits the forces of Light against Dark in a quest to gain control of five Power Points on a checkerboard grid. The shifting cycles of squares' colors keeps the balance of power ever-changing. One or two players. \$44.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Oct 86)

**Balance of Power** is the world's first computer peacegame. This simulation allows players to become either the President of the United States or General Secretary of the Soviet Union. Extraordinary artificial intelligence routines and general play make this a classic. \$54.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60022. CP (Prem)

**Borrowed Time** casts players as detectives who have to solve their own murder — before it happens. This game requires players to think and act like a detective to solve the game. Good sentence parser, sketchy Mac interface. \$44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (May 86)

**Bridge 4.0** provides three other players and the cards for a game of rubber bridge. It's an average (Goren) bidder and a less than good card player. Good if it's the only game in town. Plays slowly since it's written in BASIC. \$29.95. Artworx Software, 150 N. Main St. Fairport, NY 14450. CP (Sep 86)

**Dark Castle** is an outstanding achievement in action games which integrates RealSound with superb animation and graphics. You'll need better-than-average hand/eye coordination, but it's well worth the effort. Requires 512K+. \$39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

**Deja Vu: A Nightmare Comes True** is a graphic adventure that breaks new ground. Innovative use of the Mac interface in

truly playable and exciting game. A great introduction to graphic adventure games. \$49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (Jan 86)

**Dinner at Eight** is a useful recipe filing system that includes a collection of recipes from a nationwide sampling of restaurants. Users enter number of diners and program scales recipes accordingly. \$59.95. Rubicon, 6300 La Calma Dr., Austin, TX 78752. CP (Jan 86)

**Dungeon of Doom** is a fairly standard, *Ultima*-type adventure game of the pick-it-up, cut-'em-down variety. Fun, if you like the type. Requires 512K. Version 4 is HFS compatible. Shareware. \$25. NCP (Jan 87)

**Enchanted Scepters** is a surround sound graphic adventure game. It has a limited vocabulary and virtually no story. Offers extensive and varied scenes and utilizes the Mac interface to the fullest. \$39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. CP (May 86)

**Flight Simulator** puts you at the controls of a small plane (prop or jet) and lets you roam North America. As difficult as real flying. Not all features available on 128K. \$49.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. CP (Nov 86)

**Fokker Triplane** is about as near to flying as you can get seated in front of a computer. Very realistic simulation and excellent graphics. Well designed and implemented. \$59.95. Bulls-eye Software, PO Drawer 7900, Incline Village, NV 89450. CP (Feb 86)

**Gato** puts players in command of an American submarine in World War II. This superb simulation game uses all of the Mac's graphic capabilities to really make you feel that "you are there." \$49.95. Spectrum HoloByte, 1050 Walnut St., Boulder, CO 80302. NCP (Nov 85)

**Grand Slam** is an absorbing and realistic tennis simulation game. Practice or play tournament against Mac-controlled players with different styles and abilities on four different surfaces. 512K or Mac Plus. \$49.95. Infinity Software, 1331 61st St., Emeryville, CA 94608. CP (Nov 86)

**HardBall** is a baseball simulation game complete with umpire's calls and crowd sounds. Great graphics and a lot of fun for fans. \$44.95. Accolade, 20833 Stevens Creek Blvd., Cupertino, CA 95014. CP (Feb 87)

**Leather Goddesses of Phobos** is another in the long line of witty and entertaining Infocom text adventures. This one lets you choose your sex and comes with a 3D comic and a scratch 'n' sniff card. It has three levels of play: tame, suggestive and lewd. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (Feb 87)

**Lode Runner** is a 150-screen action-strategy challenge that requires a joystick for truly effective play. Move around a grid of ladders and platforms collecting treasure; dig a hole to trap pursuers. Build your own challenges. \$39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP

**MacCourses** adds four very challenging new courses to *MacGolf*. Courses are swapped on the original *MacGolf* master disk two at a time. Nice add-on for a good game. Requires *MacGolf*. \$34.95. Practical Computer Applications, 1305 Jefferson Hwy, Champlin, MN 55316. CP (Apr 87)

**MacGolf** is a dynamic simulation of real golf. Players have a choice of courses and difficulty levels. Superb playability makes this a must for all golfers and gamers. Requires 512K+. \$59.95. Practical Computer Applications, 1305 Jefferson Highway, Champlin, MN 55316. CP (May 86)

**Mac Pro Football** is a terrific sports simulation that gives you the chance to pit any combination of 38 Super Bowl teams against each other and direct team play. It comes with excellent, detailed (and necessary) documentation. Play selection can get a bit Byzantine. \$49.95. Avalon Hill, 4517 Harford Rd., Baltimore, MD 21214. CP (Mar 87)

**Make Millions** is a fascinating business simulation in which the player competes against the computer to take control of five companies, then run them profitably. Appeals to the closet capitalist in all of us. \$49.95. Scarborough Systems, 55 South Broadway, Tarrytown, NY 10591. CP

If you like SCRABBLE®  
or word games, you will love

### SCRABBLER

a program that plays SCRABBLE®.



Better and faster than a human being.  
Knows all the 2 to 8 letter words of  
The Official SCRABBLE® Players  
Dictionary (75,000 words)  
System requirement: Mac 512 or Plus.

Invite home a Master.

Price : 49\$ US. 65\$ CAN.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Send check or money order to:

MacDUPLICATE 6223 IBERVILLE  
MONTREAL (P.Q)CANADA H2G 2C5  
DEALERS INQUIRIES (514) 7211600

Please circle 280 on reader service card.

## LIONHEART

BUSINESS & STATISTICAL SOFTWARE

PC/MS-DOS (5 1/4 & 3 1/2), MACINTOSH, AM'GA  
ATARI ST, C-128, CP/M, APPLE DOS 3.3

Explanatory books with professional compiled software; the new standard for statistical use. The influential Seybold Report on Professional Computing has this to say about Lionheart "... our sentimental favorite because of its pragmatic approach to the basic statistical concepts... The thinking is that the computer merely facilitates the calculations; the important thing is to be able to formulate a problem correctly and to determine what type of analysis will be most valuable." Let Lionheart help you get ahead of the competition! Spreadsheet compatible.

- BUSINESS STATISTICS ..... \$145
- EXPERIMENTAL STATISTICS ..... 145
- MULTIVARIATE ANALYSIS ..... 150
- EXPLORATORY DATA ANALYSIS ..... 75
- STATISTICS FOR MARKETING ..... 150
- QUALITY CONTROL & INDUSTRIAL EXPERIMENTS ..... 145
- FORECASTING AND TIME-SERIES ..... 145
- SALES AND MARKET FORECASTING ..... 145
- DECISION ANALYSIS TECHNIQUES ..... 110
- LINEAR & NON-LINEAR PROGRAMMING . 95
- PERT & CRITICAL PATH TECHNIQUES ... 95
- OPTIMIZATION ..... 110

VISA, MasterCard, Check, AMEX

P.O. Box 379, ALBURG, VT 05440

(514) 933-4918

Please circle 300 on reader service card.

Are you sure you need a  
Psychic... Just to find the  
disk you're looking for??



"DISORGANIZATION" by Ideafarm Inc.



### MacLabeler® 2.2

- Labels disks fast • Shows HFS or MFS • Label shows date made and space available • Shows files & folders • Includes 60 QuickLabels
- Choose & edit names • Also prints directory



### DiskQuick™

- Fast and feature packed • Catalogs 100's of floppies • Catalogs hard disks
- Powerful file locator • Shows info comments • Marks files needing backup • Marks superseded files

201 QuickLabels™ \$19 • MacLabeler \$49.95 • Disk-Quick \$37.50 • US shipping \$3 for 1st item, \$1 for each additional item • Iowa add 4% tax • Ideafarm Inc., P.O. Box 1540, Fairfield, IA 52556 • Visa/MasterCard accepted • (515) 472-7256

MacLabeler, DiskQuick, and QuickLabels are trademarks of Ideafarm Inc.

Please circle 125 on reader service card.

## Introducing NEW!! dBMAN-MAC

A powerful, sophisticated, dBASE III PLUS  
work-alike relational database manager for the Macintosh

# The most popular dBASE language is available on your Macintosh. Now!!

System requirements:  
Mac with 350K of free RAM.

Suggested retail price:  
dBMAN-MAC \$249.95  
dBMAN-MAC (demo) \$ 14.95

dBMAN is also available for IBM PC DOS, NOVELL,  
PC Network, Xenix, Atari ST, Commodore Amiga.

Call your Mac dealer to order  
your copy of **dBMAN-MAC**.

- dBASE II/dBASE III PLUS compatible. If you know dBASE there is little or no learning required. Many dBASE programs will run with almost no change.
- Directly reads and writes dBASE III database files.
- Easy to use "ASSIST" program to guide the user with Macintosh-based interface.
- Simple interface to the most useful Mac Tool-box routines like the Pull Down Menu, File Selection Dialog to allow you to create your own Macintosh-based applications.
- Built-in interface to Mac Serial Ports.
- True source level debugger/editor.
- Supports both MFS and HFS (Hierarchical File System).
- Not copy protected.



### VERSASOFT CORPORATION

4340 ALMADEN EXPRESSWAY, SUITE 250  
SAN JOSE, CA 95118  
TEL (408) 723-9044  
TELEX 6502635806(VIA WUI) Answer Back MCI

VersaSoft and dBMAN are trademarks of VersaSoft Corporation. Macintosh is a trademark of Apple Computer, Inc. dBASE is a trademark of Ashton-Tate. IBM PC is a trademark of IBM Corporation. XENIX is a trademark of Microsoft Corporation. Atari and ST are trademarks of Atari Corp. Commodore and Amiga are trademarks of Commodore Business Machines, Inc.

Please circle 282 on reader service card.

# MINIFINDERS



**MazeWars+** is an interactive, multiplayer game to be played on **tttt** AppleTalk or through a modem link. Chase opponents through a four level maze. Requires 512K+, AppleTalk or Hayes compatible modem. \$49.95. MacroMind, 1029 W. Wolfram, Chicago, IL 60657. NCP (Nov 86)

**Mind Over Mac** features five games. Entertainment for the whole **tttt** family. Good graphics paired with synthesized sound and on-screen help. \$49.95. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP (Feb 86)

**MoonMist** is Infocom's latest introductory level text adventure **tttt** game. This is a typical haunted English castle story, not quite up to Infocom's best. It has four versions, so it's good for more than one play. \$38.95. Infocom, 125 Cambridge Park Dr., Cambridge, MA 02140. NCP (May 87)

**NewGammon** is animated backgammon that will challenge even **tttt** good players. Features include variable skill levels and strategies and options to play the Mac or watch the Mac play itself. An arcade-like high speed mode is included. \$39.95. Newssoft, PO Box 3046, Newport Beach, CA 92663. CP

**Orbiter** puts a real space shuttle on the Mac screen. A multitude of **tttt** controls, intelligent on-board computer with speech capabilities, real-time graphics and 16 distinct missions help this program succeed as both a game and a simulation. \$49.95. Spectrum HoloByte, 1050 Walnut St., Boulder, CO 80302. NCP (Jul 86)

**Orbquest** is a fantasy role-playing adventure with better-than-**tttt** average puzzles and an excellent sense of humor. Not as sophisticated as some, but a good value. \$49.95. QWare, PO Box 850415, Richardson, TX 75085. CP (Dec 86)

**Patton vs. Rommel** is traditional-style strategic wargame. It **tttt** covers events in Normandy in 1944. While complex, it's well designed and very playable. \$39.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. CP (Apr 87)

**The Pawn** is an unusual British interactive adventure game with **tttt** text and graphics. The unique interface has some drawbacks, but *The Pawn* has humor, social satire, is entertaining and is challenging. \$44.95. Requires a Mac+. Firebird, PO Box 49, Ramsey, NJ 07446. CP (Mar 87)

**Pinball Construction Set** lets users create their own pinball **tttt** games, as elaborate or as easy as desired. Uses *MacPaint* for backgrounds and has lifelike sounds (on 512K+ Macs). \$40. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Jan 86)

**Psion Chess** is as good a micro chess player as you'll find. This **tttt** 1984 World Micro Champion makes superb use of graphics and the Mac interface. Switch between 6 languages for a touch of spice. \$59.95. Psion, 40 Lindeman Dr., Trumbull, CT 06611. CP (Mar 86)

**Puppy Love** is a combined game and teaching tool. As you teach **tttt** your puppy tricks and routines, you learn the basics of programming logic. Great fun for all ages. Does not run from a hard disk. \$19.95. Addison-Wesley, Reading, MA 01867. CP (Mar 87)

**Real Poker** is five-card draw against five other players with Old **tttt** West names, distinct personalities and playing styles, in a saloon setting. Dealing and play are very fast. Game evaluates your hand. \$39.95. Henderson Associates, 980 Henderson Ave., Sunnyvale, CA 94086. CP

**Sargon III** is a chess program with 9 levels of play, problem-**tttt** solving modes, take back, hint, etc. Easy Play blocks *Sargon* from stealing search time during player's move, effectively doubling number of levels. Disk stores 107 classic games for review and replay. \$49.95. Hayden, 1 Kendall Square, Cambridge, MA 02139. CP (Mar 86)

**Shanghai** challenges players to clear a board of all 144 tiles, by **tttt** matching pairs of mah-jongg tiles and removing them.



## Take the Bite Out of High-Priced Software

### Our Best Sellers

All on one disk — 12 top-rated programs from MacWorld!

86 Best of Public Domain—utilities (Ramstart, Servant for 512 or greater), desk accessories (FKEY), communications (Freeterm), games (Billiards) and much more! \$9

A Must for the Desktop Publisher

76 PageMaker Templates—40 templates for postcards, signs, letterhead, envelopes, and business cards. Excellent disk! \$9

- |   |   |  |
|---|---|--|
| <b>Art</b>  | <input type="checkbox"/> 7 Switcher, disk dump, Ramstart... \$9                                 | <input type="checkbox"/> 25 Banner: prints to 8" letters, picts... \$9   |
| <input type="checkbox"/> 96 Space Images: Andromeda, etc. \$9                                     | <input type="checkbox"/> 73 Calendar—personalize w/Picts \$9                                    | <input type="checkbox"/> 84 Print ASCII, Compress fileset. \$9           |
| <b>Communication</b>  | <input type="checkbox"/> 87 BASIC Compiler-text files to machine language. \$9                  | <input type="checkbox"/> Book: 150 pg. directory of disks. \$7.95        |
| <input type="checkbox"/> 29 Red Ryder-latest version w/dioc \$9                                   | <input type="checkbox"/> 1 Yr. Membership: book, quarterly bulletins, plus many discounts. \$20 | <input type="checkbox"/> 1 Yr. Membership: Complete set—100 disks. \$695 |
| <b>Desk Accessories</b>   | <input type="checkbox"/> 68 Windows, MiniDOS icon maker \$9                                     |  |
| <input type="checkbox"/> 97 Miniwriter: text editor w/dioc \$9                                    |   |  |
| <b>Fonts</b>  | <input type="checkbox"/> 90 Boston II—laser qly on imgwtr \$9                                   |  |
| <input type="checkbox"/> 94 New Fonts and Icons \$9   |   |  |
| <input type="checkbox"/> 95 Laserwriter font + American Sign Language Font \$9                    |   |  |
| <b>Games</b>  |   |  |
| <input type="checkbox"/> 62 Dungeon of Doom, Social Climber, etc. \$9                             |   |  |
| <input type="checkbox"/> 67 Billiards, Volleyball, Juggling \$9                                   |   |  |
| <input type="checkbox"/> 78 Cap'n Magneto, Spacebubbles \$9                                       |   |  |
| <input type="checkbox"/> 88 Design own text adventure \$9   |   |  |
| <input type="checkbox"/> 99 Crystal Raider, Stuntcopter \$9                                       |   |  |
| <b>Home/Business</b>  |   |  |
| <input type="checkbox"/> 33 Multiplan templates: bus, nutrition \$9                               |   |  |
| <b>Nudes</b>  |   |  |
| <input type="checkbox"/> 49 Girls!: Adults only pictures \$9                                      |   |  |
| <input type="checkbox"/> 65 More Girls! \$9   |   |  |
| <input type="checkbox"/> 66 MacNudes: Digitized photos \$9  |   |  |
| <b>Programming</b>  |   |  |
| <input type="checkbox"/> 44 XLISP AI language \$9   |   |  |
| <input type="checkbox"/> 51,52,53 Modula2 language w/dioc \$27                                    |   |  |
| <b>Sound</b>  |   |  |
| <input type="checkbox"/> 91,101 Install and play digitized sounds on your keyboard (2 disks) \$18 |   |  |
| <b>Utilities</b>  |   |  |
| <input type="checkbox"/> 5 Code Cracking w/dioc, FEedit \$9                                       |   |  |
| <input type="checkbox"/> 6,8,9 ResEd: edit fonts & icons. doc. \$18                               |   |  |

**SPECIAL OFFER!**  
Any 3 Disks + Book  
PLUS! 1 Yr. Membership  
**ONLY \$39.95** (+\$4 S/H)

Add \$4 (\$10 foreign) for shipping & handling or \$2 (\$5 frgn) if ordering book only. CA orders add sales tax.

