

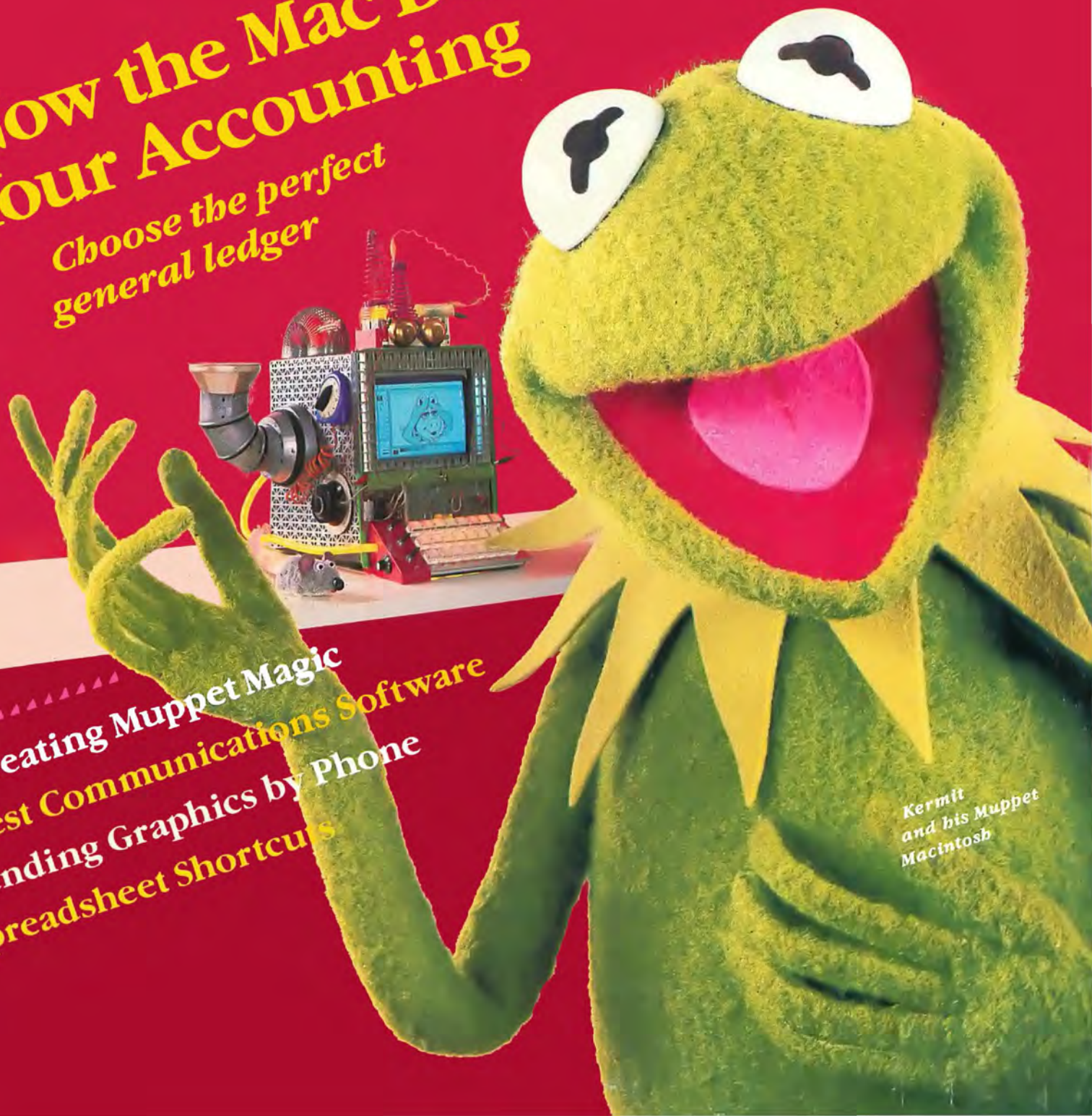
MACWORLD

December 1985 \$3.95
Canada \$4.95

The Macintosh Magazine

**Now the Mac Does
Your Accounting**
Choose the perfect
general ledger

Creating Muppet Magic
Best Communications Software
Sending Graphics by Phone
Spreadsheet Shortcuts



Kermit
and his Muppet
Macintosh

A • F O U R • S T A R • M E N U

DINNER AT EIGHT



Chefs of the nation's finest restaurants offer this ultimate collection of their favorite recipes, step by step—from shopping list to wine list!

Ah! Dinner at Eight. A two-disk system offering instant access to the delectable recipes of the country's finest restaurants. From New York City to San Francisco, master chefs reveal their secrets—with room for you to enter your own "house specials."

Select your menu from ours. Dinner at Eight lists hundreds of dishes, complete with preparation times. Select an entire menu and print a single shopping list of ingredients, automatically calculated for a single serving or any number of people. And may we suggest a companion wine with your meal?

Dinner at Eight. Bon appetit!

6300 LA CALMA DR./STE. 100/AUSTIN TX 78752/(512) 454-5004
A STARCOR PACKAGE

RUBICON
PUBLISHING

*First of the second generation hard disk drives for Macintosh.

You *need* a Macbottom™ hard disk drive to enhance the power and speed of your Macintosh.

Macbottom with ten plus megabytes of storage is the fastest external disk you can attach to your Macintosh. And more data storage no longer means sacrificing desk space. Macbottom is the only high capacity hard disk drive system that's two inches high and fits perfectly under your Macintosh. Since it weighs less than five pounds you can take it everywhere you take Mac. Macbottom and your Macintosh are a perfect match.

Macbottom . . . designed by Mac Users . . . for Mac Users!

- Built-in power fail detection protects valuable disk data.
- Automatic turnon feature requires no extra switches.
- Connects to either modem or printer port.
- Variable size volume allocation utilizes all available space efficiently.
- Backup program makes backup foolproof and fast!
- Printer spooler frees the Macintosh™ for more work.
- Works with 128k or 512k Macintosh.
- Warranted for six months—parts and labor.



Personal
Computer
Peripherals
Corporation

6204 Benjamin Road Tampa, FL 33614
1-800-MACBUTT (813) 884-3092



*As seen in San Francisco at the Macworld Exposition.

Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 223 on reader service card

MACWORLD

December 1985

The Macintosh™ Magazine

Getting Started

68 Take the Macro Shortcut

Danny Goodman

Part of what makes *Excel* excel is its unique macros. Find out what macros are and what they can do for your spreadsheets.

Review

74 Electronic Ledgers for the Macintosh

Steve Mann

You may never again use books to do the books. An accountant at a Big Eight accounting firm audits three general ledger programs for the Macintosh: *Back to Basics*, *Rags to Riches*, and *Symposium*.

82 Special Delivery

Gordon McComb

Videx's *Mail Center* lets you send mail or memos anywhere on an AppleTalk network with the click of a mouse.

86 No Static At All

Jim Heid

Communication without aggravation! Four "communicative" programs—*Smartcom II*, *inTouch*, *Red Ryder*, and *Telescope*—bring you simplicity and advanced features.

Hands On

96 The Mac Font Shuffle

Robert C. Eckhardt

Swap characters and symbols between fonts or redesign them altogether to get the font you want. It's easy, with Altsys's *FONTastic* font editor.

102 Graphics by Phone

Gordon McComb

Why restrict your electronic mail to text only? A step-by-step tutorial describes how to send *MacPaint* and *MacDraw* pictures by modem.

Photo/illustration credits

José Cruz, 75; John Goodman, 39; Henson Associates, Inc., cover; John Hersey, 97; Will Mosgrove, 102-103; Jeffery Newbury, 83; Bob Sacha, 106-111; George Steinmetz, 11, 41, 43, 47; Mick Wiggins, 86-87, 116, 125, 137.

Muppet™ characters are © 1985 Henson Associates, Inc., used by permission. All rights reserved.

Community

106 The Muppets Meet the Macintosh

Jeffrey S. Young

At Henson Associates, birthplace of the Muppets, technology and creativity go hand in puppet. Naturally, the Muppeteers' computer of choice is the Macintosh.

Columns

11 Don't Wear a Suit—Telecommute

David Bunnell

23 Letters

39 Macworld View

Edited by Herschel Schmedick

The Macintosh in the lab, Apple II-to-Mac conversions, MacroMind's CheapPaint, and other news and notes for the Macintosh community.

47 Get Info

Lon Poole

Macworld's tutor answers questions about *MacWrite* versions, printing display-sized *MacPaint* pictures, *MacPaint*-to-MBASIC conversions, and other Macintosh matters.

Departments

116 Macware Reviews

Edited by Erfert Nielson

Short but straight-shooting assessments of *FileMaker*, *Gato*, *QuickWord*, *ClickArt Effects*, *Ultima II*, and *MacEdge II*.

161 Open Window

Edited by Jim Heid

Speeding up *Jazz*, MBASIC keyboard shortcuts, and more reader-discovered tips for fine-tuning the Mac.

187 Macworld Gallery

Edited by Erfert Nielson

An exhibition of Macintosh graphics.

179 Macworld Directory

Indexes

184 Advertisers

185 Products

Forms proliferate in the modern office. They plague us with their number, but they streamline repetitive paperwork. Design forms to use on screen or on paper, without messy cutting and pasting, with FileMaker, a database manager reviewed in Macware Reviews, starting on page 116.

MACWORLD

David Bunnell

Publisher

J. Kelley Younger

Executive Editor

Kearney Rietmann

Editor

Editorial

Associate Editors: Daniel Farber,

Adrian Mello

Technical Editor: David Ushijima

Assistant Editors: J. E. Arcellana,

Erfert Nielson

Editorial Manager:

Janet McCandless

Senior Copy Editor:

Kathleen Christensen

Copy Editors: Nancy E. Dunn,

Wendy Weinberg

Editorial Assistant: Heidi Mitchell

Editorial Secretary: Eileen Drapiza

Research Assistant: David Turin

Contributing Editors:

Danny Goodman, Jim Heid,

Jeremy Joan Hewes, Nicholas Lavroff,

Gordon McComb, Lon Poole,

Jeffrey S. Young

Art

Associate Publisher:

Jacqueline Poitier

Designer: Marjorie Spiegelman

Art Director: Bruce Charonnat

Associate Designer: Dennis McLeod

Associate Art Director:

Christopher Burg

Design Associates: Leslie Barton,

Victoria Floyd

Assistant: Nan Cassidy

Production

Director: Herbert Linden

Senior Production Managers:

Frances Mann, Lee R. Trevino

Editorial Production Manager:

Ellyn L. Hamant

Production Editor: James Felici

Ad Traffic: Jayne Boyer

Telecommunicators: Mark L. Duran,

Susan M. Ford, Virginia Weir

Display Advertising Supervisor:

Cathy Miller

Assistant: Otto Waldorf

Research

Associate Publisher/Director:

Cheryl Woodard

Manager: Gary L. Rocchio

Assistant: Laura McCoy

Corporate Development

Special Projects: Jeffrey S. Glines

International: Karen Dowell

Assistant: Randi Glaser

Secretary: Gloria C. Sundin

Marketing and Advertising Sales

Associate Publisher/Director:

James E. Martin

Regional Advertising Manager

(Northern California, Texas):

Penny Rigby

Northwest/Midwest: Patricia Navone

East: Linda Holbrook

Southeast: Judy Sutter

Southern California/Southwest:

Michela O'Connor

Directory/1/6-Page Ads: Niki Stranz

Advertising Services Manager:

Ray Petsche

Assistant to the Director:

Loretta Giglione

Circulation

Director: Penny Ertelt

Director Single-Copy Sales:

George Clark

Subscription Manager: Gail Egbert

Single-Copy Sales: Bill Cox

Promotions Manager:

Laurie King

Fulfillment Coordinator:

Phil Semler

Administration

Director: Janet McGinnis

Accounting: Pat Murphy,

Ralph Ames

Facilities: Joseph Wollenweber

Personnel: Sarah Cox

Assistant to the President:

Christina W. Spence

Corporate

PC World Communications, Inc.

David Bunnell

Chairman

Bartlett R. Rhoades

President & CEO

Herbert Linden

Vice President

Jacqueline Poitier

Vice President

Cheryl Woodard

Vice President

Andrew Fluegelman

1943-1985

Founding Editor

December 1985

Volume 2, Number 13

Macworld™ (ISSN 0741-8647) is published monthly except semimonthly in November by PC World Communications, Inc., 555 De Haro St., San Francisco, CA 94107.

Subscription rates are \$30

for 12 issues, \$50 for 24 issues, and \$70 for 36 issues.

Foreign orders must be prepaid in U.S. funds with

additional postage. Add \$6 per year from Canada and

Mexico; add \$12 per year for surface mail or \$80 per

year for airmail from all other countries. For

subscriber service questions call toll-free 800/525-

0643 (in Colorado 303/447-9330) or write:

Subscriber Services, P.O. Box 54529, Boulder, CO

80322-4529. To place new orders, call 800/972-3100

(in Nebraska 402/895-7284). Application to mail at

Second Class pending at San Francisco.

POSTMASTER: Send address changes to Macworld,

P.O. Box 54529, Boulder, CO 80323-4529.

Editorial and business offices: 555 De Haro St., San

Francisco, CA 94107, 415/861-3861.

Macworld is a publication of PC World

Communications, Inc.

Macworld is an independent journal, not affiliated

in any way with Apple Computer, Inc.

Apple is a registered trademark of Apple Computer,

Inc. Macintosh is a trademark licensed to Apple

Computer, Inc. The following are trademarks of PC

World Communications, Inc.: Note Pad, Macware

Reviews, Open Window, Macworld Gallery, Macware

News, Macworld View.

Macworld is a member of the CW Communications/

Inc., group, the world's largest publisher of

computer-related information. The group publishes

57 computer publications in 20 major countries. Nine

million people read one or more of the group's

publications each month.

Printed in the United States of America.

Copyright ©1985 PC World Communications, Inc.

All rights reserved.



How Do Your Present Accounting Methods...



...Stack up to Ours?

Macs™... IS THE BETTER WAY! Its' a fact--you have to do your books. Manual accounting is repetitive, very detailed and time consuming. Macs™ (Macintosh® Accounting Control System) will perform those time consuming but nonetheless important tasks at the touch of a Mouse! Macs™, a powerful, feature rich business accounting program will keep track of overdue accounts, balance your books and maintain complete control of all your expenses in a fraction of the time!

Step-by-step instructions lead you through the modules with ease and confidence. Since it is simple to use and very easy to understand, no previous computer knowledge is required.

For a complete demonstration of Macs™, visit your local Macintosh® dealer and ask for Macs™, the accounting software... for the rest of us!

Macintosh is a registered trademark of Apple Computer Inc. Macs is a registered trademark of Atlantis Software Corp.



ATLANTIS
SOFTWARE

The Future Wave in Software. Today.

7601 North Federal Highway, Boca Raton, Florida, U.S.A. 33431

1305 Matheson Blvd., Mississauga, Ontario, Canada L4W 1R1

Circle 407 on reader service card

One company lets you animate, communicate and create

Hayden



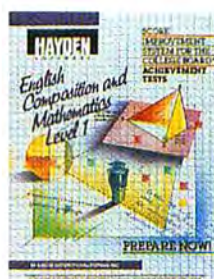
VideoWorks™...a full-featured animation system for presentations, training, storyboards, movies, or cartoons. Anyone can create high-quality animations with the VideoWorks system of tools, artwork, tutorials, and examples.

The Program disk includes the animation tools for both frame-by-frame and real-time animation; the Art disk features a wide assortment of pictures to incorporate into your production; the Movies disk illustrates how VideoWorks can enliven even the most moribund presentation. **Suggested List Price \$99.95**

The Hayden Score Improvement Systems™...everything you need to obtain your highest possible scores on the SAT™, Achievement Tests™, and Graduate Record Exams™.



For the first time, a computer-aided instruction system, developed and tested in schools across the country, significantly enhances the learning process needed to improve scores. The Hayden System displays all material on the screen - no need for constant referrals to a manual



or text. Simulated tests scored on the 800 scale indicate how you would have done on the actual exams.

Review modules provide tutorials, drills and analysis for each area. Optional "tutormode" sections provide a complete explanation of the answers and



the best way to arrive at them. Definitions and strategies sections suggest the best ways to attack problems in each area. **Suggested List Price: Hayden Score Improvement System for the SAT \$99.95; for the Achievement Tests \$99.95; for the GRE \$129.95**



Art Grabber™ with Body Shop...an innovative desk accessory enables the direct transfer of MacPaint™ images. If you have ever tried to bring a MacPaint image into any other application, you have experienced long delays. Life is too short. Get Art Grabber and transfer MacPaint images fast. Use the art disk and desk accessory to spruce up letters, illustrate reports, create posters, or supply animation subjects. **Suggested List Price \$49.95**



MusicWorks™...creating, editing, and listening to musical compositions is as easy as a sweep and click of the mouse. Compose with either conventional music notation or a "player-piano" grid. Four voices spanning eight and a half octaves, and eight instruments are available. Over forty pieces from Three Blind Mice to Beethoven's Symphony #5 are included for you to play or rearrange. **Suggested List Price \$79.95**



If you like Boggle®, you'll love **WORD CHALLENGE® II**. Compete against LEXX in a Boggle-like battle to find as many words as possible. Choose from 26 levels of difficulty, three board sizes and five scoring options. All words are checked against a 90,000 word dictionary. **Suggested List Price \$39.95**



PERPLEX™...if you like Scrabble®, you'll love **PERPLEX®**. **PERPLEX** brings you the challenge of Scrabble with the Macintosh's ease of use. All entries are checked against a 90,000 word dictionary. Customize your game. Choose playing level and board size, put five, six or seven letters in your rack, and assign bonus squares. **Suggested List Price \$39.95**

educate, decorate, checkmate, all on your Macintosh.TM Software.



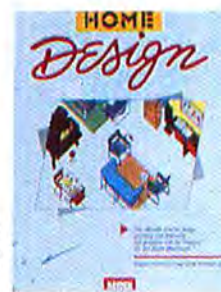
Sargon III...the ultimate in computer chess. Play chess the way you like to play...has nine levels of difficulty and an opening library of over 68,000 moves. Call up 107 of the greatest games in chess history or use Sargon to analyze chess problems. **Suggested List Price \$49.95**



Hayden: Speller™...a spelling verification system for your MacWrite™ and Microsoft Word™ documents. Use Speller's main dictionary - which contains 97% of the most-used words in the English language - or add your own "personal dictionaries." Need to know how many times you've used a word? Speller will print out an alphabetized word frequency list. **Suggested List Price \$79.95**



"I Know It's Here Somewhere!™"...your personal filing system. Designed as a filing system, "I Know It's Here Somewhere!" puts information at your fingertips either at home or in business. You can create your own form layout, sort and search for information using multiple criteria and have up to five different files open at once. Sample forms included. **Suggested List Price \$59.95**



Home Design™...interior design planning tool featuring 3-D graphics and Art Grabber™. Now you can create the room of your dreams.

Home design consists of three disks containing over 800 3-D images (furniture, windows, doors, etc.) for use with MacPaint.

And, to make the program even easier to use, Home Design includes Art Grabber. **Suggested List Price \$79.95**

Turbo Turtle™...helps your child learn the LOGO language.



Programming with Turbo is an exciting and creative process of discovery for children of all ages and abilities. As they instruct the turtle to appear, disappear, move, turn, and draw designs, they are developing logical thinking and problem-solving skills. **Suggested List Price \$59.95**

Computer Novel Construction Set™...a complete toolkit for creating your own interactive text adventures.

No programming skills are required. Create and connect rooms with a click of your mouse. Devise your own objects, characters, and timed events - then indicate their interrelations. Since you define the vocabulary for the game, you can make it difficult, fun, humorous, or even educational. Challenge your friends to play games you create. **Suggested List Price \$49.95**



DaVinci Buildings™, Landscapes™, & Interiors™ architectural design at an affordable price.

Works with your MacPaint program and contains images drawn to scale by professional artists and architects. Whether you're an amateur or a designer by trade, each of the modules provides you with the tools and the means to create professional-looking plans. **Suggested List Price \$49.95 each**



These and other fine Macintosh software products are available at your local software dealer, or contact Hayden Software: 650 Suffolk St., Lowell, MA 01854, or call 800-343-1218

HAYDEN
SOFTWARE

registered trademarks of the College Entrance Examination Board. This software has been developed by Arrow Instructional Systems, Inc. for Hayden Software Company, Inc., which bears sole responsibility for its contents. GRE is a registered trademark of the Educational Testing Service. This software has been developed by Instructional Systems for Hayden Software Company, Inc., which bears sole responsibility for its contents.

Circle 431 on reader service card

Microsoft Excel. For those who

You may speak more softly now.

For we are delivering into the hands of business, a very big stick.

Microsoft® Excel for the Macintosh™. A financial analysis tool of unprecedented power.

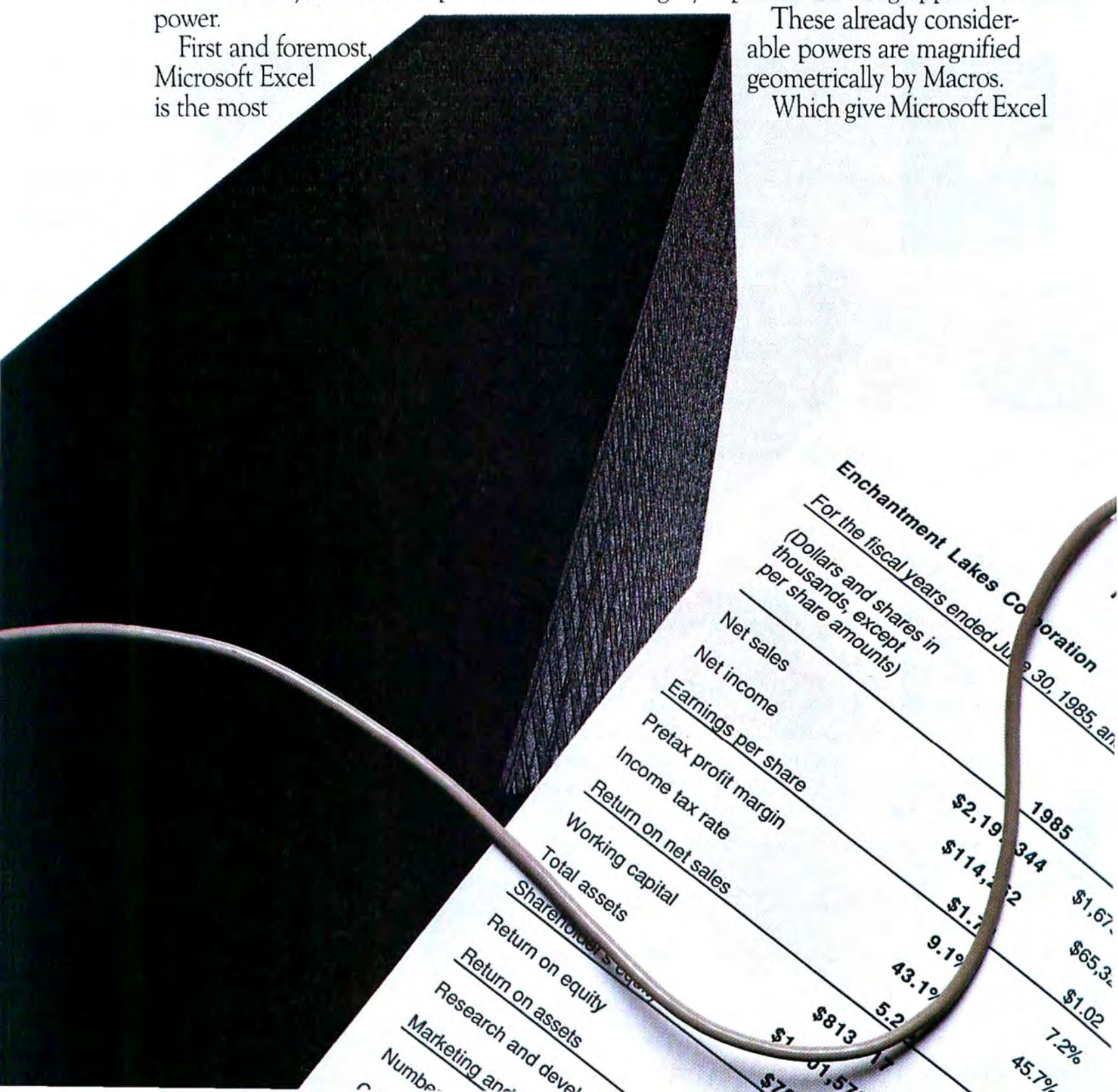
First and foremost, Microsoft Excel is the most

formidable spreadsheet ever to run on a personal computer.

A spreadsheet which is in turn linked with an extraordinary graphics program and a highly capable data filing application.

These already considerable powers are magnified geometrically by Macros.

Which give Microsoft Excel



Enchantment Lakes Corporation
For the fiscal years ended June 30, 1985, and 1984
(Dollars and shares in thousands, except per share amounts)

	1985	1984
Net sales	\$2,193,344	\$1,673,344
Net income	\$114,372	\$65,344
Earnings per share	\$1.72	\$1.02
Pretax profit margin	9.1%	7.2%
Income tax rate	43.1%	45.7%
Return on net sales	5.2%	4.0%
Working capital	\$813,171	\$710,571
Total assets	\$1,015,571	\$813,171
Shareholders' equity	\$813,171	\$710,571
Return on equity	21.1%	17.1%
Return on assets	17.1%	14.1%
Research and development	\$1,015,571	\$813,171
Marketing and sales	\$813,171	\$710,571
Number of shares outstanding	124,640	162,344

appreciate the uses of power.

the capacity to learn your most complex routines. And activate them with a single keystroke.

Yet for all its ability, Microsoft Excel is simple to learn, simple to use. No complex commands to memorize. No classes to take. The only thing complicated about Microsoft Excel is the problems it can solve.

See your Microsoft dealer for a demon-

stration of the powers of Microsoft Excel.

In the right hands, a potent weapon, indeed, in the cause of commerce.

We trust you will use it responsibly.

Microsoft Excel

The rest are history.

For the name of your nearest Microsoft dealer, call (800) 426-9400. In Washington State and Alaska, call (206) 828-8088. In Canada, (416) 673-7638.

Microsoft is a registered trademark of Microsoft Corporation.
Macintosh is a trademark licensed to Apple Computer Inc.



Special Highlights

30, 1984

84

Change

31%

75%

Introducing MacWizardry



SOME THINK IT'S FAR MORE THAN A GAME

Wizardry — the finest family computer game you can buy. And now the classic first scenario, *Proving Grounds of the Mad Overlord* has been completely redesigned for the Macintosh.

The new Mac Wizardry is ready to work its very special magic on your imagination. Find out why hundreds of thousands of fans have made Wizardry the most popular computer fantasy role-playing game of all time.

We invite you and your family to enter this fascinating, immensely rewarding world. Discover for yourself if Wizardry is just a game. Or far more.

• Available at all Fine Computer Stores. PRICE: \$59.95

• LOOK FOR THE DRAGON SYMBOL OF WIZARDRY. PROMISE OF EXCELLENCE.

SIR-TECH
SOFTWARE INC.

8 MAIN STREET
OGDENSBURG, N.Y. 13669
(315) 393-6633

• Macintosh is a registered trademark of Apple Computer, Inc.
• Wizardry is a registered trademark of Sir-Tech Software, Inc.

Circle 372 on reader service card

Don't Wear a Suit— Telecommute

*For some of us, telecommunications
could make car pools, mass transit, and paid
vacations obsolete*



We have to break through the idea that an executive is a person who drives 33 miles a day to a central location where hundreds of thousands of people work in cubicles and unless you go there, nothing gets done.

—Alvin Toffler

A technological revolution is supposed to happen overnight, but it usually evolves at a snail's pace until it suddenly becomes a fait accompli. For instance, automobiles, televisions, and even VCRs experienced slow starts; then, voilà! they were everywhere.

Telecommunications is no exception to this pattern. Marcia Kelly, president of Electronic Services Unlimited, a telecommunications consulting group, estimates that over five million people now telecommunicate to work—at least part time. Over 100,000 are participating in formal telecommuting programs in some 400 companies, including giants such as Pacific Bell, IBM, ComputerLand, and Hewlett-Packard.

In 1973, when Jack Nilles of the University of Southern California's Center for New Futures

Research coined the term *telecommunications*, a new chapter was added to Sir Thomas More's *Utopia*. Predictions abounded that soon we'd all be sitting out in the sun and fresh air, reading our office mail and doing our business plans via telephone links to the company's central computer.

The dream is coming true, and people are telecommuting—but from cars, hotel rooms, and satellite offices. When implemented correctly, telecommunications cuts costs and increases productivity. Employees eliminate commuting time and expenses, and they work more efficiently without the countless interruptions that inevitably occur in the office. Companies experimenting with telecommuting experience less turnover and find that their employees are healthier. These corporations are also able to hire disabled or housebound people without having to expand or customize office space.

Despite all its virtues, telecommunications isn't for everyone. Some people just aren't self-starters and require the motivation of the office environment to work. Others fear they might lose track of company politics and thus opportunities for advancement. To

compensate for such alienation and isolation, Electronic Services Unlimited recommends that all employees go into the office once or twice a week.

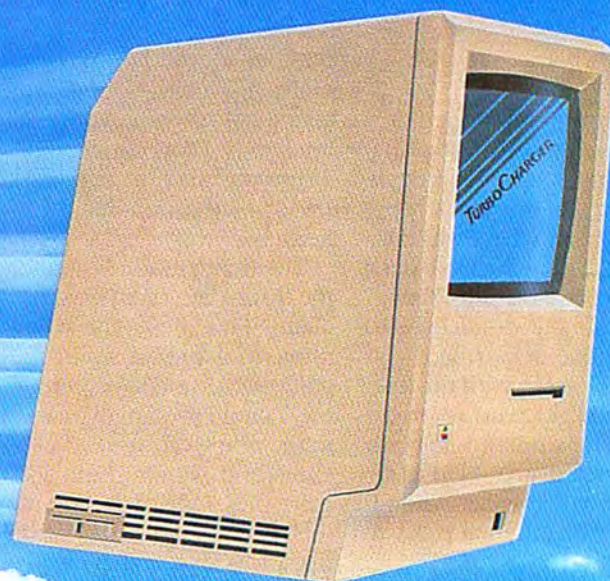
The luxury of going to the office, however, isn't always possible. I recently had the opportunity to put hard-core telecommuting to the test when I went on an 11-day business trip to Miami; Washington, D.C.; and New York. My staff in San Francisco had received several test subscriptions to AppleLink, the on-line network that Apple Computer developed with General Electric's GEISCO for Apple dealers. We were curious to see how well we could communicate without resorting to Federal Express. Since my Macintosh is much easier to tote around than my Compaq Deskpro, I packed up my Mac and a Hayes 1200B modem and hit the road.

After arriving in Miami for an electronics conference, I encountered my first problem: the

(continues on page 14)

Make Your
Macintosh
Faster.
Guaranteed.





Now you can make your Macintosh 512 up to 1,000% faster for less than \$100. TurboCharger™ software improves the performance of your Macintosh 512 dramatically. Common tasks such as searching a database or loading a program often happen 300% faster, with peak performance over 1,000% faster. Guaranteed.†

TurboCharger is a "disk cache" system, it makes your Macintosh faster by speeding disk access. TurboCharger works automatically as you use your Macintosh, analyzing disk usage to increase performance.

TurboCharger will make your Macintosh into a more effective tool. Now you can return to the desktop 300% faster, load programs 400% faster, re-organize your database 1200% faster. In fact, TurboCharger works automatically with all of your Macintosh software. Guaranteed.

**Make your Macintosh faster now.
Ask for TurboCharger™ at your local dealer, or
call us at (212) 532-8720**

TurboCharger is the only software which gives you all these features:

- TurboCharger is often 300% faster with peak performance over 1000% faster
- TurboCharger works automatically
- TurboCharger works with copy-protected software
- Works with popular software including Microsoft Multiplan, Chart, Word, Mac Write, Mac Paint, pfs:File, pfs:Report, Ensemble, Omnis 2, Mac Lion, Consulair C, Aztec C, and many others††
- Uses as little as 32K of RAM
- Adjust TurboCharger memory size as needed
- Works with large programs like Lotus' Jazz
- Simple one-time-only installation
- Optional disk write buffering
- No extra steps at startup time
- Resize buffer without shutting down the Macintosh
- On-line (in program) help
- Not copy-protected (you may backup the program)
- Shipping since February '85
- **30 Day Money Back Guarantee†**

† We Guarantee that TurboCharger will work as advertised. Try it. If you feel that it does not live up to our advertising, return it for a complete refund. This offer is available through participating dealers only.

†† Multiplan, Chart, and Word are Trademarks of Microsoft Corp. pfs:File and pfs:Report are trademarks of Software Publishing Corp. Jazz is a trademark of Lotus Development Corp. Ensemble is a trademark of Hayden Software. Omnis 2 is a trademark of Organizational Software Corp. Mac Lion is a trademark of Computer Software Designs Inc. Aztec C is a trademark of Marx.

NEVINS
MICROSYSTEMS INC.
250 FIFTH AVENUE
NEW YORK, NY 10001
212 - 532 - 8720



(continued from page 11)

phone in my hotel room didn't have a modular jack. I couldn't connect my modem. Although convinced that the concierge wouldn't know what I was talking about, I rang the front desk. To my surprise he said, "One moment, sir, I'll connect you to the telephone department."

After speaking with the telephone manager, who assured me that a new jack would be installed immediately, I left to attend a 2-hour seminar. When I returned, the modular jack was in place.

With the deliberation of a surgeon about to make the first cut, I assembled my tools. My Mac running, modem connected, and software loaded, I clicked the phone icon. The reassuring sound of the Hayes dialing the local AppleLink access

number soothed my nerves. One ring, click, and static—the sound of two computers shaking hands. I was connected. There was mail in my in-basket. I was in telecommunicator's heaven.

The honeymoon lasted for the three days that I was in Miami. I had it all. The swimming pool, the sunshine, the golf course, and telecommuting. I could send mail to anyone in the home office, read messages, and even transmit and receive files. One of my contractors sent a *ThinkTank* outline that I was able to download and review. We even used a combination of the AppleLink system and our Tymshare network to convert a *WordStar* file to *MacWrite*. At one point, I communicated with an associate

also away on business. Neither of us knew where the other was, and had we been at home, we probably wouldn't have connected—but on line we made a great team.

The bubble burst when I left Miami. I called the hotel in Washington, D.C., to verify that the rooms had modular jacks, but when I checked in and set up my instant office, I couldn't connect with the AppleLink network. Every time I dialed the access number, the phone went dead after the connect signal.

I was devastated. The thought of having to rely once again on the telephone and Federal Express was truly depressing. I never did manage to log on during my sojourn at the nation's capital.

In New York, my room didn't have a modular jack, and the hotel manager was less helpful

than the one in Miami. I finally managed to get a new jack installed—only to find that the line went dead as it had in Washington. Desperate for one more hit of telecommunications, I played my last card: I had the hotel install a dedicated line in my room—for a mere \$125—on the chance that the switchboard was causing the problem.

It didn't work.

Back in San Francisco, I relayed my tale of three cities to my colleagues. The consensus was that hotel telephone lines are too weak to sustain telecommunications. As the "dedicated line" in New York still went through the hotel switchboard, the theory made sense. But when I attempted to log on

(continues on page 18)

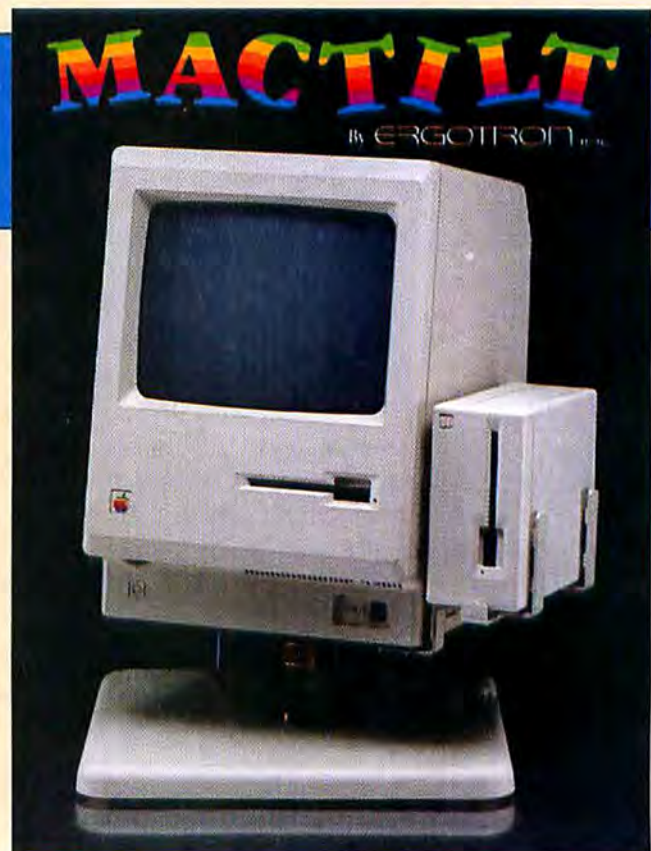
AN ERGONOMIC WORKSTATION FOR MACINTOSH[®] THAT MEANS BUSINESS

Ergotron's new MacTilt[™] is the professional ergonomic workstation that provides the utmost in operator flexibility and viewing comfort. With a silky-smooth, one hand motion, your Macintosh can be adjusted to relieve operator stress, ease neck, back and eye strain, and increase productivity. A special bracket is provided to mount your external disk drive providing additional convenience and savings in desk space. The MacTilt by Ergotron[®] elevates the Macintosh approximately 4", and provides 30° tilt/360° rotation at the touch of a finger for only \$99.95. If you would like to receive more information on this exciting new product visit your Apple Computer Dealer or contact Ergotron at (800) 328-9839.

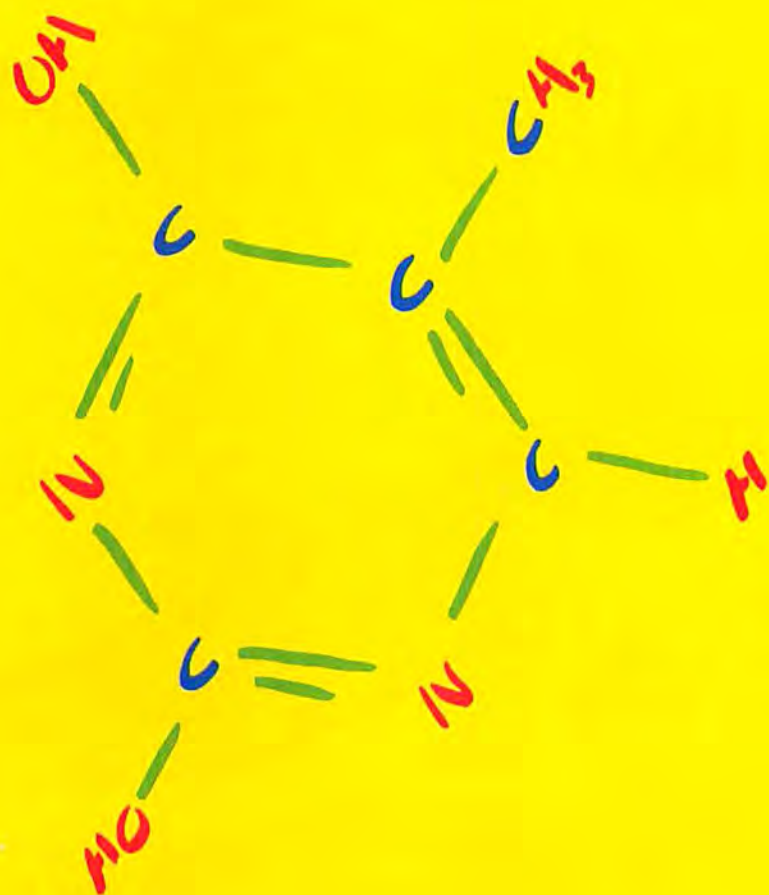
ERGOTRON inc.

P.O. Box 17013 • Minneapolis, MN, USA 55417

Ergotron is a registered trademark of Ergotron, Inc. MacTilt is a trademark of Ergotron, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.



Circle 83 on reader service card



MacChemistry™

Now! Desktop Technology Converts to Lab Bench Capabilities.

What happens when you combine the desktop technology of a Macintosh™ with software written specifically for chemical applications? You get MacChemistry: four hard working, easy-to-use programs designed to enhance your chemistry reports and experiments. MacChemistry includes:

- ▲ Templates, a rich source of carefully delineated illustrations—everything from crystal lattices to quick-fit glassware—that will give your reports a polished, professional look
- ▲ ChemLab, a specialized lab set that provides acids and bases for multiple and complex “on-line” titration experiments
- ▲ NEST, a Nifty Electronic Storage Tray that lets you create your own annotated indexing system
- ▲ PLUS a quick-reference Periodic Table, with room for your notes

Intrinsic to MacChemistry is an advanced ChemFont feature with a full array of chemical signs and symbols. If you're involved with chemistry at any level,

MacChemistry is a powerful productivity tool you'll want to experiment with.

The price for the complete four-part MacChemistry package is just \$145 (postage paid in the continental U.S.) California residents please add 7% sales tax.

To order by phone, M.C. or VISA, call (818) 355-7114.

To order by mail, credit card or check, write: Fortnum Software, 31 W. Sierra Madre Blvd., Sierra Madre, CA 91024.



MacChemistry is a trademark of Southern Software. Macintosh is a trademark of Apple Computer, Inc. © 1984 Southern Software.

Clean up your Mac!

If you're serious about graphics, it's time you stopped mousing around. And you can. With MacTablet™, the peripheral that turns

your Macintosh™ into a graphics workstation.

Like most people, you bought your Mac for its graphics capability. But you've probably found that, while a mouse is fine for pointing, drawing with one is like painting with a bar of soap. It has its limitations.

With MacTablet though, there **are** no limits. It's a professional quality graphics tablet. Not just an overpriced mouse, like tablets that plug into the mouse port. MacTablet is as easy to use as putting pen to paper. Install it as a desk accessory (no need to unplug the mouse), and you're ready to go.

Because MacTablet is compatible with all Macintosh software. What's more, it's the lowest priced tablet on the market.

MacTablet's stylus gives you fingertip control. Its electromagnetic technology means high resolution and absolute precision. So whether you're an artist, designer, engineer, architect

Circle 244 on reader service card

or you just want to perk up presentations, MacTablet makes the art work better, easier, and faster.

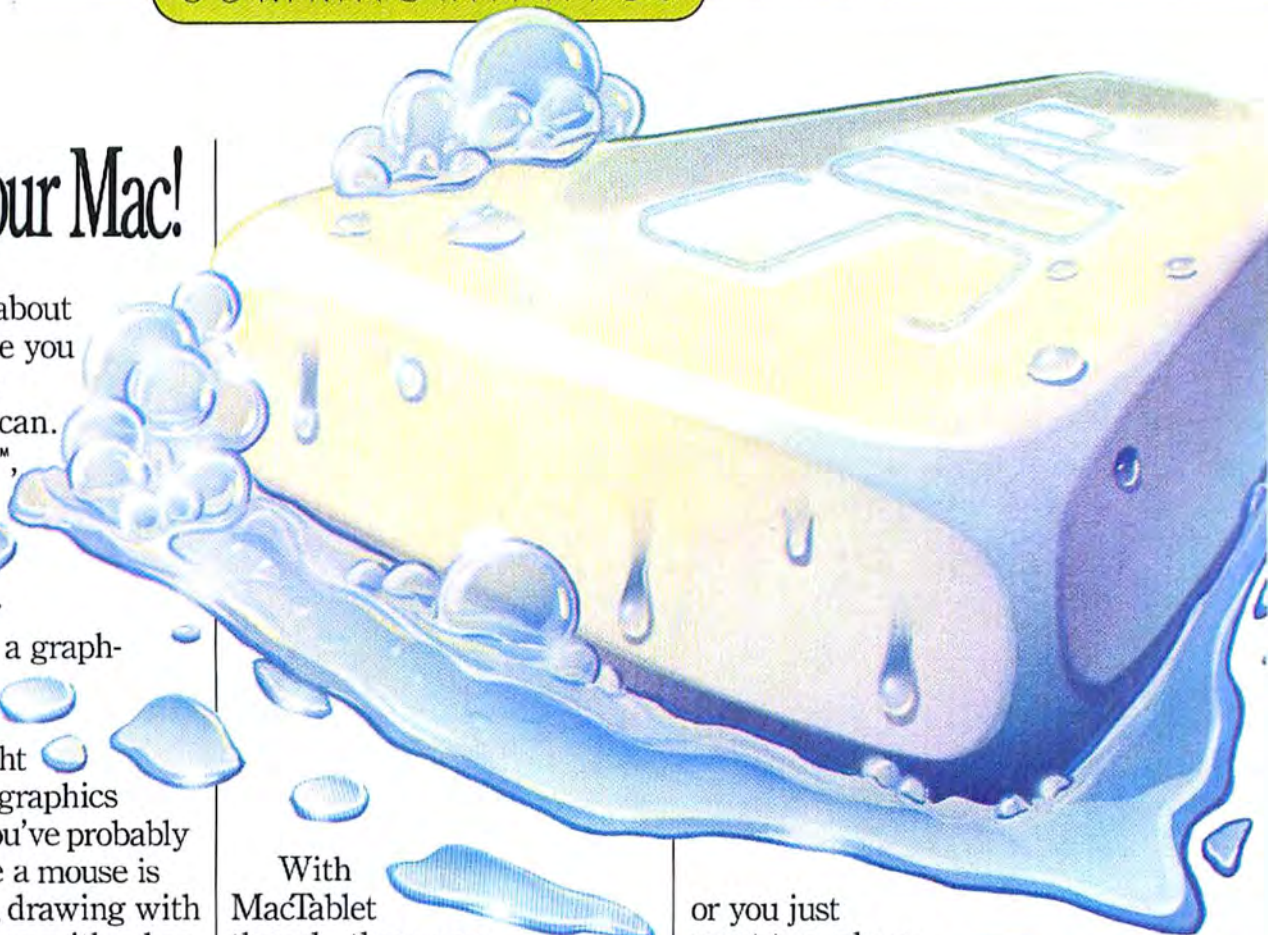
MacTablet from Summagraphics. The results will dazzle you. The price will astound you.

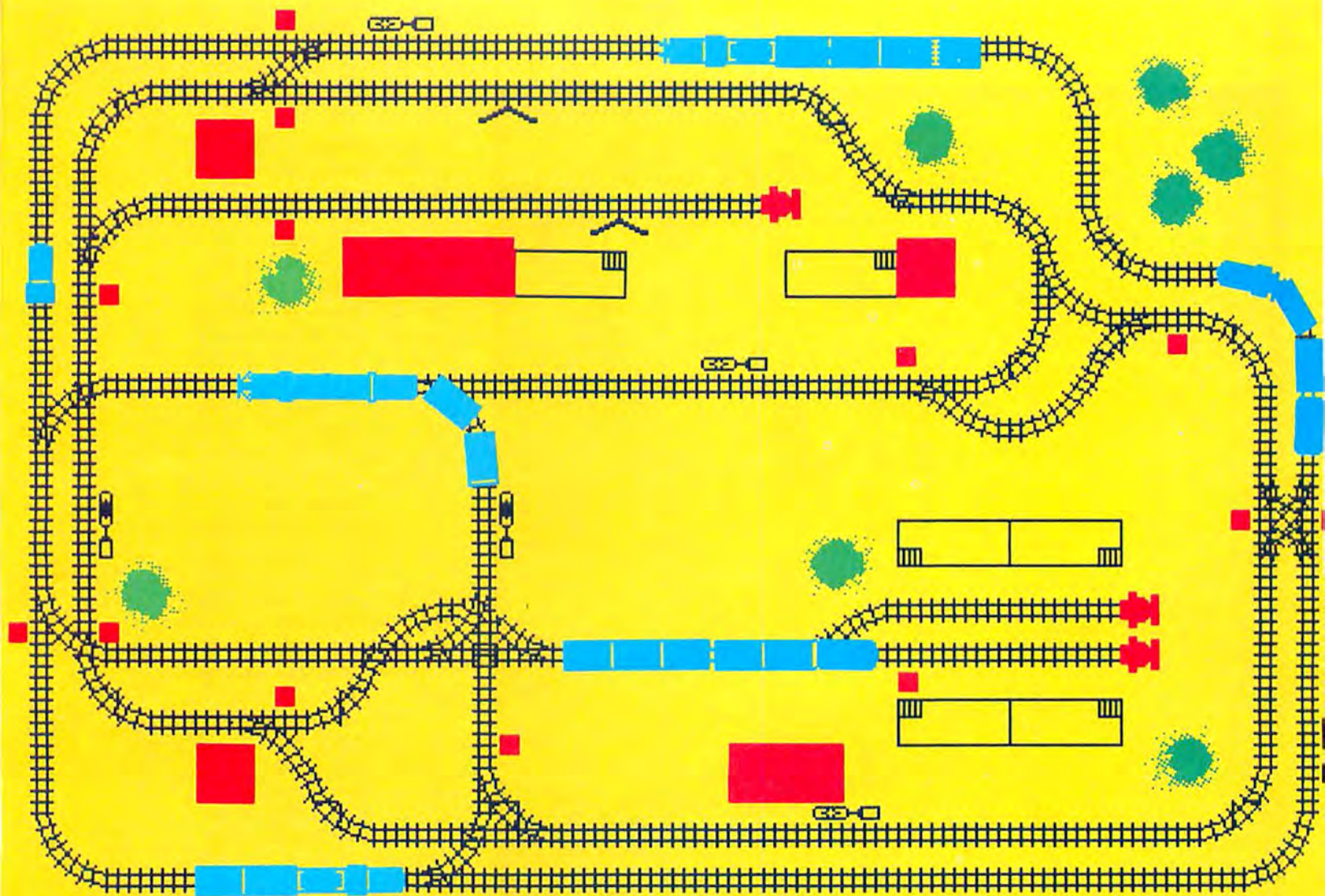
To see it in action, visit a dealer near you. For information, call Summagraphics Corporation, (203) 384-1344.

Summagraphics
CORPORATION
Draw on our experience.™

MacTablet is a trademark of Summagraphics Corporation.

Macintosh is a trademark licensed to Apple Computers, Inc.





Pardon me, boys, is this the Macnooga Choo-Choo?™

Yes! It's a super true to life electronic train set!

If you really want to let off steam with your Macintosh Computer, don't miss the MacNooga Choo-Choo. This whole new kind of model railroad lets you build elaborate train systems right on your screen, then bring them to life with the click of a switch.

Express Yourself.

MacNooga Choo-Choo provides a dazzling depot of realistic icons you can quickly assemble in an infinite number of permutations. Layer tracks in complex curves, then send cars careening around corners. Cause havoc-wrecking crashes. Or harrowing near-misses. Add station houses, bridges and trees. All the bells and whistles are

built-in, so unlike other model train sets, there are no expensive extras to buy.

Working On Your Railroad

Using the mouse, or keyboard, you simply pick up desired images, then place them on a grid.



TRACKS: Pieces can be flipped, rotated, added singly or in a series.



LAYERED TRACK: Place pieces on top of each other for double tracks or crossovers.



TERRAIN: Trees, buildings, all the authentic model train set extras.



ROLLING STOCK: String engines, cars and cabooses together any way you want.

Timed For Holiday Arrivals

At just \$39.00, the MacNooga Choo-Choo makes a great gift for your favorite Macintosh Engineer, or give yourself a break!

Ask for the MacNooga Choo-Choo at your local software dealer, or call us to order direct: 818-355-7114.

To order by mail, credit card or check, write: Fortnum Software, 31 W. Sierra Madre Blvd., Sierra Madre, CA 91024.

Postage paid in the continental U.S. California residents please add 7% sales tax.

But make tracks now! Supplies of this special program are limited!



MacNooga Choo-Choo is a trademark of Southern Software. Macintosh is a trademark of Apple Computer, Inc. © 1984 Southern Software.

(continued from page 14)

at home and finally read my mail, the phone again went dead.

After fooling around with my equipment for a while, I discovered my disk was faulty. With a borrowed copy of AppleLink software, I logged on at the first ring, and the system has been working ever since.

I'll never know if the hotel lines in Washington and New York were too weak, or if something happened to my disk on the plane from Miami. But I do know that telecommuting is great—when it works. I found myself sending long, philosophical messages to staffers I hardly impart ten words to under normal circumstances. And monitoring a project through teleconferencing beats roundtable discussions any day.

Yes, telecommunications is wonderful. But if you or your company is interested in participating in this new-age phenomenon, you'd be well advised to consult with the experts. Electronic Services Unlimited has helped many companies get connected and avoid mistakes. Give them a call—it could be the start of something big. □

Electronic Services Unlimited
142 W. 24th St.
New York, NY 10011
212/206-8272



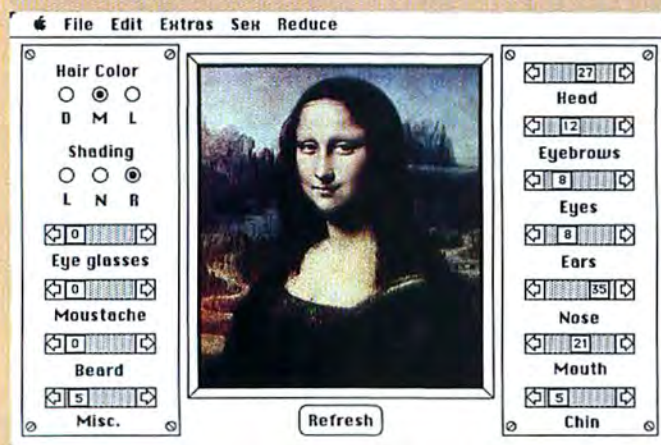
MusicType 2.0
the music typewriter utility

simply,
the best way
to notate music
on a personal computer.

Shaherazam

P.O. Box 26731 Milwaukee, WI 53226 414/442-7503

Will you be able to create a masterpiece with Mac-a-Mug?



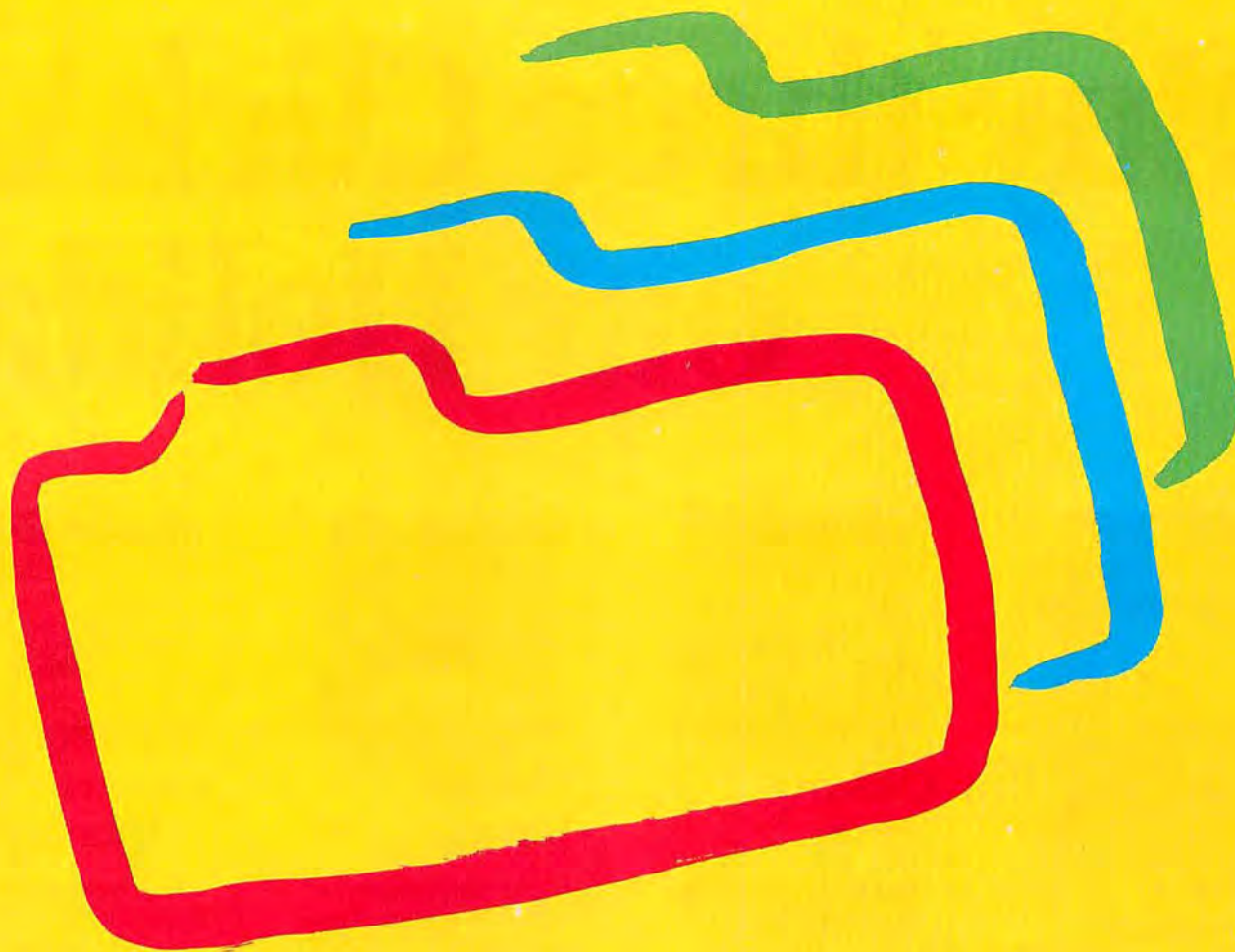
Probably not.
But you can create thousands of interesting faces with a click of a scroll bar! Its easy and anyone can do it. With hundreds of features, the possibilities are endless!

Mac-a-Mug
"the people processor"

Shaherazam

P.O. Box 26731 Milwaukee, WI 53226 414/442-7503

Circle 35 on reader service card



MacNest™

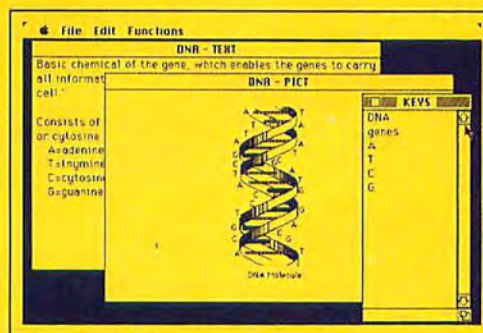
Now! A Double-Screen Scrapbook with Instant Indexing.

MacNest is a Nifty Electronic Storage Tray that lets you pull or place information using a straightforward filing system. It features two editable screen windows—one for graphics from MacPaint™ or MacDraw™; one for text from MacWrite™—as well as keys you can label any way you want, to cut your information storage and retrieval time in half.

To locate an illustration with MacNest, just type in its given name. You can tap stored text from MacWrite just as easily.

The documents you create with MacNest can be stored completely, or in part, and later amended or removed. You can use a single item Clipboard,

the same as you would with MacPaint. Or a multiple item Clipboard, to hold both pictures and text.



Find and pull information in a flash.

The result is a fluid interchange between your source and output docu-

ments, with files that can easily be updated, partially or completely, to keep your data current, handy and modular.

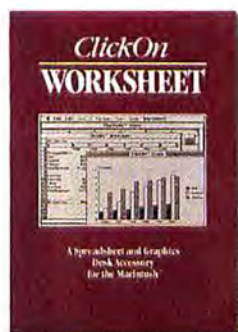
MacNest is recommended for use with Switcher™ and the 1024K Macintosh™ and it's available to enhance your applications now. The price is just \$49 (postage paid in the continental U.S.) California residents please add 7% sales tax.

To order by phone, M.C. or VISA, call (818) 355-7114. To order by mail, credit card or check, write: Fortnum Software, 31 W. Sierra Madre Blvd., Sierra Madre, California 91024.



MacNest is a trademark of Southern Software. MacPaint, MacDraw, MacWrite, Macintosh and Switcher are tradenames of Apple Computer, Inc. © 1985 Southern Software.

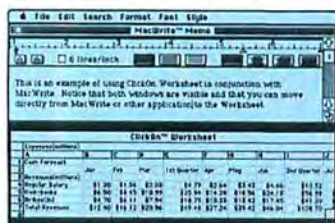
Buy three ClickArt™ our Holiday



ClickOn™ Worksheet

New Power for your Desktop

ClickOn Worksheet is a desk accessory that adds a spreadsheet and grapher to any application. The 50 row × 20 column spreadsheet includes features such as variable column widths, absolute/relative addressing, built-in financial calculations (like net present value, compounding, future value) and logical operators.



Ready-made Solutions

To make your job even easier, we've included a dozen popular applications templates.

Requirements:

128k or 512k Macintosh™

ClickOn Worksheet

Price: \$79.95



ClickArt Effects

ClickArt Effects Picks Up Where MacPaint Left Off

Now you can produce the special effects you've always wanted in MacPaint. Rotate your words or pictures a few degrees at a time. Or slant them. Or give them perspective through a vanishing point. Or even use a distortion box to create the perception of a twist. All with four new tools called ClickArt Effects.



Works Right Within MacPaint

Effects gives you four new tools—rotate, slant, distort and perspective—which work directly from within MacPaint.

ClickArt Effects

Price: \$49.95



ClickArt Letters

ClickArt Letters contains 24 high quality typefaces in large point sizes (24, 36, 48 and 72 point) that make your headlines and overhead transparencies come alive. Fifteen of the typefaces are installable fonts. Typefaces up to two inches high are included in MacPaint files.



ClickArt Letters

Price: \$49.95



ClickArt Publications

ClickArt Publications is a collection of images specifically designed for creating newsletters, flyers and invitations. It includes two- and three-column layout guides with illustrated headlines (like "Letters to the Editor," "On Vacation," "Party," "Thanks" and "Bon Voyage") sized to fit the layouts. It also contains cartoons, maps of the USA and Europe, illustrated alphabets, and much more.

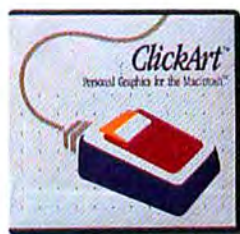


ClickArt Publications

Price: \$49.95

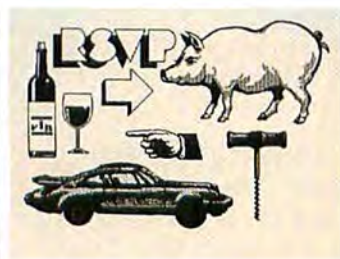
ClickArt and ClickOn are trademarks of T/Maker Company. Macintosh is a trademark licensed to Apple Computer, Inc. MacPaint, MacWrite and MacDraw are trademarks of Apple Computer, Inc.

packages and get images free



ClickArt Personal Graphics

Personal Graphics is a disk-full of contemporary images from small dingbats to full-screen portraits. Images include Einstein, Michelangelo's David, animals, cartoons, cars, wine bottle, city skyline. They're great for adding a personal touch to invitations, stationery or announcements.



ClickArt Personal Graphics
Price: \$49.95

For More Information!

Stop by your dealer and check out all our Macintosh products —Or call or write to us to receive a free catalog showing all the images and describing each package.

We have a present for you!

From now until January 31, 1986, the purchase of three specially marked ClickArt or ClickOn packages entitles you to receive the ClickArt Holiday Images disk free from T/Maker Graphics.

You'll get dozens of Christmas and Chanukah images, as well as art for Thanksgiving, Fourth of July, Easter, Valentine's Day, Mother's Day, Father's Day, Graduation and Halloween. Also included are a card-fold guide and some great cut-out-and-fold files to create 3-D scenes.

The Holiday Images disk is available only through this special offer. See package for redemption details. Happy Holidays from T/Maker!



Create 3-D scenes with cut-out-and-fold files

Borders



Get dozens of Holiday images



Create your own greeting cards with the guides provided



T/Maker Graphics • Holiday Offer
2115 Landings Drive • Mountain View, CA 94043 • 415/962-0195

Merry Christmas! From our family to yours.



Looking for the perfect gift for your husband's Macintosh™? For your Mom's? Your daughter's? Your son's? Don't forget your boss. And how about your own Mac? Doesn't it deserve a little something for the holidays?

This Christmas, make it easy on yourself—with Macaccessories. You'll find the perfect gift for every interest and budget. From a Control Center or A-B Box to a Tilt/Swivel or Cleaning Kit. A Macaccessories Mouse Pocket, Mouseway or Dust Cover is a perfect stocking stuffer.

And Macaccessories are very affordable—only \$10 to \$100. See them at your local dealer. Or, for a free 12 page brochure, contact Kensington at 251 Park Avenue South, New York, NY 10010. (212) 475-5200.

KENSINGTON



Letters

Cutting the Hype

A magazine, like a book, shouldn't be judged by its cover. Your September cover seemed to suggest that the issue would feature *Jazz* and *Excel* as dueling spreadsheets, with the better one prevailing over the other in a monumental software struggle.

Inside, in fact, the articles on *Jazz*, *Excel*, and a third spreadsheet program, *Crunch*; the article comparing the three programs; and even the interviews with Bill Gates and Mitch Kapor all arrived at the only possible conclusions: each of the spreadsheet programs is addressed to a specific segment of the software market, and the choice of a spreadsheet program is an individual one, whether the "individual" is a person or a business.

I am glad that your articles helped clarify the seeming controversy, which is more marketing hype than useful substance.

Julie Weidenbach
Highmore, South Dakota

Everyman's Spreadsheet

As the chief purchasing officer of a Dallas investment firm, I was responsible for researching and selecting a spreadsheet for the company's employees. In the article "The Spreadsheet Choice" [*Macworld*, Sep-

tember 1985], the author does an excellent job of characterizing the differences among *Jazz*, *Excel*, and *Crunch* and points out that each program is uniquely suited to certain applications and purchasing considerations. However, the three spreadsheets become rivals when they are considered by an organization for a large-scale purchase.

Organizations have good reason to use a single spreadsheet program. Using different spreadsheets requires extra training and means that data files must be converted every time co-workers want to share information. When an entire organization uses the same program, an advice pool is formed. Each person can benefit from the experiences of others.

When it comes time to choose one spreadsheet for a group of employees, the most versatile spreadsheet is the obvious choice. Although only a fraction of my company's spreadsheet users need the advanced capabilities of *Excel*, the fact that it provides those capabilities means everyone in the company should have it. Some of the employees I polled were anxious to take advantage of *Jazz*'s flashy integration, especially for reports, but the fact that *Jazz* can't link spreadsheets took it out of the running. The ability to link spreadsheets is essential to a large business like ours.

While some people argue that advanced features make a program more confusing for beginners, a well-rounded program should have such features available for people who need them. As long as beginners are not forced to deal with them, advanced features should not cause confusion.

Laura Whitworth
Dallas, Texas

I Love Lisa

If Larry Tesler felt pangs when Lisa, a.k.a. Macintosh XL, production terminated, I and, I believe, thousands of other Lisa users suffered heartbreak [*Note Pad*, *Macworld*, September 1985].

My company, Group 4 Construction Project Services, and its affiliates own eight Lisa computers and five Macintoshes. We have well over 50,000 labor hours invested in those machines, both in our construction business and as a software developer. The power and ease of use of the Lisa continue to amaze me, even after two and a half years of continuous use.

As great a machine as the Macintosh is, our training period for employees is much shorter and the productivity of

our staff is far greater with the Lisa Office System.

Tesler's group developed the most significant operating system for the office since the introduction of personal computers. He and his colleagues should be praised for brilliant work. For our applications, the Macintosh is a compromise on the issue of office productivity. We are optimistic, however, that Lisa's true legacy will be a Lisa-class computer within the Macintosh product line.

Bert J. Warbington
Nashville, Tennessee

Gambled and Lost

Larry Tesler's glowing superlatives about the Lisa certainly cannot be supported by our experience here at the state insurance system. Theoretically and perhaps technically, the Lisa merits the kudos Tesler heaps upon both the computer and its development team. But in reality the machine is unreliable, and support for it is virtually nonexistent. The Lisa is a lemon and a sour one at that. Within the last six months we have had two major failures of the Lisa and at least a dozen minor ones.

We are disgusted with Apple. We will not remain committed to the company or its products. We are obliged to the public we

(continues on page 26)

It's easy with Factfinder.

Because Factfinder™ is a kind of electronic "desk-drawer" where you can just toss information without worrying about how it should be arranged or how you might want to use it. There are no fields to define, no formats to set up.

When you need to find all the clients you have who hate olives or live in Denver; when you want to collect your notes on pasta merchandising; when you need the name and number of that guy who's looking for leveraged buyouts, it's yours in a few seconds, at your index fingertip.

You just key in your notes on the Needleman Plan (or Needleman vs. Nardoff or the Needleman Noodles campaign) in any length you want, and click the mouse on a few key words—"fallout," "bail-out," "roll-out,"

"leveraged buyout," whatever.

Then, any of those words or part of those words will bring you a stack of notes you've made that include "Needleman," or "leveraged buyouts," "national rollouts" or miracle "bail-outs." Or you can request Factfinder to get you the Factsheet that contains "Needleman" and "bail-out." Or you can ask for anything that mentions "bail-out" or "Needleman."

Factfinder has all kinds of features like zoom and automatic word wrap. And because it's not copy protected, it's easier to use, easier to back up, and easier to configure for the Macintosh™ Office. All for just \$150 (suggested retail). To get a \$15 demo version of Factfinder, call 1 800 MACWARE today. From Forethought, Inc.

MACWARE™



How to find a Needleman in a haystack.



© 1985 Forethought, Inc.
MACWARE is a trademark
of Forethought, Inc.
Factfinder is a trademark of
Fact Finder Software, Inc.
Macintosh is a trademark
licensed to Apple Computer, Inc.

TIME BILLING & MAIL LIST FOR YOUR MAC!

LEGAL BILLING is a time billing package designed for attorneys, accountants, consultants or any professional office.

Legal Billing will track time spent, costs dispersed and credits received. Client statements can be printed in several different formats. A variety of other reports can be printed including time, client and aging reports. This package is powerful enough for larger firms, yet easy enough for smaller firms.

Here is what Legal Billing can do for your professional office:

- Prints your client bills in a variety of formats
- Cuts billing time with fast and easy data entry using up to 45 modifiable codes
- Increases office efficiency with numerous

- management reports
- Allows monthly or on demand billings
- Consolidates up to 8 matters per client
- Prints detailed statements with up to 80 characters of comments for each time slip
- Handles up to 18 lawyers or employees
- Full use of the MAC Interface
- It's so easy you can begin using immediately
- Hard disk compatible
- \$595.00

Legal Billing and Bulk Mailer are available at your dealer or from Satori Software



Satori Software
5507 Woodlawn N.
Seattle, WA 98103
(206) 633-1469

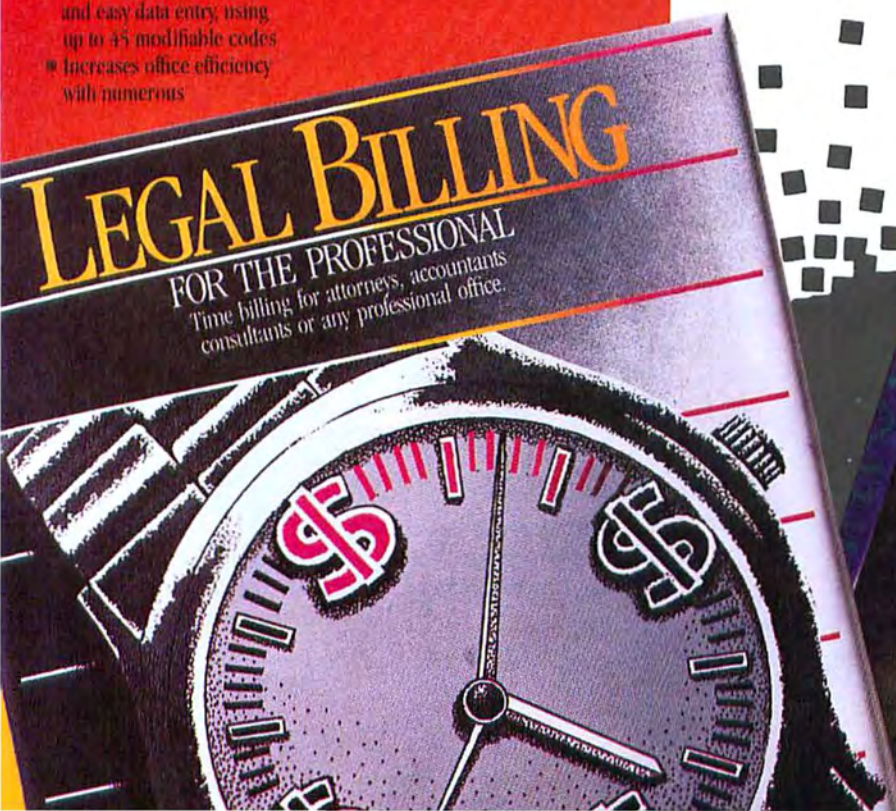
BULK MAILER is a powerful program specially designed for managing mail lists, large or small. Bulk Mailer does everything you want in a mail list program, including duplication elimination, zip and alpha sorts, 1 to 4 up labels printed, easy-entry defaults, multiple label format, plus much, much more. And this special Macintosh version is incredibly easy to use.

This is the only program to offer all these features:

- Duplication elimination
- Zip or alpha sort
- Car-ri sort or zip + 4

- 1 to 4 labels or roster format
- Powerful coding capabilities
- Sophisticated global editing and deleting
- Mail merge with Microsoft Word
- Envelope printing
- Easy-to-use entry defaults
- Coding and date expiration fields
- Large record capacity (up to 4,400 names if used with disk drives)
- Hard disk compatible
- Full use of the MAC Interface
- \$125.00

Macintosh is a trademark of Apple Computer, Inc.
Word is a trademark of Microsoft Corporation.



(continued from page 23)

serve to limit our losses and prevent similar situations from happening again.

Vance A. Hughey
Carson City, Nevada

With a Friend Like Amiga

The Commodore Amiga has three desirable features that the Macintosh does not. First, the Amiga has color. Second, the Amiga is very fast because of several "dedicated" chips that bypass the 68000 for graphics, animation, and sound. And third, the Amiga has open architecture. The people at Apple may solve some of the Mac's problems in the future, but for now we must live with its minor flaws.

The Amiga, however, will not be used in the same way as the Macintosh. Most people will be unable to justify the need for its special features. I think that, instead, the machine will be used mostly by game, video, and music enthusiasts.

Darren J. Van Soye
Irvine, California

One from the Heartland

In your August *Macworld View* you presented information about Pennsylvania farmers running Macs ["The Farmer's Macintosh"]. How about a number where we farmers who use the Macintosh in other states can contact those Pennsylvania farmers?

Don Bathe
Arcadia, Missouri

For more information call
Pennsylvania State University's Cooperative Service,
814/863-3449. —Ed.

Macworld Enquirer

Rob Swigart's note entitled "Divining with the Mac" [*Macworld View*, *Macworld*, August 1985] displays a degree of gullibility that would be acceptable in a tabloid purchased at the supermarket checkout but seems out of place in a magazine devoted to technology-related issues. Swigart's bland acceptance of the Mobius Society's claims for the efficacy of psychic search techniques, in spite of the generally dismal record of psychic research, does not enhance the reputation of your magazine.

Daniel M. Dobkin
Stanford, California

Almost ThereWare

I know you cannot be held responsible for the claims of

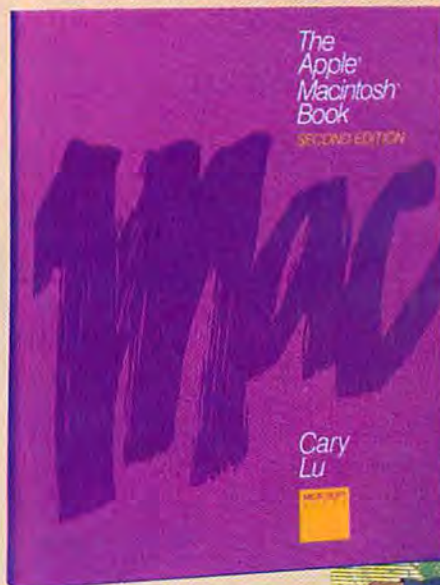
companies advertising in your magazine, but the least you can do for us software suckers is adopt some ethical standards for product reviews. Don't you think you owe it to *Macworld* readers to review only programs that exist? The situation is bad enough as it is given that many programs have to be bought sight unseen. Few retail outlets carry a decent range of products. A magazine such as yours should carry reliable and responsible coverage of products. It is often the only source of information that gives some idea of what products are available and whether they can do the job.

William Bowles
Brooklyn, New York

Our policy is to publish reviews of new products only when manufacturers assure us that the products will be released by the time of publica-

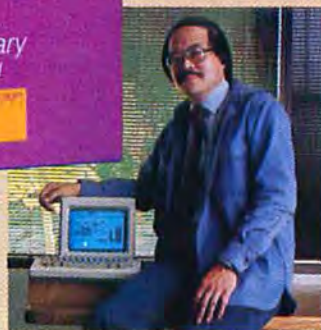
(continues on page 31)

THE EXPERIENCE CONTINUES



\$19.95

Available wherever books and software are sold.



THE APPLE MACINTOSH BOOK. It quickly became the most popular book on this revolutionary machine. Now... for current or prospective Macintosh owners, or those considering 512K upgrades... here is a timely and authoritative new edition. And, like the first, this edition is sure to dazzle, inform, and inspire.

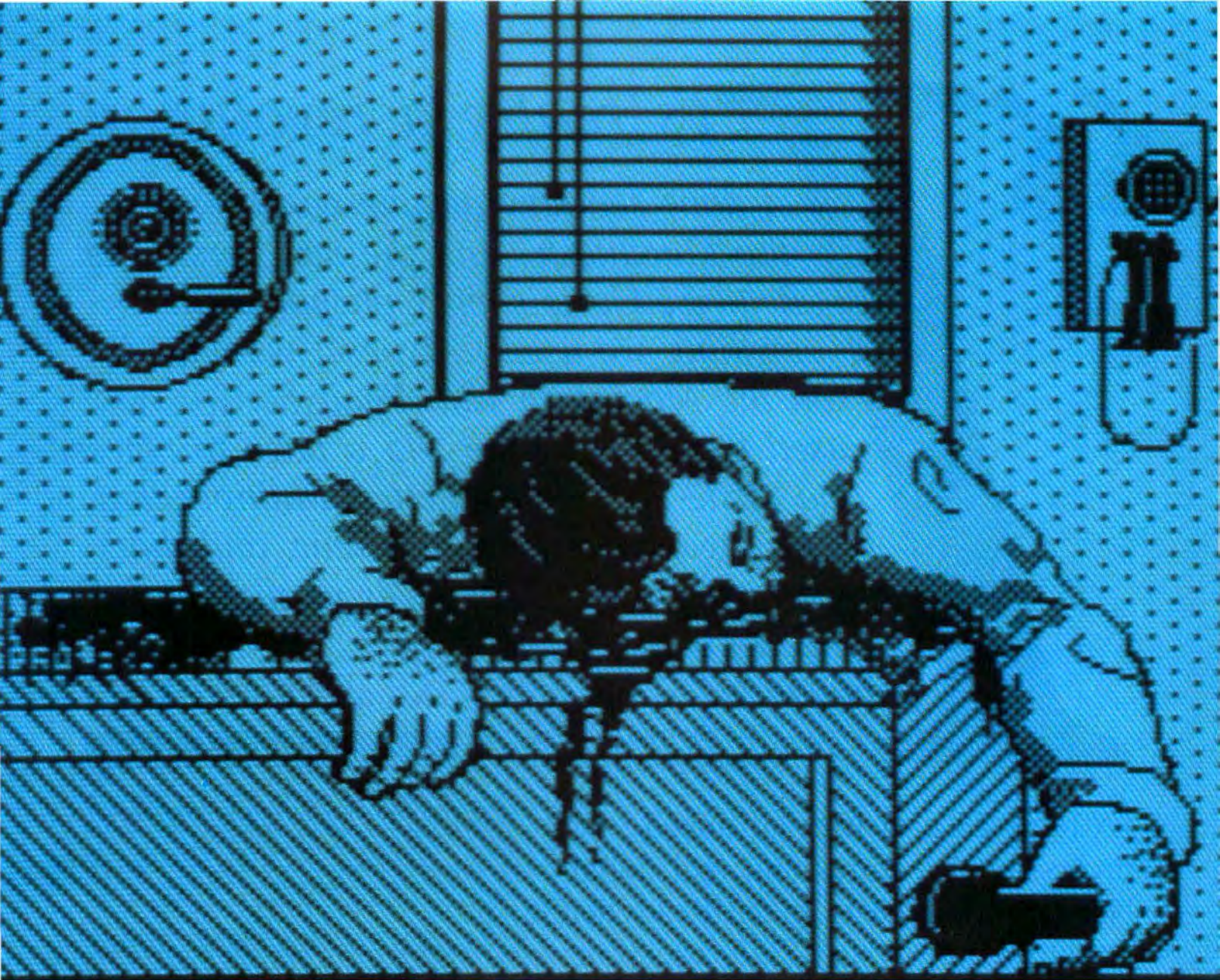
Cary Lu, the noted authority on microcomputers, gives you a comprehensive look at the Mac's pace-setting technology and philosophy, and the hardware that is now available: disk drives, I/O ports, printers, and modems. THE APPLE MACINTOSH BOOK sorts through today's new Mac software to help you evaluate what's right for you: integrated software, word processing, graphics, communications, spreadsheets, and programming languages. Plus an inside look at special Mac features: networking with AppleTalk, laser printing, typography, and, even future Mac products.

THE APPLE MACINTOSH BOOK, second edition... the experience continues.

**MICROSOFT
PRESS**

Microsoft Press
10700 Northup Way
Bellevue, WA 98004

Circle 421 on reader service card



If you think you've played this game before, you're dead wrong.

Your head is pounding with a bump that's bigger than a cue ball. Your clothes are stained with blood that's, frankly, not your type. And the overcoat that hangs by your side hides a warm revolver. As you stumble from room to room, nothing is familiar. Especially the stiff slumped over the desk.


It all adds up to one thing. *Deja Vu, A Nightmare Comes True*™, the exciting new state of the art Mindscape adventure designed specifically for the Macintosh!™

And because everything you encounter

in this bizarre maze reacts to your every move, there's only one person who can control the outcome of this mystery. And guess what? Only you can clear yourself of the murder.

So pick up Mindscape's new *Deja Vu* graphic/text adventure. It's like no other software program you've ever experienced.



Mindscape 

Software that challenges the mind.

Deja Vu, A Nightmare Come True is available for the Macintosh.

Mindscape, Inc. 3444 Dundee Road, Northbrook, Illinois 60062 1-800-221-9884. (In Illinois 1-800-942-7315)

Copyright © 1985, Mindscape, Inc. All Rights Reserved. Macintosh is a trademark of Apple Computer, Inc. *Deja Vu* is a trademark of ICOM Simulations, Inc. Mindscape is a trademark of Mindscape, Inc.

Circle 389 on reader service card

It's really a revolution.

I don't see how anyone can overlook the Macintosh. And the new version of ReadySetGo is simply phenomenal. Anything we used to typeset we now do on the Macintosh with ReadySetGo. We used to pay someone \$45 a page to typeset and paste-up our newsletter. Multiply that by 16 pages, seven times a year, and that's how much we saved. It gives us the control we need for the whole publication."

—Tom Engleman, Director,
Dow Jones Newspaper Fund.

Extreme ease of use, advanced professional features and real dollar benefits combine to make ReadySetGo unique. And, at just \$125, everyone can afford to join the personal publishing revolution.

ReadySetGo™
ReadySetGo
ReadySetGo
The Ultimate Page Processor.™

ReadySetGo

Features

Multipage. Design, produce and print documents up to 32 pages in length, with full integration of text and graphics. Pages can be of any complexity with up to 100 text columns or pictures per page. ReadySetGo displays *real pages* at all times and allows total interactive editing of both layout and contents. Unique design allows very fast scrolling through the document by page or *article*.

Integral Copy Editor. ReadySetGo has complete copy editing features for production needs, not just typo correction. Tabs are fully supported. Text can also be imported directly from any other Macintosh program if needed.

Text Reflow. Flow text between columns and pages throughout the document with automatic updating. Even 'undo' the reflow operation if major changes are needed.

Design Capability. ReadySetGo has a unique free form architecture which allows accurate placement of text and graphics without need for column guides found in other products. This feature makes the program an ideal design tool.

Advanced Picture and Graphics Handling. Bring in pictures and graphics from any other Macintosh program. Pictures can be scrolled in position within ReadySetGo for cropping and can also be scaled to any size. ReadySetGo can create solids, frames, lines and ovals of any thickness and in a variety of patterns.

Professional Typography. Variable line spacing and point sizes from 1 thru 99 coupled with support of full professional type fonts allow for the production of type according to real typographic specifications.

Printing. ReadySetGo can print documents to the ImageWriter™ and any Postscript device including the LaserWriter™ and Allied commercial typesetters.

How much is that doggie in the window?
Did Noah own an umbrella? Is that check
really in the mail?

Find out by asking Racter![™]
Mindscape's[™] new tongue-in-chip
software.

Racter gives your computer a
mind of its own. Imagine the hit that
can be at a party.

Racter answers all your ques-
tions. Gives you advice. And changes
your outlook on all that's sane in the world.



He'll do the same for your friends. And your pets.
What's more, Racter has been half-
heartedly endorsed by the Institute of
Artificial Insanity.

Take Racter home and you'll never
be alone again.

Don't forget to buckle up.

Mindscape

Software that challenges the mind.



Racter is available for Apple[®] II Series, Macintosh[™],
and IBM[®] PC. Coming soon on Amiga[®].

*Racter made me
what I am today*



Circle 389 on reader service card

TEAR ALONG THE DOTTED LINE.

Send in
this coupon before
you're sent away.

To join the Institute of Artificial Insanity,
simply take a crayon, fill in this coupon,
and send it along with \$4.37. To save
\$4.37, buy Racter and you're auto-
matically committed.

MAIL TO
I.A.I. 3444 Dundee Road,
Northbrook, IL 60062.

HANDLE _____

ABODE _____

CITY _____

STATE _____ ZIP _____

Mindscape, Inc. 3444 Dundee Road, Northbrook, Illinois 60062 1-800-221-9884. (In Illinois 1-800-942-7315)
Apple and Macintosh are registered trademarks of Apple Computer, Inc.
Amiga and IBM are registered trademarks of Commodore Business Machines and International Business Machines.
Racter is a trademark of Inrac, Inc. Mindscape is a trademark of Mindscape, Inc.

TACK DAVIS

ODESTA HELI^X

A Data-Based Information
Management & Decision Support System TM

**In the world of Nature,
The newborn fawn
Extends its legs
And walking happens.**

**In the world of Helix¹
You extend your reach²
And flying happens.³**

1) The Computer Letter: "...Helix represents a very important advance in database design."

2) Business Week: "With Helix, a manager with no technical skill can learn in just days how to custom design his own applications. Designing such an (application) from a traditional database program...can take months or even years to learn."

3) Version 2.0 is shipping now.

Odesta, 4084 Commercial Avenue, Northbrook, IL 60062 (USA)
(800) 323-5423 In Illinois, (312) 498-5615

Odesta Helix is a trademark of Odesta Corp. Macintosh is licensed to Apple Computer, Inc. © 1985 ODESTA

Circle 13 on reader service card

Helix for \$15.00*

Version 2.0 Test Flight Package
2 disks—including full Helix 2.0
(limited to twenty records)

plus Quick Start manual
Sample applications
(requires 512K, ext. drive)

800-323-5423
*credit applied to purchase of Helix
Happiness Guaranteed or \$ Back

(continued from page 26)

tion. But because of eleventh-hour revisions that delay scheduled release dates, a review of a product may be published before the product reaches computer store shelves. —Ed.

Stock Exchange

I too was flabbergasted by the news of Steve Jobs's removal as head of Apple Computer [see "Mutiny on the Bounty," *Macworld*, August 1985]. I love my Macintosh, and I like to think of the original Mac developers continuing to work on their dream. Maybe it will be several more years before Apple pays a stock dividend, but I have great faith in the Macintosh. I am sure it will mean much financial success for Apple.

My reaction to the news was to buy Apple stock. Perhaps the gesture is futile, but I wonder what would happen if every Macintosh owner bought a few shares of Apple. Can you imagine a user-controlled computer company?

Edward L. Tripp
Ignacio, Colorado

Flabbergasted II

I too was flabbergasted, not by the ousting of Jobs but by David Bunnell's column in the August *Macworld*. You're certainly entitled to an opinion, and I would expect it to be biased toward the Macintosh, but please try to keep some perspective.

The Mac was crippled by Jobs during its conception. The Mac's tremendous abilities are a credit to Jobs and his team, but let's not forget that Jobs must also assume responsibility for the machine's limitations.

I work with an Apple II, an IBM PC compatible, and a Macintosh. The Mac is fun, but

when I need productivity, I turn to the other computers. I doubt the Mac will make it in the business world. It will easily be outpaced by newer machines before it can get a foothold.

But it was your slur at Steve Wozniak and the Apple II that prompted this letter. Really! Criticizing the II for not being able to display lowercase characters—I suppose you disdain the Model T for its lack of air conditioning and power steering?

Please, praise the Mac all you like. But lay off Woz and the II.
Arthur H. Ude
Stoddard, New Hampshire

Beyond Flabbergasted

David Bunnell's inflammatory comments about the Apple II series of computers and Steve Wozniak were completely out of line. You must realize that without Wozniak and the Apple II, the Macintosh would never have existed.

As someone who works with both the Apple II and the Macintosh, I can't see why a devotee of Apple should criticize one machine simply because they believe in the other.

Lewis A. Etheridge
Columbia, South Carolina

Putting In a Good Word

As Microsoft's product manager for *Word*, I want to respond to two letters, which appeared in the September 1985 issue of *Macworld*, regarding *Microsoft Word* for the Macintosh.

(continues on page 33)



**HEWLETT
PACKARD**

ThinkJet

Marry a ThinkJet to your Mac.

With JETSTART™. The completely compatible printer driver.

Your Macintosh side by side with Hewlett-Packard's 7-lb. portable, ThinkJet. Think of it. Every Macintosh printing capability and Macintosh quality as you jet through the text and graphics at less than a whisper. All you need is JETSTART software for a ThinkJet marriage made in paradise.


\$45 at your Hewlett-Packard dealer. Requires a standard Macintosh printer cable and a ThinkJet serial printer.



SoftStyle®

SoftStyle, Inc. • 7192 Kalanianaʻole Hwy. • Suite 205
Honolulu, Hawaii 96825 • Toll free (800) 367-5600


Circle 259 on reader service card



Apple Crisp?

Protect your Mac with the MacGard™ Surge Protector


- Eliminates both line-to-line and line-to-ground voltage surges and spikes
- Eliminates altered memory and data disruptions caused by static electricity
- Eliminates damage to hardware and software caused by faulty grounding in electrical outlets
- Eliminates scrambled monitor images caused by radio frequency interference
- Easy on/off fastening makes transporting your Mac easy
- Lifetime warranty
- Available in computer stores everywhere or by calling 1-800-558-2001. In Wisconsin call 1-800-242-3102.



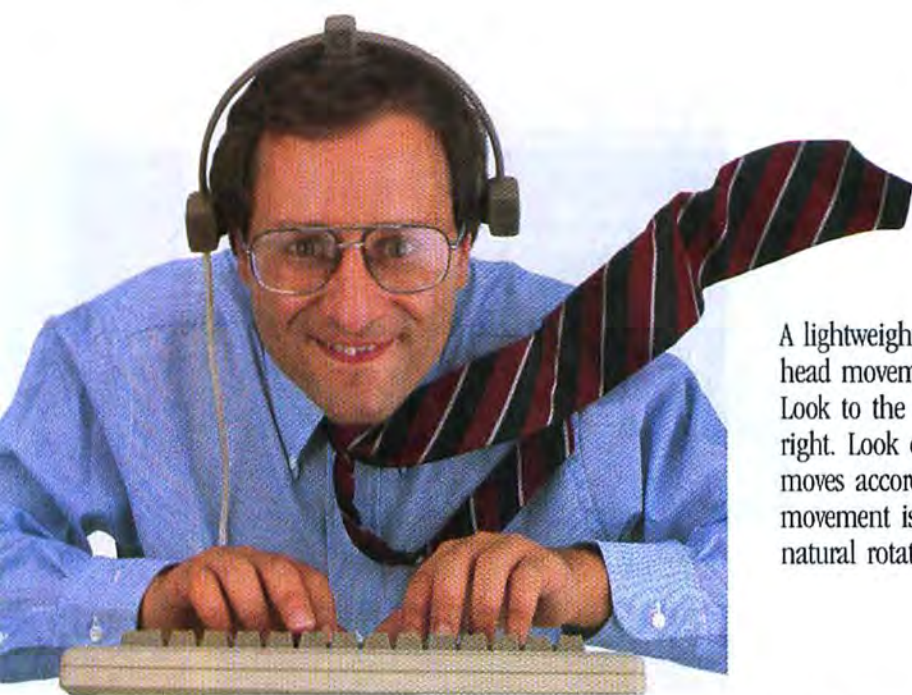
A product of

Systemis Control
A Division of M.J. Electric
North U.S. 2, P.O. Box 788
Iron Mountain, Michigan 49801

MacGard™



Circle 177 on reader service card



The View Control System™ from Personics™ gives you a whole new way to command your Macintosh. It's fast, direct and remarkably intuitive. The VCS moves the cursor where you look on the screen.

A lightweight headset translates natural head movement into cursor movement. Look to the right and the cursor moves right. Look down and left and the cursor moves accordingly. No broad head movement is required, just subtle, natural rotation.



Ultrasonic signals transmitted from the VCS Control Unit track headset rotation. And a remarkable translation algorithm makes the conversion to precise cursor commands just like those produced by your mouse.

The Mouse that flies

Look Ma, Both Hands!

Now you don't have to take your hand off the keyboard to reach for the Mouse. A unique button pad clips on your keyboard just below the space bar. One button activates the headset so you can direct the cursor by viewing. Use the second button for clicking and dragging. No more reach, grab, roll, click, return.



The VCS works with any 128K or 512K Mac. Plug it in and you're ready to go. No hardware or software modifications are required.

Faster than a Speeding Mouse.

Since you can look much faster than you can reach and roll, the VCS is faster than a mouse. And because your

hands stay on the keyboard you maintain continuity and concentration. For tasks like word processing and spreadsheet, expect a real boost in productivity.

Reclaim Your Desktop!

The VCS flies above the ordinary mouse, leaving more space on your desktop. Now you have room for books, papers and your favorite coffee cup. If you want, connect your mouse or trackball along with the VCS and use them interchangeably.

Just \$199.00 and Easy to Order

The VCS is available right now, directly from Personics. Call us toll free. A member of our sales staff will be happy to answer your questions. If you're ready to order, please have your major credit card at hand when you call.

CALL TOLL FREE 800-445-3311
In Massachusetts 800-447-1196

When your VCS arrives, try it for 30 days. If you're not completely satisfied, return it and we will swiftly refund your money. Satisfaction guaranteed. University and corporate purchase orders accepted.



Personics Corporation
2352 Main Street, Building 2, Concord, MA 01742
(617) 897-1575

really works.

Product Review

It's all quite interesting and sexy in a technological way, but how well does it work? I have used the VCS for a week. The first day was something of a strain, as I found myself overshooting screen targets and making exaggerated head motions. After a few days, using the system became second nature. My thumbs fell readily on the buttons below the space bar, and the cursor always seemed to be just where I was looking. After a week, you'll wonder how you managed without it. On the whole, the View Control System represents a real advantage over the mouse for many Mac tasks.

ICON - Magazine of The Association of Apple 32 Users.

Customer Letters

I just received my VCS and am more than delighted with its performance. I couldn't believe that it would be able to work one pixel at a time but it does, and that with less than an hour's use. It's the best thing yet that I have seen for controlling the Macintosh.

My daughter and I are certainly enjoying our "flying mouse." Not only is it terribly ingenious, it really works very smoothly and with fine sensitivity. Congratulations on an innovative advance.

I am a university professor and I do a substantial amount of writing. I just finished a monograph of about 64 single-spaced pages. I used the VCS for the entire project and it performed beautifully. If there were a market for my mouse, I might sell it.

(continued from page 31)

The letters detail several specific points, including the screen display of running heads, slow printing, and the Macintosh screen display. Microsoft has addressed several of those points in an upgrade to *Word* released in June—version 1.05. Other points require clarification of how *Word* operates.

Word does use a different method than *MacWrite* for displaying running headers and footers but makes up for the difference with an increase in functionality. With version 1.05, underlined carriage returns are no longer printed. The program does not have a macro facility, but it can search for special marks such as paragraph returns, tabs, and space marks. Using this facility is much quicker than deleting carriage returns by hand.

Regarding slow printing and the 128K Macintosh, I can only assume that the document that took so long to print contained a number of fonts and styles. Because *Word* does not require a print file to be built and sent to disk prior to printing, the program allows you to print large documents without worrying about disk space. The program, however, must perform printing calculations page by page.

Word version 1.05 can recognize a 10-point font when the program returns from typing 10-point footnotes. It no longer defaults to 12-point type.

Bill McGee

Bellevue, Washington

Word to the Wise

Take a look at *Word*'s menu bar, and you will see that the program works on three levels: document, paragraph, and character. Margins are a document-level feature. Paragraph indents are a paragraph-level feature. Making the two levels can produce some strange results.

The problem Peter Yudkin describes in your September *Letters* ["Discouraging Word"] comes from trying to set the margins for the document by adjusting the right and left indents of every paragraph instead of using the Page Setup dialog box. The confusion on this issue stems from the differences between *Word* and *MacWrite*. Everyone who uses *Word* is probably familiar with *MacWrite*, and work habits are easy to carry over. One such habit is setting the document margins from the ruler, which is the only way to do it in *MacWrite*. But in *Word* the ruler shows the attributes of the currently selected paragraphs. To change settings on the ruler is to change attributes at the paragraph level. Changing the margins is a document-level function, which can't be done on the ruler.

Laurence F. Kirsh
Sterling, Virginia

Mail your letters to Letters, Macworld, 555 De Haro St., San Francisco, CA 94107, or send them electronically to CompuServe 70370,702 or The Source BCW440. All published letters become the property of Macworld. □



HEWLETT
PACKARD LaserJet

Marry a LaserJet to your Mac.

With LASERSTART™. The completely compatible printer driver.

Your Macintosh teamed with Hewlett-Packard's LaserJet. A combination designed to deliver—super speed, ultra quiet—spectacular graphics and laser quality text, perfect to the letter. All you need is LASERSTART software for a LaserJet marriage made in paradise.

\$95 at your Hewlett-Packard dealer. Package comes complete with software and printer cable.



SoftStyle®

SoftStyle, Inc. • 7192 Kalanianaʻole Hwy. • Suite 205
Honolulu, Hawaii 96825 • Toll free (800) 367-5600

Circle 260 on reader service card

MacLink

...the "intelligent" link between your Macintosh and the IBM PC

MacLink allows you to translate spreadsheet and word-processing files between the Macintosh and the IBM PC... easily and quickly.

Now you can translate spreadsheets between Lotus on the PC and Multiplan on the Mac... including formulas, column formats, and functions.

And MacLink allows you to transfer any other type of file between the two machines as well... including binary, CSV, SYLK, text, WKS (Jazz/Excel), and Word files.

MacLink's integrated communications and unique translators

Unique PC ↔ Mac Translators!

And you can translate documents between Wordstar, Multimate or Displaywrite on the PC and MacWrite on the Mac... including margin settings, paragraphing, columns, and print styles.

work via modems or with an optional PC to Mac cable.

The cost is just \$125. This includes the MacLink manual, and a MacLink disk for both the PC and the Mac. \$155 with cable.

DataViz, Inc. — 16 Winfield Street — Norwalk, CT 06855
(203) 866-4944

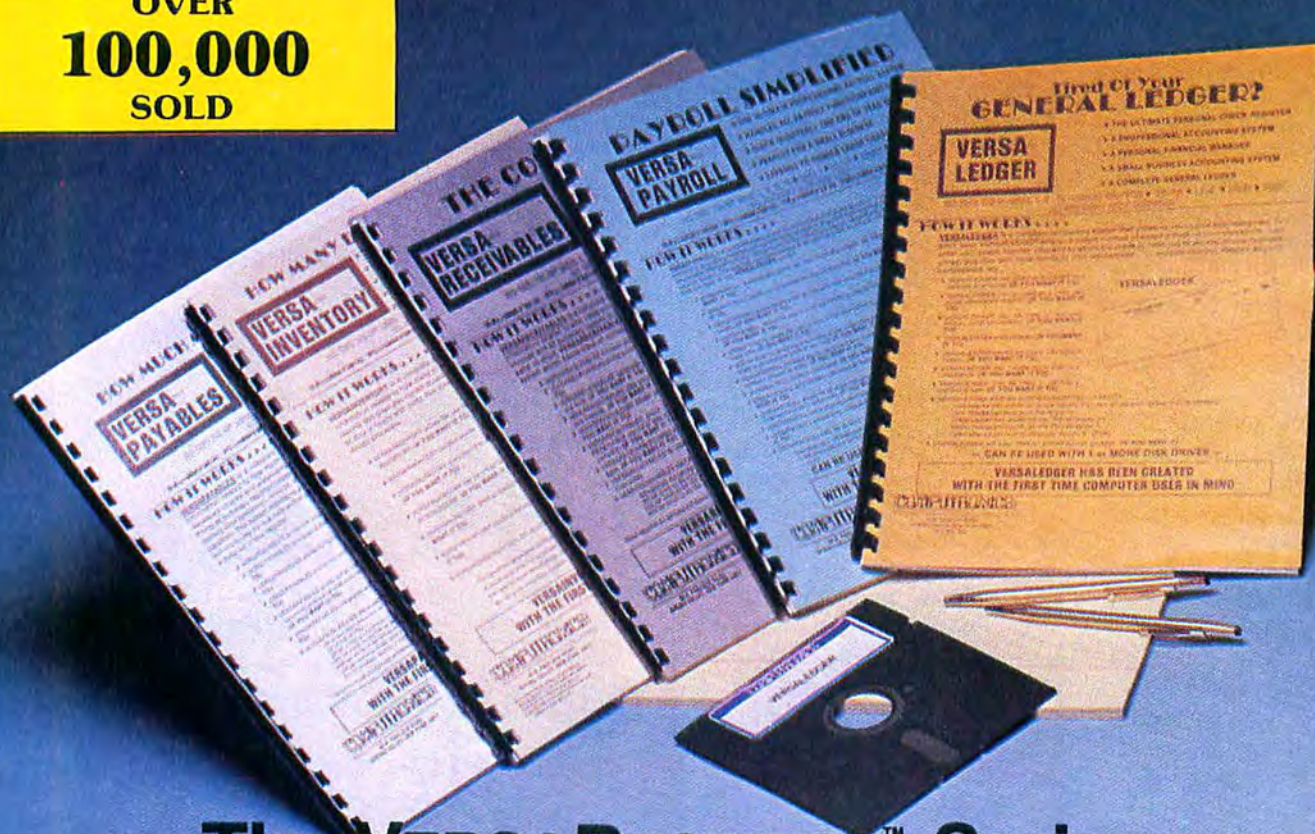
Trademarks: IBM, Lotus, Macintosh, MacWrite, Multimate, Multiplan, Wordstar, Displaywrite, Excel, Jazz, Word

Circle 281 on reader service card

Introducing the Most Powerful Business Software Ever!

FOR YOUR IBM • APPLE • MAC • TRS-80 • KAYPRO • COMMODORE • MSDOS OR CP/M COMPUTER*

OVER
100,000
SOLD



The VERSABUSINESS™ Series

Each VERSABUSINESS module can be purchased and used independently, or can be linked in any combination to form a complete, coordinated business system.

VERSARECEIVABLES™

\$99.95

VERSARECEIVABLES™ is a complete menu driven accounts receivable, invoicing, and monthly statement-generating system. It keeps track of all information related to who owes you or your company money, and can provide automatic billing for past due accounts. VERSARECEIVABLES™ prints all necessary statements, invoices, and summary reports and can be linked with VERSALEDGER II™ and VERSAINVENTORY™.

VERSAPAYABLES™

\$99.95

VERSAPAYABLES™ is designed to keep track of current and aged payables, keeping you in touch with all information regarding how much money your company owes, and to whom. VERSAPAYABLES™ maintains a complete record on each vendor, prints checks, check registers, vouchers, transaction reports, aged payables reports, vendor reports, and more. With VERSAPAYABLES™, you can even let your computer automatically select which vouchers are to be paid.

VERSAPAYROLL™

\$99.95

VERSAPAYROLL™ is a powerful and sophisticated, but easy to use payroll system that keeps track of all government-required payroll information. Complete employee records are maintained, and all necessary payroll calculations are performed automatically, with totals displayed on screen for operator approval. A payroll can be run totally, automatically, or the operator can intervene to prevent a check from being printed, or to alter information on it. If desired, totals may be posted to the VERSALEDGER II™ system.

VERSAINVENTORY™

\$99.95

VERSAINVENTORY™ is a complete inventory control system that gives you instant access to data on any item. VERSAINVENTORY™ keeps track of all information related to what items are in stock, out of stock, on backorder, etc., stores sales and pricing data, alerts you when an item falls below a preset reorder point, and allows you to enter and print invoices directly or to link with the VERSARECEIVABLES™ system. VERSAINVENTORY™ prints all needed inventory listings, reports of items below reorder point, inventory value reports, period and year-to-date sales reports, price lists, inventory checklists, etc.

VERSALEDGER II™

\$149.95

VERSALEDGER II™ is a complete accounting system that grows as your business grows. VERSALEDGER II™ can be used as a simple personal checkbook register, expanded to a small business bookkeeping system or developed into a large corporate general ledger system without any additional software.

- VERSALEDGER II™ gives you almost unlimited storage capacity (300 to 10,000 entries per month, depending on the system),
- stores all check and general ledger information forever,
- prints tractor-feed checks,
- handles multiple checkbooks and general ledgers,
- prints 17 customized accounting reports including check registers, balance sheets, income statements, transaction reports, account listings, etc.

VERSALEDGER II™ comes with a professionally-written 160 page manual designed for first-time users. The VERSALEDGER II™ manual will help you become quickly familiar with VERSALEDGER II™, using complete sample data files supplied on diskette and more than 50 pages of sample printouts.

SATISFACTION GUARANTEED!

Every VERSABUSINESS™ module is guaranteed to outperform all other competitive systems, and at a fraction of their cost. If you are not satisfied with any VERSABUSINESS™ module, you may return it within 30 days for a refund. Manuals for any VERSABUSINESS™ module may be purchased for \$25 each, credited toward a later purchase of that module. All CP/M-based Computers must be equipped with Microsoft BASIC (MBASIC or BASIC 80).

To Order:

Write or call Toll-free (800) 431-2818
(N.Y.S. residents call 914-425-1535)

- * add \$3 for shipping in UPS areas
- * add \$4 for C.O.D. or non-UPS areas
- * add \$5 to CANADA or MEXICO
- * add proper postage elsewhere

DEALER INQUIRIES WELCOME

All prices and specifications subject to change / Delivery subject to availability.

COMPUTRONICS

50 N. PASCACK ROAD, SPRING VALLEY, N.Y. 10977

Circle 231 on reader service card



NOW THERE'S AN EVEN WIDER SELECTION OF HARD DISKS SLOWER THAN HYPERDRIVE.

Thousands of people are buying hard disks to speed up their Macintoshes.

So this is a good time to remind you that, despite all the late entries, none is as fast as HyperDrive.

None is more portable than HyperDrive. (It's the only hard disk that fits inside the Mac and connects directly to its microprocessor. Which also explains why it's so fast.)

None preserves the Mac's footprint quite as well, or leaves desks so uncluttered. And few can match

HyperDrive's capacity (up to 20 mb).

Finally, none is accompanied by HyperDrive's ingenious software. Which includes a backup program that protects your data by copying it onto diskettes. A print spooler that lets you go on to other jobs while your printer is occupied. And a security program that protects your files from unauthorized entry.

So if you want a hard disk to increase the performance and capacity of your Mac, there are now even more ways to get less of what you want.


And one way to get more. To explore that way, look into HyperDrive at a participating Apple dealer. Or call (800) 422-0101 or (617) 492-5500. In Canada, you can call our distributor at (800) 565-1267.



**GENERAL
COMPUTER**
The leading edge starts here.

© 1985 General Computer Corp. HyperDrive is a trademark of General Computer Corp. Apple is a trademark of Apple Computer Inc. Macintosh is a licensed trademark to Apple Computer Inc.

Circle 143 on reader service card



YOU'RE NOT SMART ENOUGH TO CONQUER THE WORLD TWO BILLION TIMES.

Introducing STRATEGIC CONQUEST, at last. This is the first wargame available for your Macintosh computer. And it's about as intense and intricate a war-game as you can find to play on any computer.

Consider for openers, STRATEGIC CONQUEST has more than two *billion*

possible world maps. That's 2,000,000,000. It also has 15 levels of difficulty and eight types of tactical weapons that include submarines, battleships, bombers, destroyers, fighter jets and armies.

It isn't unusual to sweat while plotting to take total control of the world. Nor

is it out of the ordinary to go six grueling hours before completing a single game. Or eight hours. Or ten.

STRATEGIC CONQUEST is a mind buster. Primarily because you're battling a program that borders on artificial intelligence.

You may be smart and imaginative and persevering

enough to dominate the world once, ten times, a hundred, a thousand. But sooner or later, your intellect will crack. It happens to all of us.

No shame, no blame.

PBI Software
A SUBSIDIARY OF ITAI, INC.

1111 Triton Drive, 2nd Floor,
Foster City, CA 94404 (415) 349-8765

STRATEGIC CONQUEST \$49.95. TO FIND OUT MORE ABOUT STRATEGIC CONQUEST SEE YOUR LOCAL COMPUTER SOFTWARE DEALER OR ORDER DIRECTLY FROM US BY CALLING 800-843-5722; OR IN CALIFORNIA, CALL 800-572-2746 9AM-5PM PST.
STRATEGIC CONQUEST, A TRADEMARK OF PBI SOFTWARE, IS WRITTEN BY PETER MERRILL. MACINTOSH IS A TRADEMARK LICENSED TO APPLE COMPUTER, INC.

Circle 233 on reader service card



HOPEFULLY, YOU CAN FLY THIS FOKKER WITHOUT CRASHING IT.

WWI fighter pilot ace, Baron von Richthofen summed up the Fokker's uncanny ability to evade enemy attacks when he said the Fokker "climbs like a monkey and maneuvers

like the Devil."

We seriously doubt you will ever pilot this superb flying machine with the deftness of the Red Baron, but who knows? She's a sleek little sweetheart, this

triplane, she may respond to you. But if she doesn't, don't be too hard on yourself. The Fokker Triplane is the most sophisticated flight simulator software your Macintosh computer can

play. It's definitely not for Sunday fliers.

A practice mission will give you an idea of what we mean. Climb to 5000 feet. Now bring her to a heading, zero, zero, zero. Okay, ready? Enter a shallow dive. Easy, keep your wings level, pull the nose up through horizon, full throttle. Keep back pressure on the stick. Fine, you're inverted. Alright, relax pressure to round out the top of the loop.

Not bad for a beginner. Try a Snap Roll. Great! Drop altitude. See if you can fly under this bridge up ahead. Hey, you're pretty damn good. But listen, don't get cocky. One stupid, clumsy pilot error, an enemy aircraft sweeps in behind you, and boom, you're dead.

PBI Software
A SUBSIDIARY OF ITAT, INC.

1111 Triton Drive, 2nd Floor,
Foster City, CA 94404 (415) 349-8765

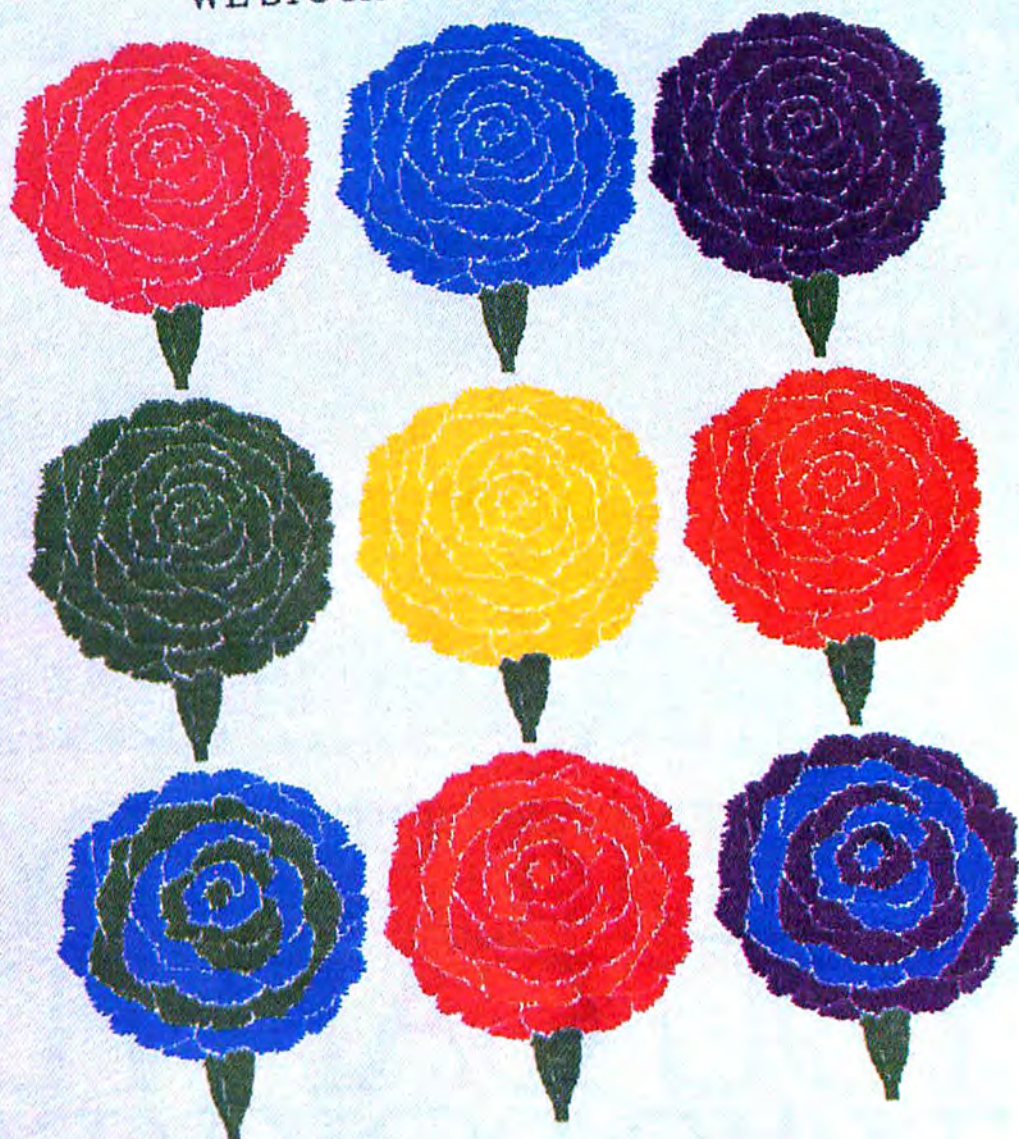
FOKKER TRIPLANE FLIGHT SIMULATOR, \$59.95. TO FIND OUT MORE ABOUT THE FOKKER TRIPLANE FLIGHT SIMULATOR SEE YOUR LOCAL COMPUTER SOFTWARE DEALER OR ORDER DIRECTLY FROM US BY CALLING 800-843-5722; OR IN CALIFORNIA, CALL 800-572-2746 9AM-5PM PST. FOKKER TRIPLANE FLIGHT SIMULATOR IS A TRADEMARK OF BULLSEYE SOFTWARE. MACINTOSH IS A TRADEMARK LICENSED TO APPLE COMPUTER, INC.

Circle 386 on reader service card

WE STOCK CARNATIONS IN THESE COLORS



WE STOCK THESE CARNATIONS



NOW MACINTOSH COMES INTO FULL BLOOM.

INTRODUCING THE COLOR PINWRITER PRINTER SYSTEM FOR MACINTOSH.

One thing a Macintosh™ does brilliantly is create graphic images. But only in black and white.

But now your images don't have to stay black and white. Any image or text created with MacPaint™, MacWrite™ or other Macintosh software can be printed in eight colors including black and white. All it takes is the new NEC Colormate™ kit and an NEC Color Pinwriter™ dot matrix printer.

Colormate software is easy to use. In fact it works much like MacPaint. It includes everything you need to connect an NEC Color Pinwriter or Pinwriter printer including a cable.

And color is not the only bright thing about an NEC Color Pinwriter.

The graphics resolution is superior to the Image-writer™ and just about every other dot matrix printer in the world. And it prints in three different speeds and in 8 different type styles.

So visit your dealer and ask him how you can make your Mac bloom. For more colorful information, call 1-800-343-4418 (in MA 617-264-8635). Or write: NEC Information Systems, Dept. 1610, 1414 Massachusetts Ave., Boxborough, MA 01719.

NEC PRINTERS. THEY ONLY STOP WHEN YOU WANT THEM TO.



NEC

NEC Information Systems, Inc.
Circle 142 on reader service card

C&C Computers and Communications

Pinwriter and Colormate are trademarks of NEC Corporation.

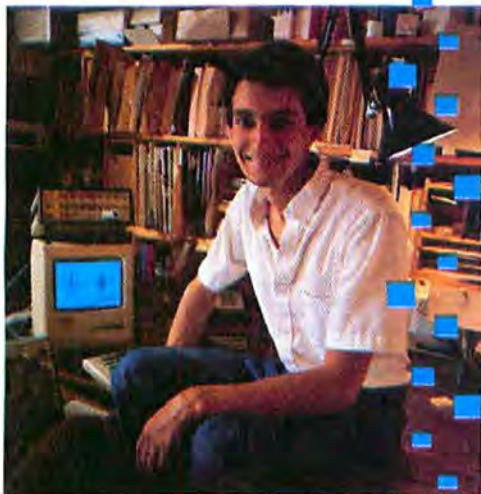
Macintosh is a trademark licensed to Apple Computer, Inc. MacPaint and MacWrite are trademarks of Apple Computer, Inc.

Macworld View

The Macintosh in the laboratory, Apple II to Mac conversions, CheapPaint, and more

Edited by Herschel Schmedick

I suspect that many of you have had strange or enlightening encounters with the Macintosh. Or perhaps you've heard of someone else's unique application of the Mac. Your contributions are welcome. Macworld pays up to \$50 for each item published. Send your contributions to Macworld View, 555 De Haro St., San Francisco, CA 94107. I look forward to hearing from you.



The inventor at home: Glenn Weinreb, creator of the MacADIOS lab-monitoring system, in his MIT dorm room.

Laboratory Mac

In a crowded room in the dilapidated dormitories of the Massachusetts Institute of Technology (MIT), a small box capable of turning the Macintosh into an oscilloscope is communicating with the Mac at 500,000 bits per second. Presiding over this dormitory-based laboratory is MIT student Glenn Weinreb—president of GW Instruments and inventor of MacADIOS (Macintosh Analog-Digital Input-Output System), a device that gives the Macintosh the ability to control and monitor laboratory experiments.

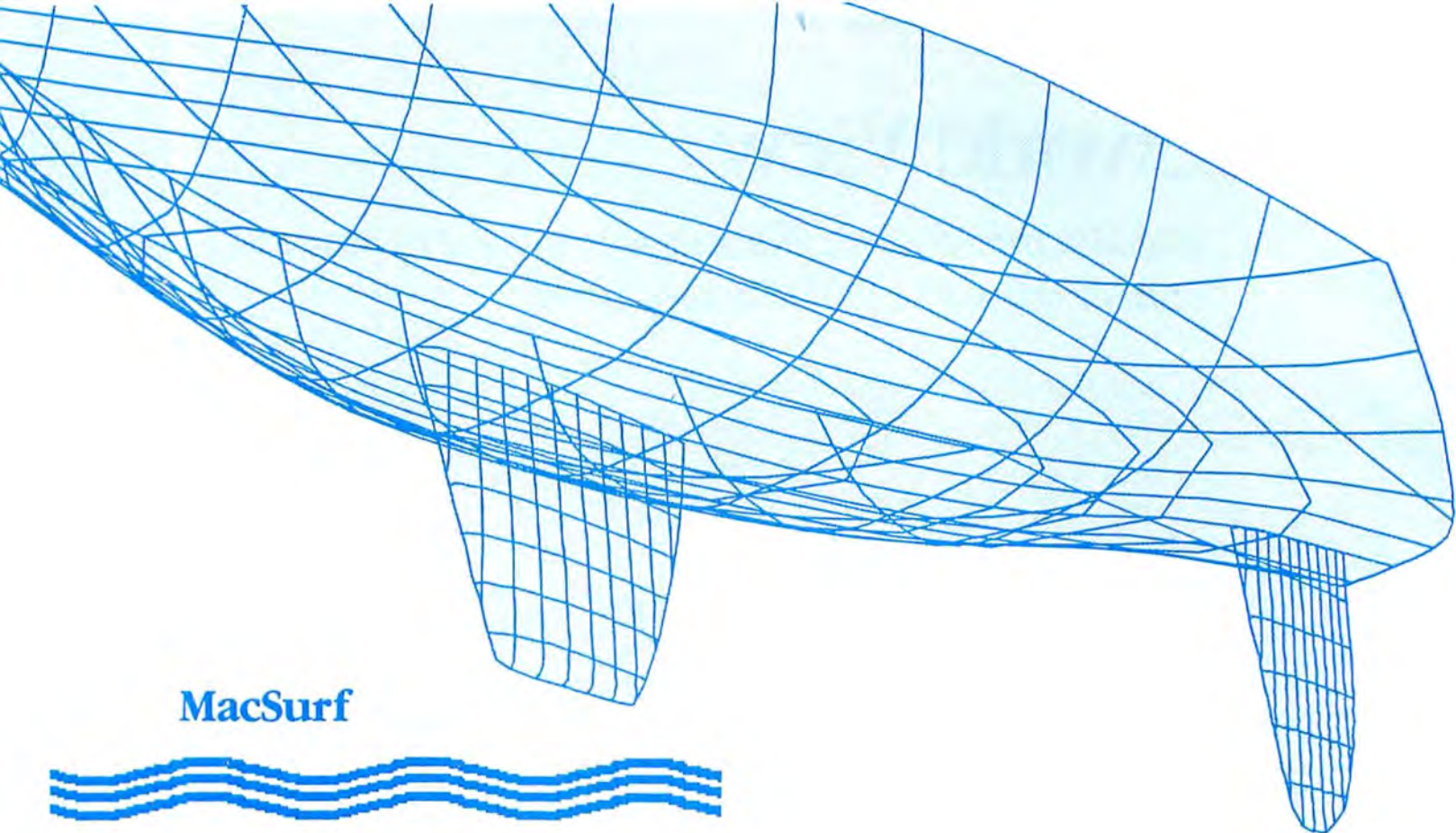
Weinreb explains that MacADIOS is designed to automate laboratory tasks. "Traditionally, a scientist who wanted to analyze the effects of metal fatigue, for example, would have to turn knobs to adjust controls, read data displayed on dials, sit down with a calculator to assess the results, and then manually plot the data into graphic form. With MacADIOS, this process can be done in seconds."

Weinreb, along with his collegiate associates, has also developed software that coordinates many of the laboratory tasks performed by MacADIOS.

MacADIOS Manager is a sophisticated Mac program designed to help scientists gather, edit, analyze, display, store, and print data. In addition, Weinreb's company has developed a BASIC program that controls MacADIOS and performs high-level array manipulations to analyze data. Other BASIC routines can be used with MacADIOS to convert the Macintosh screen into a sonogram or a spectrum analyzer, as well as an oscilloscope.

As expected, developing and manufacturing the \$2500 MacADIOS system requires financing. Weinreb and his colleagues have devised a clever way to raise capital. GW Instruments' technicians have been trudging through blizzards to perform 512K Macintosh upgrades for Cambridge and Boston residents. Weinreb says, "In the long run, we hope to be influential in making the Macintosh an efficient tool for engineers and scientists. For the time being I don't mind doing upgrades to finance MacADIOS. It keeps us in touch with the Cambridge Macintosh community, and that's rather nice."

—David Turin



MacSurf

Large waves are breaking on the shores of the CAD/CAM market. Riding the crest of these waves is *MacSurf* (Graphic Magic, P.O. Box 185, Cottesloe, 6011 Western Australia), a Macintosh program developed to aid engineers in the design of yachts and sailboards. The program drastically reduces the time and cost of designing a yacht. Within an hour you can complete a yacht design in *MacSurf* that would take four or five days and several erasers to draft by hand.

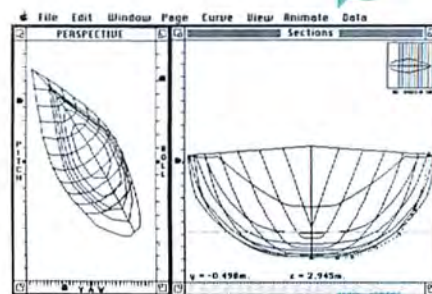
MacSurf displays four windows that show different aspects of a design: plan, profile, transverse sections, and perspective. Each window can be resized and moved around the screen, and the contents of any window can be zoomed in on or moved. The perspective view can be animated to provide smooth three-dimensional movement of the design. In addition, you can cut and paste *MacSurf* drawings into *MacDraw* or vice versa and print designs on large plotters.

In CAM terms, *MacSurf* is revolutionizing the production of foam-cored marine products, such as sailboards. *MacSurf*, linked to a styrofoam cutting device, is the first system that enables manufacturers to generate a finished foam shape from a computerized design.

The program is being used by some of the world's top yacht designers. Ben Lexcen, who designed the 1983 America's Cup winner, *Australia II*, is now using the Macintosh and *MacSurf* to design his yachts.

Of the future, Andrew Mason of Graphic Magic says, "*MacSurf* is intended for the design of marine hull shapes, but it can be used to design any bilaterally symmetrical object, such as an automobile or even a space shuttle." With its \$1950 price tag, however, you probably won't want to buy the program to design paper airplanes or skateboards.

—David Turin



Cutaway and perspective views of a hull design created with *MacSurf*.

Be Quiet, Sleep Camp

For ten summers, Dr. Mary Carskadon of the Stanford Sleep Center has been running the Stanford Sleep Camp to study the effects of sleep deprivation in young adults. This year Carskadon added a new member to her staff—the Macintosh.

At the Sleep Camp, the sleeping patterns of six volunteers are completely controlled in an attempt to duplicate the sleeping patterns of college students, who often go for weeks without an 8-hour night of sleep. Twenty summer interns work in shifts to keep the volunteers awake 19 hours a day, testing them every 2 hours for sleepiness and connecting them to polygraphs each night to record their brain waves during sleep. Each 5-hour night of sleep produces 600 pages of output that needs to be interpreted by hand and then fed into a computer for analysis.

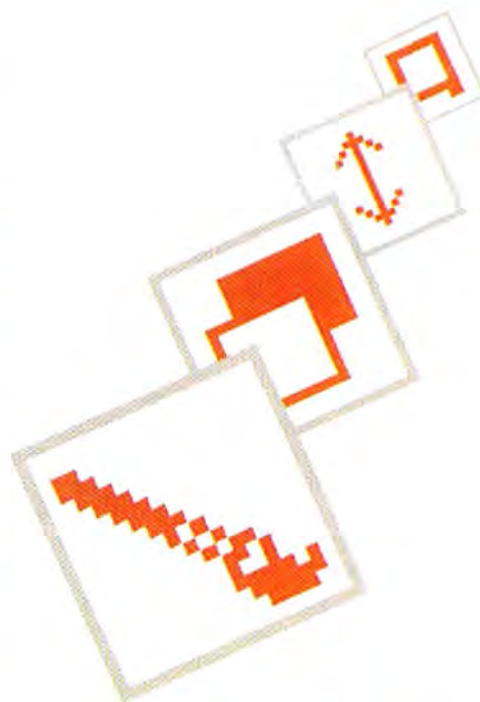
In previous years, data storage and analysis were done with five cumbersome FORTRAN programs on a PDP-11

minicomputer. Now Alan Liu, a Stanford senior in electrical engineering and a premed student, has written a program using Consulair C that executes all five programs in one run. Liu's program handles data entry, summary, comparisons, and plotting. In addition its output is an improvement over that of the FORTRAN programs.

"It's great," says Carskadon. "We can fit 200 nights of sleep onto one floppy disk. We avoid the data entry problems of the past, and the Macintosh is portable and easy to use." With the Macintosh working, now at least the computer programmer can get some sleep. —Clay Andres



While volunteers at the Stanford Sleep Camp nod off, the Macintosh works on, analyzing and reporting their brain waves. Camp researchers study the effects of sleep deprivation.



CheapPaint

MacroMind, the Chicago-based software company that created *MusicWorks*, *VideoWorks*, and *Art Grabber* with *Body Shop*, has added another desk accessory to its product line. CheapPaint, distributed by Hayden Software, gives you an instant graphics pad for the creation of original artwork, without making you quit your current application. The program, which was originally designed as the *VideoWorks* drawing window, utilizes most of *MacPaint*'s tools, such as the pencil, the paintbrush, the paint bucket, *FatBits*, and a text mode. Although this desk accessory has been enhanced by the addition of certain functions, such as rotate, it is still "cheap" in the sense that it takes up only 15K on a disk. CheapPaint works with some applications, such as *MacWrite*, on a 128K Macintosh, but for most applications you'll need a 512K Mac. —Nicholas Lavroff

When the Macintosh first came out, everyone looked at it and said, "Wow, wait 'till the gaming wizards get ahold of this baby..." And some of them did. But some of the "quick and dirty" products that have appeared have left some entertainment software for the Mac a little disappointing.

Here at **Miles Computing**, software designers who simply will not put up with second best, or half-baked concepts, have delivered entertainment products of such intensity of effort and such depth that our designers say "Wow, wait 'till people get ahold of *this*..."



MacAttack! was the first, an amazing best-selling programming feat. It's a 3-dimensional tank battle zone simulation where you defend a city in your radar-equipped Sherman Tank. You must survive by out-manuevering conventional and heat-seeking missiles coming from your opponents who can only be eliminated by accurate shooting on your part. Deadly tanks and planes roam about in this unique game with three levels.



Harrier Strike Mission is follow-up to MacAttack! in a tour-de-force of Assembly language utilizing sensational 3-D graphics. This flight combat simulator features the famous Harrier Jump Jet, a fighter aircraft which can maneuver like a heli-

copter but has all the punch of the latest in modern jet armament. You are pitted against an enemy-occupied island firing heat-seekers, not to mention fighter aircraft in mid-air combat. You must take off from an aircraft carrier, take out the command post and fuel depot on the island and return to your ship. With two skill levels and your choice of day or night mission, mouse or joystick controls, it's the ultimate 3-D flight combat simulator.



Then there's **Fusillade**. You're the last person stuck on Planet Fusill, and must defend a city from power-hungry kamakazee

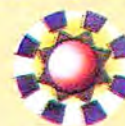
Miles Computing Entertainment Software. The Promise Fulfilled.

looters in a fast-action shoot-out which escalates at dizzying speed as wave after wave attacks your position in over 30 knuckle-whitening levels. Mouse, keyboard or joystick controlled.



If real trouble is what you're looking for, **MacWars** has it. Miles Computing just can't keep away from 3-D, and this one has a black planet strewn with a deadly obstacle course of surface and sky targets through which you fly your laser cannon-

equipped and shielded space ship. On the way to the enemy's planet-sized space station you must survive waves of enemy space paraphernalia, and only your mouse or joystick stand between you and destruction as the waves keep coming, and coming, making things "rather difficult indeed" for you.



For those who want to exercise brain muscles, we have **Overlords**. The object is galactic domination, with power struggles. Struggles against whom? Well, up to 32 players, that's who!

Players can be either people or the Macintosh itself, or can even be linked up via Apple Computer's Apple Talk network, the very first game to do this. You can have multiple players on one computer, or link up to other computers, each player with its own strategy and personality. You can use the

ships that come with it, over a dozen, or design your own, and by zooming in and out over the Galaxy, set out for high adventure.

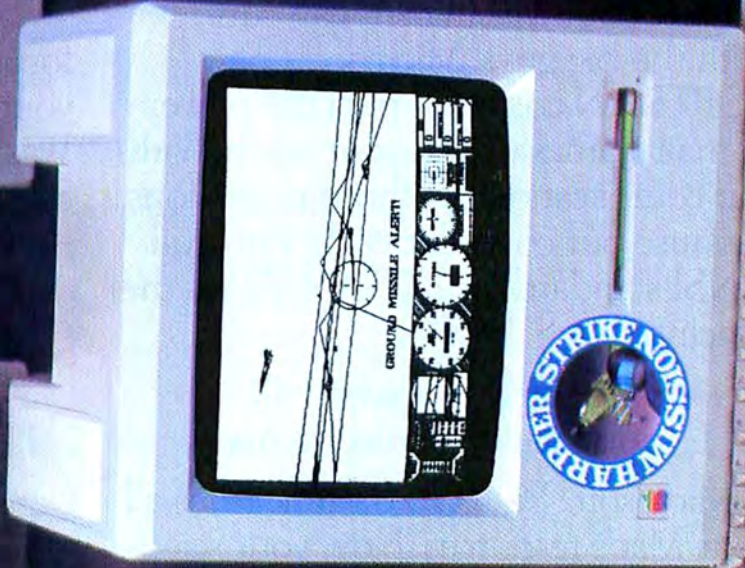
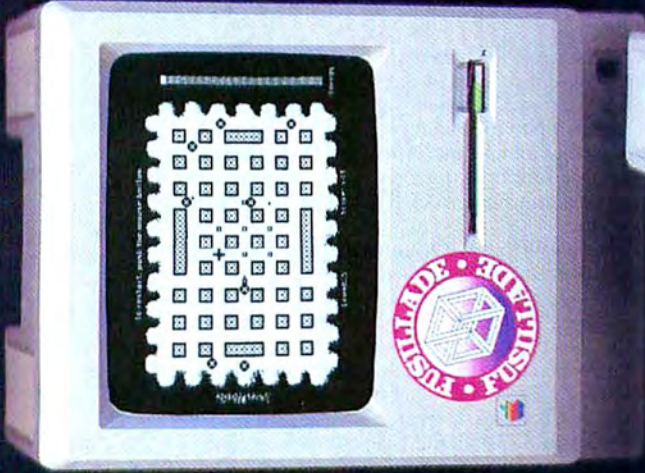
Miles Computing Entertainment Software. The Promise Fulfilled.

Miles Computing, Inc., 21018 Osborne Street, Building 5, Canoga Park, California 91304. (818) 341-1411.

Fussillade, Harrier Strike Mission, MacAttack, MacWars, Overlords, Miles Computing and the Miles Computing logo are registered trademarks of Miles Computing, Inc. AppleTalk is a trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 37 on reader service card

MILES Computing



We've taken FORTRAN to the Macs.

Now your Macintosh™ can run with the big guys. Microsoft's new FORTRAN compiler puts the power of mainframes within your reach. Without complications, without restrictions. Because our compiler is the only full, ANSI standard FORTRAN '77 for the Macintosh.

**Fortified to exceed all
your daily requirements.**

Microsoft® FORTRAN unleashes all your Mac's resources. Now your scientific and engineering programs can have access to Mac graphics. An IEEE math package. Plus huge virtual arrays for data. Boosted with the blazing speed of compiled code.

Our compiler makes the programming faster as well. FORTRAN enhancements like DO...WHILE make structured programming easy. Dynamic overlays let you run mainframe-size programs. Even in 128K of RAM. And a powerful set of utilities gives you complete library management. Not to mention dynamic linking, a program editor and an interactive source code debugger.

In other words, Microsoft FORTRAN gives you just what you'd expect for your Mac—the max.

So get moving. Call (800) 426-9400 for more information and the name of your nearest Microsoft dealer. In Washington State and Alaska, call (206) 828-8088. In Canada, (416) 673-7638.

Microsoft FORTRAN Compiler Version 2.1

Microsoft FORTRAN Compiler

- Full ANSI FORTRAN '77—the standard.
- Port mainframe and minicomputer applications with little or no change.
- Calculate with IEEE-standard floating-point numbers.
- Performs direct 32-bit integer arithmetic.
- Supports virtual arrays as large as available disk space.
- Compile up to 1600 lines per minute.
- Optionally compile into Apple's MDS assembly language.
- Structure your code using separately compiled modules, statement functions, block IF; block DO and SELECT CASE constructs.

Interactive Window-Oriented Source Debugger

- View your source file while debugging.
- Single-step through your program.
- Set source-level breakpoints to control execution.
- Examine and modify your variables.
- Search source code for labels or line numbers.
- Examine file status for all units.

Extensive Toolbox Interface

- Access over 475 built-in Macintosh toolbox functions, including windowing, cursor handling, pull-down menus, mouse tracking, event queue handling and desk accessory management.
- Draw using powerful Macintosh graphics routines: points, rectangles, ovals, arcs, polygons and regions.

Library Manager

- Build your own libraries of useful subprograms.
- Include over 200 procedure files per library.
- Mix FORTRAN and assembly language procedures.

Object Code Linker

- Dynamically link routines as needed while executing.
- Statically link subprograms for faster execution.

Other Productivity Tools

- Apple's source code editor—optimized for faster programming.
- Apple's resource compiler—takes advantage of special Macintosh capabilities.

System Requirements

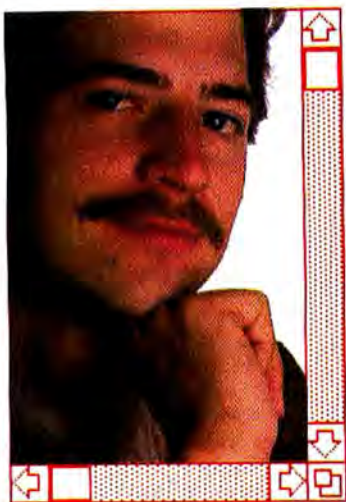
- 128K Macintosh.
- One disk drive.

Microsoft
The High Performance Software.™

Get Info

Macworld's tutor answers questions about disk-based MacWrite, display-sized pictures, and Imagewriter graphics

Lon Poole



More than a few people have written to complain about *MacWrite* 4.5, especially people who use 128K Macs or write long paragraphs. This month I respond to both groups. I also list the features of the two official upgrades to *MacWrite*. Someone who is learning *MacPaint* asks about the Grid command, and another *MacPaint* user wonders if it's possible to create drawings larger than *MacPaint*'s 8- by 10-inch limit. A programmer using Microsoft BASIC (MBASIC) wants to incorporate drawings created with *MacPaint* into his program. Another programmer wants to create graphics with an MBASIC program and print them directly on an Imagewriter. And a Pascal programmer wants to create a self-contained program that doesn't require the Macintosh Pascal interpreter.

MacWrite 4.5 Style and Font

Q. I use *MacWrite* 4.5 on a 128K Macintosh. When I try to change the font or style of text, even in a small document, I get the obnoxious double beep and the message "Memory almost full. This operation can't be undone." Why does *Mac-*

Write run out of memory? Is there any way to make font and style changes without this message occurring?

*Gladys Fletcher
Baton Rouge, Louisiana*

A. Apparently there's no way around the flaw you describe. It's ironic that an upgrade designed to make life better for people with 128K Macs actually makes life worse. I recommend that 128K Mac users stick with *MacWrite* 2.2 unless they absolutely must have 4.5's ability to handle longer documents.

Paragraph Too Long

Q. When I convert documents created with *MacWrite* 2.2 to *MacWrite* 4.5, the following message often appears:

"This document contains a text paragraph that is too large to load. Shorten it, and try again." I was unable to shorten the offending paragraph, but since I had retained a copy of *MacWrite* version 2.2, the problem was not major. However, the update information provided with *MacWrite* 4.5 clearly implies that there is no reason to retain copies of earlier versions of *MacWrite*, and I imagine that some Macintosh owners would take Apple at its word on this. The moral is obvious.

*Robert C. Mainfort, Jr.
Pinson, Tennessee*

A. It certainly does make sense to keep an old version of a program around until you've had a chance to thoroughly exercise the new version. Incidentally, the "paragraph too large" message occurs if any paragraph is longer than 3000 characters, which is about one page of single-spaced 12-point text. A new paragraph starts after a return character or a formatting ruler.

MacWrite Version Differences

Q. I know there have been several versions of *MacWrite*. Could you explain the improvements or changes in the different versions?

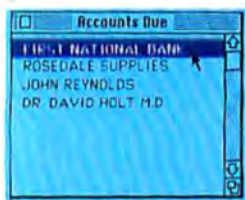
*James R. Wilson
Ormond Beach, Florida*

A. To date, Apple has released three official versions of *MacWrite*. Version 1.0 was the first version shipped. It was supplanted by version 2.2 in May 1984. Version 2.2 featured Geneva 12 instead of New York 12 as the standard text font. A 10-point option was added to

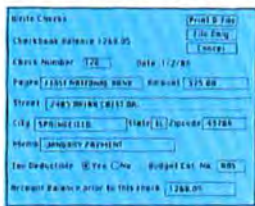
(continues on page 50)

NEW! 10.7 SECONDS

To print a check with Orion Checkwriter!



#1. Automatically alerts you to due accounts.



#2. One click records, classifies and deducts the check amount.



#3. The printed check is ready for signature and mailing in its own two-window envelope.

Save time and increase the productivity of your Mac with the new Orion Checkwriter. This is serious software that's easy to use. It's ideal for home or office—whether you write ten, fifty or a hundred checks each month.

Costs Less, Does More

With Checkwriter, you can track budgets by the month, the year and to date. It supports multiple checking accounts and a help menu provides on-line documentation. With a few mouse clicks, you can reconcile your monthly bank statements. No more

sorting through checks!

And Checkwriter records all tax-deductible expenses. Great at tax time and all-year 'round.

Free Personalized Checks

To introduce you to the speed and convenience of this remarkable software, Orion will send you a certificate for 100 personalized, continuous-feed checks with your purchase. Choose business or personal size.

This special offer is limited and may be withdrawn at any time. So order today!

Just **\$69.95** Checkwriter with free personalized checks is an ideal gift for the Macintosh owner.

To Order, Phone Toll-Free **800-742-2200**, ext. 50.

—For Customer Service, Call (717) 757-7721 —
Or use your Macintosh to order: Source ID: STR034
Compuserve ID: 72335.634

To: Orion Training Systems
P.O. Box 94, Dallastown, PA 17313

Yes! Please send me Checkwriter today, along with my certificate for 100 free personalized checks.

Payment Method

_____ Check or Money Order for \$69.95 plus \$4.50 shipping and handling enclosed. (PA residents add 6% sales tax)

_____ Charge to my _____ MasterCard or _____ VISA
Card Number _____ Exp. Date _____

Name _____

Address _____

City _____ State _____ ZIP _____

Phone () _____

Minimum Hardware Requirements: 128 or 512 K plus external disc drive and Imagewriter printer.

Macintosh and Imagewriter are trademarks of Apple Computer, Inc.

All This Automatically in 10.7 Seconds!

- ☐ Prints account name & address
- ☐ Prints check amount
- ☐ Records check number
- ☐ Prints check date
- ☐ Displays account balance
- ☐ Computes new checking balance
- ☐ Records tax-deductible checks
- ☐ Updates outstanding check file
- ☐ Credits check to proper account
- ☐ Recomputes account balance
- ☐ Computes account due date using Mac clock
- ☐ Computes total paid to account
- ☐ Computes budget category to date
- ☐ Computes total budget for month and year
- ☐ Adds check to bank statement for reconciliation

Prints These Reports

- ☐ Individual budget category by month and total
 - ☐ Budget categories total to date
 - ☐ Budget categories for a month
 - ☐ Budget categories for the year
 - ☐ All budget categories
 - ☐ Outstanding deposits
 - ☐ Cancelled deposits
 - ☐ Cancelled checks
 - ☐ Tax-deductible checks
- ☐ Checks for an account
 - ☐ All accounts
 - ☐ Auto-deposit information
 - ☐ Outstanding checks



ORION

Orion Training Systems
P.O. Box 94
Dallastown, PA 17313

Circle 392 on reader service card

CONROY-LA POINTESM #MW32 INC.

© 1984, 1985 by Conroy-LaPointe, Inc. All Rights Reserved

LOW PRICES TO PROFESSIONALS WHO KNOW WHAT THEY WANT AND KNOW HOW TO USE IT!

TELEX 910 380 3980

TO ORDER, CALL (800) 547-1289

FOR YOUR MACINTOSH

STOP WAITING
ALL ORDERS SHIPPED
STANDARD AIR
VIA
FEDERAL EXPRESS

512K Macintosh

CALL

HARD & FLOPPY DRIVES

	LIST	OUR
HABA, 800K DS/DD External Drive	\$ 599	\$ 489
400K External Drive	\$ 449	\$ 335
IOMEGA, 5 Meg. Bernoulli Box	\$1995	\$1595
QUARK, QC 10 meg hard disk	\$1295	\$1095

MODEMS

COMPUABLE, Smartmodem Cable	\$ 32	\$ 18
HAYES, Smartmodem 300 (RS-232)	\$ 199	\$ 149
Smartmodem 1200 (RS-232)	\$ 599	\$ 419
Smartcom II	\$ 149	\$ 107
Transet 1000	\$ 399	\$ 309
Mac Access Pak	\$ 40	\$ 35
NOVATION, Smartcat Plus w/software	\$ 499	\$ 349
2400 External	\$ 795	\$ 549
PROMTECH, 1200 Modem w/software	\$ 549	\$ 399
MacPac	\$ 150	\$ 109

BUSINESS SOFTWARE

ALS, Mighty Mac	\$ 60	\$ 37
CREIGHTON, Mac Office	\$ 39	\$ 26
MacSpell+	\$ 99	\$ 61
CSD, MacLion	\$ 379	\$ 239
DOW JONES, Straighttalk	\$ 79	\$ 49
Market Manager Plus	\$ 249	\$ 159
FIRST BYTE, SmoothTalker	\$ 100	\$ 63
FORETHOUGHT, Fact Finder	\$ 150	\$ 95
HABA, Quartet	\$ 199	\$ 149
HAYDEN, Ensemble	\$ 300	\$ 189
Hayden:Speller	\$ 80	\$ 53
HUMAN EDGE, Mind Prober	\$ 50	\$ 29
LIVING VIDEOTEXT, Think Tank	\$ 145	\$ 92
Think Tank 512K	\$ 245	\$ 145
LOTUS, Jazz	\$ 595	\$ 389
MANHATTAN, ReadySetGo	\$ 125	\$ 69
MEGAHAUS, Megafiler	\$ 195	\$ 125
MegaMerge	\$ 125	\$ 80
Megaform	\$ 295	\$ 189
MICROSOFT, Business Pak	\$ 595	\$ 395
Excel	\$ 395	\$ 259
Multiplan, File or Word, ea	\$ 195	\$ 125
Chart	\$ 125	\$ 82
ODESTA, Helix	\$ 395	\$ 249
PALADIN, Crunch	\$ 295	\$ 225
PEACHTREE, General Ledger	\$ 175	\$ 111
PROVUE, Overvue	\$ 295	\$ 185
SOFTWARE PUB., File / Report Combo	\$ 175	\$ 105
STONEWARE, DB Master	\$ 195	\$ 125
TELOS, File Vision	\$ 195	\$ 119
VIDEX, MacCalendar	\$ 89	\$ 49
Mail Center for two	\$ 299	\$ 169
WARNER, Desk Organizer	\$ 149	\$ 99



COMPUTERS PRINTERS & INTERFACES

	LIST	OUR
ASSIMILATION, Daisywheel Connect.	\$ 99	\$ 80
Mac to Epson Connection, (Spec. RX/FX)	\$ 89	\$ 69
CREIGHTON, ProPrint	\$ 99	\$ 63
EPSON, FX Series — In Stock		CALL
LX80 — 100 cps DQ / 16 cps NLQ	\$ 299	\$ 249
FX85 — 160 cps	\$ 499	\$ 389
LQ1500 — 200 cps DQ / 67 cps LQ	\$1295	\$995
Serial Interface Board	\$ 130	\$ 110
STAR MICRO, SG 10-120 cps (DQ) & 30 cps (NLQ)	\$ 299	\$ 249
SG15-120 cps (DQ) & 30 cps (NLQ), 16K	\$ 499	\$ 419
SD10-160 cps (DQ) & 40 cps (NLQ),	\$ 449	\$ 379
SD15-160 cps (DQ) & 40 cps (NLQ), 16K	\$ 599	\$ 509
SR10-200 cps (DQ) & 50 cps (NLQ),	\$ 649	\$ 549
SR15-200 cps (DQ) & 50 cps (NLQ), 16K	\$ 799	\$ 679
Star/Mac Interface	\$ 100	\$ 89
TOSHIBA, 351-288 cps (DQ) & 144 cps (NLQ)	\$1695	\$1249
1340-144 cps (DQ) & 54 cps (LQ)	\$ 799	\$ 619

PRINTER SUPPLIES

CONROY-LAPOINTE, Colored Paper Pack (250)	\$ 13	\$ 8
PAPER: White, Colored, Laser Cut, etc.		
RIBBONS, DAISY WHEELS		CALL

UTILITIES SOFTWARE

APPLE, MacDraw	\$ 195	CALL
ASSIMILATION, Work-n-Print	\$ 29	\$ 24
BORLAND, Sidekick (copiable)	\$ 85	\$ 45
CENTRAL POINT, Copy II MAC	\$ 40	\$ 24
CREATIVE SOLUTIONS, MacForth Level I	\$ 149	\$ 95
MacForth Level II	\$ 249	\$ 157
EXPERTELLIGENCE, ExperLogo	\$ 150	\$ 95
HAYES, Smartcom II	\$ 149	\$ 107
MICROSOFT, BASIC Interpreter	\$ 150	\$ 95
Fortran	\$ 295	\$ 199

HOME & TRAINING

CONTINENTAL, Home Accountant	\$ 100	\$ 65
CREIGHTON, Home Pak	\$ 39	\$ 26
DAVIDSON, Speedreader II	\$ 70	\$ 45
Math Blaster	\$ 53	\$ 33
ELECTRONIC ARTS, Financial Cookbook	\$ 50	\$ 35
FORETHOUGHT Typing Intrigue	\$ 50	\$ 32
HARCOURT, Computer SAT	\$ 50	\$ 33
HAYDEN, Music Works	\$ 80	\$ 50
Mac Speller	\$ 80	\$ 53
Turbo Turtle	\$ 60	\$ 38
MICROSOFT, Logo	\$ 125	\$ 79
MONOGRAM, Dollars & Sense	\$ 150	\$ 89
Forecast	\$ 70	\$ 43
SCARBOROUGH, Mastertype	\$ 50	\$ 32
SIMON & SCHUSTER, Typing Tutor III	\$ 60	\$ 37
STATE OF THE ART, Electronic Checkbook	\$ 80	\$ 50
T/MAKER, Clickart (Pers Graphics)	\$ 50	\$ 32
Letters or Publications, ea.	\$ 50	\$ 32
Effects	\$ 50	\$ 32
Clickon Worksheet	\$ 80	\$ 50

ACCESSORIES

	LIST	OUR
ASSIMILATION, TurboTouch	\$ 129	\$ 89
Mac Port Adaptor	\$ 79	\$ 59
Numeric Turbo, Keypad	\$ 149	\$ 109
CURTIS, Diamond	\$ 50	\$ 29
Emerald	\$ 60	\$ 35
Ruby	\$ 90	\$ 55
Sapphire	\$ 80	\$ 46
INNOVATIVE, Flip-n-File, 40	\$ 30	\$ 19
KENSINGTON, Surge Protector	\$ 50	\$ 35
Starter Pak	\$ 90	\$ 60
A-B Box	\$ 100	\$ 69
KOALA, MacVision	\$ 400	\$ 229
MICROSOFT, Mac Enhancer	\$ 249	\$ 179
THUNDERWARE, Thunderscan	\$ 229	\$ 189

DISKETTES

CONROY-LAPOINTE, Top Quality, 5 Yr Ltd Wty		
10 each, SS/DD, w/Flip Box	\$ 25	
50 each, SS/DD	\$ 115	
100, 500, 100 Quantity	CALL	
MAXELL, 10 each, 3 1/2" SS/DD	\$ 55	\$ 35
MEMOREX, 10 each, 3 1/2" SS/DD	\$ 60	\$ 33
VERBATIM, 10 each, 3 1/2" SS/DD	\$ 65	\$ 32

RECREATIONAL SOFTWARE

AEGIS, Challenger or Pyramid, ea.	\$ 50	\$ 33
BLUECHIP, Millionaire, Tycoon, ea.	\$ 60	\$ 38
BRODERBUND, Lode Runner	\$ 40	\$ 26
CBS, Murder by the Dozen	\$ 45	\$ 29
CREIGHTON, Mac Command	\$ 35	\$ 23
ELECTRONIC ARTS, Pinball Construction	\$ 40	\$ 29
Dr. J & Larry Bird	\$ 40	\$ 30
Deluxe Music Construction	\$ 50	\$ 37
FIRST BYTE, Smooth Talker	\$ 100	\$ 63
GREAT WAVE, Concert Ware Plus	\$ 60	\$ 40
HARVARD, Mac Manager	\$ 50	CALL
HAYDEN, Sargon III	\$ 50	\$ 31
Music Works	\$ 80	\$ 50
HUMAN EDGE, Mind Prober	\$ 50	\$ 29
INFOCOM, Zork II or III, ea.	\$ 45	\$ 29
Zork I or Hitchhiker's Guide	\$ 40	\$ 25
Suspect, Starcross or Sorcerer	\$ 45	\$ 29
Suspended or Deadline, ea.	\$ 50	\$ 33
MICROSOFT, Entrepreneur	\$ 50	\$ 33
MILES, Mac the Knife, v.1	\$ 39	\$ 25
MacAttack or Mac the Knife, v.2	\$ 49	\$ 31
Carrier Strike Mission	\$ 50	\$ 35
PENGUIN, Transylvania	\$ 40	\$ 25
Graphics Magician	\$ 80	\$ 53
SCARBOROUGH, Run for the Money	\$ 50	\$ 32
SIERRA/ON-LINE, Frogger	\$ 40	\$ 25
Ultima II	\$ 60	\$ 39
SILICON BEACH, Airborne	\$ 35	\$ 22
SPECTRUM HOLOBYTE, Gato	\$ 50	\$ 32
VIDEX, MacVegas	\$ 60	\$ 33
Gammon or Checkers, ea	\$ 49	\$ 28

CONROY-LAPOINTE COMPUTER STORES, INC.

Retail Sales only. Store prices may vary.
SAN FRANCISCO — 550 Washington Street (at Montgomery, opposite the Pyramid). Interstate 80 to Highway 480; take Washington Street Exit. CALL (415) 982-6212.
PORTLAND, OREGON — At Park 217, Tigard at intersection of Highways 217 and 99W. CALL (503) 620-5595.
SEATTLE, WASH. — NEW LOCATION! 1105 Bellevue Way N.E. in Belgate Plaza, 2 blocks north of Bellevue Square. CALL (206) 641-4736.



OUR REFERENCES:

We have been in computers and electronics since 1958, a computer dealer since 1978 and in computer mail order since 1980. Banks: 1st Interstate Bank, (503) 643-4678. We belong to the Chamber of Commerce (503) 228-9411, and Direct Marketing Association; call Dun and Bradstreet if you are a subscriber. Recipient of OREGON BUSINESS MAGAZINE's 1984 Enterprise Award.



NO SALES TAX

CALL (800) 547-1289	
In Oregon: (800) 451-5151	(503) 620-9877
QUESTIONS (503) 620-9878 8:00 AM - 5:00 PM (PST) Weekdays Only	ORDER DESK HOURS Mon-Fri 8am to 6pm (PST) Saturday 8am to 4pm (PST) (6 am here is 9 am in New York)

ORDERING INFO & TERMS: MAIL TO: 12060 SW Garden Place, Portland, OR 97223 — include telephone number. Check your figures for Shipping, Insurance and Handling (SIH). All items usually in stock. NO C.O.D. Cashiers checks, money orders, Fortune 1000 checks and government checks honored immediately. Personal and other company checks—allow 20 days to clear. Prices reflect 3% cash & Conroy-LaPointe Credit Card discount, so add 3% to above prices for VISA/MasterCard/American Express. Your card NOT charged if we ship. Gift Certificates available in any amount. We ship Federal Express Standard Air. U.S. & Puerto Rico, add 3% (\$5 minimum). Canada, add 12% (\$15 min). Foreign, add 18% (\$25 min). APO, FPO, & other U.S. territories shipped postal, so add 6% (\$10 min). Orders received with insufficient SIH will be held for balance due. All prices, availability and specifications subject to errors or change without notice, so call to verify. All goods are new, include warranty and are guaranteed to work. Due to our low prices and our assurance that you will get new, unused products—ALL SALES ARE FINAL. We do not guarantee compatibility. Call before returning goods for repair or replacement. ORDER DESK HOURS—8AM to 6PM PST, Monday through Friday, Saturday 8 to 4. EconoRAM*, Fasttrak*, and Genetrak* are trademarks of Magnum Computer, Inc.

CONROY-LAPOINTE CREDIT CARD
Send me a Conroy-LaPointe credit application form, so I can get cash discount prices with credit card convenience \$400 Minimum initial purchase.

#MW32

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

MAIL TO: 12060 SW Garden Place, Portland, OR 97223
CREDIT DEPT. (503) 684-7232

(continued from page 47)

the Style menu, as were superscript and subscript styles. The keyboard shortcuts for the style options were changed so you could turn an option on or off. The Show and Hide Header and Footer commands in the Format menu were replaced with Open, Display, and Remove Header and Footer commands.

Prerelease versions of the third version of *MacWrite*—versions 3.0 to 4.2—proliferated throughout the Macintosh community from December 1984 until May 1985, when version 4.5 was officially released. This version, dubbed “disk-based *MacWrite*,” does not keep an entire document in memory, as earlier versions did. Instead it keeps the document on disk and brings into memory only the part you’re actually working with. That means your documents can be larger. Also, new commands in version 4.5’s Format menu allow you to align selected text without inserting a formatting ruler. Formatting rulers now have a box you can check to force vertical spacing of six lines per inch. The Search menu now includes Find Next and Goto Page # commands, and the current page number appears in the scroll box.

Oversize Pictures with MacDraw

Q. I created a *MacPaint* drawing of a paddle wheeler. The picture became so large that it takes up two *MacPaint* documents. I don’t want to shrink the drawing. Is there any way to combine the two documents into one drawing?

Daryl Dubas
Pittsburgh, Pennsylvania

A. Many individual *MacPaint* documents can be copied and pasted into one *MacDraw* document to create a single large picture. *MacDraw* can print the large picture full-size or half-size, using as many sheets of paper as necessary. You tape together the sheets of paper to form the whole drawing.

Each *MacPaint* picture must be transferred to the composite *MacDraw* document via the Clipboard. *MacPaint*’s small drawing window forces you to chop each picture into as many as six pieces. Copying and pasting each piece separately takes forever unless you use the Switcher to switch between *MacPaint* and *MacDraw*. You can also copy all the pieces from the *MacPaint* picture to the Scrapbook. You then copy the Scrapbook file, which is inside the System Folder, from the *MacPaint* disk to the *MacDraw* disk and copy and paste the pieces from the Scrapbook to the *MacDraw* document.

Copying *MacPaint* pictures to *MacDraw* is much easier with one of two desk accessories: QuickPaint (\$49.95 from Enterset, 800/621-0851 ext. 305, 415/543-7644 in California) or Art Grabber (\$49.95 from Hayden Software, 800/343-1218, 617/937-0200 in Massachusetts). Both allow you to copy fairly large pieces of a *MacPaint* document without quitting *MacDraw* or any other application program. To most efficiently copy full-width or full-height *MacPaint* pictures—up to 8 by 10 inches—use the *Paint Cutter* program (part of *Accessory Pak 1*, \$39.95 from Silicon Beach Software, 619/695-6956), preferably with the Switcher.

(continues on page 55)



Open the Door and Enter StudioMac™

A MUSIC EXPANSION KIT FOR YOUR MAC

Now you can create, enter, and edit 8 voice music on your Mac, and then listen to it in full orchestral sound using the Casio CZ-101’s amazing sound generation capabilities.

Studio Mac’s innovative software makes it easy for beginners as well as maestros to unleash their music creativity.

INCLUDES PROFESSIONAL KEYBOARD SYNTHESIZER

Studio Mac comes complete with the Casio CZ-101 keyboard synthesizer the 49 key, 4 octave professional keyboard synthesizer you’ve seen advertised in *Keyboard* and *Rolling Stone* magazine.

Create 8 voice Sound
Orchestrate duets with Mac and
the CZ-101 synthesizer
Use any MIDI-compatible synthesizer
(Software available unbundled)

Complete concerts may be created
Conversion routine for MusicWorks
files provided
Lots of sample tunes provided
SOURCE CODE AVAILABLE!!

MENTION THIS AD FOR A 10% HOLIDAY DISCOUNT!!

StudioMac a great value at \$595:
CZ-101 Keyboard Synthesizer,
Easy to use software
MIDI Adapter

Also sold separately:
StudioMac Software \$125
MIDI Kit \$214

 **Creative Solutions Inc.**

4701 Randolph Rd. Suite 12 Rockville, MD 20852 (301) 984-0262

CZ-101™ is a trademark of Casio, Inc.

Macintosh™ is a trademark of Apple Computer, Inc.

MusicWorks™ is a trademark of Hayden Software Company



Market Manager PLUS.™

The investment software that helps you stay ahead of the odds.