Enclosed \$\_\_\_\_\_ by  Check  VISA  MC

Card No \_\_\_\_\_ Exp \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**THE PUBLIC DOMAIN EXCHANGE**

2074C Walsh Avenue, Dept. Santa Clara, CA 95050, 408-496-0624

Please circle 95 on reader service card.

Unleash the power of your LaserWriter with hundreds of POSTSCRIPT™ routines from Nikrom.

Routines that can be mixed and mingled to produce innumeral graphics effects. Print along paths, in circles, spirals, ellipses etc. Transform your present fonts into extended, super-bold, tall, thin or jumbo. Set text from 3 pts. to 720 pts. (10 inches) and in increments of 1/16 th of a point.

LaserCraft routines provide scaling, shading, rotating in 1/16 th degree increments and 3-D art effects. Mix Hi-Res graphics with text. Patch directly into your page makeup program or even into MacWrite!

All programs are fully commented, with instructions on how to change things so you can create your own effects. Folders are full of ready to go graphics. Here is just a partial list of what you can do with LaserCraft:

**Text Routines**

- Certificate
- Circular
- Cylindrical
- Daisy
- Diplomas
- Emblem
- Elliptical
- Flipped
- Jumbo
- Lightning
- Rotated
- Shaded
- Shadowed
- Transformed
- As Windows

**Graphic Techniques**

- Back Drops
- Borders
- Brushed-Metal effects
- Inverse Laser output
- 32 Gray Shades
- Lines to 10" thick
- Curves - All kinds
- Special Op-Art folder
- ◆ Design Grids 1, 2 & 3 pt. Perspective

Visa, MasterCard, CODs

**LaserCraft™ - \$65.00**

Call Free 1-800-835-2246

**NIKROM™**

Technical Products, Inc.

176 Fort Pond Road ♦ Shirley, MA, 01484

Please circle 266 on reader service card.

186 M A C U S E R M A Y 1 9 8 7

# MINIFINDERS



Terrific strategic options plus the ability to randomly generate new game boards keep this one fresh. \$44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Oct 86)

**Skyfox** is a sophisticated 3D shoot-em-up. You're fighting tanks, planes, and enemy cities floating in the sky. Fast graphics, good sound, slick, on-board attack computer and many levels of difficulty will keep fans of this genre happy for hours. \$39.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Oct 86)

**Smash Hit Racquetball** is an accurate and entertaining simulation of a day on the courts. Digitized sound adds to the realism. Includes a hard disk install, unusual for a game. The low price makes this the perfect Mac gift. \$19.95. Primera Software, 33 Norwood Ave., Kensington, CA 94707. CP (Dec 86)

**Strategic Conquest** is large scale, strategic conflict on the Mac. This very involved war game will be enjoyed by those who like this genre. \$49.95. PBI Software, 111 Triton Dr., Foster City, CA 94404. CP (Dec 85)

**Suspended** is Infocom's most unique text game. Using a small plastic board and six markers, the player keeps track of six uniquely designed robots which check on damage to a complex's machinery and report back what they perceive as the problem. \$49.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

**Tass Times in Tone Town** is a slightly off-the-wall graphic adventure in which you need a flashy hairdo and a jumpsuit before you can get anywhere, and you pay for things with guitar picks. Decent puzzles, with a sense of humor. \$39.95. Activision, 2350 Bayshore Pkwy, Mountain View, CA 94043. CP (Jan 87)

**The Toy Shop** is a construction kit for building 20 different working model toys. Some parts can be customized. Manual gives

clear instructions, but many toys are too complex for a child to build. \$64.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Nov 86)

**Ultima III** allows up to four characters to cooperate to explore the vast wilderness of Sosaria; dungeons, oceans, and the Moon Gates to help solve the adventure. \$59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103. CP

**Uninvited** is an icon-based adventure game set in an extremely haunted mansion. Since you access the parser by double-clicking, command choices are always visible — you don't waste time trying to figure out which words the program understands. It has animation and sound. \$49.95. Mindscape, 3444 Dundee, Northbrook, IL 60062. CP (Sep 86)

**Winter Games** lets up to eight players compete against each other in Olympic events including figure skating, bobsledding, biathlon and ski-jumping. Excellent animation, good graphics, good theme music. \$39. Epyx, 1043 Kiel Ct., Sunnyvale, CA 94089. CP (Mar 86)

**Wizardry** is an outstanding dungeon exploration adventure pitting a party of up to six characters against the guardian monsters of the evil wizard Werdna. Capture his amulet to earn your reward. Even after solving the game, you'll want to go back into the dungeon. \$59.95. Sir-Tech, 6 Main St., Ogdensburg, NY 13669. CP

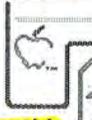
**WordPlay** is a word game with over 50 crossword puzzles for different levels of expertise. User friendly, it offers on-screen Help menus. A Work mode allows development of new puzzles for the creative. \$49.95. Palantir, 12777 Jones Rd., Houston, TX 77070. NCP (Mar 86)

**World Builder** is an adventure game construction set with what amounts to its own programming language. The whole program (language including) is easy to learn and produces commercial quality games. No support for the programming

## We RENT Mac Software !!

# MacStore™

28 Tealwood  
New Braunfels  
Texas 78130



National **800-847-0026**

Ask about our frequent renter program!

**We'll match any software rental price in this issue.**

We have hundreds of other titles available for the Mac. If you don't see what you want - call us!

Accessory Pak 1 or Art Grabber	8.80	Mac Golf	9.45
Accounting Packages	Call	Mac Labeler	8.80
Battery Pak	8.80	Mac Lightning	14.80
Bulk Mailer	21.60	Medical or Legal Dictionary	13.30
Business Filevision	56.25	Mac Mat Book (all volumes 1 - 6)	25.47
Calendar Maker or Certificate Maker	8.90	Mac Publisher & Mac Publisher II	Call
Click Art, Effects, Letters, Publications (each)	8.80	Mac Spell Right or Mac Spell +	13.85
Consultant	28.80	Mac 3 D	27.80
Copy II Mac	8.80	Mac Tracks	8.80
Championship Boxing or Baseball	8.80	Mac the Knife 1, 2, or 3 (Art, Fonts, Ripper)	Call
Crickit Graph	27.90	Max RAM Max PRINT	8.80
Da Vinci (We have them all!)	Call	Micro Planner PLUS	64.68
Dollars and Sense	18.70	More	34.69
D Mac III	58.08	Musicworks or Videoworks	13.19 & 14.15
Double Helix	60.50	Omnis III Plus	70.95
Excel	52.75	OverVue	36.80
Filemaker	29.20	Picture Base or Postermaker	8.80
Fluent Fonts, Fontastic, Font Explorer,	Call	Pinball Construction Set	8.80
Laser Fonts, Superfonts, UltraFonts...	Call	Quick Disk, Quick Word, Quick Paint (each)	8.80
Ferrari Grand Prix or Flight Simulator	8.80	Ready Set Go	Call
Full Paint	14.56	Smart Alarms	8.90
Gato, Orbitor, or Gridwars	8.80	Super Paint	13.40
Helix	49.50	Tempo	13.30
Infocom games	Call	ThunderScan	37.50
LaserSpool	15.16	Will Writer	8.80
Keystroke	64.68	Write Now or Word Handler	Call
Languages (Asm, Basic, Z Basic, C, Cobol,	Call	Works	37.90
Expertisp, Fortran, TML Pascal, etc.)	Call		
Microsoft Chart, File, Multiplan, Word	Call		
Mac Attack	8.80	<b>Accessories</b>	
Mc Cad	62.56	Cables - we stock most Mac cables	call
Mac Challenger or Mac Command	8.80	10 Sony Disks	10.95
Mac Draft	33.84	800K External Drives (double sided)	184.50
Mac Draw	32.47	Upgrades & Power Supply Board Repairs	Call
		20 Meg SCSI Hard Disk	695.00
		20 Meg Tape Back-Up	698.50

**No membership fee • 16 day rentals • Rental applies to purchase**

The store logo is a trademark of MacStore, Inc., the apple logo a trademark of Apple Comp. Inc.  
 In Texas **800-222-1537** Alter tone ask operator for extension **993265**  
 or dial direct **512-629-5419**



the original

# disk·books™

from MicroStore™



## disk·instinctively the best!!!

- The fast finder of disk storage, displays all disks for fast selection & easy return.
  - Closes securely with a unique top seal — your valuable disks won't fall out!!!
  - Perfect in the home or office, stores all your disks both frequently used or backups.
- disk • book-32 (holds 32, 3.5" Disks) ..... \$29.95  
 — disk • book-Plus (holds 16 disks plus 3 pockets for manuals, pads, pens, etc.) ..... \$29.95  
 — disk • book-10 (holds 10 disks) ..... \$14.95

ALSO AVAILABLE — SLIMLINE 'TRAVELLERS'

**TRAVELLER-12,**  
 Holds 12, 3.5" Disks ..... \$13.95  
**TRAVELLER-8,** Holds 8 Disks ..... \$11.95  
**TRAVELLER-4,** Holds 4 Disks ..... \$ 7.95

**FAST-PAD mouse pad**  
 with TEF-GLIDES ..... \$14.95  
**TEF-GLIDES**  
 (Teflon Mouse Feet) ... \$ 2.95



CRAFTED WITH  
 PRIDE IN U.S.A.

**ORDER NOW!!! 1-800-962-8885**  
 Use your MasterCard, Visa or American Express

INFORMATION: (612) 665-3284, TLX 325853, Shipping to 48 States \$3.00 plus \$1 ea. additional unit. Send purchase orders to MicroStore, P.O. Box 33, Le Sueur, MN 56058, Dealer Inquiries Invited.  
 Thanks to those companies providing software for this ad. Trademarks: disk·book, Traveller, MicroStore-MicroStore, Inc.

Please circle 165 on reader service card.

Please circle 243 on reader service card.

# MINIFINDERS



language, though. \$79.95. Silicon Beach Software, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

**Xyphus** is a role-playing game pitting four characters (fighters or wizards) against multiple scenarios that grow increasingly harder. Excellent Mac interface and icon control. \$39.95. Penguin, PO Box 311, Geneva, IL 60134. CP

**Zork II** is where the adventure continues in the underground empire. A wandering wizard keeps things interesting, though there's a way to beat him if you persevere. \$44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

**Zork III** is the final chapter in the trilogy. Players come up against the ultimate enemy — the Dungeonmaster himself. More closed-ended than previous *Zorks*. \$44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

## MUSIC

**ConcertWare+** is an enhanced version of *ConcertWare*. Has different instruments and can use any four of a set of eight at any point in a piece. Can read and use *ConcertWare* and *MusicWorks* files. \$69.95. Great Wave Software, PO Box 5847, Stanford, CA 94305. NCP (Nov 85)

**Deluxe Music Construction Set** is a good general purpose music program. An active piano keyboard and instant audio feedback make this program perfect for educational applications. \$50. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Mar 86)

**Listen** is an educational tool for ear training. It has both a piano keyboard and a guitar fretboard for the student to input notes, and offers a wide range of exercises. It also produces some beautiful sounds. \$69. Imaja, PO Box 638, Middletown, CT 06457. CP (Jan 87)

**Music Mouse** is a music program in a genre all its own. Called "intelligent instrument", *Music Mouse* gives you instant musical feedback as you move the mouse and type on the keyboard, which controls tempo, vibrato, volume, etc. \$59.95. OpCode Systems, 444 Ramona St., Palo Alto, CA 94301. NCP (May 87)

**Performer** is a strong contender for the high-end of the MIDI sequencer market. Only those experienced with MIDI should get this. Files can be transported to *Professional Composer* for editing. No direct track or segment looping. \$295. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. CP

**Professional Composer** is aimed at music professionals. Produces performance-quality sheet music; has only limited playback facilities. \$495. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. CP (Prem)

**Studio Session** consists of two programs, and Editor and a Player, that produce music with six voices of digitized sound. Excellent program plus good manual make this a good buy. \$89.95. Impulse, 6860 Shingle Creek Pkwy, Minneapolis, MN 55430. CP (Dec 86)

## HARDWARE & ACCESSORIES

**DASCH** is an external RAMdisk available in half, 1 and 2M sizes. Connects to a serial port. Speeds up operations 200 to 300%. Can be used as a printer buffer. Works with all Macs. 512K, \$395; 1M, \$450; 2M, \$545. Western Automation Laboratories, PO Box 3438, Boulder, CO 80307. (Feb 87)

**Data Frame 40XP** is a very fast, very quiet 40-meg external SCSI hard drive. Comes with a good and complete set of utility software. About as fast as a SCSI drive can be. Requires SCSI port, 512K+, new ROM. \$1995. SuperMac Technology, 950 N. Rengstorff Ave., Mountain View, CA 94043.

**Ergotron** is a Mac (and external drive) holder that allows a full range of swiveling and tilting. Very strong, this well made unit is also very easy to use. \$99.95. Ergotron, PO Box 17013, Minneapolis, MN 55417.

**FX-20** is a good 20-meg external hard drive. Good utility software. Reliable, and reasonably quiet. Sits next to Mac, has a

large, oddly shaped case. Requires SCSI port, 512K+, new ROM. \$1199. General Computer, 215 First St., Cambridge, MA 02142. (Feb 87)

**Hard Disk 20SC** is Apple's 20-meg SCSI hard disk. Reliable, fairly noisy unit. Good utility software, but no backup yet. Requires cable and terminator (\$80). Requires SCSI port, 512K+, new ROM. \$1299. Apple Computers, 20525 Mariani Ave., Cupertino, CA 95014. (Feb 87)

**MacBottom HD21** is a very low (about 2 inches high), external 20-meg hard drive. Fits under the Mac. Very quiet, very reliable. Good utility software, including *HFS Backup*. Requires SCSI port, 512K+, new ROM. \$1195. PCPC, 6204 Benjamin Rd., Tampa, FL 33614. (Feb 87)

**MacCharlie's** components slip around the Mac and convert it into an IBM PC clone. Amazingly, it works well. The enlarged keyboard has a few bugs but is a joy to use. \$995. Dayna Communications, 50 S. Main St., Salt Lake City, UT 84144. (Dec 85)

**MacIntizer** is a graphics tablet and absolute positioning device that replaces the mouse. Various scales are possible. \$599. GTCO Corp., 7125 Riverwood Dr., Columbia, MD 21046.

**MacNifty Sound Digitizer** turns ordinary analog sound input into digital waveforms which can then be manipulated using the *SoundCap* software it comes with. Capable of truly stunning effects. Requires 512K+. \$129.95. Impulse, 6860 Shingle Creek Pkwy., Minneapolis, MN 55445.

**MacNifty Switch** allows any port on your Mac to connect to two peripherals. Turn the knob to switch between the two devices. \$34.95. Impulse, 6860 Shingle Creek Pkwy., Minneapolis, MN 55445.

**MacTablet** is a stylus-driven graphics tablet. Users can easily sketch or trace art using this absolute-positioning device. Has a working area the size of the Mac screen. Allows concurrent use of the mouse. \$495. Summagraphics Corp., 777 State St. Extension, Fairfield, CT 06430. (Jan 86)

**MacVision** is a digitizer that uses an ordinary video camera for input. Capable of extremely fine results and special effects. Easy to use and well documented. \$399.95. Koala, 3100 Patrick Henry Dr., Santa Clara, CA 95052.

**Magic Digitizer** is a hardware digitizer that works with video cameras. With *LaserMagic* software you can generate 300 dpi images (in PostScript). Requires 512K+. Digitizer with *Magic* software, \$399.95; *LaserMagic* software, \$49.95. New Image Technology, 10300 Greenbelt Rd., Seabrook, MD 20706. NCP (May 87)

**Mouse Mover** is a mouse pad-type surface that snaps on to the bottom of the mouse like a roller skate, freeing it up to glide over desk or mouse pad with ease. 99 tiny ball bearings at three strategic points. Mouse glides faster and saves on mouse wear and tear. \$19.95. Magnum Software, 21115 Devonshire St., Chatsworth, CA 91311.

**Moustrak** is a fabric covered foam mousing pad. It will increase the efficiency of your mouse while helping to keep it clean. Pad comes in a variety of colors. Particularly useful in the typical office desk top environment. \$10. Moustrak, 3047 St. Helena Hwy., St. Helena, CA 94574.

**NoLabelSystem** is a plastic permanent labeling system in which users slide new tabs into a transparent plastic case on the disk. The tabs stick out of the case slightly, making them easier to read while in the drive. \$19.45. Weber & Sons, 3468 Hwy 9, Freehold, NJ 07728.

**PhoneNET** is an AppleTalk-compatible network. Network can be up to 3000' in length. In-place, unused phone cabling can be used for network, and can be combined with AppleTalk on same network. \$49.95 per node. Farallon Computing, 1442A Walnut St., #64, Berkeley, CA 94709. (Dec 86)

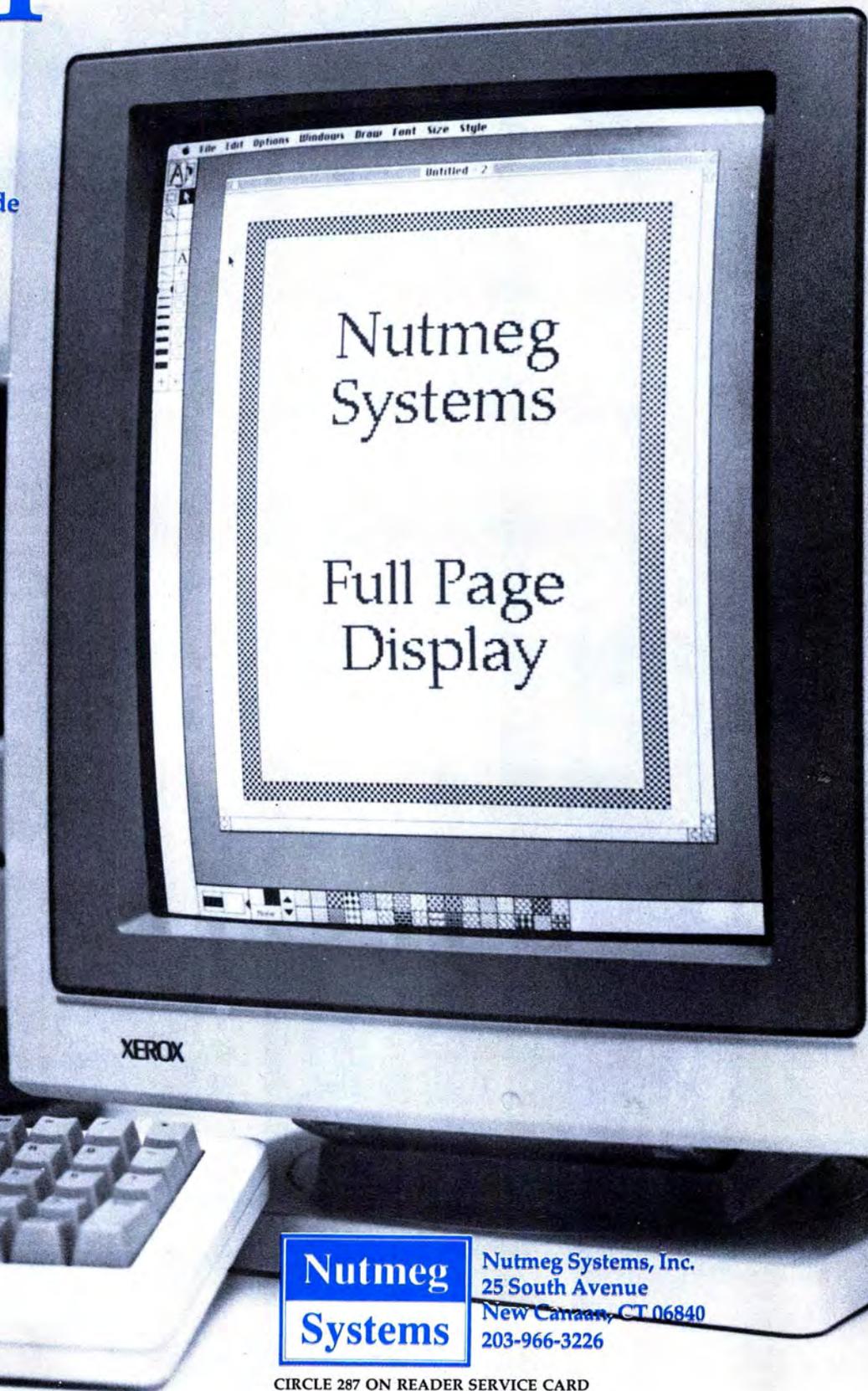
**ThunderScan** replaces the ribbon cartridge in an ImageWriter, which is required to use it. Laser scans art that can be run through the ImageWriter, producing high-quality digitized images. The images can be manipulated as they are created or afterward. \$229. Thunderware, 21 Orinda Way, Orinda, CA 94563.

# Professional Tool

If you're serious about  
electronic publishing...

...this is the optimum  
Macintosh display - made  
possible by the Nutmeg  
Interface Board...

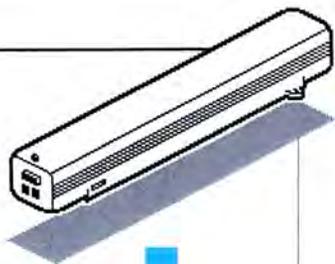
...works with any  
Macintosh computer.



**Nutmeg  
Systems**

Nutmeg Systems, Inc.  
25 South Avenue  
New Canaan, CT 06840  
203-966-3226

CIRCLE 287 ON READER SERVICE CARD



# THE STRIP SHOW

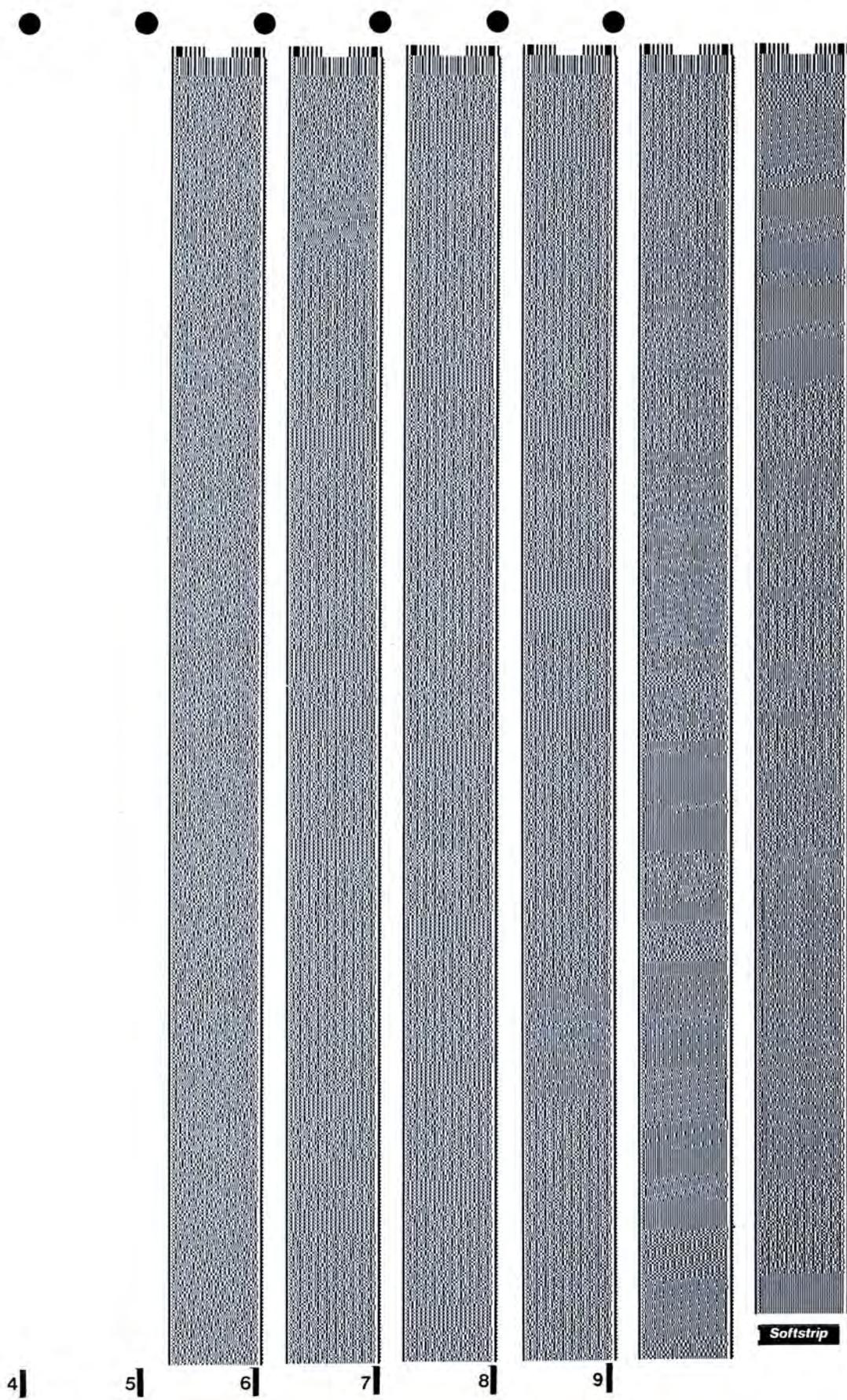
■ This page contains Softstrips: programs and data in a special machine-readable form. The material can range from straight, unformatted data to full-blown Macintosh applications.

To use this material, you'll need a Cauzin Softstrip reader. Readers are available from your local computer dealer. Be sure to get the Macintosh accessory kit. They're easy to use, well made and simple to store. If you wish to print your own strips, you must purchase a separate, inexpensive program.

This month's strips are for a *MacDraw* document entitled "Laser Disk Labels". This document is a supplement to this month's Tip Sheet. In an extended tip, we detail how to use *MacDraw* and a LaserWriter to produce professional quality diskette labels. The other materials needed besides this file are detailed in the Tip Sheet. This file can also be obtained on the CompuServe and Delphi networks.

We would like to thank Robert T. Coolidge of Centerbrook, CT for providing us with this file and its associated tip. As with the other tips printed in *MacUser*, Robert will be receiving \$25. This file, the Softstrip and the associated text may not be reproduced without the written consent of *MacUser* magazine.

This month's *Strip Show* is presenting a second program, to make up for last month. The program is *Layout*. Its purpose is to modify the *Finder's* LAYO resource easily. The LAYO resource was discussed in detail in "Inside Improvements" in the September 1986 issue of *MacUser*. The instructions there involved using *ResEdit* and a certain amount of trial and error. *Layout* makes it all easy. The program was written by Michael C. O'Connor and is ©1986 by Leptronics Systems Design Company of 405 Tarrytown Rd., #145, White Plains, NY 10601.



4 |

5 |

6 |

7 |

8 |

9 |

Softstrip

# DRAFTING MADE EZ

(continued from page 90)

*EZ-Draft* excels. *EZ-Draft* creates what are known as "dynamic" dimensions. When a dimension is inserted into a drawing, *EZ-Draft* measures the distances automatically and places that information in the dimension's text. This means that you do not have to verify the position of every line in the drawing. *EZ-Draft* acts as a checker regarding the distance between point A and point B. This ability to verify has justified many large CAD system acquisitions.

Dimensions come in four flavors: Linear, Radial, Diametral and Angular. The flexibility of these commands is awesome. The dimensioning package conforms to the current *ANSI Standard Y14.2*. That means there are a wealth of suboptions presented when any dimensioning command is invoked. You can specify how such things as tolerances are presented (i.e., min-max, + and -, none). Dimensions are treated like any other element on the drawing in terms of editability. You can move, delete and yes, even change what a dimension says (although I wouldn't recommend doing this).

Speaking of editing, *EZ-Draft* includes a very powerful set of editing commands. You can change just about any aspect of any element in the drawing including getting rid of it altogether. In fact, you can even add color to elements (rather tough to see on the Mac). The real use of this feature is to allow the use of other hardware, such as multipen plotters and color displays like the Vermont Microsystems' VM-8860 color monitor, for which *EZ-Draft* includes a special set of drivers. *EZ-Draft* supports a host of output devices in the form of pen plotters, and, of course, the LaserWriter.

*EZ-Draft* can exchange graphics data with other CAD systems that support IGES. (IGES is a data exchange format supported by all major CAD vendors.) To do so, you'll need Bridgeport's extra cost IGES translator software. The ability to communicate with other CAD systems is absolutely necessary in the pro CAD world.

The IGES translator works well and accepted data ported over from

both *Autocad* and *Computervision* systems. However, there appears to be a serious bug in the IGES module when it comes to converting symbols. Fortunately, this is a known bug and is currently being addressed. *EZ-Draft* also supports the ability to exchange data with *MacDraw* through the Clipboard.

For all its elegant features, *EZ-Draft* isn't perfect. The main problems arise from it not being fully incorporated into the Mac operating environment. This leads to annoyances like requiring that all files have a specific MS-DOS-like extension. Overall speed is also on the slow side. The program runs under a Pascal language interpreter that requires a runtime library, a fact made very clear during installation of the software. That probably accounts for the slow response of the program overall.

This programming environment is being abandoned in the 2.0 release, which was in final, or beta, testing at press time. I was able to examine and work with one these test copies, and things are looking up. Gone is the difficult installation procedure. Present is a *MacDraw*/*MacPaint*-like icon palette and the familiar window controls found in most Mac programs.

The presence of the sizing box may open this program up in terms of flexibility. With *EZ-Draft 2.0* and an E-Machine large screen display, for instance, a user could increase the effective work surface considerably. This program would benefit from some sort of add-on math coprocessor product such as General Computer's HyperDrive 2000 or Levco's Prodigy 4. In fact, *EZ-Draft* is demonstrated at most shows using the HyperDrive 2000.

Technical support is available via telephone, but there isn't a free (800) number yet. The support supplied was adequate, although a little frustrating. It took three phone calls — starting with the 800 number (which turned out to be primarily a sales number) published on the cover of the reference manual — to finally get through to someone in product support. Once there, though, the person was very helpful.

Most calls the company receives involve technical problems arising from passing IGES data between systems.

The small manual included with *EZ-Draft* is much like most Mac manuals, but reasonably thorough, assuming you're familiar with CAD already. It includes a tutorial that takes a first-time user through creation of a complete drawing.

There is copy protection on this product, a fact of life with almost all programs over \$1000. It requires a master disk be present in the drive at all times. This is supposed to prevent a two-Mac firm from getting by with one copy of *EZ-Draft*. Oh well — if you are an engineer, designer or architect and need CAD on your Mac, you should seriously consider this package. In terms of its overall usefulness it is very good. In terms of value, *EZ-Draft*, at \$2500, is in line with the other micro-CAD packages of equal performance, although rather high for the general Macintosh market. And you must sacrifice some of the Mac's niceties that you have grown used to, but it is a small price to pay for a very powerful CAD software package. 

FRANK CONFORTI IS AN OPERATIONS MANAGER FOR A CAD SERVICE BUREAU IN DEERFIELD BEACH, FLORIDA. HE HAS BEEN INVOLVED WITH CAD SYSTEMS FOR NINE YEARS.

## *EZ-Draft*

<b>Overall Rating</b>	
Follows Mac Interface	
Printed Documentation	
On-Screen Help	None
Performance	
Support	
Consumer Value	

**Comments:** A full-featured, computer-aided design package that gives the user advanced design capabilities. **Best Feature:** Flexible drawing manipulation and dimensioning. **Worst Feature:** Slow response time and difficult installation. **List Price:** \$1995 for basic package; \$500 for IGES module. Published by Bridgeport Machines, 500 Lindley St., Bridgeport, CT 06606. (203) 367-3651. Copy protected.

# MACINTOSH SOFTWARE

THOUSANDS OF PUBLIC DOMAIN  
PROGRAMS AVAILABLE FROM OUR

ONLY  
\$4.99

## "INTERNATIONAL SOFTWARE LIBRARY"

### Art Gallery

**Animals (4169,4170)**  
Animal MacPaint pictures volume 1 and 2.  
**Nudes (4171,4172)** Volume 1 and 2.  
**Apple Schematics (4094)**  
Pinouts from Apple IIe, IIc & Macintosh™.  
**Nasa Schematics (4116)** Detailed MacDraw sketches of Space Station, Pump, Thrusters...

### Word Processing

**Printer Utilities (4102)** Wordstar to Macwrite. PageSetup (Create your own page sizes on your printer).  
**Spellcheck (4104)** A spellier and extensive dictionary for Macwrite 2.2 and textfiles.