In today's dynamic market, staying ahead of the odds means staying on top of your investments—making sure you have the right information at the right time to manage your portfolio effectively.

Market Manager PLUS offers portfolio management for the active investor. By linking you with Dow Jones News/Retrieval®, it provides comprehensive automatic updating and reports.

Here's what it gives you:

- Automatic portfolio valuation updates.
- Automatic dividend distribution.
- Automatic stock-split routines.
- Automatic bond and treasury bill maturity alerts.
- Automatic option expiration and stock long-term alerts.
- Interest and dividend tax reports.
- Holdings reports by portfolio and security symbol.
- Plus much more.

Market Manager PLUS gives you easy access to the portfolio information you need to make informed investment decisions.

Demonstration disk. Just \$5*.

We've prepared a demo disk to show you how easy it is to manage investment portfolios. Learn how you can stay ahead of the odds, call:

1-800-345-8500, extension 48.

(Alaska, Hawaii and foreign call, 1-215-789-7008 ext 48.)

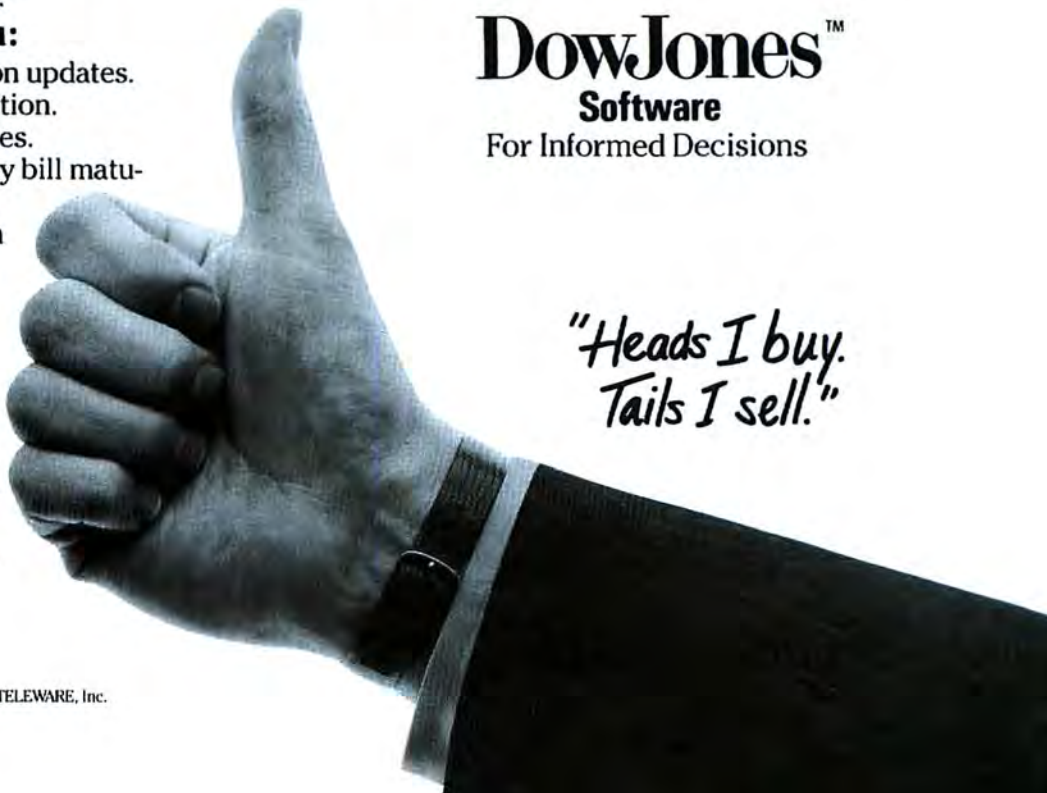
Have your credit card information ready, including expiration date. VISA, MasterCard, and American Express accepted.

Act now—Offer good for a limited time only.

*Please add \$2.50 for shipping and handling.

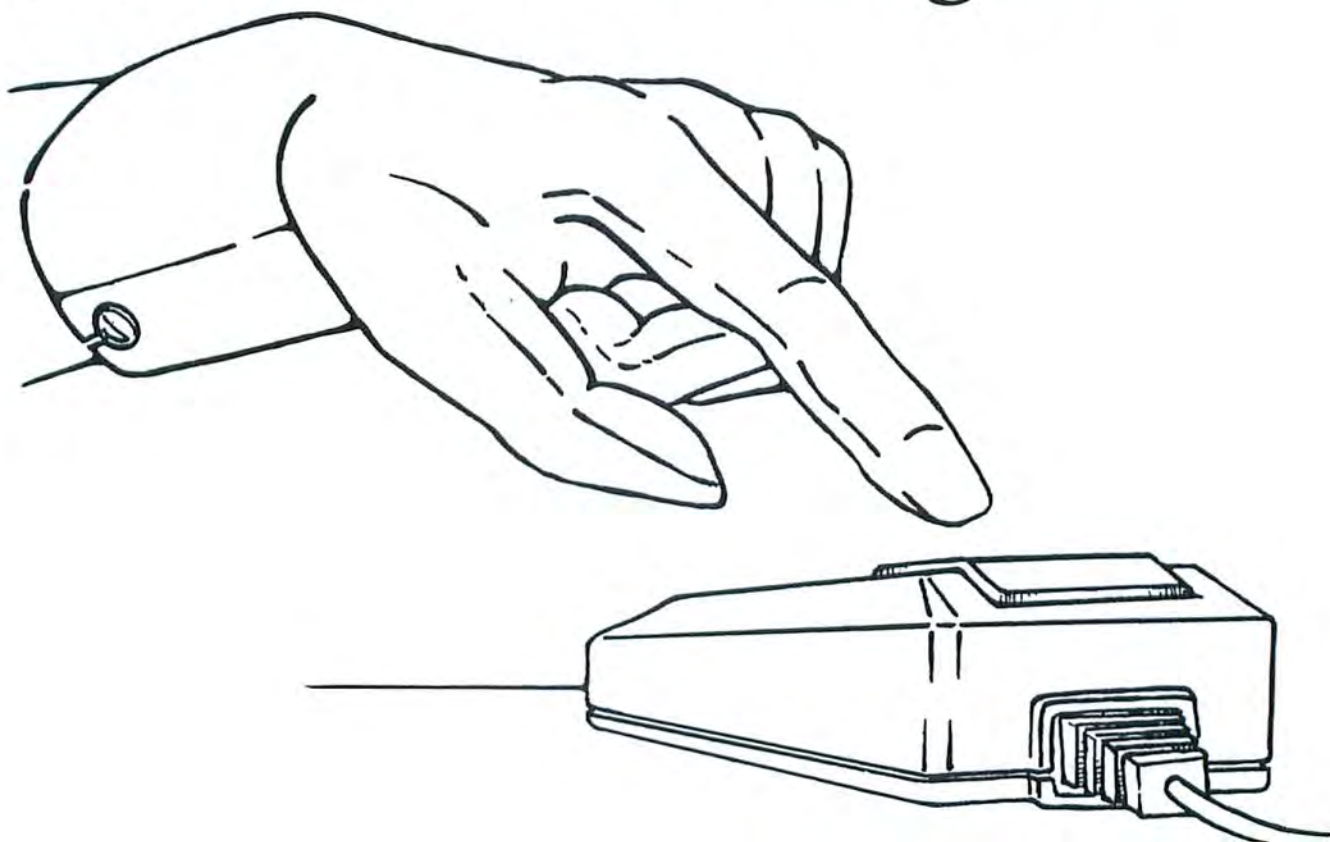
Market Manager PLUS works with IBM® PC, IBM XT, Apple® Macintosh™, Apple IIc and IIe.

Dow Jones™
Software
For Informed Decisions



*"Heads I buy.
Tails I sell."*

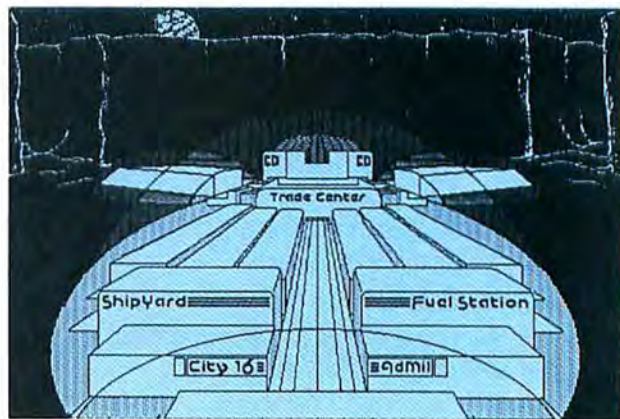
Let the Games Begin...



Grid Wars™

Your opponent waves its tentacles in the smoky barroom air, unleashing wave after wave of bizarre soldiers across the three-dimensional playing surface. You respond with your arsenal of weapons; fighting them off barely in time to face the next attack. If you fail, you buy the drinks.

\$39.95



Lunar Explorer™

Society is decaying around you. In your custom-designed space ship, you cross the war-torn world, bartering supplies between the isolated cities, and fighting the enemy forces in the barren canyons between. Your efforts are all that hold together the last remnants of civilization. If you fail, your world dies.

\$49.95

Game Software written exclusively for the Macintosh from

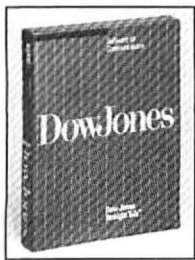


Ann Arbor Softworks, Inc.™

308½ S. State Street • Ann Arbor, MI 48104 • (313) 996-3838

Straight Talk.™

The information software that keeps you on course.



You don't go sailing without the right navigational instruments. And you don't make business decisions without the right information.

Straight Talk and your Macintosh™ give you access to a world of timely information. Fast. So you have the information you need to make informed business decisions.

Here's what it gives you:

- Automatic log-on and log-off to major information services like, Dow Jones News/Retrieval®, The Source_{SM}, and CompuServe.
- The latest business information and financial news, plus airline schedules and fares, an encyclopedia, electronic mail and much more.
- Ability to review, save, edit and copy data received online *after* you hang up.
- Communication with other Macintosh computers via modem or networking.

And at \$95, Straight Talk is the least expensive, most diligent electronic know-it-all you'll ever come across.

Straight Talk is the precision instrument designed to make sure your ship comes in.

Special Offer!

For a limited time, order Straight Talk at \$95 and get 5 hours of **free time** on Dow Jones News/Retrieval (approximately \$100 value). To order, see your local computer dealer* or call:

1-800-257-5114, ask for John Austin.

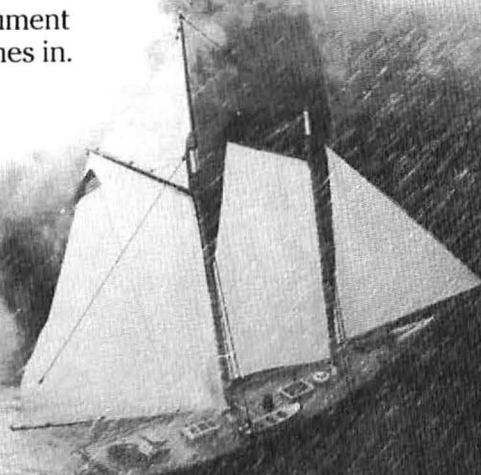
(In New Jersey, Alaska, Hawaii and Canada, call 1-609-452-1511)

Please have your credit card information ready, including expiration dates. VISA, MasterCard, and American Express accepted.

*To redeem offer send proof of purchase to Dow Jones & Company, Inc., John Austin, P.O. Box 300, Princeton, N.J. 08540.

Straight Talk works with Apple® Macintosh.™

Dow Jones™
Software
For Informed Decisions



"I think we turn left here."

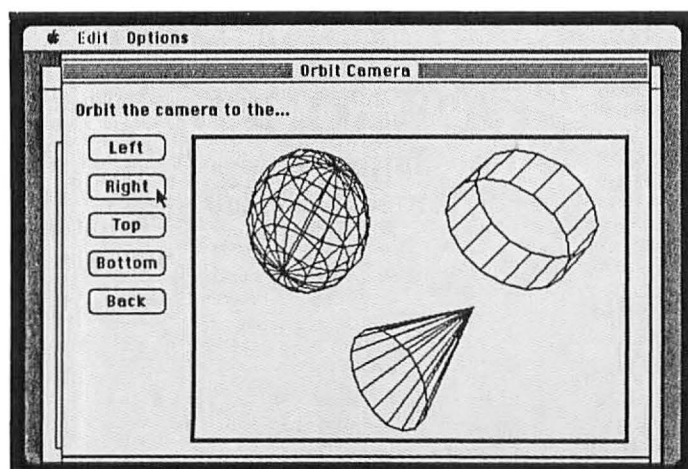
Mac3D

...a new dimension in software

Mac3D™ is a powerful three-dimensional graphics package now available exclusively for the Macintosh™.

Use it to create technical or free form drawings and designs. Simply select from a palette of basic shapes and then stretch, flip, resize, reshape and/or rotate your drawing along any axis in three dimensions--much like you would shape a globule of clay and examine it in your hand. Features include:

- **Advanced tool palette.** Select Text, Freehand Drawing, or shapes like Rectangles, Ellipses (includes circles), Polygons, Pyramids, Polygonal Prisms, Polygonal Pyramids, Ellipsoids, Cones, Cubes, Cylinders, and Tori (doughnuts).



- **Moveable Camera.** Use our new Setup Camera option and observe a drawing from virtually any point of view--even from the inside looking out!

Mac3D requires a 512K Apple® Macintosh™ and an external disk drive.

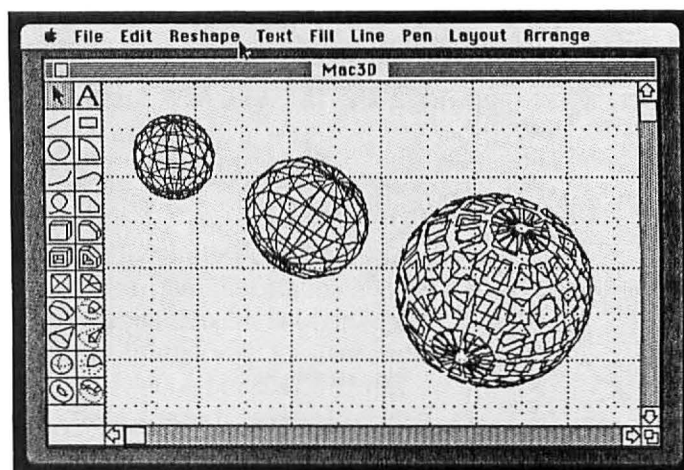
For more information see your local computer dealer or contact:

CHALLENGER SOFTWARE

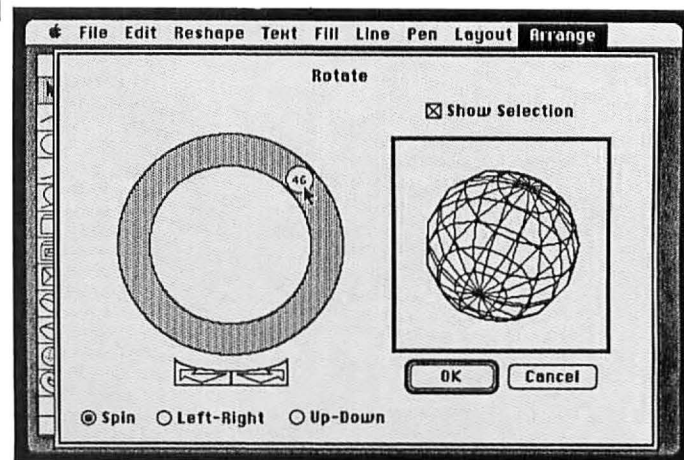
18350 Kedzie Avenue
Homewood, Illinois 60430
Phone (312) 957-3475

Apple is a trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.
Mac3D and the Mac3D logo are trademarks of Challenger Software Corporation.
©1985 Challenger Software Corporation

Circle 120 on reader service card



- **Reshaping capability.** Move vertices, edges, or surfaces with the mouse and watch as the connected edges and surfaces follow.
- **Standard and custom rulers.** Use the rulers we provide, or create your own for greater precision.
- **Enhanced Pattern Editor.** Choose from among the many fill and pen patterns provided, or create and edit your own.
- **360 degree rotation.** Use our new circular scroll bar and rotate your objects in one-degree increments to any orientation possible.



(continued from page 50)

Paste the *MacPaint* pictures into *MacDraw* beginning with the top left section of the composite picture. Work your way toward the bottom left corner of the *MacDraw* document. *MacDraw* initially positions all pasted objects in the middle of the drawing window, but you can move them so they align properly. Before attempting to align objects, choose Turn Grid Off from the Layout menu, so the objects will not be forced to move in 1/8-inch increments.

Use the scroll bars to bring additional *MacDraw* document space into view in the drawing window. If you scroll to the right or bottom edge of the document and still need more space, choose Drawing Size from the Layout menu to enlarge the document.

To print the composite drawing, choose Page Setup from the File menu. Select No Breaks between Pages. Check the appropriate paper size and pick a reduction factor, either none or 50 percent. The composite drawing may fit better if you select Wide orientation instead of the normal Tall Adjusted, depending on the drawing's shape. To check the fit, choose Reduce to Fit from the Layout menu, which gives you an overview of the whole document at once. To reenlarge the document to its normal size, choose Normal Size from the Layout menu.

Printing a large *MacDraw* document requires free space on the *MacDraw* disk for a temporary print file. The message "The print command was not completed" usually means the *MacDraw* disk has too little work space. Try printing one or two pages at a time. You can get

more free space by making *MacDraw* the startup application. To do so, select *MacDraw* and choose Set Startup from the Finder's Special menu. You can also free memory by removing the Finder—drag it from the System Folder to the Trash—or by copying *MacDraw* to a disk that doesn't contain a System Folder.

MacPaint to MBASIC 2.0

Q. How can I transfer a *MacPaint* picture into a Microsoft BASIC version 2.0 program?
Peter Howard
Emmaus, Pennsylvania

A. An MBASIC program can import a *MacPaint* picture that has been copied to the Clipboard. The following program illustrates how to do this:
OPEN "CLIP:PICTURE" FOR INPUT AS 1
IMAGES\$=INPUT\$(LOF(1),1)
PICTURE,IMAGES\$
CLOSE 1

First, the OPEN command opens the Clipboard—the MBASIC device named CLIP:—as an input file for pictures. Next, the INPUT\$ function copies the picture from the Clipboard to the string variable IMAGES\$. Finally, the PICTURE command displays the picture from the string variable in the upper-left corner of the output window. This program is a corrected version of the one that appears on page 58 of the MBASIC 2.0 documentation.

Imagewriter Graphics from MBASIC

Q. Could you please suggest a method for printing graphics on the Imagewriter with standard MBASIC commands?
Robert A. Mueller
Wauwatosa, Wisconsin

(continues on page 57)

It's alive with Speed.

R_x for MacPaint and MacWrite!

☐ Mac Measure → 2.750" ↓ 0.266"

Mac Measure-- a desk accessory that displays your current pointer position in inches, cm., or screen dots.

☐ Mac Measure ↔ 1.125" ∠ 27°

Also displays the length and angle of lines as you draw:

☐ Mac Measure → 1.000" ↓ 0.144"

Displays the size of boxes, marquees and ellipses as you stretch them:

Use it with MacPaint to: • Precisely scale drawings. • Create isometric drawings. • Design forms.
 Use it with BASIC or Pascal to: • Choose the right x and y the first time. • Layout screen displays.

Mac RTL-- for Right To Left writing.

- A desk accessory that converts MacWrite into a Right to Left word processor for use with Hebrew and other RTL languages.*
- Text appears on screen and printer** in the correct RTL order.
- Use any of MacWrite's features to control the text size, margins, and tabs.

*Hebrew font included.

** Not currently compatible with LaserWriter.

Foundation Systems

P.O. Box 18308-M
Minneapolis, MN 55418

Charge orders: (800) 328-3890
In Minnesota: (800) 682-3816
Inquiries: (612) 789-3793



Order Now!

Mac Measure: \$24.95
Mac RTL: \$49.95

Minn. residents add 6% tax.
MacPaint, MacWrite, and LaserWriter
are trademarks of Apple Computer, Inc.

Circle 23 on reader service card

(continued from page 55)

A. The WINDOW OUTPUT command can divert the graphics drawn by commands such as CIRCLE, PSET, PICTURE, CALL PENSIZE, CALL LINETO, and CALL TEXTFONT to the printer. The program "Sine Curve" prints the graph of a sine curve on the Imagewriter.

In MBASIC the device name for the printer is LPT1:. If you append the PROMPT option to the device name, MBASIC displays the standard Page Setup and Print dialog boxes so you can choose paper size, orientation, pagination, reduction, print quality, page range, number of copies, and paper feed (see "Sine Curve"). However, the page range choice has no effect. Only the first page is printed regardless of the range you choose.

Stand-Alone Pascal Programs

Q. I write programs using Macintosh Pascal. However, I dislike having to start Pascal and then open a program. Can I run programs directly? How can I create a program that doesn't require the Pascal interpreter disk?

*Albert E. Fowerbaugh
Lakewood, Ohio*

A. You can open a Pascal program icon directly using the Finder, which automatically opens the Pascal interpreter first. But once the program is open, you must run it manually by choosing Go from the Run menu. The Pascal interpreter disk must be inserted in a drive.

(continues on page 59)

It's alive with Power.

'Program prints the graph of a sine curve

SCALE=100 'Size factor
OFFSET=300 'Starting point

OPEN "LPT1:PROMPT" FOR OUTPUT AS #1 'Open printer
WINDOW OUTPUT #1 'Divert output to printer

CALL MOVETO (OFFSET,0) 'Start at top center of page

'Draw graph
FOR Y=0 TO 2*3.1416 STEP .1
CALL LINETO (SIN(Y)*SCALE+OFFSET,Y*SCALE)
NEXT Y
END

Sine Curve

Printing graphics from Microsoft BASIC on the Imagewriter printer requires the printer device, LPT1:, to be opened as an output file. The Page Setup and Print dialog boxes are displayed prior to printing if you include the PROMPT option.

Need A Backup? Lost a File or Disk? Run Programs on Hard Disk? Run Programs without Master Disks! **Mac Zap**

Three Main programs + extras!
Backup Protected Disks, Automatic!
File and Disk Recovery Utilities!!
Install Programs to Hard Disk!!
Disk Controls Graphics Volum Info
Dissassembler File Info Maps
Regular Updates, 55 page Manual
Also 170 Page Book Apple/Mac/IBM
'Software Protection on Micros'

Micro Analyst Inc.	Mac Zap Program \$60
P.O. Box 15003	Book (Optional) \$40
Austin, TX 78761	Ship (Overseas \$10) \$02
Call (512) 926-4527	Visa/Mc Accepted!

Circle 219 on reader service card

Only you and your mouse can defend your city and save its people.



Introducing MacCommand



Creighton Development, Inc.

MacCommand is a registered trademark of Creighton Development, Inc.

For more information, or the location of your nearest MacCommand dealer, please call or write Creighton Development, Inc.

16 Hughes Street, Suite C-406
Dept. MAC
Irvine, California 92714
714/472-0488

5:35 a.m.

Your city is under attack from hostile forces. Hot air balloons have started releasing a deadly shower of bombs in an attempt to break your city's protective shield. Dive bombers are zooming in for a full scale attack.

The battle has just begun...

9:08 a.m.

Smart bombs come hurtling through the air... You fire and miss, fire and miss. What's happening?! You've never seen anything like them... how do you destroy them before they destroy you? OH, NO! You're losing your high-energy shield!

11:23 a.m.

Armed paratroopers are dropping from the skies in droves. You begin to realize that defending your city is no easy mission. You fire from one of your three MacCommand bases. ZapZapZap! Got one, got two... But, they're coming too fast. Paratroopers have penetrated your city...

4:52 p.m.

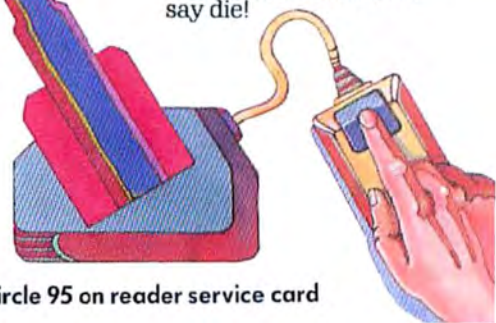
They've destroyed your main missile base. They've detonated city hall! Ambulances are on their way to collect your wounded. What a disaster!

But there's more to come...

9:47 p.m.

NOT THE DREADED SPINNERS! With spinners zinging through the air, firing smart bombs randomly in rapid succession, how much longer can you hold the enemy back?

To find out, you'll have to get your own copy of MacCommand. And don't worry... if you don't make the high scoreboard your first time around, there's always tomorrow. Remember, dedicated MacCommandos never say die!



Circle 95 on reader service card

(continued from page 57)

To write a stand-alone program, you need a Pascal compiler, such as MacAdvantage UCSD Pascal (\$295 from SofTech Microsystems, 800/451-8080, 800/824-7867 in California). You write a Pascal program with an editor, such as *MacWrite*, and use the MacAdvantage compiler to translate the Pascal program statements into an intermediate code. A separate program called a run-time module executes the intermediate code when you run the program. Since the run-time module is not copy protected, you can put a copy on each of your program disks. However, if you want to sell or give a program to anyone else, you need a license to distribute copies of the run-time module (\$500 from SofTech Microsystems for one year of unlimited distribution). The MacAdvantage system uses the Mac operating system and offers access to most of the ROM routines but is not compatible with the p-System Pascal that runs on the IBM PC.

MacPaint's Grid Command

Q. What does the Grid command in *MacPaint*'s Goodies menu do?

*Abmed Nasr Ghanem
Eastbourne, East Sussex
United Kingdom*

A. Choosing Grid from *MacPaint*'s Goodies menu imposes an invisible grid on the drawing window. Pointer movement is constrained to the grid lines, as if the drawing window were a piece of graph paper and the pointer could only move on the

lines or jump from line to line. The grid feature affects only the following operations:

- Selecting, dragging, and duplicating with the marquee.
- Selecting a text insertion point with the I-beam pointer.
- Drawing straight lines.
- Drawing rectangles, rounded rectangles, ovals, and polygons (but not free-form shapes).
- Dragging and duplicating an object selected by the lasso. The lasso is only affected by the grid immediately after you paste something else that was selected by the lasso.

The invisible grid lines are eight dots apart, so the pointer moves eight dots at a time instead of one, making it easy to position the parts of a drawing. The grid is especially handy for working with patterns, which are defined by eight-by-eight-dot squares. *MacPaint* fills an area by laying patterned squares end-to-end like floor tiles. The grid feature constrains movement of a selection to the same eight-dot intervals that the pattern squares are based on. If the grid feature is on when you drag patterned objects, overlapping patterns always mesh. If you drag patterned objects when the grid feature is inactive, overlapping patterns usually end up offset from each other.

The grid feature is also useful for stretching a patterned object. You select one

(continues on page 62)

It's alive with Expand- ability.



Leave the stone age behind and enter the MAGIC™ age.



MAGIC captures full screen (512 x 342 pixel) MacPaint-editable images in less than two-fifths of a second—a professional-quality camera interface system for the Macintosh computer.

The MAGIC system is 100% mouse-driven, making it reliable, quick, and fun to use.

Choose from three different capture modes: high-contrast black and white, gray-scale patterned, or our new "edges-only" mode.

MAGIC includes a high quality B&W television camera, electronic interface, and application program on disk.

The complete MAGIC system is available for \$549.00. MAGIC without camera is \$399. A demo disk is available for \$9.95. Visa and MasterCard are accepted. Maryland residents add 5% sales tax.

Call or write:

New Image Technology, Inc.
Suite 104, 10300 Greenbelt Rd.
Seabrook, MD 20706
301/464-3100

Circle 90 on reader service card

Mac Special

Blythe Software Omnis 3	249.00
Computer Software Design	
MacLion	189.00
Haba Systems Quartet	115.00
Hayden Software Ensemble	149.00
Innovative Data Design	
MacDraft	139.00
I/O Design Macintosh & Imagewriter	
Carry Case Bundle	79.00
Kalmar Designs	
Teakwood Roll-Top Disk Cases:	
Micro Cabinet (45) 3 1/2"	14.00
Double Micro (90) 3 1/2"	24.00
Living Video Text	
Think Tank 512K	125.00
Lotus Jazz	379.00
Mark Of The Unicorn	
Professional Composer	249.00
N² Products Inc.	
Highest Quality Molded & Shielded Cables	
with Thumbscrews matching the	
Macintosh's Style & Color perfectly!	
Macintosh Modern Cable	25.00
Macintosh Printer Cable	25.00
ODS, Inc. Consultant	129.00
Practical Computer Peripherals	
Mac Bottom Hard Disk	\$ Lowest Price!
ProVUE Development	
OverVUE 2.0	149.00
Summagraphics	
MacTablet	\$ Lowest Price!

Backup and Utility Software

Assimilation Process Guardian	22.00
Mac Memory Disk	22.00
Mac Mouse Tracks	22.00
MIDI Composer	22.00
Work 'N' Print	22.00
Central Point Software	
Copy II Mac	20.00
Crystal Canyon Computing, Inc.	
The Mac Librarian	29.00
Dreams Of The Phoenix	
Quick & Dirty Utilities	28.00
FWB Software Hard Disk Util	59.00
Hippopotamus Software	
Hippo-Lock	69.00
Ideaform Mac Labeler V2.0	29.00
Meacom Mac + II	71.00
MicroAnalyst MacZap	38.00
Mainstay MacBooster	32.00
Disk Ranger	32.00
N' Cryptor	26.00
Nevins Microsystems TurboCharger	57.00
New Canaan Microcode	
Mac Disk Catalog	29.00
PBI Software	
Icon Switcher or Icon Libraries	14.00
Protect-It Software ProCopy/ProEdit	31.00
Practical Computer Applications	
MacBackup	47.00
SMB Development MacMate!	35.00
SoftStyle Epstart V2.0	29.00
Laserstart	61.00
TI Start	49.00
Jetstart or Toshstart	29.00
Symmetry Quick Disk	21.00
Tardis Software Fast Finder or	
C-Learner	36.00
MacMake	36.00
C-Learner, Tool Pak I or II	36.00
Macintosh Programmer's Library	149.00
Tesseract Software MacCopy	39.00

Desk Accessory Programs

Batteries Included Battery Pak	31.00
Borland SideKick	49.00
Dubl-Click Software	
Calculator Construction Set	59.00
Dreams Of The Phoenix Twelve-C	28.00
EnterSet QuickSet	55.00
QuickPaint	29.00
QuickWord	36.00
Haba Systems Haba Window Dialer	29.00
Intermatrix MacDesk	54.00
Harvard Associates Desk Toppers	31.00
Mainstay Type Now	26.00
Macadam Publishing	
WindowWare Calendar or Phone Book	31.00
WindowWare Phone Book & Calendar	51.00
MegaHaus MegaDesk	67.00
Silicon Beach Software	
Accessory Pak #1	24.00
T/Maker ClickOn Worksheet	46.00
Videx MacCalendar	51.00

Languages

Apple Computer MacPascal	95.00
Macintosh 68000 Development System	145.00
Consular	
Mac C/Mac C Toolkit/Version 4.0	275.00
Creative Solutions	
MacForth Level I—Explorer's System	79.00
MacForth Level II—Professional System	129.00
Expeffelligence ExperLogo	79.00
ExperLisp	239.00
ExperOPS5	169.00
Hippopotamus Software	
Hippo-C Level 1	79.00
Hippo-C Level 2	229.00
Hippo-C Upgrade Kit	139.00
Kryia Systems Neon!	129.00
Mainstay MacASM	75.00
Megamax, Inc. Megamax C Compiler	175.00
Micromotion	
MasterForth Base System	89.00
Microsoft Microsoft Basic	86.00
Microsoft Logo	75.00
Portable Software PortaAPL	199.00
SoftTech Microsystems	
Mac Advantage UCSD Pascal	159.00
UCSD Pascal Development System	127.00
UCSD Pascal Language Compiler	92.00
Fortran 77 Development System	189.00
Fortran 77 Language Compiler	155.00
Advanced Development Tool Kit	98.00
Softworks Ltd.	
Softworks C Compiler	237.00
Terrapin MacLogo	75.00

Communications Software

Aegis Software MacMail	37.00
Apple Computer MacTerminal	95.00
Compuserve Compuserve Starter Kit	15.00
DataViz MacLink with Cable	109.00
Desktop Software 1st Port	49.00
Dilithium Press	
PC to Mac and Back with Cables	79.00
Dow Jones Straight Talk	45.00
Dreams Of The Phoenix	
Mouse Exchange Terminal or BBS	28.00
Haba Systems HabaCom	42.00
Hayes Microcomputer	
Smartcom II	86.00
Kaz Business Systems MacDasher-Data	
Gen. D210 Term. Emulator	35.00
Mainstay Telescope	78.00
Mesa Graphics Tekalike	179.00
Mycroft Labs Mite	87.00
Prometheus ProCom-M	69.00
Smith Micro Software Market Link	45.00
Software Masters In Touch	97.00
Source Telecomputing	
On-Line Information Network	30.00
Southeastern Software	
Mac Transfer	31.00
Videx Mail Center (2 User)	179.00
Mail Center (6 User)	289.00

Business Software

Advanced Logic Systems	
Mighty Mac	36.00
Aegis Software The HouseKeeper	45.00
Aldus Corporation PageMaker	Call
Apple Computer MacProject	145.00
Assimilation Process	
Mac Spell Right	69.00
The Right Word	69.00
Business Essentials	65.00
Boston Software Publishers	
The MacPublisher	74.00
The MacPublisher II	Call
Creighton Development	
MacHome or MacOffice	27.00
MacSpell +	55.00
DataFood MacForms	45.00
DrawForms	35.00
DataPak Software My Office	75.00
Dreams Of The Phoenix	
Day Keeper Calendar	28.00
Desktop Software First Base	99.00
First Merge	49.00
1st Base & 1st Merge	148.00
Dow Jones Market Manager Plus	109.00
Spreadsheet Link	57.00
Electronic Arts Financial Cookbook	34.00
Emerging Technology MacOfix	79.00
Forethought Factfinder	86.00
Filemaker	109.00
Haba Systems HabaWorks	Call
Haba Solutions Software Bundle	149.00

Hayden Software Ensemble	149.00
Haden: Chart	59.00
Hayden: Speller	45.00
I Know It's Here Somewhere	35.00
MacBase	115.00
Hayes Microcomputer	
Please Database	129.00
Human Edge Software	
The Communications Edge	99.00
The Management Edge or Sales Edge	129.00
The Mind Prober	29.00
The Negotiation Edge	149.00
Layred Front Desk	79.00
Lazer Software LazerBase	95.00
Living Videotext Think Tank 128	75.00
Think Tank 512	125.00
Manhattan Graphics	
Ready Set Go	59.00
MegaHaus Mega Business Pack:	
File, Form, Merge & Desk	235.00
MegaFiler	104.00
MegaForm	149.00
MegaMerge	65.00
Microsoft Microsoft File	112.00
Microsoft Chart	72.00
Microsoft Excel	229.00
Microsoft Multiplan	112.00
Microsoft Word	112.00
Mac Business Pack:	
Word, Multiplan, File & Chart	342.00
Model Office Company	
Document Modeler	Call
Odesta Helix	219.00
Paladin Crunch	169.00
Satori Software Bulk Mailer	79.00
Smith Micro Software	
Stock Portfolio System	110.00
Softstyle Decision Map	94.00
SoftDesign TimeBase	87.00
SoftTech Microsystems	
MailManager	69.00
Software Publishing	
PFS:File/Report Combo	105.00
StatSoft DataFast	39.00
Stoneware DB Master Mac	99.00
Telos Filevision	99.00
Warner The Desk Organizer	59.00

Overlays For Multiplan™

Allegro Software Softstart	31.00
Personal Finance	31.00
Business Analyst	31.00
Apropos Financial Planning	55.00
Investment Planning	55.00
Tax Planner	25.00
Harris Technical Systems	
Profit Projections/Break-even Analysis	47.00
Prentice Hall	
Construction Estimator	42.00
RealData, Inc. Overlays For Multiplan and Jazz:	
Tax Shelter Syndication Analysis	179.00
On Schedule	119.00
Income Producing Real Estate	89.00
Financial Overlays	62.00
Commercial/Industrial Applications	62.00
Residential Models	62.00
Synetics Syncorp Budget Aids	45.00

Accounting Packages

Aegis Software ZAP! Invoice	61.00
Applied Logic Systems	
BizMac Small Business Systems	Call
Chang Labs Rags to Riches Ledger	105.00
Rags to Riches Receivables	105.00
Rags to Riches Payables	105.00
Continental/Arrays	
The Home Accountant	59.00
Digital, Etc. Maccountant	145.00
Future Design Software	
Strictly Business Accounting System:	
Module 1—General Ledger	239.00
Haba Systems Haba Checkminder	42.00
Intermatrix Chequebook	27.00
Micromax Gallery Finance Package:	
GLIAR/AP/Cash Disbursements	499.00
Gallery Finance Package:	
Special Edition	199.00
Monogram Dollars & Sense	81.00
Forecast	41.00
Palantir General Ledger	79.00
Accounts Receivable	79.00
Inventory Control	79.00
Peachtree General Ledger	89.00
Accounts Receivable	89.00
Accounts Payable	89.00
Sierra On-Line MacOneWrite	139.00
Accountants Choice Modules (ea.)	399.00
SoftSync Personal Accountant	51.00

State Of The Art Electric Checkbook	45.00
United Software	
In House Accountant	110.00

Statistics Packages

BrainPower Statview	99.00
Hayden & Son Statworks	89.00
Northwest Analytical NWA StatPak	249.00
NWA Quality Analyst	319.00
StatSoft StatFast-2	75.00

Graphics Software

Apple Computer MacDraw	145.00
Antsys Corp. Fontastic	34.00
Art Arbor Softworks	
Animation Tool Kit I	31.00
InMotion	99.00
Axlon Art Portfolio	35.00
Card Shoppe	35.00
Casady Company Fluent Fonts	29.00
Challenger Software Mac 3D	125.00
Esoft Enterprises ColorChart	75.00
Hayden Art Grabber	29.00
VideoWorks	59.00
Home Design w/Art Grabber	49.00
DaVinci: Buildings	29.00
DaVinci: Building Blocks	46.00
DaVinci: Commercial Interiors	115.00
DaVinci: Houses	29.00
DaVinci: Interiors	29.00
DaVinci: Landscapes	29.00
Innovative Data Design MacDraft	139.00
Paste-Ease Volume 1	37.00
I/O Designs ColorPrint Software Only	29.00
ColorPrint Starter Kit-3	45.00
ColorPrint Starter Kit-6	59.00
ColorPrint Transfer Starter Kit	59.00
ColorRibbon—Heat Transfer Ribbons (ea.)	9.00
Kensington Microware Graphic Accents	29.00
Professional Type Fonts For Text	29.00
Professional Type Fonts For Headlines	42.00
Magnum Software	
McPicl Volume 1 or 2	30.00
The Slide Show Magician	35.00
Matrix Advocates Images	27.00
Mesa Graphics Plot-It	69.00
MicroSpot MacPlot	89.00
Miles Computing	
Mac The Knife Volume I	23.00
Mac The Knife Volume II	27.00
Penguin Graphics Magician	56.00
T/Maker	
Click Art Letters or Personal Graphics	29.00
Click Art Publications or Effects	29.00
Vamp, Inc. McCad	299.00

Educational/Creative Software

ATI Teach Yourself Jazz	45.00
Teach Yourself Multiplan	30.00
BrainPower Chipwits	28.00
Teletchess	41.00
Thinkfast	24.00
Camde Nutri-Calc	59.00
Charlot Software Group	
Microtest II	149.00
Davidson & Asso. Speed Reader II	38.00
Spell It!, Math Blaster, or Word Attack	30.00
Electronic Arts	
Pinball Construction Set	28.00
Deluxe Music Construction Set	34.00
First Byte Smooth Talker	59.00
Kid Talk or Speller Bee	49.00
Forethought Typing Intrigue	29.00
Great Wave Software	
ConcertWare Plus	42.00
Harvard Associates MacManager	31.00
Hippopotamus Software	
Hippo Computer Almanac	21.00
Hippo Jokes & Quotes	21.00
Hayden MusicWorks	45.00
SAT Score Improvement System	58.00
Turbo Turtle	36.00
Computer Novel Construction Set	30.00
Microsoft Entrepreneur	32.00
Learning Multiplan & Chart	38.00
Palantir MacType or MathFlash	30.00
WordPlay	27.00
QED Typing Made Easy	39.00
Queue Intellectual Software	
Not Like The Others	36.00
How Many? or Early Reader	25.00
What Comes Next?	35.00
Reading & Thinking I or II	39.00
Vocabulary Adventure I or II	44.00
Spanish Grammar I, II or III	25.00
World Geography Adventure I or II	44.00
U.S. Geography Adventure	44.00
How A Bill Becomes A Law	44.00
American History Adventure	44.00
Starting A New Business	44.00
Analogies I or II	49.00
College Aptitude Reading Exercises	49.00
Rubicon Publishing SongPainter	34.00
Deja Vu	24.00
Dinner at Eight	Call
Scarborough Make Millions or	
MasterType	29.00
Run For The Money	29.00

Simon & Schuster Mac Art Dept.	24.00
Typing Tutor III	35.00
Paper Airplane Construction Set	24.00
Software Concepts	
Concepts Computerized Atlas	45.00
Think Educational	
MacEdge II or Mind Over Mac	29.00
MacEdge Plus	29.00
Mac Mac & His Mindbox	29.00
TimeWorks	
Evelyn Wood Dynamic Reader	41.00

Game Software

Activision	
Championship Star League Baseball	22.00
Aegis	
Mac-Challenger or Pyramid of Peril	29.00
Artsci Hearts	18.00
Axlton MacMatch	30.00
Blue Chip Software	
Barron or Millionaire	30.00
Squire or Tycoon	30.00
Broderbund Ancient Art of War	29.00
Cyborg or Lode Runner	24.00
CBS Software Murder by the Dozen	27.00
Creighton Development	
Mac Command	21.00
EPYX Rogue	18.00
General Computer Co.	
Ground Zero	24.00
Hayden Software Holy Grail	29.00
Masterpieces or Perplex	24.00
Sargon III or Inca	30.00
Word Challenge II	24.00
Infocom A Mind Forever Voyaging	27.00
Cutthroats or Enchanter	24.00
Deadline or Starcross	30.00
Hitchhiker's Guide or Zork I	24.00
Infidel, Zork II or Zork III	27.00
Planetfall or Seastalker	24.00
Sorcerer or Suspect	27.00
Suspended	27.00
Wishbringer or Witness	24.00
Invisicubes - Hint Booklets (ea.)	6.00
Kastel Technology Trivia Savant	23.00
Magnum Software Gypsy	29.00
Mark Of The Unicorn	
Mouse Stampede	23.00
Miles Computing MacAttack	28.00
Harrier Strike Mission	28.00
Mindscape Deja Vu	34.00
Origin Systems Ultima III: Exodus	37.00
PBI Software Feathers & Space	21.00
Strategic Conquest	30.00
Fokker Triplane	37.00
Penguin Pensate or The Quest	24.00
Transylvania or Xyphus	24.00
Professional Software Trivia Fever	22.00
Trivia Fever Volume II	14.00
Priority Software	
Forbidden Quest or Gateway	27.00
Screenplay Trivia Arcade	20.00
Sierra On-Line	
Championship Boxing or Frogger	24.00
Ultima II	35.00
Silicon Beach Software Airborne!	21.00
Sir Tech Wizardry	36.00
Soft Life MacSlots	29.00
Spectrum Holobyte Gato	28.00
Orbiter	36.00
Star Systems Software	
12 Classic Adventures	39.00
Telarium Amazon or Dragon World	27.00
Fahrenheit 451 or Rendezvous w/Rama	27.00
Videx Fun Pack	23.00
MacCheckers & Reversi	28.00
MacGammon & Cribbage	28.00
MacVegas	34.00

Disk Drives/Hard Disks

Apple Macintosh Hard Disk 20	1199.00
Macintosh External Drive	359.00
Bal MAC525-10 400KB External Drive	239.00
MAC535-20 800KB External Drive	Call
Corvus 5.5 MB Mac OmniDrive	999.00
11.1 MB Mac OmniDrive	1399.00
21.6 MB Mac OmniDrive	1999.00
45.1 MB Mac OmniDrive	3449.00
Haba Systems	
HabaDisk 400 KB SS/DD w/SoftBundle	299.00
HabaDisk 800 KB DS/DD w/SoftBundle	Call
Iomega The Bernoulli Box	1299.00
5 Meg Cartridge	42.00
Head Cleaning Kit	59.00
Micro-Design	
The Keeper™ File Servers-10,20 or 30MB	Call
Mirror Technologies	
Shugart 400 M/E Manual Eject Drive	189.00
Sony Magnum 800K Drive	429.00
Mitsuba Super 5 Mac External Drive	279.00
Paradise Systems	
Mac 10 Hard Disk Subsystem	Call
Personal Computer Peripherals	
MacBottom Hard Disk	Call
Quark QC10-10 Meg Hard Disk	1029.00
QC20-20 Meg Hard Disk	1379.00

Tecmar	
Mac Drive 5 MB Removable	995.00
Mac Drive 10 MB Fixed	995.00
Western Automation Labs	
Dasch External RAMdisk 500K	Call
Dasch External RAMdisk 1000K & 2000K	Call

Modems

Anchor Automation	
Signalman Express 1200 Baud	239.00
Apple Computer	
Apple Personal Modem 300/1200	289.00
Hayes Microcomputing	
Smartmodem 300	129.00
Smartmodem 1200	369.00
Smartmodem 2400	579.00
Transtel 1000	269.00
Kensington	
Portable Modem (300 Baud)	89.00
Microcom	
Mac Modem 1200 w/Software	419.00
Novation	
Cat Comm Communications System	279.00
Prentice	
Popcom X-100 Modem (Mac)	265.00
Prometheus	
Promodem 1200 with Mac Software	335.00
U.S. Robotics Password 1200	199.00
Courier 2400	389.00

Printers

Apple ImageWriter II Color Printer	459.00
ImageWriter Printer	409.00
ImageWriter Wide Carriage	479.00
LaserWriter Printer	5249.00
Brother HR-15XL	349.00
HR-25	489.00
HR-35	679.00
Twinwriter 5 w/Serial Interface	899.00
Epson DX-10 Daisy Wheel	Call
DX-20 Daisy Wheel	Call
FX-85 w/Hanzon Interface	Call
FX-185 w/Hanzon Interface	Call
LQ-1500 w/Serial Interface	Call
Hewlett Packard Thinkjet	Call
Laserjet	Call
Juki 6100 Serial	389.00
6300 Serial	679.00
NEC SpinWriter 2010	625.00
SpinWriter 3510	995.00
SpinWriter 8810	1395.00
Color PinWriter CP2-6 10"	699.00
Color PinWriter CP3-6 15"	949.00
NEC Colormate Kit	79.00
NEC SpinWriter Accessory Kit	79.00
Okidata ML-192 Apple Mac/Lisa	375.00
ML-193 Apple Mac/Lisa	555.00
Toshiba P-1340 Serial	529.00
P-351 Serial	1099.00

Blank Media

BASF 3 1/2" (5)	12.00
Bulk 3 1/2" (10)	18.00
Sony 3 1/2"	22.00
Fuji 3 1/2" (10)	24.00
Maxell 3 1/2" (10)	23.00
Memorex 3 1/2" (10)	23.00
Verbatim 3 1/2" (10)	26.00
3M 3 1/2" (10)	29.00

Digitizers

GTCO Corporation Macintizer	399.00
Koala Technologies Corp.	
KAT Graphics Tablet	135.00
MacVision	169.00
New Image Technology	
Magic Digitizer	249.00
Oberon International	
Omni-Reader	579.00
Summagraphics MacTablet	Call
ThunderWare Thunderscan	175.00

Accessories

A.M. Products	
3 1/2" Head Cleaning Kit	18.00
AST RamStack Expandable Memory	
for Mac XL:	
RamStack w/512K Ram Installed	625.00
RamStack w/1, 1.5 or 2 MEG Installed	Call
American Tourister Mac Carry Case	69.00
Apple Computer	
Mac Numeric Keypad	85.00
Macintosh Carry Case	85.00
Assimilation Process	
Numeric Turbo	129.00
Mac Turbo Touch	79.00
Mac Port Adaptor	69.00

MIDI Conductor	75.00
Mac Epson Connection	75.00
Mac DaisyWheel Connection	79.00
Port Adaptor w/Epson Connection	Call
Port Adaptor w/DaisyWheel Connection	Call
Creighton Development	
ProPrint Software Only	39.00
ProPrint with Cable	54.00
ProPrint with AB/Switch & 2 Cables	139.00
Curtis Manufacturing	
Diamond-Surge Suppressor-SP1	30.00
Emerald-Surge Suppressor-SP2	36.00
Ruby-Surge Suppressor-SPF-2	54.00
Sapphire-Surge Suppressor-SPF-1	47.00
Diversions, Inc.	
Underware Ribbon	9.00
Underware Color Pens-Small	10.00
Underware Color Pens-Large	15.00
Environmental Software Company	
MacAttire: Available in Navy-Blue, Burgundy, or Silver-Gray	6.00
External Drive or Keypad Cover	11.00
Imagewriter Cover	13.00
Wide ImageWriter Cover	15.00
Mac & Keyboard Cover	17.00
LaserWriter Cover	20.00
Mac XL & Keyboard Cover	75.00
Ergotron MacTilt	
Hanzon	
Universal Data Buffer w/64 K	289.00
Intermatrix MacPhone	75.00
ComputerPhone w/Modem	249.00
Innovative Concepts	
Flip 'n' File/Micro	8.00
Flip 'n' File II/Micro	18.00
Innovative Technology Pocket Pack	9.00
The Easel	12.00
CompuBag	55.00
I/O Design	
Imagewriter Carrying Case	44.00
Wide Imagewriter Carrying Case	55.00
Macintosh Carrying Case	54.00
Kensington A/B Box	60.00
Disk Case	19.00
Disk Drive Cleaning Kit	19.00
Dust Cover	8.50
Mouse Cleaning Kit w/Pocket	15.00
Polarizing Filter	31.00
Starter Pack	54.00
Surge Protector	34.00
Swivel	22.00
Tilt/Swivel	22.00
Control Center	60.00
Printer Stand	17.00
Kette Group	
MacNifty Joystick Converter	37.00
MacNifty Stereo Music System	61.00
MacNifty A/B Switch	27.00
MacNifty Keyboard	115.00
Kraft QuickStick	49.00
Microsoft MacEnhancer	159.00
Mouse Systems A + Optical Mouse	59.00
MousTrak MousePad	8.00

MPH Computer Products	
MAC-B-COOL	119.00
Optimum Computer Luggage	
MacTote Mac Carry Case	65.00
Ribbons Unlimited	
Available in Black, Blue, Brown, Green, Orange, Purple, Red, Yellow, and Silver	
ImageWriter Ribbon - Black	4.50
ImageWriter Ribbon - Color	5.00
ImageWriter Rainbow Pack (6 Colors)	28.00
Smith & Bellows Hand Crafted Mahogany Disk Case: Holds up to 90 Diskettes	19.00
SRW	
Microdex/25 Modular View File 3 1/2"	14.00
Systems Control MacGuard	56.00
Video 7 Mouse Stick	38.00

Books

Microsoft Press Inside MacPaint	14.00
MacWork/MacPlay	14.00
Microsoft Macinations	14.00
Microsoft Multiplan: Of Mice & Menus	13.00
Presentation Graphics on	
The Apple Macintosh	14.00
The Apple Macintosh Book	14.00
The Printed Word	13.00

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

ORDERING INSTRUCTIONS:

VISA AND MASTERCARD ACCEPTED
For fast delivery send cashier's check, certified check or money order. Fortune 1000 & Government checks honored immediately - Personal and other company checks allow 3 weeks to clear. Mastercard & Visa include card # & expiration date. Connecticut residents add 7.5% sales tax. We ship same day for most orders.

Shipping Charges: Software - \$2.50 Minimum charge U.S. Mainland. With C.O.D. shipments add an additional \$1.90 U.S. postal, APO, and FPO add 3% (\$5.00 Min.). Alaska or Hawaii add 6% (\$10.00 Min.). Canadian orders add 10% (\$15.00 Min.). Foreign Orders except Canada - Add 18% (\$25.00 Min.).

Hardware - please call for shipping charges.
Note: We do not guarantee machine compatibility. All products are new and include factory warranty, therefore ALL sales are final. Defective software will be replaced by the same item only. Defective hardware will be replaced or repaired at our discretion. Prices & availability subject to change without notice. Products purchased in error, subject to 15% restocking fee. All returns must have an authorization number. Call (203) 378-3662 to obtain one before returning defective products for replacement.

For items not listed just call:

Visit Our New Showroom:
Exit 32 off I-95

PROGRAMS

PLUS

Stationhouse Square, 2505 Main Street • Stratford, Conn. 06497
(203) 378-3662 • (203) 378-8293
Corporate and School Purchase Orders Accepted
Monday-Friday 9-9 Saturday 10-9
1-800-832-3201
ORDERS ONLY
TOLL FREE
MACINTOSH 128K/512K SYSTEMS Call

THE PERFECT MAC STOCKING STUFFER!

Underware™ makes custom T-Shirts in minutes!

With the Underware Ribbon your printer makes iron-on transfers of any screen image! Just print the image on plain paper using an Underware Ribbon, then iron it on to your own T-Shirt. Each ribbon makes 30-100 permanent and washable transfers.



Adding color is simple & inexpensive

With a set of Underware ColorPens you can add up to seven colors to any transfer made with an Underware Ribbon. Just color the plain paper transfer and iron it onto a T-Shirt. An Underware ColorPack (a black Imagewriter Ribbon and five ColorPens) is only \$24.95.

A complete selection of Underware Products...

The ribbon is available for the Apple Imagewriter, Okidata, Star Gemini, and Epson dot matrix printers. We also have red, blue, green, and yellow ribbons for the Imagewriter.

Underware Ribbon **\$14.95**

Underware ColorPack (Imagewriter ribbon & 5 ColorPens) **\$24.95**

Underware ColorPens (set of 5) **\$14.95**

Underware Jumbo ColorPens (set of 7) **\$19.95**

UNDERWARE™



Diversions, Inc.
1550 Winding Way, Belmont, CA 94002

415-591-0660

Circle 164 on reader service card

Megamax C for the Macintosh™

Featuring

• One Pass Compile • In-line Assembly • Smart Linker • Full Access of Macintosh Routines • 6 Register Variables • Dynamic Overlay Support • Program Profiler • and much more ...

System Includes:

• Full K&R C Compiler (with common extensions) • Linker • Librarian • Disassembler • C Specific text editor • Code Improver • RMaker • Examples • Documentation • and

Batch — a full featured command language processor.

"Megamax C is a fantastic development system and should become the new standard language for Macintosh software development"
MACazine — Jan. 85

Name	Size	Time
STEVE	5632*	4.17
	5608	6.2
FIBONACCI	5610	26
"HELLO, WORLD"	5100	N/A

*using register variables

Megamax C \$299.95

Megamax C Debugger \$99

Megamax C now available for
Atari ST computers

Call or Write for more information, to:

Megamax, Inc.
Box 851521
Richardson, TX 75085-1521
(214) 987-4931

VISA, MC, AMX, COD accepted

Circle 109 on reader service card

Get Info

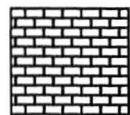
(continued from page 59)

end of the object, press **⌘-Shift-Option**, and drag. Without the grid feature, the pattern is disrupted. With the grid on, the pattern is maintained (see "Pattern Stretch").

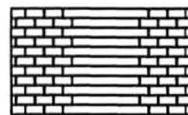
Get Info answers questions about the Macintosh and how it works. When you need advice about using the Mac, drop me a line. I cannot respond to all letters, but I will answer the most represen-

tative questions. Send your questions about the Macintosh, Macintosh software, and Macintosh programming to Get Info, Macworld, 555 De Haro St., San Francisco, CA 94107. Send electronic mail to CompuServe 70370,702 or The Source BCW440. All published submissions become the property of Macworld.

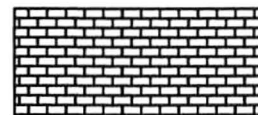
Lon Poole is a Contributing Editor of Macworld. □



Original



With grid off



With grid on

Pattern Stretch

To stretch a patterned object in MacPaint, select one end of the object, press **⌘-Option-Shift**, and drag. With the grid active, the pattern's uniformity is retained; otherwise, the pattern is distorted.



The C for the Macintosh

"Library handling is very flexible...documentation is excellent...the shell a pleasure to work in...blows away the competition for pure compile speed...an excellent effort."

COMPUTER LANGUAGES, 4/85

Why Professionals Choose Aztec C

Professionals choose Manx Aztec C development systems because they are the most powerful, portable, and professional microcomputer C development systems available. Professionals know that Manx Aztec C offers the features, dependability, and performance required for producing professional results.

Applications implemented with Aztec C development systems range from real time control of robot arms used in manufacturing, to message switching systems, to games, languages, operating systems, and business systems.

Much of the commercial software for the Apple Macintosh including top selling titles from software publishers Broderbund, Hayden Software, and Spinnaker is developed using Manx Aztec C.

Value, Performance, and Flexibility

Manx Aztec C68k for the Macintosh is available as a line of three upgradable development systems: Manx Aztec C68k-p, Manx Aztec C68k-d, and Manx Aztec C68k-c. Student, non-commercial, and small business discounts are available. Whatever your budget and requirements, there is a Manx Aztec C68k development system that offers you the best value and performance for your investment.

New Macintosh Mouse Interface

The highly acclaimed, powerful, and professional Manx Aztec SHELL development environment now includes a mouse interface. Developers unfamiliar with UNIX or MS-DOS can work entirely with the mouse interface. Those interested in learning the advanced features of the SHELL can do so at their leisure. Developer's familiar with UNIX or MS-DOS can ignore the mouse, if they so choose, and work entirely in a familiar command driven environment.

Aztec C, The Most Portable C.

Manx Aztec C Development Systems are available for the Apple Macintosh, Apple II, IBM PC, PC compatibles, CP/M-80 systems, Radio Shack Systems, and the Commodore 64/128. Manx Aztec C is also compatible with UNIX and UNIX ports. Manx currently is developing systems for the Amiga and other microcomputer systems. No other C Development System for the Macintosh comes close to the portability of Manx Aztec C.

Power To Spare

In benchmark after benchmark, Manx Aztec C appears in column after column as the clear winner.

The following sieve benchmark timings are reprinted with permissions of Computer Languages, 131 Townsend St., San Francisco, Ca 94107 from a Macintosh review that appeared in the April, 1985 issue:

compiler	compile/link	run	size
Manx Aztec	49	7	13,274
Megamax	114	7	13,816
Softworks	201	9	46,914
consulair	152	10	17,654
Hippo 2	102	13	30,648

The following sieve benchmark timings are reprinted with permission of Macworld, 555 De Harro St., San Francisco, CA 94107, from the May, 1985 issue from "Mac Wins By A Length" in the Open Window column.

Language	Run Time
Aztec C 1.06C	6.55
McFORTH 2.0	20.01
Modula-II	71.60
MBASIC 2.00	1170.00
Pascal	1270.00

Sieve timings for Manx Aztec C68k 1.06g:

with register variables 3.37 secs 5,007 bytes
without register variables 6.02 secs 5,140 bytes

Manx Aztec C68k - Professional Tools

Manx Aztec C68k is bundled with a rich abundance of tools to help produce superior results in reasonable time frames. The following is a list of features and facilities included in Aztec C68k-d, the Developer's System, and Aztec C68k-c, the Commercial system. Items that are marked -c are unique Aztec C68k-c.

Optimized C	Mouse Enhanced SHELL
UNIX-like SHELL	Creates desk Accessories
Macro Assembler	Creates Clickable Applications
Smart Overlay Linker	Phone Support
C-PASCAL Interface	PASCAL-C Interface
Resource Compiler	UNIX Library Functions
Debuggers	Terminal Emulator (Source)
Object Librarian	Easy Access to Mac Toolbox
Mouse Editor	unlimited code size
IEEE floating point	six register variables
Inline assembly	extensive sample programs
600 page manual	hard disk support
no license fees	PASCAL type strings
Macintosh support	AppleTalk support
code optimizer	symbolic debugger (512k)-c
MacRam Disk-c	UniTools (ul, make grep, diff)-c
Library Source-c	One Year Of Updates-c

Summary

If you plan to program in C on the Macintosh or are currently doing so using a brand x C compiler, there is a Manx Aztec C68k system for you that offers the best value and the greatest degree of portability, power, and professional quality available.

Look around, evaluate, and compare. The more you look, the more you compare, the more you will see that Manx Software Systems has succeeded in its objective to provide you with the best C development system available at the best possible price. Then, give us a call, and join the 25,000 users who already know and enjoy the Manx Aztec C advantage.

Products and Prices

Aztec C68k-c Commercial System	\$499
Aztec C68k-d Developer's System	\$299
Aztec C68k-p Personal System	\$199
C-tree database (with source)	\$399
Lisa Kit	\$ 99
MS-DOS → Macintosh Cross	\$750

Discounts

Discounts are available for professors, students, independent developers, hobbyists, and small businesses.

How To Become an Aztec C User

To become an Aztec C user call 1-800-221-0440 or call 1-800-832-9273 (800-TEC WARE). In NJ or outside the USA call 201-530-7997. Orders can be telexed to 4995812.

Payment can be by check, COD, American Express, VISA, Master Card, or Net 30 to qualified customers.

Orders can also be mailed to Manx Software Systems, Box 55, Shrewsbury NJ, 07701.

How To Get More Information

To get more information on Manx Aztec C and related products, call 1-800-221-0440 or 201-530-7997, or write to Manx Software Systems.

30 Day Return Policy

Manx has a 30 day return policy. If you don't like your Manx Aztec C development system, return it within thirty days for a refund. Refunds do not include shipping costs, and might incur a small restocking charge.

Distribution Of Manx Aztec C:

In the USA, Manx Software Systems is the sole and exclusive distributor of Aztec C. Any telephone or mail order sales other than through Manx are unauthorized. Aztec C is available from qualified retail outlets under license to Manx Software Systems.

Circle 112 on reader service card

MANX

To order or for information call:

800-221-0440

Give MACWORLD for the Holidays

Give *Macworld*, the gift that explores fascinating new realms of computing... unleashes the imagination... creates a *Macworld* community... shares ideas, problems, and creative solutions.

You can take advantage of special gift rates from now until January 31, but we urge you to act quickly so we can announce your gift with a personalized card in time for the holiday season.





Special Holiday Benefits!

Macworld Holiday Gift Certificate

First Subscription **\$24**
Each Additional Gift Only **\$20**

Each gift you give after the first saves you 33% off the regular subscription rate (more than 57% off the single-copy price) for 12 issues.

Your name _____
Company _____
Address _____
City _____ State _____ Zip _____

☐ Enter or ☐ Extend my own subscription to *Macworld* at the holiday discount rate of \$24, along with the following gift subscriptions.

I have entered a total of _____ subscriptions
☐ \$ _____ enclosed ☐ Bill me

A personalized gift card will be sent directly to each recipient. Holiday offer valid in U.S. only. Gift rates expire January 31, 1986.

Gifts For ...

Name _____
Company _____
Address _____
City _____ State _____ Zip _____
Sign card from _____

Name _____
Company _____
Address _____
City _____ State _____ Zip _____
Sign card from _____

Name _____
Company _____
Address _____
City _____ State _____ Zip _____
Sign card from _____

4AWA6

SAVE \$23⁴⁰
on your first gift

SAVE \$27⁴⁰
on each additional gift

Special holiday gift card sent to each recipient

Visa and MasterCard accepted

Call the toll-free Holiday Hotline 800/972-3100
(from Nebraska call 402/895-7284)

Macworld Holiday Gift Certificate

First Subscription **\$24**
Each Additional Gift Only **\$20**

Each gift you give after the first saves you 33% off the regular subscription rate (more than 57% off the single-copy price) for 12 issues.

Your name _____
Company _____
Address _____
City _____ State _____ Zip _____

☐ Enter or ☐ Extend my own subscription to *Macworld* at the holiday discount rate of \$24, along with the following gift subscriptions.

I have entered a total of _____ subscriptions
☐ \$ _____ enclosed ☐ Bill me

A personalized gift card will be sent directly to each recipient. Holiday offer valid in U.S. only. Gift rates expire January 31, 1986.

Gifts For ...

Name _____
Company _____
Address _____
City _____ State _____ Zip _____
Sign card from _____

Name _____
Company _____
Address _____
City _____ State _____ Zip _____
Sign card from _____

Name _____
Company _____
Address _____
City _____ State _____ Zip _____
Sign card from _____

4AWA6

Special Holiday Benefits!



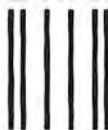
NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 51666
Boulder, Colorado 80321-1666



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 51666
Boulder, Colorado 80321-1666



30 Day Money-Back
Guarantee

MacBase™

Not just another pea in the pod!

Many databases promise power and ease of use. Only MacBase delivers both.

MacBase is a true relational database, powerful enough to allow you to create a wide range of applications.

And MacBase works like a Macintosh™ database should... as easy to use as MacWrite™ and MacPaint™.

Place text and data anywhere on the screen. Format fields with a simple point and click. Stretch fields with the mouse. Use any available font.

Calculated fields appear right on the screen. Up to 32,000 characters allowed in each formula. Over 25 mathematical functions to use in your calculations. Concatenate text from several fields.

Create listing areas within records. Control printing of every piece of text and every field. Create reports without running a special reporting program!

Create form letters within MacBase. Automatically retrieve data from other forms. Find and update groups of records. Merge files with common data. Change existing forms without losing data.

Import/Export data to and from other Macintosh applications. Nest forms within forms up to 200 deep.

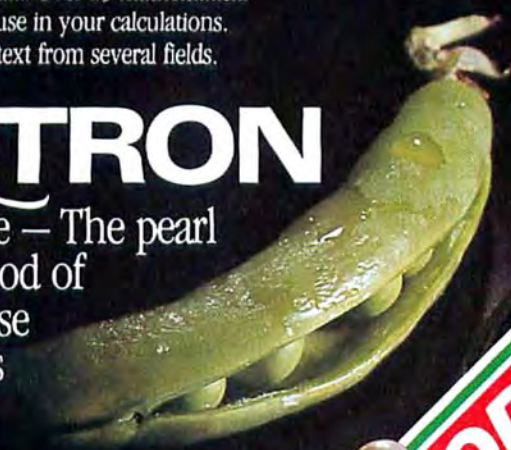
*There's no need to learn a special database language. And here's the best part... it's competitively priced.**

EQTRON

MacBase — The pearl
in the pod of
Data Base
Systems

In Canada
1-800-387-1555,
Dealer Distributor. Inquiries Welcome (416) 361-5002
Eqtron 926 Hope Street, Stamford,
Connecticut 06907

*Suggested list price of \$195.00.
Macintosh is a trademark licensed
to Apple Computer, Inc.
MacWrite and MacPaint are
trademarks of Apple Computer,
Inc. MacBase is a trademark
of Eqtron Corporation.



SPECIAL INTRODUCTORY OFFER!

Only
\$99⁰⁰
Reg. \$195.00

You Save \$96.00

**Order your copy of
MacBase today!** Offer expires
December 31, 1985

1-800-MacBase

Please send me _____ copies of MacBase at \$99.00 each
(Plus \$7.00 shipping & handling)

NAME _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

TELEPHONE () _____

COMPANY _____

TELEPHONE () _____

☐ Visa



☐ MasterCard



☐ American Express



☐ Check

☐ Money Order

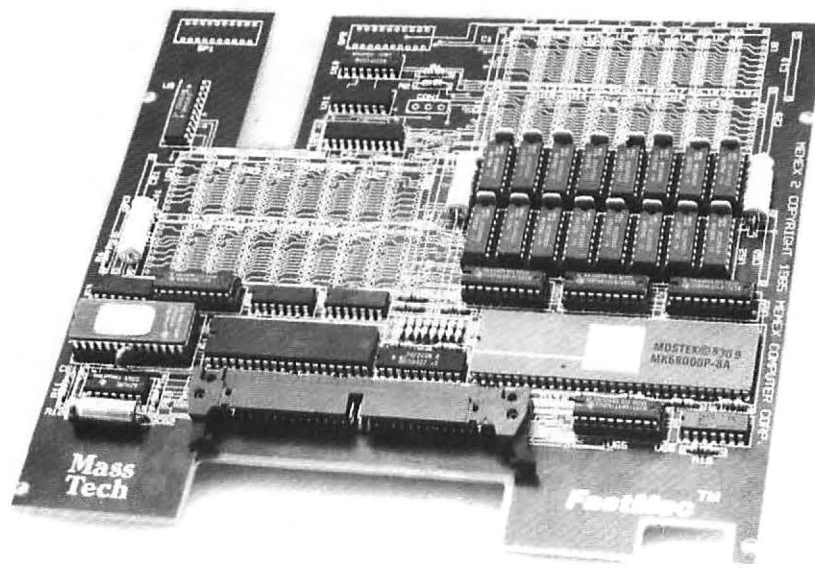
Card No. _____

Expiration Date _____

Circle 5 on reader service card

The FastMac™

Memory and CPU Performance Upgrade



1, 1.5, and 2 Megabytes

Featuring no modification clip-on design
easily removed for Apple Servicing

Introduction:

The FastMac series of memory upgrades is available in 1, 1.5, and 2 megabytes (true linear memory). With the FastMac upgrade you will be able to quickly and powerfully create and manipulate large files with programs such as Jazz, Excel, Crunch, Word, Helix, Multiplan, Switcher, etc. Each FastMac upgrade comes with a free electronic disk program which will create itself when the Macintosh is powered on and move your favorite applications to it automatically.

ROM Enhancement:

The FastMac upgrade includes the necessary ROM enhancement to run software such as Jazz, Excel, Switcher, etc.

CPU Performance

In addition to adding memory, the FastMac upgrade increases CPU performance because of its high performance memory interface design.

MacFan™

Many Macintosh users are concerned about the running temperature of the machine. MassTech offers a cool solution called MacFan. A MacFan is provided with each FastMac upgrade. It exhausts heat out the rear vents of the Macintosh. MacFan mounts securely in the inside back cover of the Macintosh and requires no modifications to the Macintosh's cabinet.

MacBus™

MacBus is a new internal expansion bus which will soon be available on all FastMac upgrades. This will provide for future expansion of the Macintosh.

Servicing:

Apple servicing can still be provided because the upgrade can be removed as easily as it was installed. All the necessary circuitry for the FastMac upgrade is located on a separate circuit board and is connected to the Macintosh board with a simple clip-on connector.

Warranty:

The FastMac upgrade has a **warranty of 120 days** from the date of purchase. An extended one-year warranty is also available.

About MassTech:

MassTech has provided upgrades for the Apple Macintosh for over one year. Our list of customers includes: Wang Laboratories, Hewlett Packard, The United States Air Force, The United States Navy, Columbia University, Harvard University, Tufts University, The University of Pennsylvania, MIT Lincoln Laboratory, and The University of Rochester.

Aren't you interested in a faster, more powerful Macintosh? Call MassTech today for the name of your nearest MassTech dealer.

**Mass
Tech**

**Inexpensive 512K upgrades
also available**

MassTech Development Labs, Inc.

773 Boston Road
Groton, MA 01450

Tel. 1-800-447-1215

1-617-448-3450 (in Massachusetts)

Apple, Switcher, and Macintosh are Trademarks of Apple Computer Corp.; Multiplan, Excel, and Word are trademarks of Microsoft, Inc.; Jazz is a trademark of Lotus Development Corp.; Company; Crunch is a trademark of Crunch Software Corp.; Helix is a trademark of Odesta; FastMac, MacFan, and MacBus are trademarks of MassTech Development Labs, Inc.

Now
Shipping



MacSpell+™ \$99.00

INTERACTIVE SPELLING CHECKER FOR YOUR MACINTOSH™

As easy to use as it is POWERFUL, MacSpell + provides you with the three tools you need to compose documents with confidence and flair.

+ **Spelling Checker:** MacSpell + is an interactive spelling checker—YOU DO NOT HAVE TO QUIT THE WORD PROCESSING PROGRAM IN ORDER TO PROOF YOUR DOCUMENT! As a result, you save time and effort.

+ **MacSpell +** contains a dictionary with over 75,000 words and provision for you to add over 3,500 words of your own. Displays alternatives for misspelled words by searching dictionary phonetically, and all at the click of the mouse!

+ **Thesaurus:** MacSpell + contains a convenient thesaurus to enable you to select a synonym at the click of the mouse.

+ **Word Hyphenation:** MacSpell + also provides you with a convenient word hyphenation feature. After selecting the word to be divided, simply choose the desired hyphenation point by clicking the mouse and it will be entered automatically into your document.

MacSpell + will improve your efficiency and streamline your word processing function with only a click of the mouse!

MacOffice™ \$49.00

10 USEFUL MACINTOSH™ PROGRAMS FOR YOUR OFFICE

1. Loan Amortization Schedule
2. ACRS Depreciation and Investment Tax Credit Schedules
3. Lease vs. Purchase
4. Financial Calculator
5. Scientific Calculator
6. Statistics Calculator
7. Internal Rate of Return
8. Bond Yield to Maturity
9. Calendar Functions
10. Desk Accessories Editor

Supports:
Microsoft Word™
MacWrite 4.5™
MacWrite 2.2™
Requires 512K Mac with 2 drives.
XL Compatible

Plus:
Free Easel™ Disk Carrier
with purchase of MacSpell+
(\$1995 Value)
Through January 31, 1986.

ProPrint™ \$99.00

LETTER QUALITY PRINTING FOR YOUR MACINTOSH™

(with cable)
Prints files on all popular (serial) letter quality printers

Versatile Text Formatting Options:

- Underlining
- Bold Face
- Superscript
- Headers/Footers
- Page Breaks
- Line Justification: left, right, centered and full
- Subscript
- Tabs; Decimal Tabs
- Ribbon Color Change
- Proportional Spacing

Easy To Use, Yet POWERFUL:

- Completely Mouse driven: no keyboard interaction
- Automatically loads and prints up to 50 files sequentially
- Automatically defaults to user's most recent printer configuration upon start up

Flexible Options:

- Multiple copies option.
- Single sheet or continuous feed
- Wide selection of printer operating parameters
- Port Options: Connect printer to either printer port or phone port

MacHome™ \$49.00

10 USEFUL MACINTOSH™ PROGRAMS FOR YOUR HOME

1. Financial Calculator
2. IRA Benefit Calculator
3. Checkbook Reconciliation
4. Banner Maker
5. Personal Financial Statement
6. Home Inventory Record
7. Stock Record
8. Improved Alarm Clock
9. New Puzzle for Desk Accessories
10. Desk Accessories Editor



See your local dealer.

MACINTOSH™ SOLUTIONS



Creighton Development, Inc.

16 Hughes Street • Suite C-106 • Irvine, California 92718 • (714) 472-0488

Circle 95 on reader service card

TM—Macintosh is a trademark licensed to Apple Computer, Inc.
MacSpell +, MacOffice, ProPrint and MacHome are trademarks of
Creighton Development, Inc.



Take the Macro Shortcut

Danny Goodman

Macros are a hot topic these days, especially in connection with Microsoft's *Excel*, which has them, and Lotus's *Jazz*, which currently doesn't include them. What are macros, and what do they do for a spreadsheet program?

The term *macro* is short for *macro-instruction*. A macroinstruction is a single command that takes the place of many. For example, the first time you direct a friend to your house, you furnish a series of detailed instructions like "turn left at the light, go straight three blocks, and make a right at the stop sign." The next time, however, you tell your friend, "Come to my house," which is a

■ Getting Started

macro, or shortcut, that causes your friend to repeat the steps you supplied earlier. The macro can later become part of an even larger macro. "Pick me up on your way to the game" contains the implied macro, "Come to my house."

In *Excel*, macros perform similar shortcuts. One command from a menu or the keyboard triggers the execution of a long series of planned actions—actions that affect calculations, the size and location of windows, the creation of charts and databases, and more. In fact, an *Excel* macro can carry out virtually any operation you do with the keyboard and the mouse.

Because *Excel*'s macros automate the program's actions, the macros can perform tedious tasks for you. One example is the job of displaying the bottom-line figure of a large worksheet while you play "what if" with values elsewhere on the sheet—a task that involves opening, resizing, and scrolling windows.

The Planning Process

Since macros mimic manual operations, the first step in creating one is to note the operations you would perform without the macro. In the case of viewing the bottom-line figure, the process involves six steps:

- Resize the main window to allow room below it for a second, small window for displaying the bottom-line numbers.
- Open a second window to the active worksheet.
- Resize the new window, making it approximately two rows tall.
- Move the small window to the bottom of the screen.
- Scroll the small window to view the cell containing the bottom-line figure.
- Reactivate the main worksheet window so you can start plugging in values and work your way to the desired bottom-line figure.

After you note the steps to include in a macro, you're ready to create the macro. If you were creating a macro with Lotus's 1-2-3, the IBM PC program that made spreadsheet macros popular, you'd be rifling through the manual right now, searching for the right commands to type. *Excel*, however, provides a simple

macro-creation method that makes learning a macro programming language unnecessary. It's called the *macro recorder*, and it works like a tape recorder, taking down for future playback every mouse click, every menu selection, and every keystroke.

Filling the Blank Tape

To use *Excel*'s macro recorder, first open a new *macro sheet*—a worksheet for writing and storing macros—by choosing New from the File menu and clicking on the Macro Sheet button. Next, tell *Excel* where to store the macro commands by selecting a column on the macro sheet and choosing Set Recorder from the Macro menu. You select a column by clicking its heading.

When you're rehearsed and ready to record, choose Start Recorder from the Macro menu. From that instant, *Excel* automatically converts every action into macro commands, which appear in the macro sheet column you selected. Because *Excel* records every move, take your time and think about each action. To stop the macro recorder, choose Stop Recorder from the Macro menu; *Excel* inserts the required ending formula, =RETURN(), into the macro.

Before creating an elaborate macro, you may want to experiment with the macro recorder to become familiar with how it operates. A good way to learn is to open a new *Excel* worksheet and a macro sheet and position both windows side by side (see Figure 1). Next, start the macro recorder using the steps I just de-

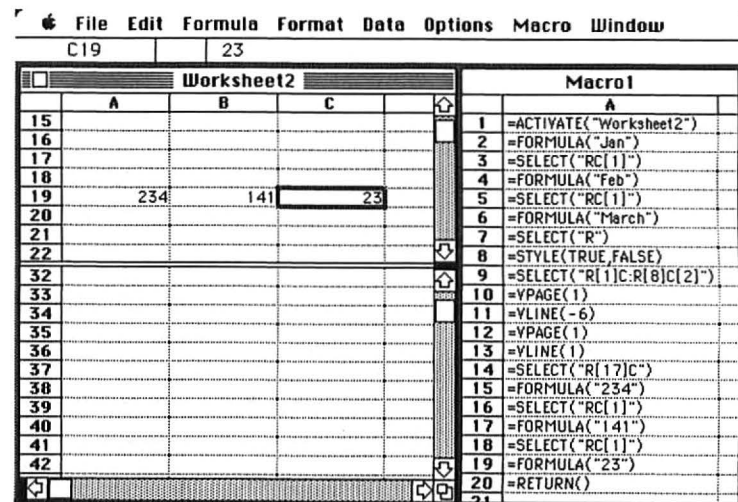


Figure 1

A good way to become familiar with *Excel*'s macro recorder is to open a new worksheet and macro sheet and juxtapose the windows. Next, start the macro recorder and issue some commands—scroll around, resize the worksheet window, and type a value or two. You'll see the macro language commands appear on the macro sheet as you go.

scribed and issue some commands—scroll around, select a few cells, resize the worksheet window, and type a value or two. You see the macro language commands appear in the macro sheet as you go, evidence that *Excel* is recording each move. When you finish experimenting, choose Stop Recorder from the Macro menu.

The final step in creating a macro is naming it. Select the macro's first cell and choose Define Name from the Formula menu (see Figure 2). Type a short, descriptive label in the Name box and then click the Command button to specify the type of macro. Finally, if you want to be able to run the macro by typing an Option-⌘ key sequence, type a letter in the Option-⌘ box.

To execute the macro, choose Run from the Macro menu and double-click on the macro's name, or press Option-⌘ while typing the letter you assigned to the macro. As you watch *Excel* repeat your performance at lightning speed, you'll begin to appreciate the power of the macro recorder.

Generic Macros

The bottom-line figure macro I mentioned earlier simply creates and manipulates windows; it doesn't perform any actions relating to a particular worksheet, such as entering or calculating specific values. Since the macro isn't locked into a certain worksheet, it would be convenient if you could use the set of instructions with any *Excel* worksheet.