### Business

**Business Programs (4106)**  
Office Manager (Accounts Receivable: prints ledgers, deletes inventory)  
Also included are Excel™ templates: Depreciation, Revenue.

**Excellent Exchange™ templates**  
The following require MS Excel™ to run. Included are great tutorials for learning to work with Macros.

**Excel templates (4164)**  
Life Planner, About Excellent Exchange, Catalog, Tip Sheet & Order Form.

**Excel templates (4165)**  
Database Macros, 1st. and 2nd. Mortgage, Time Weighted IRR, Roots of Equations, Steam Volume, Triangles, Monthly Calendar, Truth in Lending, Lalling Label II, Tax Templates, Macro Function Tutor & Travel Expense Weekly.

**Excel templates (4166)**  
1986 Calif. Payroll and Checkbook organizer with documentation.  
Also included: Programmer-Self, a programmer's/financial planner's calculator. This program will allow you to print your steps onto to Imagewriter™.  
**(4167)dMAC III Demo & Examples**  
Relational Database program.

### Telecommunications

**Red Ryder 9.4 (4111)** Latest update. It has an autodial feature and can store up to 80 telephone numbers. It also allows you to receive files automatically in any of 3 modes: ASCII, XMODEM, and KERMIT.  
**Red Ryder Macros (4090)**  
Contains Dow Jones™ & E. F. Hutton Quotes. Also contains a listing of area codes.  
**Termworks 1.2 (4112)** Supports MacBinary & Macro capability for storing numbers & protocol settings. Also included are Freeterm 1.8, PackitIII and FModem.  
**Communication Utilis (4107)**  
BinHex 5.0. Supports the new .BIN protocol, as well as the old .HEX, .HCX & .HQX protocols. Packit III 1.2 (Compress your data for faster transmission), Compact, AppleTalk Chat and more.

### Hacker Tools

**H. Tools (4100)** DrawPaint 1.0 (Convert MacDraw files to MacPaint.)  
TabUtil. (Text File processor: add or remove tabs.) Icon Exchanger, Icon Collector, Cleanup, Iconer & more.  
**H. Tools (4108)** Patchdisk (Get into any sector of a disk and modify it!), PurgeIcons, Disk Test, Answering machine and more.  
**Programmer Utilities (4162)**  
Softools™ (Draw many standard software engineering drawings such as Dataflow diagrams, flowcharts etc.), Fast Eddie A powerful programmers' text editor. Includes documentation.  
**Programmer Utilities (4163)**  
MemTest, MightFinder, FOBT Format, PRAM 2, Font -FKEY-DA sampler. (This very useful program will open any font, Desk Accessory or Function Key without having to install them onto the System. Also included: Cleanup, Mac ID, Hex & Ascii Strings.  
**Developer Stuff (4087)**  
ResDecompile. (A Macintosh application which can convert certain types of resources in a resource file, into source code suitable for compiling with ResEdit (Apple's Resource Editor).  
**Developer Stuff (4088)**  
Obi, Systems ID's, archiver & more.

### Music

**MacNifty (4124)**  
This disk contains realistic digitized sounds that may be altered by changing the sampling rate. Sounds included.  
**Musicworks™ songs (4122)**  
Includes Musicworks Demo which plays back songs. You can't write your own songs unless you have the commercial Musicworks. Songs included:  
"Invention #1", "Ballet de la Roynie", "Born Free", "For Your Eyes Only", " Raiders of the Lost Ark", "The Gambler", "Jump" and many more.  
**Musicworks™ songs (4128)**  
Pop Music songs.  
**Concertware™ Songs (4123)**  
A varied selection of classical as well as contemporary songs.

### Midi Music Applications

These programs require a MIDI Keyboard.

**Midi Term (4117)** Midi 2, Midi Mouse, 7th Heaven  
**CZedit Demo (4118)** CZlibrarian (For use with the Casio CZ101™ Keyboard).

### Educational

**Flachcard (4138)** Orbital Mixing & Grades folder.  
**Math Master (4139)** Venn, Conformal Maps, Automata, Tree and Tangent.  
**Speech Synthesis (4140)**  
The following programs demonstrate Speech Synthesis: Rona, Talking Eliza with demo files & instructions, Speak Easy and La Limerick Machine. (This one will read limericks that are typed)  
**Math Tutor (4181)**  
Weinberg. This program facilitates drawing math functions like integrals, summations etc. Equation, Math Drill & Camera tutorial.

### Engineering:

**DesignScope (4119)**  
Simulation Program that helps design component Circuitry. (Demo Version)  
**Digital Simulator (4120)**  
Digital Logic Simulator. Build & test electrical circuits.

### Utility Programs

**System Utilities (4182)**  
BootEdit (Alter the Welcome to Macintosh message), Change application font, Install (Install resources to your system that will RESUME your program after many system bombs), Window Changer (lets you customize the Save As & Open dialog boxes)  
**Disk Utilities (4183)**  
Disk Cat. Disk cataloging program. Disk Test, Display (text file reader), & Scavenger Mac (recovery files).  
**Diagnostic Utilities (4184)**  
DiskTest, Speed Check, Ram Test 1.7, Dir-Act-ry (Reads directory of & disk then converts it to an outline document for use with the Acta DA.), Remount HD20 (Remount an Apple HD20 that has been accidentally thrown into the trash).

### Updated Disks

**Redit 1.2 (4185)**  
European Resource editor. This program is excellent for translating Macintosh programs to other languages. It does not alter any of the resources.

**Switcher 5.0.1 (4186)**

### Languages

**Basic Compiler (4101)** Complete with documentation and examples.  
**Smalltalk (4099)** Disk also includes Ada and a 68000 disassembler.  
**Xlisp 1.4 (4037)**  
**McAsm (4033)** 68000 Assembler and Linker.

Our library contains the most current public domain software. It is updated daily and we are constantly expanding our selection. A free catalog is available upon request. We invite authors to send in new programs. For technical support, feel free to call our librarian-Luis Camberos.

**RIBBONS (Minimum 3):**  
Apple Imagewriter, I, II, Prowriter 2.39  
Apple Imagewriter Multicolor 11.99  
3.5" DISKETTES (Minimum 30)  
ss/dd-Blue/Beige/Grey 1.39  
ds/dd- Blue/Beige/Grey 1.59  
ds/dd color pack 1.69  
(red, orange, yellow, green, blue)

**THE "CARETAKERS"**  
10 pack library case 3.5" .99  
40 disk storage case 3.5" w/lock 7.99

**ACCESSORIES**  
Drive head cleaning disk 3.5" 12.99  
Printer stand 29.99

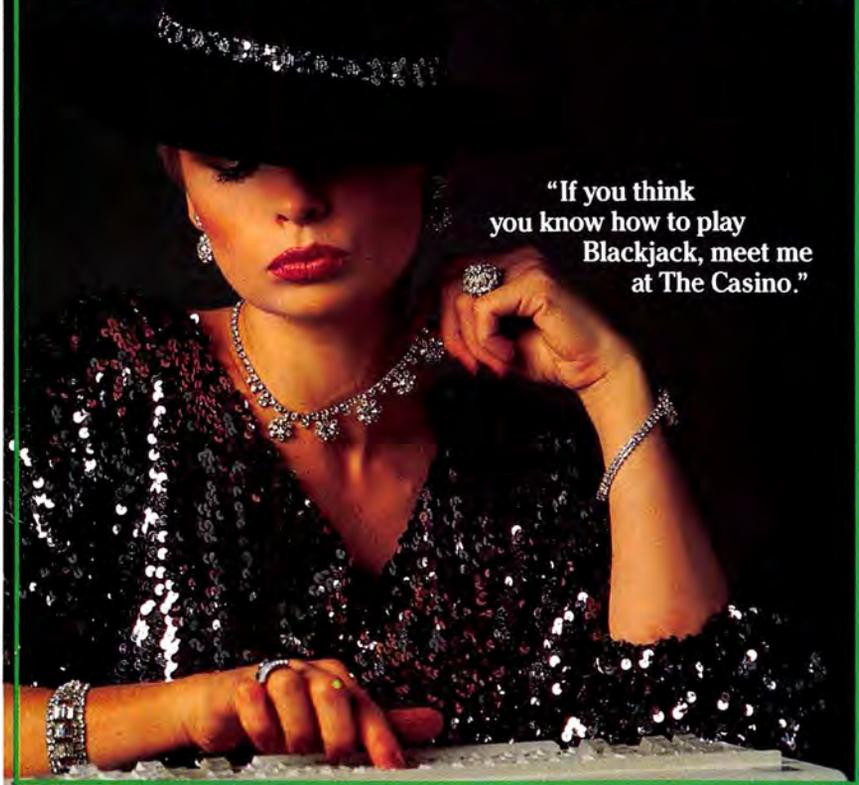
Minimum order quantity on PD - 5 program disks

Lifetime warranty on disks. Satisfaction guaranteed or your money refunded within 30 days. Disks packaged in 10's - Min. 30 disks. Checks (allow 10 days to clear), money orders, MC, Visa, AX, C.O.D. (add \$1.90). P.O.'s accepted from qualified public institutions, gov't. agencies and well-rated companies, net 30. CA. residents add 6%. For information and free catalog call: (619) 942-9998.

800-992-1992 U.S./DISK, INC. 619-942-9998  
NATIONAL CALIFORNIA

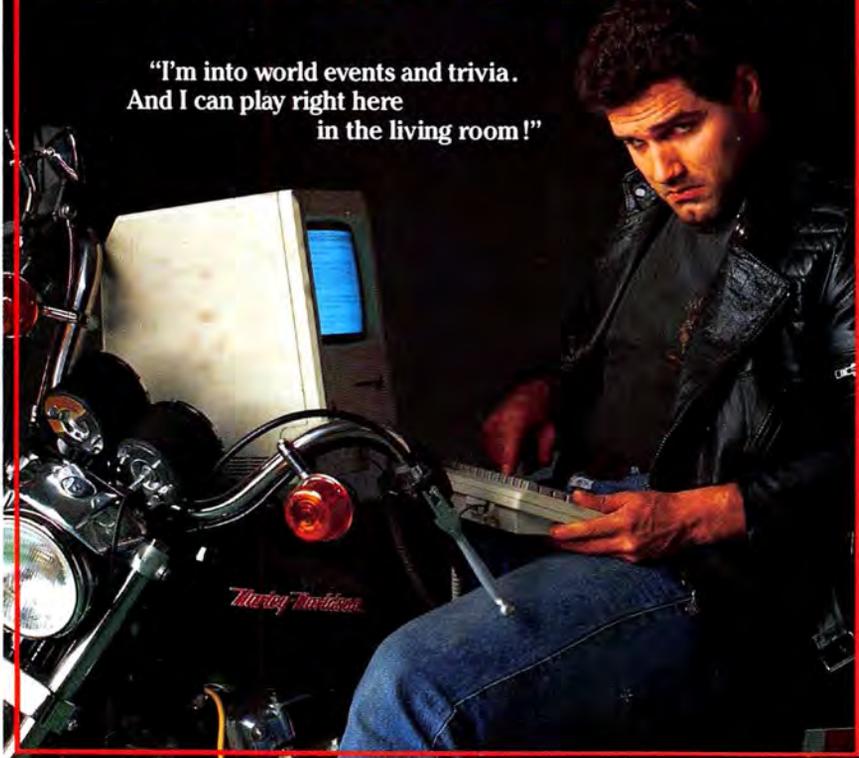
511-104 Encinitas Boulevard. Encinitas. California 92024 ■ Hours: Mon. - Sat. 6:00 am - 4:30 pm

# COMPUTOUGH



"If you think  
you know how to play  
Blackjack, meet me  
at The Casino."

# COMPUFUN



"I'm into world events and trivia.  
And I can play right here  
in the living room!"

Please circle 208 on reader service card.

## BANKING...

(continued from page 98)

the HA's automatic use of the previous year's actuals, thus my suggestion to make it a choice.

- Provide a method for capturing graphs in addition to textual data.

### BARGAIN AT TWICE THE PRICE

For just \$17, Survival Software will let you trade in your *Home Accountant Mac* master disk for *MacMoney* and a 12-page blurb describing the new features. Or you can pay \$45 and get *MacMoney* plus its new user manual.

If you are looking for a financial management package, you won't go wrong taking a close look at *MacMoney*. If you already have *Home Accountant for the Macintosh*, the small investment required to upgrade will be well worth it.

Before *MacMoney* and its ancestors, my family couldn't use the dining room table from January 2 through April 15 — and sometimes even later. Now, armed with *MacMoney*, we not only fearlessly face the government forms, we don't have to eat at the kitchen.

Ah, taxes, where's thy sting? ☞

BONNIE WALKER IS CURRENTLY PRESIDENT OF HER OWN CONSULTING FIRM WHICH SPECIALIZES IN DEVELOPING TECHNICAL MANUALS AND TRAINING MATERIALS. SHE IS ALSO THE AUTHOR OF SEVERAL TEXTBOOKS.

## MacMoney

Overall Rating	☞ ☞ ☞ ☞ 1/2
Follows Mac Interface	☞ ☞ ☞ ☞
Printed Documentation	☞ ☞ ☞ ☞
On-Screen Help	☞ ☞ ☞ ☞
Performance	☞ ☞ ☞ ☞
Support	☞ ☞ ☞ ☞ ☞
Customer Value	☞ ☞ ☞ ☞ ☞

**Comments:** An excellent choice for anyone who wants to keep personal or business financial records based on checkbook payments. **Best Feature:** Flexibility and ease of use. **Worst Feature:** No space for memos or ID codes on split transactions. **List Price:** \$74.95. 512K+ and printer required. Published by Survivor Software Ltd., 11222 La Cienega Boulevard, Suite 450, Inglewood, CA 90304. (213) 338-0155. Not copy protected.

# COMPUCOVER®



## COVER YOUR INVESTMENT

Macintosh Video & Keyboard .....	12.95
Macintosh Plus Keyboard .....	add - 1.00
With Mac Bottom .....	add - 3.00
Image Writer .....	12.95
Image Writer II .....	14.95
External Drive .....	5.95

Epson - C.ltoh - Okidata  
Over 3000 covers to choose from.  
You name it - We got it!

Anti-Static-Different Colors



ORDER LINE  
**1-800-874-6391**  
FLORIDA ORDER LINE  
**1-800-342-9008**



Dealer Inquiries Invited

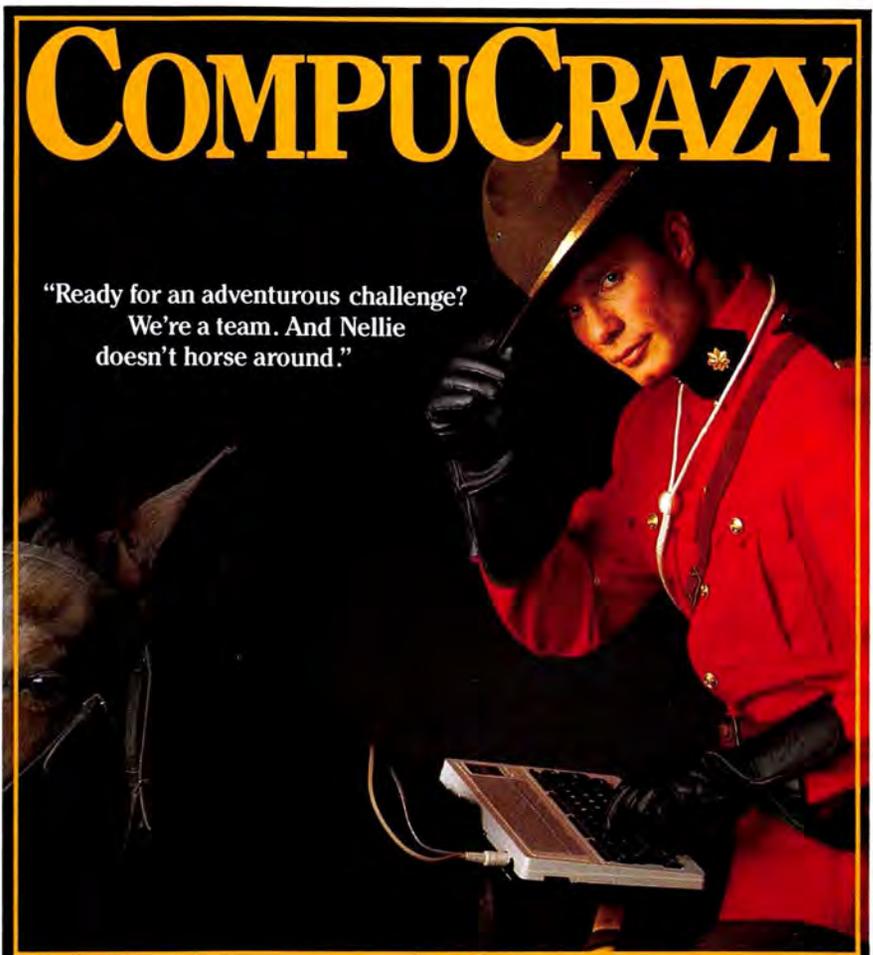
CompuCover®  
P.O. Box 310 Dept. K  
Mary Esther, FL 32569

Customer  
Service  
(904) 243-5793  
Telex 469783

Please circle 92 on reader service card.