When you use the macro recorder, however, the resulting macro is tied to the worksheet you used when recording the macro. In the bottom-line figure macro, for example, when you activate the main worksheet, called Expenses, before resizing it, the macro recorder creates the command =ACTIVATE ("Expenses"). If you close the Expenses worksheet and open one called 1st Qtr Expenses, you get an error message if you try to run the bottom-line figure macro because the macro expects to find a worksheet called Expenses. Also, since *Excel* records scrolling and cell selections, the resulting macro expects the worksheet to be a specific size and for cells to be located in specific places. If a different worksheet is larger or smaller than the one you used when recording the macro, the macro may not scroll to the right cell.

You can create a "generic macro," one that works with numerous worksheets, by abandoning the macro recorder and typing the macro from scratch. A better method, however, is to use the macro recorder to capture the basic maneuvers and then edit the resulting macro to be generic.

A Mini Macro

An important step in making the bottom-line figure macro generic is to define the bottom-line figure cell of the main worksheet with a name. By doing so you can create a macro that, instead of scrolling a relative number of cells, scrolls to the exact cell you want. To appreciate why naming the cell is important, con-

sider the directions to your house. If you specify the directions in relative terms, saying "go straight three blocks, turn right, and then make the next left," the directions lead only your friend to the door; someone living in a different part of town can't use them. If, however, you use names, saying, "Take Route 101 to Elm Street and then go left on Union Street," the directions become generic because anyone knowing those streets can find your house.

You can name the bottom-line figure cell manually by selecting it and choosing Define Name from the Formula menu, then typing the name *bottom.line*. That technique, however, locks you into that cell as the bottom-line figure cell unless you later repeat the Define Name procedure with another cell. Another short macro can do the defining for you and let you change the bottom-line figure cell with a keystroke. The macro, called *set.bottom.line*, automatically gives the name *bottom.line* to the selected cell or range of cells:

```
=DEFINE.NAME("bottom.line",SELECTION())
=RETURN()
```

Define this macro as a command macro and assign it to the Option-⌘-S key sequence. Once you name the macro, you can use it to designate the bottom of a column or the right edge of a row as the bottom-line cell.

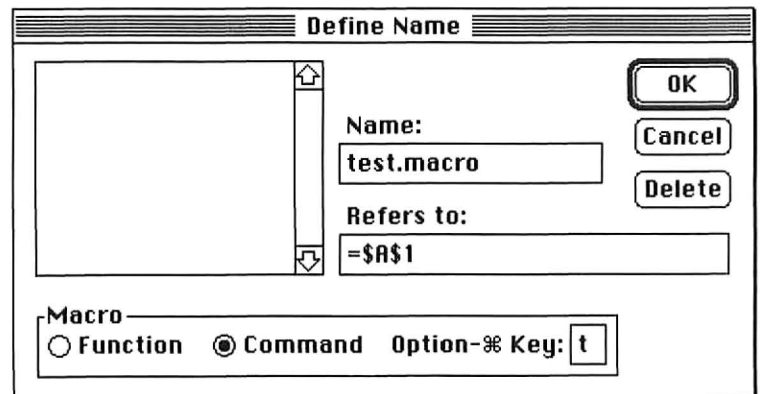


Figure 2

After you create a macro, name it by selecting its first cell and choosing Define Name from the Formula menu. Type a name in the Name box and then click the Command button to tell Excel that the macro is a command macro. You can also assign an Option-⌘ key sequence to the macro.

Workhorse Macro

The *set.bottom.line* macro makes it possible for the real macro worker, the one I call *view.bottom.line*, to operate. The macro appears in the first column of Figure 3; let's go over it cell by cell. Cell A1 identifies the macro. In cell A2 the current window—the active window at the time the macro runs—resizes to a depth of 260 pixels, or screen dots. Assuming the window is near the top of the screen, as most are, the 260-pixel depth leaves just enough space for the second, smaller window to fit below. The macros use pixels as increments to measure length and width and as coordinates for positioning windows on the screen.

In cell A3 the macro creates a second window to the current document. If the original window is titled Forecast, *Excel* titles the new window Forecast:2 and renames the first Forecast:1. In cell A4 the new window resizes to the full screen width, or 512 pixels, but only 55 pixels deep—about the right size to display one row of *Excel*.

Cell A5 moves the new window so that its top-left corner is at the left margin—pixel number 1—and approximately $\frac{3}{4}$ inch from the bottom of the screen at pixel number 290. The macro then selects the cell that the small macro named *bottom.line*. The exclamation point before the name *bottom.line* in cell A6 tells the macro to look in the active window for a cell with that name. Without the exclamation point the macro looks only on the macro sheet for the named cell; since no cell called *bottom.line* exists on the macro sheet, a missing exclamation point would stop the macro and

cause an error message to appear. To help the bottom-line figure cell stand out, cell A7 issues a Copy command that surrounds the cell with a moving marquee.

The formula in cell A8 works like *Excel*'s \mathbb{M} , which activates the next window down on the desktop, in this case the *Excel* worksheet's main window. The window you just deactivated goes to the bottom of the pile of windows on the desktop, so one of the other windows might obscure the *bottom.line* window. To avoid losing sight of the bottom line, keep the bottom of the screen—where you positioned the bottom-line window—free of other windows.

The final macro cell, A9, contains the command that returns control of *Excel* to you. Every *Excel* macro must end with a RETURN function.

What Next?

The examples only scratch the surface of *Excel*'s macro talents. If you're willing to learn a programming vocabulary, you can create macro sequences that resemble computer programs in their power and flexibility. With *Excel*'s INPUT function, for example, you can instruct a macro to pause while you enter a value from the keyboard. The IF function lets macros test for certain conditions and act accordingly—like adding the sentence "If Elm Street is closed, take Grove Street instead" to the directions for your friend.

Best of all, *Excel*'s macro recorder makes it possible to avoid for a long time diving into the macro function listings in the *Excel* manual. Between the macro recorder and *Excel*'s English-like macro programming language, you'll be able to create powerful macros that streamline *Excel* sessions and let you get more done in less time. That's the real bottom line. □

M/entry	
A	B
1 view.bottom.line	set.bottom.line
2 =SIZE(,260)	=DEFINE.NAME("bottom.line",SELECTION())
3 =NEW.WINDOW()	=RETURN()
4 =SIZE(512,55)	
5 =MOVE(1,290)	
6 =SELECT(!bottom.line)	
7 =COPY()	
8 =ACTIVATE.NEXT()	
9 =RETURN()	
10	
11	
12	

Figure 3

This *Excel* macro sheet, titled *M/entry*, holds two macro listings. *View.bottom.line* in column A opens a second window to a worksheet, shrinks it to fit at the bottom of the screen, and displays the bottom-line figure cell in the new window. The macro in column B defines the selected cell in a worksheet as the bottom-line cell that the *view.bottom.line* macro will highlight.

■■■■■■■■■■ Danny Goodman
is a Contributing Editor of *Macworld*.

■■■■■■■■■■
Excel
Microsoft Corp.
10700 Northup Way
Bellevue, WA 98009
206/828-8080
List price: \$395

NEW: MACINTOSH VERSION!!!

Borland's SideKick® Will Clear Your Desk In 30 Minutes And Increase Your Productivity By 50%

SideKick, the Macintosh Office Manager, brings information management, desktop organization and Macintosh. Instantly, while telecommunications to your running any other program.

A FULL-SCREEN EDITOR/MINI-WORD PROCESSOR

lets you jot down notes and create or edit files. Your files can also be used by your favorite word processing program like MacWrite™ or MicroSoft® Word™.

A COMPLETE TELECOMMUNICATION PROGRAM

sends or receives information from any on-line network or electronic bulletin board while using any of your favorite application programs. A modem is required to use this feature.

A FULL-FEATURED FINANCIAL AND SCIENTIFIC CALCULATOR

sends a paper-tape output to your screen or printer and comes complete with function keys for financial modeling purposes.

A PRINT SPOOLER prints any text file while you run other programs.

A VERSATILE CALENDAR lets you view your appointments for a day, a week or an entire month. You can easily print out your schedule for quick reference.

A CONVENIENT "THINGS-TO-DO" FILE reminds you of important tasks.

SideKick, the Macintosh Office Manager.

NOT COPY-PROTECTED

84.95

THE CRITICS' CHOICE

"Take my compliments as a user. When I see SideKick, I know I want it."

Jean-Louis Gasse, V.P. of Product Development, Apple Computer, Inc.

"SideKick allows concurrency, meaning that you could say, call a client with the phone dialer, begin to time the call and switch into Jazz to look at a spreadsheet to discuss with the client. The log would continue to run in the background."

Lisa Raleigh, SAN JOSE MERCURY NEWS

BORLAND
INTERNATIONAL

4585 Scotts Valley Drive, Scotts Valley CA 95066
Phone (408) 438-8400 Telex 172373

Copyright 1985 Borland International BI-1015A

SIDEKICK is a registered trademark of Borland International, Inc. Macintosh is a trademark of McIntosh Laboratory, Inc. MacWrite is a trademark of Apple Computer, Inc. Jazz is a trademark of Lotus Development Corp. MicroSoft is a registered trademark and Word is a trademark of MicroSoft Corp.

A CONVENIENT ALARM SYSTEM alerts you to daily engagements.

A PHONE LOG keeps a complete record of all your telephone activities. It even computes the cost of every call. Instantly access the state, region and time zone for all area codes.

AN EXPENSE ACCOUNT FILE records your business and travel expenses.


A CREDIT CARD FILE keeps track of your credit card balances and credit limits.

A REPORT GENERATOR prints-out your mailing list labels, phone directory and weekly calendar in convenient sizes.

A CONVENIENT ANALOG CLOCK with a sweeping second-hand can be displayed anywhere on your screen.

ON-LINE HELP is available for all of the powerful SIDEKICK features.

SIDEKICK



Available at better dealers nationwide.

Yes, I want the Best. Please send me SideKick! This price includes shipping to all U.S. cities.

Amount (CA 6% tax) _____

Payment: VISA MC BankDraft Check

Credit Card Expr Date _____ / _____

Card # _____

Call (800) 556-2283 for the dealer nearest you. To order by Credit Card call (800) 255-8008, CA (800) 742-1133.

SideKick Not Copy-Protected Quantity: _____ at **\$84.95**
(CA res. add \$5.10 tax per copy)

Name: _____

Shipping Address: _____

City: _____

State: _____ Zip: _____

Telephone: _____

COD's and Purchase Orders WILL NOT be accepted by Borland. California residents add 6% sales tax. Outside USA add \$10 and make payment by bank draft payable in US dollars drawn on a US bank.

Software for your Macintosh

60-DAY MONEY-BACK GUARANTEE

NOT COPY-PROTECTED

M52

Circle 381 on reader service card

Electronic Ledgers for the Macintosh

Steve Mann

The world of accounting seems pretty dull to many personal computer owners, who rank studying ledgers on a par with reading the telephone book. But to accountants, auditors, bookkeepers, and bankers, debits and credits are the lifeblood of a business. For the financial specialist—and for any small-business owner—a company's books vividly chronicle the daily transactions that add up to the health of an enterprise. The reports created by accounting software describe the habits of a living entity—your business.

You might think there are only so many ways to keep the books of a business. On the contrary, although all accountants record and report financial incidents, or events, accounting programs are as individual as personal diaries.

Several accounting programs for the Macintosh are now on the market. This review examines three general ledger programs aimed at small businesses: *Back to Basics*, *Rags to Riches*, and *Symposium*. The products differ in accounting principles, reporting capabilities, transaction entry methods, and flexibility.

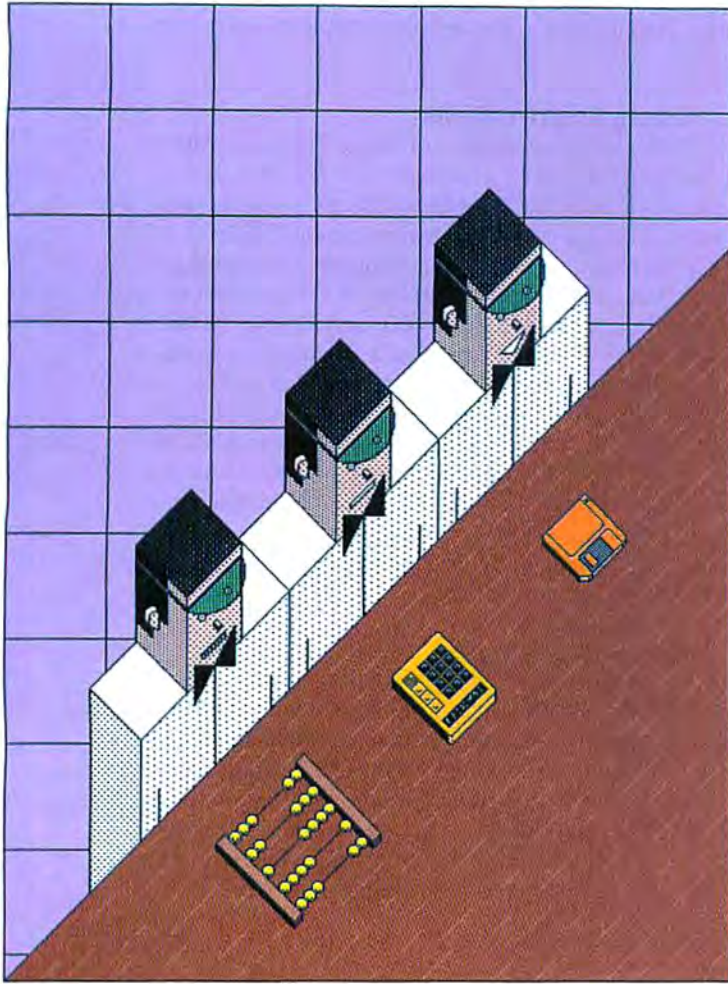
Back to Basics

The *Back to Basics* general ledger program from Peachtree Software has been available for the Macintosh since late 1984. It lets you maintain a cash-basis general ledger with subledgers for cash disbursements by check, for cash receipts, and for cash sales (to keep track of cash register sales). Accounts payable and accounts receivable programs are available and can be linked to the general ledger for accrual-basis accounting.

Back to Basics accommodates up to 254 four-digit general ledger account numbers, ten departments, and about 3000 transactions per month, more than enough for many small and medium-sized businesses, depending on the type of business. For instance, a neighborhood grocery store may need a program that can handle more transactions, but a freelance writer doesn't.

System Requirements

Back to Basics works on a 128K Mac with two disk drives, a 512K Mac with one or two drives, or a Mac XL with *MacWorks*. *Back to Basics* is copy protected with a key-disk scheme. You can copy the program onto a hard disk as long as you're willing to insert the original program disk every time you start up. A hard disk improves the performance of the general ledger but does not increase its capacity for accounts or transactions.



Back to Basics' chart of accounts uses predefined number ranges for each type of account. For instance, asset accounts get a number between 1000 and 1999, and income accounts range between 4000 and 4499. If you currently use a different numbering scheme, you'll have to renumber your accounts. Once you clear that hurdle, it's easy to set up and use the program. The program includes a sample chart of accounts that you can use or modify, simplifying the task of setting up the general ledger for the first time.

Windows to Files

When *Back to Basics* opens, a file cabinet appears on the left side of the screen (see Figure 1). Each of the seven drawers corresponds to one of the program's functions, such as chart of accounts, general transaction entry, or report generation. Double-clicking on one of the file drawers opens a window that fills the rest of the screen. When entering a transaction, you can open a second window that lets you scroll

through the chart of accounts and select an account number for the transaction. You cannot open more than two windows at a time.

The program's two-window restriction isn't necessarily a problem, but it limits your ability to browse through existing accounting information. For instance, before you enter a cash receipts transaction, you might want to check to see if it was already entered. But to view a list of cash receipts transactions, you have to close the cash receipts entry window and open the reports window. A more effective use of windows would simplify this process.

Accounting Reports

Back to Basics was designed by a certified public accountant (CPA). It has strong accounting controls, which stop you from entering information at the wrong place or time, helping to guarantee that your financial data is correct.

The *Back to Basics* reports include a chart of accounts report, a balance sheet, an income statement, and a trial balance—a combined income statement and balance sheet with account numbers. Detailed transaction lists for the general ledger and cash disburse-

ments, cash receipts, and cash sales subledgers are also included. All reports can be saved on disk, printed, or viewed on screen. Other useful features include automatic transaction entry, which simplifies handling of recurring transactions like a monthly loan payment, and provision for generating separate income statements for each of up to ten departments in a company. This feature allows you to track the profitability of each department separately.

The documentation for *Back to Basics* includes a section that gives an excellent introduction to accounting fundamentals, explaining accounting terminology and procedures. Other sections include complete set-up and installation instructions, an adequate tutorial, a detailed index, and a description of methods for handling 61 business situations such as depreciation of assets and periodic or perpetual inventory.

Symposium

The *Symposium* general ledger handles cash receipts, cash disbursements with check writing, and general ledger transaction entry; however, the program does not have a subledger for cash sales. If you need to track

inventory, this program can estimate monthly adjustments to inventory accounts for the whole company or an individual department. Like *Back to Basics*, the *Symposium* general ledger was designed by a CPA and has good accounting controls. No companion programs exist as yet for accounts receivable and accounts payable.

System Requirements

The program works on a 128K or 512K Mac with one or two disk drives—two drives are recommended—or on a Mac XL with *MacWorks*. It is not copy protected, so you can easily run it on a hard disk.

Symposium has several advantages over *Back to Basics*. You can set up any number of 4-digit general ledger account numbers, and you can number the accounts in any order, making it easy to retain your current numbering system. You can also set up any number of departments. The only limit on the number of accounts, departments, and transactions is available disk space. Unfortunately, *Symposium* doesn't handle a full disk gracefully: it crashes with the dread "serious system error" message. To avoid the error, you must monitor disk space with the Finder, as explained in the *Symposium* documentation.

Accounting Reports

Symposium produces a set of financial reports suitable for common accounting applications. These reports include a chart of accounts, a trial balance, an income statement, a balance sheet, and detailed transaction lists for the general ledger and disbursements and receipts subledgers. For your convenience, some reports can include comparison columns showing data for the previous month or year for each report line.

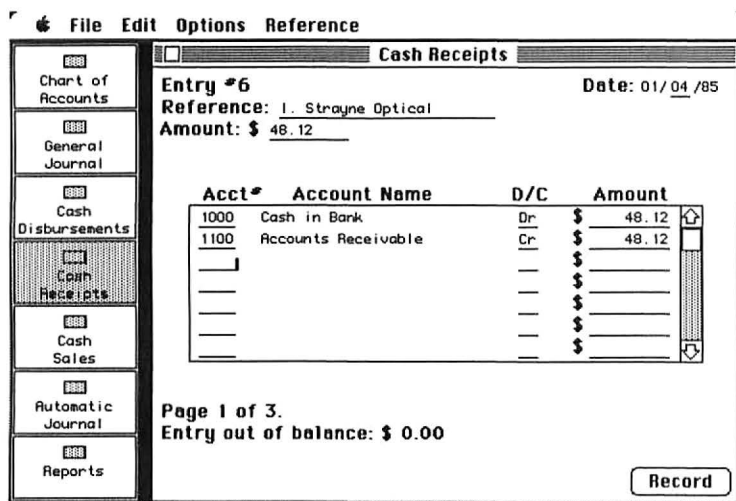


Figure 1

The seven file drawers of the Back to Basics screen correspond to the program's functions. Double-clicking a drawer opens a window such as the Cash Receipts transaction entry window shown here.

Date	Deposit	Source	Account	DR	CR
Jan 4	994	Albert Hall	100 (Checking Account)	35.00	
			200 (Accounts Receivable)		35.00
Jan 4	994	J. L. Byrd Bail Bonds	100 (Checking Account)	95.36	
			200 (Accounts Receivable)		95.36
Jan 4	994	C. Sicks, MD	100 (Checking Account)	23.55	
			200 (Accounts Receivable)		23.55
Jan 4	994	I. Strayne Optical	100 (Checking Account)	48.12	
			200 (Accounts Receivable)		48.12
Jan 4	994	H.I. Latt	100 (Checking Account)	106.44	
			200 (Accounts Receivable)		106.44

Figure 2

Symposium reports cannot be displayed on screen, but the printed reports incorporate a variety of text styles and sizes. *Symposium*'s reports include the chart of accounts, a trial balance, an income statement, a balance sheet, and detailed transaction reports for the general ledger and the disbursements and receipts subledgers.

You can specify balance sheet report subtotals for up to nine groups of account numbers, allowing you to summarize related accounts. Reports can only be printed, not displayed on the screen. Offsetting this shortcoming is the professional look of the reports, which include a variety of font styles and sizes and feature a large heading with the company name and italicized report titles (see Figure 2). You cannot vary the report formats.

Convenient Windows, Cumbersome Entry

A typical *Symposium* screen configuration includes separate windows for the company data, the chart of accounts, and the cash receipts journal (see Figure 3). The company data window shows the company name, the year currently stored in the general ledger, and the month whose financial events are currently displayed. The cash receipts journal lists all cash receipts subledger transactions already entered. While the company data window cannot be manipulated, both the chart of accounts and the journal windows can be moved, resized, and scrolled. In this way, *Symposium* gives you more flexibility and control over your interaction with the program than *Back to Basics* does.

When you start to enter a general ledger transaction, a transaction entry window appears. Each line of the transaction must include a general ledger account number. Unfortunately, you must know the numbers by

heart or have a printed list handy. If you can't supply the number, you must cancel the entry, check the chart of accounts for the correct choice, and start the transaction entry all over again. The inconvenience is a strange oversight in an otherwise high-quality program. You should be able to call up the chart of accounts window at any time for easy reference, as you can in *Back to Basics*.

Symposium's documentation is short and leaves much to be desired. It has no explanation of accounting principles, no tutorial, and no index. The most complex capability of the program—inventory adjustments—is not clearly explained.

Rags to Riches

You can use the *Rags to Riches* general ledger for either a cash- or accrual-basis business that logs a moderate number of income and expense transactions each month. The program has no separate subledgers for cash disbursements, cash receipts, or cash sales, which could make implementing a cash-basis system

Chart of Accounts

Acct ID	Title	Cate- gory	Report Group
100	Checking Account	A1	G1
120	Savings Account	A1	G1
150	Cash on Hand	A1	G1
160	Petty Cash	A1	G1

Company Data

Lucky Dog Pet Store
Jan 1, 1985 - Dec 31, 1985
Current Month: Jan 1985

Cash Receipts Journal

Jan85	Dep.	Source	Acct.	Posted	DR	CR
4	994	Albert Hall	100	<input type="checkbox"/>	35.00	
			200	<input type="checkbox"/>		35.00
4	994	J. L. Byrd Bail Bonds	100	<input type="checkbox"/>	95.36	
			200	<input type="checkbox"/>		95.36
4	994	C. Sicke, MD	100	<input type="checkbox"/>	23.55	
			200	<input type="checkbox"/>		23.55
4	994	I. Strayne Optical	100	<input type="checkbox"/>	48.12	
			200	<input type="checkbox"/>		48.12
4	994	M. I. Lait	100	<input type="checkbox"/>	106.44	
			200	<input type="checkbox"/>		106.44

Figure 3

A Symposium screen. The small window in the upper-right corner contains the name of the general ledger file in use, the fiscal year in effect, and the current month. The Chart of Accounts window lists the general ledger accounts by number, and the Cash Receipts window lists the transactions entered in the cash receipts subledger.

SUMMARY

☒ Current ☐ Quarterly ☐ Yearly

☒ Assets ☐ Liability ☐ NetWorth ☐ Income ☐ Expense

Key	Name	Amount	PCT
s	Cash in Bank (Checking)	\$308.47	0.0%
a	Cash on Hand	\$0.00	0.0%
g	Accounts Receivable	-\$308.47	0.0%

AUDIT

Accounts Receivable

Current Balance: -\$308.47
Net Outstanding: \$0.00
Statement Balance: -\$308.47
Debit/Credit Totals: 0.00 308.47

☐ Clear Item

OK	Date	Account Name	Memorandum	Debit (+)	Credit (-)
V	1/4	Cash in Bank	Albert Hall		35.00
V	1/4	Cash in Bank	J. L. Byrd Bail Bonds		95.36
V	1/4	Cash in Bank	C. Sicke, MD		23.55
V	1/4	Cash in Bank	I. Strayne Optical		48.12
V	1/4	Cash in Bank	M. I. Lait		106.44

Figure 4

Rags to Riches displays information hierarchically, with the top level of the hierarchy—the Summary window—listing the general ledger account names and balances. Double-clicking an account name opens the Audit window, which lists the current transactions for that account. Double-clicking on a transaction opens the Data window, which shows the details of the transaction.

Accounting Fundamentals

Both manual and computerized accounting systems start with a collection of financial data, called a *general ledger*, that describes all the financial activities of a business. Each entry in the general ledger describes a single financial event, often called a *transaction*, such as the purchase of a piece of machinery.

The general ledger supplies the information for the reports that describe the status of a business. One important report, the *income statement*, summarizes all the recent transactions that affect profits: income from the sales of goods or services and outgo for the payment of expenses. The difference between income and expenses is the profit or loss.

Another important report, the *balance sheet*, summarizes the long-term financial status of

a business. It compares assets such as cash in the bank and the value of inventory with liabilities such as outstanding loans or unpaid bills. The difference between assets and liabilities, called *equity*, measures the value that the business has built up over time.

Most accounting systems organize the general ledger by numbered accounts, where each account number roughly translates to a line on a financial statement. For instance, if account 100 tracks the balance in a checking account, every check written and each deposit made to that checking account must be entered as a transaction for general ledger account 100. That way the ledger always has the information needed to calculate the current checking balance. The complete set of account numbers is called the *chart of accounts*.

To avoid cluttering the general ledger with thousands of financial transactions, accountants often use subsidiary

ledgers, or *subledgers*, for transactions of a specific type. An accounts payable subledger, for example, contains all the transactions related to paying bills. In contrast, an accounts receivable subledger tracks all the income received. The detailed subledger information is summarized and entered in the general ledger so that the general ledger provides a complete overview of the business's financial status.

The number of subledgers you need depends on the nature of your business and the financial details you might want to separate for specialized analysis. Accounts payable and accounts receivable subledgers may be found in almost any accounting system because almost everyone pays bills and collects income. But only a business that carries many items in inventory would be likely to use an inventory sub-

ledger. The general ledger program works best with two companion programs—accounts receivable and accounts payable with check writing.

The account number and transaction capacity of *Rags to Riches* is limited by memory. A 128K Mac has room for a combination of about 250 active accounts and transactions. A 512K Mac can handle a combination of about 10,000 accounts and transactions.

Rich in Windows

Rags to Riches has the most windows of the three programs I reviewed. The general ledger can display eight windows simultaneously, which you can reposition. At times the number of windows can be confusing, but the organization of information in the windows and the relationships between windows made a lot of sense to me.

The windows establish a hierarchy of information. At the top level is the Summary window, which lists the general ledger accounts. Each line shows an account name and balance. *Rags to Riches* does not require that you use account numbers, which are an archaic accounting tradition. If you double-click an account title, the next level window, named Audit, opens, showing the current transactions for that account (see Figure 4). If you double-click a transaction line, the Data window that was used to enter the transaction appears.

Rags to Riches is the most imaginative program of the three I reviewed. This program is the forerunner of accounting software designed for window environments. In fact, it departs from traditional accounting procedures, which are used by *Back to Basics* and *Symposium*, and provides you with an unusual view of your accounting data that intuitively makes more sense. It also has a variety of shortcuts for simplifying transaction entry, like single-key designation of frequently used accounts. *Rags to Riches* has a few ac-

ledger. A psychologist wouldn't need an inventory subledger, while a computer manufacturer, retailer, or distributor probably would.

The point at which you record income and expenses in the general ledger also determines which subledgers an accounting system needs. If you record income when you receive it and expenses when you pay them, you use *cash-basis* accounting. If you record income and expenses when obligations arise, not when money changes hands, you use *accrual-basis* accounting. Either method is allowed for tax reporting purposes.

Cash-basis accounting is appropriate for a small single-owner business such as a neighborhood grocery store or a small consulting business with few customers. Either the bulk

of the financial transactions are actually conducted in cash, or so few invoices are sent and received that the business owner can readily keep track of what the business owes and is owed.

Cash-basis accounting systems usually tally expense and income transactions in two subledgers called *cash disbursements* and *cash receipts*. Most computerized cash disbursement systems can print checks for you. Typically, cash disbursements and receipts subledgers are not organized by customer or vendor. And because you only enter transactions when money changes hands, you can't directly track payables or receivables.

Accountants recommend accrual-basis accounting for larger businesses. Accrual-basis systems usually have accounts payable and receivable subledgers, which can store detailed information about your customers and vendors in addition to details of each income and expense transaction. The data is organized by vendor or

customer, permitting analyses not normally available with a cash-basis system, such as detailed payment histories by customer.

One final note—you can implement accrual-basis accounting procedures with a cash-basis system, but the procedure can get complicated. You have to set up general ledger accounts for receivables and payables, and then enter all income and expense obligations directly to those accounts. If you have a lot of transactions in both categories, the general ledger may not be able to store all the information. Additionally, you must make sure the payables and receivables accounts properly reflect cash receipts and disbursements as they occur. If you use accrual-basis accounting, it makes sense to use receivables and payables subledgers with the general ledger.

counting control weaknesses, however. For example, while you can work with one month of data at a time, the program does not correctly handle entries dated outside of that month.

Accounting Reports

The program provides fewer reports than *Back to Basics* or *Symposium*; for example, trial balance and reports from subledgers are lacking. The general ledger prints only an income statement, balance sheet, chart of accounts, audit trail, and transaction list. None of the reports can be viewed on screen, although the transaction list and chart of accounts print out in a form nearly identical to their respective program windows.

Rags to Riches does not let you specify departments, but you can indicate up to nine subtotals on the income statement and balance sheet to produce de-

partment totals. Also, the font required for report printing, Monaco-12, was inexplicably absent from the *Rags to Riches* disk. You must use Apple's Font Mover to copy the missing font from another disk, a procedure not explained in the program's documentation. Those shortcomings, however, are offset by the amount of detail you can view directly in the program windows.

The *Rags to Riches* documentation needs some work. The tutorial is too brief, and the explanations of how to finish each accounting month are weak. The documentation, however, includes a good section on sample financial transactions, a useful index, and a glossary.

Selecting a Mac Accounting Package

The *Back to Basics*, *Symposium*, and *Rags to Riches* general ledger programs are worth considering if you're looking for an accounting package for the Macintosh. All the programs have adequate audit trails, which trace transactions all the way through the entry and reporting processes. All three have adequate accounting controls, although *Rags to Riches* falls short in checking dates during transaction entry. Furthermore, all the programs allow you to correct transaction errors.

Before you select any of these programs, analyze your requirements to determine if the programs will accommodate them.

Each program has its shortcomings. Only *Back to Basics* lets you export data to other programs: you can save reports on disk and open them with *MacWrite*. All three have an edit menu for cutting and pasting fields between entries within the program. I found no way to copy accounting information to a spreadsheet. Both *Symposium* and *Rags to Riches* would benefit from improved documentation. *Back to Basics* and *Symposium* need more convenience features for data entry. *Symposium* crashed when I tried to create a new account or transaction on a full disk.

Back to Basics general ledger is fine for small or medium cash-basis businesses. With the companion accounts receivable and accounts payable programs, it should be suitable for medium or large accrual-basis businesses. *Symposium* general ledger is appropriate for small, medium, or large cash-basis businesses or accrual-basis businesses that don't have a lot of transactions. *Rags to Riches* general ledger, without accounts payable and receivable, is appropriate only for small businesses. With the companion programs on a 512K or larger Mac, it can handle large accrual-basis businesses.

Before you select any of these programs, talk to your accountant and your bookkeeper. Review the documentation to make sure the reports are adequate.

Analyze any special requirements you may have such as departments, special report subtotals, or inventory adjustments, and try to determine if the programs will accommodate your needs. Think about how you'll adapt your current accounting methods to these programs. Once you make it past these considerations, you can enjoy the wonderful world of window-based accounting software. □

▲▲▲▲▲▲▲▲▲▲ Steve Mann is an electronic data processing auditor and an accounting systems designer for the San Francisco office of the accounting firm Peat, Marwick, Mitchell & Co.

▲▲▲▲▲▲▲▲▲▲
Back to Basics General Ledger
 Peachtree Software
 4355 International Blvd.
 Norcross, GA 30093
 800/554-8900
 List price: \$175, Accounts Receivable and
 Accounts Payable \$175 each

Symposium General Ledger
 Symposium, Inc.
 914 Silver Spring Ave. #103
 Silver Spring, MD 20910
 301/587-6381
 List price: \$299

Rags to Riches General Ledger
 Chang Labs
 5300 Stevens Creek Blvd.
 San Jose, CA 95129
 800/972-8800, 800/831-8080 in
 California
 List price: \$199, Accounts Receivable and
 Accounts Payable \$199 each, all three
 programs \$499.50

If you've been waiting to buy a hard disk for your Mac till Apple introduced their version, the long wait is over.

And look what they've given you. A disk drive that has the same footprint as your Mac. Makes it 3½" taller. And does who-knows-what to its carefully thought-out ergonomics.

That's why we think you should take a closer look at the Paradise MAC 10 and MAC 20.

Start with the case: instead of jacking your screen way up in the air, our drive sits right next to your Mac. And looks like it belongs there. In terms of styling, proportion, and balance, it's a perfect fit.

And that's just the surface. Inside, you'll find a full 10 or 20 MB. A lightning-fast 85 ms average seek time. An extra serial port. And the kind of reliability that lets us give you a one-year warranty.

So if you've been waiting for a hard disk that matches your Mac inside and out, go look at the MAC 10 and MAC 20. At better Apple dealers who know a good thing when they see one.

The perfect hard disk for your Macintosh might not be an Apple.

Paradise Systems, Inc., 217 East Grand Ave., South San Francisco, CA 94080
(800) 822-2020 Ext. 312 (CA) or (800) 527-7977 Ext. 312 (Outside CA)

Trademarks: Paradise, MAC 10, MAC 20—Paradise Systems Inc. Macintosh, MAC—Apple Computer, Inc. Paradise Systems reserves the right to change specifications without notice.

PARADISE
SYSTEMS, INC.

Special Delivery

Gordon McComb

Videx's Mail Center brings electronic mail to the Mac

Until recently, if you wanted to share a file with a co-worker, you had to carry or send a disk or a paper copy to that person's desk. But with Videx's Mail Center you can send files to a co-worker via the AppleTalk network with a click of the mouse button.

Mail Center lets you exchange messages and documents between Macintoshes linked in an AppleTalk network. You can send mail to any running Macintosh in your network that has the *Mail Center* software installed, even if the person you're sending mail to is at the Mac sketching a design in *MacPaint* or writing a memo with *Microsoft Word*. I should note right here that *Mail Center* does not work with Macs linked via modem. Other programs such as *MacTerminal* and *InTouch* are designed for that purpose (see "No Static At All" in this issue).

Mail Center works with either a 128K or a 512K Macintosh, though you may get "out of memory" messages often when you use a 128K machine. The program, which takes up about 80K of disk space, can run on a Mac with one disk drive, but you'll most likely be juggling disks often. For example, *Mail Center*, *Microsoft Word*, and the System Folder take up an entire disk, leaving no room for data or messages. The program is also compatible with hard disks and the Switcher, which are perhaps the best ways to use the program.

Mail Center consists of two disks, one for each of two Macintoshes. Since the program is copy protected, you need an original *Mail Center* application disk for each Macintosh in a network. The copy protection used is the "key access" type: when you first start the *Mail Center* application, the program asks you to insert the original disk. After you do so, you can put the original disk away until you turn off or reset the computer.

Both *Mail Center* disks contain the *Mail Center* application, and one has a program that installs the *Mail Center* desk accessory on the application disks you intend to use on the *Mail Center* network. *Mail Center* also comes in a six-disk pack. You can combine several packs to enable all the Macs in an AppleTalk network to converse with one another. You're limited to 32 Macintoshes on one network—the maximum allowed by AppleTalk.

The *Mail Center* Install program enables the Macintosh to monitor incoming mail. You can't receive mail if you use disks that don't have *Mail Center* installed. When you receive mail, the Mac beeps, and a small mailbox icon starts blinking on your screen. You click on the mailbox if you want to get rid of it. A Mail Preferences option is also installed in the Apple menu when you run the *Mail Center* installation program. The option lets you take your Macintosh off line when you don't want to be disturbed by incoming mail, which means the mailbox simply doesn't appear when mail is sent to your computer. You can also turn off the incoming mail beeper and position the mailbox icon at any of the screen's corners (see Figure 1). To use the installation program, you start the program, enter the name you want to be known by—your mailing address—and insert each of your application disks as prompted.



*Videx's Mail Center
opens the door to easy
interoffice mail. With-
out leaving your desk,
you can send and re-
ceive files to or from
anywhere on an Ap-
pleTalk network.*

Outgoing Mail

Sending and receiving mail with *Mail Center* are practically as easy as addressing an envelope and dropping it in a mailbox. To send mail, you first open the *Mail Center* application. Three windows appear on screen: On Line, Send Log, and Receive Log (see Figure 2). The Send and Receive logs display all the messages you've mailed or have received in the mail. The On Line window lists all the Macintoshes in the AppleTalk network that can receive mail. Those Macs, represented by a mailbox and an addressee name, are the ones that are turned on and using an application that's been set up with the *Mail Center* Install program. Alternatively, the information in the windows can be displayed by name, without the icons.

To send mail, you double-click on the mailbox with the recipient's name, or if you want to send the same mail to more than one Macintosh, you shift-click on several mailboxes. You then choose the Send Mail command from the File menu. A dialog box appears that lists all the data files on the current disk. You click a file to select it or shift-click on several to select more than one, and then you click the Send Mail button.

The Send Mail dialog box also includes a comments box that lets you in-

clude in a transmission up to 40 words of explanation about the mail (see Figure 3). Double-clicking on a Send or Receive log item displays the message. For example, you can alert the person receiving mail that a message is urgent and should be read promptly.

During the process of sending mail, *Mail Center* gives you a progress report. A graphic shows where the mail is going, and an indicator lets you know how many pieces are being sent and how many are left to go (see Figure 4). Depending on the length of the messages and the number of messages being sent, your Mac will be tied up transmitting mail for anywhere between 15 seconds and several minutes.

After the mail is sent, *Mail Center* updates the Send Log window. The log tells whom you sent mail to, the time and date of mailing, and whether the transmission was successful. A bad transmission can occur if the network is overloaded, for instance, or if insufficient space is available on the receiving disk to hold the mail. With a 512K Mac you can store up to 500 transactions per log. If you want to maintain a record of your transmissions, you can print the log or save it on another disk. By the way, the Send Log only lists the messages mailed and to whom. The logs do not contain the documents you sent. Therefore if you delete listings in a Send Log, the mail files remain on the disk.

Incoming Mail

Receiving mail is even simpler than sending mail. You just wait for someone to send you a file. If the mailbox icon blinks and the Mac beeps while you're sorting a database, you know mail awaits you. The mail you receive is saved on a disk, either a data disk on which you've put a folder to receive the mail or the application disk you're currently using. You can quit what you're doing and retrieve the mail or wait and open it later.

Mail Center transmits Macintosh documents in the normal data format, which means that if you send a *MacWrite* file, the person you're sending to gets a *MacWrite* file, including all the specified margins, paragraphs, and typeface styles. You can transmit several types of documents at once. They all appear on the receiver's disk the way you sent them. When documents are displayed on the desktop or in a dialog box, *Mail Center* adds the suffix *.Mail* to the name of every document that has been electronically transmitted.

The Receive Log, which appears on any disk that's been used to capture mail, lists the messages and documents you have received from others. Similar to the Send Log, the Receive Log lists whom the mail came from, when it was sent, and whether the transmission was completely successful. You can delete entries, save old logs, or print the contents of the window.

Mail Center transmits only as much data as disk space allows. To avoid incomplete transfers, use a hard disk.

One problem I discovered as I tested *Mail Center* was that while the person sending you mail knows if you're on line and ready to receive mail, he or she has no idea if you have sufficient room on the disks currently in your Mac's drives to hold the documents being sent. Should the disks be almost full, *Mail Center* transmits only as much data as space on the disks permits. Both you and the sender are told that the transmission was "partial" or "bad." You can usually avoid this problem by using *Mail Center* with a hard disk.

Mail Center Overview

Mail Center lacks an important feature that I think should be a part of electronic mail software for the Macintosh. Because the program can't send text-only files, you can't send a note without leaving the application you're working in. Text-only files are stored without formatting, fonts, sizes, styles, pictures, page breaks, headers, or footers. If *Mail Center* had a text-only feature working as a desk accessory, you could write a note while using any program and send the note without leaving the current application. Similarly,



Figure 1
The Mail Preferences option lets you take your computer off line, turn off the sound, or select where you want the blinking mailbox to appear on the screen.

the person receiving mail would be able to read the note without leaving the current application.

With *Mail Center*, if you want to send someone a memo, you must open *MacWrite*, *Microsoft Word*, *Jazz*, or another word processor, write the letter, quit the application, start the *Mail Center* program, and send the memo on its way. The recipient, upon getting your memo, has to quit the current job, find the appropriate word processing program, start it, and open the memo.

One way to send text-only files is to use the *MockWrite* desk accessory, available as part of CE Software's *MockPackage*. *MockWrite* is a text editor that you can use without quitting most applications. You must send mail using the *Mail Center* application, but the person you send mail to can read the incoming mail by opening *MockWrite* and selecting the mailed document.

Another way to eliminate opening and closing applications to send mail is to include *Mail Center* in the Switcher rotation so that when you need to send someone a document, you can transfer from *Word* to *Mail Center* in a split second.

All in all, I liked *Mail Center*, especially for its ease of use. The program applies the Macintosh user interface well and makes electronic mail a reasonable alternative to passing paper or disks to your co-workers. □

▲▲▲▲▲▲▲▲▲▲ Gordon McComb is a Contributing Editor of Macworld.

▲▲▲▲▲▲▲▲▲▲
Mail Center
 Videx, Inc.
 1105 N.E. Circle Blvd.
 Corvallis, OR 97330
 503/758-0521

List price: two-disk pack \$299, six-disk pack \$499, discounts available on quantity purchases

MockWrite
 CE Software
 801 73rd St.
 Des Moines, IA 50312
 List price: license \$25, license and disk \$30; includes *MockWrite*, *MockPrinter*, and *MockTerminal*

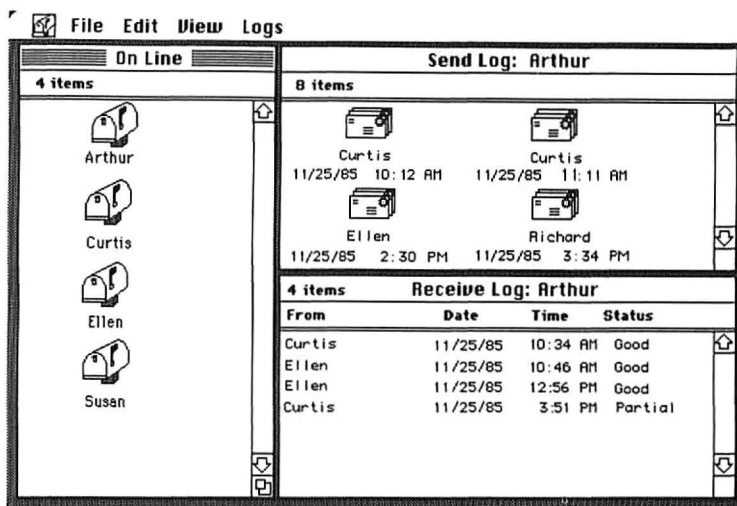


Figure 2
Mail Center displays three windows. The On Line window indicates which computers in the network are currently on line, and the other two windows maintain records of incoming and outgoing mail.

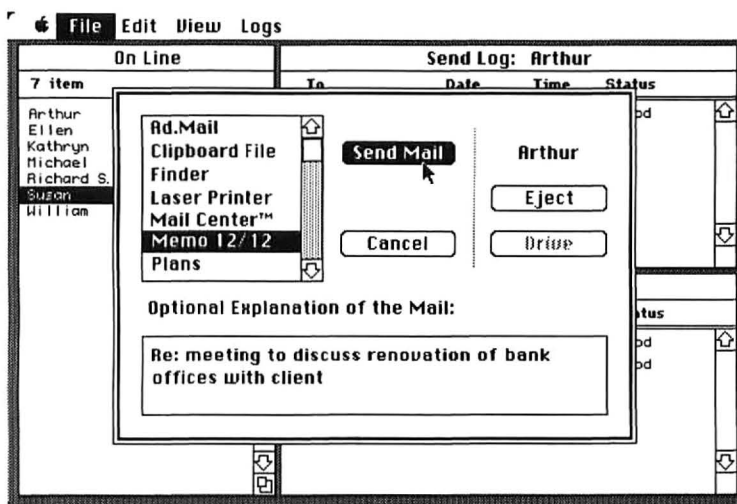


Figure 3
 The Send Mail dialog box lists all the files on the current disk. You can send several files in a single transmission. You can also include a short message with the document you are sending.

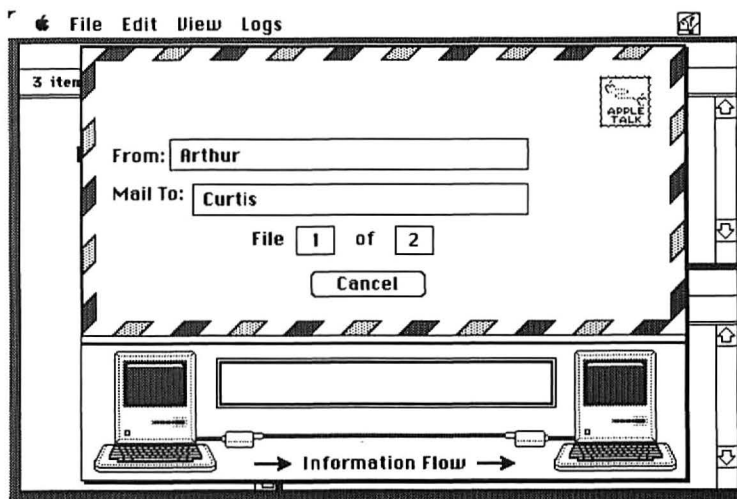


Figure 4
 You can monitor the mail being sent by watching the message box below the envelope. Each time a file has been sent successfully, a small envelope passes across the screen.

*Four new pro-
grams clear a path
through the com-
munications jungle
and save you time
and money*



No Static At All

Jim Heid

For many Macintosh owners, entering the communications world is like embarking on an adventure with Indiana Jones. The treasures are out there—free software, news and stock quotes, discount shopping services—but the road to them is lined with potential adversaries. Like curses inscribed on the walls of a long-forgotten temple, awkward commands, control codes, and transfer protocols lie in wait, ready to impede your progress. Some people bravely sling modems over their shoulders and forge ahead to capture the largesse of information services and bulletin board systems. Others, however, retreat to the sanctuary of familiar disk libraries, convinced that communications is esoterica confined to computer experts.

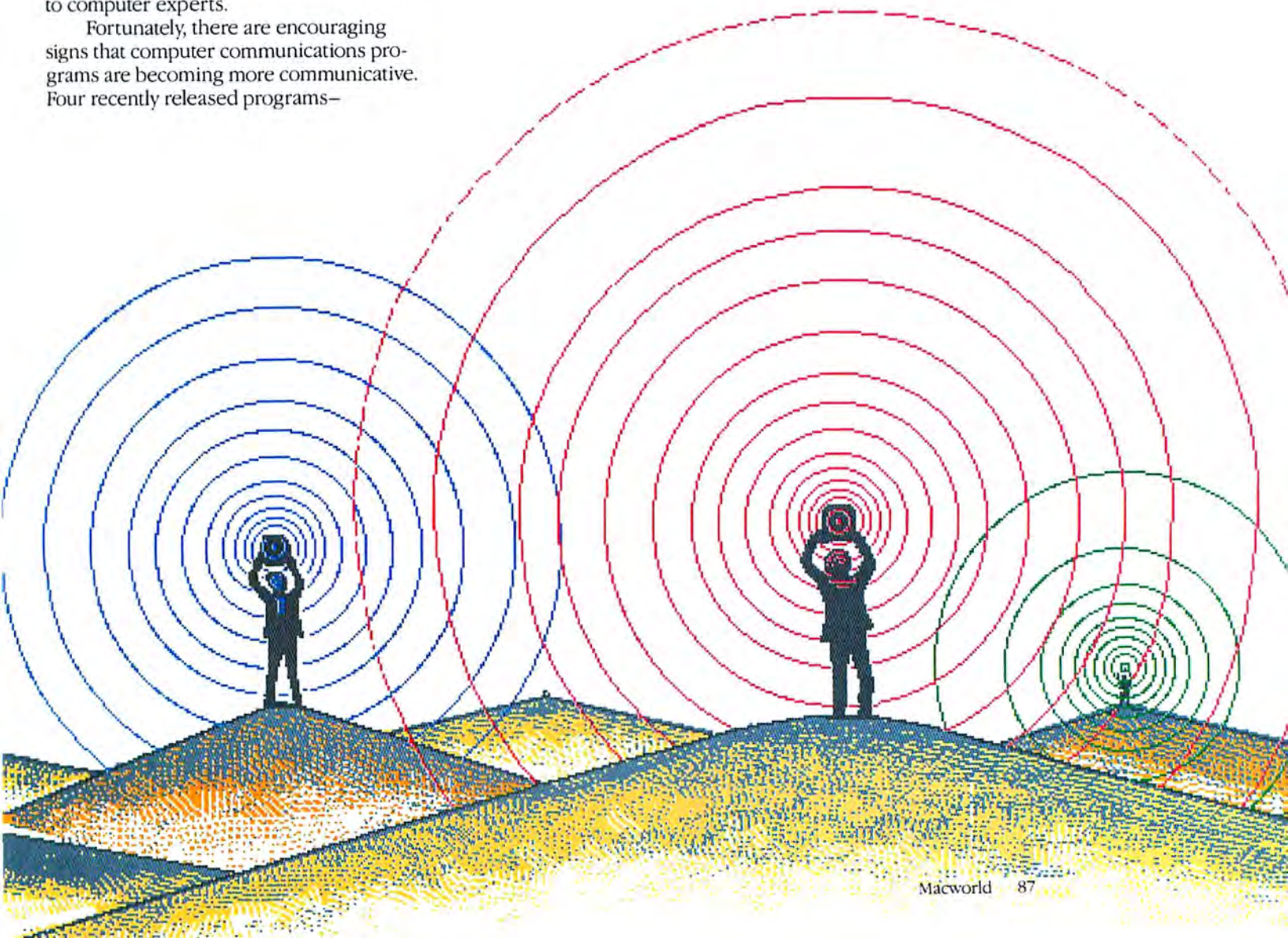
Fortunately, there are encouraging signs that computer communications programs are becoming more communicative. Four recently released programs—

Smartcom II, *Red Ryder*, *inTouch*, and *Telescope*—can help you tame the tangle of commands leading to on-line treasures.

Notice I said "help." As long as bulletin board systems and information services like CompuServe require typed commands, telecomputing will never be as easy as using programs like *MacPaint* or *MacWrite*. Still, these communications programs' ability to store lists of commands in "autopilot" documents enables you to dial a number, establish a connection, log on automatically, and move to a desired section of the information service all with a single command. *Smartcom II*,

Red Ryder, and *inTouch* can even sign on while you slumber, sending or retrieving electronic mail or software when rates are low.

Besides making communications accessible to beginners, the programs reviewed here provide advanced communications capabilities for experts. People who use computers in corporations or universities can use the programs to emulate popular terminals such as Digital Equipment Corporation's VT-100. Hobbyists or



businesses can use *Telescope's* remote access feature to turn a Mac into a bulletin board system.

Whether or not you're an expert, advanced communications software should be judged not only on features but also on its ease of use. Throughout this review I'll comment on how any advanced features are presented. The specifications of the products reviewed are listed in "Comparing Communicators."

Smartcom II

Smartcom II, from Hayes, uses icons to minimize typing and simplify the set-up of automated operations. This simplicity is the program's greatest strength, making it easy to learn and reducing the number of steps involved in day-to-day communications tasks.

You use *Smartcom II's* icons to create autopilot sequences. (The communications world has its own terminology. If you think an *autopilot* helps a pilot fly an airplane or that *protocols* are for diplomats, see "The Age of Automation" and "Communicating with Accuracy" for an introduction to the jargon.) You create an autopilot sequence in *Smartcom II* by clicking icons that represent the operations the program can perform. As you click the icons, statements like "Start printing" or "Stop capturing to disk" appear in a window. You type only when you enter information, such as an identification number, needed to complete a particular autopilot step.

Smartcom II has a unique option that guards the confidentiality of text such as passwords. Protected text can't be viewed or changed even with a disk editing program such as *Fedit* or *MacTools*. When completed, an autopilot sequence looks like a computer program written in plain English (see Figure 1). You can execute a sequence immediately or at a later specified time.

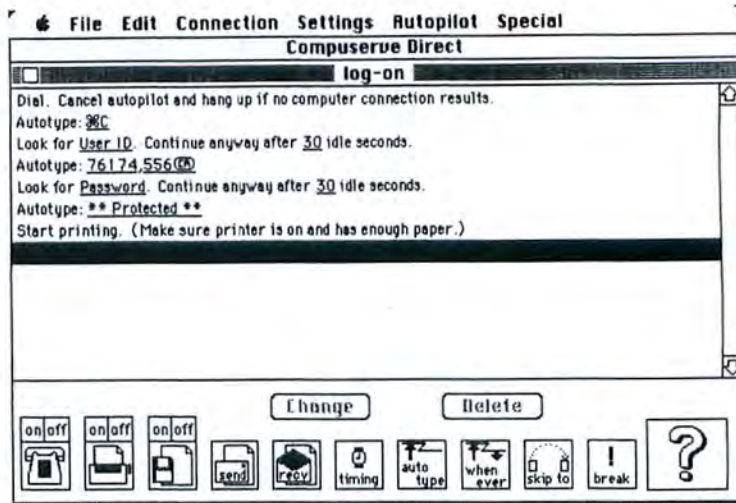


Figure 1

You create Smartcom II autopilot sequences by clicking icons at the bottom of the screen. As you do, statements like "Start printing" or "Stop capturing to disk" appear in a window, showing the steps Smartcom II will take in the sequence. Here, Smartcom II's "protect" option has been used to hide a password.

Icons On Line

Smartcom II also uses icons to simplify operating on line. For example, you can send a file, print incoming text, or save text in a disk file by clicking an icon. Icon functions are easy to identify. To send a file, for instance, you click an icon depicting a stamped, addressed envelope. I found that the icons give a responsive feel to operating on line, and they don't obscure incoming text, like pull-down menus do, when you need to give a command. I'd like, however, to see ⌘-key equivalents for clicking the icons.

In the file transfer department, *Smartcom II* works with the Xmodem error-checking protocol and the MacBinary format, making it ideal for exchanging software with MicroNet Apple User's Group (MAUG). The program also offers the Hayes Verification protocol, which is useful for exchanging files with the IBM PC version of *Smartcom II*.

The Graphics Canvas

Smartcom II offers a graphics "canvas" that lets two people draw and exchange graphic images, provided they each have *Smartcom II* and a 512K Macintosh (see Figure 2). While one person draws an image with the program's *MacPaint*-like drawing tools, the other can see the drawing develop on screen and modify the image with the same tools. The Scrapbook on the *Smartcom II* disk contains a graphic chessboard you can use for on-line chess games. (Playing chess on line, however, is a pastime that may not be appreciated by other household members, since it ties up the phone.)

Smartcom II's canvas is interesting, but I'm not sure how useful it is for professional graphics applications. I can't imagine, say, two architects having an on-line discussion about a house design, with one dragging rooms around and typing, "No, put the bathroom here," and the other getting the last word by double-clicking the eraser. Under more casual circumstances, however, the ability to create and modify images on line may help colleagues sketch out impromptu ideas. This type of communication would be more beneficial if the participants could talk to each other as they draw.

On the negative side, *Smartcom II* lacks a macro facility. You can create autopilot sequences that send frequently typed commands, but sending such a sequence involves choosing a command, selecting the sequence name, and clicking a button—a time-consuming task compared to simply clicking a button or typing a ⌘-key sequence. It's also important to note that *Smartcom II* works only with modems that use Hayes commands. If your modem is not Hayes compatible (early Microcom MacModems aren't, though an upgrade is available), you can't use *Smartcom II*.

Overall, *Smartcom II* earns high marks for combining advanced features with simplicity. The program's detailed on-line help minimizes trips to the manual. I

(continues on page 90)

The Age of Automation

Dial a number, type a number, enter a password. Signing on to CompuServe or The Source is like unlocking a bank vault.

Autopilot sequences are lists of commands that instruct a communications program to dial a number and then wait for a remote computer to send specific text, such as "User ID:." When the text is received, the program sends the ID number as if you had typed it. The program may then wait to receive the next prompt, such as "Password:," and then send the requested response. Once you create an autopilot log-on sequence, you need never sign on by hand again.

Automated communication is useful for more than sign-on sequences. You can tell the program to wait until after a specific hour, say 11 p.m., to sign on, retrieve your electronic mail, store it on disk, call up a closing stock quote, print it, and then sign off. Autopilot documents can accomplish most on-line tasks, short of chatting with other telecommunicators in a conference area.

Macros

Macros are scaled-down autopilot sequences. You can assign text, such as frequently typed commands, to specific keys and

send the text by pressing a key or clicking an on-screen button. For example, the finger-twisting sequence `cat/des/age:7/key:binary` displays a description of all binary files added to a MAUG data library within the past seven days. Rather than wrestle with the keyboard, put the command in a macro. You also save money by spending less time on the service because the Macintosh can issue macros faster than you can type. Macros lack the flexibility of autopilot sequences, however. You can't make the program wait for specific incoming text or until a designated time before sending a macro.

Terminal Impersonations

For people who link their Macintosh to university or corporate mini or mainframe computers, *terminal emulation* is an important capability. Terminal emulation allows the Mac to duplicate the characteristics of popular terminals such as DEC's VT-100 or IBM's 3101. For the Mac to imitate a specific terminal, it must understand the specialized commands sent by the large computer to control aspects of the terminal's operation such as clearing the screen and positioning the cursor.

Similarly, the Mac can send commands in a format the host computer is designed to receive when the terminal's function keys and cursor-movement

keys are pressed. Since the Mac's keyboard lacks these keys, many terminal emulators display graphic equivalents on the Mac's screen. Others use `⌘`-key sequences. The mainframe computer acts as if it were communicating with the terminal the Mac is mimicking.

Remote Control

Some communications programs can turn the Macintosh into a message center capable of exchanging files with callers. A business could use remote access features to allow employees traveling with portable computers to check in at any time and read messages from the home office. The employees could also update the boss on the progress of their business trips. Hobbyists use remote access to turn their Macs into *bulletin board systems*—homespun information services that other hobbyists can use to exchange messages and software.

(continued from page 88)

like using icons for common activities such as printing and sending or receiving files. Furthermore, the program's autopilot is the easiest to use of the programs I tested.

Getting inTouch

MacinTouch Software's *inTouch* is a complex program that offers a versatile autopilot and an excellent macro facility but is more difficult to use than *Smartcom II*. The best example of *inTouch*'s complexity is its Communications Command Language (CCL), which you use to type autopilot instructions. The terse nature of commands

in CCL makes autopilot sequences more difficult to decipher than their *Smartcom II* counterparts (see Figure 3). The command `dial retry 10 delay "10"`, for example, tells *inTouch* to make up to 10 attempts to dial a number, waiting 10 seconds between each attempt. Although it's bothersome to type every command and refer to the manual for ones you've forgotten, *inTouch* does provide an editing window for creating CCL sequences and checks for typing errors and misspelled commands.

inTouch lets you create more macros and keep them better organized than any other Macintosh communications program I have tried. You can assign up to 63 characters to an on-screen button. You send the characters when you click the button. You can label buttons with short names such as "News" or "MAUG" to describe their contents. *inTouch* provides 32 such buttons; 8 buttons are available at a time. You switch

between sets of 8 by clicking buttons labeled L1 (for "level 1") through L4.

inTouch also lets you use a macro to run a CCL program. For example, to browse through electronic mail or wire service news you might set up two autopilot procedures, one that begins capturing incoming text in a file and another that pauses the capturing process, and assign each procedure to a macro. You could selectively capture information by sending each macro when appropriate. You can even reset all 32 macro buttons within a CCL program, giving *inTouch* a virtually unlimited number of macros.

inTouch doesn't let you send macros using the keyboard; you must click the buttons on the screen. This limitation is unfortunate because life on line requires a lot of typing, and keyboard commands would enable you to perform common tasks, such as sending macros, without taking your hands off the keyboard.

For file transfers, *inTouch* works with the Xmodem and Crosstalk protocols. Unfortunately, *inTouch* is out of touch with the MAUG world: it doesn't recognize files in MacBinary format. Communications programs that recognize MacBinary can download MAUG files in a single step, avoiding a cumbersome file conversion procedure. A spokesperson from MacinTouch Software told me that a future version of *inTouch* will be able to recognize MacBinary files. Until then, people who regularly download programs from MAUG should use another communications program.

inTouch's excellent macros and advanced autopilot command language make the program ideal for people who frequently use complex information services such as CompuServe, The Source, and Dow Jones News/Retrieval, but who don't download MacBinary files. The program saves time by storing in macros the numerous commands needed to navigate through those services. But be prepared to spend some time learning the program's Communications Command Language to get the most out of *inTouch*.

(continues on page 92)

Figure 2
Smartcom II offers a graphics "canvas" that lets two Smartcom II users with 512K Macs draw and exchange graphic images. As one person draws, the other sees the image appear on the screen. The second person can modify the image using the program's drawing tools.

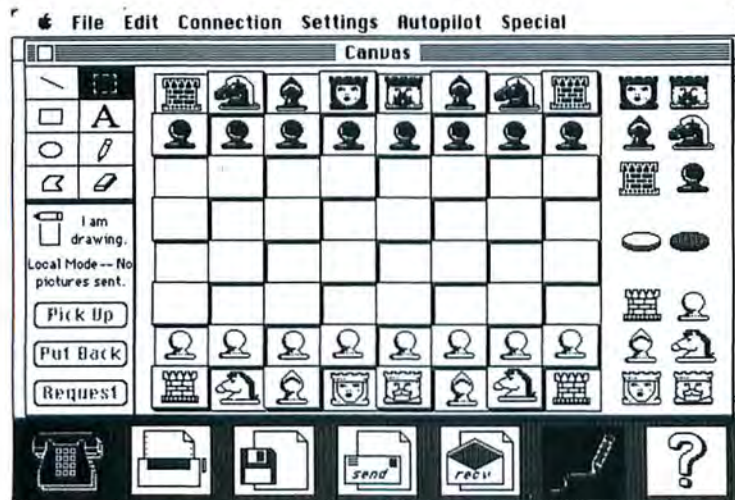
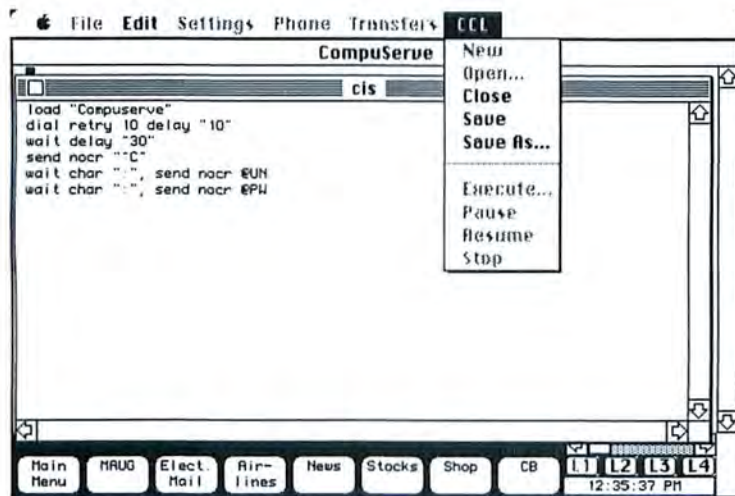


Figure 3
inTouch requires you to type the text of Communications Command Language (CCL) sequences. CCL sequences are less easily understood than their Smartcom II counterparts. This sequence, for example, performs the same function as the autopilot sequence in Figure 1.



Comparing Communicators

	MacTerminal	Smartcom II	Telescope	Red Ryder	inTouch
Autopilot Features					
Executes sequences at specific time	—	yes	—	yes	yes
Hides passwords in sequences	—	yes	—	no	no
Sends files within sequences	—	yes	—	yes	yes
Receives files within sequences	—	yes	—	yes	yes
Activates printer within sequences	—	yes	—	yes	yes
Adjusts settings within sequences	—	no	—	yes	no
Loads saved macros within sequences	—	—	—	yes	yes
Macro Features					
Maximum number of macros	—	—	10	10	32
Maximum characters in a macro	—	—	80	40	63
Autopilot sequences in macros	—	—	—	yes	yes
Control codes in macros	—	—	yes	yes	yes
Sends macros with ⌘ key	—	—	yes	yes	no
Sends macros with on-screen buttons	—	—	yes	yes	yes
File Transfer Features					
Sends text files	yes	yes	yes	yes	yes
Captures incoming text	yes ¹	yes	yes	yes	yes
Xmodem protocol	yes	yes	yes	yes	yes
MacBinary format	no	yes	yes	yes	no
Kermit protocol	no	no	no	yes	no
Hayes protocol	no	yes	no	no	no
Crosstalk protocol	no	no	no	no	yes
Convenience Features					
Views scrolled text	yes	yes	no	yes	yes
Selects and copies text to Clipboard	yes	yes	no	yes ²	yes
Copies text in table form	yes	no	no	no	no
Pastes text to remote computer	yes	yes	no	yes ²	yes
On-screen clock or timer	no	no	no	yes	yes
Prints incoming text	no	yes	no	yes	yes
Prints selected text	yes	yes	no	yes ²	yes
Remote Access Features					
Sends and receives files	no	no	yes	yes	no
Menus for remote access	no	no	yes	no	no
Modems Supported³	Hayes	Hayes	Hayes, any	Hayes, any	Hayes, any

¹Using *MacTerminal*'s Save Lines Off Top command, you can save text that scrolls off the top of the screen.

²These features are present only on the 512K version of *Red Ryder*.

³Hayes-compatible modems include Apple modems, recent Microcom MacModems, and Prometheus Products' Promodem. "Any" indicates that the program can control any intelligent modem, but you must first specify modem commands.

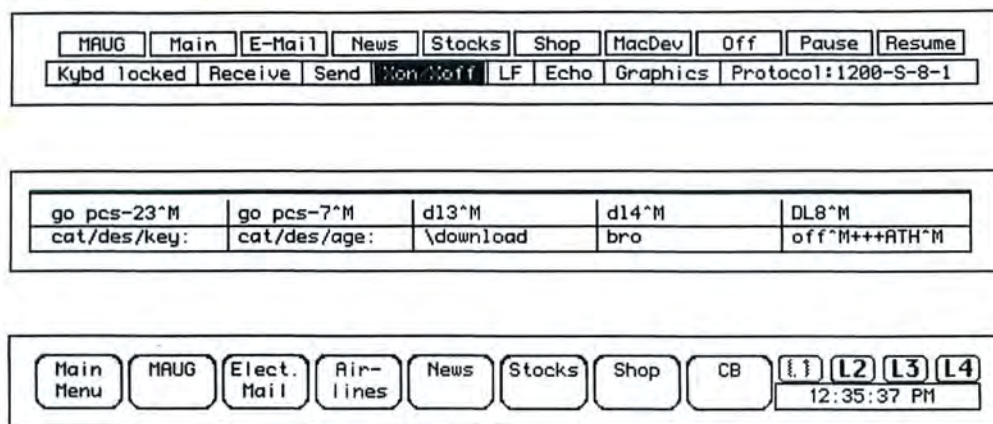


Figure 4

A macro comparison. Telescape (top) lets you create labels to describe its ten macros: you send a macro by clicking its label. The bottom row of the display shows status information, such as the communications protocol. Red Ryder (middle) also lets you send macros by clicking labels but does not let you create labels for the macros. Instead, a portion of each macro's text appears as its label. inTouch (bottom) lets you create labels for its 32 macros. Eight macros are available at any one time; you switch between sets of 8 by clicking buttons L1 through L4.

(continued from page 91)

Red Ryder

Red Ryder, a "shareware" program from FreeSoft Company, provides a sophisticated autopilot command language and good macros but isn't as easy to use as *Smartcom II*. Unlike *inTouch*, *Red Ryder* recognizes MacBinary files.

Red Ryder provides an autopilot language similar to *inTouch*'s but lacks an editing window for creating autopilot sequences. Instead, you create text documents with a word processing program that you convert to *Red Ryder* "procedures" with the Change Text to Procedure command. The only purpose of this conversion process is to change the file's icon and make it recognizable to *Red Ryder*. I was annoyed that I had to perform this extra step whenever I wanted to refine an autopilot sequence. If you find an error, you must convert the procedure back into a text file, correct it with a word processing program, and then reconvert it. Scott Norman, *Red Ryder*'s author, suggests using CE Software's MockWrite desk accessory to create autopilot files, since MockWrite lets you edit autopilot sequences without quitting *Red Ryder*.

Red Ryder's macro talents aren't as impressive as *inTouch*'s, but they're adequate for storing information service commands. As with *inTouch*, you click on-screen buttons to send a macro. However, you can't give the button a descriptive name such as "MAUG" or "Mail." Instead, buttons are identified with the first 13 characters of the macro itself (see Figure 4). As

with *inTouch*, you can include the name of an autopilot procedure in a macro, causing that procedure to be executed when you send the macro.

If you have a modem that answers automatically, *Red Ryder*'s Host Mode lets you access files in your office Macintosh from your home, or vice versa. Choosing Host Mode from the Mode menu causes *Red Ryder* to wait for the phone to ring. When it does, and the modem has established a connection, *Red Ryder* waits for typed commands from the other computer, such as **sendx** for sending a file using Xmodem, or **recx** for receiving a file. I would prefer a menu that contained all the file transfer options rather than having to remember and type commands.

Red Ryder is best suited to members of MAUG and explorers of other information services who are willing to forego *Smartcom II*'s simplicity in exchange for macros and the ability to access files from a remote computer. *Red Ryder*'s only major shortcoming is the large amount of typing required to create autopilot procedures and the need for a separate word processing program.

But *Red Ryder* is inexpensive, and its shareware distribution method lets you evaluate the program before purchase. You can get a copy through user groups or MAUG; you pay \$40 only when you decide to keep the program. Moreover, *Red Ryder* is frequently revised based on feedback from people who use it. A version with improved features for writing autopilot sequences is in the works and may be available by the time you read this.

Telescape

Mainstay's *Telescape* is like a car with cruise control but no windshield wipers: it provides luxury features not found in other programs yet lacks the conveniences that are standard equipment on the competition. *Telescape* stores parameters such as communications settings, phone numbers, and macros differently than the other programs I tested. Instead of storing each set of parameters as a separate document, *Telescape* stores 20 parameter sets together in a single directory. While 20 entries should be adequate for most people, active communicators may require a larger on-line black book.

Telescape lacks an autopilot. You can work around this shortcoming somewhat by using the program's "smart" macros, which wait for specific incoming text before sending text. You could, therefore, create an automatic sign-on macro that would operate identically to an autopilot procedure. Nevertheless, *Telescape*'s macros lack the power of autopilot sequences. For example, you can't create macros that automatically start and stop saving data to a disk file. As with *Red Ryder*, you send a macro by pressing **⌘** along with a number or by clicking on-screen buttons.

Of the programs reviewed here, *Telescape* is the most versatile terminal emulator. Its Terminal Emulation Language creates *terminal definitions*—tables that specify how *Telescape* interprets the specialized commands a specific terminal receives and sends to the host computer. *Telescape* comes with definitions for several terminals, and Mainstay reports that definitions for more than 50 other terminals are available.

Communicating with Accuracy

The rules that allow error-free file exchange between computers—despite potentially noisy phone lines—are called *file transfer protocols*. Numerous error-checking protocols exist. Regardless of the protocol, your communications program should be able to work with the protocol used by the computer at the other end.

The simplest file transfer method is a *text transfer*, or *ASCII transfer*. This method has no error-checking protocol. On the receiving end, the text scrolls onto the screen and isn't saved unless you instruct the communications program to save incoming text on disk. Text transfers are suitable for sending text-only files created with a word processor. If static on telephone lines scrambles some of the text, chances are the person at the other end can still decipher the message.

Text transfers aren't suitable for sending *binary files* such as *MacPaint* documents, word processing documents with font and formatting informa-

tion, or programs. One lost or garbled bit can make a mess of a *MacPaint* masterpiece or render a program useless. Though specially converted binary files may be exchanged through text transfers, accurate exchanges depend on error-checking protocols like Xmodem.

The Xmodem protocol sends a file in blocks, with each block containing error-checking information. If the receiving computer reports that a block contains an error, the sending computer transmits it again. Since the file exchange is monitored and erroneous data retransmitted, files exchanged with Xmodem have a 99.6 percent or better chance of arriving intact. Because the response time of mainframe computers such as CompuServe's slows during peak periods, some programs let you specify a lengthy *time-out* value to allow CompuServe some slack time and avoid timeout errors during downloading.

Until recently, binary files downloaded from mainframe computers had to be converted by a utility program called BIN-

HEX before they could be used (see "Shopping the Electronic Software Shelves," *Macworld*, June 1985). This extra step was required because Macintosh binary files have two components—a *resource fork* holding information such as rulers and font information, and a *data fork* containing the file's data. CompuServe's computers cannot store files in the Macintosh format.

A special format called MacBinary has eliminated the need for BINHEX conversion when transferring Mac files. A downloaded MacBinary file is ready to use immediately. The MacBinary format even transfers the file's original name, as well as its creation and modification dates. MacBinary files are stored on CompuServe with the extension .BIN after the file's name. If you intend to exchange binary files through MAUG, a communications program that recognizes MacBinary saves you a lot of trouble.

Callers can upload or download files as well as read and leave messages. The program's remote access feature makes it more suitable for use as a bulletin board system than *Red Ryder*. The menus bulletin board callers see are easy to use (see Figure 5), and the message system lets you inform callers of the latest software additions to the bulletin board.

Some of *Telescope*'s capabilities are unique, but its omissions are significant. The program lacks a vertical scroll bar for displaying text that has scrolled off the top of the screen. Consequently, scrolled text is

consigned to oblivion unless you previously specified that incoming text should be saved on disk, in which case you can review it with a word processor. A command for printing incoming text is also missing, though you can print the screen by pressing ⌘-Shift-4. Finally, *Telescope* can't copy incoming text to the Clipboard or paste text on the Clipboard to the remote computer.

If you need to emulate a terminal that the other programs can't, or if you want to operate a bulletin board system, *Telescope* is the best choice. Otherwise, the other programs I evaluated are more serviceable and make better general-purpose communications software. *Telescope* has promise, but it should provide better convenience features.

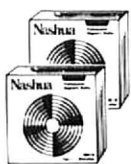
The Envelope, Please

All the programs I've reviewed are capable communicators, but *Smartcom II* is my favorite. Hayes has put a lot of effort into making *Smartcom II* powerful yet easy to use. Its autopilot facility is by far the simplest to use of the programs reviewed here, yet it sacrifices nothing in terms of capability. I would be willing to trade the program's graphics for a good macro facility, however.

Red Ryder ranks a close second. Its compatibility with MacBinary, its macros, and its autopilot language make it ideal for downloading and for exploring information services. It isn't as easy to use as

Nashua

3 1/2" SS DISKS FOR YOUR MAC



Ten-packed disks. Limited Lifetime Warranty.

\$1.59 each Qty. 100
\$1.69 each Qty. 50
\$1.75 each Qty. 20

5 1/4" DISKS SINGLE SIDED/ DOUBLE DENSITY

85¢ each Qty. 100 Limited Lifetime Warranty.
88¢ each Qty. 50 Boxed in tens.

SONY

3 1/2" DISKS FOR YOUR MAC

Ten-packed disks from the inventor of the 3 1/2" drive. Treat your MAC right, use the original 3 1/2" disk.



\$1.85 each Qty. 100
\$1.89 each Qty. 50
\$1.95 each Qty. 20

FREE



FREE

FREE SMARTCARE 3 1/2" Head Cleaning Kit with any purchase of 200 3 1/2" disks from this ad. Includes everything you need to keep your MAC in peak operating condition. Regular Price **\$9.95** each.

RIBBONS

Sold in dozens only. Other models available. Apple Imagewriter **\$3.49 each**

DELUXE ROLLTOP FILES



Classic rolltop design holds 55 3 1/2" or 140 5 1/4" disks. Color-coded labels, anti-skid feet and dividers. Many color choices! 3 1/2" Model **\$17.49** 5 1/4" Model **\$24.99**

CALL TOLL FREE

1 800 USA-FLEX

7 to 7 Central Time
10:30 to 3:00 Saturdays

In Illinois 1 (312) 351-9700

Shipping/handling additional. Minimum order \$50.00. Visa, Mastercard and prepaid orders accepted. Corporations rated 3A2 or better and government accounts are accepted on a net 30 basis. C.O.D. orders add an additional \$5.00 special handling charge. APO, FPO, AK, HI & PR orders add an additional 5% of the total order amount to cover PAL and insurance. Illinois residents add 6 1/4% tax.

USA FLEX

135 N. Brandon Drive Glendale Heights, IL 60139

Figure 5

Telescope lets you turn the Macintosh into an electronic bulletin board with menus, such as the one shown, that callers can use to exchange software and messages.

Telescope Message Service

```
<R>ead ..... Read Message
<L>eave ..... Leave Message
<D>ownload .. Files or Applications
<U>pload .... Files or Applications
<C>hat ..... Chat With Sysop
<G>oodbye ... Terminate Session
```

Command: _

Smartcom II, and its two-step process for writing autopilot sequences is annoying if you don't use MockWrite, but the program is an excellent value.

inTouch has excellent autopilot and macro powers, but it must be able to recognize the MacBinary format to be useful to people who want to download programs from MAUG.

Telescope needs some work before I can recommend it. I like its remote access feature and the versatility of its Terminal Emulation Language, but I wish the program had some of the conveniences common to most Mac communications programs.

Finally, keep in mind that there are other communications programs available. At least two modem manufacturers supply communications programs with their products: the Prometheus Promodem comes with the *ProComm-M* program, and the Microcom MacModem includes its own software. If you haven't purchased a modem, one of these modem and software combinations might be a good choice. Both *ProComm-M* and MacModem have autopilots, though MacModem can't check file transfers with the Xmodem error-checking protocol. Because Xmodem is used for MacBinary file transfers, MacModem can't transmit or receive files in MacBinary format.

If you're on a tight budget, several public-domain or shareware communications programs are available in MAUG's telecommunications data library. *MacTep* and *Freeterm* are the best known; they don't have macro or autopilot facilities, but they send and receive files capably.

Smartcom II, *inTouch*, *Red Ryder*, and *Telescope* are opening the doors to easier and more economical communica-

tions. Autopilots and macros save time by letting you maneuver quickly through large information services. Terminal emulation lets businesses unite the Macintosh with mainframe computers, lightening the load on data processing departments. Best of all, novices who are understandably intimidated by cryptic commands and BINHEX conversions can brush these adversaries aside and embark on a communications adventure. □

▲▲▲▲▲▲▲▲▲▲ Jim Heid is a
Contributing Editor of Macworld.

▲▲▲▲▲▲▲▲▲▲

Smartcom II
Hayes Microcomputer Products, Inc.
5923 Peachtree Industrial Blvd.
Norcross, GA 30092
404/449-8791
List price: \$149

inTouch
MacinTouch Software, Inc.
224 S. Deerfoot
Houston, TX 77057
713/367-7413
List price: \$149.95

Red Ryder
The FreeSoft Co.
10828 Lacklink
St. Louis, MO 63114
314/423-2190
List price: \$40 (on approval)

Telescope
Mainstay
28611B Canwood St.
Agoura Hills, CA 91301
818/991-6540, 818/991-5037 by modem
List price: \$125

A two-disk set of fonts with 48 different styles. Useful for Graphic Artists, Language Students, Teachers, Engineers, Scientists - anyone who wants to express ideas clearly. Great care has been taken to optimize Fluent Fonts for high-quality output on the ImageWriter™ and the LaserWriter™ smoothing routines.

FLUENT FONTS™

The Most Complete Collection of Fonts for the Macintosh™

Melrose Bodoni GLOSS
Calligraphy Canterbury CHUBBY
OLD NOVA ART SHADOW
WEST NOVA STRIPE
Easy Street Script DREAM EIRE
CHUBBY NY Inline MICRO SLIM
MAZEL NORDIC TINY TEENV
TOY SILICON CONFUSER

AVAILABLE SOON:
Laser Fonts

PostScript™ versions of the LaserWriter™ for other compatible printers & typesetters. FOR ADVANCE ORDERS OR INFORMATION CALL (408) 646-4660 Casady Company Box 223779 Carmel, CA 93922

"The best deal I've seen so far is Fluent Fonts... Hot Stuff."

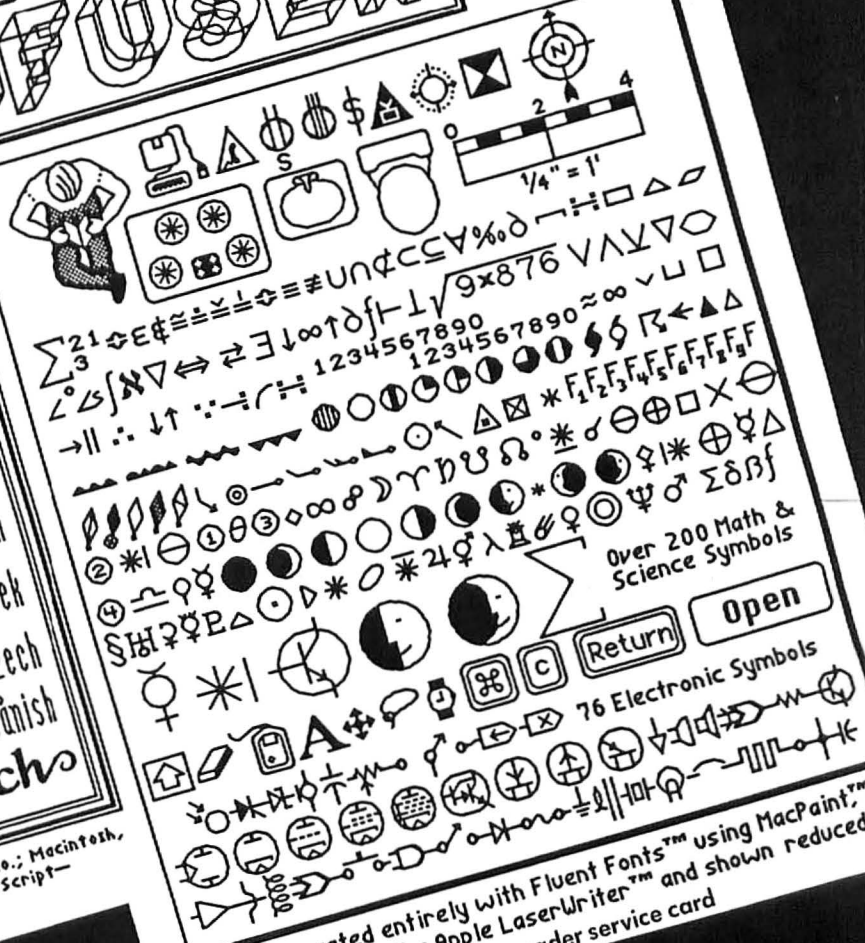
John C. Dvorak
InfoWorld
July 22, 1985

"This package of fonts represents the broadest selection, greatest attention to detail, and the best value we've run across."

Icon Review

Ευρώπη • Λάγυαγές
ЯФЙІЄЧЁБ • "СВЯЗЬ"
DIAČKÍTIČAZ MÁRKŠ
Français • Polish • ШІ7λγ
Deutsch • Russian • ШІ7λγ
Português • Italiano • Hebrew
ΕαΣΡΨΔΔΩΕΦ • Deutsch
ΓΥΧΥΖ ΩΩΑΕΥΙ • Greek
Très Élégant
ЙЦГЩЗХЪ • Slovak • Czech
ИГЩЗ • Cyrillic • Danish
Español • Glückliche

TRADEMARKS: Fluent Fonts—Casady Co.; Macintosh, LaserWriter—Apple Computer; PostScript—Adobe Systems Inc.



Over 200 Math & Science Symbols
76 Electronic Symbols
This ad created entirely with Fluent Fonts™ using MacPaint™ then printed on the Apple LaserWriter™ and shown reduced Circle 165 on reader service card

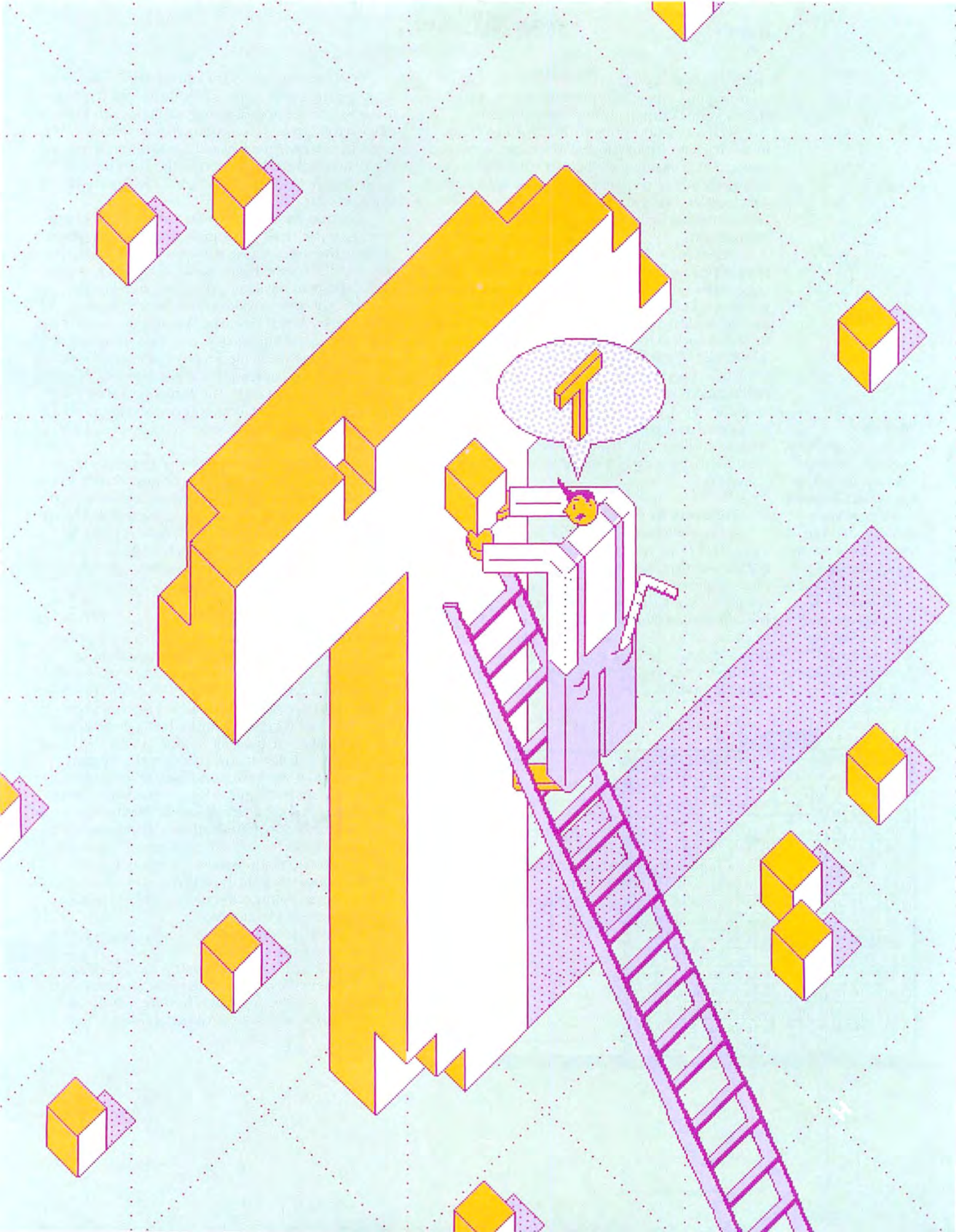


The Mac Font Shuffle

Robert C. Eckhardt

More than a hundred fonts are available commercially and in the public domain. But haven't you ever wished that the special symbols in one font were available in a different font? Or that the italic or bold versions of your favorite fonts looked better? Or that you could have a tall or fat display version of one of your favorite fonts? Perhaps your work requires special characters missing from the Macintosh's fonts. With FONTastic, a font editing program from Altsys Corporation, you can modify fonts to fit your needs.

The Macintosh's Font Mover lets you move fonts in and out of the System file with a few mouse clicks. Until recently, however, modifying a font—adding



characters or changing the appearance of existing ones—required Apple's Resource Editor (ResEd), a complex and occasionally unreliable program.

With Altsys Corporation's *FONTastic* you can move characters from one font to another to create a custom font containing all the special characters you frequently use, or you can convert an entire font to an italicized version by slanting letters to the right. You can even create new fonts by stretching and squeezing existing ones.

Before you start modifying fonts, a note on *FONTastic*'s performance and memory is in order. I suggest that on a 512K Macintosh you use a RAM disk containing *FONTastic* and the System or fonts file you want to modify. After you alter a font, copy it from the RAM disk back to the floppy disk it was on. If you have a 128K Mac, beware: *FONTastic* can run out of memory when you work with large font sizes or perform modifications, such as stretching a character, on an entire font. During a few font editing sessions, *FONTastic* crashed or refused to save my work, so save often to avoid trouble. If *FONTastic* alerts you about insufficient memory, quit the program, restart it, and try again.

Different Keystrokes for Different Folks

When you need to move characters around within a font, *FONTastic* handles the job well. Unless you completely rearrange the Macintosh's keyboard layout, most character-moving operations involve making often-used symbols or special characters more accessible or assigning them to easily remembered key sequences. Let's look at one such font-shuffling move—relocating the copyright symbol (©) in 12-point New York from its home, Option-g, to a more memorable location, Option-c.

FONTastic opens with a font selection window resembling the one in Apple's Font/DA Mover. The fonts in the System file appear in one scroll box, while another scroll box lets you access separate font files. You begin by selecting the font and size you want to edit, in this case New York-12. Next, click the Edit button to open the font for alteration. Double-clicking on the font's name also opens the font.

Opening a font displays the Sample and Font windows (see Figure 1). The Sample window shows some prose in the selected font, while the Font window, titled with the selected font's name, displays a 16- by 16-cell grid containing letters, numbers, and symbols. The Font window provides two views: the System view and the Actual view. The System view displays the characters in the Chicago font and in the positions designated by the System file. Empty character cells, those that contain no characters in the selected font, display a small, hollow rectangle. The Actual view shows characters in their current form, with any alterations you make. In the Actual view, empty cells are denoted by gray squares.

Use the System view when you get confused or make a mess of your work. If you change a character beyond recognition, the System view can remind you what the character was. The System view is also handy when you work with picture fonts such as Cairo. By switching between System and Actual views, you can determine which picture corresponds to each character position.

The Editing Table

To move the copyright symbol, first locate its current position and its destination. Some searching through the Font window's System view reveals that the symbol's cell is located in the 11th column across and the 10th row down. To locate the symbol's new home—the cell corresponding to the Option-c key sequence—make sure the Font window is active and type Option-c. The Font window cell located 9 columns across and 14 rows down is highlighted, and an editing window opens containing a lowercase *c* with a cedilla (*ç*), which is the character produced when you press Option-c. Since you don't need the editing window to move a character, close it. The cell remains selected.

Now you're ready to move the symbol.

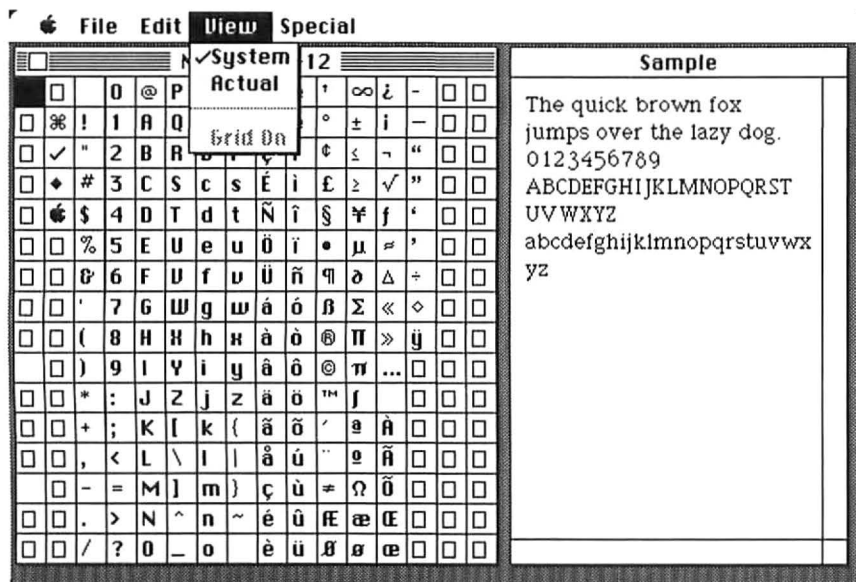
- Choose Cut from the Edit menu to store the *ç*. Then select an empty cell—one containing a rectangle. Paste the *ç* there for safekeeping.

- Select the copyright sign, cut it, and paste it into the cell where the *ç* was.

- Cut the *ç* from its temporary storage cell and paste it where the copyright sign was. You can also remove the *ç* by selecting it and choosing Clear from the Edit menu, or you can paste the symbol elsewhere.

Figure 1

Opening a font opens the Sample and Font windows. The Sample window shows some classic prose in the open font. The Font window, titled with the open font's name, displays a 16- by 16-cell grid containing letters, numbers, and symbols. Character cells for which no characters exist show a small, hollow rectangle.



- Choose Save from the File menu to preserve the new arrangement. Since the font you worked on is in the System file, you can quit *Fontastic* and use the font immediately. If the font were in a fonts file, you would place the font in the System file with *Fontastic*'s font-moving commands before you quit.

To test the modified font, activate the Sample window and type Option-c. Whether the Sample window is active or not, *Fontastic* automatically updates it to reflect your editing. If the characters corresponding to Option-c and Option-g had already been typed, you would have been able to see the results of the swaps as they occurred.

As another font-shuffling project, try moving characters from other fonts into the empty character cells of your favorite font. If you prefer New York but often use Geneva's math symbols, for example, copy the symbols to New York. Open Geneva, locate and copy one of the special characters, then close Geneva and open New York. Finally, select a position for the symbol in the Font window, and paste. Repeat the process for the other math symbols.

Don't forget that your alterations apply only to the font size that you opened. New York-24, for example, does not contain changes you make in New York-12. And since the Imagewriter usually uses a font double the size of the actual text when printing in high quality, the changes do not appear on paper unless you change New York-24. The moral? To avoid unpleasant surprises, always modify all the sizes of a given font in the same way, at the same time.

Opening the Editing Window

For character modifications more ambitious than moving characters between fonts, you must enter the editing window, which is the world of font FatBits (see Figure 2). The editing window shows characters at eight times their actual size and provides several *MacPaint*-like tools for customizing. A pencil lets you add and remove single dots, an eraser cleans large areas, and a marquee lets you select part or all of a magnified character.

Besides magnifying characters, the editing window lets you control important character properties. Sandwiched between the editing tools and the magnified display is a narrow column containing two arrows and two bars. The upper arrow points to the *baseline*, the imaginary line on which all capital letters sit. The bar above it marks the *ascent*, the height of the tallest characters. The bar below the baseline marks the *descent*, or the length of the lower parts of letters such as *g*, *j*, and *q*. The lower arrow controls the *leading*, the space between two lines of text. The two controls at the bottom of the editing window control the space that appears before and after a character. The width values, unlike the ascent, descent, and leading, are set individually for each character in a font. (For more typographical background see "A Face for All Seasons," *Macworld*, February 1985.)

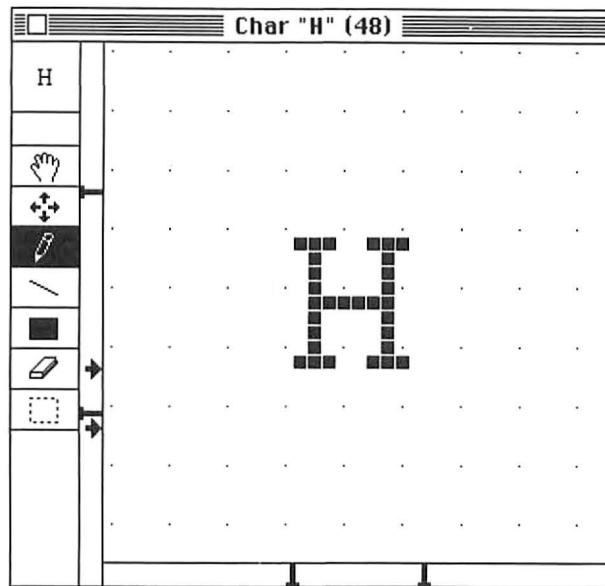


Figure 2

The character editing window shows characters at eight times their actual size and provides several *MacPaint*-like tools for customizing. A pencil lets you add and remove single dots, and a marquee lets you select part or all of a magnified character. You can also adjust a character's width and the font's leading.

Leading and Kerning

If you adjust the ascent and descent of existing fonts, you'll probably chop off the tops or bottoms of some characters. You can, however, adjust the leading without risking character damage. In fact, the ability to change the amount of space between lines is a valuable design tool that isn't available in many Macintosh applications. Most Macintosh fonts come preset to add one point of leading between lines. You can decrease or increase that value in one-point increments by dragging the *Fontastic* editing window's leading control up or down. To determine the amount of leading a given font uses, open the font and choose About *Fontastic* from the Apple menu.

Another character adjustment you can make extends a character beyond the width designated by the width controls. That means characters can overlap, a condition that you'd think would be undesirable but that can significantly improve the appearance of certain letter combinations, such as *To*, *Yo*, and *Ta*. Since the capital *T* is a natural for *kerning*, as the overlapping is called, let's create a special *T* that you can use when appropriate.

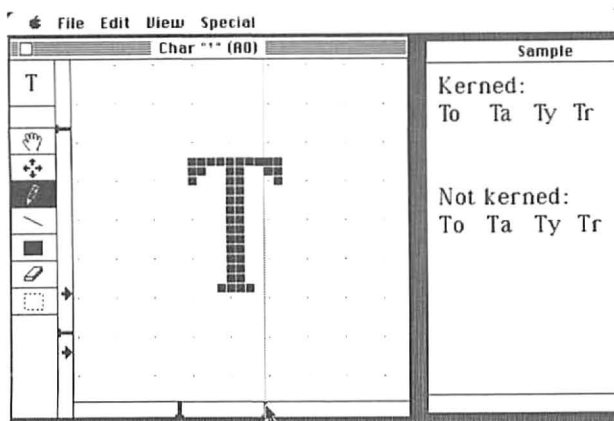
- Open a font, locate the capital *T*, select it, and choose Copy from the Edit menu.

- Make sure the Font window is active, then type Option-t to store the kerned *T* in that slot. When the editing window opens, close it. You'll see that the Option-t slot—which in the System view contains a dagger, or †—remains selected. Store the *T* in the slot with the Paste command.

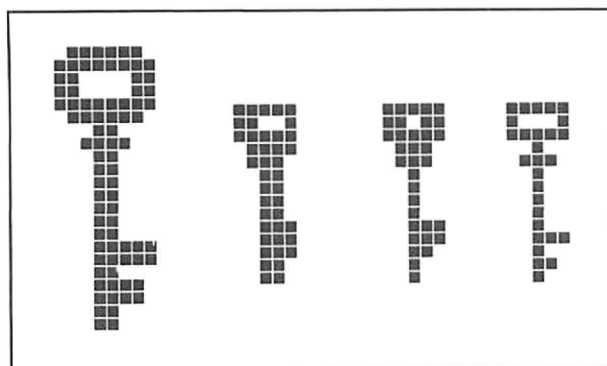
- Drag the right-hand width control to the left. The distance you drag depends on the font you're editing and what size it is. With small sizes one notch is sufficient, while larger sizes can be decreased by two

Figure 3

Here, the width of the letter T is decreased so that characters like o, e, and a tuck under it for a better appearance. The Sample window shows the spacing difference between the kerned and normal-width T. The modified T has been assigned to the Option-t key sequence.

**Figure 4**

The 18-point Cairo key must be rescaled to fit into 12-point New York. Two transfer methods produce different scaling results, shown by the two middle keys. Some touching up in the editing window results in the smaller but reasonably accurate key on the far right.



or three notches. Check your work by activating the Sample window and typing Option-t followed by a round character such as o or e (see Figure 3). When you're satisfied with the spacing, save the modified font. In the future, when you type a character combination such as To, Ta, Ty, or Te, use the kerned T instead of its normally spaced sibling by typing Option-t. But don't forget to modify the other sizes of that font to avoid problems when printing in high quality on the Imagewriter.

Smoothing Seedy Characters

You use the editing window's pencil and eraser tools when copying characters between fonts of different sizes. Consider the task of moving one of 18-point Cairo's pictures into 12-point Geneva. FONTastic automatically rescales the picture, but rescaling is accomplished mathematically—and not always artfully—so the results can be ragged.

Two methods exist for moving characters between dissimilar font sizes. You already know one method—select the Cairo character in the Font window, copy it, and then paste it into Geneva's Font window. You can often get better results, however, by opening the character's editing window, selecting the magnified character with the marquee, and then copying your selection. Next, close Cairo, open Geneva, and open the cell where the character is to reside. Finally, paste the magnified character into the editing window of the specified empty cell. The resulting character often retains more detail than one pasted directly into the Font window (see Figure 4).

Styling and Scaling

For major font makeovers, use FONTastic's styling and scaling commands. Your style options include the usual choices—bold, italic, underline, shadow, and outline—plus three unusual ones. The Expand option increases the space between characters. Condense decreases the space and often improves the appearance of large type sizes. The Invert option gives you white characters on a black background.

Creative use of the style options can improve some styles' appearance. For example, to produce an italicized New York that looks better than the italic the Macintosh creates, make the Font window active and choose Select All from the Edit menu. Next, choose Style from the Special menu and select the Italic option. Finally, clean up the ragged edges with the editing window's pencil and eraser.

Another FONTastic application is to create new sizes and shapes for existing fonts with the Special menu's Scale Font command. FONTastic rescales the entire font, even if you highlight only a single character or group of characters. The program lets you scale both vertically and horizontally, independently of one another, into either larger or smaller sizes.

When you create new sizes for existing fonts, specify the same horizontal and vertical scale values in the Select Scale Factors dialog box to maintain the font's original proportions. If you like the Seattle font, for example, which is supplied in 10-point and 20-point only, rescale the font into other sizes. You can also produce a wide or tall font by making one value more or less than the other. For a tall version of the font, use a larger horizontal value. For a wide font, use a larger vertical value. After scaling, sand the rough spots and save the font.

Closing the Type Drawer

Tailoring fonts to your applications can make using the Macintosh more convenient, and it enhances your ability to convey information. After you rearrange some special characters, change leading or width values, and scale existing sizes into new ones, you might want to try your hand at designing a font from scratch. With FONTastic and knowledge of font-editing basics, you can create fonts that are just your type. □

Robert C. Eckhardt
is a free-lance writer and editor.

FONTastic
Altsys Corp.
P.O. Box 865410
Plano, TX 75086
214/596-4970
List price: \$49.95

gallery

"THIS ACCOUNTING SYSTEM IS SIMPLY A PLEASURE."

Gallery™ Accounting and Business Management Series for Macintosh™.

Simplicity and power that will change your perception of business accounting.

"Like many others, I enlisted Macintosh to help run my business. But long after I'd located the proper data base, word processor, and spreadsheet, I still couldn't find the accounting software I needed. I figured I was stuck with my existing manual accounting method.

"Then I read a review on Gallery, a one-write based accounting series that was designed specifically for a small to mid-size business. It was easy to set up, quick to learn, and convenient in performing daily functions. Now this was what I needed. I purchased the package at once.

"Immediately I could see Gallery was well-conceived. Clearly written manual. Descriptive illustrations. Natural integration. Familiar format. Simple pull-down menus and meaningful dialog boxes. Not only was it easy to make a journal entry, it was automatically copied to the appropriate customer record. All figures were available on the screen—no more data disappearing act. Gallery actually enhanced the one-write system.

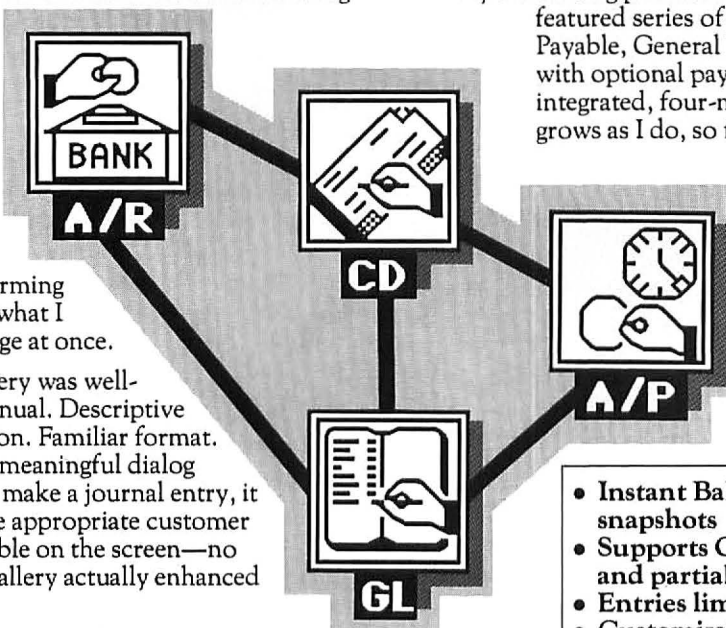
"My accounting procedures were now fully automated; I was ecstatic. But then I discovered innovative features I'd never

seen before. I could make almost all my data entry from the numeric keypad. There was a scratch pad for handy calculations. Name directories for looking up customers and vendors. An open posting structure that let me revise journals even after periods were technically 'closed.' It even reconciled my bank statement.

"My accounting problems were solved with Gallery, a full-featured series of Accounts Receivable, Accounts Payable, General Ledger, and Cash Disbursements, with optional payroll tracking. This naturally integrated, four-module program is so powerful it grows as I do, so flexible it compensates for my errors, yet so simple, I was able to produce financial reports within my first 20 minutes.

"Before I discovered Gallery, I thought productive accounting software for Macintosh didn't exist. But you know what really impresses me?

Doing business is now simply a pleasure."



- Instant Balance Sheet, Profit & Loss snapshots
- Supports Open Item, Balance Forward, and partial payments
- Entries limited only by disk space
- Customizable reports
- Built-in data security and failsafe features
- Compatible with popular hard drives
- Works on Lisa/Macintosh XL

For more information please contact us or your local dealer.

File Period Function Layout Help! [0.0]

Gallery™ 01.00 A/R Nov 85 (11) Sabertooth Enterprises, Ltd.

20	01	DATE	CUSTOMER NAME	REF	CHARGES 4 Dr	CREDITS 5 Cr	BAL
1	11/1/85	Joseph Baker	4525-36	1125	57		1
2	11/2/85	Bill Smith	4525-37	654	25		1
3	11/2/85	Ken Jones	PP/1005			250	66
4	11/3/85	Academic Books Inc.	1102	2505	45		25
5	11/5/85	American Pie & Cake Co	AP-154			4500	00
6	11/5/85	Jim Zebra				236	55
7	11/5/85	William Tell Arrows	1105	10025	13		11
8	11/5/85	P E Pike					
9							
10							
11							
12							
13							
14							
15							
				374	10	4987	83

The one-write system presently used by millions of businesses. Gallery takes it one step further.

Circle 424 on reader service card



gallery™

Making business a pleasure.™

Micromax Systems, Inc.
6868 Nancy Ridge Drive
San Diego, CA 92121
(619) 457-3131

A \$295 Special Edition is available for a limited time with a 30-day money-back guarantee.

Graphics by Phone



*You can send
MacPaint and
MacDraw pictures
quickly over the
telephone lines*

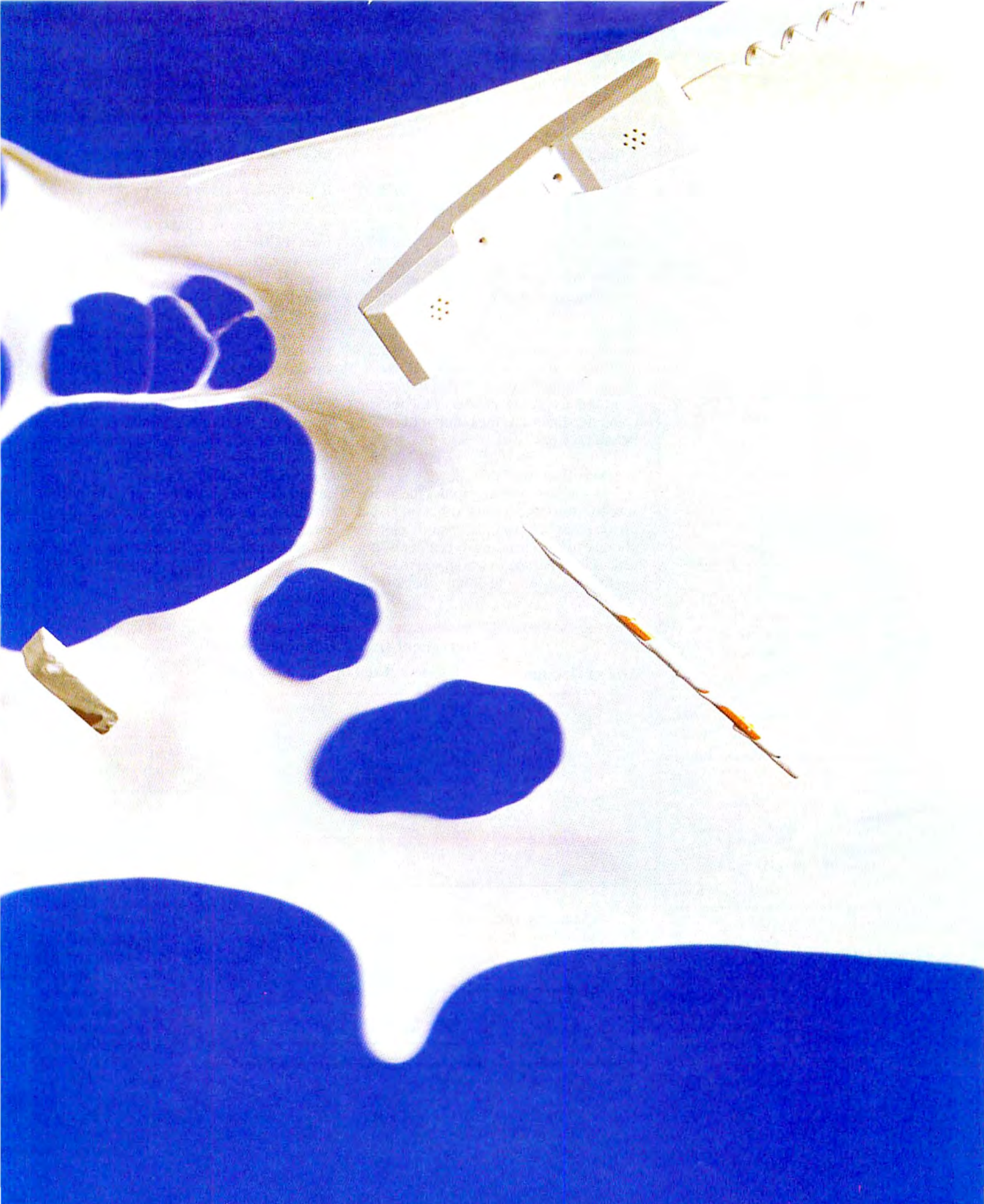
Gordon McComb

When you're in a hurry to ship a MacDraw document or a digitized MacPaint picture to an associate, you can send it by courier or express mail. But if your associate has a Macintosh and you each have a modem, there's a better way. Zap the picture by phone, and it gets there today.

Transmitting MacPaint or MacDraw documents by modem is surprisingly simple with a communications program like MacTerminal, which takes care of most of the technicalities for you. Any other communications program that can perform binary file transfers—as opposed to ASCII, or text-only, file transfers—does the job. The file transfer is simplest if both sender and receiver use the same program.

Before you send a MacPaint or MacDraw document over the telephone, connect the modem to the Macintosh. Then start MacTerminal.

Sending graphics documents, which are stored in binary format, is different



Terminal Settings

Terminal ☒ UT100 ☐ TTY ☐ IBM 3278

Mode ☒ ANSI ☐ VT52

Cursor Shape ☒ Underline ☐ Block

Character Set ☒ United States ☐ United Kingdom

Line Width ☒ 80 Columns ☐ 132 Columns

Protocol Conv ☐ AppleLine ☐ Cluster Ctlr

☒ On Line ☒ Local Echo ☐ Status Lights

☒ Auto Repeat ☒ Auto Wraparound ☒ New Line

☐ Repeat Ctrls ☐ Transparent

Compatibility Settings



Baud Rate ☐ 50 ☐ 75 ☐ 110 ☐ 134.5
☐ 150 ☐ 200 ☐ 300 ☐ 600
☒ 1200 ☐ 1800 ☐ 2000 ☐ 2400
☐ 3600 ☐ 4800 ☐ 9600 ☐ 19200

Bits per Character ☐ 7 Bits ☒ 8 Bits

Parity ☐ Even ☐ Odd ☒ None

Handshake ☐ HDn/HDff ☒ None

Connection ☒ Modem ☐ Another Computer

Connection Port ☒  ☐ 

File Transfer Settings

Transfer Method ☒ XModem ☐ Text

Remote System ☒ MacTerminal ☐ Other

Delay Between Chars / 60th Second

Delay Between Lines / 60th Second

☒ Retain Line Breaks

☒ Word Wrap Outgoing Text

Phone Settings

Phone Number

Dial ☒ Tone ☐ Pulse ☐ Mixed

Number of Rings Before Answer

Modem ☐ Apple 300 ☒ Apple 1200 ☐ Other

Figure 1
Before transferring MacPaint or MacDraw documents, change MacTerminal's default settings as shown here. The default settings that need to be changed are highlighted.

from sending text files. But *MacTerminal* can easily send the binary-format *MacDraw* or *MacPaint* pictures once you make a few changes to the default *MacTerminal* settings (see Figure 1).

First choose Terminal on the Settings menu. Click Local Echo, Auto Wraparound, and New Line to turn those features on. Next select Compatibility on the Settings menu. Set the baud rate so that it matches that of the remote, or receiving, modem. Select either the modem or the printer as the connection port, depending on where your modem is connected. Choose File Transfer on the Settings menu and select Xmodem as the transfer method and MacTerminal as the remote system. Choose Phone Settings from the Phone menu, and enter the telephone number of the remote computer. Enter 1 as the number of rings before answer.

Sending the File

Before you send a graphics file, make sure that the system at the other end is set up to receive a binary file. A quick telephone call can clear up any problems. Both you and the person to whom you're sending the picture should double-check your

Terminal, Compatibility, and File Transfer settings. If everything checks out, hang up and place the call through the modem.

Once you establish contact with the other Macintosh, you can converse via the keyboard to make sure the communications link is working properly. When you're ready to send the *MacPaint* or *MacDraw* document, choose the Send File command from the File menu. Select the document you want to send from the dialog box that appears. If the document is in the external disk drive, use the Drive and Eject buttons so the Mac can find the desired file. When you click OK, the document is sent automatically. The person at the receiving end doesn't have to do a thing.

During the transfer, a dialog box appears on both screens, telling you and the person at the other end how large the file is and how much more remains to be transmitted (see Figure 2). The gauge that appears in the dialog box shows you the progress of the file transfer. At no time should the gauge indicator stop moving for more than 30 seconds. If the indicator stops, wait 30 seconds and then press the

Document Transfer Times (minutes)			
Size of Document	300 bps	1200 bps	2400 bps
5K	3.00	.75	.37
10K	6.00	1.50	.75
15K	9.00	2.25	1.10
20K	12.00	3.00	1.50
30K	18.00	4.50	2.20
40K	24.00	6.00	3.00
50K	30.00	7.50	3.75

Waiting for Baudot

A comparison of the calculated times required to transfer a document at three transmission speeds (baud rates). Actual transmission times may vary due to the quality of the phone lines used.

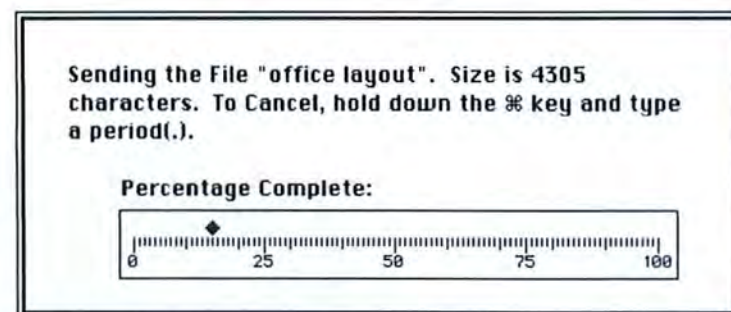


Figure 2

Once you begin a file transfer, a dialog box displays the name of the file and its size. The gauge shows the progress of the file transfer. At 1200 bits per second, transferring a 15K MacPaint document takes just over 2 minutes.

How Large Is a MacPaint Document?

The bigger and more complex a *MacPaint* picture, the larger its file. A blank *MacPaint* document takes up about 1K, while a complex document can be as large as 58K. You almost never see a *MacPaint* document that large, however, since the program uses a data compression technique to save disk space.

Because of the way the compression technique works, more data is packed on a disk when a picture is made up of

patterns and solid blocks—white or black—rather than random splotches of paint. On the average, I found that hand-drawn *MacPaint* pictures, especially those containing filled shapes, usually take up between 10K and 15K. Pictures created with a video digitizer—like the Koala MacVision—are two to four times as big.

As a rule of thumb, the Macintosh takes 9 seconds to transmit 1K of data at 1200 bits per second (bps). On that basis, transmitting a 10K *MacPaint* picture takes approximately 1½ minutes. At 300 bps the same

10K document takes 6 minutes to transmit. These averages include the 10 to 20 percent overhead that *MacTerminal* requires for Xmodem communications.

Of course, if you are lucky enough to own a 2400-bps modem, you can slash the 1200-bps transmission times in half. As you might guess, however, the Macintosh on the other end must also be equipped with a 2400-bps modem. See the table "Waiting for Baudot" for a comparison of *MacPaint* transfer times.

⌘ and period keys simultaneously. Try to contact the other Mac by typing a few *bello*'s. If there is no response, assume that you've lost the connection, and try again.

A *MacPaint* or *MacDraw* document sent via telephone contains more than picture information. It also includes the data required by the Macintosh to create the entire file, including the document's name, its icon, any edited patterns, and even the comments you entered with the Get Info command. In other words, sending a graphics document with *MacTerminal* is like copying a document from one disk to another. The transferred copy is a duplicate of the original.

Once the file is sent, *MacTerminal* returns control to you and the person at the other end, where the file is automatically saved on the *MacTerminal* disk. After the transfer, you and your associate can talk via the keyboard or simply hang up. When the person at the other Mac quits *MacTerminal* and goes back to the Finder, the icon of the graphics document received appears on the desktop, ready to be opened with *MacPaint* or *MacDraw*.

The Bulletin Board Alternative

If you can't coordinate a time when you and your associate can transfer a file, a bulletin board or an information service is

an alternative to telephone tag. Although most services can't receive binary files directly, a growing number are adding the ability to receive files in a format known as MacBinary. MAUG on CompuServe uses the MacBinary format to allow you to upload and download binary files such as programs and formatted documents to and from MAUG's public-domain data libraries. However, since MAUG isn't intended for private mail and since CompuServe's EasyPlex mail service can't receive MacBinary files, you have to either rely on a private bulletin board service that uses MacBinary formats to act as an intermediary or convert your graphics file to ASCII.

To transfer a *MacPaint* or *MacDraw* document to a service that can't receive binary files, you have to convert the graphics file to ASCII format using a utility program called BINHEX, available from CompuServe's MAUG. Then you can send the converted file to the bulletin board or information system. After your associate downloads the file, it must be reconverted to binary format using BINHEX.

If you upload a graphics file to a service that can receive files in MacBinary format, you don't need to go through the BINHEX conversion, but you and your associate need to use a terminal program that can send and receive files in MacBinary format, such as *FreeTerm*, *Red Ryder* versions 5.0 and 6.0, *Smartcom II* version 2.1b, and *Telescape*. Future versions of

MacTerminal are also expected to handle MacBinary files.

No matter what communications method you choose, once you become familiar with the procedure, you'll find that sending an average-size *MacPaint* picture at 1200 bits per second takes less than 10 minutes, including the time required to set up *MacTerminal*, establish the phone connection, and send the file. Neither courier nor express mail is as fast or as cheap. □

Gordon McComb is
a Contributing Editor of Macworld.

MacTerminal
Apple Computer
20525 Mariani Ave.
Cupertino, CA 95014
408/973-3317
List price: \$99



The Muppet master himself, Jim Henson, and Kermit join the rest of the Muppet menagerie (depicted in the mural). Henson believes the Macintosh's visual style makes it ideal for children's software.

The Muppets Meet the Macintosh

Jeffrey S. Young

You know you've entered a different world the moment you reach the foyer of the Henson Associates offices. Located in an appealing Georgian townhouse on the upper east side of Manhattan, the office would resemble any upscale bank branch except for the full-wall mural showing 30 years worth of Muppets sitting in a theater, their eyes watching you as if you were on stage. Or maybe it's the illuminated stained glass vista of Kermit sitting on a lily pad and playing the banjo. Or the giant copper *ba!*—for Henson Associates—embedded in the marble floor.

The combination of whimsy and professionalism that pervades the Henson Associates building also characterizes the people who work behind the scenes bringing to life the furry, fuzzy puppets you see on television and in movies. Henson's team consists of an extensive network of creative people working around the globe, aided by an assortment of computers. The computer systems include sophisticated VAX minicomputers that guide the movements of puppets at the Sesame Place theme park in Pennsylvania. Digital radio-control devices known as "waldos," designed by Muppet electronics whiz Faz Fazakas, enable puppeteers to manipulate remote characters with all the finesse of a hand puppet. And the Macintosh plays a prominent role in the day-to-day operations of Henson's Muppet empire.

You can find Macs on a number of desks in the Henson offices. For example, associate producer Ritamarie Peruggi uses a Macintosh for scheduling and

coordinating the elements of the Henson Associates children's television series, "The Little Muppet Monster Show." With 13 episodes in various stages of development to track, she ended up designing her own production calendar with *MacDraw*. Whether she's in her office in New York or at the editing facilities in Hollywood, she can check the progress of the series at a glance.

Compared to "The Little Muppet Monster Show," Henson Associates' HBO series "Fraggle Rock" is an even more complex production. Artists, writers, and producers collaborate from various locales around the world. The two head writers live 8000 miles apart—in southern California and Wales. The show is shot in Toronto, animated sequences are created in Hollywood, administrative details are handled in New York, and Jim Henson might be anywhere around the globe. The company manages to keep in touch via modems through an international commercial electronic mailbox system called Dialcom. Henson himself is one of the prime users of the system. While in London working on a Muppet movie, he used his Macintosh to read messages, memos, scripts, and schedules sent to his Dialcom mailbox.

An author of several Muppet books, Louise Gikow describes the advantages of Dialcom. "By using the electronic mailboxes, we can all communicate instantaneously, revise scripts, and work out problems without having the one-day wait of overnight express mail services. Also, the relationships we have communicating electronically are different, and in some ways deeper and more emotional, than if we communicated solely by phone. I find that I reveal more and express myself more subtly as I relearn the art of letter writing."

The Muppet Master

Henson created the Muppets nearly 30 years ago. With the success of "Sesame Street," his creations, especially Kermit, became stars. Henson's organization has had a string of well-received television shows and several films, including *The Muppets Take Manhattan*. And the Muppet characters appear in nearly a thousand commercial products of various kinds, from dolls and party hats to playhouses and pajamas. Over the years the success of the Muppets has made Henson himself a celebrity.

Henson uses his Macintosh for artistic inspiration and doodling; he delegates day-to-day business operations to others. "I'm a visual person, not a word person, so I appreciate the mouse," explains the puppeteer. "I like playing with the images that you can create on the Macintosh far more than I like exchanging scripts and script ideas, which is primarily what our writers use the machine for."

"I feel like I'm playing when I use the Mac. But it's quite possible that any one of the characters I sketch out on the screen could end up in a project we do in the next couple of years. The puppet makers would use those doodles as a basis for creating a new puppet." Now that the Muppets have become a ubiquitous part of American culture, Henson is acutely aware of the influence his creations have with their fans. "When you've been doing 'Sesame Street' for 17 years, you develop a sense of responsibility toward kids."

Part of that responsibility involves making computers a part of the Muppet world. "As computers become more a part of our culture, we find that we're

using them more. We even include computers on some of our sets. For example, in our latest movie, *Labyrinth*, which was shot in London with George Lucas, a computer is sitting on the desk of the central character. The computer just happens to be present along with lots of other objects."

'It's easier for kids to learn from puppets than from a teacher figure. That's why we believe our educational software can be so influential.'

In another example of the influence of computer technology on entertainment, Henson Associates has developed a computer game version of *Labyrinth* with the games division of Lucasfilm. The game is scheduled for release at the same time as the film—late this spring—and will be available on the Macintosh. But perhaps most important in establishing the appropriate relationship between the Muppets and computers is educational software. "Over the years," says Henson, "the Muppets have shown that they can help kids deal with learning in new ways. It's easier for kids to learn from puppets than from an adult teacher figure. That's why we believe our educational software can be so important and influential."

"I certainly never used a personal computer before the Macintosh. Its visual style is what appeals to me most. And of course, the visual quality is exactly what makes the Mac good for children too. Hopefully the Macintosh will influence all educational software in the next few years."

Henson is very interested in computer animation and graphics, especially in the possibilities for mixing live-action puppetry with computer animation. Interactive films are another area of technology that excites the puppeteer. "In *Labyrinth* we used lots of radio-controlled devices instead of manual cable controls, and that's the direction we see the future taking. We're at the forefront of this technology, which enables puppets to be remotely controlled without losing the warmth of live presence. As long as we can use the technology without losing the magic of the human performance, we'll keep pursuing it. But the magic of puppetry is in the performance, and computers can't replace that no matter how friendly they are."

A somewhat aggressive acronym for such a congenial company, this inlaid copper ha! in the foyer floor greets visitors to the Henson Associates' Manhattan offices.



The Software Guru

Perhaps the most effusive Macintosh partisan among all Henson's associates is Chris Cerf. Cerf has had a distinguished career as a humorist. He was a member of the original group of writers at the *National Lampoon* and has produced and written a number of books and parodies. Most recently he coauthored *The Experts Speak* with Victor Navasky. The book contains thousands of examples of "authoritative misinformation." Cerf is an award-winning songwriter, having received two Grammys for his music on the Children's Television Workshop shows "Sesame Street" and "The Electric Company." And he has a best-selling album, *Born to Add*—a collection of rock parodies written for kids that was nominated for two more Grammys last year.

Cerf has recently become an eloquent spokesman for the use of computers in education. He has consulted for the software publishing divisions of CBS, Random House, and Simon & Schuster, as well as for the toy division of Fisher-Price. So far five software packages for the Apple II family and the Commodore 64 have sprung from the Henson-Cerf collaboration. In addition to *Kermit's Electronic Storymaker*, from Simon & Schuster, and the Muppet Discovery Disk with the Muppet Learning Keys, from Koala Technologies, Henson and Cerf developed *The Great Gonzo in WordRider* for Simon & Schuster and a new "Fraggle Rock"-based interactive storybook, *The Mystery of the River of Song*, for CBS Software. (The Learning Keys are also available for the IBM PCjr, and will soon be available for the Macintosh.) An appealing software cruise on the SS Microchip with Captain Kermit, entitled *Welcome Aboard* and available from Brøderbund, introduces the elements of personal computing for different home computers.

In addition to designing software for Henson Associates, Cerf, along with musical director Joe Carroll and other songwriters, composes music, including songs, for the cast of puppets in "The Little Muppet Monster Show."

Cerf uses his Macintosh extensively, both to compose lyrics and to pursue his diverse interests. When Cerf is composing songs, he works with a Macintosh, an Apple II, a piano, and an Alpha Syntauri synthesizer connected to the Apple II. Once he comes up with a tune, he tapes a version on a cassette. Then he sits down in front of the Macintosh and writes the lyrics.

The Macintosh in Education

Like Henson, Cerf believes that the Macintosh is ideally suited for educational programs, especially those that require pointing at objects on screen. "The fact that a four-year-old can use *MacPaint* or *MacWrite* without much coaching shows the Mac's great potential in education," Cerf says. "The Mac's visual user interface has been an important influence on much of our software to date. I'm convinced that the Mac is the way of the future. And with the new computers coming out, like Commodore's Amiga or the Atari ST, you can clearly see the influence that the Mac has had on the entire computer industry."

"Education software designers are only beginning to use the interactive possibilities of pictures and pointing at words and numbers to introduce learning concepts. A program like *ChipWits* is a wonderful ex-

Chris Cerf (with glasses), Animal (with red nose), and other Henson associates at Cerf's workstation. The Grammy-winning composer and humorist is an accomplished keyboardist on both the synthesizer and the Mac, on which he writes lyrics to new standbys like "Born to Add."



ample of educational software that uses the Mac's interface for fun while it teaches an important set of computer programming lessons."

The lack of color on the Macintosh, however, is a problem for educational software developers. "Unfortunately, the critical limit of the Mac, especially for young kids, is color. Maybe color isn't so important for adults, but for children it is. When the Mac was still secret, Steve Jobs showed it to me and asked how important I thought color was to a personal computer. I told him it was absolutely essential," Cerf chuckles. "You can see how much influence I have."

Cerf became obsessed by the possibilities of computers in education early—his first computer was an Apple II. Not surprisingly, since he worked with the Children's Television Workshop for several years before becoming an independent consultant, the same philosophy that pervades "Sesame Street" determined his direction as a software designer. "Early educational software was always more educational than fun. Since the Children's Television Workshop proved that learning could be fun as well as extremely visual, why not the same combination for educational programs?"

The Muppet Learning Keys

In the late 1970s at Sesame Place, a theme park located halfway between Philadelphia and New York, a series of interactive computer displays and games were

built. They included the first prototypes of a keyboard designed especially for kids by Dave Thornburg of Koala Technologies.

Cerf and his longtime crony Michael Frith—who is creative director, executive producer, art director, and general right-hand man for Jim Henson—collaborated with Thornburg on the project. They took the concept of a desk top, which they had encountered with Apple's Lisa computer, and skewed it to a child's perspective. The goal was to produce a personal computer keyboard that a young child could easily use and that, by playing off the Muppets, would be completely nonthreatening.

They designed the keyboard to look like the top of a child's desk, with pictures of notebooks, a pencil tray, a box of watercolors, a big fat eraser, and a keypad that looks like a small chalkboard with all the letters of the alphabet marked in uppercase. And the three made their keyboard peanut butter and jelly proof. The prototype eventually became the Muppet Learning Keys.

"Exploration, not explanation. That's the philosophy behind the Learning Keys and our other products," explains Bill Prady, chief of the Muppet Institute of Technology. The Institute is the Muppet software and hardware division. The initials of the institute, lest you miss them, are M.I.T., and its motto is *Learnum Est Funum*.

"There is one underlying idea in Learning Keys: a child cannot make a mistake," says Prady. "In the starting discovery mode, every object the child presses on the keyboard does something. For instance, the child hits the letter K and a kite appears on screen; hit the number 6 and six kites appear; press the yellow button and all six kites turn yellow. We are convinced that kids learn by trial and error, by cause and effect—which means by pounding on the keyboard and seeing that every time they press one key, the same image appears on screen. Then one day if a child wants to bring six yellow kites on screen, he or she will figure out how. All of a sudden you've introduced the concept of a keyboard to a three-year-old and at the same time given him or her lots of practice discriminating among various letters, numbers, and colors.

"There's still a place for learning by rote, such as memorizing long lists. For example, the letters on the Learning Keys are arranged in alphabetical order because to the kids of the ages for which the Learning Keys are important [two to six] we're teaching the alphabet by memorization. Giving kids a QWERTY keyboard while you teach them the ABCs can be confusing, even counterproductive. Many kids get frustrated." Currently, educational software for the Macintosh is mostly designed for the college level. From kindergarten through high school, the Apple II dominates the classroom. Cerf thinks that the Macintosh will even-

M.I.T. (Muppet Institute of Technology) staff members (from front to back) Robin, Bill Prady, and Scooter demonstrate the Muppet Learning Keys, a keyboard specially designed for children and other small creatures.



tually gain a strong foothold in primary education, especially if a color Mac becomes available. "The Macintosh and Apple II will grow closer together," he says. "That is how it should have been all along. With new interface boards and peripherals, the two machines should become compatible. If Apple II educational software could easily be adapted for the Macintosh, the Mac would be viable in the home and in primary education. I think that in the future compatibility between computers will be the norm, not unusual.

Exploration, not explanation. That's the philosophy behind the Learning Keys.'

"Currently, we are developing *Kermit's Electronic Storymaker* for the Macintosh. I'm proudest of this program because of the ways it uses the Macintosh-style interface. *Kermit's Electronic Storymaker* lets kids point to different parts of a sentence and insert or change words without typing anything. As fast as they put words on the screen, they see an animated cartoon of the sentence they produced, no matter how absurd the sentence might be.

"The result is that kids learn about sentence structure and increase their reading vocabulary. The idea is to let kids have fun while they learn something. The Macintosh is perfectly suited to that, with no special function keys, just a mouse and icons."

A Look into the Future

Cerf feels that we'll soon see technological breakthroughs in computers and education, especially in the area of digital sound production. "Good sound adds dimension to the computer's value as a learning tool," says Cerf. He explains that phonics have been taught for years from books without the benefit of sound, but believes that the home computers of tomorrow will change the way subjects such as phonics are taught.

"The interesting new medium," says Cerf, "will be interactive film, both for educational and entertainment products. Imagine that a kid watching 'Sesame Street' could tell Grover what direction to go by talking directly to him, and depending on what was said, the story would change.

"We're interested in that kind of interactive program, and the technology is available now. Computers have to reach the home or school in sufficient numbers, and that will probably happen sooner than we think."

The Children's Vote

Since the Muppets are a part of the American cultural landscape now, they pop up anywhere, even in the most American of places—shopping malls. And there the Muppet Institute of Technology exhibits are often set up, introducing children to computers and technology. Recently Cerf was at a Macy's on Long Island for an M.I.T. exhibit. A giant computer was erected alongside the exhibit, and life-size versions of Professor Bunsen Honeydew and his assistant, Beaker, entertained the children. Hundreds of children crowded the exhibit, waiting for their turn to play with dozens of Muppet Learning Keys devices.

In the middle of all the activity, Cerf, wearing a Kermit the Frog tie, watched the children interact with the computers. "I don't want you to get the impression that this is a big joke," says the software designer, suddenly turning serious. "I care desperately about kids and education, especially about the future of reading. I think that's where I can have the most influence, and I think our programs can be most influential by being a lot of fun."

Fun in education is such a simple idea, you wouldn't think it was revolutionary. Henson and Cerf are using the Muppets to introduce children to modern technology in a gentle way. Their programs and products let children discover on their own, without the intervening hand of an adult. That's one reason why the Macintosh and the Muppets are a good match: the creators of both have similar philosophies. The Mac's unintimidating visual interface and design make it accessible to everyone. Even to a Muppet like Kermit.

Kermit, of course, has his own requirements when it comes to a computer. "I'm looking for a computer with a few more bugs in it," said the frog when asked what machine he'd really like, "and maybe a few flies as well." □

▲▲▲▲▲▲▲▲▲▲ *Jeffrey S. Young is a
Contributing Editor of Macworld.*



"Strummin' on the old banjo..." A stained-glass tribute to Kermit, the Muppets' affable, amphibious master of ceremonies, graces the Henson Associates' lobby.

Magnificent

✓ denotes Mac XL compatibility.

SOFTWARE

Altsys	
✓Fontastic (create your own fonts)	\$35.
Ann Arbor Softworks	
Animation Toolkit 1	31.
Apropos	
Financial Planning (reqs. Multiplan)	51.
Investment Planning (reqs. Multiplan)	51.
Arrays/Continental	
Home Accountant	52.
Assimilation	
✓MacTracks	22.
✓MacMemory-Disk	22.
✓MacSpell-Right	69.
ATI	
Teach Yourself Multiplan	29.
MacCoach Training	39.
Jazz Training	39.
Batteries Included	
The Mac BatteryPak	27.
Eight powerful desk accessories.	
Blyth Software	
✓Omnis 2 (requires external drive)	139.
✓Omnis 3 (requires 512k, external drive)	249.
Borland International	
✓Sidekick (unprotected)	45.
BrainPower	
✓PowerMath	52.
Symbolic equation solver, requires 512k.	
✓StatView (statistics package)	99.
Casady Company	
✓Fluent Fonts (two-disk set)	29.
Central Point Software	
Copy II Mac	20.
Chang Labs	
Rags to Riches Ledger	105.
Rags to Riches Receivables	105.
Rags to Riches Payables	105.
Computer Software Design	
✓MacLion (relational database)	188.
External drive recommended.	
Creative Solutions	
✓MacForth - Level 1	77.
✓MacForth - Level 2	128.
Creighton Development	
✓MacSpell+ (requires 512k)	55.
DataFood	
✓DrawForms (requires MacDraw)	30.
✓MacForms (requires MacPaint)	42.
Desktop Software	
✓1st Port (communications software)	48.
✓1st Merge	48.
✓1st Base	95.
Digital, Etc.	
✓Maccountant	139.
Dillithium Press	
PC to Mac & Back	79.
Dow Jones	
Straight Talk	45.
Spreadsheet Link	56.
Market Manager PLUS	109.
Dreams of the Phoenix	
✓Day Keeper Calendar	29.
✓Mouse Exchange BBS	29.
✓Quick & Dirty Utilities Vol. 1	29.
✓Twelve-C Financial Desk Accessory	29.
Electronic Arts	
Financial Cookbook	\$32.
Enterset	
✓Quickpaint	29.
✓Quickset 2.0	29.
✓Quickword	32.
1st Byte	
Smoothtalker (version 2.0)	57.
Speller Bee	42.
KidTalk	42.
"Talking notebook" helps improve reading and writing.	
Forethought	
✓Typing Intrigue	29.
✓Factfinder	84.
✓FileMaker	108.
Great Wave Software	
The Art of Fugue (Bach)	12.
Instrumental Favorites	12.
ConcertWare+	39.
Harvard Associates	
MacManager (business simulation)	29.
Desktoppers (new desk accessories)	29.
Hayden Software	
✓DaVinci Buildings	29.
✓DaVinci Interiors	29.
✓DaVinci Landscapes	29.
✓DaVinci Building Blocks	46.
✓DaVinci Commercial Interiors	114.
✓Art Grabber with Body Shop	29.
Turbo Turtle	35.
I Know It's Here Somewhere	35.
Musicworks	45.
Hayden:Speller	45.
Score Improvement System for the SAT	57.
Videoworks	57.
Ensemble	155.
Hayes	
✓Smartcom II (communications software)	86.
Hippopotamus Software	
Hippo Computer Almanac	21.
✓Hippo-Lock (file security program)	68.
Hippo-C - Level 1	79.
Hippo-C - Level 2	219.
Human Edge Software	
✓Mind Prober	26.
✓The Communication Edge	99.
✓The Management Edge	127.
✓The Sales Edge	127.
✓The Negotiation Edge	148.
Ideaform	
✓MacLabeler (print disk labels)	29.
Innovative Data Design	
✓Paste-Ease (requires MacPaint)	35.
✓MacDraft (requires 512k)	139.
Kensington	
✓Graphic Accents	29.
✓Professional Type Fonts for Text	29.
✓Professional Type Fonts for Headlines	42.
Requires 512k.	
Layered	
✓Front Desk	77.
Linguist's Software	
✓Tech (1000 different symbols)	69.
✓MacCyrillic	69.
✓MacKana/Basic Kanji	69.
✓MacKorean	69.
✓SuperGreek	69.
✓SuperHebrew (right to left)	\$69.
✓SuperFrench/German/Spanish	69.
✓SuperGreek/Hebrew/Phonetics	119.
Living Videotext	
ThinkTank 128k	75.
✓ThinkTank 512k	125.
Lotus	
✓Jazz (requires 512k, external drive)	375.
Magnum	
✓McPic - Volume I	29.
✓McPic - Volume II	29.
✓The Slide Show Magician	35.
Manhattan Graphics	
✓Ready Set Go 2.0 (requires 512k)	65.
Mark of the Unicorn	
Professional Composer (reqs. 512k)	249.
Microsoft	
Entrepreneur	32.
Learning Multiplan and Chart	38.
Chart	74.
Logo	75.
Basic (version 2.1)	89.
Multiplan	107.
File	112.
Word	112.
Fortran	195.
Business Pack	342.
Includes Word, File, Chart, and Multiplan.	
Miles Computing	
✓Mac the Knife - Volume 1	21.
✓Mac the Knife - Volume 2	25.
Mindscape	
The Perfect Score: SAT	47.
Monogram	
✓Forecast	40.
✓Dollars & Sense	81.
Nevins Microsystems	
Turbocharger (requires 512k)	57.
New Canaan MicroCode	
Mac Disk Catalog	25.
Northwest Analytical	
NWA StatPak (requires Basic, 512k)	249.
Odesta	
✓Helix (requires 512k, external drive)	219.
Organizational Development Software	
✓Consultant (idea management)	119.
Paladin	
✓Crunch (requires 512k)	165.
Palantir	
✓MacType (supports Dvorak keyboard)	27.
✓MathFlash (math flash card drills)	27.
✓WordPlay	27.
Accounts Receivable (requires Basic)	75.
General Ledger (requires Basic)	75.
Inventory Control (requires Basic)	75.
PBI Software	
✓Icon Switcher	13.
✓Icon Fun & Games Library	14.
✓Icon Business Library	14.
Peachtree	
✓Back to Basics General Ledger	88.
✓Accounts Payable	88.
✓Accounts Receivable	88.
ProVUE Development	
✓OverVUE (version 2.0)	149.
QED Information Sciences	
Typing Made Easy	36.
Reston Publishing	
Construction Estimator (reqs. Multiplan)	45.

Country Comfort.

(Or, how to buy Mac products with confidence).

Mail order magic in the high tech hills.

Welcome to MacConnection, that large and friendly mail order giant situated on the banks of the Ashuelot River in Marlow, NH. If you're ever up this way, stop by and visit our headquarters in the renovated Marlow mill building.

MacConnection has earned a reputation for thorough and considerate customer support. Maybe part of the reason is that we look at trees, rivers, and fields on our way to work, not high rises and smokestacks. It

helps to make us a little more patient, a little more relaxed, a little more personal. Our thousands of repeat customers appreciate that.

Need a friend?

Our 800 number is available for customer service as well as for orders. Call us any time before or after the sale. There's no question that's too trivial or unimportant. Our trained Mac specialists have had to deal with the same confusions you're facing. And by working on Macs all day, every day they've learned to solve just about any dilemma imaginable. When there

is a question we can't answer, we get on the phone to the manufacturer, and

stay on until we have a solution. You see, a lot of people talk about trying to strike a balance between technology and nature. Well, we've got an IBM system 38 in the basement and ducks in the park-

ing lot. We have bushels of Macintosh apples outside and bundles of Apple Macintoshes inside. It's a nice balance. And, as you can see, our prices are as good as our support. That's the nicest balance of all.



ReadySetGo \$65



Harrier Strike Mission \$27



ThinkTank 512K \$125



Sidekick \$45



OverVUE \$149



Mac One Write \$137

MacConnectionTM

14 MILL STREET, MARLOW, NH 03456 1-800/Mac&Lisa or 603/446-7711

© Copyright 1985 Micro Connection, Inc. MacConnection is a division of Micro Connection, Inc. MacConnection and Micro Connection are trademarks of Micro Connection Inc.

Circle 4 on reader service card

Macintosh products.

Videx	
Funpak	\$23.
MacCheckers/Reversi	28.
MacGammon/Cribbage	28.
MacVegas	34.

HARDWARE

Assimilation	
Mac-Port-Adaptor	69.
Mac-Epson-Connection	75.
Mac-Daisywheel-Connection	79.
Mac-Turbo-Touch	89.

Compucable	
Mac to Hayes Smartmodem cable	17.
Mac to Epson FX/RX/JX printer cable ..	17.
Mac to Apple modem cable	17.

Creighton Development	
Proprint	39.
Proprint (w/one cable)	54.
Proprint (w/two cables)	139.

Curtis Manufacturing	
Diamond (6 outlets)	28.
Emerald (6 outlets; 6 ft cord)	34.
Sapphire (3 outlets; EMI/RFI filtered) ...	44.
Ruby (6 outlets; EMI/RFI filtered; 6 ft cord)	50.

Epson	
FX-85	call
FX-185	call
JX-80	call
LX-80	call
LQ-1500 (letter quality dot matrix)	call

Hayes	
Smartmodem 300	call
Smartmodem 1200	call
Smartmodem 1200 Package	call
<i>Includes modem, software and cable.</i>	
Smartmodem 2400	call
Smartcom II (communications software) ..	86.

IOmega	
Bernoulli Box (5-megabyte storage) ..	1315.
5-meg Cartridge	39.
Head Cleaning Kit	59.

Kensington	
External Disk Drive Cover	8.
Mouse Pocket	8.
Mac Dust Cover	10.
Mac XL Dust Cover	10.
Imagewriter Dust Cover	10.
Wide Imagewriter Dust cover	10.
Mouse Cleaning Kit w/Mouse Pocket ..	16.
Universal Printer Stand	17.
Disk Case (holds 36 Mac disks)	19.
Disk Drive Cleaning Kit	19.
Tilt/Swivel	22.
Polarizing Filter	31.
Surge Suppressor	32.
Starter Pack (includes Tilt/Swivel)	53.
A-B Box	60.
Control Center	61.
Modem (300 baud)	89.

Koala Technologies	
MacVision (digitizer)	169.

Kraft	
QuickStick	45.

Microcom	
MacModem (Hayes compatible)	469.

Microsoft	
MacEnhancer	159.

Mitsuba	
Super 5 External Drive	\$239.

Mouse Systems	
A+ Optical Mouse	59.

Paradise Systems	
Mac 10 (10 megabyte hard disk)	1029.

PBI Software	
Switch Box	36.

Systems Control	
MacGard (surge protection)	55.

Video 7	
MouseStick	39.

DISKS

BASF 3 1/2" Disks (box of 5)	13.
Verbatim 3 1/2" Disks (box of 10)	25.

Sony 3 1/2" Disks (box of 10)	25.
Fuji 3 1/2" Disks (box of 10)	25.

Memorex 3 1/2" Disks (box of 10)	25.
MAXELL 3 1/2" Disks (box of 10)	25.

3M 3 1/2" Disks (box of 10)	25.
--	-----

INFORMATION SERVICES

Compuserve	
Compuserve Information Service	19.

Source Telecomputing	
The Source (subscription & manual) ...	30.

MISCELLANEOUS

American Tourister	
Mac Carrying Case	69.

Automation Facilities	
Floppyclene (ten cleaning disks)	25.

Refill Kit (ten disks)	
10	

Clean Image Ribbon Co.	
Clean Image Ribbon Kit	12.

Computer Coverup	
External Disk Drive Cover	4.

Imagewriter Cover	8.
Wide Imagewriter Cover	8.

Mac & Keyboard (two covers)	10.
-----------------------------------	-----

Diversions	
Underware Ribbon	10.

Underware Colorpens	10.
Jumbo Colorpens	13.

ColorPack	19.
<i>Includes one black ribbon and set of five Colorpens.</i>	

Environmental Software Company	
The Clutch (holds 8 disks)	9.

MacAttire	
<i>High quality rip-stop nylon dust covers for your complete Macintosh system. Available in navy-blue, burgundy-red, or silver-gray.</i>	

External Drive Cover	7.
Numeric Keypad Cover	7.

Imagewriter Cover	11.
Wide Imagewriter Cover	13.

Mac & Keyboard Cover	15.
Laserwriter Cover	17.

Mac XL & Keyboard Cover	20.
-------------------------------	-----

I/O Design	
Imagewriter Color Transfer Ribbon	10.

Imageware	special
Imageware wide	special

Macinware	special
-----------------	---------

Innovative Concepts	
Flip & File (holds 25 disks)	\$10.

Flip & File (holds 40 disks)	18.
------------------------------------	-----

Innovative Technologies	
The Pocket Pak (holds 6 disks)	10.

The Easel (holds 20 disks)	14.
CompuBag	59.

<i>Well-padded carrying case for your Mac and accessories. Reinforced bottom.</i>	
---	--

Kalmar Designs	
Teakwood Roll-top Case (holds 45 disks) 14.	

Teakwood Roll-top Case (holds 90 disks) 24.	
---	--

Microsoft Press	
Microsoft Multiplan: Of Mice and Menus 13.	

Inside MacPaint	14.
MacWork MacPlay	14.

The Apple Macintosh Book	14.
Presentation Graphics on Apple Mac ..	14.

The Printed Word	14.
Macinations (intro to Basic)	17.

Moustrak	
Moustrak Pad	

Standard 7"x9" size	8.
Large 9"x11" size	9.

Imagewriter Pad	11.
-----------------------	-----

Pacific Wave	
Flip Sort Micro (holds 40 disks)	12.

Flip Sort Micro (holds 60 disks)	15.
--	-----

Ribbons Unlimited	
<i>Available in black, blue, brown, green, purple, red, yellow, orange and silver.</i>	

Imagewriter Ribbon	5.
Imagewriter Ribbons Six Pack	27.

Imagewriter Rainbow Six Pack	27.
------------------------------------	-----

Smith & Bellows	
Basswood disk case (holds 90 disks) ..	19.

OUR POLICY

- We accept VISA and MASTERCARD.
- No surcharge added for charge cards.
- 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 shipments insured; no additional charge.
- Allow 1 week for personal and company checks to clear.
- UPS Next-Day-Air available.
- COD max. \$1000. Cash or certified check.
- 120 day guarantee 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 thru Friday 9:00 to 5:30.

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.

savings on Macin

Rubicon Publishing	
✓Dinner At Eight (recipes to wines).....	\$35.
Scarborough Systems	
Mastertype	25.
Sierra On-Line	
✓MacOneWrite (cash disbursements)....	137.
Silicon Beach Software	
✓Accessory Pak 1	24.
Simon & Schuster	
The Mac Art Department.....	24.
Paper Airplane Construction Kit.....	24.
Typing Tutor III	31.
SoftStyle	
Epstart	29.
Jetstart	29.
Toshstart	29.
Tlstart	49.
Laserstart	59.
Decision Map	79.
Software Publishing	
PFS:File/Report	100.
State of the Art	
✓Electric Checkbook	45.
Symmetry	
✓Quick Disk (requires 512k)	21.
T/Maker	
✓Click Art Personal Graphics	29.
✓Click Art Publications	29.
✓Click Art Letters	29.
✓Click Art Effects	29.
✓ClickOn Worksheet	46.
Telos Software	
✓Filevision	99.
Think Educational	
✓Mind Over Mac	29.
✓MacEdge II	29.
Videx	
✓MacCalendar	51.
Warner Software	
The Desk Organizer	55.

GAMES

Aegis Development	
MacChallenger (flight simulation).....	25.
Blue Chip	
✓Millionaire (stock market).....	30.
✓Tycoon (commodities)	30.
✓Baron (real estate)	30.
BrainPower	
✓Think Fast (improves recall)	23.
✓Chipwits	27.
Broderbund Software	
Lode Runner (you'll never sleep!)	24.
Cyborg (sci-fi text adventure).....	24.

MacConnection Special of the Month through December 31, 1985

I/O DESIGN

Macinware

Sturdy well-padded carrying case designed to carry the entire Macintosh system including the external disk drive, keyboard, mouse, cords and manuals. Available in Navy Blue \$49.

Imageware

Similar to the Macinware in construction. High density foam and 1000 denure Cordura nylon. Designed to carry the Imagewriter and a small supply of computer paper. Available in Navy Blue.

- Regular 80 column 39.
- Wide 132 column 45.

Macinware-Imageware Special

Buy both and save. With the selection of a Macinware carrying case and the choice of either the regular or wide Imagewriter printer case, your cost is only 79.

CBS

✓Murder by the Dozen	25.
----------------------------	-----

Creighton Development

✓MacCommand	21.
-------------------	-----

Epyx

✓Rogue (great graphics)	24.
-------------------------------	-----

Gamestar

Championship Star League Baseball ..	24.
--------------------------------------	-----

Hayden Software

Masterpieces	24.
Word Challenge II	24.
Sargon III (9 levels of chess)	30.

Infocom

✓Seastalker (junior)	24.
✓Cutthroats (standard)	24.
✓Enchanter (standard)	24.
✓Hitchhiker's Guide (standard)	24.
✓Planetfall (standard)	24.
✓Wishbringer (standard)	24.
✓The Witness (standard)	24.
✓Zork I (standard)	24.
✓Zork II (advanced)	27.
✓Zork III (advanced)	27.
✓A Mind Forever Voyaging (advanced) ..	27.
✓Infidel (advanced)	27.

✓Sorcerer (advanced)	\$27.
✓Suspect (advanced)	27.
✓Deadline (expert)	29.
✓Starcross (expert)	29.
✓Suspended (expert)	29.
Invisicues (hint booklets)	6.

Mark of the Unicorn

✓Mouse Stampede (highly addictive)	23.
---	-----

Miles Computing

✓MacAttack (3-D tank simulation)	27.
Harrier Strike Mission	27.

Mindscape

Déjà Vu (murder mystery)	33.
--------------------------------	-----

Mirage Concepts

Trivia (special price)	19.
------------------------------	-----

Origin Systems

Exodus: Ultima III (fantasy adventure) ...	38.
--	-----

PBI Software

✓Feathers in Space	21.
✓Strategic Conquest	29.
Fokker TriPlane Flight Simulator	35.

Penguin

✓Transylvania	24.
✓The Quest	24.
✓Pensate	24.

Priority Software

✓Forbidden Quest	25.
✓Gateway (sci-fi fantasy adventure)	25.

Psion

✓Psion Chess (3D and multi-lingual)	31.
---	-----

Scarborough Systems

Run for the Money	29.
Make Millions	29.

Sierra On-Line

Frogger	24.
Championship Boxing	27.
Ultima II (role-playing adventure)	35.

Silicon Beach Software

Airborne! (great graphics and sound) ..	21.
---	-----

Soft-Life Corp.

Mac-Slots	25.
-----------------	-----

The best one-armed bandit going!

Spectrum Holobyte

GATO (submarine simulation)	27.
-----------------------------------	-----

Telarium

Amazon	27.
Dragon World	27.
Fahrenheit 451	27.

Unicorn

Futura (sci-fi adventure)	24.
Utopia (science fantasy game)	24.
Animal Kingdom (ages 6-12)	27.
Science and language arts program.	
Mac Robots (animation and speech)	27.

1-800/Mac&Lisa

530C

MacConnection™

MacConnection, 14 Mill Street, Marlow, NH 03456 800/622-5472 603/446-7711

© Copyright 1985 Micro Connection, Inc. MacConnection is a division of MicroConnection, Inc. MacConnection and Micro Connection are trademarks of Micro Connection.

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.

Circle 4 on reader service card

Macware Reviews

Create a form-based database, strategize beneath the sea, rotate and distort MacPaint images, save keystrokes, explore strange new worlds, and tutor your kids

Edited by Erfert Nielson

In Fine Form

Businesses seem to find substance in forms. Most business communication, from magazine subscription blanks to insurance claims forms, must be recorded in a fixed, organized format. And please—print neatly or type.

FileMaker, a database manager from Forethought, can't help you print neatly, but it can help you design forms that are easy on the eyes and the writing hand. In addition to the usual data management capabilities that let you store, sort, and search records, *FileMaker* is adept at creating forms. This marriage of filer and form generator is a happy one. You can use the program's form design tools to create different visual layouts, all of which can be used to enter, view, or print information. Whether you're

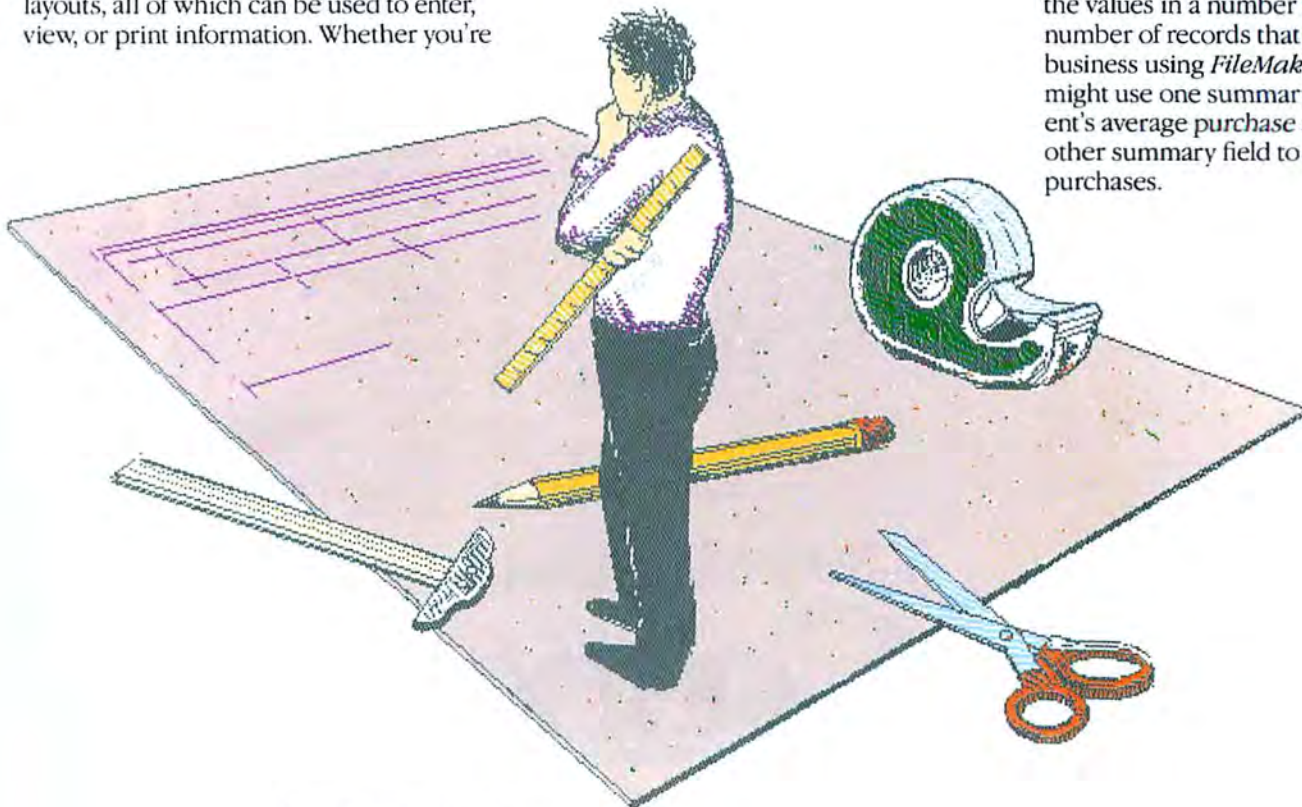
designing insurance forms that sadistically require applicants to print each character in its own tiny box or tracking your videotape collection, *FileMaker* helps you design and produce forms so easily that you hardly need its excellent manual.

Fields Apart

FileMaker steps you through the design process in a logical way that provides a maximum of flexibility. The program separates the design process into two phases: you first define the type of information you want to store and then design one or more layouts for entering, viewing, or printing information.

When you open a new database, a dialog box appears in which you define the type and format of the database's fields. You don't have to bother specifying field lengths—as some programs require—that may later prove to be either too short to store necessary information or unnecessarily long, wasting valuable disk space.

The program includes five field types: text, number, date, calculation, and summary. A calculation field contains a formula of up to 250 characters that calculates numbers stored in other fields. For example, you could create a field to calculate the total cost of a job by adding the value of the labor field to the value of the materials field. A summary field totals or averages the values in a number field or counts the number of records that contain a field. A business using *FileMaker* to track clients might use one summary field to show a client's average purchase amount and another summary field to total a client's purchases.



On the Layout Table

FileMaker's salient characteristic is the way it lets you design and use forms. Once you define the field types and organization, you handle nearly all other data management tasks through layouts you create in a window equipped with a palette of specialized drawing tools. The tools, well matched to the task of drawing forms, let you embellish a layout with lines, boxes, and text. Boxes for positioning fields and other parts of a layout's format, such as headers, footers, and summaries, are also located on the palette.

In addition to those drawing tools, *FileMaker* includes a pair of T squares and a grid that let you pinpoint design elements to within $\frac{1}{1000}$ inch. I was impressed with the effectiveness and accuracy of the T squares and the grid. They're especially useful for creating layouts for printing data on commercially available forms, such as purchase orders or express courier air bills. Most form generators have a difficult time placing information on preprinted forms. *FileMaker's* precise measuring system and form-generating talents also make the program and the LaserWriter a natural combination.