# COMPU CRAZY

"Ready for an adventurous challenge?  
We're a team. And Nellie  
doesn't horse around."



# MaCATI™

Macintosh Assisted Telephone Interviewing



## Professional Survey Research Tools

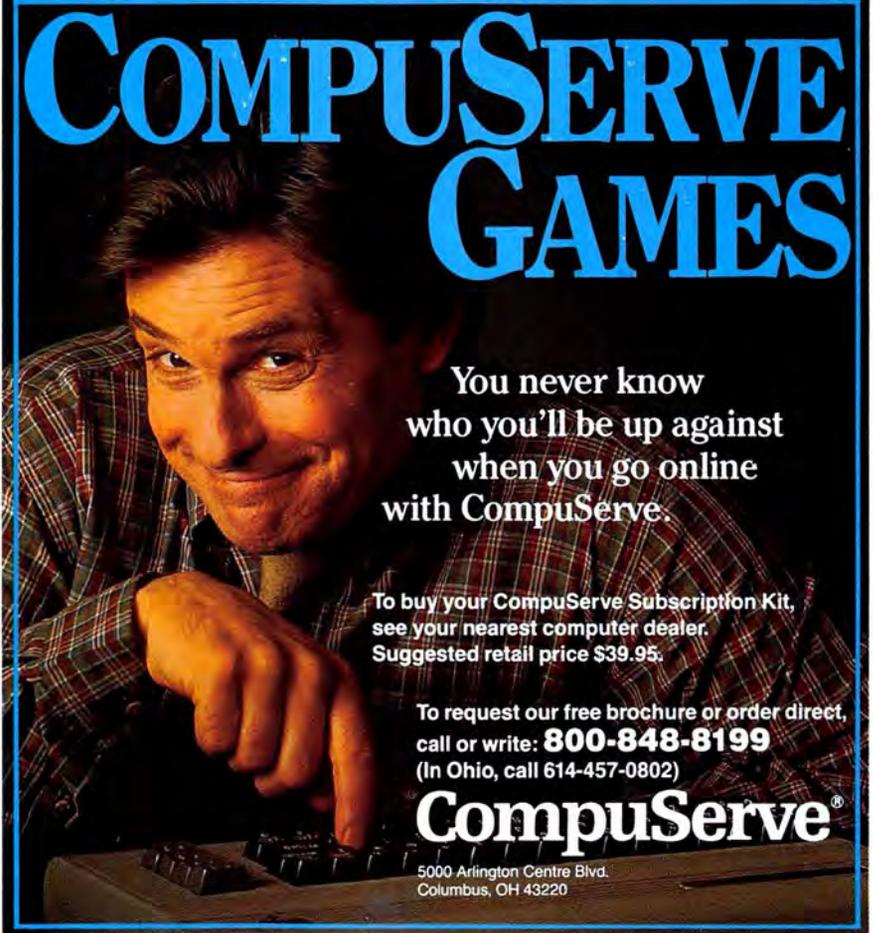
The first CATI system for the Mac.  
Questionnaire Editor, Utilities package, and  
Fielder. Automatic phone dialing, appoint-  
ments, stats. Can be used at individual  
workstations or networked.

Package for two interviewer stations - \$795:  
\$200 each additional station.

*PSRC Software*  
Population and Society Research Center  
Bowling Green State University  
Bowling Green, Ohio 43403  
(419) 372-2497

Please circle 284 on reader service card.

# COMPU SERVE GAMES



You never know  
who you'll be up against  
when you go online  
with CompuServe.

To buy your CompuServe Subscription Kit,  
see your nearest computer dealer.  
Suggested retail price \$39.95.

To request our free brochure or order direct,  
call or write: **800-848-8199**  
(In Ohio, call 614-457-0802)

## CompuServe®

5000 Arlington Centre Blvd.  
Columbus, OH 43220

Please circle 245 on reader service card.

# AD INDEX

Page #....	Advertiser, Reader Service #	Page #....	Advertiser, Reader Service #	Page #....	Advertiser, Reader Service #
<b>A</b>					
22-23.....	Adobe Systems Inc., 286	185.....	Ideaform Inc., 125	*31.....	Palantir Software, 295
57.....	Adobe Systems Inc., 7	173.....	Image Club Graphics, 272	198.....	Paragon Couresware, 104
*2-3.....	Aldus Corp., 262	*15.....	Infosphere, Inc., 110	80-83.....	PC Connection, 82
170.....	ALSoft, Inc., 240	*11.....	Internet, 73	182.....	PDS Video Technology, Inc., 139
171.....	ALSoft, Inc., 298	182.....	ISM, Inc., 20	161.....	Peak Systems, 63, 17
72.....	American Intellware Corp., 185	<b>J</b>			
142-143.....	Ann Arbor Softworks, Inc., 34	C3.....	jasmine Computer Systems Inc., 53	198.....	Peripherals Computers & Supplies Inc., 218
*16-17.....	Apple Computer, Inc., NA	<b>K</b>			
62-63.....	AST Research, Inc., NA	37.....	Kameran Labs, 274	*7.....	Personal Computer Peripherals Corp., 50
160.....	Avery International, 138	*32.....	Kensington Microware Ltd., 144	56.....	Personal Training Systems, 60
<b>B</b>					
170.....	Bede Tech, 126	*24.....	Kent Marsh Limited, Inc., 238	40.....	Practical Computer Applications, 101
149.....	Bering Industries, Inc., 217	180.....	Kinetics, Inc., 9	199.....	Primer Software, 212
10.....	Berkley System Design, 184	89.....	Kroy Scientific, 294	19-21.....	Programs Plus, Inc., 69
48.....	Best Computer Supplies, 31	<b>L</b>			
175.....	Bible Research Systems, 97	66.....	LaserWare, Inc., 276	195.....	PSRC Software, 284
C2 & 1.....	Borland International, 128	50-51.....	Layered, Inc., 21	186.....	Public Domain Exchange, The, 95
26.....	Bravo Technologies, Inc., 234	14.....	Levco, 209	<b>R</b>	
33.....	Buick Motor Car Co., NA	185.....	Lionheart, 300	133.....	Radius, Inc. 154
<b>C</b>					
28.....	Central Point Software, Inc., 10	12-13.....	Living Videotext, NA	54.....	Rodime Systems, 10
181.....	Cognition Technology Corp., 84	C4.....	Living Videotext, NA	<b>S</b>	
195.....	CompuCover, 9	141.....	Lundeen & Associates, 173	162.....	Safeware, The Insurance Agency Inc., 285
194.....	CompuServe, 208	<b>M</b>			
195.....	CompuServe, 245	80-83.....	MacConnection, 82	134-135.....	Saving Zone, The, NA
198.....	Computer Cover Co., 202	169.....	MacDoctor Electronics, 162	11.....	SBT Corp., 288
30.....	Computer Friends, 200	185.....	MacDuplicate, 280	160.....	Sequoia mb, 297
31.....	Cortland Computer, Inc., 198	175.....	MacLine, 161	24.....	SoftStyle, Inc., 291
155.....	Cricket Software, 132	147.....	MacRentals, 152	29.....	Softsync, 289
157.....	Cricket Software, 134	187.....	MacStore, Inc., 165	5.....	Software Discoveries, 292
<b>D</b>					
64.....	Data Tailor, Inc., 103	70.....	Manx Software Systems, 194	30.....	Software Library, NA
171.....	Desktop Software Center, 48	183.....	Meku, 278	*24.....	Solutions, Inc., 2
38.....	Dest, 296	176.....	Meta Software Systems, 268	180.....	Solutions, Inc., 265
183.....	Diehl Graphsoft Inc., 242	180.....	Micro-Analyst, Inc., 143	4.....	SuperMac Technology, NA
199.....	Diskette Connection, 279	27.....	MicroGraphic Images, 145	49.....	SuperMac Technology, NA
18.....	Dove Computer, 24	8-10.....	Microsoft Corp., NA	199.....	Survivor Software Ltd., 4
169.....	Dubl-Click Software, Inc., 108	58-59.....	Microsoft Corp., NA	56.....	Symmetry Corp., 3
175.....	D2 Software, Inc., 176	164-165.....	Microsoft Corp., NA	179.....	Systat, Inc., 36
<b>E</b>					
68.....	Ergotron Inc., 183	187.....	MicroStore, 243	<b>T</b>	
<b>F</b>					
60.....	Firebird Licenses, Inc., 293	42-43.....	MindWork Software, 78	17.....	Target Software, 195
6-7.....	Forethought Inc., 225	91.....	Mirror Technologies, Inc., NA	152.....	Target Software, 199
46.....	Forethought Inc., 290	92-93.....	Mirror Technologies, Inc., 188	*25.....	Think Technologies, Inc., 182
<b>G</b>					
44-45.....	General Computer Corp., 81	<b>N</b>			
*29.....	GW Instruments, 203	151.....	Nantucket, 224	158.....	Thunderware, Inc., 236
<b>I</b>					
41.....	Odulvai Software, Inc., 119	*19.....	Network Specialties, 250	100.....	T/Maker Co., 29
41.....	Odulvai Software, Inc., 120	186.....	Nikrom Technical Products, Inc., 266	35.....	Tussey Computer Products, 79
39.....	Orange Micro Systems, 16	162.....	Nordic Software, 227	*24.....	Tynlabs Corp., 52
<b>J</b>					
<b>K</b>					
<b>L</b>					
<b>M</b>					
<b>N</b>					
<b>O</b>					
<b>P</b>					
<b>R</b>					
<b>S</b>					
<b>T</b>					
<b>U</b>					
<b>V</b>					
<b>W</b>					

\*Desktop Communications Supplement

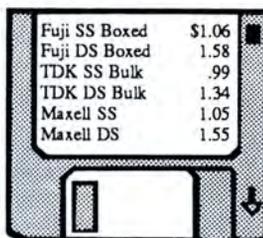
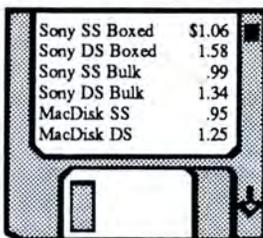
# 1-800-MAC-DISK

## Hardware

<b>SCSI Hard Drives</b>	
Magic20	599.00
Magic30	799.00
Magic65	1399.00
<b>Hard Drive Backups</b>	
Magic20 Tape	699.00
Magic60 Tape	899.00
<b>The Keeper</b>	
The Brain	1295.00
19" Stretch Screen	1695.00
PC-Mac Keyboard	119.00
Ehman 800K Drive	209.00
Magic 800K Drive	199.00
MagicModem 1200	149.00
Avatex 1200 Baud	119.00
<b>Prometheus Modems</b>	
1200G	169.00
2400G	259.00
Numeric Turbo	109.00
Turbo Mouse	83.00
MacFan	95.00
Thunderscan	175.00
Cauzin Softstrip Reader	175.00
Microtek Scanner	1995.00

## Ribbons

	<u>1-5</u>	<u>6±</u>
Black	2.95	2.75
Colored	4.50	3.75
Multicolored	13.00	12.00



## Upgrades

128K to 512K	99.00
512K to 1024K	159.00
128K to 1024K	249.00
SCSI Port	89.00
68020 Upgrade	495.00

## Dove Upgrades

MacPlus 2MB	269.00
512K to 1024K	159.00
512K to 2048K	399.00
2.5MB Hyperdrive Compt.	650.00
4MB Hyperdrive Compt.	1199.00

180-Day Warranty on all Upgrades  
Over 3200 Upgrades Completed

**1-800-MAC-DISK**

**1-800-622-3475**

## Accessories

Magic Pad	10.95
Pocket Pack	9.00
The Macintosh Bible	21.00
Mouse Feet	3.95
Disk File/30	6.95
The Library	26.00
The Easel	14.00
Surge Protector	19.00
MacPlus Bag	59.00
Image II Bag	55.00
PhoneNet	39.00
MacFlip	18.00
MacTilt	25.00
Batteries	8.00
Laser Writer Retoner	50.00
Joystick	49.00

## Software

ComicWorks	53.00
Cricket Draw	177.00
Cricket Graph	139.00
Dark Castle	36.00
Dbase Mac	317.00
Dollars and Sense	99.00
Dinner at Eight	35.00
Double Helix	285.00
FileMaker Plus	159.00
Fontographer	199.00
FullPaint	51.00
FullWrite	59.00
GraphicWorks	52.00
Glue	40.00
Hard Disk Utilities	66.00
LaserServe	99.00
Laserspool	65.00
Legal Dictionary	68.00
Lightspeed C	125.00
Mac3D 2.0	99.00
MacDraft	154.00
MacGolf	32.00
MacGolf Courses	28.00
Mac-In-Tax	59.00
Mac Lightning 2.0	50.00
MacMoney	54.00
Medical Dictionary	68.00
Micro Planner	295.00
Microsoft Excel	229.00
Microsoft Word 3.0	229.00
Microsoft Works	185.00
MORE	155.00
Multiplan	69.00
Omnis3+	280.00
PageMaker	399.00
Ragtime	199.00
Reflex	55.00
Smart Alarms	29.00
Spellswell 1.3	59.00
SuperPaint	55.00
Tempo	59.00
Thesaurus	30.00
Trapeze	185.00

# Vision Technologies

2200 Guadalupe Austin Texas 78705

### Ordering Information

Call: 1-800-MAC-DISK In Texas: 1-800-2MAC-TEX Tech Info: 512-473-8393  
Hours: 8am-6pm CST. \$25 minimum on all orders.  
Visa, MasterCard, C.O.D., Company and Institution PO's, Checks.  
Texas residents add 7 1/4% sales tax.

### Shipping Information

Minimum \$3.00 additional.  
UPS Next Day Air & 2nd Day Air Available.

### Pricing & Availability

Prices are subject to change.  
Items are subject to availability.

## The MagicDrive Enhanced

The MagicDrive is a hard disk drive which utilizes the SCSI port on your Macintosh™ or Macintosh Enhanced™. Available in 20, 30, 65, and 150 Megabyte models, the Magic hard disk increases your productivity in a number of ways.

The MagicDrive gives you the ability to store all of your application programs in one space. With the drive, you don't have to search for program diskettes, nor do you have to worry about losing crucial documents.

With an ultra-fast data transfer rate, our drive also increases your productivity by saving you time. The MagicDrive lets you open and close documents much more quickly than conventional hard disk drives, including the Apple Drives.

The MagicDrive Enhanced also comes with a recover program which can recover crashed disks



and files. Additionally, the software program includes a disk and file editor, a copy program and a patcher.

One final note on the MagicDrive. Since it comes with a 30-day, money-back guarantee, your investment is protected and worry free.

## The Speed Tape

If you want the security of a tape backup, MagicProducts Speed Tape is available in 20 and 60 Megabyte versions.

Like the MagicDrive, these tape units are fast, dependable and convenient. Each comes with utility software and all the cabling needed to tie up to your Macintosh.

One of the most attractive features of the Speed Tape is its price:

Speed Tape 20:	\$699.00
Speed Tape 40:	\$899.00

**MagicProducts**  
4505 Spicewood Springs  
Suite 304  
Austin, Texas 78759  
512-343-0781

## IT ISN'T OVER 'TIL IT'S COVERED



Your Macintosh is a very special computer, therefore, it deserves the best dust covers available. **Computer Cover Company** designs these covers specifically for each Macintosh component. Our workmanship and quality has been acknowledged by thousands of our discerning customers.

Have you ever tried vinyl, naugahyde or cloth dust covers? If you have, then you can appreciate why our covers are constructed of 400 denier Rip Stop Nylon. Our covers are water and static resistant, they will not tear, crack or create lint problems.