You can create layouts for different data management purposes, including entering data, viewing records, and creating

Data Layouts

FileMaker lets you mix fonts on forms. You can also add MacPaint or digitized graphics to the layout. Here, the T squares indicate that "Number of Bedrooms" appears 1.972 inches from the top of the form and 2.537 inches from the left. You display other layouts by clicking the book icon.

reports. If you don't want to design your own forms, the program provides an unadorned ready-made layout. Part of *FileMaker's* appeal, however, is that you can dress up forms with graphics. You can select any Macintosh font, size, and style for field labels and data. You can also paste *MacPaint* images or digitized graphics into the layout (see "Data Layouts"). But *FileMaker's* graphics don't go much further; the program lacks the picture fields of *Microsoft File*, and you can't link pictures to data like you can with Telos's *Filevision*.

Typing and Browsing

The ease with which you enter data into a *FileMaker* database is comparable to the ease of use of other database programs in its class. The program provides a couple of useful shortcuts that minimize typing when you enter information into a database. You can copy data from an existing field by choosing the field specifically or by selecting it from an index of all previous field entries. *FileMaker* also saves data automatically to prevent a database from losing more than a small amount of information as a result of system errors or power failures. Typing errors are a more common cause of annoyance, but unfortunately, *File-*

Maker takes what you type at face value. If you enter text into a number field, for example, the program provides no error message. This blind trust could lead to inaccurate reports, especially when number fields are used in calculation or summary fields.

When you want to use information created with other programs, *FileMaker* does its share. You can create and access text-only files, BASIC sequential-format files, and Microsoft SYLK files. *FileMaker's* data-sharing capabilities are better than average among its competition and in line with more expensive programs. *FileMaker* also has excellent sorting capabilities that let you organize a database to meet your

(continues on page 120)

my OFFICE

THE COMPLETE OFFICE SYSTEM FOR THE MACINTOSH®
AVAILABLE IN 128K OR 512K DELUXE VERSIONS



- Powerful yet simple-to-use File Management System
- Built-in Word Processor for all your business composition needs
- Fully personalized Form-Letter generation for mailings of any size
- Built-in Graphics Program for forms, stationery, newsletters and pictorial art
- Highly flexible Search Feature for reports, lists and mailings
- Quick "Archive" Storage for older inactive files
- Instantaneous "File Clerk" retrieval of all folders, documents and data
- Fast and easy creation of Mailing Labels
- Easy to use and easy to understand Manual

DataPak Software, Inc. 14011 VENTURA BLVD. #402, SHERMAN OAKS, CALIF. 91423, U.S.A. (818) 905-6419 TELEX 297582 (GCGW UR)



NOW AVAILABLE IN
• ENGLISH • GERMAN
• ITALIAN • DANISH
• FRENCH (AVAILABLE SOON)

Circle 159 on reader service card

AT LAST professional game designers taking the Macintosh seriously. Announcing two exciting new games designed especially for the Macintosh. Monkey Business and Delta Patrol are available now, and work on both the 128k and 512k MAC's. Drop by a dealer near you to see the first two releases by the programmers that have been at the top of both **SOFTSELL'S HOT LIST** and **BILLBOARD'S TOP COMPUTER SOFTWARE** list. Monkey Business and Delta Patrol professional quality software from the **OTHER VALLEY**.



DELTA PATROL

As you speed your way over the rapidly changing terrain, you begin to realize that you are the last surviving member of Delta Patrol... Your knees shake, your stomach flutters. To relax, you think about what you are going up against. The scouts come first. But once you destroy a few of them the enemy commanders are on to you. What **YOU** do will determine the outcome of the next battle. **YOU** are the last surviving member of **DELTA PATROL!!**

ARCADE ACTION - SMOOTH SCROLLING BACKGROUND - NEW MOUSE ROUTINES

As the top I.R.S. agent in your area, you have been "volunteered" to collect from Mr. Big. In your ten years as an I.R.S. agent you've seen every tax dodge imaginable. As you begin your pursuit of Mr. Big throughout his huge mansion, you quickly discover why the last three agents who came here did not return. To collect from Mr. Big, you must first overcome an obstacle or two. Such as: - An 8 foot tall 450 pound "bodyguard" - Rolling and flying trash cans - Ferocious attack dogs

ARCADE ACTION - MULTIPLE SCENARIOS - INCREASING LEVELS OF DIFFICULTY **MONKEY BUSINESS**



Monkey Business and Delta Patrol are available now at your local dealer for just **34.95**. Or contact us direct, Visa and Mastercard orders can be placed by phone. California residents please add 6% sales tax.

THE OTHER VALLEY SOFTWARE
976 W. FOOTHILL BLVD. STE. 490
CLAREMONT, CA 91711
(714) 980-0440 (714) 980-7810

Circle 394 on reader service card

NOW You Can Teach an Old Mouse New Tricks with — Make Another Copy!



You've waited long enough! Imagine turning any existing drawing into your own electronic masterpiece. Now you can with **Make Another Copy (M.A.C.)**. **Make Another Copy** enables you to copy anything you can point at, photos, maps, drawings, etc. . . . Don't be limited by the size of your original art!

M.A.C. lets you **ENLARGE**, **REDUCE**, or retain original size of that art to fit your need. Using a stylus system, the M.A.C. allows "hands off" mouse control without loss of any functions.

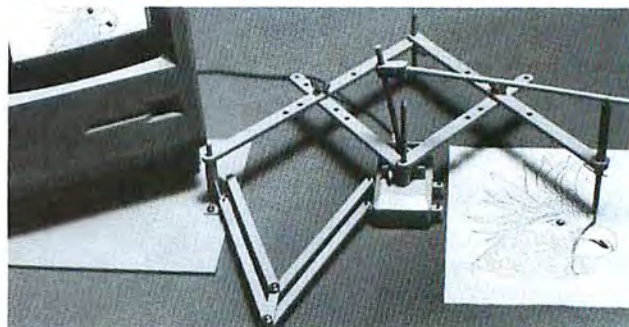
Replicates by a pantograph mechanism. For the same price as some picture disks but with unlimited drawing potential. If you can't afford or justify the expense of a digitizer, then M.A.C. is your answer. Works with all Apple Paint programs. Try M.A.C. for 10 days, if not thoroughly satisfied, return for full purchase price. (When ordering state whether Macintosh IIE or IIC.)

Send only \$49.95 plus \$4.50 for shipping and handling for each Make Another Copy. Make your check or money order payable to:

INNOVATIVE PRODUCTS
Box 1233 Dept. 1
Oakbrook, IL 60522-1233

Allow 6-8 weeks for delivery. IL residents add 7% sales tax.

Mac and MacPaint are trademarks of Apple Computer, Inc./Macintosh is a trademark licensed to Apple Computer, Inc.



Circle 422 on reader service card

INTRODUCING THE ONLY COMBINATION OPTICAL SCANNER/PRINTER FOR APPLE MACINTOSH¹ AND IBM PC²

IMAGE BLUE \$1295

Fully compatible with MacPaint¹, MacWrite¹, and PC Paintbrush²



With Image Blue, up to 4 graphic pages can be stored on a single floppy.

Scans (to screen or memory) or prints a full page with high resolution in 3 minutes. 200 DPI's horizontally and vertically.

ALSO...

setup a facsimile network with or without personal computers.

Image Blue, with its built-in RS 232 port is the easiest way to scan and print text and graphics in and out of Macintosh Office¹, IBM PC² network, or any other existing network.

Call today for the full story.

IMAGE COMMUNICATIONS, INC.
640 West Putnam Avenue P.O. Box 4809
Greenwich, CT 06836-0086
(203) 661-0607

¹Trademarks licensed to Apple Computers, Inc.
²Registered Trade Mark of IBM.

Circle 429 on reader service card

(continued from page 117)



The Macintosh Now Has Intelligence, Artificial Intelligence

The tools of AI are now available for your Macintosh. Computer novice and data processing professional alike will find the package that's "just right" for their level of expertise and interest.

Start With . . .

ExperLogo™ – featuring ease-of-use, 2-D, 3-D and spherical graphics, English-like commands and compiled speed. A recent book, *AI Programming Techniques and Languages: An Introduction**, teams with ExperLogo to introduce and explore the concepts underlying Artificial Intelligence.

ExperLogo-Talk™ – an add on to ExperLogo that utilizes the extensive sound capabilities of the Macintosh to generate speech. The ExperLogo-Talk product is delivered with **ExperLogo-Prolog**, a Prolog interpreter that is written in ExperLogo.

And When You're Ready . . .

ExperLisp™ – the first compiled implementation of LISP on a micro-computer. Developed on a Symbolics 3600, the compiler generates efficient MC68000 code providing speed and function ideal for the development and delivery of AI applications.

ExperFacts™ – an extremely flexible expert systems building tool. Written in ExperLisp by MC-Systems, ExperFacts features backward and forward chaining with Meta-level control.

ExperOPS5™ – an ExperLisp implementation of the well-known OPS5 expert systems building tool. Implemented for ExperTelligence by Science Applications International Corporation™, ExperOPS5 teams with ExperLisp and the Macintosh to deliver performance that rivals OPS5 on the Xerox 1108 class of LISP machine.

ExperTelligence is the leader in bringing innovative Artificial Intelligence products to the Macintosh. It publishes its own software products as well as those submitted by other developers.

Call today for more information: ExperTelligence, Inc.
559 San Ysidro Road
Santa Barbara, CA 93108
Tel: 805/969-7871.



ExperLogo-Talk requires a 512K Macintosh and ExperLogo. ExperOPS5 and ExperFacts require ExperLisp, a 512K Macintosh and an add-on floppy or hard disk drive. Macintosh is a trademark licensed to Apple Computer. Symbolics 3600 is a registered trademark of Symbolics, Inc. *AI Programming Techniques and Languages: An Introduction is published by Howard W. Sams & Co., and is available through your local bookstore or direct from the publisher at 4300 West 62nd Avenue, Indianapolis, IN 46206.

specific requirements. You can sort a database on any number of levels, in ascending or descending order.

Once you enter information into a database, you can find records by browsing one record at a time or by searching for records that meet given criteria. Browsing a database is as easy as leafing through a book. *FileMaker's* book icon lets you jump to the first or last record in a database or view the record preceding or following the one currently displayed. The book icon can also leaf through the form layouts you have created. The double-duty nature of the book icon is in character with the way *FileMaker* reuses tools to perform similar tasks.

Easy Hard Copy

One of *FileMaker's* strengths is the ease with which it allows you to create reports. Unlike other database managers, *FileMaker* doesn't require you to issue specialized commands to set up and print a report. You determine the visual appearance of a report when you choose a layout. To print the report, you simply choose Print from the File menu. This approach has several advantages over creating reports with commands. You don't have to learn an extra design process to create reports. You can eliminate work by using the same layout to enter data and print reports. Furthermore, you can present the same data in different formats if you design layouts for specialized reports and choose among them before printing. Finally, it's easy to see the final appearance of most reports before they're printed. However, because *FileMaker* displays only one record at a time, you can't accurately preview a columnar report on screen before committing it to paper. And the program doesn't provide as many statistical functions as *Microsoft File* or *1stBase*, two other data managers in *FileMaker's* class. Another reporting limitation is that you can print only single-column mailing labels, known as "one-across" labels.

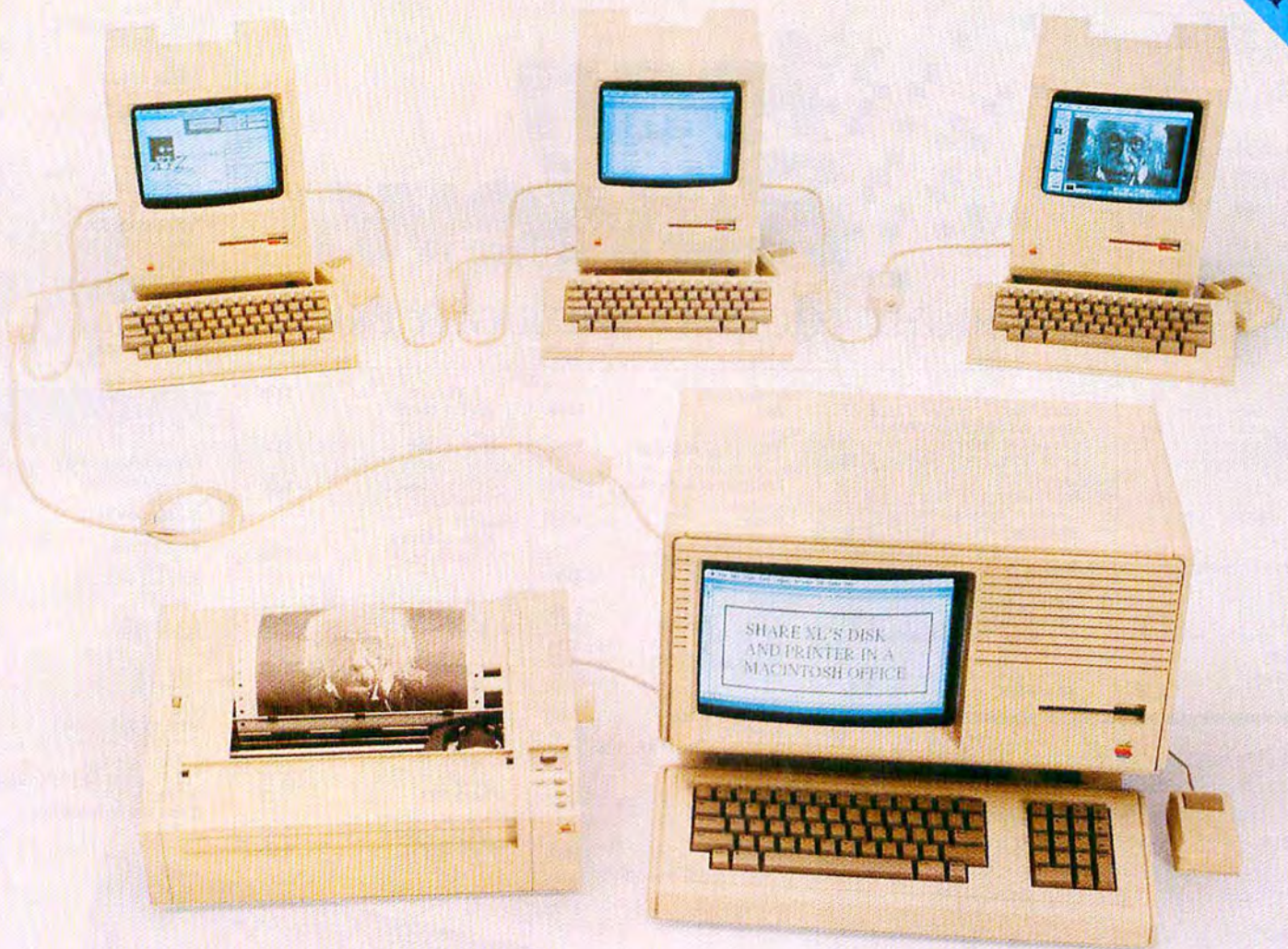
FileMaker doesn't check for typing errors and lacks some of the statistical functions of its competitors, but it's a solid, well-designed program that performs well, though it does keep a 128K Macintosh's disk drive busy. *FileMaker's* greatest

(continues on page 125)

Circle 56 on reader service card

The Macintosh Office Expands.

Introducing
MacServe!



You've heard of XL/Serve,[™] the first commercial AppleTalk software. It made the Macintosh Office a reality.

Thousands depend on it, every day, to reliably share information and resources. They access common applications, data, and printers on a Mac XL, the original Macintosh Office workhorse.

Introducing MacServe.[™] **The second standard for AppleTalk networks.**

Now, your 512K Macs can share their disks and printers. You can build your Macintosh Office with freedom of choice, using any of the leading hard disk drives,* perhaps with equipment

you already have. No need to buy an unproven black box, or to commit to a single hardware vendor.

Create up to 16 independent work areas on your hard disk; you set their sizes. For each, choose to share it over the network, and elect read-only or read-write access. Volume-level passwords control security of sensitive data.

There's also a shared printer spooler, so you and your colleagues can get on with things while your ImageWriter (or other serial printer) is churning out your documents.

Some call our software sorcery

Your MacServe host remains, primarily, a Macintosh workstation. Through true multitasking, we let you run your favorite applications (even Switcher) while others share your resources.

Just add more MacServe hosts to your network when you want increased performance or need more capacity. Imagine the megabytes in over 250 hard disk volumes. With full desk accessory convenience for all day-to-day operations. It's transparent to the leading applications!

When you're ready to build a network, ask for MacServe and XL/Serve at your local dealer, or call us at:

Infosphere, Inc.

4730 SW Macadam Avenue • Portland, OR 97201 • 503-226-3620

AppleTalk and Macintosh Office are trademarks of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc. MacServe and XL/Serve are trademarks of Infosphere, Inc. *Consult Infosphere for a list of currently supported hard disks.

Circle 249 on reader service card

FIND QUALITY AND VALUE THROUGH

MINDWORK™

- Living Videotext
ThinkTank 128 SPECIAL \$ 85
ThinkTank 512 SPECIAL \$149
- MindWork Software
PreWriter SPECIAL \$ 99
Creativity Aid & Knowledge Organizer
- Organizational Development Software
Consultant \$149
Most innovative product — 1985
- Selfstyle
Decision Map SPECIAL \$ 99
Innovative decision support and modeling.

PRODUCTIVITY

- Aegis
Zap Invoice \$ 69
- B. Knick Drafting
MacPerspective \$119
Discovery of the Month! Lets drafts-men adjust viewpoint on 1, 2, or 3-point perspective wire-frame drawings to easily find the best viewing angle.
- Bythe Software
Omnis 3 \$319
Most powerful database manager
- Borland
SideKick \$ 59
Desktop/phone/schedule organizer extraordinaire!
- BrainPower
Power Math \$ 59
Statview SPECIAL \$ 99
Best stat for Mac!
- Creighton Development
MacSpell+ \$ 59



THE RIGHT TOOLS AT THE RIGHT PRICE!

- Enterset
Quick Paint SPECIAL \$ 29
Browse, cut and paste MacPaint files from Desk Accessory.
Quick Word SPECIAL \$ 39
- Forethought
FactFinder 1.1 SPECIAL \$ 89
Essential — Freeform DB for notes
FileMaker SPECIAL \$114
Our favorite forms DB — Best balance of power and ease of use.
- Harris Technical Systems
Profit Projections/Break-even Analysis \$ 49
Quick analysis and graphs without spreadsheet
- Hayden Software
Art Grabber \$ 37

- Lotus Development
Jazz \$389
- Magnum Software
Slide Show Magician \$ 39
- Mark Of The Unicorn
Professional Composer \$289
- Mesa Graphics
Plot-It \$ 89
Plotter drivers for Mac
- Micro Planning Software
MicroPlanner \$350
- Microsoft
Chart \$ 75
Excel SCALL \$114
File SPECIAL \$114
Multiplan SPECIAL \$107
Word SPECIAL \$114
- Monogram
Dollars & Sense \$ 82
ForeCast \$ 45
Tax Planning - Works with Dollars & Sense
- Odesta
Helix 2.0 SPECIAL \$229
Faster, enhanced
- Paladin Software
Crunch SPECIAL \$149
Powerful, icon-based spreadsheet.
- ProVUE
OverVUE 2.0 SPECIAL \$169
Best balance of power and ease-of-use in database.

- Real Data, Inc.
Financial Analysis \$ 69
Real Estate Investment Analysis \$ 99
Residential Real Estate \$ 69
Templates for Multiplan or Jazz
- Saloni Software
Bulk Mailer SPECIAL \$ 95
Fully professional list management
- Silicon Beach Software
Accessory Pak #1 \$ 25
Cut and paste whole MacPaint pages!
- Simon & Schuster
Mac Art Department \$29
- Softtech Microsystems
Mail Manager \$ 79
- State-Of-The-Art
Electric Checkbook \$ 49
- T/Maker
ClickOn Worksheet SPECIAL \$ 59
Desk Accessory—Great for casual spreadsheet use
Click Art Effects \$ 33
Add tools to MacPaint

- Vindex, Inc.
Mail Center (2 User) \$209
Mail Center (6 User) \$349

ACCOUNTING

- Arrays/Continental Software
The Home Accountant \$ 82
- Chang Labs
Rags To Riches
 • Acct's Rec. SPECIAL \$139
 • Acct's Pay. SPECIAL \$139
 • Gen. Ledger SPECIAL \$139

- 3 Modules (All the above) SPECIAL \$279
- Digital Etc.
Macaccountant \$149
- Micromax
Gallery Finance \$250
Special Edition
- Peachtree
Back to Basics
 • Gen. Ledger SPECIAL \$ 89

COMMUNICATIONS

- Hayes
Smartcom II SPECIAL \$ 99

EDUCATION

- Brainpower
Chipwits SPECIAL \$ 29
Think Fast \$ 29
- Davidson & Associates
Speed Reader II \$ 49
Math Blaster \$ 39

- Electronic Arts
Music Construction Set (Deluxe) \$ 39
- First Byte
Speller Bee \$ 59
- Great Wave
Concertware+ SPECIAL \$ 45
An education in music
- Hayden Software
Sargon III SPECIAL \$ 30
Turbo Turtle \$ 45
- OED Information Sciences
Typing Made Easy \$ 45
Highly Recommended
- Rubicon
Songpainter \$ 39
- Think Educational
Mac Edge \$ 39
Mac Edge II \$ 39
Mind Over Mac \$ 39

UTILITIES

- Altsys Corp.
Fantastic Font Editor \$ 39
Make your own fonts
- Assimilation
MacMemory Disk \$ 21
MacCracks \$ 21
Work N'Print \$ 21
Print spooling software
Batteries Included \$ 45
Battery Pak
- Casady Company
Fluent Fonts \$ 29
- Central Point Software
Copy II Mac SPECIAL \$ 21
Essential backup utility
- DataViz
MacLink W/8' Cable \$129
Converts IBM and Mac files
- Dreams of the Phoenix
12C Financial Calculator Desk \$29
Accessory \$29
Quick and Dirty Utilities \$29

Our Icon Review Catalog contains timely, candid product reviews, featuring some of our favorite products. The catalog also includes comparative reviews that help you identify which products are right for you, as well as a "Beware" column that helps you steer clear of problem products.

ORDERING IS EASY

Icon Review is dedicated to supplying top-rated software, same-day service, and discounted prices. Call toll-free, or order by mail.

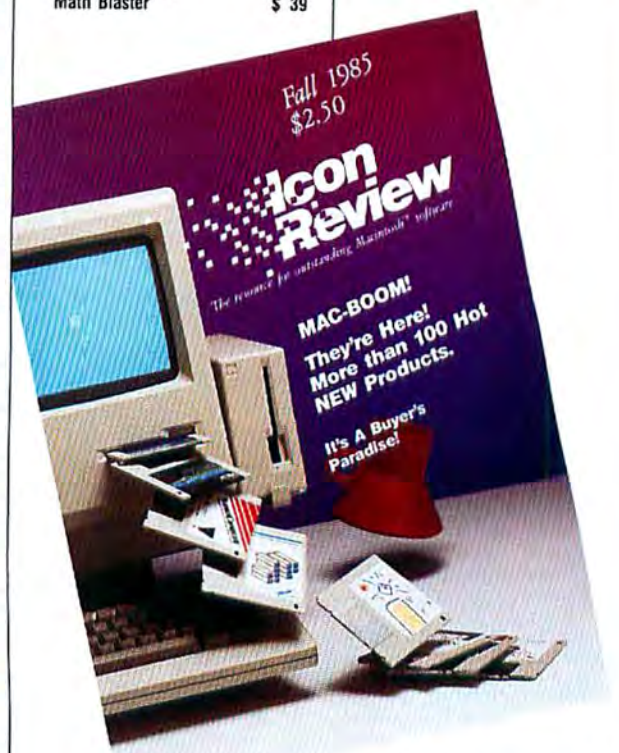
ORDERS ONLY 800/228-8910
 In California 800/824-8175

NATIONAL ACCOUNTS PROGRAM

Icon Review's popular National Accounts program serves the special needs of the many companies, user groups, schools and government agencies that seek us out as a source of information and accessories. For detailed information call 408/625-1957 and ask for Brett LaSorella, Marketing Director.

- Cricket Software
Statworks \$ 79
- DataFood Software
DrawForms \$ 35
All the business forms you'll ever need!
- DataPak Software
My Office \$ 95
Super graphic office on a disk!
- Dow Jones
Spreadsheet Link \$ 69
- Electronic Arts
Financial Cookbook \$ 40

- Hayden Chart
Works with all spreadsheets \$ 69
- I Know It's Here
Somewhere \$ 39
Video Works \$ 65
Astonishing visual effects!
- Layered
Front Desk \$ 85
- Innovative Data Design
MacDraft \$169
CAD for the Mac
Paste-Ease \$ 29



To get your copy of the Icon Review catalog send \$3.00. Or, get one FREE with any order.

MacDraft \$169

If you work on a drafting table, designing anything from printed-circuit boards to architecture, MacDraft has the power and functionality to become the central tool at your workstation without overburdening you with a high price and sharp learning curve. Its powerful set of drawing, scaling, viewing, measuring, and highest resolution printing features set it above all other graphic programs.

FVB Software	
Hard Disk Utility	\$ 69
Hippopotamus Software	
Hippo Lock	\$ 79
Almanac	SCALL
Ideafarm	
MacLabeler	SPECIAL \$ 29
Prints disk labels.	
Infophere	
XL Serve	\$149
Partitions Mac XL hard disk, network disk server, print spooler & more!	

Capturing Your Thoughts on Paper... PreWriter™

From MindWork Software Publishing

PreWriter is the first integrated idea processor for the Mac—offering simultaneous access to outlining, notecard management, and sophisticated text processing. PreWriter stimulates creativity during the early idea formation stage of the writing process. You can jot down ideas, rearrange notecards, make outlines, and create rough drafts as the need arises. Includes commands to count words, scan notecards, arrange notes as lists or outlines, and help analyze text for composition, style and coherence. Requirements: 512K Mac. Available: First quarter 1986

Order Today!

Advance Orders will be gladly accepted at the Low Introductory Price of \$99. ■ Retail Price \$149

To request product information call Icon Review or write to: MindWork Software Publishing, Inc., Dept. MW125 P.O. Box 2566, Monterey, CA 93942

Kensington	
Professional Type Fonts	\$ 33
Professional Type Fonts (512K)	
Headlines	\$ 45
Micro Analyst	
MacZap	SPECIAL \$ 39
Hacker's back-up utility and more!	
Micro Spot	
Mac Plot	SCALL
Plotter driver for Mac	
Nevins Microsystems	
TurboCharger	SPECIAL \$ 59
Disk Cache — speeds operation	
New Caanan MicroCode	
Mac Disk Catalog	SPECIAL \$ 31
Organizes your disk library	
Symmetry	
QuickDisk	\$ 21

LANGUAGES

Microsoft	
Basic	\$ 89
Logo	\$ 79
Tardis Software	
FastFinder	SPECIAL \$ 39
MacMake	SPECIAL \$ 39
Programming maintenance utility	
C-Leaner	\$ 39
Source code optimizer	
Tool Pak I	\$ 39
Diff, GREP, ASM XREF, etc.	
Tool Pak II	\$ 39
C XREF, Utility library in source, etc.	
Mac Programmer's Library	\$149
(All the above)	
TMQ Software	
TMON Debugger	\$ 89
Better than ROM debugger	

GAMES

Aegis Development	
Mac Challenger	\$ 29
Space Shuttle simulation	
Pyramid of Peril	SPECIAL \$ 29
Ann Arbor Softworks	
Grid Wars	\$15.60
Lunar Explorer	\$19.60
Blue Chip Software	
Baron	\$ 37
Millionaire	\$ 37
Tycoon	\$ 37
Squire	\$ 39
Broderbund Software	
Lode Runner	\$ 29
Electronic Arts	
Pinball Construction Set	\$ 29
Infocom	
Hitchhiker's Guide	
To The Galaxy	SPECIAL \$ 25
MicroSoft	
Entrepreneur	\$ 32
Miles	
Harrier	\$ 35
Mindscape	
Deja Vu	\$ 39
Priority Software	
Forbidden Quest	\$ 27
Gateway	\$ 27



Assimilation	
MacPort Adapter	SCALL
Includes 5' parallel cable & 36-pin connector	
AST	
Ram Stack - .5 meg.	\$699
Ram Stack - 1 meg.	\$899
Ram Stack - 1.5 meg.	\$1099
Additional memory for your Mac XL	
Computer Friends	
Mercury Modem w/ Cable	\$265
Work horse 1200 baud modem at a miracle price.	

Consultant \$149

Consultant improves your productivity by adding structure and organization to your planning process...it prompts you to develop an action plan by following steps presented as menu items. Icon-based Thinking Aids help with Idea Generation and Decision Making. Consultant is the most innovative product we've discovered this year!

Hayes	
Smartmodem 1200	SPECIAL \$399
Smartmodem 2400	SPECIAL \$639
Smartmodem-To-Mac Cable	\$ 18
Transet 1000	\$349
Multi-function buffer and switch—Incredible!	
GTCC Corporation	
MacIntizer	\$499
Prometheus	
ProModem 1200 M	\$359
Systems Control	
Mac Gard	\$ 75
Surge suppressor	
Thunderware	
Thunderscan	\$175

SideKick \$59

SideKick overcame all our desk organizer objections and then some! In fact, with its extensive collection of utilities for scheduling, storing contact information, and managing your telephone resources, SideKick may be the Jazz of the Accessory menu!

WINCHESTER DRIVES

Corvus	
Omni Drive	
11 megs	\$1496
20 megs	\$2246
45 megs	\$3896
126 megs	\$6896
Omni Talk	\$296
Multi-user software	
Paradise Systems	
Paradise Mac Ten	SPECIAL SCALL
New and exciting 10 meg.	
PCPC	
MacBottom	SPECIAL SCALL
Most Mac-like, personal 10 meg drive	

ACCESSORIES

Assimilation	
Numeric Turbo	\$129
Trackball with numeric keyboard	
Regular Turbo	\$ 95
Trackball without numeric keyboard	
Mac Daisy Wheel Connection	SPECIAL \$ 69
Mac Port Adapter	SPECIAL \$ 59
Bech Tech	
Fanny Mac	\$ 99
Fan fits in Mac's handle	
Facts of Mac Posters (2)	\$ 19
Mac schematics for your wall	
Computer Friends	
MacInker	\$ 55
Save SS — RE-ink ribbons	

Dialight Corporation	
Wire Tree Plus	\$ 69
Surge suppressor for computer and modem	
Eichner	
Disk Holder	\$ 25
Disk Holder with Lock	\$ 33
Ergotron	
Mac Tilt	\$ 95
Swivel stand for Mac & 2nd drive	
Floppy Clean	
Head Cleaner	\$ 21
Mouse Cleaner	\$ 19
Keyboard MCPK Cleaner	\$ 19
Icon Review	
Mac Cracker	\$ 20
Combination long handle Torx screwdriver and cover pry tool	
Innovative Technologies	
The Easel	\$ 14
Cloth case carries and displays disks	
Kensington	
A-B Box	\$ 69
Control Center	\$ 65
Printer Stand	\$ 19
Surge Suppressor	\$ 34
Tilt/Swivel	\$ 21
Kette Group	
Mac Nifty	
A-B Switch	SPECIAL \$ 29
A-B-C-D Switch	\$ 49
Mac Nifty Stereo System	\$ 69
Great sound for the Mac—includes speakers	
Koala Technology	
Mac Vision	\$219
Puts images from your video camera into Mac	

My Office \$95

The designers of My Office have expanded the desk metaphor to include the whole office. The clever animation of the file drawers as they open is the most highly developed visual metaphor we've seen anywhere. These high-power graphics let a new user grasp the necessary fundamentals immediately.

Mountain Equipment, Inc.	
Mac Carrying Case I	\$ 79
The Best! Heavy duty and stylish	
ImageWriter Carrying Case	\$ 59
Mouse Systems	
A+ Mouse (optical)	SPECIAL \$ 69
Mousetrak	
MousePad	SPECIAL \$ 9
Ring King	
Sound-Write™	\$ 99
Acoustical cover for Imagewriter	
Leather Ware	
Disk Wallet	SPECIAL \$ 29
Packs 6 disks in your jacket pocket—executive style!	

DISKETTES

Sony 3 1/2" (10)	SPECIAL \$ 27
The Best!	



OPEN MONDAY THRU SATURDAY
8 A.M. to 6 P.M. (Pacific Time)

Order Desk Holiday hours: (Starting Nov. 1, 1985) 6am to 9pm Pacific Time.

CALL TOLL FREE CUSTOMER SERVICE
ORDERS ONLY 408/625-0465
800/228-8910 TECHNICAL SUPPORT
408/625-2158

In California NATIONAL ACCOUNTS
800/824-8175 408/625-1957

ASK ABOUT OUR
NATIONAL ACCOUNTS PROGRAM

OUR POLICIES

- We accept MasterCard and VISA with no added service charge. Your card will not be charged until we ship. Private and company checks accepted; for faster delivery send certified or cashiers check, or money order.
- No C.O.D.'s.
- We accept corporate or school purchase orders from qualified institutions. \$300.00 minimum. Call 408/625-1957 for details.
- California residents add 6% sales tax.
- All goods are new and guaranteed to work, but we do not guarantee machine compatibility. Due to software copyright laws, all sales are final. To return a defective product, call for a Return Authorization Number, 408/625-1932.

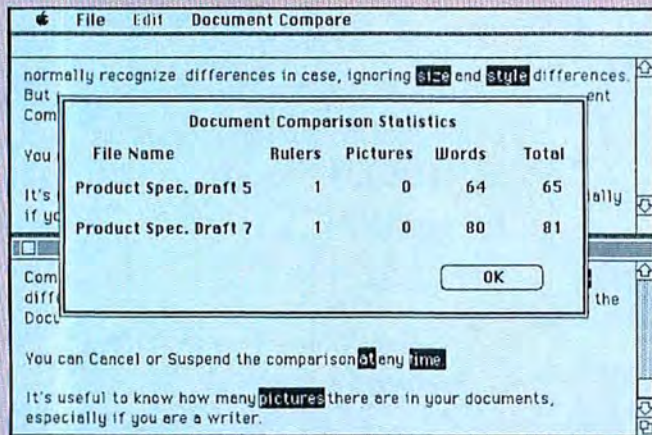
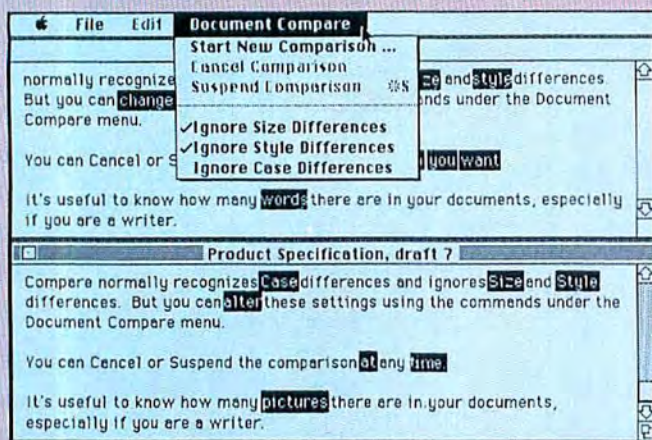
Shipping

- We ship same day on most orders.
 - We automatically use the fastest method to you. \$6.00 minimum charge covers shipment by Federal Express Standard Air, insurance and handling. Please allow one week before calling to trace delivery.
 - Next day service available.
- SPECIAL SHIPPING: Alaska: Add 6% (\$10 minimum). Hawaii: Add 10% (\$15 min.). Canada: Add 12% (\$15 min.). FOREIGN ORDERS: add 18% (\$25 min.). All prices must be paid in U.S. dollars.

PRICES AND AVAILABILITY SUBJECT TO CHANGE
WITHOUT NOTICE

Now
why didn't
anyone think
of this before!

What's the difference?



You know how to compare apples and oranges. And maybe you can tell the difference between identical twins. But how often haven't you wished the Macintosh would help you untangle the difference between similar documents? Now it does! With **Document Compare** from The Model Office Company.

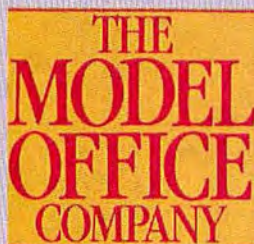
Document Compare takes two versions of a MacWrite document and shows them in two windows, one above the other, and *automatically* detects any differences. It not only detects, but it *marks* differences in words, case, rulers, page breaks, headers, footers, tabs, returns, fonts, styles and pictures in a special reverse video font called *Night Times*.

Now wouldn't it be great to deliver your next draft of an important document with all the changes clearly marked? Just print the compared documents and you will. And don't worry, the original documents remain unchanged.

Attention students and writers! The guessing game is over. The *Document Comparison Statistics* window displays the number of words (and more) in each document.

Document Compare

Another business productivity program from the Document Modeler developers.



And here's the best news yet, it's available NOW at only \$99 for all Macintoshes. To order, telephone or write:

The Gooderham 'Flatiron' Building,
49 Wellington St. East,
Toronto, Canada M5E 1C9
1-800-268-8181; or, (416) 860-1033

(continued from page 120)

strength is its flexibility. The program imposes no artificial limits on field lengths or sort levels, making it easy to enter and organize information. With *FileMaker* it's also easy to design visually appealing forms that are precise enough to meet demanding requirements. Best of all, you can reuse the same information in a number of forms, each tailored for a particular purpose. If you need to manage data and insist on bringing still more forms into the world, consider *FileMaker*.—*Jim Heid*

FileMaker
Forethought, Inc.
1973 Landings Dr.
Mountain View, CA 94043
800/622-9273
List price: \$195

Down in the Depths

The ideal submarine commander during World War II was smart, ruthless, and short. Anybody taller than 5 feet 6 inches was too big for submarine duty and was probably assigned elsewhere. Big people, after all, take up more room, eat more food, and use up more oxygen—important considerations for selecting personnel who have to coexist for months at a time with limited resources in unbelievably cramped quarters. If you have always wanted to command a submarine but find that you tower some 6 feet above the ground or tip the scales at more than 200 pounds, help may be on the way. Spectrum Holobyte has released the Macintosh version of *Gato*, a submarine simulation game that gives you a taste of war under the waves.

This game is no mere shoot-'em-up but an adult-level, true-to-life simulation full of authentic details that affect play. The

(continues on page 127)



PALANTIR®

Software for Macintosh Educational Series



Mactype®

- Full Dvorak and QWERTY Training
- Not a Game! Structured Exercises
- Achievement Certificates Awarded
- Uses Standard Training Cycles



MathFlash

- Four-Function Math Flash Cards
- Tracks Progress of 100 Students
- Timed Drills ... Progress Awards
- Prints Report Card



WordPlay

- Crossword Puzzle Word Games
- Includes Diagramless
- Varying Degrees of Difficulty
- CREATE and PRINT Your Puzzles

128K - Single Disk Drive

Palantir Software
12777 Jones Road, Suite 100
Houston, Texas 77070
For Information:
713-955-8880

To Place Order:
TX (800) 831-3119
CN (800) 235-0025
US (800) 368-3797

Circle 388 on reader service card

ORDER LINE **1-800-MAC-ONLY**

SOFTWARE ADVISOR'S
telemart
Doing Business Since 1980
A Division of CW Marketing, Inc.

Your Hardware and Software Source

Save Up To 60%

★ **NOW Even Lower Prices** ★

★ **NO CHARGE FOR VISA AND MASTERCARD** ★

★ **OUR CUSTOMERS HAVE RATED US #1 IN PRICE & SERVICE** ★

★ **CORPORATE & INSTITUTIONAL PURCHASE ORDERS ACCEPTED** ★

★ **CALL FOR DETAILS.** ★

**Low Prices Are BORN Here
RAISED Elsewhere**

- Just Ask Our Competitors!!! -

FREE
AIR EXPRESS SHIPPING
See Details Below

SOFTWARE

DATA BASE MANAGERS

DB Master	\$109
Fact Finder	72
File Maker	98
File Vision	99
First Base	99
First Merge	49
Front Desk	77
I Know Its Here Somewhere	35
Mac Lion	189
MegaFile	115
MegaForm	167
MegaMerge	75
Microsoft File	112
Omnis III	245
Overview 2.0	146
Think Tank	74
Think Tank 512	119

LANGUAGES

Basic 2.0	\$ 88
Consulair C w/F.P.	259
Consulair C w/MDS	435
Consulair Linker/Librarian	59
ExperLisp	245
Experlogo	76
Mac Asm	75
Microsoft Logo	74

MONEY MANAGEMENT

Dollars & Sense	\$ 79
Dollars & Sense Forecast Module	39
Mac Home Accountant	79
Electric Checkbook	43

WORD PROCESSORS

Hayden Speller	\$ 45
Microsoft Word	112
Mac Spell Plus	Call

GRAPHICS

Accessory Pack 1	\$ 23
Click Art	29
Color Print	28
Color Chart	58
Da Vinci	28
Mac Draft	135
Mac Pic #1 & 2	29
Mac The Knife	22
Mac The Knife II	29
Ready Set Go	55
Slide Show Magician	35
VideoWorks	57

UTILITIES

Concertware Plus	\$ 36
Copy II Mac	19
Desk Organizer	55
Mac Home	26
Mac Labeler	24
Mac Office	26
Music Works	45
My Office	72
Pro Print w/cable	57
Quickdisk	18
Sidekick	43
Smooth Talker	51
Turbo Charger	55

SPREADSHEETS

Chart	\$ 73
Click On	46
Crunch	169
Microsoft Excel	232
Multiplan	112

INTEGRATED SOFTWARE

Ensemble	\$146
Helix	222
Microsoft Business Pack	339
Jazz	Call

TRAINING

MasterType	\$ 29
Mind Prober	26
Typing Intrigue	26
Typing Tutor III	34

ACCOUNTING

Palantir G/L	\$ 75
Palantir A/P	75
Palantir A/R	75
Peachtree G/L	85
Peachtree A/R	85
Peachtree A/P	85

DISKETTES

MAXELL Disks (10 Pack)	\$ 22
SONY Disks (10 Pack)	21

COMMUNICATIONS

CompuServe Starter Kit	\$ 17
Dow Jones Straight Talk	45
Smartcom II	84

ACCESSORIES

Flip & File 3 1/2"	\$ 12
Imageware Printer Carrying Case	40
Imageware Wide Carriage Printer Case	49
Katimar Teak Diskette Box	15
Maccessories Control Center	59
Maccessories Diskette Box	20
Maccessories External Drive Cover	8
Maccessories Head Cleaning Kit	19
Maccessories Mac Dust Cover	9
Maccessories Mouse Cleaning Kit	17
Maccessories Printer Cover	9
Maccessories Printer Stand	16
Maccessories Starter Pack w/Swivel/Tilt	55
Maccessories Surge Suppressor	34
Maccessories Swivel/Tilt Stand	21
Mac Enhancer	157
MacTote Carrying Case	59
MacVision	168
MousPad (By Moustrak)	7
Printer Ribbon	6
The Easel	12

HARDWARE

MODEMS

Anchor Automation Anchor Express	\$235
Anchor Automation Mark XII	229
Hayes Smartmodem 300 Baud	129
Hayes Smartmodem 1200 Baud	369
Hayes Smartmodem 2400 Baud	599
Kensington Portable Modem	92
Prometheus Promodem 1200 (MAC)	335
US Robotics Password 1200	195

DISK DRIVES

Bernoulli Box 5 Megabyte	\$1319
Habadiisk Drive	279


PRINTERS

Brother HR-15XL	\$ 329
Diablo D-25	549
Diablo 630 API	1484
Epson Printers	Call
NEC 2010	619
NEC 3510	989
NEC 8810	1329
Okidata Printers	Call
Panasonic 1091	235
Panasonic 1092	349
Panasonic 1093	429

PRINTERS (Contd.)

Star Micronics SG-10	219
Star Micronics Printers	Call
Silver Reed EXP500 (Serial)	279
Silver Reed EXP550 (Serial)	389
Silver Reed EXP770 (Serial)	699
Toshiba 1340 Parallel	439
Toshiba 1340 Serial	439
Toshiba 341 Parallel	819
Toshiba 341 Parallel & Serial	869
Toshiba 351 Parallel & Serial	975

Canon
«PC» PERSONAL COPIERS



Canon PC-10

Canon PC-14

Canon PC-20

Canon PC-25

\$ 509

\$ 649

719

939

• No Charge for VISA and Mastercard

• Free Air applies ONLY to orders up to 10 lbs. You Pay The Ground - We Pay the Air

• Shipping and Handling Add \$6.00

• Personal and Company Checks Will Delay Shipping 2 weeks

• Prices & Availability Subject to Change Without Notice

• Due to Copyright Laws No Returns on Software Purchases

• Add 2% for C.O.D. Orders

• We Do Not Guarantee Machine Compatibility

• Order Line Hours: Mon-Fri. 8:30-5:30 Saturday 9:00-1:00

• Order Processing: 602-224-9345

10:00 a.m. - 3:00 p.m. Monday - Friday

Mailing Address:

2222 East Indian School Road
Phoenix, Arizona 85016

(continued from page 125)

game's most attractive feature is the way it re-creates the challenges faced by the commander of a Gato-class submarine in the Pacific during World War II. For example, if your mission takes place before 1943, you cannot use radar because it was not introduced until that year. Or if you submerge to a depth greater than 20 feet, you cannot use your diesel engines and must proceed under battery power because your air supply line does not extend beyond that depth.

View from the Bridge

Play commences the moment you receive orders from ComSubPac (Commander Submarine Force Pacific Fleet). Your assignment might be to rescue a downed aviator or to escort a friendly convoy through hostile waters. The way you proceed with your assignment is entirely up to you. Like a real submarine commander, you can choose to attack or avoid an enemy vessel, depending on the circumstances, and you can navigate on the surface or underwater.

The game screen displays most of the information you need to command the *Growler* (see "Underwater Follies"). The middle third of the screen shows the view from the bridge when the sub is on the surface or through the periscope when the sub is less than 50 feet underwater and the periscope is up. By clicking on a directional icon, you can look fore, aft, port, or starboard.

The screen includes analog and digital readouts of the sub's speed, heading, and depth, determined by throttle, rudder, and dive plane controls, which are also displayed. All controls can be operated from the keyboard, although using the mouse is simpler and more intuitive. Also on screen are a control panel from which you can fire torpedoes, a report box with an outline of the sub and "idiot lights" that indicate which parts have sustained damage, and indicators of remaining diesel fuel, battery power, and oxygen supply.

A radar display and a box showing the quadrant the *Growler* is in keep you oriented as you navigate. Clicking in the quadrant box reveals a chart showing the 20 quadrants that are *Gato's* world at war, as well as still another control panel that lets you load and lay mines.

If your sub is damaged, it stays damaged for the duration of the game unless you can get it to the subtender, a friendly vessel that helps you with refueling, rearming, and repairs. Consequently, you should avoid the serious mistake of sinking the subtender.

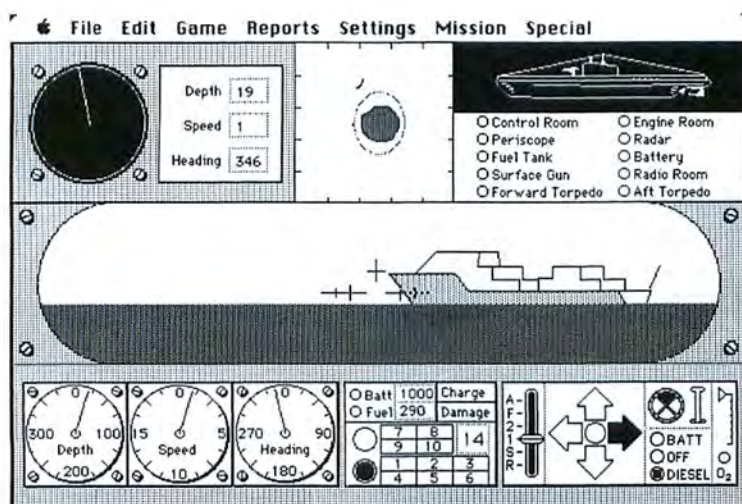
Engagements by Design

Missions in the game's ten levels of play range from the relatively simple to the diabolically difficult. If you should become jaded with the missions—a process that could take several years and numerous res-

(continues on page 128)

Underwater Follies

This game screen displays the information you need to command a Gato-class submarine during World War II. An enemy PT boat is about to enter the cross hairs of your periscope, and your forward torpedo bay is open and ready to fire. Try not to miss; PT boats carry depth charges and are much faster than subs.



PALANTIR®

Software for Macintosh Office Series



inTouch

- VIDTEX for online Compuserve Graphics
- Most Popular CRT Terminals Supported
- Uses Terminal Function Keys
- Uses Numeric Keypads



inTouch

- CROSSTALK Support - IBM to Mac and Back
- More Error Free File Transfer Protocols
- MACBINARY - Mac to host and Back



inTouch

- Built-in Editor for Online Editing
- On Screen Function (MACRO) Keys
- Automate Almost Any Task With Communications Command Language (CCL)
- Powerful Point and Click Simplicity

128K - Single Disk Drive

Palantir Software
12777 Jones Road, Suite 100
Houston, Texas 77070
For Information:
713-955-8880

To Place Order:
TX (800) 831-3119
CN (800) 235-0025
US (800) 368-3797

Circle 74 on reader service card

(continued from page 127)

rections of the *Growler-Gato* allows you to design your own missions by clicking buttons in the Mission Creator box. The Mission Creator, which is exclusive to the Macintosh version of the game, lets you define elements such as the types of enemy vessels you tangle with, as well as their course and speed.

As you reach the more difficult playing levels, the game progressively becomes more true to life. For example, instructions from ComSubPac are given in Morse code, which is transcribed for you at the elementary levels. However, at levels 3 through 6, instructions are given only in Morse code, with dots and dashes running across the screen, while at levels 7 and above, you only hear the signals, which you must transcribe before embarking on your mission. A Morse code tutorial is available on the game's Special menu. At levels 5 and above, enemy ships are no longer tracked on the quadrants, leaving you at the mercy of your radar and periscope. And at levels 6 and above, the enemy could break the code and intercept messages from ComSubPac, thereby anticipating your destination and other details of your assignment.

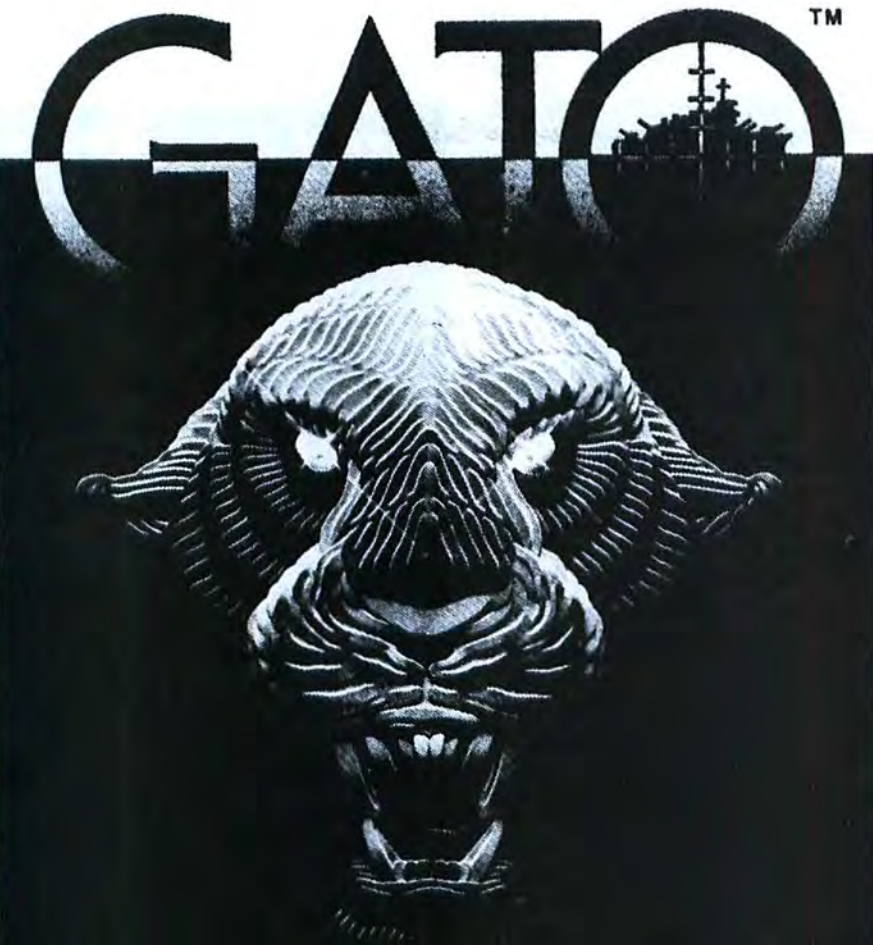
That's Reality

The game's verisimilitude might be attributable to Bill Graves, a retired United States Navy captain who advised *Gato's* programmers. Of course, Captain Graves cannot be blamed for the bothersome bugs that *Gato* version 1.2, which I played for this review, runs into more often than the *Growler* runs into PT boats. The bugs allowed enemy ships to steam right through Pacific islands, made it impossible to save games, and all too often led to system crashes that were more unnerving than going down with the sub.

Fortunately for consumers and would-be submarine commanders, Spectrum Holobyte is replacing the buggy version with a debugged version 1.3. According to product manager Patricia J. Herringer, notices are being sent to *Gato's* registered owners informing them of the replacement, which is free with the return of the original game disk.

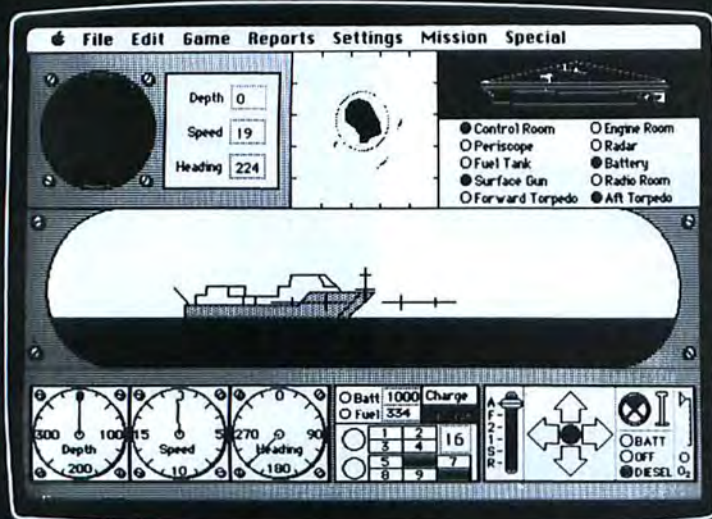
Spectrum Holobyte deserves to be commended for designing a war simulation game that steers clear of the shoals of jin-

(continues on page 130)



WW II GATO-Class Submarine Simulation

3-D Graphics with Sound



Macintosh Version

Also Available for Apple® IIe/c or
IBM® PC Series (includes PCjr.)

SPECTRUM HOLOBYTE, INC., 1050 Walnut, Suite 325, Boulder, CO 80302 (303) 443-0191. Check your local computer store or wherever software products are sold. Dealer inquiries call: (800) 621-8385 x262. Macintosh Version by Mindbender. IBM and Apple are registered trademarks of International Business Machines Corp. and Apple Computer, Inc. respectively.

Circle 47 on reader service card

Get inTouch - stay in touch

The Palantir Office Series for the Macintosh



Electronic mail. Stock quotes from Dow Jones. A weather map from Compuserv. Legal casework from Lexus. The chance to transmit your latest MacPaint masterpiece to the world. A conversation with an IBM PC. And more. It's all a natural with inTouch.

Here's a MACUSER Five-Mouser. They say, 'This very powerful program has all of the expected features and lots of bells and whistles... The Communications Command Language is the most powerful in any Mac comm program... Learning CCL is a snap thanks to the excellent documentation and large number of sample programs... Even beginners will soon be communicating at full speed.' (MACUSER Magazine, October, 1985)

And since that review, we've added even more features. Like VIDTEX graphics support for Compuserve, and MacBinary for Mac-to-host-and-back file transfers. Plus 32 user-defined and user-labeled function keys.

Look at all these inTouch benefits:

- **Communications Command Language (CCL), for automated or unattended operations:**

Have your Mac build a file on disk...wait until phone rates are lowest...dial (and redial if necessary)...transmit your messages, commands and data... receive and save the response on disk...hang up...print the transmitted information from the disk...and then dial someplace else for some other purpose. **All unattended.** No problem.

- **32 Function keys, on four levels:**

Send up to 64 keystrokes each, execute a CCL program, and/or switch to another level with eight more function keys.

- **Support for graphs, pictures, photographs:**

inTouch VIDTEX emulation is the **only** way your Mac can display Compuserv's weather maps, stock price charts, or (just in case) their photographs of the FBI's Ten Most Wanted.

- **Broad line-protocol support:**

Text transfer, MacBinary, XModem (Modem-7), and Crosstalk. inTouch is the only system that lets your Mac talk to an IBM PC running Crosstalk. 50 to 19,200 baud transmission rates.

- **A desktop with all the popular options built in:**

Compuserve, The Source, Dow Jones, EasyLink, and Dialcom

- **Built-in editing and file handling for operational efficiency:**

Only inTouch lets you create and edit text, save selections, and append selections to the end of existing files -- **without** leaving the program.

- **Emulation of many terminals:**

VIDTEX, IBM 3101, ADDS Viewpoint/60, BEEHIVE DM5A, TELEVIDEO 925, VT-100, VT-52, Standard TTY, and many more.

Get in touch with the world. **Get inTouch.** Available from your dealer or Palantir® Software.



PALANTIR®
SOFTWARE

PALANTIR® SOFTWARE

12777 Jones Road, Suite 100
Houston, Texas 77070

For Information: 713-955-8880

To Place Order: TX 800-831-3119

To Place Order: US 800-368-3797

To Place Order: CN 800 235-0025

(continued from page 128)

MacInkerTM MercuryTM

**Re-Ink Any Fabric Ribbon
Automatically for
Less Than 5¢**

Extremely simple, automatic operation with built-in electric motor. We support the Imagewriter[®]*, along with over 1000 other types of printers (cartridges/spools/special).

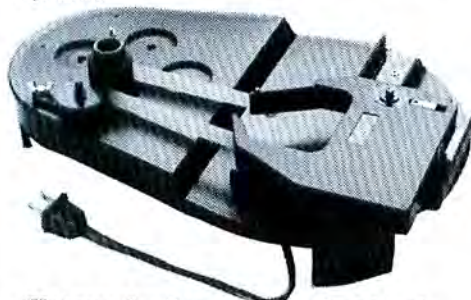
Most **Mac Inker(s)** cost less than \$60. The Imagewriter type (our model #234) is \$59.95 (add \$3 for UPS shipping anywhere in the U.S.). The **Universal Cartridge Mac Inker** (supports the Imagewriter and about 100 other cartridge types) is \$68.50 (our model #234UN).

Use your **Mac Inker** to re-ink your dry Imagewriter cartridges (for less than 5 cents in ink) and watch the improvement in print-out quality. Our residueless, lubricated, dot matrix ink yields a darker print than most new ribbons. Or get any of our six basic ink colors: **Brown, Blue, Red, Green, Yellow, Purple** and use **Mac Inker** to create or re-ink your own colored cartridges. We have uninked or pre-colored cartridges.

Most cartridges can be used almost indefinitely, if ribbon is regularly re-inked, kept moist and lubricated, so that the fabric does not fray. Some customers have reported 80 re-inkings of the same cartridge and still getting excellent print.

As of October '85 we have more than 45,000 **Mac Inker(s)** in the field, in five continents (220V motors available). **Mac Inker** has been reviewed, approved and flattered in most magazines and even in the *New York Times* and the *Chicago Sun Times*.

*Imagewriter is a trademark of Apple. Mac Inker is a trademark of ComputerFriends. We were 'Mac' well before anyone else.



(Universal w/Imagewriter Cartridge)

**Computer
Friends**

Dealer Inquiries Welcome

**From the God of
Communications a
Divine Modem at a
Miracle Price.**

• **100% Hayes Smartmodem[®] Compatible**; that is, **Mercury** runs with all the popular and just about any private or public domain communications software.

• **300/1200 Baud Speed**, software or hardware (dip switch) selectable. The 1200 Baud features will save you a bundle in long-distance connections.

• **Auto Dial/Auto Answer/Speed Selection**

• **Audio Monitor** via speaker with volume control

• **Front Panel Lights** give you at a glance full information on the status and mode of your communication: modem ready — terminal ready — carrier detect — send data — receive data — high speed — auto answer — off hook.

• **Clear and Easy-to-Read Manual**. If modeming is new for you, the **Mercury** manual will ease your way into the exciting and rewarding world of data transmission.

• **18-Month Warranty**

\$265.00

Including power supply, telephone cable and manual. MacIntosh to modem cable (\$12) — shipping \$4 anywhere in continental U.S.

*Hayes is a Trademark of Hayes Microproducts.



Order toll free 1-800-547-3303
or ask for free brochure

In Oregon and for 24-hour service
(503) 297-2321.
Computer Friends
6415 SW Canyon Ct., #10
Portland, OR 97221

goism in favor of the open seas of technical challenges. While the effect of this approach may be to sanitize war, it at least does not appeal to the baser, warring instincts of nations.

Gato goes beyond merely simulating a visual environment by recreating the subjective conditions under which a submarine commander experienced war in the Pacific during World War II. The player does not sit back passively watching the environment unfold but actively participates in the game. The requirement of strategic ability, rather than mere hand-eye coordination, makes this game a challenge even for experienced computer game players. And if you should happen to be under 5 feet 6 inches, don't worry; you can still play. Just put a pillow on your chair. —*Nicholas Lavroff*

Gato
Spectrum Holobyte
1050 Walnut #325
Boulder, CO 80302
303/443-0191
List price: \$49.95

Expanding Your Words

Typing is inescapable when you use any personal computer, even one with a mouse. The **QuickWord** desk accessory reduces the amount of typing you do by expanding short abbreviations into full words, phrases, and paragraphs. Every time you type a space, a tab, a return, a period, a comma, a colon, a semicolon, an apostrophe, a quotation mark, an exclamation point, or a question mark, **QuickWord** checks the preceding word against a table of abbreviations. If a match is found, the abbreviation you typed is replaced with the expanded entry from the table.

QuickWord's ability to expand a short abbreviation into a full block of text suggests several uses. You could, for example, abbreviate names and addresses in letter headings, as well as salutations or closings. You can even use **QuickWord** for instantly correcting typing errors. For example,

(continues on page 134)

Give us \$6.95 and we'll give you the World for Christmas!

Quick, what's the capital of Sri Lanka? What countries do you pass through traveling from Copenhagen to Rome? For learning, explaining, or just plain daydreaming, there's nothing like an atlas. Now, with **CONCEPTS COMPUTERIZED ATLAS**, the world enters the computer age. You can too. In your own home and for only \$6.95. Thanks to our unique Phoenix Plan.

What Is a Computerized Atlas?

You can forget the bulky volume with the endless index. We put a three-dimensional globe on your screen. Turn it east, west, north, or south. Select an area that interests you and enlarge it.

Visit any state in the United States, any province in Canada. Visit any country in the world! Simply type the name, and the **Atlas** brings it to the center of the screen. A closer look? Magnify it twice, three times, five times! Call up the Fact Sheet to find the population, the size, the capital, the monetary unit and more.

Our **Atlas** can give you information on more than 2,500 cities. Just type the name, and the **Atlas** shows you where it is. And tells you the city's latitude and longitude, its population, and facts about the country it's part of. Big cities, historical cities, vacation spots, places in the news.

With our **Atlas**, you can even find the distance between any two places in the world, a feature no bulky volume can duplicate. And the **Atlas** can calculate it in land miles, nautical miles, or kilometers. How far is it from London to Moscow in kilometers? Iceland to the Virgin Islands in nautical miles? It's easy with our **Atlas**.

Our **Atlas** was compiled from a number of sources, including a CIA satellite. Over three years of research have gone into our **Atlas** to make sure that it has the latest, most up-to-date information available.

Of course, you have to try our **Atlas** to appreciate it. We know that. So we have devised the Phoenix Plan to let you do just that—and for little more than the cost of a blank disk.

CONCEPTS COMPUTERIZED
Atlas

The Phoenix Plan

The Plan is simple. Try our **Atlas** before you buy it. For only \$6.95, you get the complete **Atlas** software and with it our easy-to-follow instruction booklet. This is *not* a demonstration disk—you have all the capabilities of **Atlas** at your fingertips. And for an additional \$3.95 we'll include a Teacher's Guide.

You can load the program three times and experience all its capabilities. After the third time, the program locks. If you decide not to keep **Atlas**, simply format the disk and you have a blank Maxell® disk. The blank disk alone is a \$5.00 value.

But if you want to keep **Atlas** (and we think you will), simply dial our toll-free number and charge it to your American Express, MasterCard or VISA. The operator will take your order and give you the unlocking code over the phone. Our **Atlas** costs only \$69.95.

Our patented Phoenix Plan has been successfully used to market our business software by Lanier, Philips and Xerox—to name a few. Now, for the first time we are making the Phoenix Plan available to the PC marketplace. So why don't you try it? Fill out the order form below and send it with your \$6.95 today. You've got nothing to lose and the world to gain.

System requirements: just your MAC with at least 128k of memory.

Program also available on Apple IIe/IIc systems.

YES, put the world on my MAC. I enclose my \$6.95. Please send the **Atlas to:**

Name _____

Address _____

City _____

State/Zip _____

(Allow approximately 4 weeks for delivery.)

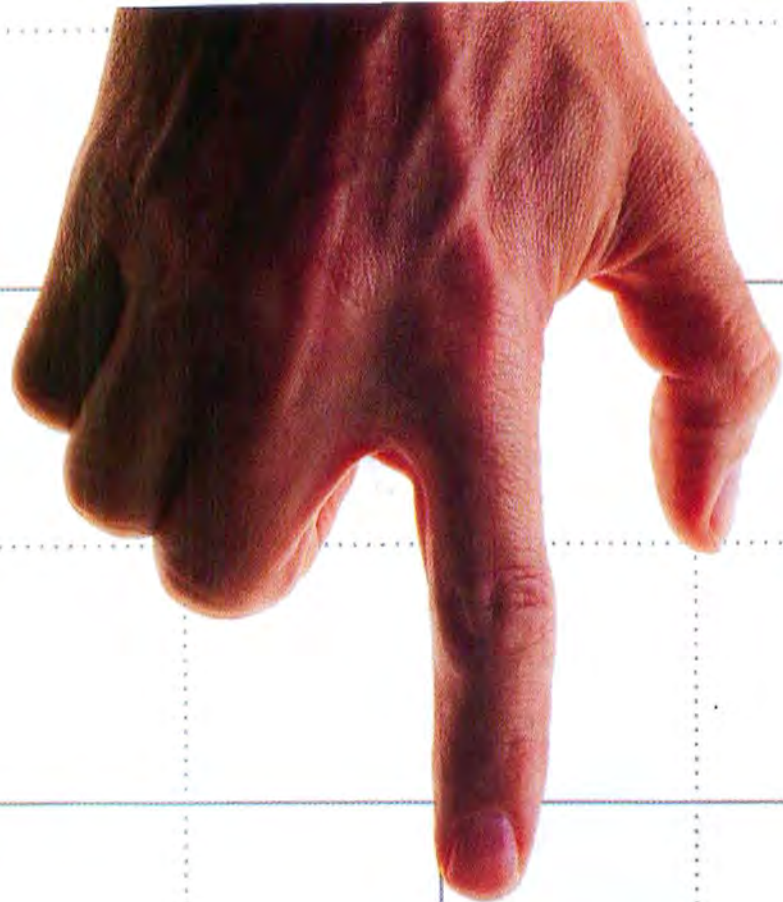
☐ Send me the Teacher's Guide for an additional \$3.95.

Foreign orders include \$4.00 for postage and handling.

Mail to Software Concepts, Inc., P.O. Box 3323, Wallingford, CT 06494

Or call Toll Free 1-800-782-4567 (except in CT, AK, HI). In Canada call

1-800-231-0764. Orders only.



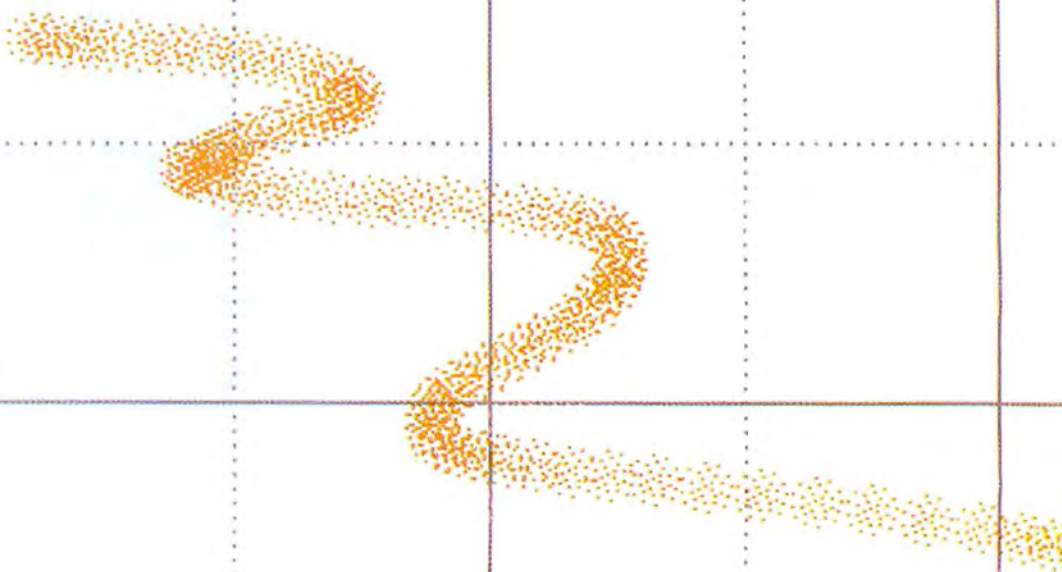
Unleash Your Fingertip

Let's get right to the point:
the computer for the rest of us
can bring out the best in us.

All it takes is your Mac, your
imagination, and *Macworld*
as your guide. And, of course,
the tip of your finger. Experts
have called the Macintosh the
only "whole-brain" computer.
So here's a chance for you to
use your entire cerebral cre-
ativity with push-button ease.

With more than \$20,000 be-
ing awarded to winners of the
Macworld Art Contest for your
Macintosh graphics published
in this magazine, you could
profit considerably from your
subscription to *Macworld*.

Which brings us to the next
point. Right now, unleash your
fingertips and remove the post-
paid card facing this page.
Complete. Mail. Compute! Let
your fingers do the talking.



MACWORLD

Save

\$23.40

off the

~~\$47.40~~

cover price

(That's over \$10 off the
basic subscription rate.)

Order Now to Take
Advantage of This
Limited Time Offer!

VISA and MasterCard
Accepted!

Call TOLL FREE:
800/972-3100

(in Nebraska
402/895-7284)

Subscribe
Now

YES! Please send me *Macworld*, the Macintosh Magazine

☐ \$24 for 1 year (12 monthly issues)

SAVE EVEN MORE!

☐ \$46 for 2 years (24 issues)

Name

Company

Address

City, State, Zip

Please allow 6 to 8 weeks for delivery of your first issue. Offer good in U.S. only.
Offer expires April 30, 1986.

4AWB4

MACWORLD

Subscribe
Now

YES! Please send me *Macworld*, the Macintosh Magazine

☐ \$24 for 1 year (12 monthly issues)

SAVE EVEN MORE!

☐ \$46 for 2 years (24 issues)

Name

Company

Address

City, State, Zip

Please allow 6 to 8 weeks for delivery of your first issue. Offer good in U.S. only.
Offer expires April 30, 1986.

4AWB4

MACWORLD



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES



BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 51666
Boulder, Colorado 80321-1666



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES



BUSINESS REPLY CARD

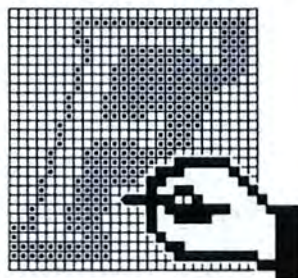
FIRST CLASS PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 51666
Boulder, Colorado 80321-1666



YOUR FACE STANDS OUT IN A CROWD.



With Fontastic, your typeface will be unique. Because you can create totally different fonts easily.

Fontastic unleashes your creativity. And lets you style, edit and scale any existing fonts. As well as cut and paste characters within or between fonts. All with more convenience than you've ever known.

Fontastic. The Macintosh™ font editor that offers you versatility the easy way.

And the kind of face that gets you the attention you deserve.

Fontastic™

Macintosh™ font editor

\$49.95 — includes shipping (Add \$8.00 for airmail outside U.S.) MasterCard, Visa, or personal checks accepted.

Altsys
corp.

P.O. Box 865410
Plano, TX 75086 • (214) 596-4970

Circle 227 on reader service card

• After you read our ad, call TOLL-FREE for more information. •

MACohm Projects

And you thought that 128K would be enough!

RAMdisks • JAZZ • Helix • ReadySetGo • ThinkTank 512K • Apple's 68000 Developers Kit • Switcher and greatly enhance the operation of many other popular software packages.

Cool is the Rule!
(or sometimes Mac gets sad)

Eliminates the chance of board failure due to overheating during the RAM desoldering/soldering process. The soldering iron will never touch an integrated circuit.

MACohm Projects 512K Upgrade does not require the desoldering of any RAM.

Our upgrade uses an integrated circuit board that is soldered into seven empty holes in Mac's logicboard. This means that there are no jumper wires exposed and that only a single trace needs to be cut.

When You Place Your Order

We will ship you tools and a complete set of instructions for removing your Mac's motherboard and packing materials for shipping your board to us. Ship us your board and within 24 hours your board will be UPgraded and shipped back to you. All of our work carries a full 90 day warranty. We also provide low cost out-of-warranty board swaps and repair service.

128MB Upgrade Also Available!

3 Year Limited Warranty
(Extended Warranties Available)

- Fast Service (Overnight if desired)
- 100% Compatible

No desoldering or soldering of RAMS!

Call or write for more information:

MACohm Projects
129 N. Randolph
MAComb, IL 61455
1-800-851-2753
(outside Illinois)
In IL (309) 833-1157 collect

User Friendly Kits

If you enjoy the satisfaction of doing things yourself, then our UPgrade kit might be just what you are looking for.

Our kit comes with 256K DRAMS, special sockets, integrated circuit board, tools and complete, easy to follow, well illustrated instructions for completing your UPgrade.

We give you a Guided Tour video tape, a MacOpener tool kit, and Soldering - Desoldering Tools!!

Dealer, User's groups, and foreign inquiries welcome

Jazz™ Lotus Development Corp-Helix™ Qdest™ Apple & Macintosh™ Apple Computer Corp-Ready Set Go™ Manhattan Graphics

Circle 295 on reader service card

Real Estate Decision Making for the Mac!

ProAnalysis

Innovative Software for Real Estate Investors

Introducing ProAnalysis; the first sophisticated real estate program designed for the non-programmer who demands professional quality analysis. One application justifies the cost of the software and computer! Facilitates decisions on choice of property and terms, compares financing alternatives, prepares forecast for tax planning, and permits multiple sensitivity analyses.

Comprehensive Input Modeling: Accommodates multiple loans of all types and refinancing.

Advanced Performance Measures... Incorporates IRR, Adjusted IRR, Net Present Value, and many others.

Data Output Flexibility: Applicable to Realtors, Financing Institutions, Tax Planners, Private Investors, and Brokers.

Brochure available. For 512K Mac \$295

Technalysis Services
14555 DeBell Road
Los Altos Hills, CA 94022
(415) 949-4176

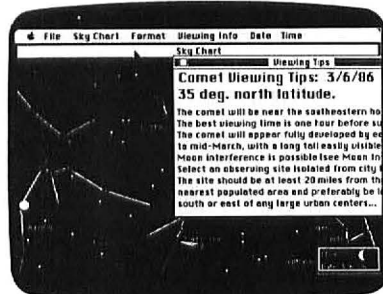
Circle 430 on reader service card

(continued from page 130)

Of the 235 million people in America hoping to see Halley's Comet, only a fraction know exactly when and where to look.

Do you?

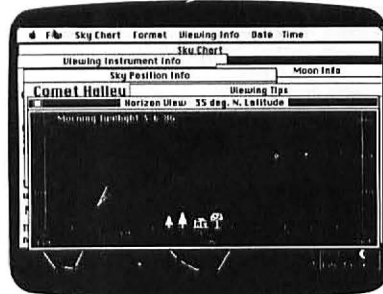
Don't miss the spectacular event which is now appearing in the heavens! Every 76 years Halley's Comet returns for a once in a lifetime visit. The **Comet Halley** program turns your Mac into a complete viewing guide showing the exact position of the comet in a star filled sky.



You will see over 600 stars in 33 constellations. Instrument suggestions and **daily viewing tips** are also given. These include appearance, visibility and optimal viewing times.

"Knowing exactly where and when to look is the key to seeing Comet Halley."

Astronomy magazine
October 1985



Additional windows give exact sky coordinates, moon information and horizon views. All windows are updated for each date and time August 1, 1985 to July 31, 1986. A continuous advance feature also tracks the progress of the comet across the sky. Latitude can be set for 30°, 35° or 40° North and most information is highly accurate within 5° of the latitude setting.

All this for only **\$29.95** suggested retail

Contact your local software dealer or Great Wave Software at 415 325-2202, P.O. Box 5847, Stanford, CA 94305. From the publishers of ConcertWare+ and ConcertWare+ MIDI.



**Great Wave
Software**

Circle 166 on reader service card

QuickWord can change *nad* to *and*. Checking for abbreviations as you type doesn't affect the rate at which the typing appears on the screen. Expanding abbreviations occurs at 20 to 30 characters per second, faster than anyone can type but slow enough that you have to wait for lengthy expansions.

Abbreviations and their expansions are kept in a table you create. You type the abbreviations on the left side of the table and the expansions on the right side (see "Abbreviation Table"). An abbreviation contains from one to four characters—letters, digits, and symbols—in any combination you find easy to remember. An expansion contains any text you type on the keyboard, including Return, Tab, and Option-key characters. Since expansions can be any length, QuickWord can be used for creating form letters. For example, you can expand an abbreviation into a name and address or an entire paragraph of "canned" text. The expanded text conforms to the document's margins. In addition to the abbreviations and expansions you type, every table automatically includes six unlisted, predefined abbreviations that expand into various forms of the current date and time taken from the Macintosh's internal clock.

In most cases the QuickWord table can remain on the screen beneath the document window, so you can quickly review or edit an entry. You edit the table using familiar techniques: cut, copy, and paste.

I wish QuickWord had the ability to sort the abbreviation table in alphabetical

order. If you create a long table, finding a particular abbreviation can be a chore, because abbreviations are listed in the order you enter them.

One useful command lets you temporarily deactivate QuickWord to type an abbreviation without expanding it. You can also hide the table but keep it active, a condition required by *MacPaint*.

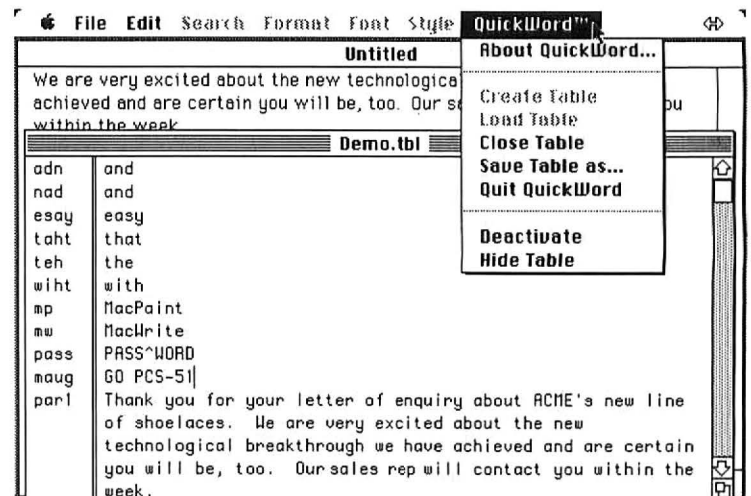
To install QuickWord you need the Apple Font/DA Mover utility. Once the desk accessory is installed, the System file grows by 14K. I found QuickWord's startup procedure cumbersome. You activate QuickWord by choosing it from the Apple menu each time you start an application. Then you must load a QuickWord table before QuickWord can expand any abbreviations. The need to manually load the table could have been avoided by having the program load a default table. Another hindrance is QuickWord's tendency not to recognize an abbreviation after you backspace over an error. About 10 percent of the time, QuickWord failed to expand an abbreviation after I had misspelled and corrected it.

QuickWord worked well with most of the application programs and desk accessories that I tested. However, I could not get QuickWord to work with *ThinkTank 512*, and though QuickWord works with *MacTerminal* version 1.1, I had problems getting QuickWord to work properly with two other terminal programs, *MacTep* and *ProCom-M*. With both programs, QuickWord did not reliably expand abbrevia-

(continues on page 137)

Abbreviation Table

QuickWord refers to a table to expand abbreviations that you type. You enter abbreviations into the left column of the table and the full text into the right column. The expanded text can be of any length and is reformatted to fit within the margins of the document you are working on.



Powerful software that turns the ordinary mouse into an intelligent business partner?



It's quite simple. You see, the people at EXECUCOM Systems Corporation had a great idea. First, develop a powerful Decision Support Software System that allows you to describe (model) your business problems and situations using understandable terms and calculations. A system that helps you analyze information faster and better. A system that can communicate — with other PC's and with our mainframe Decision Support System, IFPS®. And, a system that gives you precise answers for accurate decision-making, and helps turn complex business problems into simple solutions.

Second, design this software system around a computer that understands you. That understands how you think. A computer that's easy for you to operate.

This powerful system is called MindSight™. It's designed for the Apple Macintosh™, the computer for the rest of us. And it's from EXECUCOM, the leader in Decision Support technology. Now people who really need to use

computers, like you, have a powerful Decision Support System you can use. MindSight is a system that reduces the time required for you to become productive with a computer, a system that helps reduce the time required for you to act on important business matters. And MindSight is a system so simple, you can operate it with an ordinary mouse.

If you think, as we do, that MindSight is a great idea, why not try it for yourself and discover firsthand how MindSight can become your intelligent business partner.

To order your copy of MindSight for \$195, phone EXECUCOM Systems Corporation, P.O. Box 9758, Austin, TX 78766 **(1-800-531-5038;** in Texas or Canada, **512-346-4980).**

EXECUCOM,
the number one
choice of the Fortune
500 in Decision Support
Software. Continuing a decade of
excellence.



EXECUCOM
A CONTEL COMPANY

MindSight is a trademark, and IFPS is a registered trademark of EXECUCOM Systems Corporation. Macintosh is a trademark licensed to Apple Computer, Inc.

IFPS is a 1985 Recipient of ICP's 100 Million Dollar Award. MindSight runs on 512K MAC. Second disk drive recommended.

Circle 318 on reader service card

How to run AppleII programs on the Macintosh.

Mac + II (2.0)

An AppleII + emulator for the Macintosh.

100% compatible with the Apple II + , 64K, DOS 3.3, ProDos . . .



OFFER AN APPLE II TO YOUR MACINTOSH
Boot Mac + II 2.0 in your Macintosh and it becomes
an AppleII. Insert the MacDos disk in your
Macintosh drive and type PR#6, you have just
installed DOS 3.3.

DO NOT TRY TO INSERT YOUR 5 1/4" DISKS
in the Macintosh. We provide a communications
software 'Mac Com' to transfer programs and files
in the Macintosh floppies, from any Apple II + /e/c,
through the Image Writer cable (very simple!) or
modems.

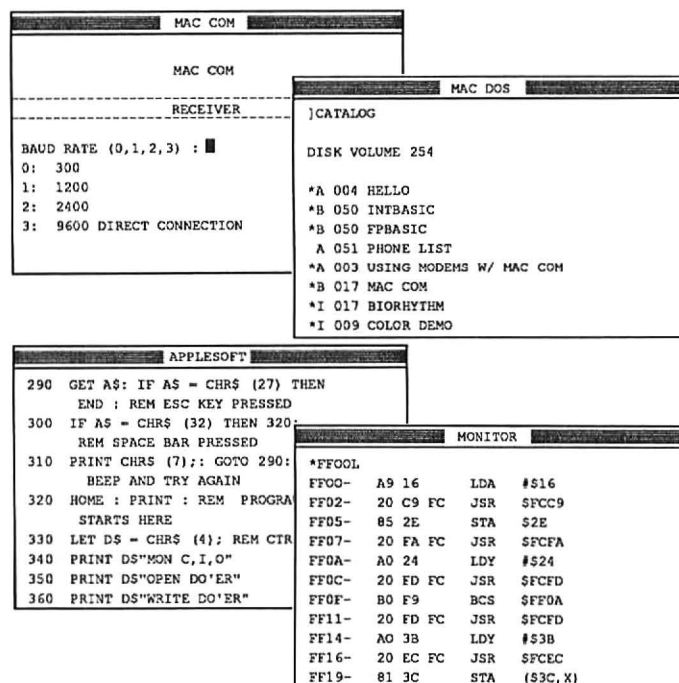
YOU CAN RUN OR DEVELOP Applesoft, Integer
BASIC, and 6502 machine language applications,
and you have access to the Macintosh 68000 machine
language, to add routines from the Macintosh
toolbox to your Apple II applications.

IF YOU HAPPEN TO HAVE a 3 1/2" disk drive
connected to your Apple II, Boot Mac + II 2.0 in the
Macintosh and read your 3 1/2" Apple II disks with
the Macintosh. For example ProDOS!!

IF YOU DO NOT HAVE TIME to read the manual
do not forget to install the interrupt-switch on your
Macintosh, it is the Reset key of the AppleII.

THIS PRODUCT IS AVAILABLE AT
BETTER DEALERS FOR ONLY \$99.95.

You can order directly and send check or money
order to Meacom, (Texas res. add 6.125% tax), or
call (713) 526-5706, Visa & MC are accepted.



Mac + II 1.0 works on 128K Macintosh. It does not
allow page flipping operations, and emulates 48K.
Mac + II 2.0 works on 512K Macintosh, it has page
flipping abilities and emulates 64K.

Mac + II is software only.

meacom TM



P.O. Box 272591, Houston, TX 77277, (713) 526-5706 Telex: 4945935

Apple & Macintosh are trademarks of Apple Computer, Inc.

Circle 369 on reader service card

(continued from page 134)

tions. If you plan to use QuickWord with a terminal program, try the two programs together before making a purchase.

If you're a fast typist who likes to read as you type, QuickWord may be more distracting than helpful. But if you repeatedly use common phrases in your writing or regularly compose form letters containing repeated sections of text, QuickWord can save you time.—Lon Poole

QuickWord
Enterset
410 Townsend St.
San Francisco, CA 94107
415/543-7644
List price: \$59.95

Effects for Your Easel

When I first saw a demonstration of T/Maker Graphics' *ClickArt Effects*, I didn't bother to disguise my eagerness to get a copy. My mouse finger was getting itchy. Here was a program that would let me cross several items off my *MacPaint* wish list.

ClickArt Effects works in conjunction with *MacPaint* as a desk accessory. Unlike most other desk accessories, this one appears only when you use *MacPaint*. When you run ClickArt Effects, *MacPaint*'s tool palette disappears. In its place are four new tools, which let you rotate any *MacPaint* image in 1-degree increments, slant a picture to the left or the right, create single-point perspective, or distort an image as if the picture were printed on a sheet of rubber and stretched (see "Rotations and Mutations").

(continues on page 139)



DeSmet C

MACINTOSH™
DEVELOPMENT
PACKAGE

\$150
Includes Shipping

Runs on 128K and 512K Macintosh

- Produces FINDER/SHELL applications
- Dynamic OVERLAY support

Full K&R C Compiler

- Native Code Compiler
- In-line asm directive
- IEEE S/W Floating Point

Assembler, Linker, and Librarian

Machine Code Debugger

Source Code Editor

"SHELL" Interface

- Environmental Variables
- Wild-Card Expansion
- Many Built-in Functions
- Command History
- Runs Any Application

>120 Function STUDIO Library

>450 Function Macintosh ROM Library

360 Page Manual

RAM Disk

Macintosh is a trademark licensed to Apple Computer, Inc.

- ☐ Please Send Information.
☐ Send Macintosh Development Package
Check # _____ Enclosed

SHIP TO: _____

ZIP _____

CW A R E
CORPORATION

P.O. BOX C
Sunnyvale, CA 94087
(408) 720-9696

All orders shipped UPS surface. California residents add sales tax. Canada shipping add \$5, elsewhere add \$15. Checks must be on U.S. Bank and in U.S. Dollars. Call 9 a.m.—1 p.m. to CHARGE by VISA/MC/AMEX.

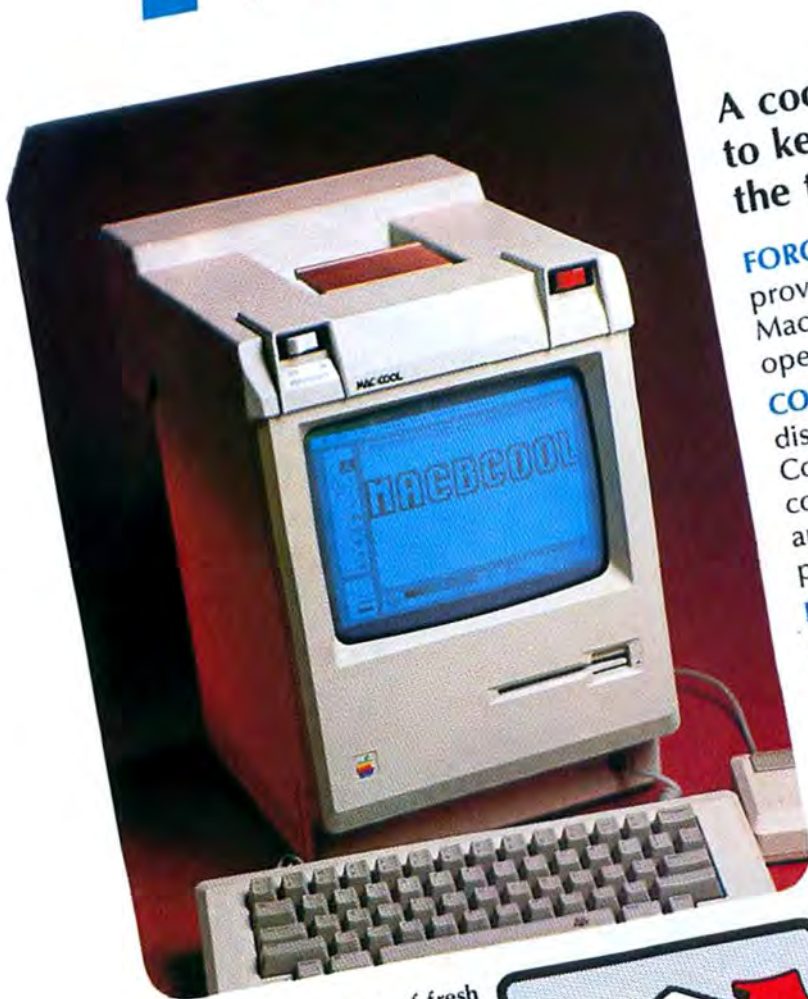
Street Address: 505 W. Olive, #767, Sunnyvale, CA 94086

Circle 298 on reader service card

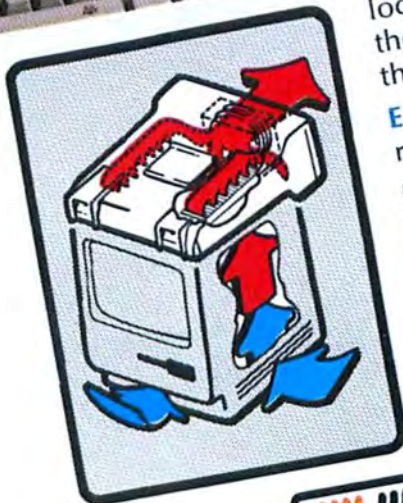
Take
the heat off
your Mac.

MACBCOOL™

for your Macintosh™



A continuous flow of fresh cool air passes through your Macintosh cooling your computer's critical components.



A cooling enhancement module designed to keep your Macintosh cool and eliminate the threat of overheating.

FORCED AIR COOLING with a quiet efficient fan providing a continuous flow of fresh air through your Macintosh. The results are better reliability and longer operating life of your computer.

CONTROL CENTER OPERATION with system power distribution through your MACBCOOL module. Conveniently located front mounted power switches control both main power for your complete system and power for peripherals through two rear mounted power outlets.

BUILT-IN SURGE PROTECTION provides extra protection against power line surges, fluctuations, and noise which can cause permanent damage or intermittent operation to sensitive computer equipment.

A PERFECT FIT because MACBCOOL is designed specifically for the Macintosh Computer. When positioned on the computer, a sturdy handle firmly locks the MACBCOOL module to the computer and substitutes for the Mac's built-in handle.

EASY INSTALLATION. No tools required.

Macintosh is a trademark licensed to Apple Computer, Inc.
MACBCOOL is a trademark of MPH Electronics, Inc.

To order or request additional information contact:
MPH Computer Products
A Div. of MPH Electronics, Inc.
2660 Loma Avenue
South El Monte, CA 91733
(818) 442-7829
DEALER INQUIRIES WELCOME



MPH COMPUTER PRODUCTS.

Circle 291 on reader service card

(continued from page 137)

Installing Effects

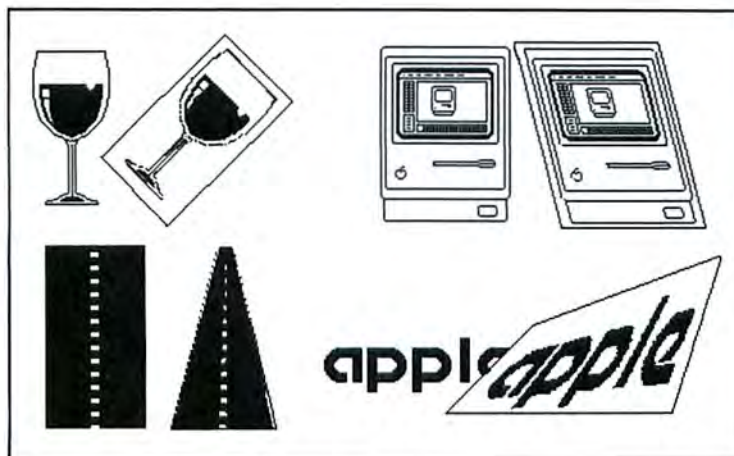
Before you can use ClickArt Effects, you have to install it on the *MacPaint* disk. The installation process is easy: copy the ClickArt Effects Installer program onto the *MacPaint* disk and click Install when the dialog box appears. Since ClickArt Effects is installed as part of *MacPaint*—adding about 10K to the program—you have to repeat the procedure for each copy of *MacPaint* you have. Or you can create one Effects-enhanced version of *MacPaint* and then replace the other copies of *MacPaint* with it. You can also use the Install program to remove ClickArt Effects from the disk, should you ever want to. ClickArt Effects worked with all the versions of *MacPaint* I tried—1.0, 1.3, 1.42, and 1.5.

Slanting, Distorting, and Rotating

Whenever you want to use Effects, you position the object you want to alter in the *MacPaint* drawing window and then choose ClickArt Effects from the Apple menu. Click one of the four Effects tools, draw a selection rectangle around the object you want to manipulate, and start tugging and pushing with the mouse. You can put Effects to work slanting, distorting, and rotating either text or graphics.

Rotations and Mutations

ClickArt Effects adds four tools to MacPaint: Rotate, Slant, Perspective, and Distort. To use a tool, you click it, surround an image with the selection rectangle, and manipulate the image with the mouse.



If you don't like the way Effects has altered the picture, you can always start over by selecting Undo from the Edit menu. Undo is the only *MacPaint* command available when you use ClickArt Effects. Once you surround an object with the selection rectangle, you can keep adjusting until the graphic is the right size and shape. Once you click another Effects tool or exit ClickArt Effects, the changes are permanent.

Depending on how you use ClickArt Effects, the results may look a little ragged around the edges. The program does quite a bit of computational magic to rotate and distort *MacPaint* images, but it isn't perfect. The altered pictures can contain pixels you need to remove or holes you need to fill. I call these out-of-place pixels the "jaggies."

The jaggies are easy to get rid of, although the process can be tedious. Use Fat-Bits for cleanup work. If your picture includes a pattern, erase the pattern before using Effects. Then manipulate the image as desired and refill the object.

After a bit of experimenting, I found that the jaggies were worse when I used the Distort tool and when I altered a pic-

(continues on page 141)

~~the mega retro~~
~~and interface~~
~~Rite Write~~

The Right WordTM and Mac-Spell RightTM

Make perfect spelling automatic.

You can easily eliminate all the woes associated with checking and correcting spelling with these *fast* spelling checkers from Assimilation.

These powerful application programs automatically do the work for you. Get the power of Webster's Dictionary & Roget's Thesaurus with the click of a button. The Right-Word is a double layered post processing application designed to expand with your system. A 40,000 word utility dictionary can be used with your disk drive or a full dictionary (200,000 plus) can be used with a hard drive system. The Right-Word delivers maximum efficiency with MicrosoftTM WordTM, Mac PublisherTM, MacWriteTM, and other text files such as JazzTM.

The new, upgraded release of Mac-Spell-Right features: Spell, Edit, Word count, Automatic word search and Dynamic interface *within* MacWrite. Take the worry out of writing. Mac-Spell-Right and The Right-Word make perfect spelling automatic.

List price \$89 each.



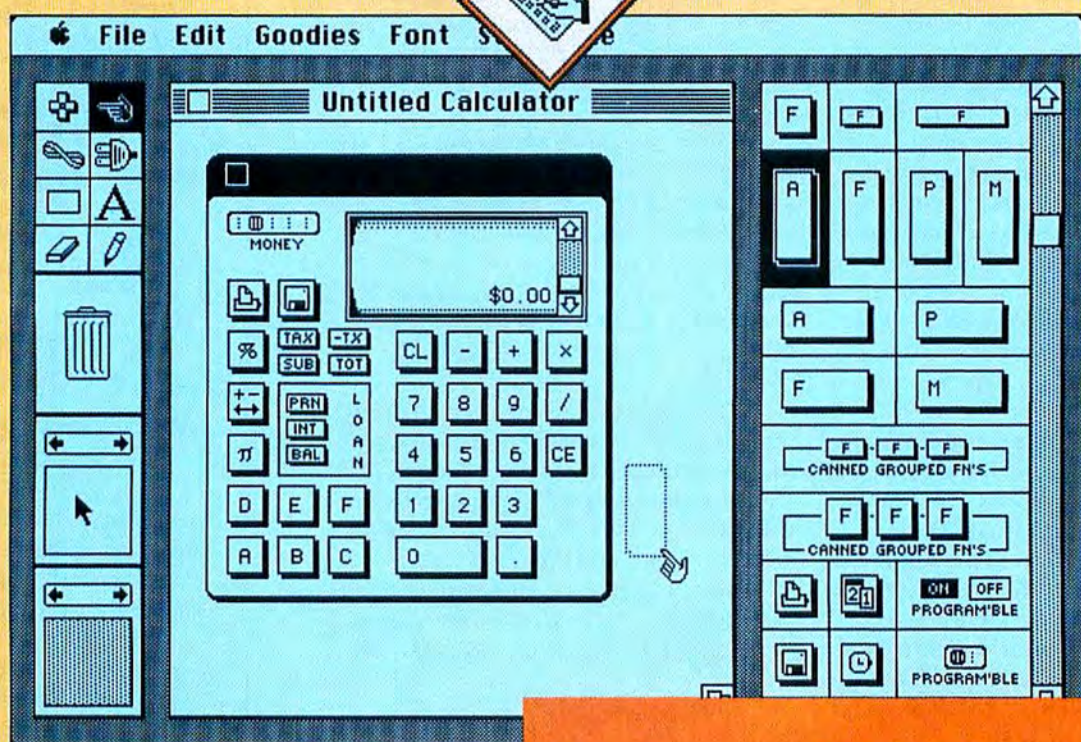
Assimilation

MacWrite is a trademark of Apple Computer, Inc.
Mac-Spell-Right and The Right-Word are trademarks of
Assimilation, Inc.
© Assimilation Inc. 1985

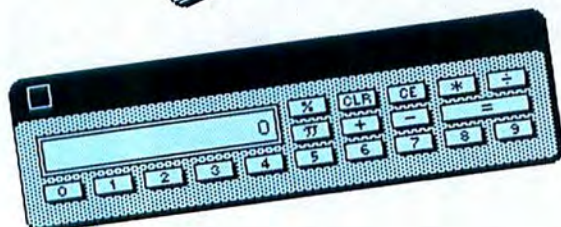
Circle 265 on reader service card
Macworld 139

THE DUBL-CLICK CALCULATOR™

CONSTRUCTION SET



Design and build your own Calculator desk accessories!



No programming required. Just drag predefined parts onto a calculator case, and select the functions! Need more room? No problem—just stretch the calculator case to any size you want. Test your new calculators while still under construction. Or alter them later after hours of installed use.

Included are a host of mathematical, scientific, business, date/time, and conversion function keys. Or define your own programmable keys. The CCS parts box is loaded with assorted keys, switches, LEDs, clock/calendar displays—Even a resizeable, scrolling paper tape that prints to the *ImageWriter*, clipboard, or a *MacWrite*™ text file. Onscreen calculator keys may be mapped to any alphanumeric keyboard or keypad key (as an alternative to using the mouse).

Customize your calculator's case using *MacPaint*™ style tools for drawing, painting, erasing, fatbitting, filling, stretching, and typing text. You can even design your own custom cursor to use with your calculator. Calculators may be saved as workfiles (allowing future changes), *Font/Desk Accessory Mover* files, or as self-installing calculator files. Several sample calculators are included.

The Dubl-Click Calculator Construction Set.

Suggested retail: \$99.



18201 GRESHAM STREET
NORTHRIDGE, CA 91325
(818) 349-2758

DUBL-CLICK SOFTWARE

(continued from page 139)

ture with more than one tool. For example, if you rotate, distort, rotate again, and then slant a picture, the result will most likely be an unrecognizable mess. The program's documentation doesn't hide this limitation. In fact, it includes several tips on how to get around the problem.

Effects' Limitations

Other than the jaggies, there are only minor limitations to ClickArt Effects. First, you can't use any of *MacPaint*'s commands or features when Effects is active. If you need to add a pattern, for instance, you have to exit Effects, use the appropriate *MacPaint* tool, and then reenter Effects. If you find yourself shuttling back and forth, record the maneuvers with Assimilation's Mac Tracks desk accessory, which records sequences of mouse movements and converts them to simple keyboard commands.

Another limitation is that, like *MacPaint*, ClickArt Effects can't work with an image larger than the *MacPaint* window. If you want to manipulate a large picture, you have to do it in chunks. The process can be tricky because it's hard to manipulate different pieces in exactly the same way.

ClickArt Effects adds a lot to the already powerful *MacPaint*, and it does so in an unobtrusive, easy-to-use way. Applied carefully, the tricks you perform with this desk accessory can save you time and energy and make *MacPaint* sessions more productive. In addition to spicing up *MacPaint* drawings, Effects should prove valuable to *VideoWorks* animators who paste *MacPaint* images into their productions. I think ClickArt Effects is a must for anyone who uses *MacPaint*—whether a casual doodler or a master artist. Just watch out for the jaggies.—Gordon McComb

ClickArt Effects
T/Maker Graphics
2115 Landings Dr.
Mountain View, CA 94043
415/962-0195
List price: \$49

(continues on page 144)

Time wasting.



Stop repeating yourself.

Now, with Mac-Tracks, you can save the time and hassle of typing the same things over and over again. Mac-Tracks records keystrokes, menu selections and mouse movements and plays them back with the touch of a single key! (In combination with the command key.)

That's right. No more repetitive typing of frequently used command sequences, words, sentences, paragraphs or even whole pages. Mac-Tracks can store up to 5,000 characters on a single key.

And that's not all. You can record graphics, too! Record your favorite graphs, charts and even complicated drawings. Watch them play back with lightning speed on your Macintosh™ screen.

Mac-Tracks, a desk accessory "macro," works with all your Macintosh software. Make working with your favorite applications—from MacWrite™ and MacPaint™ to Jazz™ and Excel™—faster and more efficient. You'll stop repeating yourself, and love how little it takes to accomplish a lot.

Mac-Tracks List Price \$29
An explosion of shortcuts.



Stop waiting.

Now, with Work-n-Print, you can work and print at the same time! No more waiting for the work you've just finished to print out before getting back to work on something else. Work-n-Print lets your Macintosh do both at once. You can get more work done. More quickly. More efficiently. With no interruption to break your concentration.

And that's not all. With Work-n-Print, you can print as many documents as you want, consecutively, without stopping in between. Just tell your Macintosh which files you want to print and you'll be able to print them when you want, and in the order that you want.

Use Work-n-Print. You'll stop twiddling your thumbs while you're waiting for your document to come off the printer. And you'll love how little it takes to accomplish a lot.

Work-n-Print List Price \$29
An essential desk accessory.



Assimilation.

1 (800) MAC-5464 • In California 1 (800) 421-0243

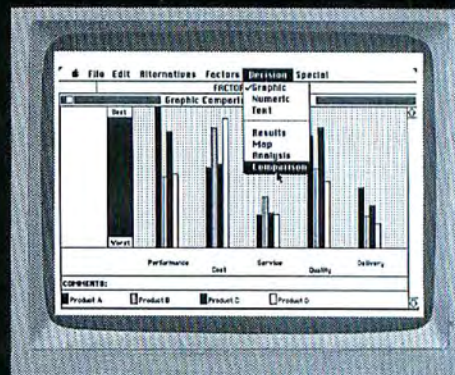
Macintosh, MacWrite and MacPaint are trademarks licensed to and of Apple Computer. Mac-Tracks and Work-n-Print are trademarks of Assimilation, Inc. © Assimilation, Inc. 1985

Circle 265 on reader service card

It's your decision. Prove it or lose it.



When you're choosing the best alternative, you input the evaluation factors and weight the importance of each.



After you've ranked the alternatives for each of the factors, DecisionMap presents the results.

Introducing DecisionMap. Software to help you make the best decision and back it up.

In the world of decision making, proving your decision is just as important as making it.

Enter DecisionMap. The definitive decision making software for Macintosh. The first product to take your experience and intuitive thinking and help you through the decision making process in a logical, graphic way.

Giving you a better decision, based on more than numbers. A better decision because it's based on your expertise. And giving you the hard backup you need to sell it.

Whether your decision is as basic as choosing a new copier, as important as hiring key personnel, or as difficult as locating new facilities, DecisionMap has the depth to handle it, simply and quickly.

You choose the criteria, weight each factor, and rank the alternatives. Then see at a glance how Alternative A stacks up against B, C, D, and E. And how the determining factors look, weighted against each other in the overall picture.

DecisionMap Trial Size Just \$10.

Now that it's here, you'll only have to make one more decision without it. And that is to call us toll free at 800-367-5600 and order a \$10 DecisionMap Trial Size Package.

SoftStyle, Inc.
7192 Kalanianaʻole Highway, Suite 205
Honolulu, Hawaii 96825
Phone (808) 396-6368
Toll free (800) 367-5600

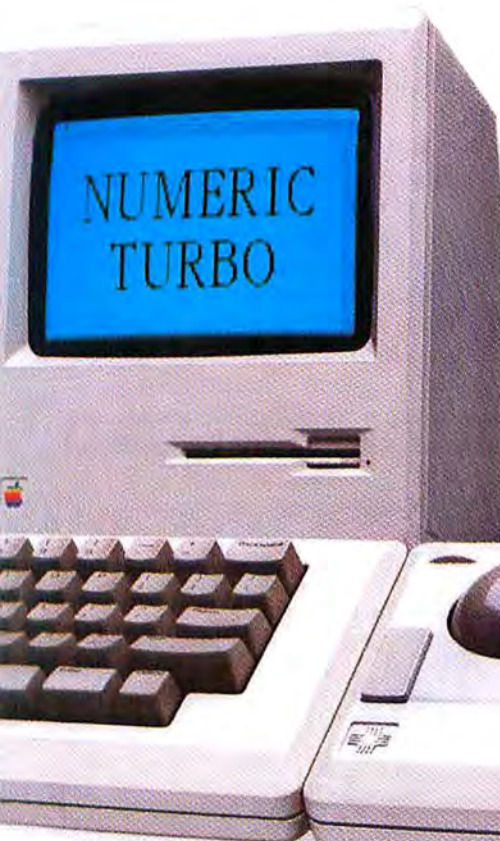
SoftStyle®

DecisionMap™

Suggested retail price \$145. Compatible with 128K, 512K, and XL Macintosh. SoftStyle is a registered trademark and DecisionMap is a trademark of SoftStyle, Inc. Macintosh is a trademark licensed to Apple Computer, Inc. ©1985 SoftStyle, Inc.

Circle 343 on reader service card

Faster figures.



Now you can cut your data input time in half! With the Numeric•Turbo™, a new high-speed input device combining the fast response of the Mac•Turbo•Touch™ with a full-scale numeric keypad. The Numeric•Turbo includes cursor keys and direct function keys, so you no longer have to use the Control or Shift key on the Mac keyboard for function entry. Figures flow directly from your fingertips to your Macintosh, making data entry with Numeric•Turbo 50% faster than with a conventional mouse and Apple keypad. Because there's nothing to get between you and your software.

Numeric•Turbo is ideal for use with Jazz™, Multiplan™, Ensemble™, Quartet™, Dollars and Sense™ and any other Macintosh software where you want your figures faster.



If you already own a Mac•Turbo•Touch* and want to upgrade to a Numeric•Turbo, just ask your Apple Dealer for details. We've provided Dealers with upgrade kits that are easy to install and priced to please. And, we think you'll be more than pleased with how little it takes to accomplish a lot with Numeric•Turbo.

List Price \$149

*The Mac•Turbo•Touch is another way to enhance your Macintosh's performance. This high speed input device is designed to respond as quickly as you do. The slightest touch of the gyroscopic ball positions the pointer quickly and accurately on the screen. The result is software that works even better, faster and more precisely.



Assimilation™

1 (800) MAC-5464 • In California 1 (800) 421-0243

Macintosh is a trademark licensed to Apple Computer. The Numeric•Turbo and Mac•Turbo•Touch are trademarks of Assimilation, Inc. © Assimilation, Inc. 1985.

Circle 265 on reader service card

(continued from page 141)

Beyond Space and Time

Have you ever noticed that there are only a few types of computer games? Despite the large number of game titles, each falls into a well-worn niche that might more accurately be called a rut. In arcade games you shoot down alien invaders or chase Sugar Pops through a maze with a smiley face. In adventure games you participate in a quest by searching for clues that eventually lead to your objective. Most other games are strategy games, such as chess, trivia, or blackjack, in which you test your wits against the computer's. When I recently discovered a game that seems to combine those genres, my interest in games was reawakened from what had become a deep slumber.

Ultima II, from Sierra On-Line, mixes the real-time action of an arcade game with the goading mystery of an adventure game. The object is to find and kill an evil enchantress. First you create a character who engages in exploits and eventually kills the enchantress. You choose the character's race, vocation, and attributes,

ending up with a character such as an elvish wizard who is more agile and strong than intelligent or charismatic. Once created, your character appears as a small figure on a map of one of Earth's continents, roughly sketched to show forests, mountains, and seas (see "Nine Million Years B.C."). You move from continent to continent by pointing and clicking. The mouse commands you give are recorded in a command journal. Unlike most adventure games, you use the mouse for all game interaction. The lack of typed commands means you don't get to use your imagination to find solutions because all commands are already prescribed in menus.

War and Peace

During extensive cross-country travels, your stand-in encounters antagonists such as thieves, demons, devils, and sea monsters. You fight them by repeatedly clicking on the enemy until conflict is resolved. If you are victorious, you acquire the spoils, which may include gold and magical items essential to the quest.

Although *Ultima II* is not designed to be an arcade game, it works like one in that

(continues on page 146)

New!
Version 2.0
With QuickLabels™

MacLabeler™



Organize your software library with custom labels

MacLabeler™ reads the document, application and folder names off your disk and prints them out on a wrap-around label • Selects names by clicking with the mouse • Puts the disk name on the skinny edge • Eight border patterns.

MacLabeler™ 2.0 works with pin-feed, die-cut QuickLabels™ • Easy registration • Removable adhesive • Non smearing • Designed for the Imagewriter • A complete disk-labeling system.

Version 2.0 now lets you type on the label • Edit names on the label • Shows date label was created • Shows disk space used and available • Prints multiple labels • Installs on a hard disk.

MacLabeler can also display, sort and print a complete directory • Shows folders and what's in all folders immediately • **Search disks fast!**

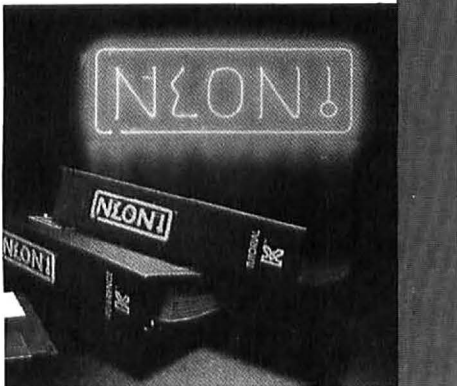
Price: \$49.95 includes 60 labels • Pack of 200 QuickLabels™, \$19 • Shipping \$3 for 1 item, \$1 for each additional • Iowa residents add 4% tax • 128, 512, or XL Macintosh & Imagewriter • Ideaform Inc., 908 E. Briggs, Fairfield, IA 52556 • Visa/MC OK • (515) 472-7256

Macintosh is a trademark licensed to Apple Computer Inc. MacLabeler and QuickLabels are trademarks of Ideaform Inc.

Circle 208 on reader service card

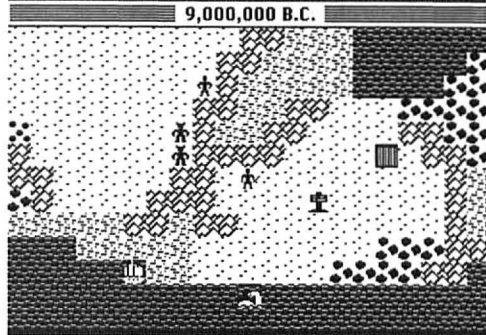
TURN ON THE FULL POWER OF YOUR MAC

Hidden within your Mac is the programming power, flexibility, and speed to match your imagination. **Neon™** is your key to this object-oriented world. Based on the same design philosophy as the Mac itself, **Neon** lets you create and command objects — program modules that you build to quickly test your ideas, tuning as you go for maximum speed and efficiency. With **Neon** and a 128K Mac, you're fully equipped for professional software development. **Neon** is available for \$155 including shipping/handling.



Nine Million Years B.C.

In this *Ultima II* game the player has taken the role of an elvish thief named Bathead, whose attributes and possessions are listed on the right third of the screen. The action unfolds in the upper-left window where Bathead, the small figure with the knife in the center of the scene, is separated from a few adversaries by a mountain range.

Game Commands	Intent	Armour	Weapons	Spells
9,000,000 B.C.				
				Worldly Possessions 0-Keys 3-Torches 2-Tools 1-Hand 5-Helms 1-Ankh 1-SkullKey 2-GreenGems 1-Button 2-Trillithiums 1-Coin 2-Tassels
				Bathead Male Elven Thief Str=25 Agl=45 Sta=25 Chr=5 Wis=5 Int=5 ----- Hitpoints ----- 1639 Provisions ----- 480 Experience ----- 47 Gold Pieces ----- 224
Command Journal				
CMD-The sign reads: Anos 9,000,000 B.C.				
CMD-West				
CMD-West				
CMD-NorthWest				
CMD-				

To order, call 1-800-34KRIYA now with Visa or MasterCard, or send your check to Kriya Systems, Inc., Six Export Drive, Sterling, VA 22170. In Virginia call (703) 430-8800



Neon is a registered trademark of Kriya Systems, Inc.

Circle 246 on reader service card

PRESENTING THE MOST INNOVATIVE SPACE AGE ACCESSORIES



**TAKE YOUR
PICK FROM
THE TWO MOST
PORTABLE 3 1/2"
MICRO DISK
CARRIERS**

**THE POCKET PAK — TOP
THE EASEL — BOTTOM**

Introducing the little one, **THE POCKET PAK**, the pocket version of the micro disk carrier. This useful product will carry up to six micro disk, and is small enough to fit into the inside of a coat, jacket or purse—perfect for the college student, college professor, and the executive on the move! **Priced at only \$13.95 retail!**

The world's most popular portable, disk handler **THE EASEL** solves your storage and transport needs—A "no-nonsense" approach to disk handling. Holds up to 20 diskettes. **THE EASEL** design allows you to read your disks at a glance. Both **THE EASEL** and **THE POCKET PAK** fold to a thickness of less than one inch, fitting easily into your computer bags, briefcase, or desk drawers. It's specially treated anti-static material protects your valuable disks. Best of all is the price! Retail \$19.95. Available in a beautiful variety of colors. Ask for these products at your favorite computer store, university and retailbook centers. Dealers inquiries welcome.

Call toll free for information USA **1-800-525-2226**, California **1-800-824-6097**, San Diego **(619) 456-0722**
23 Alderbrook Drive Don Mills, Ont. Canada M3B1E3 **416-485-6352**



**Innovative
Technologies**

Innovative Ideas For Innovative People

5731 La Jolla Blvd., La Jolla, CA 92037

Microsoft Word & Excel are trademarks of Microsoft. Filemaker & Macware are trademarks of Forethought. Omnis & Thinktank are trademarks of Blyth Corp. & Living Video Text, respectively. Pagemaker & Macworks are trademarks of Aldus Inc. & Apple Inc., respectively. Overview & Macaccountant are trademarks of Proview Development & Digital Etc., respectively. Mac Lion & Sony are trademarks of Computer Software Design & Sony, respectively and Datatype is a trademark of Verbatim.

COMING SOON—
The Library™, The Wiz™, The Pyramid™, The Mac Care Kit™
Ask for our special coupon promotion!
Circle 305 on reader service card

(continued from page 144)

"Ahh... Safe at Last!"

MacCopy



Version II

De-Protects and Allows You
To Load Multiple Programs on
to One Diskette

**Mounts Protected
Software to
Hard Disk**

For Macintosh™ Software



... MacCopy is here
to protect your expensive
Macintosh™ software, by allowing you to
make a back-up copy!

Due to popular demand now only **\$49.95**

**Tesseract
Software**



... nothing could be simpler!

Tesseract Distributing Inc.

P.O. Box 937
St. Catharines, Ontario, Canada L2R 6Z4
Call (416) 685-4854

Tesseract Software is a Division of Tesseract Distributing Inc.
MacCopy is a registered trademark of Tesseract Distributing Inc.
Macintosh is a trademark of Apple Computer, Inc.

you maneuver your character on screen to avoid or challenge adversaries. Once you engage in combat, however, the program takes over, requiring none of the hand-eye coordination usually associated with arcade games. I had to spend far too much time bludgeoning enemies to accumulate gold and charms, an activity that requires no skill. In the course of a game, you may click your way through thousands of battles, adding up to hours of boredom.

As you traverse the world's surface, you discover villages, towns, and castles. Keep an eye out for villages. They're easy to miss because they resemble forests. When you double-click one of those places, you enter a more detailed level of play. A layout appears with buildings, walls, and walkways. Depending on the location, you can buy weapons, armor, hitpoints, food, transportation, and spells. Villages, towns, and castles are populated mostly with peace-loving citizens who often have invaluable advice. You return to the world's surface by stepping outside the boundaries of a place. Here are a couple of tips: though guards are fearsome combatants, fighting them is often the key to getting locked treasure, and stealing is often more profitable than paying a fair price.

World Farer

The quality I like best about *Ultima II* is its multidimensionality. Not only do you explore cities and continents, but you can enter different eras by passing through the time doors that appear intermittently on screen. The game spans several time periods, from the prehistoric past to post-nuclear holocaust. In each period the geography of the continents is different. In some the differences are minor, such as the presence or absence of a land bridge at the Bering Straits. But proving that fiction is at least as strange as life, in one period the continents are merged into the super continent of Pangaea. You can also travel to different planets, once you discover how.

(continues on page 152)

Circle 217 on reader service card

Set of Knives

Mac the Knife

Yes indeed. A set of Mac the Knife Clip-Art and Font Volumes. One for most every application.

If you're the type that makes up a lot of forms or newsletters on the Macintosh, you've probably noticed that they could use some illustrations or something to make things look better. That's where Mac the Knife, Volume I: A Clip Art Treasury comes in. This best-selling program has literally hundreds of images to



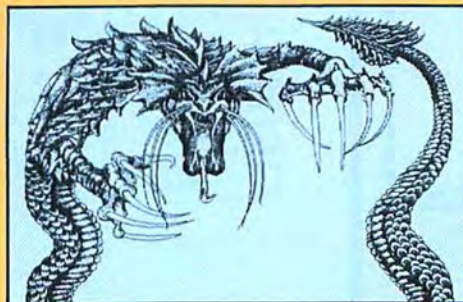
choose from – great for presentations, business graphics, ads, coupons, flyers or just plain fun.

If you do a lot of word processing on your Mac, you've probably noticed that although the Mac has a lot of typefaces, you really don't have the flexibility someone with expensive real typesetting equipment has. That's where Mac the Knife, Volume II: World-Class Fonts comes in. Two dozen fonts in all kinds of



styles and sizes – from decorative display typefaces to practical text fonts – come with concise documentation to get the fonts to where they can do you some good.

And finally, if you use your Mac in any one of a number of creative ways, you've probably noticed that if you can't draw, trying to bring life to your ideas in MacPaint can be frustrating. Yes, that's



where Mac the Knife, Volume III: Mac the Ripper slashes in. This specially-priced two-disk set has the kind of imagery you've always wanted to see. Large and small drawings and useful illustrations, including many for almost any conceivable occasion from Hanukkah to Christmas to birthdays to Chinese New Year are drawn in magnificent detail. Included are a number of specialty headline fonts so you can do BIG LETTERS. Once you see it, you know why we call it...

Mac the Ripper

From



Miles ahead of the pack.

Miles Computing, Inc.

21018 Osborne Street, Bldg. #5
Canoga Park, CA 91304 • (818) 341-1411
Telex 595863, MILES COMP
TWX 9103337664

Makers
of

WARRIOR
STRIKE
MISSION

MAC
ATTACK

Mac the Knife, Volume I: A Clip-Art Treasury, Mac the Knife, Volume II: World-Class Fonts, Mac the Knife, Volume III: Mac the Ripper, Miles Computing and the Miles Computing logo are registered trademarks of Miles Computing, Inc. MacPaint is a trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 37 on reader service card

NORTHEASTERN Software

88 Ryders Lane, Stratford, Connecticut 06497

1. Tap our unmatched selection and inventory of software/hardware for the Mac and Apple (as well as the IBM PC and Commodore Amiga).
2. School and corporate purchase orders are welcomed. CALL 1-800-874-1108.
3. Special/rush orders. If something you need is not listed, hard to find, or needed in a hurry, CALL 1-800-874-1108.
4. Order Status. CALL (203) 375-3860.
5. FREQUENT PURCHASER PROGRAM. Effective 10/14/85, any repeat customer who has placed an order after 9/4/85 will automatically receive \$1 off any order he or she places with us. Please mention to your operator that you are a repeat customer. We value your continuing business. Send in \$1,000 worth of invoices (representing previous purchases) and you will receive a coupon worth 1% off any future purchase. With \$5,000 worth of invoices, receive a coupon worth 5% off any future purchase.
6. SOFTWARE RENTAL LIBRARY. For 25% of our price, rent any program for two weeks. Apply your rental fee toward purchase if you choose.
7. No additional charges for credit card orders.
8. Technical experts on duty.
9. Convenient hours. 7 days/week: 9 AM-11 PM EST.
10. FREE AIR EXPRESS SHIPPING. Purchase \$150 or more of software and for no additional charge we will ship your products by air courier. Mention this to your operator as you place your order.
11. FURTHER DISCOUNTS BY MAIL. Circle the items in our ad you want, send the ad in with the coupon below and receive \$.50 off each item! Cut out a competitor's ad with a lower price and we will give you \$1 off his price (subject to the conditions below).

ORDER EARLY FOR THE HOLIDAYS. IF ORDERING AT THE LAST MINUTE, OUR AIR EXPRESS SERVICE CAN RUSH YOUR SOFTWARE/HARDWARE TO YOU. HAVE A HAPPY AND SAFE HOLIDAYS!

Send coupon and list of items desired to:
DISCOUNT BY MAIL DEPARTMENT
 Northeastern Software, 88 Ryders Lane, Stratford, CT 06497

To be eligible for the \$0.50 per item discount you must:

1. Fill out all items.
2. Send in our ad with the items you desire circled.

Name _____

Address _____
 (Include Company Name)

City _____ State _____ Zip _____

Phone No. at above address _____

Check form of payment
☐ Visa ☐ MasterCard ☐ C.O.D. ☐ Personal Check
☐ Certified Check ☐ Money Order

Card No. _____ Exp. Date _____

10/11 MACW

Personal and company checks allow 3 weeks to clear. For faster delivery, send cashier's check, certified check, or money order. Shipping—Software (\$3.00 minimum). Shipping—Hardware (please call 203-375-3860). C.O.D.—Add an additional \$2.00. Alaska, Hawaii, Canada, P.O. APO, and FPO \$5.00 minimum. Foreign orders—\$15.00 minimum and 15% of all orders over \$100. MasterCard and Visa (please include card no. and expiration date). Connecticut residents add 7.5% sales tax. Prices subject to change without notice. All returns must have a return authorization number. Call 203-375-3860 to obtain one before returning goods for replacement. Defective merchandise replaced with same item only. We do not guarantee compatibility. All sales are final.

*Comparable advertised price does not include typographical errors on the part of other vendors or prices that do not reflect higher shipping costs, credit card charges, or membership fees. The \$1 off offer only applies to items where Northeastern's price is not already the lowest. Final judgement remains with the manager on duty.

WE WILL BEAT (See Below)

SPECIALS

BORLAND's Sidekick for the Mac:	42.75
Back to Basics Accounting	87.25
Chipwits	26.00
Copy II Mac	19.00
Excel	4.50
Elephant Imagewriter Ribbon	223.75
Exel	74.00
Fantastic	24.00
Golf	26.00
Harrier Strike Mission	27.75
Jazz, UNDER	356.00
Make Millions	28.00
Megamax C Compiler	174.00
Microsoft Chart	72.00
Microsoft File	110.50
Microsoft Word	110.50
Sargon III	28.50
Sony 3 1/2 Diskettes	21.00
Thinktank 512K	101.00
ThunderScan (new version)	167.00
Ultima III	37.00
Wizardry	34.75

ACCOUNTING PROGRAMS

APPLIED LOGIC SYSTEMS	
BizMax Account Payable	279.00
BizMax Accounts Receivable	415.00
BizMax General Ledger	345.00
BizMax Inventory	279.00
BizMax Payroll (standalone)	105.00
BizMax Payroll (integrated)	379.00
ARABY/CONTINENTAL	
The Home Accountant	51.00
CHANG LABS	
Right to Riches (AP, AR, or GL)	101.75
DIGITAL, ETC.	
MacAccount	139.00
HABA SYSTEMS	
Haba Solutions	36.00
INTERMATRIX	
Chequebook	26.95
MONOGRAM	
Dollars & Sense	80.50
Forecast	39.75
OPEN SYSTEMS	
Open for Business I and II	CALL
PALANTIR	
Accounts Receivable	77.75
General Ledger	77.75
Inventory Control	77.75
PEACHTREE	
Accounts Payable	87.25
Accounts Receivable	87.25
General Ledger	87.25

SIERRA INFORMATION SYSTEMS

Accountant's Choice General Ledger	CALL
SIERRA-ON-LINE	
Mac One Write	136.00
SOFTSYNC	
Personal Accountant	50.75
STATE OF THE ART	
Electric Checkbook	43.95
SUPEREX	
Accounts Payable	178.00
Accounts Receivable	178.00
General Ledger	178.00
Inventory Manager	178.00
Inventory w/AR	269.00
SYMPOSIUM	
General Ledger	175.00
UNITED SOFTWARE	
In-House Accountant	109.00

ACCESSORIES

AMARAY	
Diskbank III	12.50
AMERICAN TOURISTER	
Mac Carrying Case	55.00
APPLE COMPUTER	
Mac Security Kit	38.00
MacNumeric Keypad	75.00
Macintosh Carry Case	75.00
ASSIMILATION PROCESS	
Mac Daisy Wheel Connection	CALL
Mac Epson Connection	CALL
Mac Numeric Turbo	CALL
Mac Turbo Touch	CALL
Mac Port-Adaptor	CALL
AST	
RamStack 512K, UNDER	605.00
RamStack 1 MB, UNDER	999.00
RamStack 1.5 MB, UNDER	1399.00
RamStack 2 MB, UNDER	1799.00
COMPUTER IDENTICS CORP.	
Mac-Bar Code	240.00
ScanStar-Mac	500.00
CREIGHTON DEVELOPMENT	
ProPrint Software Only	38.00
ProPrint with A/B Switch & 2 cables	138.75
ProPrint with Cable	52.00
CURTIS MANUFACTURING	
Diamond	27.95
Emerald	33.00
Ruby	49.00
Sapphire	43.00
DATALOGIC OPTIC ELECTRONICS	
Datapen	CALL
DAYNA COMMUNICATIONS	
MacCharla, UNDER	1325.00
DOS INDUSTRIES	
TOSH	155.00

ELEPHANT

Imagewriter Ribbon	4.50
ENVIRONMENTAL SOFTWARE (MacAttire)	
(In blue, burgundy, or gray)	
Mac Cover w/Keyboard Cover & Mouse	
Pocket	14.75
External Drive Cover	5.95
Keypad Cover	5.95
Imagewriter Cover (10" or 15")	13.00
ERGOTRON	
MacTilt	73.50
GYCO CORP.	
MacIntizer	CALL
HANZON	
Universal Interface for Epson	58.95
MOGLUND	
PaintMate	CALL
I/O DESIGN	
Imagewriter Carrying Case	CALL
Imagewriter Transfer Ribbons	9.00
Macintosh Carrying Case	CALL
MacIntizer	68.00
Mac Private Eye	CALL
INNOVATIVE CONCEPTS	
File n File II/Micro	7.95
File n File II/Micro	17.95
INNOVATIVE TECHNOLOGIES	
Compugob	51.00
Pocket Pack	8.75
The Easel	11.75
KALMAR DESIGNS	
Double MicroCabinet	21.00
MicroCabinet	12.00
KENSINGTON	
A/B Box	58.50
Control Center	59.95
Disk Case & Disk Pocket	18.50
Disk Drive Cleaning Kit	18.75
Disk Drive Cover	6.95
Dust Cover	8.00
Mouse Cleaning Kit w/pocket	14.90
Mouse Pocket	6.95
Polarizing Filter	30.50
Printer Cover (10" or 15")	8.95
Starter Pack	51.00
Surge Suppressor	32.00
Swivel	20.00
Tilt/Swivel	21.50
Universal Printer Stand	15.75
KETTE GROUP	
MacIntify A/B Switch	26.75
MacIntify ABCD Port Switch	45.00
MacIntify Joystick Converter	35.75
MacIntify Sound Digitizer	106.00
MacIntify Stereo Music System	59.75
KOALA	
KAT	131.75
MacVision	167.00

*TOP RATED IN A LEADING CONSUMER MAGAZINE.

CALL TOLL FREE 1-800-382-2242

Connecticut Orders Call (203) 375-3860

IN CANADA 1-800-843-0074

SHAPECHANGER SOFTWARE	
Webster's Revenge	CALL
SIERRA-OH-LINE	
Championship Boxing	24.00
Frogger	23.00
King's Quest II	34.00
Ultima II	34.00
SILICON BEACH SOFTWARE	
Airborne	20.00
Enchanted Scepters	27.00
SIR TECH	
Wizardry	34.75
SOFT LIFE	
MacSlots	28.75
SPECTRUM HOLOBYTE	
Gato	26.00
STAR SYSTEMS SOFTWARE	
12 Classic Adventures	36.00
TELARIUM	
Amazon or Dragon World	25.90
Fahrenheit 451	25.90
Rendezvous With Rama	25.90
UNICORN SOFTWARE	
Futura	26.50
Utopia	26.50
VIDEX	
FunPack	22.00
MacGambian & Cribbage	27.75
MacVegas	33.00

LANGUAGES

APPLE COMPUTER	
MacPortel	87.00
Macintosh 8000 Development System	137.00
CONSULAIR	
Mac-C w/Toolkit	277.00
Mac-C w/Toolkit & Floating Point	277.00
Smartthinker	65.00
CREATIVE SOLUTIONS	
MacForth Level I	76.00
MacForth Level II	126.00
EXPERTTELLIGENCE	
ExpertLisp	235.00
ExpertLogo	74.00
ExpertOPS	163.00
HIPPOTAMUS SOFTWARE	
Hippo-C Level I	78.00
Hippo-C Level II	218.00
Hippo-C Upgrade Kit	CALL
IQ SOFTWARE	
CPM for the Macintosh	290.00
KRYIA SYSTEMS INC.	
Wave	144.00
LOGIQUE	
C.P. Mac	CALL
MAINSTAY	
MacASM	87.00
MANX	
Aztec C68K-C	403.00
Aztec C68K-D	241.00
Aztec C68K-P	160.00
MEACOM	
Mac+ II	CALL

MEGAMAX INC.	
Megamax C Compiler	174.00
MICROMOTION	
Masterforth	88.00
MICROSOFT	
Fortran Compiler	179.00
Microsoft Basic 2.1	85.00
Microsoft Logo	73.75
SOFTCH MICROSYSTEMS	
Advanced Development Toolkit	97.00
Fortran 77 Development System	188.00
Fortran 77 Language Compiler	154.00
Mac Advantage UCSD Pascal	157.00
UCSD Pascal Development System	127.00
UCSD Pascal Language Compiler	91.00
SOFTWORKS LIMITED	
Softworks C Compiler	240.00
TERRAPIN	
MacLogo	CALL

MODEMS

ANCHOR AUTOMATION	
Mark XII	227.00
APPLE COMPUTER	
Apple Modem 1200 Baud w/acc. kit	349.00
Apple Modem 300 Baud w/acc. kit	157.00
COMPUABLE	
Mac to Smartmodem Cable	16.00
HAYES MICROCOMPUTING	
Smartmodem 1200	363.00
Smartmodem 2400	575.00
Smartmodem 300	128.00
Tamaset	268.00
KENSINGTON	
Portable Modem (300 Baud)	85.00
MICROCOM	
Mac Modem 1200 w/software	385.00
Mac Modem 2400 w/software	553.00
NOVATION	
Cat Comm Communications System	274.00
PRENTICE	
Popcom X-100 Modem (Mac)	253.00
PROMETHEUS	
MacPack	39.00
Promodem 1200 with Mac Software	328.00
U.S. ROBOTICS	
Courier 2400	387.00
Password 1200	194.00

GRAPHICS SOFTWARE

ALITSYS	
Fontastic	24.00
APPLE COMPUTER	
MacDraw	135.00
ANN ARBOR SOFTWARES	
Animation Tool Kit I	30.00
Animation Tool Kit I Advanced	CALL
Animation Tool Kit II	CALL
In Motion	CALL
AXLON	
Art Portfolio	34.00
Card Shoppe	34.00
BRODERBUND	
The Print Shop	CALL

CASADY COMPANY

Fluent Fonts

CHALLENGER SOFTWARE

Mac3D

COMPUSEVCO

(Templates are below)

Architectural Design

Drafting Toolkit

Electrical and Electronic

Flowcharts and Logic

Home Designer

Layout Planner

Mechanical Design

PC Board Design

Rules Isometric w/Views

Single Line Isometric Piping

Single Line Orthographic Piping

Two Line Orthographic Piping

DIABLO VALLEY DESIGN

MacGrid

DIVERSIONS INC.

Underware Color Pens

Underware Ribbon

Jumbo Color Pens

ENTERSET

Quickpoint

ESOT ENTERPRISES

Color Chart

FOUNDATIONS SYSTEMS

MacMeasure

HAYDEN SOFTWARE

Art Grabber w/Body Shop

Home Design

DaVinci Buildings or Interiors

DaVinci Landscapes

DaVinci Building Blocks

DaVinci Commercial Interiors

VideoWorks

INNOVATIVE DATA DESIGN

MacDraft

Paste-Ease

I/O DESIGNS

ColorPrint Ribbon

ColorPrint Software

ColorPrint Starter Kit w/3 ribbons

ColorPrint Transfer

KENSINGTON MICROWARE

Graphic Accents

Professional Type Fonts for Headlines

Professional Type Fonts for Text

LINGUIST'S SOFTWARE

Tech

MAGNUM SOFTWARE

MacPic Volume 1 or 2

The Slide Show Magician

MANHATTAN GRAPHICS

Ready Set Go

MATRIX ASSOCIATES

Images

MESA GRAPHICS

Plot II

MICRO: MAPS

MacAtlas U.S.A.

MacAtlas World

MICROSPOT

MacPlot

MILES COMPUTING

Mac The Knife Volume 1

Mac The Knife Volume 2

Mac The Knife Volume 3

SOUTH BAY SYSTEMS

Music Character Set

T/MAKER

Click Art Effects or Letters

Click Art Personal Graphics

Click Art Publications

VAMP INC.

MacCad

BACKUP AND UTILITY SOFTWARE

ASSIMILATION PROCESS

Guardian

Mac Memory Disk

Mac Tracks

Work N Print

BATTERIES INCLUDED

Mac Battery Pak

BAY SYSTEMS SOFTWARE

Hard Disk Util

CENTRAL POINT SOFTWARE

Copy II Mac

CRYSTAL CANYON

Mac Librarian

Mac Librarian

DREAMS OF THE PHOENIX

Quick and Dirty Utilities

HIPPOCAMPUS SOFTWARE

Hippo-Lock

IDEAFORM

MacLabeler

MAINSTAY

Disk Ranger

MacBooster

N'cryptor

Type How

MICROANALYST

MacZip

NEVINS MICROSYSTEMS

TurboCharger

PBI SOFTWARE

Icon Libraries

Icon Switcher

PCA SOFTWARE

MacBackup

PROTEKT IT SOFTWARE

Procopy

SMB DEVELOPMENT

MacMate

SILICON BEACH SOFTWARE

Accessory Pak I

SOFTSTYLE

Epstart

Jetstart

Lowstart

Tiltstart

SOUTHEASTERN SOFTWARE

P-1340

Mac Transfer

SYMMETRY CORP.

Quick Disk

TARDIS SOFTWARE

C Leaner

Fast Finder

Mac Programmer's Library

MacMake

Tools #1

Tools #2

TESSERACT SOFTWARE

MacCopy

PRINTERS

APPLE COMPUTER

Imagewriter II (NEW!), UNDER

Imagewriter, UNDER

Imagewriter Wide Carriage, UNDER

LaserWriter Printer, UNDER

BROTHER

HR-10

HR-15XL

HR-25

HR-35

C. ITOH

ProWriter 1550SR

ProWriter 8510BC-2

ProWriter 8510SR

EPSON

DX 10

DX 20

FX 85

FX 185

LQ 1500

LX 80

JUKI

5510S

6100S***

6200S

6300S

NEC

Color Pinwriter CP21

Color Pinwriter CR31

a.i.f. 360

NEC5110, UNDER

NEC8010, UNDER

Spinwriter Accessory Kit for Mac

OKIDATA

ML-1925 Mac/Lisa

ML-1935 Mac/Lisa

PANASONIC

KXP 1091***

KXP 1092

KXP 1093

KXP 3151 Letter Quality

STAR MICRONICS

SD-10

SD-15

SG-10

SG-15

SR-10

SR-15

TOSHIBA

P-1340

P-351, UNDER

23.00

34.75

34.75

144.75

34.75

34.75

38.75

38.75

38.75

38.75

38.75

38.75

38.75

38.75

38.75

38.75

38.75

38.75

(continued from page 146)

In addition to different time periods the game has dungeons and dark towers. You enter a dungeon or a tower by double clicking it. Once inside, you explore a three-dimensional maze, where you can combat with more strange creatures. You can spend hours finding your way around the dungeons and towers with little reward. In fact, though they add dimensions to *Ultima II*, the interior landscapes are superfluous to the successful completion of the game. Considering the complexity of the mazes and the amount of difficulty required to negotiate them, they should have been more completely integrated into the overall theme of the game. After being led down such a long dark alley with so little reward you may feel like condemning the game designers to live out the rest of eternity within their own creation.

The incidental nature of the towers and the dungeons and the long hours of mindless combat reduce *Ultima II* to a test of patience rather than a challenging puzzle. It's a shame because the way the game weaves worlds within worlds is so intriguing enough to incite the curiosity of most game adventurers. Despite those drawbacks and the game's ordinary graphics and sound, *Ultima II* is worth examining if you enjoy multidimensional games or if you're interested in game design. However, after you finish the game, you regret all the uninspiring time spent dispatching villains and accumulating wealth.—Adrian Mello

Ultima II
Sierra On-Line, Inc.
P.O. Box 485
Coarsegold, CA 93614
209/683-6858
List price: \$59.95

(continues on page 154)

"Up Your Mac" We Make It Easy

Upgrade to 512K - 1, 1.5 or even 2 Megabyte

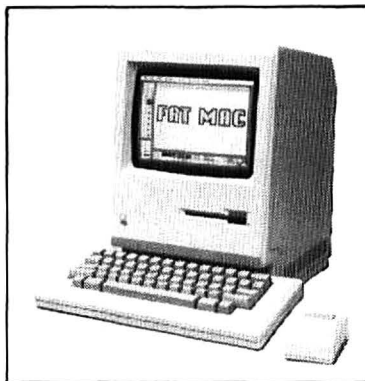
THE VOAD ADVANTAGES:

- No LOSS of use
- No Shipping Your Mac
- 120 day Warranty

We ship you a complete, reworked board! You replace your old board, with our FREE loaner tools, and return the old board, AFTER you make the swap.

New VOAD Products:
MacTilt & Video Mac

...and coming soon



"Clean Sweep"

Dealer Inquiries Welcome — Use Your Credit Card — We Ship C.O.D.

213-450-2929

VOAD SYSTEMS™

3304 Pico Blvd., Santa Monica, CA 90405

Circle 6 on reader service card

COPY II MAC™

• 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!*

• RUNS PROTECTED SOFTWARE FROM YOUR HARD DISK!

Copy II Mac makes using your hard disk as convenient as it should be. No longer will you have to use the 3½ inch disk with some of the most popular business software - *call for current list.*

• INCLUDES POWERFUL UTILITIES!

(Can even repair damaged disks!)

System Requirements: 128K Macintosh, 1 drive.
(2 drives, 512K and hard disks fully supported.)

GIVE YOUR MAC MORE MUSCLE - USE COPY II MAC!

**CENTRAL POINT
Software, Inc.**

9700 SW Capitol Hwy., #100
Portland, OR 97219

503/244-5782

M-F, 8-5:30, W. Coast Time



CHECK, COD WELCOME
(Prepayment Required)

\$39.95

plus \$3 s/h (\$8 overseas)

*We update Copy II Mac as often as needed to handle new protections; you as a registered owner may update at any time at a reduced price.

Backup utilities also available for the IBM, Apple and Commodore 64!

These products are provided for the purpose of enabling you to make archival copies only.

Circle 175 on reader service card

Williams & Macias myDiskLabeler™

Use **myDiskLabeler™** to design and print your own distinctive wraparound labels for 3½" disks. Choose from a variety of formats, fonts, text sizes and styles. Edit text or graphics in six different windows: disk name, disk edge, contents, owner, automatic date and icon. Design large or small icons with the icon editor. Save labels and icons for later use and easy updates. **myDiskLabeler™** also reads and sorts disk directories. You select the file names you want to print on the label.

Printing labels is quick and easy using **myDiskLabeler™**. Just position the printing head on the alignment guide and select label position(s) using graphic interface. Three print qualities are available.

myDiskLabeler™ comes with 54 die-cut labels on standard 8½ x 11" pin-feed forms, so there is no need to adjust the form size on your printer. "These are high quality non-smear labels". Refills are \$5.00 for a pack of 54, plus \$1.00 shipping. \$1.00 shipping.

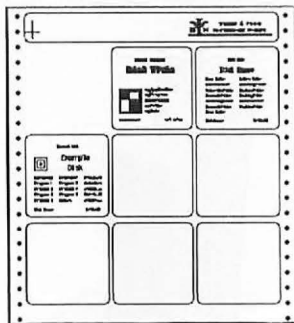
Macintosh™ (128, 512 or XL) and Imagewriter™ printer required.



**Williams & Macias
Microcomputer Products**

**Spokane International Airport Business Park
P.O. Box 19206, Spokane, Washington 99219**

Macintosh and Imagewriter are trademarks of Apple Computer, Inc.



Only \$39.95*
+ \$2.40 shipping

Call toll-free:

1-800-752-4400

M-F 8:00 a.m. to 5:00 p.m. PST
From Washington & Alaska call:
(509) 458-6312

**Visa and Mastercard
accepted**

*Washington State residents add
7.8% sales tax.

Circle 374 on reader service card

MacDraft™ The Ultimate Drawing Package!
\$165

Rotation, Zoom, Auto Dimensioning, Scale to Size, & More!
MAC 3D \$142 Finally, you can now Create and Manipulate advanced 3D shapes. Rotate to view from any angle.

Dinner at 8 \$49 Master Chef's Recipes from N.Y. to San Francisco. Hundreds of dishes. Print Shopping Lists, Preparation Time, and will automatically calculate for number of servings.

MacCOBOL \$479 The Power Business Language! High Level Compiler, Native Code Generator, ANSI '74 Stan., plus all Mac Windowing and Call Routines. From Micro Focus.

COLORPRINT \$39 Automates printing of up to eight colors on MacPaint Printouts. Now w/ Reverse for Transfers.

Speller Bee \$58 Talking Spell Package with Skill-builder.

KidTalk \$58 Increase children's ability to read, write and communicate ideas. Mac-speech added to creative writing.

External Speaker & Amplifier \$22 Now clearly hear all music and speech generated by your Mac.
Also: **Mac to Stereo, \$12.** Plug your Mac into your Stereo!

MacSwivel/MacTilt \$25 360° Swivel & 20° Tilt. Base matches the color and texture of the Mac. 1" high.
MacSwivel/Surge \$65 w/4 Surge/Suppr/Filter Outlets.

Icon Switcher \$17 from BPI. Create, Customize, or Switch any icon. Great to keep your directories clearer. Also available: 100 Ready to Use Create Icons! Business & Personal Icons - \$17.

Mac Disk Catalog \$37 Reads and compiles all your floppy or hard directories. Builds and sorts a database, prints disk labels, or 3 x 5 cards. Works with our MacLabels.

BE MAC-THANKFUL! PURCHASE ORDERS WELCOME NO SALES TAX!

CREATIVE COMPUTER

620 Elm Street Company
Albany, Oregon 97321

All Prices and Information correct to the best of our ability.
Prices or availability subject to change without notice.

Circle 313 on reader service card

Be MacColorful

Pin Fed - Blue, Pink, Green, Yellow, Gold
100 ea 300 ea 500 ea Rainbow Pac
\$5.00 \$13.00 \$16.00 \$18.00

Correspond Quality and Rag Available
Color Laser-Cut Continuous Feed Paper

Imagewriter Ribbons Black \$4.50 Color \$6.50
NEW! Transfer Ribbons \$8.50 for Iron-on Transfers
Discounts for 6 and up - Quality Full Length Ribbons
Red, Blue, Yellow, Green, Brown, Purple, Orange & Silver
Print Head Cleaner \$18 60 Cleanings, Easy to Use,
Extends Printer Life, A Must with Color or Heat Transfers.

MacLabels™ Continuous-fed removable or non-removable color disk labels. Also white pin-fed blank labels.
Red, Blue, Yellow, Green, Orange, Purple. 100 for only \$9.00.

MacJackets™ NEW! Colored Jackets for 3½" Disks—Anti-static, Tough as Nails Tyvek™ for safe transport, keeps out dust & dirt, spills, and curious fingers. Doesn't hide label. Red, Blue, Green, Orange, Purple.
25 for only \$4.95.

Diskettes - Sony — Box of 10 \$29

Diskette Desk Case \$18 Holds 36 Disks - Flip Top.
Leather Disk Carrier \$19 Holds ten disks with Style. 5x9.

Printer Stand \$17 Lifts and Slants Printer forward — with Anti-Static Pads and allows 500 sheets under printer.

Mouse Pads \$8 5 colors: Save your Furniture & Mouse
MouseMover \$17 90 ball-bearings make Mice Fly.
MouseClean Kit \$10 — Don't Damage your Mouse from Neglect

MacBag™ \$79 each Custom made to hold your Mac and all accessories! Navy - Black - Grey - Wine - Tan:
☐ Imagewriter™ Bags — Fully Padded, same colors \$52

Public Domain Software \$8.00 per disk
Circle Response Card Number or Call for Catalogs.

TOLL FREE: (800) 325-1529
HOT LINE: (503) 362-5147
Shipping, Insurance, Handling at Cost \$3.00 Minimum, except where noted

Macware Reviews

(continued from page 152)

One of the first educational games my children played was the Sesame Street collection for the Apple II. Those computer variations of word and logic games like hangman and towers of Hanoi stand out in my mind because my two girls played them over and over. Though the girls are older now, they showed the same kind of interest when I recently brought home a collection of eight arithmetic and word games recommended for children from 4 to 14 years old, **MacEdge II** from Think Educational Software.

Number Games

Count on Mac II teaches children to recognize the numerals 0 to 9 by having them count familiar objects, such as ice cream cones, and then choose a corresponding numeral. The game also provides practice in addition and subtraction, using objects instead of numerals.

In Table Race, players move a picture of a small car horizontally or vertically through a race track made up of squares. With each move, a simple addition or multiplication problem is displayed. A player must solve the problem to advance to the next square in the race track. The computer keeps time, and the best time wins. A wrong answer returns the car to the previous square, which costs time and creates an incentive to keep trying for correct answers.

The other three arithmetic games, Give 'n' Take II, Good Times II, and Dividing Line II, introduce addition, subtraction, multiplication, and long division. Each game covers different arithmetic operations, although the programs look alike. The three games are basically automated drills that can take the place of flash cards and teach children basic arithmetic skills.

(continues on page 156)

(continued from page 152)

Williams & Macias myDiskLabeler™

Use **myDiskLabeler™** to design and print your own distinctive wraparound labels for 3 1/2" disks. Choose from a variety of formats, fonts, text sizes and styles. Edit text or graphics in six different windows: disk name, disk edge, contents, owner, automatic date and icon. Design large or small icons with the icon editor. Save labels and icons for later use and easy updates. **myDiskLabeler™** also reads and sorts disk directories. You select the file names you want to print on the label.

Printing labels is quick and easy using **myDiskLabeler™**. Just position the printing head on the alignment guide and select label position(s) using graphic interface. Three print qualities are available.

myDiskLabeler™ comes with 54 die-cut labels on standard 8 1/2 x 11" pin-feed forms, so there is no need to adjust the form size on your printer. "These are high quality non-smear labels". Refills are \$5.00 for a pack of 54, plus \$1.00 shipping. \$1.00 shipping.

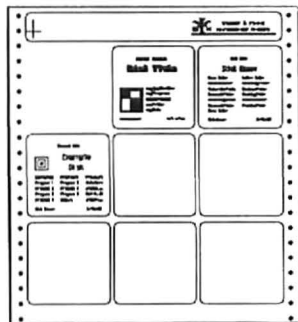
Macintosh™ (128, 512 or XL) and Imagewriter™ printer required.



Williams & Macias
Microcomputer Products

Spokane International Airport Business Park
P.O. Box 19206, Spokane, Washington 99219

Macintosh and Imagewriter are trademarks of Apple Computer, Inc.



Only \$39.95*
+ \$2.40 shipping

Call toll-free:

1-800-752-4400

M-F 8:00 a.m. to 5:00 p.m. PST
From Washington & Alaska call:
(509) 458-6312

Visa and Mastercard
accepted

*Washington State residents add
7.8% sales tax.

One of the first educational games my children played was the Sesame Street collection for the Apple II. Those computer variations of word and logic games like hangman and towers of Hanoi stand out in my mind because my two girls played them over and over. Though the girls are older now, they showed the same kind of interest when I recently brought home a collection of eight arithmetic and word games recommended for children from 4 to 14 years old, **MacEdge II** from Think Educational Software.

Number Games

Count on Mac II teaches children to recognize the numerals 0 to 9 by having them count familiar objects, such as ice cream cones, and then choose a corresponding numeral. The game also provides practice in addition and subtraction, using objects instead of numerals.

In Table Race, players move a picture of a small car horizontally or vertically through a race track made up of squares. With each move, a simple addition or multiplication problem is displayed. A player must solve the problem to advance to the next square in the race track. The computer keeps time, and the best time wins. A wrong answer returns the car to the previous square, which costs time and creates an incentive to keep trying for correct answers.

The other three arithmetic games, Give 'n' Take II, Good Times II, and Dividing Line II, introduce addition, subtraction, multiplication, and long division. Each game covers different arithmetic operations, although the programs look alike. The three games are basically automated drills that can take the place of flash cards and teach children basic arithmetic skills.

(continues on page 156)

Circle 374 on reader service card

MacDraft™ The Ultimate Drawing Package!
\$165
Rotation, Zoom, Auto Dimensioning, Scale to Size, & More!
MAC 3D \$142 Finally, you can now Create and Manipulate advanced 3D shapes. Rotate to view from any angle.

Dinner at 8 \$49 Master Chef's Recipes from N.Y. to San Francisco. Hundreds of dishes. Print Shopping Lists, Preparation Time, and will automatically calculate for number of servings.

MacCOBOL \$479 The Power Business Language! High Level Compiler, Native Code Generator, ANSI '74 Stan., plus all Mac Windowing and Call Routines. From Micro Focus.

COLORPRINT \$39 Automates printing of up to eight colors on MacPaint Printouts. Now w/ Reverse for Transfers.

Speller Bee \$58 Talking Spell Package with Skill-builder.

KidTalk \$58 Increase children's ability to read, write and communicate ideas. Mac-speech added to creative writing.

External Speaker & Amplifier \$22 Now clearly hear all music and speech generated by your Mac.
Also: **Mac to Stereo, \$12.** Plug your Mac into your Stereo!

MacSwivel/MacTilt \$25 360° Swivel & 20° Tilt. Base matches the color and texture of the Mac. 1" high.

MacSwivel/Surge \$65 w/4 Surge/Suppr/Filter Outlets.

Icon Switcher \$17 from BPI. Create, Customize, or Switch any icon. Great to keep your directories clearer. Also available: 100 Ready to Use Create Icons! Business & Personal Icons - \$17.

Mac Disk Catalog \$37 Reads and compiles all your floppy or hard directories. Builds and sorts a database, prints disk labels, or 3x5 cards. Works with our MacLabels.

Be MacColorful

Pin Fed - Blue, Pink, Green, Yellow, Gold
100 ea 300 ea 500 ea Rainbow Pac
\$5.99 \$13.99 \$16.99 \$18.99
Correspond Quality and Rag Available

Color Laser-Cut Continuous Feed Paper

Imagewriter Ribbons Black \$4.50 Color \$6.50
NEW! Transfer Ribbons \$8.50 for Iron-on Transfers
Discounts for 6 and up - Quality Full Length Ribbons
Red, Blue, Yellow, Green, Brown, Purple, Orange & Silver
Print Head Cleaner \$18 60 Cleanings, Easy to Use,
Extends Printer Life, A Must with Color or Heat Transfers.

MacLabels™ Continuous-fed removable or non-removable color disk labels. Also white pin-fed blank labels.
Red, Blue, Yellow, Green, Orange, Purple. 100 for only \$9.00.

MacJackets™ NEW! Colored Jackets for 3 1/2" Disks—Anti-static, Tough as Nails Tyvek™ for safe transport, keeps out dust & dirt, spills, and curious fingers. Doesn't hide label. Red, Blue, Green, Orange, Purple.
25 for only \$4.95.

Diskettes - Sony — Box of 10 \$29

Diskette Desk Case \$18 Holds 36 Disks - Flip Top.

Leather Disk Carrier \$19 Holds ten disks with Style. 5x9.

Printer Stand \$17 Lifts and Slants Printer forward — with Anti-Static Pads and allows 500 sheets under printer.

Mouse Pads \$8 5 colors: Save your Furniture & Mouse

MouseMover \$17 90 ball-bearings make Mice Fly.

MouseClean Kit \$10 — Don't Damage your Mouse from Neglect

MacBag™ \$79 each Custom made to hold your Mac and all accessories! Navy - Black - Grey - Wine - Tan:
☐ Imagewriter™ Bags — Fully Padded, same colors \$52

Public Domain Software \$8.00 per disk
Circle Response Card Number or Call for Catalogs.

TOLL FREE: (800) 325-1529
HOT LINE: (503) 362-5147
Shipping, Insurance, Handling at Cost \$3.99 Minimum, except where noted

BE MAC-THANKFUL! PURCHASE ORDERS WELCOME NO SALES TAX!

The CREATIVE COMPUTER
620 Elm Street Company
Albany, Oregon 97321

All Prices and Information correct to the best of our ability.
Prices or availability subject to change without notice.

Circle 313 on reader service card

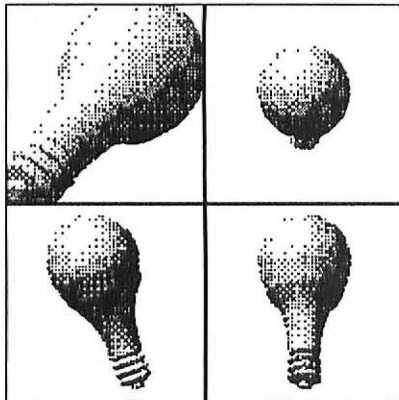
INTRODUCING EASY3D™

(All you need is \$99 and a MAC).

Use your Macintosh™ to build your own skyscraper, design a 3D logo or recreate the solar system. With Easy3D,™ you can do it all for less than the price of a down payment on most other professional 3D programs. And that's only the beginning...

You get what you envisioned, not a tangle of lines.

Skip the wire frames. Easy3D lets you create and manipulate *solid* three dimensional objects at will. Call up a basic 3D shape or use the lathe or jigsaw to turn a 2D outline into your own 3D design. Objects can be



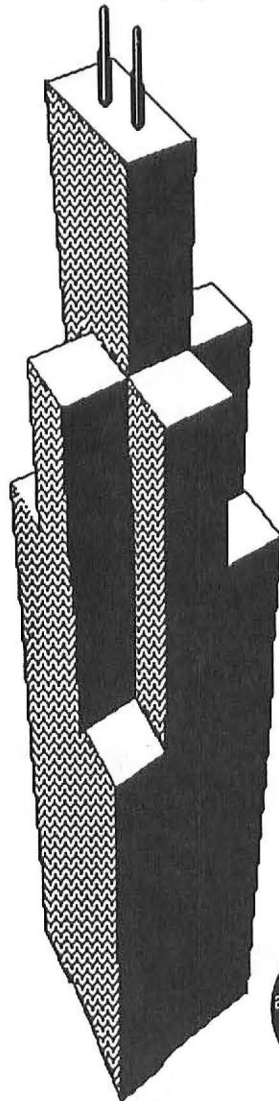
Easy3D will simultaneously display your design from four different views as you create it. (Picture shown here and at right reproduced from actual printouts.)

moved, rotated, distorted, glued together, cut apart, compressed, stretched and dramatically lit (in 16 shades) from any angle.

Move the mouse and turn a teacup into a rowboat.

And if you don't like the look of it, change it back. Fill it with sugar cubes. Add wheels. Easy3D renders shaded objects at a rate of up to 12,000 polygons a minute. So if you blink, you may not even see the stopwatch on the way to your next design.

Macintosh is a trademark licensed to Apple Computer, Inc. MacDraw, MacPaint, LaserWriter and ImageWriter are registered trademarks of Apple Computer, Inc. PageMaker and VideoWorks are registered trademarks of Aldus, Inc. and Hayden Software, Inc., respectively. Easy3D is a trademark of Enabling Technologies, Inc.



When you're satisfied with your creation pop it into MacDraw,™ MacPaint,™ VideoWorks™ or PageMaker.™ Or if you can't wait to show it off, produce a hard copy on your ImageWriter™ or LaserWriter.™ Once you see your first three-dimensional design, you won't believe that Easy3D only costs a mere \$99. But until then...

You get a 15-day Money-back Guarantee.

Try Easy3D without risking one 3D penny when you order direct. If you aren't overwhelmed you'll get a full refund...which means you have nothing to lose by ordering now except a lot of unnecessary reading. Honest. If this ad listed even *half* the possibilities of Easy3D, there wouldn't be any room left for the magazine.

Advanced User Interface Designs
From Enabling Technologies, Inc.

Call toll-free to order
1-800-621-1203

(In Illinois call 1-800-942-2835)...

Distributed by Ashton-Tate
Publishing Group

Look for us
at the Ashton-Tate
booth at
COMDEX

See your dealer or use the coupon below.

YES, send me Easy3D,™ the complete documentation and a 15 day money back guarantee. For only \$99 that's a great deal (even if I *do* have to tack on \$5 for shipping and handling). But please hurry.

Name _____

Address _____

City/State/Zip _____

☐ Check ☐ MasterCard ☐ Visa Amount \$ _____*

Account # Thru _____

Signature _____ Date _____

Mail to: Enabling Technologies, Inc.
125 Armstrong Road
Des Plaines, Illinois 60018
1-312-427-0408

*Please add \$5 for shipping and handling.

MW125

(continued from page 146)

“Up Your Mac” We Make It Easy

Upgrade to 512K - 1, 1.5 or even 2 Megabyte

THE VOAD ADVANTAGES:

- No LOSS of use
- No Shipping Your Mac
- 120 day Warranty

We ship you a complete, reworked board! You replace your old board, with our FREE loaner tools, and return the old board, AFTER you make the swap.