MACINTOSH COVER SETS	BASE PRICE*
#100... Macintosh, keyboard, and mouse	\$21.95*
#110... Macintosh, keyboard, printer, and mouse	\$29.95*
#120... Macintosh, keyboard, printer, external drive, and mouse	\$31.95*

### STAND UPS:

Universal printer stands designed for your Imagewriter or Imagewriter II. Direct Order \$13.95 w/Purchase of Cover Set Only \$10.95

### PAK UPS:

Convenient diskette carriers with velcro closure holds diskettes safe and secure.  
 3.5" Small PAK UP holds 1 or 2 diskettes direct order \$4.95 2/\$7.95  
 3.5" Big PAK UP holds up to 8 diskettes direct order \$7.95 2/\$12.95  
 Colors - bone, tan, blue, platinum, brown, red, black, smoke, green

### IMAGEWRITER RIBBONS:

	Box of Six	5 or Less
Black	\$21.95/\$3.86 ea.	\$4.50 ea.
Solid Colors	\$26.95/\$4.50 ea.	\$6.00 ea.
Multicolored I/W II	\$52.50/\$8.75 ea.	\$10.00 ea.

### SLIP UPS:

Our own special mouse pad measures 8" x 9 1/2". Available in 3 colors: blue, red and gray. Regularly \$6.95

★ **FREE** — Slip Up Mouse Pad w/each Cover Set Purchased ★★

### ORDER FORM — Complete and Mail To:

**Computer Cover Co.**, P.O. Box 3080, Laguna Hills, CA 92654  
 Orders Only CA (800) 237-5376 — Outside CA (800) 235-5330  
 Inquiries (714) 380-0085

Macintosh set number	Base Price	No. Additional Charge	Exp. #
Monitor: <input type="checkbox"/> 128/512 Plus (NAC) <input type="checkbox"/> 128/512 (NAC) <input type="checkbox"/> Keyboard PLUS (NAC) <input type="checkbox"/> Imagewriter II (add \$1.00)			
Printer: <input type="checkbox"/> Laserwriter (add \$5.00) <input type="checkbox"/> 15" Imagewriter (add \$2.00) <input type="checkbox"/> I/W II w/sheet feed (add \$5.00)			
Disk Drive: <input type="checkbox"/> 400K (NAC) <input type="checkbox"/> 800K (NAC) <input type="checkbox"/> HD20 (add \$1.) <input type="checkbox"/> Super Mac 20/40 Mb (add \$1.)			
Color Choice: <input type="checkbox"/> Bone <input type="checkbox"/> Blue (royal) <input type="checkbox"/> Tan <input type="checkbox"/> Brown <input type="checkbox"/> Platinum			
★ <b>FREE Slip Up with each Cover Set Purchased</b> ★★			
Name	Subtotal	CA residents add sales tax	
Address	add UPS (add \$3.00)		
Daytime Phone ( )	Total		
Payment enclosed <input type="checkbox"/>			
Card #			
Bill my Visa <input type="checkbox"/> M/C <input type="checkbox"/>			
Zip			

## INTRODUCING...

**QUED/M™... UNIQUE PRODUCTIVITY TOOL:** a powerful macro editor, appointment calendar, text database and lots more!  
**Special introductory price. \$89**  
**QUED™... the QUALITY EDITor** that takes over where Edit leaves off!  
**\$65**  
**DiskOrder®...** cleans up and organizes all disks, saves and provides full path to file catalogs and is a disk labeler!  
**\$55**  
**ElectroFonts®...** analog and digital circuit drawing font!  
**\$99**  
 Among other things, includes **Sci-Fonts** (scientific, math and fraction fonts; \$50) and **LogiFont** (digital circuit font; \$40). Works with Laser Writer Plus™  
**MacQwerty™...** Dvorak and custom keyboard configuration! Includes keyboard overlays.  
**\$45**  
**MacTAG™...** Teacher's Assistant Grader; will process files for up to 1,000 students in minutes, including assignments and scores!  
**\$65.**  
**Paragon Concepts** continues to be a leader in developing of successful **MACINTOSH™** software!  
**ORDER TODAY!** (MasterCard & VISA accepted.)

4954 Sun Valley Road • Del Mar, CA 92014 • (619) 481-4777  
 Formerly Paragon Courseware. Macintosh is a trademark licensed to Apple Computer, Inc. Laser Writer Plus is a trademark of Apple Computer, Inc.

Please circle 104 on reader service card.

## Precision Data Products™

### POLY PACK 5 1/4" DISKETTES

(From Leading Mr.)

- Blank Jackets
- WP Tabs
- Envelopes

100% Error Free  
 Lifetime Warranty  
 Sold in Lots of 100 Only

## SONY POLY PACK 3.5" DISKETTES

High Capacity Data Storage. Meets the requirements of all 3 1/2" Micro Diskette Drives

SS 135TPI	\$1.17 ea.
DS 135TPI	\$1.29 ea.

## KENSINGTON™

### Mouse Cleaning Kit and Mouse Pocket Sale \$17.95 ea.

(Sugg. Retail \$24.95)  
**Mouseway Sale \$7.95 ea.** (Sugg. Retail \$9.95)  
 Free shipping with diskette order

Minimum Order \$25.00. Add 10% for less than 50 disks. S & H: Continental USA \$4.00/100 or fewer disks. Reduced shipping charge on larger quantities. Foreign orders, APO/FPO, please call. MI residents add 4% tax. Prices subject to change without notice. Hours: 8:30 AM - 7:00 PM ET.

CALL TOLL FREE 1-800-258-0028

P.O. Box 8367  
 Grand Rapids, MI 49518  
 (616) 452-3457 • MI 1-800-632-2468

Please circle 226 on reader service card.

Desktop Communications

Desktop Engineering

Desktop Publishing

VersaTerm-PRO is where it all comes together!

File Transfer

Mainframe Text

Terminal Emulation

Mainframe Graphics

CAD Workstation Color Graphics

Color Output

Publication Quality Output

## VersaTerm-PRO™

Version 2.00 Price: \$ 295.00  
 Special upgrade price for registered VersaTerm Owners.

All the features of standard VersaTerm AND...  
**The most complete Tektronix 4105 Graphics Terminal Emulation available on the Macintosh!**  
**Enhanced Tektronix 4014 Graphics Emulation**  
 Zoom and Pan Graphics Interactively from Memory!  
 • **New! Cleared Graphic Screens (up to 32) may be instantly viewed from memory.**

- Create MacDraw, MacPaint and MacWrite documents from memory.
- Very high quality graphics may be printed on the LaserWriter.
- Color graphics output supported with ImageWriter II.

Designed for the Professional who requires sophisticated GRAPHICS features as well as the powerful TEXT features of standard VersaTerm.

Designed for a 512K Mac, Mac Plus or Mac-XL. Supports the ImageWriter(II) and LaserWriter printer.

## VersaTerm™

Version 3.00 Price: \$ 99.00

**Terminal Emulation:**

- DEC VT100
- DEC VT52
- Tektronix 4014
- Tektronix 4010
- DG D200

**File Transfer:**

- TEXT
- MacTerminal™ XModem
- Text XModem Protocol
- MacBinary XModem
- Text/Binary Kermit Protocol
- MacBinary Kermit

• Multiple file uploads and downloads.  
 • Automatic Macro Definitions  
 • Multiple Command Sets  
 • "Word Mouse" feature **New!**

- Not Copy-Protected.
- Supports DEC VT100 132 column mode.
- Very High character throughput.

Designed for users who require excellent TEXT performance but not heavily into graphics.

Published and Distributed by:

**PCS Inc.**  
 2457 Perkiomen Avenue  
 Mt. Penn, PA 19606  
 (215) 779-0522

Developed by:

**Abelbeck Software**

Please circle 202 on reader service card.

Please circle 218 on reader service card.

# Smash Hit Racquetball!

The Smash Hit Game of 1987!

MacUser:  
Highest Rating, 

MacTimes:  
Highest Rating, 

MacWorld:  
"You'll even work up a sweat."



Priced Right  
at  
**\$19.95**

Smash Hit Racquetball!™ is realistic, challenging and exciting! It has lively animation, digitized sound, four ability levels, instant replay... and much more!

See your dealer, or order now:

**Primera Software • 1-800-643-0800**  
**33 Norwood Ave. • Kensington, CA 94707**

Please circle 281 on reader service card.

## MacMoney™

The financial management program that allows you to track your financial transactions by simply filling out a check form.

The screenshot shows a 'Personal Checkbook' window with fields for Name, Date, Pay To, Amount, and Category. Below it is a 'Major Expenses' pie chart with labels for categories like 'Utilities 7.08', 'Travel 2.48', 'Food 12.88', and 'Household Expenses 19.58'.

You define the 200 categories to meet your needs. Print reports and graphs on ImageWriter or LaserWriter. Print checks using stored addresses. Transfer your data to Excel™, MacInTax™, etc. for further uses. Up to 6,000 transactions per year (depending on hardware). Non-copy protected. Requires 512K Macintosh, Macintosh Plus or Mac XL. (\$74.95 plus \$3.00 shipping/handling.)

**Survivor Software Ltd.**  
11222 La Cienega Blvd., Suite 450  
Inglewood, CA 90304 (213) 410-9527



HAMac owners call for special trade-in offer.

Please circle 4 on reader service card.

# maxell®

Packaged 10 Per Box

	2 Boxes	5 Boxes	10 Boxes
3½" Single Side	10 <sup>80</sup>	10 <sup>50</sup>	9 <sup>95</sup>
3½" Double Side	15 <sup>95</sup>	15 <sup>60</sup>	14 <sup>95</sup>

## 3½" High Density "Call"

Old Reliable  
the **Diskette Connection™**

Delaware 1-800-451-1849  
P.O. BOX 10247, WILMINGTON, DE. 19850

Oklahoma 1-800-654-4058  
P.O. BOX 1674, BETHANY, OK. 73008

Nevada 1-800-621-6221  
P.O. BOX 12396, LAS VEGAS, NV. 89112

Minimum Order \$25.00 - Visa, MasterCard accepted - C.O.D orders add \$3.00 - Surface Shipping on 3.5 or 5.25" add \$3.00 per 100 disks, 8" add \$4.00 per 100 disks. UPS delivery only. U.S. mail for APO, FPO, AK, HI or PR add an additional 5% for PAL. Prices subject to change without notice!

Please circle 279 on reader service card.

# SONY®

Packaged 10 Per Box

	2 BOX	5 BOX	10 BOX
3½" Single Side	10 <sup>95</sup>	10 <sup>70</sup>	10 <sup>30</sup>
3½" Double Side	15 <sup>95</sup>	15 <sup>70</sup>	15 <sup>30</sup>

## 3½" High Density "Call"

SONY, without labels OR box

MAC-PAC-50's Packaged in Fifties

	50	100	400+
3½" Single Side	1.06 ea.	1.00 ea.	.92 ea.
3½" Double Side	1.34 ea.	1.26 ea.	1.20 ea.

Old Reliable  
the **Diskette Connection™**

Delaware 1-800-451-1849  
P.O. BOX 10247, WILMINGTON, DE. 19850

Oklahoma 1-800-654-4058  
P.O. BOX 1674, BETHANY, OK. 73008

Nevada 1-800-621-6221  
P.O. BOX 12396, LAS VEGAS, NV. 89112

Minimum Order \$25.00 - Visa, MasterCard accepted - C.O.D orders add \$3.00 - Surface Shipping on 3.5 or 5.25" add \$3.00 per 100 disks, 8" add \$4.00 per 100 disks. UPS delivery only. U.S. mail for APO, FPO, AK, HI or PR add an additional 5% for PAL. Prices subject to change without notice!

Please circle 279 on reader service card.



# DIRECTORY DIRECTORY DIRECTORY

The **MacUser Directory** is the definitive source for advertising professional products and services. This section will be read by more than 100,000 Macintosh enthusiasts every month. **Specs:** The standard format is 50 words or 8 lines maximum for ad copy, plus four additional lines for your company name, address, and phone num-

ber. A **FREE** 25 character bold headline is also part of your ad. **Rates:** All ads must be prepaid and submitted with copy. Visa and Mastercard are also accepted. All advertising must run in a minimum of three consecutive issues. The price is \$585 for three, and \$975 for six issues. For further information, and closing dates

for space and material, please contact Russell Brody, at MacUser, 25 West 39th Street, New York, NY 10018, or call 1-800-422-6661, in New York (212) 302-2626. **If you would like FREE information on products or services advertised in this directory, circle #125 on the Reader Service Card.**

## ACCESSORIES

### CABLES—MAC PLUS TO IBM

Mac Plus to IBM AT and compatibles, Mac Plus to IBM PC, XT and compatibles, Mac Plus to old ImageWriter, \$28.50, plus \$3/cable for shipping. California residents add tax. Other cables are available. Call us for prices. All cables are 6 feet and include software hints. Dealer inquiries welcome.

- MSR Development  
6171 Debs Avenue  
Woodland Hills, CA 91376  
(818) 710-0396

### MACOPENER™

The finest one piece tool to open the Macintosh case. Do your own upgrades, installations, adjustments, and repairs. No moving parts. One year warranty parts and workmanship. Suggested list \$19.95 + \$3 shipping and handling. Dealer inquiries welcome.

- Central Products Corp.  
2211 Norfolk, Suite 518  
Houston, TX 77098  
(713) 529-1080

### NoLABELSYSTEM™ FREE SAMPLE

No labels. No label problems. No sticky disks. It's a permanent, clear plastic (window) pocket you stick on to a disk. Slide in a tabbed insert card: white and assorted colors included. Write on card to identify and organize your disks. Call today for your NoLabelSystem™. NLS 3.5/100 \$22.45, delivered. Visa/MC.

- Weber & Sons, Inc. (MU)  
P.O. Box 104, Adelphia, NJ 07710  
(800) 225-0044  
(201) 431-1128 (NJ)

## ADVERTISING NOVELTIES

### YOUR MAC ART ON OUR GIFTS

Create a you-nique gift

- Coffee mug•T-shirt•mouse pad \$12.50/9.50\*
- Award plaque—\$24.50/19.50\*
- Sweatshirt—\$17.50/13.50\*
- Jigsaw puzzle—\$ n/a/8.50\*
- Chocolate card—\$9.50/7.50\*

Xmas gift supplier to Apple Computer, Inc.  
\*12+ price•Free catalog•Co. logos OK

- Computer Expressions  
3700 Market Street, Suite 308  
Philadelphia, PA 19104

## APPLE EMULATOR

### II IN A MAC™ - NEW VERSION 2.5

Run Apple II software on a Mac and still use DAs and Cut & Paste to the Clipboard. Transfer Apple II disks to the Mac by cable or phone. Use UniDisks directly with Mac drives. Convert AppleWorks or any Apple II data file into standard Mac text files. Develop software using Apple II Basic and ML. Full 65C02 debugging system built-in. Not copy protected. \$149.95.

- Computer:applications, Inc. (919) 846-1411  
12813 Lindley Drive  
Raleigh, NC 27614

## BAR CODE

### BAR CODE/MAG STRIPE READERS

Bar code and magnetic stripe (credit card) readers for the Apple Macintosh are available separately or in a single compact unit. All readers connect between the keyboard and the Macintosh, and require no additional software or port. A powerful but simple program for printing Code 39 bar codes is also available.

- TPS Electronics  
4047 Transport Street  
Palo Alto, CA 94303  
(415) 856-6833

## BUSINESS

### PAYROLL-GENERAL LEDGER

CheckMark PAYROLL & AMS GENERAL LEDGER are full-featured accounting programs for \$195 ea. PAYROLL calculates all employer and employee taxes. Prints checks & W-2s. User modifiable tax tables. GENERAL LEDGER has extensive reporting capabilities. Profit centers, budgeting, previous year balances. Performs in business-like, straight forward manner. Demo's \$15.

- CheckMark Software, Inc.  
P.O. Box 860  
Fort Collins, CO 80522  
(800) 426-2466 ext. 338

## COMMUNICATIONS

### MAC2624 TALKS TO THE HP3000!

With Mac2624, your Macintosh emulates the HP2624, HP2392, HP2394 block mode CRTs, running HP3000 software reliably and elegantly. Mac2624 implements all HP modes, parameters, keyboard features, and display characteristics within the ingenious Macintosh mouse menu, command-key environment. Intelligent, ultra-fast file transfer; text/graphics conversion options.

- Tymbabs Corporation  
211 East 7th Street  
Austin, TX 78701  
(512) 478-0611

## TEKALIKE

A VT100 and Tektronix terminal emulator for text and graphics; emulates text terminals (tty, VT100, VT640, Tektronix 4105) and/or graphic terminals (Tektronix 4006, 4010, 4012, 4014, 4016, 4105 and the VT640). Compatible with screen editors. Supports LaserWriter, plotters, MacDraw and MacPaint output; desktop publishing compatible. \$250.

- Mesa Graphics  
P.O. Box 600  
Los Alamos, NM 87544  
(505) 672-1998

## DESKTOP PUBLISHING

### MACPALETTE

MacPalette by Microspot enables you to print multicolored pictures and text from existing Macintosh software using the ImageWriter II. MacPalette will colorprint your existing documents from MacDraw, MacDraft, MacProject, MacWrite, Jazz, Microsoft Chart, Word, etc. (not MacPaint). It now prints black as a true black instead of mixing a black.

- CompServCo  
800 Freedom Lane  
Slidell, LA 70458  
(800) 272-5533 or (504) 649-0484

## TYPESETTING FOR THE MACINTOSH

Alphabet Soup is the desktop publishing resource for high quality type and graphics from your Macintosh. We offer Linotronic 100 (1270 dpi) and LaserWriter (300 dpi) output. Your files can be sent to us by mail or by modem. Call Alphabet Soup for more information and a brochure today!

- Alphabet Soup, Inc.  
900 North Point Street  
San Francisco, CA 94019  
(415) 885-3156

## DESKTOP PUBLISHING SERVICES

### LASER PRINTING SERVICES

Linotype L100 output for Mac/IBM disks and modems low as \$3.50 per page. LaserWriter output .30¢ per page. We sell Mirror Technologies and LoDown SCSI drives, Adobe fonts, Ventura publisher at low prices. Adobe screen fonts, \$10/set. Desktop publishing consulting services. In house full service offset printing, typesetting, bindery services at low, prices.

- Laser Printing Services  
26058 W. 12 Mile Road  
Southfield, MI 48034  
(800) 722-3475, In MI (313) 356-1004



**LASER TYPESETTING**

Professional quality file output service at competitive prices. Mac or IBM, via disk or modem to our LaserWriter or Linotype. Same day service. We can also keyboard your copy, from a letterhead to a full length novel. Also available complete darkroom services and platemaking for your printer.

- Hodgins Engraving  
Box 597, Batavia, NY 14020  
1-800-354-6500 Nationwide  
1-800-626-8900 in New York

**POSTSCRIPT® TYPESETTER DRIVERS**

MicroSetter® lets you use your Macintosh to run Compugraphic MCS, Varityper Comp/Edit, and Linotype CRTronic/CRTerminal. MicroSetter® converts documents from MS Word, MacWrite, MacDraw, ReadySetGo, PageMaker, MacPublisher, MacPaint and others into typesetting codes automatically. Unlimited fonts. True WYSIWYG systems—no codes entered. From \$990-\$3290 includes hardware and software.

- TeleTypesetting Company  
474 Commonwealth Avenue  
Boston, MA 02215  
(617) 266-6637

**EDUCATIONAL**

**"BEST TESTING SYSTEM"**

MeasureUP™ utilizes the Mac's powerful desktop publishing capabilities to generate tests quickly and professionally. Combining graphics, word processing and database management features, MeasureUP™ enables you to produce tests easier and better than ever—we guarantee it! Call today for the acclaimed "best educational testing tool on the market!"

- Logic eXtension Resources  
9651-C Business Center Drive  
Rancho Cucamonga, CA 91730  
(714) 980-0046

**EDUCATIONAL GAME PACKAGE**

Five unique classroom tested educational games that teach and test spelling (MicSpell), state identification (MicStates), alphabetizing (MicAlphabetize) and time telling (MicTime). All contain different levels of difficulty for ages 5 to adult. Special introductory offer—all 5 games for only \$19.95 plus \$2 s/h. Visa/MC.

- MicEdWare  
4265 Midland Road  
Saginaw, MI 48603  
(517) 799-1700

**ELECTRONIC FLASH CARD™**

Learn facts quickly and easily. Increase your motivation. Learn course or job information more rapidly. Save time and learn more. Text Edit based flash card metaphor drill program. Asks unfamiliar facts more frequently. Handles 2,000+ facts. Write for free information. 128K+, 1 drive. \$35 plus \$3 s/h. Check or money order.

- Artificial Mind Software  
P.O. Box 17590  
Pittsburgh, PA 15235-0590

**GRADEBOOK/TEST GENERATION**

Micrograde—easy course set-up, large class size, 100 assignments. Prints statistics and various reports. Personalized grade standards. Ideal for any grade level. Microtest II—create, update generate and store exam materials. Easy question entry, large data base, multiple test versions with separate answer keys. \$95 each. Free brochures. \$5 demo programs.

- Chariot Software Group  
3659 India Street MU#1  
San Diego, CA 92103  
(619) 298-0202

**MacANATOMY**

A complete electronic atlas of human anatomy in MacPaint document form. The drawings may be modified and merged into MacWrite documents using the Clipboard. Comprised of four volumes, available individually or as a collection.

- MacMedic Publications  
5805 Westheimer  
Houston, TX 77057  
(713) 977-2655

**ENGINEERING**

**NEW FOR '87-COURSE BUILDER**

Create standalone courseware for teaching, training and testing with the click of the mouse. Built-ins include drawing, painting, animation, voice, music, grading, intelligent branching and text-numeric/mouse inputting capabilities. Free brochure and CompuServe demonstration. Ships May 1987. \$300.

- TeleRobotics™ International, Inc.  
8410 Oak Ridge Highway  
Knoxville, TN 37931  
(615) 690-5600

**POWERMATH**

PowerMath is computer algebra for the Macintosh. Type your problem, using conventional math notation, and PowerMath will solve your calculus, algebra and matrix problems. PowerMath does factorials, summations, simultaneous equations, plots, Taylor series, trigonometry and allows unlimited number size. It's your math slave for \$100.

- Central Products Corp.  
2211 Norfolk, Suite 518  
Houston, TX 77098

**DATA MANAGEMENT & ANALYSIS**

All in one package! Parameter Manager™ is the only package designed specifically for professionals who manage and analyze time, date or sample based data. Parameter Manager™ contains complete, built-in analysis functions that instantly produce high quality graphs, charts, worksheets and schedules, without having to write macros. Demo disk is \$10.

- SMS  
651 River Oaks Parkway  
San Jose, CA 95134  
(800) 654-5157 or (800) 247-4994

**DIGITAL LOGIC DESIGN AID**

LogicWorks is an interactive digital logic drawing and simulation package for Macintosh. Featuring built-in common gates, flip-flops, 3-state devices, etc. User-definable symbols, PROMs and PLAs. Generates timing diagram of selected signals. Prints schematic/timing diagram. LogicWorks \$159.95, net list utility \$29.95. Libraries disk, including analog, 7400s, etc. \$29.95.

- Capilano Computing  
545-108th NE, Suite 6  
Bellevue, WA 98004-5502  
(604) 669-6343

**FINITE ELEMENT ANALYSIS**

MSC, the leader in FEA technology, markets a full line of FEA tools for the personal computers. Starting at \$45 for MSC/pal INTRO on either the IBM PC or the Apple Macintosh, our products are designed to be complete and easy to use. Interfaces for most CAD systems available.

- The MacNeal-Schwendler Corporation  
815 Colorado Blvd.  
Los Angeles, CA 90041  
(213) 259-3888

**SOFTWARE PRODUCTS PRESENTS**

SoftWear Plot produces publication-quality plots using multi-column ASCII files (e.g., program outputs, text editors, spreadsheets). Linear or logarithmic formats in either axis, overlays, zoom, on-line measurements, custom labels and tokens. Number of points limited only by disk space. Print or save as MacPaint file for enhancement. \$49.95 + \$3 s/h.

- SoftWear Products  
7230 Oliver Street  
Lanham, MD 20706  
(301) 577-9207

**STRUCTURAL ENGINEERING**

Powerful, easy-to-use analysis programs with design aids for beams, 2-D frames, trusses: BEAM MAC, BEAM MAC 11, FRAME MAC. Fully interactive. Structure, loading, tension, shear, moment, deflection diagrams, input & output texts. Section table, more. From \$145 to \$595. Money-back guarantee. Free support. 400K demo, 800K Guided Tour available.

- Erez Anzel Software  
113 McCabe Crescent  
Thornhill, Ontario L4J 2S6 Canada  
(416) 738-4601

**FINANCIAL ANALYSIS**

**FINANCIAL DECISIONS**

Financial Decisions includes over 110 templates, an extraordinary value at \$45. It turns Excel™ owners into power users by calculating mortgage schedules, refinancing decisions, bond yields, savings and investment yields, APR's with points, after tax cash flows on commercial properties, depreciation schedules and more. Phone or send check to:

- GenMicronics  
5900 Shore Blvd., #401  
St. Petersburg, FL 33707  
(813) 345-5020



## FONTS

### COMPLEMENT LASER FONTS

Spruce up your desktop publications with our unique border fonts: Bodettes Square, \$49, and Bodette Accent Frames, \$29. Each disk contains multiple fonts. Hundreds of borders can be designed using combinations of Bodettes Square characters and Accent Frames, limited only by your imagination! Order your copies of Bodettes today.

- Software Complement  
P.O. Box 1123  
Milford, PA 18337  
(717) 686-5592

### DOWNLOADABLE LASER FONTS

Specialized fonts for the LaserWriter. Classical Greek, \$85. Serif/sans-serif for scientific texts, \$75. Font of 100 chemical structures, \$125 (with scientific text fonts, \$160). Polish serif or sans-serif, \$85 each (four styles). Serif small caps, \$40 (four styles), regular or Polish. Soon: modern Greek. Visa/MC, university PO's.

- Allotype Typographics  
1600 Packard Road, Suite 5  
Ann Arbor, MI 48104  
(313) 663-1989

### FLUENT LASER FONTS

Volume 1 through 15 are shipping. Add to your LaserWriter with high quality PostScript fonts, reasonably priced. Automatic downloading, print any size, support of Western European and Scandinavian languages. Write or call for samples. Order: (800) 331-4321, In Calif: (800) 851-1986.

- Casadyware, Inc.  
P.O. Box 223779  
Carmel, CA 93922  
(408) 646-4660

### "FONTagenix & LASERgenix"

FONTagenix™: Four volumes of dot-matrix display fonts, \$29.50 each volume (all four \$99.50). FOREIGN FONTS EDITION™: Foreign language fonts on disk, \$49.50. LASERgenix™: Downloadable laser fonts (New: Extended Cyrillic) \$32.50 each. Add \$3 s/h. California res. add 6%. Write for samples or order from:

- Devonian International Software  
P.O. Box 2351  
Montclair, CA 91763  
(714) 621-0973

### LASERPERFECT™ FONTS

Downloadable PostScript fonts created especially for international and fine typography: good fit, kerned letters, old-style numerals, thin en/em spaces. MacSlab (square-serif), \$55. LPHebrew, LPBenares (Devanagari), \$125. LPAthina (Greek), \$79. LPPhonetic and display fonts (LPArrighi, LPBembo, LPBlado, LPCentaur, LPNortfolk), \$55 each. We also develop custom fonts & characters. Write/call for samples.

- NeoScribe International, (203) 467-9880  
P.O. Box 633-UD  
East Haven, CT 06512

## GAMES/ENTERTAINMENT

### THE DELPHI CHRONICLES

A challenging two disk graphics space adventure based on logic and deductive reasoning. As spaceship commander, you are ordered on a top secret mission requiring you to explore strange new worlds. Contains four levels of difficulty. Demo disk available for \$3. Requires 512K or Mac Plus. \$39.95. Visa/MC.

- DenMark Software  
5795 N. River Road  
Freeland, MI 48623  
(517) 799-1700

### GRAPHIC ASTROLOGY

Chart family and friends! More than a game, accurate and easy to use, Graphic Astrology calculates, displays and prints 3 documents: the chart, a data page and interpretation page, all from a time, date and place input. Retail, \$39.50. Advanced version, \$129.50. Visa/MC okay. Dealer inquiries welcome.

- Time Cycles Research  
27 Dimmock Road  
Waterford, CT 06385  
(203) 444-6641

## GRAPHICS

### MACPERSPECTIVE™

Rapid 3D wireframe drawing working with dimensions. Can be applied to any architecture, engineering or artistic need. Viewpoint can be changed at any time. Drawing can be printed any size up to 100 inches or transferred to other programs. Thorough manual included. \$179. Visa or MasterCard accepted.

- B. Knick Drafting  
313 Marlin Place  
Melbourne Beach, FL 32951  
(305) 727-8071

### MACPLOT & MACCAD

MacPlot by Microspot is a powerful plotter driver which will plot any object oriented graphics produced on the Mac in up to 30 colors/pens. It supports over 45 plotters. MacCAD is a series of 12 separate architectural and engineering template libraries for use with either MacDraw or MacDraft (specify which).

- CompServCo  
800 Freedom Lane  
Slidell, LA 70458  
(800) 272-5533 or (504) 649-0484

### MGMSTATION—CAD DRAFTING

MGMStation—CAD Drafting by Micro CAD/CAM, Inc., is powerful, easy to use CAD program for Mac similar in performance to Autocad for IBM-PC. MGMStation boasts over 140 powerful functions including: XY coordinate, polar or digital data input; 100X zoom; accuracy to 4 decimals, etc. Demo disk/VCR tape available — \$799.

- CompServCo  
800 Freedom Lane  
Slidell, LA 70458  
(800) 272-5533 or (504) 649-0484

## INSURANCE

### SAFWARE INSURANCE

If your computer is important to you, insure it! SAFWARE provides full replacement of hardware, media and purchased software. As little as \$39 a year covers fire, theft, power surge, earthquake, water damage and auto accident. Call 8am to 10pm Monday thru Friday. Saturday 9am to 5pm.

- Safeware, The Insurance Agency, Inc.  
2929 N. High Street, P.O. Box 02211  
Columbus, OH 43202  
(614) 262-0559 (OH) or (800) 848-3469

## LABELS/PRINTING

### MAC LABEL NEEDS

Let us make your products look dynamite! Whether it be a label for a disk, pin fed address labels, whatever, we've got what you need. Label work is our bread n' butter but we do all types of printing (pamphlets, manuals, etc.). Call me toll-free and let's talk about your printing ideas. Ask for Todd.

- Providence Tag and Label Co.  
315 Harris Avenue  
Providence, RI 02909  
(800) 535-2235

## LANGUAGES/LANGUAGE TOOLS

### EXTENDER LIBRARIES

Communications Extender™: Routines for developing customized communications via Mac serial port. \$99.95. Programmer's Extender™ Vol. 1: Create standard Mac interface—windows, menus, dialogs, text edit, etc. Vol. 2: List manager support, text/graphics printing, special effects, etc. \$89.98 per volume. Avail. for Aztec C, LightSpeed C & Pascal and TML Pascal.

- Invention Software Corporation  
P.O. Box 3168  
Ann Arbor, MI 48106  
(313) 996-8108

### MACFORTH PLUS

New, multi-tasking language and 32-bit operating environment. Includes turnkey compiler, assembler, new text editor and Switcher compatibility. Faster implementation designed to take advantage of Mac Plus features and compatible across popular micros—Atari ST and Amiga. Upgrade from L2 MacForth—\$49, or new \$199. Student version, MacForth Plus available with I.D., \$89. CompuServe net GO FORTH.

- Creative Solutions, Inc.  
4701 Randolph Road, Suite 12  
Rockville, MD 20852  
(800) FORTH-OK or (301) 984-0262

## MAIL ORDER

### PERSONAL SOFTWARE SERVICE

Constantly updated broad Macintosh selection. Prompt, personalized, hassle free service at competitive prices. No "Backorder" or "Wait-lists". Your payment accepted only when order shipped. School and Corporate purchase orders welcome, net in 30 days. Hours 9-5, Monday-Friday and 8-12 Sat. PDT. Free price list.

- Pacific Prime Trading  
2522 Artesia Boulevard  
Redondo Beach, CA 90278  
(213) 376-5820



**MEDICAL/DENTAL**

**MEDICAL & DENTAL MANAGEMENT**

Solo or multi-practitioner office includes patient (responsible party) billing, recall, paper/electronic claims, aging, collections, SuperBill, labels, diagnostic history, Word/MacWrite, audit & productivity reports. 24hr Support. 512k + Hard Disk or XL. Mac Office Demo from \$100. Amex/MC/Visa. 2,400+ dealers.

- CMA Micro Computer Division  
55888 Yucca Trail, PO Box 2080  
Yucca Valley, CA 92286-2080  
(619) 365-9718

**MUSIC SOFTWARE**

**MUSIC SOFTWARE CATALOG!**

Learn how you can compose, edit, play and print music using your Macintosh. Over 40 pages of detailed information on the leading music software products and MIDI interfaces including patch/waveform editors, librarians, digitizers, sequencers, transcribers and more—for professional and home studio use. Send \$2 s/h to:

- Scherzando Music  
Dept. MU1, P.O. Box 3438  
Milford, CT 06460  
(203) 783-8758

**NETWORK SOFTWARE**

**DECNET™ FOR THE MAC**

Finally with TSSnet™ your Mac can become a true networking partner in a DEC network. Supports asynch connection (no expensive hardware needed) and allows task-to-task communications, file transfers which can retain all Mac characteristics, and VAX electronic mail. \$329 includes 30-day money-back guarantee and 6 months support.

- Thursby Software Systems  
4301 Oak Branch Court  
Arlington, TX 76016  
(817) 572-2352

**NETWORKING HARDWARE**

**PHONENET CONNECTOR**

AppleTalk compatible network hardware can use existing telephone wires to create 3000 foot AppleTalk networks. PhoneNET uses positive locking modular telephone components and standard telephone wire allowing flexible installation of permanent, reliable AppleTalk networks. Available: AppleTalk repeater, star cluster controller and software for network testing and management.

- Farallon Computing  
1442A Walnut, Suite 64  
Berkely, CA 94709  
(415) 849-2331

**SUNOL SYSTEMS FILE SERVER**

Sunol Systems SUN\*MUFS (Multi User File Server) AppleTalk compatible file server for Mac. SUN\*MUFS allows multiple users to access same file simultaneously, providing inexpensive solution to networking your Mac environment. SUN\*STREAK model features SCSI interface for MAC. SUN\*DISK networks Apple, IBM, Epson, DEC, Wang, etc. From 21M to 245M.

- Sunol Systems, Inc.  
1177 Quarry Lane  
Pleasanton, CA 94566  
(415) 484-3322

**PHOTOGRAPHY**

**PHOTOGRAPHY STUDIO MANAGER**

SilentPartner™ is the Omnis 3+ powerhouse of the Macintosh based studio. Completely directs all of the business needs of the professional photographer in a single entry, relational database. Quickly manage agencies, art directors, vendors, services and supplies from promotion to receivables. Unlimited storage and versatility. Limited demo available.

- SilentPartner™  
32 North Third Street  
Philadelphia, PA 19106  
(215) 829-0911

**PRINTER DRIVERS**

**PRINT CHOICE WITH MACINTOSH**

The Print-Link™ Software allows a variety of daisywheel and dot matrix printers to work with all Macintosh™ computers. Simple installation using "Chooser" or "Choose Printer". Supported printers too numerous to list. Unique spacing done automatically on daisywheels. You are not restricted to standard 10/12/15 cpi selection.

- GDT Softworks, Inc.  
2800 Douglas Road, Suite D  
Burnaby, B.C., Canada V5C 5B7  
Order (800) 663-MACC, Info (604) 291-9121

**PUBLIC DOMAIN SOFTWARE**

**AFFORDABLE MAC SOFTWARE**

An awesome collection of freeware, shareware and public domain software to select from. Only \$5 per disk. Disks are packed to the brim with updated versions. Library contains DAs, utilities, games, graphics, applications and business software. Two new disks added monthly. Send \$1 for membership, new catalog and bulletins.

- M.C.U.S.  
P.O. Box 6963  
San Jose, CA 95150

**MAC SOFTWARE FROM \$3.00**

The best, most complete public domain & shareware collection available, with over 300 disks. Everything from business programs to games and DAs. We offer the best after-the-sale service, with toll-free order lines, overnight & second-day delivery, technical support hotline. Send \$1 for 100-page catalog.

- Educomp  
2431 Oxford Street  
Cardiff, CA 92007  
(619) 942-3838

**200+ MAC PD DISKS**

Don't get ripped off! 400K or 800K disks for a \$3 copying charge per disk. One day turn around, free shipping and every 6th disk free. For a catalog with full program descriptions, send \$1.75, or a formatted disk with return postage to:

- CHA Services, Inc./Dept. A  
P.O. Box 622  
Lincoln, MA 01773  
(6170) 891-1981

**PUBLICATIONS**

**HINTS & TIPS!**

You'll find over a thousand hints and tips covering more than 100 of the most popular Mac applications in THE POWER USER'S MANUAL. Published by MacUser, spiral bound with over 175 pages, the Deluxe Edition of THE POWER USER'S MANUAL is available only by sending \$17.95 + \$2 s/h (payable to MacUser Publications, Inc.) to:

- Power User's Manual Offer  
MacUser Publications, Inc.  
831 Federal Road  
Brookfield, CT 06804

**SCSI HARD DISK SYSTEMS**

**YOUR MAC SOURCE**

Dataframe -20, 40, XP from SuperMac Technology. Rodime -20, 45, internal or external (Superfast - 28MS). We are your source for all the most popular Macintosh products, including software, diskettes, peripherals, Mac cases, books, networking and consulting. Call us today!

- Your Mac Source  
1480 Terrell Mill Road Suite 692  
Atlanta, GA 30067  
(404) 955-1704

**STAT ANALYSIS SOFTWARE**

**CLR NOVA**

Analysis of Variance program that can compute a 10-way design with 5 repeated measures, factors, unequal n and any number of observations. Marginal means, plots of interactions, simple effects, Tukey, Newman-Keuls, Scheffe, Duncan, specific contrasts. Full Mac interface. Analyze data from MacWrite, Excel, etc. \$75 + \$3 s/h. Not copy protected.

- Clear Lake Research  
5615 Morningside #127  
Houston, TX 77005  
(800) 835-2246 X199, in KS (800) 362-2421

**SYSTEM DESIGN**

**DESCRIPTION AND ANALYSIS TOOL**

Design is an intellectual tool for managing complexity. It is graphics-based, using structured techniques and hierarchical organization to assist in descriptions of all types of systems. In addition, relations between objects, text and pages are remembered and redrawn automatically, making frequent revisions easy. Design: \$200, demo: \$25. Shipping \$3.

- Meta Software Corporation  
55 Wheeler Street  
Cambridge, MA 02138  
(617) 576-6920

**WRITING TOOL**

**WRITER'S WORKSHOP**

Track ideas, manuscripts, set layouts, submissions, evaluate publisher's rates, enter one query letter, send to all publishers on file. Maintain bibliographic/reference notes. Keep accurate income/expense records. Create your own market types/reference categories. Complete documentation. Requires 512K, Plus XL and external/hard drive. \$99. Free brochures.

- Futuresoft System Design, Inc.  
P.O. Box 132  
New York, NY 10012-0132  
(212) 674-5195



by John C. Dvorak

## Copping A Feel

It was a gloomy day in microcomputerdom when Lotus filed suit over the look and feel of a couple of clone spreadsheets. They look too much like a rip-off said the boss man. We'll sue the daylights out of them, he said. In his hand he waved a document. Broderbund vs. Unison was written across the top.

The user community was aghast. The developers were aghast. The mothers of the developers were aghast. The lawyers were ecstatic. "Hooray for lawyers," they all shouted.

Sides were taken. Lines were drawn. One group busted up coke bottles to create knifelike weapons. "We gonna cut you," they said. The other side grabbed sticks and clubs. "We gonna pound you," was their cry. They slowly marched towards each other when someone shouted, "Do you jokers know what this is all about?"

"Shut up," screamed a pretender as he tossed a bottle.

Whoa, hey, halt, stop, attendez, cool it. Before this cheap drama continues, perhaps we should deal with a few facts.

First of all, look and feel predates software and is nothing new to software. The first use of the term is thought to be in the Roth Greeting Cards vs. United Card Co. (1970). Time and time again, the courts protected screen design as some sort of artistic work. The most conservative cloners such as Newstar Software's *WordStar* clone adamantly refused to make a perfect copy of the *WordStar* menu for fear of copyright violation. The legal precedent for this kind of protection was pounded home by the most noteworthy case, Atari vs. North American Phillips a few years ago. It was a suit over the use of the *Pac-Man* character and screen. The recent Broderbund vs. Unison case clearly outlines the rights of developers.

I hope everyone agrees that developers have SOME rights. Or do you think that it's okay to copy whatever you want?

Let's go over some of the facts and concepts used by the winning attorneys in the Broderbund case. I spoke with Attorney Claude Stern about the issues

raised by that suit. Here are some of the misconceptions I discovered (and sometimes harbored):

1. Misconception: If Lotus wins, then all hell will break loose and there will be a rash of lawsuits because of the bad precedent. Not necessarily. Copyright cases are all tried on an individual basis. The law is fairly specific and although both sides use as many old examples as possible to prove their argument, the individual merits are the real determinant. Besides that, Lotus might be sued for its *Symphony* outliner or who knows what. Suits could be flying at Lotus if they fly at all.

2. Misconception: Apple has been pushing its pull-down menus as proprietary and protected by patent or copyright. Apple should be sued by Xerox for stealing the idea from the Xerox Star! One can hope and dream until you find that Xerox mysteriously owns 2.5% of Apple's stock. Apparently there was a sweet deal made some time ago, thus giving Apple the rights (and the rights to sue) anyone using an Apple-like interface. Besides that, even if Apple violated someone's copyright and patent, it doesn't mean that YOU can, too!



3. Misconception: Well, why doesn't the copyright holder of *VisiCalc* sue Lotus! According to the Broderbund lawyer, there is nothing wrong with modifying or enhancing to the extent that it's no longer recognized as the work you are mimicking. The idea is to protect YOU from someone making an exact copy and selling it as a clone.

Aside: Little known fact dept. Attorneys take note. The reason that *VisiCalc* used the backlash key to get to the

command line was because Dan Bricklin has a genetically inherited bent little finger. "I hate shift and control keys because of my pinkies. They are hard to hit, so I avoid them at all costs in my programs," he told me. He had to fight like crazy with Bob Frankston to implement them in the final version of *VisiCalc*. There seems to be no rationale for anyone ELSE using the keys for anything, but I digress.

Okay, let's get off this boring path and get to the point. It seems that the whole idea of these suits is to see if there is a likelihood of confusion. In fact, that's what the lawyers call it: the likelihood of confusion test. Will a casual, ordinary and reasonable person (a member of the audience, by the way, who is likely to use the product, not just some jerk off the street) when looking at two products think that one has been negligently copied from the other? Do they look and feel the same? If so, then here comes the judge.

This is the key to these cases. If a myopic judge fails to pick the right so-called "ordinary observer" then the case will fall to pieces. Let's face it, if you put a New Guinea cannibal in front of a Cray-2 and a Mac Plus, he'd figure that they were copies of each other. His perspective isn't that of the typical or prospective audience. Remember that the prospective audience for the Broderbund *Print Shop* product is a naive user of dopey brainless software. I wouldn't be caught dead making a hokey greeting card with a dot-matrix printer. Spreadsheets are a different story.

Let's hope it will be a CPA with reasonable experience who is considered the prospective audience for the product. Any decent bean counter is so detail-oriented that he shouldn't see any similarity between *Lotus 1A* and *Lotus 2* let alone *VP Planner* or anything else. When I sit down and see the Paperback Software logo appear on the opening screen, I'm sure not fooled into thinking that I have a copy of *Lotus* in my machine.

So where does this leave the Mac community? With all the limitations of the Mac, most Mac users are nonplussed by the whole look and feel scene. "Our machines are so powerful, and there are so many ways to do things that we don't have to clone anything," the arrogant Mac owner says. The more honest ones put it differently, "What's the fuss? The whole scene proves that IBM owners are wimps. In the Mac community, there wouldn't be a clone like *VP Planner*. We'd just bootleg *Lotus* and give out copies free! Who's to sue?"

# Jasmine has the drive you're looking for...

Free with every Direct Drive  
**Laserspeed™**  
By THINK Technologies

80 MB  
\$1380<sup>00\*</sup>



This sleek, attractive case is only about 2" high and does not stick out behind the Mac.

Triple layered air filtration.

20 MB \$579<sup>00\*</sup>  
40 MB \$999<sup>00\*</sup>

## The Direct Drive 80™

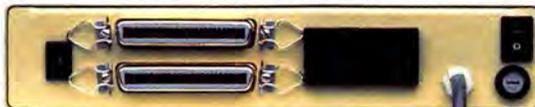
A true performance breakthrough! This sleek drive designed by Quantum blazes away with an amazing 26 millisecond access time. It features error correction and media defect handling to ensure long life and perfect performance. This drive is so intelligent it constantly scans and locates any defective sectors and locks them out... automatically. We're so confident about the superiority of this drive that we offer a full 2-year warranty for only \$100 additional. It fits into the same slim case as the others in the Direct Drive series.

Bail mounts to secure your cables to the Direct Drive.

2 SCSI connectors for daisy chaining.

2 switched AC outlets so you can surge protect your Mac and printer or modem.

Precision German made switches.



Our original SCSI select switch allows you to add another drive or tape backup with one push of a button. No longer do you have to open up a box to assign the SCSI port number.

3 Prong Power Cord.

External Fuse.



Removable panel underneath drive.

To add three or more SCSI devices, some small plugs called terminating resistors must be removed from the middle units. Jasmine designed this small panel so you never need to play technician and open our box.

Our ultra quiet fan pulls air through the drive and sends it out the bottom.

## The Direct Drive 20/40™

Our first product met with resounding success and we're still proud to put our name on it. The Direct Drive series satisfies your hunger for power and we know they fit your pocket book. Compare these drives to so called "high performance" drives costing twice as much. So, if you're a power user, dial direct and we'll get you running fast.

## Dial Direct and Save...

Jasmine Computer Systems is the fastest growing manufacturer of SCSI Drives for the Macintosh. By selling direct to you, our prices save you 40% or more.

## Exclusively Jasmine

- adds shock absorbers that protect your drive.
- adds two switched AC outlets at no extra charge.
- includes full 3-way electronic surge protection.
- features the original SCSI select switch that allows you to add another drive or tape backup with the push of a button.
- never requires you to open the box to daisy chain multiple drives.
- tests each drive with sophisticated real time diagnostics before shipping.
- ships your drive with a full public domain and Shareware library.
- 2' cable included with your purchase. Add \$8.50 for 6' cable.

## No SCSI Port? Try JasPort™ Jasmine's \$129 solution

When Apple added the Small Computer Systems Interface (SCSI) port to the Macintosh™ Plus, it allowed users access to high performance hard disks. Now the Macintosh 512 Enhanced can be SCSI upgraded with Jasmine's SCSI Port Adapter. You can purchase the JasPort Adapter, with any Direct Drive purchase for only \$129. No internal modifications, no soldering. In minutes your Macintosh 512e runs data at the speed of the Macintosh Plus!

## Technical Support

The Jasmine technical support line answers all your questions about using your drive—no matter how simple or technical. Every drive is shipped with a technical hotline number to answer your questions.

## Our prices include 30 Day Trial/Money Back Guarantee and Full One Year Warranty!

Before you buy, consider this—Others offer a much shorter standard warranty and force you to pay extra for a one-year warranty.

At Jasmine we stand behind our drives. If for any reason, you are not satisfied with any Direct Drive you may return it within 30 days for a full money back refund.

The Direct Drive series is so easy to service that in the event of a malfunction, we can promise a maximum 48 hour turnaround on any drive that needs repair. We will recover any data, if possible, in the event you have forgotten to back up your files.

## PC/TOPS™ Users

DOSPort SCSI PC board, only \$179 with purchase of any Direct Drive.

## To Order Call (415) 621-4339

### Direct Drive 20

\$579.00 Prepaid cash price

\$597.00 Visa/Master Card

### Direct Drive 40

\$999 Prepaid cash price

\$1029 Visa/Master Card

### Direct Drive 80

\$1380.00 Prepaid cash price

\$1422.00 Visa/Master Card



Air Freight \$20.00 CA residents add 6.5% Sales Tax C.O.D. orders add 5% + shipping. Same day rush shipments available at extra charge.



**Jasmine**  
COMPUTER SYSTEMS  
Quality you can afford

A Division of Jasmine Technologies Inc.  
555 De Haro Street San Francisco, CA 94107

\* Prices effective March 15, 1987. Direct Drive 20, Direct Drive 40, Direct Drive 80, JasPort, Jasmine, are trademarks of Jasmine Technologies Incorporated. Apple is a registered trademark of, and Macintosh is a trademark licensed to Apple Computer, Inc. TOPS is a registered trademark of Centram Systems West, Inc. Product specifications and prices are subject to change.

Please circle 53 on reader service card.

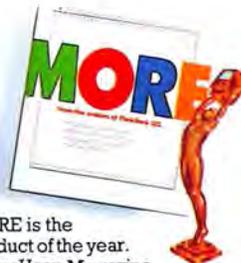
# Board Meeting Presentation

- **Presentation in one hour!**  
*Relax, take a deep breath*
- **No time for production department**  
*Don't Panic*
- **Need to get my ideas in order**  
*What can I do?*

**When you  
absolutely, positively  
have to have it.**

**In an hour.**

*Fast Desktop Presentations.*



MORE is the  
product of the year.  
-MacUser Magazine

To find out more, call 1-800-822-3700. In California call 1-800-443-4310.  
MORE is a trademark of Living Videotext, Inc., 117 Easy Street, Mountain View, CA 94043, 415/964-6300.

1-800-822-3700