New VOAD Products:
MacTilt & Video Mac

...and coming soon



“Clean Sweep”

Dealer Inquiries Welcome — Use Your Credit Card — We Ship C.O.D.

213-450-2929

VOAD SYSTEMS™

3304 Pico Blvd., Santa Monica, CA 90405

Circle 6 on reader service card

COPY II MAC™

• 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!*

• RUNS PROTECTED SOFTWARE FROM YOUR HARD DISK!

Copy II Mac makes using your hard disk as convenient as it should be. No longer will you have to use the 3½ inch disk with some of the most popular business software - *call for current list.*

• INCLUDES POWERFUL UTILITIES!

(Can even repair damaged disks!)

System Requirements: 128K Macintosh, 1 drive.
(2 drives, 512K and hard disks fully supported.)

GIVE YOUR MAC MORE MUSCLE - USE COPY II MAC!

**CENTRAL POINT
Software, Inc.**

9700 SW Capitol Hwy., #100
Portland, OR 97219

503/244-5782

M-F, 8-5:30, W. Coast Time



CHECK, COD WELCOME
(Prepayment Required)

\$39.95

plus \$3 s/h (\$8 overseas)

*We update Copy II Mac as often as needed to handle new protections; you as a registered owner may update at any time at a reduced price.

Backup utilities also available for the IBM, Apple and Commodore 64!

These products are provided for the purpose of enabling you to make archival copies only

Circle 175 on reader service card

In addition to different time periods, the game has dungeons and dark towers. You enter a dungeon or a tower by double-clicking it. Once inside, you explore a three-dimensional maze, where you do combat with more strange creatures. You can spend hours finding your way around the dungeons and towers with little reward. In fact, though they add dimension to *Ultima II*, the interior landscapes are superfluous to the successful completion of the game. Considering the complexity of the mazes and the amount of difficulty required to negotiate them, they should be more completely integrated into the outcome of the game. After being led down such a long dark alley with so little reward, you may feel like condemning the game designers to live out the rest of eternity within their own creation.

The incidental nature of the towers and the dungeons and the long hours in mindless combat reduce *Ultima II* to a test of patience rather than a challenging puzzle. It's a shame because the way the game weaves worlds within worlds is intriguing enough to incite the curiosity of most game adventurers. Despite those drawbacks and the game's ordinary graphics and sound, *Ultima II* is worth examining if you enjoy multidimensional games or if you're interested in game design. However, after you finish the game, you may regret all the uninspiring time spent dispatching villains and accumulating wealth. —Adrian Mello

Ultima II
Sierra On-Line, Inc.
P.O. Box 485
Coarsegold, CA 93614
209/683-6858
List price: \$59.95

(continues on page 154)

THE MOST EXTENSIVE SELECTION AT THE

ANY COMPARABLE ADVERTISED PRICE

KRAFT	
Quick Stick	44.00
MACMEMORY ELECTRONICS	
The Mac	CALL
MAGNUM	
The Mouse Mover	CALL
MASS TECH DEVELOPMENT LABS	
Fast Mac Upgrade	CALL
MICAH	
MacMegabytes 128K to 1MB RAM Expan.	649.00
MacMegabytes 512K to 1MB RAM Expan.	429.00
ROM Enhancement	69.00
MICRON TECHNOLOGY	
Micron Eye	309.00
MICRORAIN	
MacStrain	79.00
MICROSOFT	
MacEnhancer	152.00
Power Back-Up	CALL
MOUSE SYSTEMS	
A+ Optical Mouse	58.00
MOUSETRAK	
Mousetrak Pad	7.75
MPH COMPUTER PRODUCTS	
Mac-B-Cool	CALL
NEW IMAGE TECHNOLOGY	
Magic Digitizer	248.95
OBERON INTERNATIONAL	
Omni-Reader	431.00
OPTIMUM	
MacNote	61.00
PERFECT DATA	
Head Cleaning Kit	11.00
PERSONIC CORP.	
View Control System	138.00
SERIDYNE SYSTEMS	
Micra Imager	340.00
SMITH AND BELLOWES	
Mahogany Disk Case	17.75
SOUTH BAY SYSTEMS	
Mouse Pad	12.00
SUMMAGRAPHICS	
Mac Tablet, UNDER	399.00
SUPEREX	
Macspook	17.95
SYSTEM CONTROL	
MacGrid	55.95
THUNDERWARE	
ThunderScan (new version)	167.00
TPS ELECTRONICS	
TPS PC-380 Bar Code Reader	CALL
TRI-DATA	
Netway	CALL
VIDEO 7	
Mouse Stick	38.75

BOOKS

Inside MacPaint	13.00
Lotus Guide to Jazz	15.00
MacWork Multiplan	13.00
Microsoft Multiplan	12.75
Microsoft Macintosh	13.00
Presentation Graphics on Apple Mac	13.00
The Apple Macintosh Book	13.00
The Book of Macintosh Software	17.00
The Printed Word	13.00
BUSINESS SOFTWARE	
ADVANCED LOGIC SYSTEMS	
Mighty Mac	35.00
AEGIS DEVELOPMENT	
The Housekeeper	44.75
Zap! Invoice	60.75
ALDUS	
Pagemaker, UNDER	369.00
ALLEGRO SOFTWARE	
Business Analysis Multiplan Templates	29.00
Personal Fin. Multiplan Templates	29.00
APPLE COMPUTER	
MacProject	132.00
APPLIED LOGIC SYSTEMS	
MacMathPac	165.00
APPROPOS	
Financial Planning	53.75
Investment Planning	53.75
ARTSCI	
Magic File	57.00
Softforms	24.00
ASSIMILATION PROCESS	
Business Essentials	CALL
MacSpell Right	CALL
The Right Word	CALL
BLYTH SOFTWARE	
Omni 2	CALL
Omni 3	243.00
BOSTON SOFTWARE PUBLISHERS	
MacIndex	CALL
The MacPublisher	73.00
The MacPublisher II	CALL
BRAINPOWER	
Statview	97.75
BROCK SOFTWARE	
Keystroke Database	74.00
COMPUTER SOFTWARE DESIGN	
MacJunk	185.00
CREIGHTON DEVELOPMENT	
MacHome	23.00
MacOffice	23.00
MacSpell+	51.00

DATAFOOD

Drawforms	34.50
MacForms	44.00
DATAPAK SOFTWARE	
My Office	110.00
DESKTOP SOFTWARE	
1st Base	97.00
1st Base and 1st Merge	127.00
1st Merge	47.00
DOW JONES	
Market Manager Plus	107.75
Spreadsheet Link	55.75
DREAMS OF THE PHOENIX	
Day Keeper Calendar	27.95
ELECTRONIC ARTS	
Financial Cookbook	32.50
EMERGING TECHNOLOGIES	
MacOffice	78.00
ENTERSET	
Outward	34.75
EXECUCOM SYSTEMS CORP.	
MindSight	CALL
FORETHOUGHT	
FactFinder	84.00
Filemaker	107.00
HABA SYSTEMS	
Habodex	57.00
Quartet	114.00
HARRIS TECHNICAL SYSTEMS	
Profit Projections/Breakdown Analysis	46.75
HAYDEN SOFTWARE	
Ensemble	139.00
Hayden Chart	58.00
Hayden Speller	44.75
I Know It's Here Somewhere	34.00
MacBase	CALL
HAYES MICROCOMPUTER	
Please	122.00
HEYDEN AND SON	
Statworks	86.00
HUMAN EDGE SOFTWARE	
Communication Edge	97.00
Management Edge	127.00
Mind Prober	26.00
Negotiation Edge	147.00
Sales Desk	127.00
LAYERED	
Front Desk	76.00
LAZER SOFTWARE	
Lazerbase	CALL
LIGHTYEAR, INC.	
Lightyear	CALL
LIVING VIDEOTEXT	
Think Tank 128K	73.00
Think Tank 512K	101.00
LOTUS	
Jazz, UNDER	356.00

MAIN STREET SOFTWARE

Main Street Filer	51.00
Main Street Writer	51.00
MEGAHAUS	
MegaFiler	98.75
MegaForm	147.00
MegaMerge	63.75
MICROLAB	
Tax Manager	105.00
MICROSOFT	
Chart	72.00
Excel	223.75
File	110.50
Mac Business Pack	339.00
Multiplan	105.95
Word	110.50
MILES COMPUTING	
Miles Ahead Stock Charter	CALL
MODEL OFFICE COMPANY	
Document Modeler	CALL
The Date Calculator	CALL
ODESTA	
Helix	215.00
ODS, Inc.	
Consultant	119.00
PALADIN	
Crunch	165.00
PROVUE DEVELOPMENT	
OverVIEW	146.00
REAL DATA, INC.	
Commercial/Industrial Applications	59.00
Financial Analysis	59.00
On Schedule	112.00
Real Estate Investment Analysis	87.00
Residential Real Estate	59.00
Tax Shelter Syndication Analysis	170.00
RESTON	
Construction Estimator	41.00
RIO GRANDE SOFTWARE	
RGS File and Report	CALL
RGS File Plus	CALL
Softmaker II (128K)	CALL
Softmaker II (512K)	CALL
Legal Billing	CALL
SMITH MICRO SOFTWARE	
Market Link	52.00
Stock Portfolio System	105.00
SOFTDESIGN	
TimeBase	86.00
SOFTCH MICROSYSTEMS	
Mail Manager	67.75
Mail Merge	68.00
SOFTIDEA	
Zipfinder	87.00
SOFTSTYLE	
Decision Map	86.50
SOFTVIEW	
Macintosh '85	54.00

SOFTWARE PUBLISHING

PFS File/Report Combo	99.00
SOFTWARE TOOLS	
Engineering Tool Kit	74.00
STATSOFT	
Statfast	68.00
Datafast	38.75
STONEWARE	
DB Master Mac	97.75
SUPEREX	
Electronic Engineering	58.00
Esti Mac	58.00
Home Executive	54.00
Mac Choice	29.00
Mac Fee	178.00
Mac Finance	57.00
Mac Notes	53.00
TELOS	
Filevision	97.00
WARNER	
Desk Organizer	56.75

COMMUNICATIONS SOFTWARE

AEGIS DEVELOPMENT	
Mac Mail Telecom	CALL
APPLE COMPUTER	
MacTerminal	85.00
CLEO SOFTWARE	
CLEO	675.00
COMPUSERVE	
Compuserve Starter Kit	14.00
DATAVIZ	
MacLink with cable	86.75
DESKTOP SOFTWARE	
1st Post	47.00
DILITHIUM PRESS	
PC to Mac and Back	75.75
DOW JONES	
Straight Talk	44.00
DREAMS OF THE PHOENIX	
Mouse Exchange BBS	27.75
Mouse Exchange Terminal	27.75
HABA SYSTEMS	
HabaCom	41.50
HAYES MICROCOMPUTER	
Smartcom II	85.00
KAZ BUSINESS SYSTEMS	
MacDasher	CALL
MAINSTAY	
Telescope	78.00
MYCROFT LABS	
Mite	86.00
PERIPHERALS, SUPPLIES & COMPUTERS	
Versiform	CALL
SOFTWARE MASTERS	
In Touch	96.00

SAVE MACINTOSH THE BEST PRICES!!!

PRICE BY \$1

SOURCE TELECOMPUTING
Source On-Line Information Network... 30.00
SOUTHEASTERN SOFTWARE
Mac Transfer... 30.95
VIDEX
Mail Center for Two... 170.00
Mail Center for Six... 284.00

DESK ACCESSORY SOFTWARE

BORLAND
Sidekick... 42.75
DUBL-CLICK SOFTWARE
Calculator Construction Set... 75.00
DREAMS OF THE PHOENIX
Twelve-C... 27.75
ENTERSET
QuickSet... 54.00
HABA SYSTEMS
Haba Window Dialer... 25.00
HARVARD ASSOCIATES
Desk Topper... 28.00
MACADAM PUBLISHING
Windowware Calendar... 31.75
Windowware Phone Book... 31.75
Windowware Phonebook and Calendar... 52.75
MEGAHAUS
MegaDesk... 58.75
T/MAKER
ClickOn Worksheet... 45.00
VIDEX
MacCalendar... 49.75

DISK DRIVES

APPLE COMPUTER
Macintosh External Drive... 354.00
Macintosh Hard Disk 20MB, UNDER... 1099.00
CORVUS
Mac Network Interface Card... 146.00
Omni Talk... 295.00
5.5 MB Mac OmniDrive, UNDER... 979.00
11.1 MB Mac OmniDrive, UNDER... 1379.00
45.1 MB Mac OmniDrive, UNDER... 3399.00
DATASPACE
DS Book Disk Drive... CALL
GENERAL COMPUTING
10 MB Hyperdrive, UNDER... 1269.00
20 MB Hyperdrive, UNDER... 1565.00
ToolKit... 173.00
HABA SYSTEMS
HabaDisk 400KB w/softbundle... 279.00
HabaDisk 800KB w/softbundle... CALL
INFOSPHERE
XL/Serve... 145.00
IOmega
5 MB cartridge... 38.00

Bernoulli Box, UNDER... 1299.00
Head cleaning kit for Bernoulli box... 56.75
MICROTECH INTERNATIONAL
BAL 3 1/2" Disk Drive... CALL
MIRROR TECHNOLOGY
Shugart Manual Eject Drive... CALL
MITSUBA
Super 5 Mac External Drive... CALL
PARADISE SYSTEMS
Mac 10 Hard Disk Subsystem, UNDER... 1029.00
PERSONAL COMPUTER PERIPHERALS
MacBottom Hard Disk... CALL
QUARK
QC10 Meg Hard Disk, UNDER... 999.00
QC20 Meg Hard Disk, UNDER... 1379.00
REMINGTON
Mac External Drive (Shugart)... 280.00
TECMAR
10 MB Fixed Mac Drive, UNDER... 1099.00
5 MB Removable Mac Drive, UNDER... 1099.00
WESTERN AUTOMATION LABS
Dash Extrem. Ram Disk 500K, UNDER... 399.00
Dash Extrem. Ram Disk 1000K, UNDER... 595.00
Dash Extrem. Ram Disk 2000K, UNDER... 969.00

DISKETTES

BASF 3 1/2"... 12.00
Elephant 3 1/2"... 25.50
Fuji 3 1/2"... 23.95
Maxell 3 1/2"... 23.95
Memorex 3 1/2"... 23.75
Sony 3 1/2"... 21.00
Verbatim... 24.00

CREATIVE/EDUCATIONAL SOFTWARE

ATI
MacCoach... 42.75
Teach Yourself Jazz... 44.00
Teach Yourself Multiplication... 29.00
ASSIMILATION PROCESS
M.I.D.I. Conductor... CALL
M.I.D.I. Composer... CALL
AXION
Typing Avalanche... 35.75
BRAINPOWER
Chipwits... 26.00
Thinkfast... 22.00
CAMDE
Nutcrack... 58.00
DAVIDSON AND ASSOCIATES
Mail Blaster... 29.75
Speed Reader II... 35.75
Spell II... 29.75
Word Attack... 29.75

FIRST BYTE
KidTalk... 48.00
Smooth Talker... 57.75
Speller Bee... 48.00
FORETHOUGHT
Typing Intrigue... 28.75
GREAT WAVE SOFTWARE
ConcertWare Plus... 41.50
HARVARD ASSOCIATES
MacManager... 28.00
HAYDEN SOFTWARE
Computer Novel Construction Set... 28.75
MusicWorks... 44.00
Score Improvement System SAI... 56.00
Turbo Turtle... 34.50
HIPPOPOTAMUS SOFTWARE
Hippo Computer Almanac... 20.00
Hippo Sound Studio... CALL
MARK OF THE UNICORN
Professional Composer... 248.00
MICROSOFT
Entrepreneur... 30.00
Learning Multiplication and Chart... 36.00
PALANTIR
MacType... 26.00
Math Flash... 29.00
Word Play... 29.00
QED INFORMATION SCIENCES
Typing Made Easy... 34.00
QUEUE INTELLECTUAL SOFTWARE
Address Book... 28.00
American History Adventure... 43.75
Comprehensive Grammar Review... 40.00
How a Bill Becomes a Law... 43.75
PreKatal Baby Care... 25.00
Reading Adventure I... 28.00
Reading Adventure II... 44.00
Starting a New Business... 43.75
U.S. Geography Adventure... 44.00
Vocabulary Adventure I... 43.75
Vocabulary Adventure II... 44.00
World Geography Adventure I... 44.00
World Geography Adventure II... 44.00
RUBICON PUBLISHING
Deja Vu... 23.75
SongPainter... 33.75
SCARBOROUGH
Make Millions... 28.00
MasterType... 28.00
Run for the Money... 28.00
SHARERAZAM
MusicalType 2.0... 31.00
SIMON & SCHUSTER
Mac Art Department... 23.00
Paper Airplane Construction Set... 23.00
Speed Reading Tutor... 33.75
Typing Tutor III... 33.75

SOFTWARE CONCEPTS
Concepts Computerized Atlas... CALL
SPECTRUM HOLOBYTE
Tellstar Astronomy Program... 39.00
THINK EDUCATIONAL
MacEdge II... 28.75
MacEdge Plus... 28.75
Mad Mac & His Mindbox... 28.75
Mind Over Mac... 28.75
TIMETWORKS
Evelyn Wood Dynamic Reader... 40.00

GAMES

ACTIVISION
Championship Star Baseball... 21.50
AEGIS
Mac Challenger... 21.50
Pyramid of Peril... 21.50
ANN ARBOR SOFTWARE
Red Flag... 28.00
Grid Wars... 28.00
Lunar Explorer... 35.00
ARTSCI
Hearts... 17.75
ARTWORX
Strip Poker... 24.00
AXLON
MacMatch... 29.00
BLUE CHIP SOFTWARE
Baron or Millionaire... 28.75
Squire or Tycoon... 28.75
BRAINPOWER
Telachess... 40.00
Torpedo Run... 27.00
BRODERBUND
Ancient Art of War... 28.00
Cyborg or Lode Runner... 23.75
CBS SOFTWARE
Murder by the Dozen... 25.75
CREIGHTON DEVELOPMENT
MacCommand... 19.75
ELECTRONIC ARTS
Deluxe Music Construction Set... 33.75
Pinball Construction Set... 27.75
EPYX
Rogue... 17.95
GENERAL COMPUTER CO.
Ground Zero... 23.75
HAYDEN SOFTWARE
Holy Grail or Sargon III... 28.50
Masterpieces or Perplex... 23.00
Word Challenge II... 23.00
HENDERSON ASSOCIATES
Real Poker... 24.00
HIPPOPOTAMUS SOFTWARE
CALL
Hippo Jokes and Quotes... 20.75

INFOCOM
A Mind Forever Voyaging... 26.00
Cutthroats or Enchanter... 23.00
Deadline or Starcross... 28.00
Hitchhiker's Guide to the Galaxy... 23.00
Infidel or Sorcerer... 26.00
Planetfall or Seastalker... 23.00
Suspect or Suspended... 26.00
Winbinger or Witness... 23.00
Zack I... 23.00
Zack II or III... 26.00
KASTEL TECHNOLOGY
Trivia Savant... 32.00
MARK OF THE UNICORN
Mouse Stampede... 22.00
MAGNUM SOFTWARE
Gypsy... 24.00
MILES COMPUTING
Fusillade... CALL
Harrier Strike Mission... 27.75
MacAttack... 27.00
MacWars... CALL
Overlords... CALL
MINDSCAPE
A View To A Kill... CALL
Balance of Power... 35.00
Racter... CALL
The Mist... CALL
MIRAGE CONCEPTS
Trivia... 18.00
MCCARRON-DIAL SYSTEMS
Squire or Tycoon... 21.00
McFlip... 24.00
NEWSOFT
NewGannon... 21.00
ORIGIN SYSTEMS
Ultima III... 37.00
PBI SOFTWARE
Feathers & Space... 22.00
Fokker Triplane... 36.00
Strategic Conquest... 29.00
PENGUIN
Pensate or The Quest... 23.00
Transylvania or Xyphus... 23.00
PROFESSIONAL SOFTWARE
Super Sports Trivia... 18.00
Trivia Fever... 21.75
Trivia Fever: Volume II... 13.95
PRIORITY SOFTWARE
Forbidden Quest... 23.75
Gateway... 24.00
SABAKI
MacPoly... 25.00
SCREENPLAY
Asylum... 24.50
Professional Blackjack... 49.00
Trivia Arcade... 19.95

CALL TOLL FREE 1-800-382-2242

Connecticut Orders Call (203) 375-3860

IN CANADA 1-800-843-0074

SHAPECHANGER SOFTWARE

Webster's Revenge	CALL
SIERRA-ON-LINE	
Championship Boxing	24.00
Fragger	23.00
King's Quest II	CALL
Ultima II	34.00
SILICON BEACH SOFTWARE	
Airborne	20.00
Enchanted Scepters	27.00
SIR TECH	
Wizardry	34.75
SOFT LIFE	
MacSlots	28.75
SPECTRUM HOLOBYTE	
Gato	26.00
STAR SYSTEMS SOFTWARE	
12 Classic Adventures	36.00
TELARIUM	
Amazon or Dragon World	25.90
Fractions 451	25.90
Rendezvous With Rama	25.90
UNICORN SOFTWARE	
Futura	26.50
Utopia	26.50
VIDEOX	
FunPack	22.00
MacGammon & Cribbage	27.75
MacVegas	33.00

LANGUAGES

APPLE COMPUTER	
MacFascal	87.00
Macintosh 68000 Development System	137.00
CONSULAR	
Mac-C w/Toolkit	277.00
Mac-C w/Toolkit & Floating Point	277.00
Smartthinker	65.00
CREATIVE SOLUTIONS	
MacForth Level I	76.00
MacForth Level II	126.00
EXPERTTELLIGENCE	
ExpertLogo	235.00
ExpertLogo	74.00
ExpertOPS	163.00
HIPPOPOTAMUS SOFTWARE	
Hippo-C Level I	78.00
Hippo-C Level II	218.00
Hippo-C Upgrade Kit	CALL
IQ SOFTWARE	
CPM for the Macintosh	290.00
KRITYA SYSTEMS INC.	
Neon	144.00
LOGIQUE	
C.P. Mac	CALL
MAINSTAY	
MacASA	87.00
MANIX	
Aztec C68K-C	403.00
Aztec C68K-D	241.00
Aztec C68K-P	160.00
MEACOM	
Mac+ II	CALL

MEGAMAX INC.

Megamax C Compiler	174.00
MICROMOTION	
Masterforth	88.00
MICROSOFT	
Fortran Compiler	179.00
Microsoft Basic 2.1	85.00
Microsoft Logo	73.75
SOFTECH MICROSYSTEMS	
Advanced Development Toolkit	97.00
Fortran 77 Development System	188.00
Fortran 77 Language Compiler	154.00
Mac Advantage UCSD Pascal	157.00
UCSD Pascal Development System	127.00
UCSD Pascal Language Compiler	91.00
SOFTWARES LIMITED	
Softworks C Compiler	240.00
TERRAPIN	
MacLogo	CALL

MODEMS

ANCHOR AUTOMATION	
Mark XII	227.00
APPLE COMPUTER	
Apple Modem 1200 Baud w/fac. kit	349.00
Apple Modem 300 Baud w/fac. kit	157.00
COMPUKABLE	
Mac to Smartmodem Cable	16.00
HAYES MICROCOMPUTING	
Smartmodem 1200	363.00
Smartmodem 2400	575.00
Smartmodem 300	128.00
Transtel	268.00
KENSINGTON	
Portable Modem (300 Baud)	85.00
MICROCOM	
Mac Modem 1200 w/software	385.00
Mac Modem 2400 w/software	553.00
NOVATION	
Cal Comm Communications System	274.00
PRENTICE	
Popcom X-100 Modem (Mac)	253.00
PROMETHEUS	
MacPack	39.00
Promodem 1200 with Mac Software	328.00
U.S. ROBOTICS	
Courier 2400	387.00
Password 1200	194.00

GRAPHICS SOFTWARE

ALLYSYS	
Fantastic	24.00
APPLE COMPUTER	
MacDraw	135.00
ANIM ARBOR SOFTWARE	
Animation Tool Kit I	30.00
Animation Tool Kit I Advanced	CALL
Animation Tool Kit II	CALL
In Motion	CALL
AXLON	
Art Portfolio	34.00
Card Shoppe	34.00
BRONDERBUND	
The Print Shop	CALL

CASADY COMPANY

Fluent Fonts	28.00
CHALLENGER SOFTWARE	
Mac3D	CALL
COMPUSEVCO	
MacCad	CALL
(Templates are below)	
Architectural Design	82.00
Drafting Toolkit	38.00
Flowcharts and Logic	82.00
Electrical and Electronic	66.00
Home Designer	82.00
Layout Planner	74.00
Mechanical Design	82.00
PC Board Design	82.00
Rules Isometric w/Dials	74.00
Single Line Isometric Piping	82.00
Single Line Orthographic Piping	82.00
Two Line Orthographic Piping	82.00
DIABLO VALLEY DESIGN	
MacGrid	26.00
DIVERSIONS INC.	
Underware Color Pens	9.95
Underware Ribbon	9.95
Jumbo Color Pens	14.00
ENTERSET	
Quickpoint	29.00
ESOFTE ENTERPRISES	
Color Chart	69.00
FOUNDATIONS SYSTEMS	
MacMeasure	CALL
HAYDEN SOFTWARE	
Art Grabber w/Body Shop	28.75
Home Design	45.75
DeVinci Buildings or Interiors	28.00
DeVinci Landscapes	28.00
DeVinci Building Blocks	44.75
DeVinci Commercial Interiors	113.00
Viewworks	56.00
INNOVATIVE DATA DESIGN	
MacDraft	135.00
Paste-Ease	35.75
I/O DESIGNS	
ColorPrint Ribbon	6.50
ColorPrint Software	34.50
ColorPrint Starter Kit w/3 ribbons	52.00
ColorPrint Transfer	69.00
KENSINGTON MICROWARE	
Graphic Accents	28.75
Professional Type Fonts for Headlines	39.75
Professional Type Fonts for Text	28.75
LINGUIST'S SOFTWARE	
Tab	68.00
MAGNUM SOFTWARE	
MacPic Volume 1 or 2	26.00
The Slide Show Magician	31.00
MANHATTAN GRAPHICS	
Ready Set Go	68.75
MATRIX ASSOCIATES	
Images	26.75
MESA GRAPHICS	
Plot It	66.00
MICRO: MAPS	
MacAtlas U.S.A.	57.00
MacAtlas World	57.00

MICROSPOT

MacPlot	28.00
MILES COMPUTING	
Mac The Kraile Volume 1	20.75
Mac The Kraile Volume 2	25.75
Mac The Kraile Volume 3	CALL
SOUTH BAY SYSTEMS	
Music Character Set	19.00
T/MAKER	
Click Art Effects or Letters	28.75
Click Art Personal Graphics	28.75
Click Art Publications	28.75
VAMP INC.	
MacCad	28.75

BACKUP AND UTILITY SOFTWARE

ASSIMILATION PROCESS	
Guardian	26.00
Mac Memory Disk	CALL
Mac Tracks	CALL
Work N Print	CALL
BATTERIES INCLUDED	
Mac Battery Pak	25.75
BAY SYSTEMS SOFTWARE	
Hard Disk Util	45.00
CENTRAL POINT SOFTWARE	
Copy II Mac	19.00
CRYSTAL CANYON	
Mac Librarian	29.00
DREAMS OF THE PHOENIX	
Quick and Dirty Utilities	27.75
HIPPOPOTAMUS SOFTWARE	
Hippo-Lock	67.00
IDEAFORM	
MacLabeler	28.00
MAINSTAY	
Disk Ranger	35.00
MacBooster	31.90
H'crypter	28.75
Type Now	35.75
MICROANALYST	
MacZip	34.95
NEVINS MICROSYSTEMS	
TurboCharger	54.75
PBI SOFTWARE	
Icon Libraries	13.95
Icon Switcher	13.95
PCA SOFTWARE	
MacBackup	53.00
PROTEKT IT SOFTWARE	
Procopy	31.00
SHB DEVELOPMENT	
MacMate	34.00
SILICON BEACH SOFTWARE	
Accessory Pak I	23.00
SOFTSTYLE	
Epstart	27.75
Jetstart	27.75
Laserstart	58.75
Thstart	45.75
Toshstart	27.75
SOUTHEASTERN SOFTWARE	
Mac Transfer	30.95

SYMMETRY CORP.

Quick Disk	23.00
TARDIS SOFTWARE	
C Looner	34.75
Fast Finder	34.75
Mac Programmer's Library	144.75
MacMake	34.75
Tools #1	34.75
Tools #2	34.75
TESSERACT SOFTWARE	
MacCopy	38.75

PRINTERS

APPLE COMPUTER	
Imagewriter II (NEW!), UNDER	469.00
Imagewriter, UNDER	415.00
Imagewriter Wide Carriage, UNDER	479.00
LaserWriter Printer, UNDER	4900.00
BROTHER	
HR-10	180.00
HR-15XL	354.00
HR-25	479.00
HR-35	684.00
C. ITOH	
ProWriter 1550SR	580.00
ProWriter 8510BC-2	390.00
ProWriter 8510SR	440.00
EPSON	
DX 10	CALL
DX 20	CALL
FX 85	CALL
FX 185	CALL
LQ 1500	CALL
LX 80	209.00
JUKI	
5510S	449.00
6100S**	383.00
6200S	609.00
6300S	669.00
NEC	
Color Pinwriter (P21)	CALL
Color Pinwriter (R3T)	CALL
e.L.E. 360	CALL
NEC3510, UNDER	995.00
NEC8810, UNDER	1395.00
Spinwriter Accessory Kit for Mac	CALL
OKIDATA	
ML-1925 Mac/Lisa	373.00
ML-1925 Mac/Lisa	553.00
PANASONIC	
KXP 1091**	245.00
KXP 1092	367.00
KXP 1093	437.00
KXP 3151 Letter Quality	413.00
STAR MICRONICS	
SD-10	343.00
SD-15	455.00
SG-10	225.00
SG-15	385.00
SR-10	490.00
SR-15	589.00
TOSHIBA	
P-1340	454.00
P-351, UNDER	1095.00

For all of you who thought Dennis Brothers was crazy to give away MacTEP, here's MicroPhone.™

The one he's selling.

When the Macintosh first came out, the most powerful personal computer ever built didn't have the brains to make a phone call.

So Dennis Brothers tore down his Mac, figured out how it worked, and wrote Mac's first communications program, MacTEP.

Which he proceeded to give away.

MacTEP was a classic. The first standard in Mac communications.

Now he's created the second: MicroPhone. A program that goes far beyond any communications software currently offered for any computer.

MicroPhone is so sophisticated, it cuts through the worst tangles you encounter when you go on-line. A delight to the experienced. And a saviour for the novice.

Run on automatic.

When you open MicroPhone to the desktop you'll find a comprehensive collection of icons pre-programmed to access all major information services: CompuServe,® Dow Jones News/Retrieval,® The Source,™ Delphi,™ the works.

A few clicks and you're in. With automatic log-in and sign-on.

But that's just the beginning of its ability to automate the whole telecommunications process. For MicroPhone features the most powerful, yet simplest to set up macros ever seen on a program.

Write your own script.

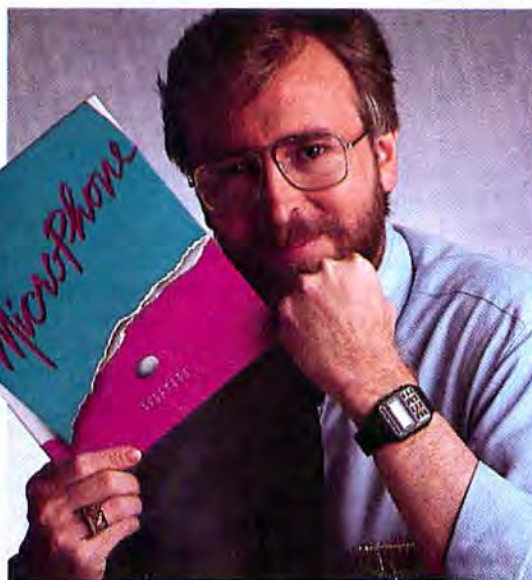
Dennis gives you two ways to create these macros. The first is to set MicroPhone in the Watch Me,™ the recording mode.

The program looks over your shoulder as you conduct a communications session following your keyboard and menu commands.

MicroPhone can remember not only an uninterrupted string of keyboard commands, but also wait-for-prompt conditions. In fact, virtually any series, no matter how long or complex.

The entire sequence is saved. To be invoked at any time with a single key command.

The second way to generate macros is through MicroPhone's unique "Script"



window. Open it and you'll discover an extensive set of functions which can be called up and linked with a series of mouse clicks. The resulting macro is extremely powerful. The method is Mac-simple.

Using Watch Me or the Script window, or a combination of both, you can automate log-ons, file transfers and unattended operations. And navigate back into the farthest reaches of any database with a single stroke.

Make files fly.

Sending and receiving files is faster and easier with MicroPhone, too. Using XMODEM protocols and MacBinary, MicroPhone transmits or receives anything you can create on a Macintosh. Including MacPaint documents, text, spreadsheets, charts, database tables, or programs.

MicroPhone allows you to scroll back and forth at high speed to review your session. Then you can select any portion of your session, print it, save it to a file, or copy it to the Clipboard for use by other Macintosh programs.

MicroPhone also features an editor desk accessory for composing text in mid-session using familiar Macintosh editing techniques.

But enough talk. See for yourself what Dennis Brothers has done now to advance the cause of telecommunications. Just take any major credit card in hand and call us toll free to place your order.

Dennis isn't giving it away this time. But at \$74.95, almost.

Let's get technical box.

Runs in terminal emulation mode at speeds up to 57.6K Baud. Emulates DEC™ VT52™, VT100™ and TTY type terminals. Supports TEXT (ASCII) and XMODEM (Christensen) protocols; send and receive. Supports MacBinary. Runs on 128K and 512K Macintosh. LaserWriter compatible. Includes Switcher for use with other Macintosh programs. Compatible with Hayes, Apple and other leading modems. Built-in full text editor licensed from Dreams of the Phoenix Inc. Documentation by Neil Shapiro.

MicroPhone and Watch Me are trademarks of Software Ventures Corporation. MacTEP is a trademark of Brothers Associates. Macintosh is a trademark licensed to Apple Computer, Inc. LaserWriter and Switcher are trademarks of Apple Computer, Inc. CompuServe is a registered trademark of CompuServe Corp. Dow Jones News/Retrieval is a registered trademark of Dow Jones & Company, Inc. The Source is a service mark of Source Telecomputing Corp., a subsidiary of The Readers Digest Association, Inc. Delphi is a trademark of General Videtex Corp. DEC, VT52 and VT100 are trademarks of Digital Equipment Corporation. © 1985 Software Ventures Corporation



SOFTWARE
VENTURES

The traditional clip-out coupon. With an untraditional money-back guarantee.

You know how to telecommunicate the hard way. Now do it the easy way. Call 24 hours toll free. Outside California, 800-DENNIS-7. Within California, 800-DENNIS-8. In Canada, 800-DENNIS-9. Or send a check, money order or credit card number for \$74.95. For 30 copies of Dennis Brothers' MicroPhone @ \$74.95 each.

In USA and Canada add US \$5.00 for postage and handling per product ordered. All other countries add US \$10.00. In California add 6% (\$4.50) sales tax. ALL FOREIGN ORDERS: please make payment by bank draft, payable in US dollars, drawn on a US bank. No C.O.D. or Purchase Orders. If you are not 100% happy, return MicroPhone within 30 days for a full refund.

☐ VISA ☐ MASTERCARD ☐ CHECK ☐ MONEY ORDER

CREDIT CARD # _____ EXPIRES _____

SEND TO: NAME _____

SHIPPING ADDRESS _____ CITY _____

STATE _____ ZIP _____

Send to: SOFTWARE VENTURES, DEPARTMENT A, 2907 Claremont Avenue, Suite 220, Berkeley, CA 94705

3.5" Diskettes



Highest quality
Lowest prices

\$18⁴⁰*

per box of ten
when you buy 10
boxes or more

\$18⁹⁰ each

5+ boxes

\$19⁴⁰ each

2+ boxes

***PLUS**

Receive a \$4.00 cash rebate from Fuji for every two boxes you buy, as well as coupons worth \$25.00 off other Fuji products: FM Audio Cassette players, Video Cameras, and more!!

SONY

\$18⁷⁵ each

10+ boxes

\$19²⁵ each

5+ boxes

\$19⁷⁵ each

2+ boxes

Bulk diskettes

Blue
or
beige

\$1⁷⁵ each

when you buy
100 or more

\$1⁸⁵ each

when you buy
50 or more

Lifetime Guarantee!!

We also carry hardware, software,
& accessories at discount prices

Visa, MasterCard, and checks accepted

State and corporate P.O.'s welcome

Call toll free

9 to 9 Central time

10 to 6 Saturdays



TransAmerican Exchange

504 W. 24th St., Suite 131
Austin, Texas 78705

1-800-722-7171

In Texas call (512) 478-9091

Circle 311 on reader service card

Macware Reviews

(continued from page 154)

Word Games

The first of the three word games, Alphabet Train, is a simple fill-in-the-blank alphabet game that teaches children how to recognize the order of uppercase and lowercase letters in the alphabet. In a variation of the game, players type the missing number in a sequence. The game also acquaints students with the placement of letters and numerals on the keyboard (see "Alphabet Train").

Another word game, Word Wonder II, is a version of the word grids found in children's magazines. Words are hidden vertically or horizontally inside an eight-by-eight-letter grid. A set of sentences with blank spaces for the missing words appears at the lower right-hand corner of the screen. Players find the hidden words within the grid and select them by dragging the cursor over the letters with the mouse. When a player makes a correct choice, the program fills the blanks in the sentences and gives encouragement.

A word game called Memory Match II, similar to the game of Concentration, was the one my children liked best. Players match words hidden under 18 movable tiles by clicking two tiles with a pointer.

The words under the two tiles appear for a few seconds and then return to hiding. Players remember words uncovered in previous turns to take advantage of the accumulation of discoveries. A successful match results in a point for the player and removes the matched words for the duration of the game. You can choose variations on the game that require different types of matches, including identical pairs, synonyms, antonyms, homophones, contractions, compound words, numbers and letters, and icons.

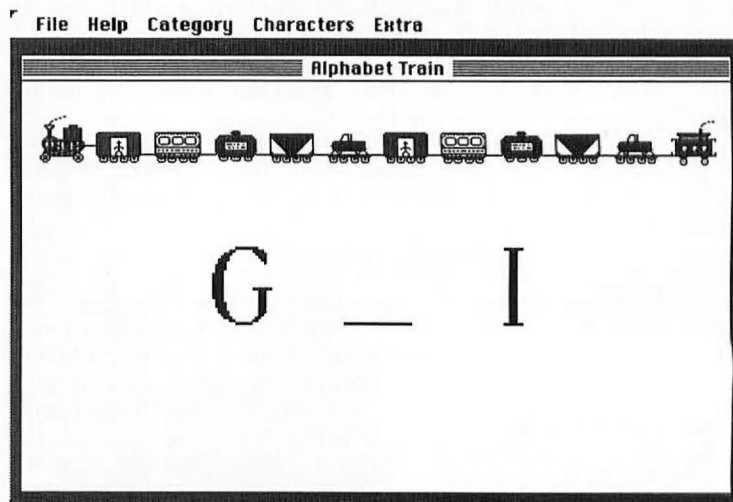
Covering the Wonder Years

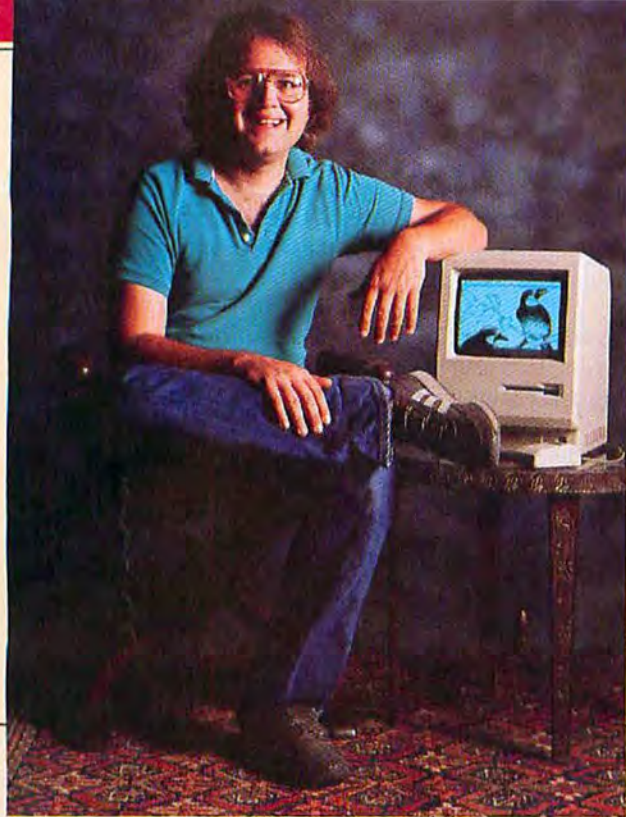
The manufacturer of *MacEdge II* claims that the eight games cover a considerable age span—4 to 14 years old. That range is a bit ambitious. Based on my children's experience, the simplest games seem appropriate for 4-year-olds, and the most difficult games were appropriate for age 12. The simplest letter and number recognition games were too easy for my 7-year-old, Tess. But she enjoyed playing those games for that very reason, making fun of how easy they were. She also liked the games because they reminded her of

(continues on page 158)

Alphabet Train

Each time a child correctly completes an alphabetic sequence, a new train car moves onto the screen. When the caboose is finally added, the train chugs across the screen.



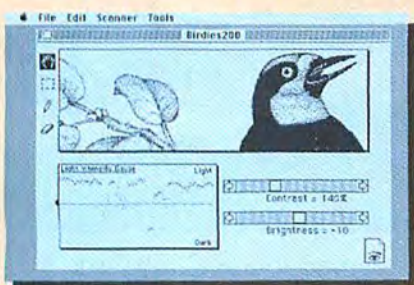


Hertzfeld on ThunderScan™

After three years on the Macintosh development team, Andy Hertzfeld began to work on the software for an easy-to-use, low-cost way to put images into Macintosh. The result: ThunderScan™. The high-resolution optical scanning device that turns the ImageWriter printer into an image reader. Recently, Andy shared some thoughts on the product he's dubbed, "MacPaint for the rest of us."

"...I was incredibly thrilled. I knew it would blow people's minds."

"I spent over three years developing Macintosh's operating system. I care a lot about Mac and wanted people to be able to use it to its full potential. But how do you get images into the machine? Most people can't draw. That's why I got involved with ThunderScan. To give people, especially non-technical users, an easy, low-cost way to get high-resolution images into Macintosh. When I first saw how beautiful ThunderScanned images were, I was incredibly thrilled! I knew it would blow people's minds."



ThunderScan's image processing tools let you enlarge, reduce, cut, paste, select, draw, scroll and erase, as well as control contrast, brightness and half-toning.

"You get to make artistic decisions. To change and improve what you see."

"Macintosh inspires creativity. ThunderScan is a vehicle for its expression. It lets you put any printed image into Mac. But you're never stuck with the image as is. You get to make artistic decisions. To change and improve what you see. You can control the contrast, brightness and half-toning. Over all or



A scanned image is just the start. Now you have micro-control over 32 shades of gray to enhance all or part of the image as you please.

just parts of the image. Even create reverse images and outlines. It's really fun. But the great thing is, when the novelty wears off, you have a useful tool.

"ThunderScan has a whole range of applications. Some people use it for inserting graphics into newsletters and reports. I know a fine artist at Stanford who makes collages with it. I use it a lot, too. The way I write a program is an expression of who I am, so in my new "Switcher" program, I included a ThunderScanned image of myself."

"...With LaserWriter you can create unbelievably exquisite images."

LaserWriter you can create unbelievably exquisite images.

"ThunderScan is a complete imaging system. You don't have to buy anything else. You just snap out ImageWriter's ribbon cartridge and snap in ThunderScan. It fits in any office or home environment, takes up no space and the lighting is always perfect.

"Developing ThunderScan was a lot like developing Macintosh. We were doing something for the first time. Making an important tool. We think we did a good job."

ThunderScan requires 128K. But to take full advantage of all its features, you'll need a 512K Mac.

Available now through computer retail stores or directly from Thunderware for just \$229. To order or for more information, call today (415) 254-6581. Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563.



Circle 167 on reader service card

(continued from page 156)

the computer games she plays at school. My 10-year-old girl, Sara, thought that the *MacEdge II* games taught her something and were fun. However, while the most difficult games were a little beyond Sara's reach, they weren't far beyond.

Sights and Sounds

Effective graphics and sound are important elements of educational games because they capture children's imaginations and hold their interest. *MacEdge II* uses both graphics and sound smoothly and effectively, not taking too much time

with distracting animation or tunes yet giving ample visual and aural rewards. For example, in *Alphabet Train* one car of a train chugs onto the screen for every correct answer. When the train is complete, it tootles off the screen with a cheerful refrain in four voices.

The simpler games provide plenty of flashing lights and music. In some cases rewards correspond to playing time. Some of the more difficult games are set up as contests, with up to four players competing for fast, accurate answers. For instance, one child can play *Table Race* against either a clock or another child.

All in all, *MacEdge II* is a good collection of games for children. The games offer enough variety and challenge to retain kids' interest and also to make the learning of basic skills an enjoyable experience.

There is one other benefit of educational computer games: when the children who play on computers later face their first spreadsheet, they won't be intimidated like their parents probably were. —Rob Swigart

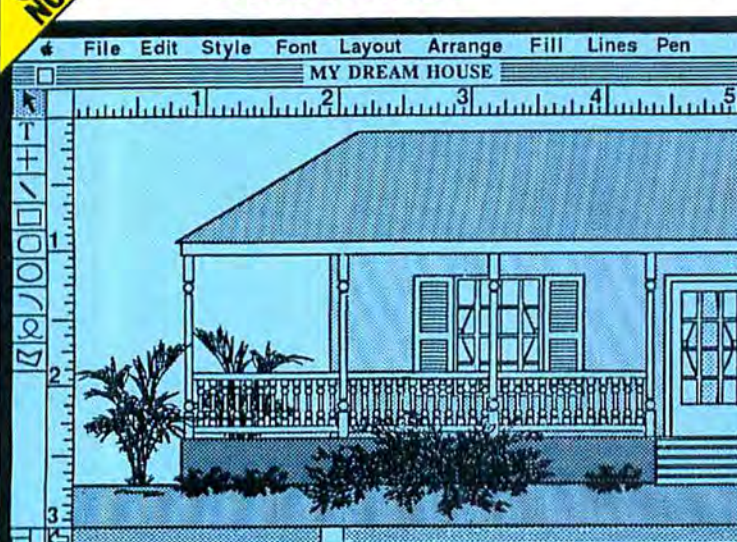
MacEdge II
Think Educational Software
P.O. Box 466
Potsdam, NY 13676-0466
315/265-5636
List price: \$49.95 □

CALL NOW!!

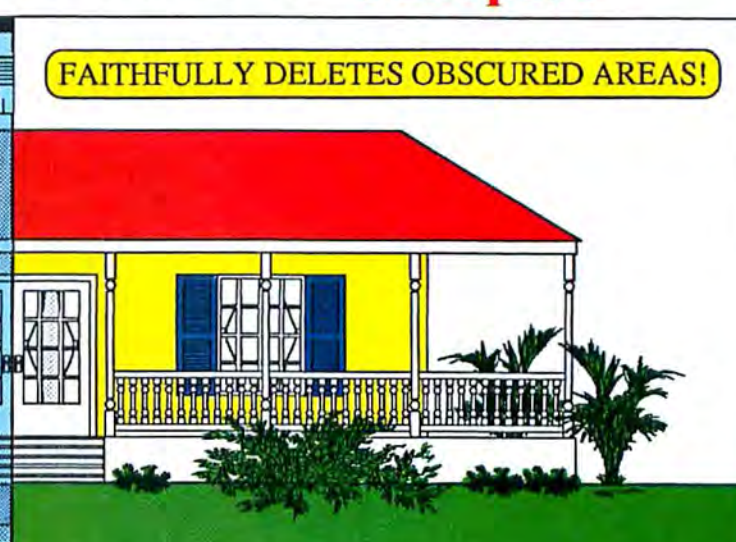
MacCAD

The Two Keys to Turn-Key Drafting

Macplot



FAITHFULLY DELETES OBSCURED AREAS!



- Architectural & Engineering software templates.
- Compatible with either MacDraw or MacDraft.
- 12 separate library packages to choose from.
- Typically 3 or 4 disks per library package.

- Plots any graphics copied to the Clipboard.
- Plots multiple colors even on a one pen plotter.
- Compatible with most popular plotters.
- The hardware interface is the Imagewriter cable.

CompServCo

800 Freedom Lane, Slidell, LA 70458

1-800-272-5533

MacDraft is a trademark licensed to I.D.D., Inc.
MacDraw is a trademark licensed to Apple Computer, Inc.

Microspot

9 High St., Lenham, Maidstone, Kent, ME17 2QD, England

Circle 226 on reader service card



MacPak

Ideal for the student. Three ways to carry, including backpack straps that hide in the notebook pocket when not in use. A PrintPak or hard disk pak may be attached on top. Navy, Black, Grey, Wine and Tan.



MacBag

So popular with Accountants and Engineers. It can carry **all** their needs with the most protection and still fit under most airline seats. Navy, Black, Grey, Wine and Tan.



MacSak

Carries the keyboard, mouse, computer, disks, and manuals. Same materials and construction as the MacPak and MacBag. Navy and Wine.



Pak and Bag

Maximum versatility and protection. With the open ports of the Macintosh we use **anti-static** foam and nylon. We put the 2nd disk drive, modem and numeric on the inside. Divider made of foam and industrial plastic, and completely covers the screen.



PrintPak

Not only do we use **anti-static** foam and nylon, we use a sandwich foam system. High impact outer foam, industrial plastic reinforcement to protect against punctures and a softer industrial foam inside gives protection for your printer. Standard 11" or legal 15" Navy, Black, Grey, Wine or Tan Available for most major brand printers.



MacFreighter & PrintFreighter

Check it as baggage or throw it in the trunk. Finest quality construction anywhere. Cases for any computer, printer or accessories.



MacAccessory Paks

Hard and Softcases Available



MacCovers

3 to choose from: 1) vinyl leather, 2) clear, 3) polyurethane backed nylon with **anti-static** polymers **built** in. 12 colors to choose from. 3pc. and 5pc. sets with covers for all computers, printers and accessories.

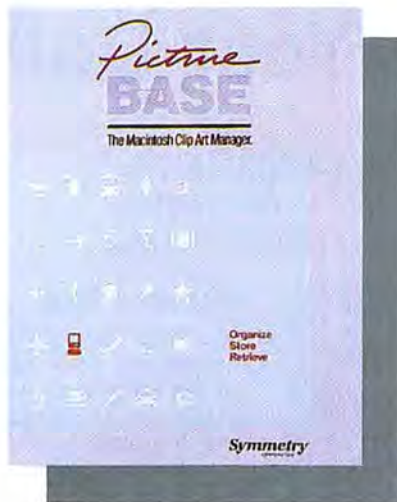
MacPacks

Carriers, Packs and Covers for the Macintosh®

643 Industry Drive / Seattle, Washington 98188

Circle 28 on reader service card

Power Tools



PictureBase™ The new way to organize, store and retrieve pictures.

Trying to find one picture out of disks of clip art and MacPaint™ or MacDraw™ documents can be like trying to find a needle in a haystack.

But now there's PictureBase, the art management system. PictureBase lets you create your own easy to use library of pictures. Just copy all or part of any MacPaint document into the library. Give it a title and description. Now, finding the picture is as easy as telling PictureBase to search for it. In seconds there's the picture, ready to paste into your work. Or if you prefer, you can browse through the library as easily as flipping a page.

There's even a unique Info feature which allows you to store up to a full page of text with each picture and a convenient desk accessory for retrieving pictures from the library without leaving an application.

PictureBase—the art management system.

Only \$48.00

QuickDisk™ The software that makes your Macintosh 10 times faster.

Sometimes the world's easiest to use computer isn't as fast as it could be.

But now there's QuickDisk. The RAM disk software that gives you what you need most—a super fast electronic disk drive, not a slow mechanical one.

QuickDisk makes your Macintosh 512K or XL run up to ten times faster by making a selectable portion of the Macintosh's memory (50K-350K) look and act like a disk drive. In fact, if you only have one disk drive, you may find that with QuickDisk you don't need to buy another one. Of course, QuickDisk has all the easy-to-use features you need like an automatic file copy, automatic eject and a complete user's manual.

So get a QuickDisk and see how fast you can be.

Only \$34.00



See your dealer or call us toll free:

1-800-624-2485

in Arizona (602) 224-5944

Symmetry
CORPORATION

3900 E. Camelback Rd., Suite 103-S Phoenix, AZ 85018

PictureBase and Quick Disk are trademarks of Symmetry Corporation. MacPaint, MacDraw and Macintosh are trademarks of Apple Computer, Inc. © 1985 Symmetry Corporation

Circle 303 on reader service card

Open Window

Jazz conversions, keyboard help, and a game to improve your concentration

Edited by Jim Heid

Open Window offers tips to help you use your Macintosh more efficiently. Submitted by readers, industry experts, and the Macworld staff, items in this department address all facets of Mac work, from applications to programming routines to capabilities of the Mac and software not covered in the documentation.

This month's column includes a tip explaining how to speed up the conversion of SYLK-format documents to Jazz documents, useful information about the Mac's Desktop file, and a handy utility program that keeps the desktop in order. For feature hunters, we share a reader's discovery of hidden capabilities of Microsoft Word and Microsoft File and another reader's insight into MacWrite's decimal tabs. Also this month, we feature a discovery of still more keyboard shortcuts in Microsoft BASIC (MBASIC) 2.0, as well as more on using the Mac with the Radio Shack Model 100 portable computer. Finally, we pit human versus Mac in an MBASIC game of concentration.

Speeding Up Jazz's Tempo

I've been using the Convert desk accessory included with Lotus's Jazz to convert some of my Microsoft Multiplan worksheets, which I have saved in SYLK format. I find that the time required to convert a document in SYLK format into a Jazz worksheet can be excessive, especially if the document contains extensive cell formatting,

such as dollar signs, centered numbers, and commas.

To decrease the conversion time, remove all special formatting from the Multiplan document before saving it as a SYLK file. Then, using the Format command in Jazz's Range menu, restore the formatting after converting the document to Jazz format. The easiest way to remove the formatting from the Multiplan document is to select the entire document, then choose General from the Format menu.

Kevin Pickett

North Platte, Nebraska

It's true that Jazz takes longer to convert formatted documents. According to my stopwatch, an unformatted test worksheet converted in 14 seconds, while its formatted counterpart required 38 seconds. Whether this tip really saves you time, however, depends on how your original worksheet is formatted. If the formatting is simple—perhaps a column or two of right-justified, currency-formatted numbers—the tip is worth using. If the formatting is complex, with many individual cells formatted differently, it may be more effort than it's worth to manually restore the formatting. In that case let Jazz convert the formatted SYLK document and take a break while Jazz performs the conversion.—Ed.

Dusting the Desktop

Have you ever been the victim of the message "Not enough memory to eject this disk" or "Not enough memory to remember this disk"? The villain is the disk's Desktop file. This "invisible" file contains

information about the icons and the folders on the disk, including their names and their locations on the desktop. The Desktop file also contains a copy of the icon for each type of file stored on that disk.

Because the Finder doesn't remove an icon from the Desktop file even after you delete every file that uses that icon, the Desktop file doesn't shrink. If you frequently add and delete files, the Desktop file can grow large enough to prevent the Finder from ejecting the startup disk or from remembering the desktop of an ejected data disk. Problems arise because the Mac stores most of the Desktop file in memory when you eject a disk, unless you throw away the disk's icon. If the disk contains a large Desktop file with dozens of old icons, there may not be enough memory to hold a large file, hence the error message.

The best solution is a program by Bill Pugh called *Purge Icons*, available through user groups and MAUG (the program is stored in Data Library 3 as NUPICN.BIN). *Purge Icons* purges the Desktop file of unused icons, freeing space on the disk and allowing the Finder to operate faster. If you can't get a copy of *Purge Icons*, you can create a new Desktop file by holding down the Option and ⌘ keys while inserting the disk. The drawback of this technique, however, is that the folder information will be lost.

Sally Weeks

Seattle, Washington

(continues on page 164)



Announcing the only devoted entirely to

*Sponsored by MACWORLD,
the Macintosh Magazine,
January 16-18, 1986,
Brooks Hall and Civic
Auditorium, San Francisco*

The Macworld Exposition returns to San Francisco for the second annual roundup of all the products and services for the Macintosh computer.

The Macworld Exposition is your chance to see it all in one place—software, hardware and peripherals for the Macintosh. See for yourself the products available now that will help you work faster, easier and smarter.

Products and services from companies such as Apple, Odesta, General Computer and Corvus will be on display. The show also features a special hands-on area with dozens of Macintoshes for everyone to use.

The Macworld Exposition program is designed to fit your busy schedule. As a dealer, a distributor, a retailer, a business user, or an educator, the three-day conference and exposition is designed for you.


Day one is for dealers, distributors, retailers, and other third-party vendors to talk to Apple and the 100+ exhibiting companies about their products.

Days two and three are specifically geared for people interested in the Macintosh as a tool for business and anyone else interested in the Mac.

Who should attend?

Industry: Dealers, distributors, retailers, wholesalers, manufacturers, systems houses, consultants, technical programmers, all other ISOs
Business: CEOs, presidents, vice presidents, managers, comptrollers, owners/partners
Professionals: Doctors, nurses, bankers, lawyers, engineers, stockbrokers, real estate and insurance agents, CPAs, consultants

Here's a sampling of what you will learn at the Macworld Expo:

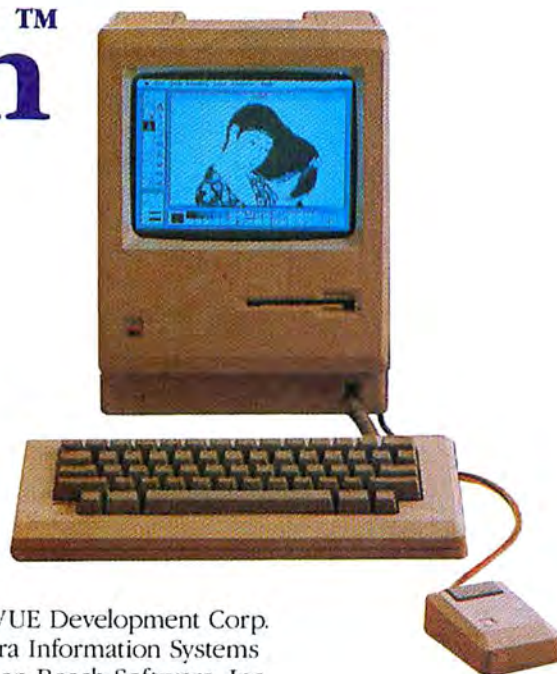
- What software is available for the Macintosh for use in the office, school and home
 - How to evaluate software before you buy it
 - Tips on database management
 - How to get the most mileage out of desktop publishing
 - Tips on using the Macintosh in small businesses
 - Tips on using the Macintosh in large organizations
 - The advantages of networking
 - Getting the most out of spreadsheet programs
- 

computer show the Macintosh™

*Here are some of the companies who will
be showing Macintosh products:*

Abaton Technology Corp.
Altsys Corp.
Ann Arbor Softworks, Inc.
A + /Ziff-Davis Publishing Co.
Apple Computer, Inc.
Applied Logic Systems
Applied Micro Solutions
Assimilation, Inc.
Avantec, Inc.
Bay Systems
Blackhole Technology, Inc.
Boston Software Publishers
Brainpower, Inc.
Capilano Computing Systems
Ltd.
Chancery Software Ltd.
CompServCo
Computer Friends
Conceptual Instruments
Corvus Systems
Creighton Development
Dataspace Corp.
Dayna Communications
Digital, Etc.
Divisions
Educomp
ESoft Enterprises
ExperTelligence
Express Computer Supplies
First Byte
Forethought, Inc.
Gemini Software
General Computer Co.
Great Wave Software
GTCO

Hayden Book Co.
Hayden Software
Hippopotamus Software
Infosphere
Innovative Technologies
The Kette Group, Inc.
Layered, Inc.
Levco Enterprises
MacPacks, Inc.
Mac Sink, Inc.
MacTUTOR
MacUser Publications
MACWORLD
Manx Software
MassTech Development Labs,
Inc.
Mentauris Technologies
Micah, Inc.
Micro Design
MicroSoft Corp.
MicroStore
Miles Computing
Mindscape, Inc.
MPH Computer Products
NEC Information Systems
Network Consulting, Inc.
New Line 7
Odesta Corp.
Optimum Computer Luggage
Paladin Software
Palantir Software
Panamax
Paradise Systems
PBI Software
Peachtree Software
Personal Computer Peripherals
Corp.
Prometheus Products



ProVUE Development Corp.
Sierra Information Systems
Silicon Beach Software, Inc.
SoftDesign
SoftIdea, Inc.
SoftView
Softworks Ltd.
Step Lively Software
T/Maker Graphics

The Macworld Exposition is produced by World Expo Company and managed by Mitch Hall Associates. For further information call Mitch Hall Associates at 617/329-7466 or 617/329-8091. Macworld Exposition is a registered trademark of World Expo Company, Inc. Macintosh is a trademark licensed to Apple Computer.

**MACWORLD
EXPOSITION**
SAN FRANCISCO

(continued from page 161)

FREE
Diskette Holder
 with purchase of
Each 30 SONY Diskettes
A \$14.95 Retail Value

SONY



Boxed in Tens

3.5" SS. 1.85 ea.
 3.5" DS. 2.95 ea.

Minimum order — 20 diskettes
 Special pricing available for large
 quantities — please call.



Stores and holds 30 disks —
\$8.95 Each or **FREE** with
 purchase of Each 30 SONY
 Diskettes.

ORDER NOW!

offer good only while supplies last.

CALL TOLL FREE
1-800-351-BEST
 in California 800-451-BEST

Visa, Mastercard or C.O.D. Corporate and
 government purchase orders accepted.
 Shipping charges are \$3.00/100 diskettes
 or fraction thereof. C.O.D. orders, add \$4.00
 handling. California residents add sales tax.



457 McGlincey Lane, #4
 Campbell, CA 95008
 (408) 559-9339

Circle 373 on reader service card

Some File Words

I like the way *Microsoft File* lets you create lengthy text fields, but I've always wished I could separate sentences and paragraphs with a carriage return. I can't press Return while entering data, since the insertion point moves to the next field in the record. However, I discovered that pressing Option-Return advances the insertion point to the next line.

Another keyboard-related tip deals with *Microsoft Word*. The hint isn't mentioned in the documentation but is buried in one of the help screens. With *Word* you can activate the buttons in dialog boxes using the keyboard. To switch disk drives at the Open or Save dialog boxes, for example, type ⌘-D. To eject a disk, type ⌘-E. To cancel a command, type ⌘-period. Also, you can type ⌘-1 to activate the leftmost button in a dialog box, ⌘-2 for the second button, ⌘-3 for the third, and so on. For example, to click the Change All button in the Change window—the fourth button from the left—type ⌘-4. With dialog boxes such as the "Save changes before closing?" query, you can answer yes by pressing Y and no with N.

The only situation in which the keyboard techniques fail occurs when you choose Save As and type an existing document name. In that case you can't respond

to "Replace existing file name?" from the keyboard.

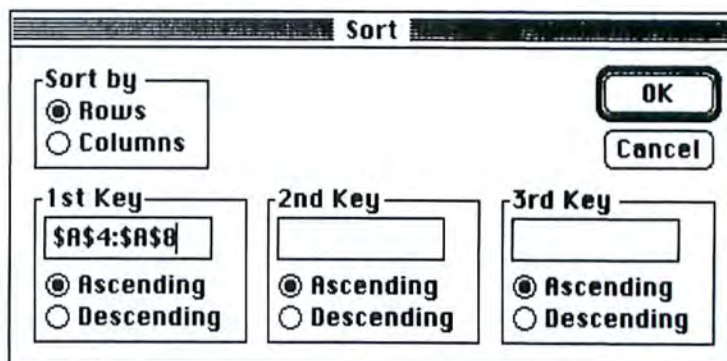
Joe Clark
 Halifax, Nova Scotia
 Canada

Microsoft File provides many of the same shortcuts but is inconsistent. You can, for example, control the Help screens using the ⌘-1, ⌘-2, and ⌘-3 keys, but you can't clear the search criteria in the Find window using ⌘-2.

Microsoft Excel also provides keyboard shortcuts. For example, you can specify bold text from a formatting dialog box by pressing B. And remember File's and Excel's "localized undo:" you can undo the clicking of radio buttons or check boxes in a dialog box by clicking the heading that appears above the buttons or boxes (see "Excel Boxes").

Here are two more undocumented File tips: You can insert a tab character in a text field by pressing Option-Tab. You can use the feature to indent the paragraphs that the Option-Return keystroke combination makes possible. Finally, in the Sort window, you can select a sort field by pressing Return until the field is highlighted, then pressing the space bar. To reverse the sort order from ascending to descending, press the space bar again. To clear a sort field—that is, to tell File not to use a field for sorting—highlight the field and press Backspace.—Ed.

(continues on page 168)



Excel Boxes

With Microsoft's Excel and File, you can undo the clicking of radio buttons or check boxes by clicking on the word that labels a set of buttons or boxes. In this Excel dialog box, for example, clicking on "1st Key" would undo any typing in the text box and the Ascending or Descending button settings.



Apple Mac 512™



IBM PCAT™



Commodore Amiga™

THERE'S ONLY ONE WORD FOR THESE PRICES: RIP-OFF.

Introducing the Atari 520ST personal computer system. \$799.95 complete.*

Go ahead. Compare those other machines with the new Atari 520ST™. They cost hundreds of dollars more, but you don't get much in return. That's what we call a rip-off.

For \$799.95*, the 520ST comes complete with high-resolution monochrome

monitor, 2-button mouse, 3.5" disk drive, TOS™ Operating System, including GEM™ Desktop, plus Logo™ and Atari BASIC programming languages. \$200 more gives you an RGB color monitor with 512 glowing colors.

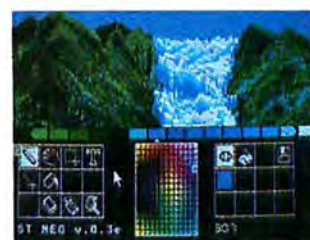
Choose innovative business, entertainment, education, systems management, and integrated package software. Expand your 520ST with industry standard parallel printers, modems, MIDI controlled synthesizers and key-

boards, 1 megabyte floppies, 10 MB and larger hard disks, and more. All available now. At remarkably low prices.

So, go ahead. Compare the ST system to those other guys. Only Atari gives you so much. For so little.

For the dealer nearest you, write Atari Corp., Customer Services, 1196 Borregas Ave., Sunnyvale, CA 94086.

*Plus applicable local taxes. \$999.95 with color monitor.
All prices are manufacturer's suggested retail list.



	ATARI™ 520ST	IBM™ PCAT™	APPLE™ Macintosh™	COMMODORE™ AMIGA™
Price	\$799	\$4675	\$2795	\$1795
CPU	68000	80286	68000	68000
Speed MHz	8.0	6.0	7.83	7.16
Standard RAM	512K	256K	512K	256K
Number of Keys	95	95	59	89
Mouse	Yes	No	Yes	Yes
Screen Resolution (Non-Interlaced Mode)				
Color	640 x 200	640 x 200	None	640 x 200***
Monochrome	640 x 400	720 x 350**	512 x 342	640 x 200***
Color Output	Yes	Optional	None	Yes
Number of Colors	512	16	None	4096
Disk Drive	3.5"	5.25"	3.5"	3.5"
Built-in Hard Disk (DMA) Port	Yes	Yes	No	No
MIDI Interface	Yes	No	No	No
No. of Sound Voices	3	1	4	4

**With optional monochrome board (non bit-mapped)

***Interlace Mode - 640 x 400



ATARI®
Power without the price.

IBM & PCAT are registered trademarks of International Business Machines Corp. Commodore & Amiga are trademarks of Commodore Electronics LTD. Apple & Macintosh are trademarks of Apple Computer, Inc. GEM is a trademark of Digital Research, Inc. Atari, TOS & Logo are trademarks of Atari Corp.

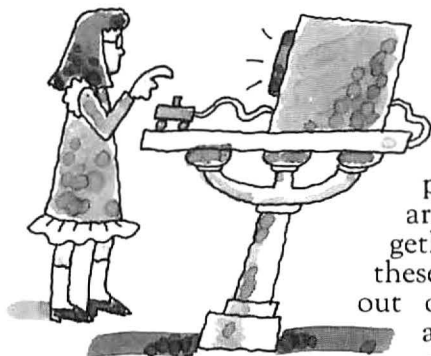
Circle 370 on reader service card

Mail to:
International Apple Core
Dept. MAC
908 George Street
Santa Clara, CA 95050

WANTED: OLD THINKER TOYS.

CW Communications, ComputerLand and The Computer Museum invite you to send in your early personal computers, software, and memorabilia — you could win a free trip to The Computer Museum in Boston

Your old, dusty "thinker toy" may now be ready to become a treasured museum piece. The Computer Museum in downtown Boston — an international museum dedicated entirely to computing — is searching for the very best and most unique relics of the personal computer revolution.

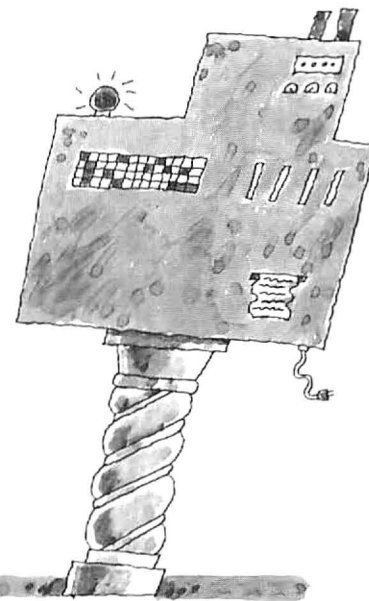
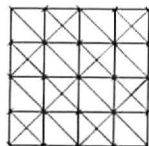


ComputerLand, CW Communications, and The Computer Museum are working together to bring these early relics out of your attic and into the collection of

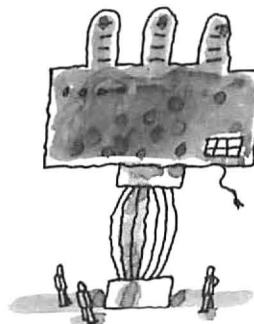
The Computer Museum. The museum is especially looking for kit machines, prototypes, programs, output, newsletters and memorabilia of early computing from around the world. A selection of the finest items will be used to create an exhibit on the

ComputerLand®

**The
Computer
Museum**



evolution of personal computers and a catalog highlighting the Museum's collections. If your submission is accepted for addition to the Museum collection, you will be invited to the grand opening of the exhibit and will receive a bound edition of the catalog. If your item is selected as one of the five best "finds", you will also receive an all-expense-paid trip to Boston for the grand opening party.



So, get up to the attic, down to the cellar and into your closets, and tell us what you find! Call or write the Museum for an official entry form, or send a photo and description of your items by March 1, 1986

to: The Computer Museum, Personal Computer Competition, 300 Congress St., Museum Wharf, Boston, Massachusetts USA 02110, (617) 426-2800, Telex: 62792318.



CW COMMUNICATIONS/INC.

Entries will be judged on significance, rarity, date, completeness and condition. Items particularly sought include pre-1980 machines, early serial numbers (get those number 1's out), machines made for purchase outside of North America (even modern machines are sought in this category); first releases of software such as first releases of operating systems, languages and mass-marketed and original applications; and pre-1980 photographs, newsletters, manuals and other records. The Computer Museum is a private non-profit educational institution. All donations are tax-deductible according to the provisions of the Internal Revenue Service. Thinker Toys is a registered trademark of George Murrow & Murrow Designs, Inc.

TopDesk adds 7 powerful features to your Macintosh!



From Within Your Application—

■ Change Fonts at the Touch of a Key!

Use **MenuKey** to dynamically assign command keys to menu items. Changes can be permanent or temporary.

■ Print Macwrite Documents While You Edit!

BackPrint is the only Print Spooler true to its name—prints text, Macwrite and Multiplan documents.

■ Create Macro Strings!

Customize **Abbrev** to assign phrases to your own abbreviations. Whenever you type the abbreviation the assigned phrase will be substituted. Like magic!

■ View Documents!

With **View** you can examine both text files and Macwrite documents. Cut and Paste without leaving your application.

■ Protect the Confidentiality of Your Files!

Encrypt makes it impossible for anyone else to read or decrypt your protected files.

■ Protect Your Screen from Image Burn-in!

Run **Blank** once and your screen is protected for as long as your Macintosh stays on.

■ Don't Wait to Run Another Program!

Just select **Launch** from the apple menu and you're off and running to your next application task.

Introductory Special: \$59.95

Mail or Call to Order.
Visa/MC
Cortland Computer, Inc.
 P.O. Box 9916
 Berkeley, CA 94709
(415) 845-1142

Please send me _____ copies of **TopDesk**. Enclosed is my check or money order for \$_____. I've added \$2.00 for shipping. (California add 6% sales tax)

Name _____

Signature _____

Address _____

City _____

State _____ Zip _____

Visa/MC # _____

Phone _____

Macintosh and Macwrite are trademarks of Apple Computer, Inc. Multiplan is a trademark of Microsoft Corp.

Circle 418 on reader service card

Open Window

(continued from page 164)

More MBASIC Keyboard Shortcuts

I was excited to read about the keyword-entry shortcuts in MBASIC 2.0 (see "MBASIC Keyboard Shortcuts," *Open Window*, *Macworld*, May 1985) and even more excited when I discovered shortcuts for an additional 28 keywords (see "More MBASIC 2.0 Shortcuts"). When entering a program in the listing window, press Option along with the appropriate key. When you press Return, the special or accented character changes into a keyword.

Bernd Stueckler Morsbach, West Germany

Entering characters that have diacritical marks on the U.S. keyboard involves two steps. First you hold down the Option key and type the appropriate key for the mark you want. For example, type Option-u for the umlaut. Then type the character that goes under the mark. You can see the Option characters by choosing the Key Caps desk accessory and holding down the Option key. —Ed.

More on the Model 100

I was delighted to find Peter Vaktor's simple solution to the problem of adding line-feed characters to carriage returns when transferring information from the Model 100 to *MacTerminal* (see "Model 100 Update, Part II," *Open Window*, *Macworld*, July 1985). I've been successfully transferring Model 100 files to the Macintosh since.

I recently succeeded in uniting the Model 100 and the Imagewriter. Using two male DB-25 connectors, some ribbon cable, and a soldering pencil, I assembled a

(continues on page 170)

Option-character Keyword

é	ELSE
ú	LEFT\$
í	FIX
ó	GOTO
á	CLOSE
è	EOF
ù	LEN
ì	FN
ò	IF
à	COMMON
ë	FIELD
ü	LINE
ï	GET
ö	INPUT
ä	CVD
Ü	CINT
Ö	CHR\$
Ä	ABS
ê	EXP
û	LET
î	FOR
ô	INKEY\$
â	COS
É	CAL
ñ	GOSUB
õ	INT
ã	CVI
Ñ	CDBL

More MBASIC 2.0 Shortcuts

You can enter many MBASIC keywords by holding down the Option key while typing the key corresponding to the desired diacritical mark, then typing the letter and pressing Return.

How Adding Macros Gives You More Speed, Less Mousing Around

Finally – the first true macros for the Macintosh!
Fly through complex strings of commands! Integrate programs automatically!
Make Jazz™ sing, Word™ dance, and Excel™ jump for joy!

Add the Power of Macros to Your Macintosh

What's a macro? A macro records any sequence of commands or keyboard entries once and then replays them all quickly forever after. A single keystroke will recall the most complex series of commands. And you can create up to 450 Tempo macros in every application.

Go beyond simple record and playback. You get powerful features that will enhance nearly every Macintosh program. Programs like Jazz™, Excel™, MacPublisher™, MacDraw™, Helix™, OverVUE™, File Vision™ and nearly every other™ designed for the Macintosh.

Automate lengthy commands. Just turn Tempo on while you perform a series of commands or keystrokes once, and *voilà!* you've made a macro. Format spreadsheets. Add boilerplate. Get creative!
Build vertical market applications by integrating unrelated programs with Tempo. You can create a single macro to automatically move data between an unlimited number of Macintosh programs.

Not just for the "power user." Even if you only use Tempo for tasks like printing out a document with one command instead of three, you'll save time in nearly every Macintosh application.

Fantastic Features Make the Difference!

Pause for text entry. Tempo will stop while replaying the series of commands so you can enter information. You can even *create your own dialog box!* That way, your Tempo macro can walk somebody through a program they've never used before.

Pause for Time. Either hours, minutes or seconds or until a given clock time, when the macro automatically starts up again. Works great

with modems. Or for reading lab data at regular intervals.

Logical Branching! A Tempo macro will read a spreadsheet cell or a database entry or anything else you can copy into the clipboard, and *branch to another macro* based on the contents. It uses simple "greater-than" and "equal-to"-style Boolean logic, and actually lets you *program your programs.*

"Live through the Launch." One macro can launch a hundred programs. Now there's beauty!

You can take information from your accounting program, move it to a spreadsheet, compare it to last month's results, build a graph from it, and modern it to an analyst. All with a single keystroke!

Real-Time Replay. Play back at the same speed you recorded. You can create "self-running demos" for nearly any Macintosh software.

Much, Much More! We haven't even covered *editing* your macro after you've created it, using standard Copy, Cut and Paste functions. Or *suspending* or *cancelling* action in the middle of a macro. And much more still.

Tempo™

Two Great Negative Reasons to Buy Tempo Now!

1. Tempo is *not copy-protected*, so you can easily install it in your hard drive.
2. If you're *not absolutely happy* with what Tempo can do for you and your Mac, return it for a complete refund. We'll guarantee your satisfaction!

Call

1-800-255-5550 x425
right now, today!

Call us for the dealer nearest you, or you can order directly from us. For \$99, you get more macro power than a micro has ever had before.



Affinity Microsystems, Ltd.
 1050 Walnut Street, Suite 425
 Boulder, CO 80302

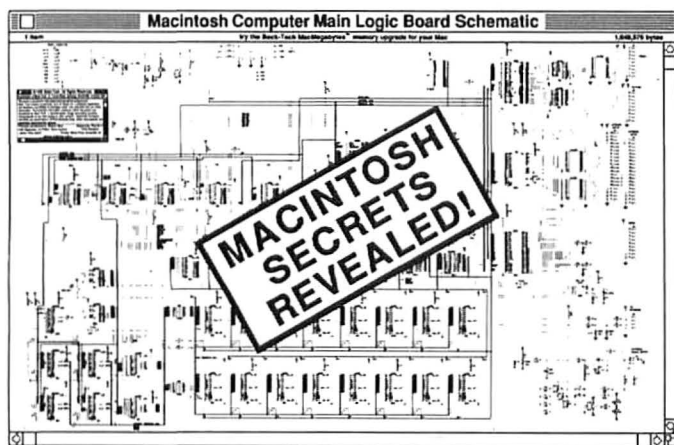
Only Tempo lets you...

- ☒ Edit Your Macro
- ☒ Link Programs Together
- ☒ Pause for Text Entry
- ☒ Create Dialog Boxes
- ☒ Pause for Interval
- ☒ Branch with Logic
- ☒ Suspend Replay
- ☒ Cancel Replay
- ☒ Set Replay Speed
- ☒ Replay in Real Time

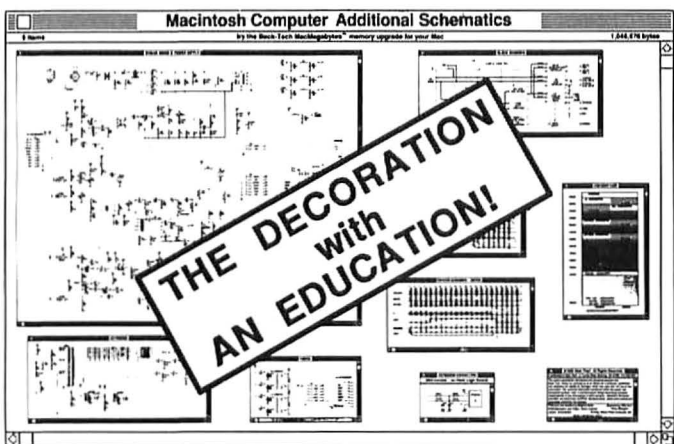
FINALLY!

FACTS of MAC™

POSTERS



Everything you wanted to know about the Macintosh computer circuitry in a convenient poster format



- #MP1 Complete Main Logic Board Schematic
- #MP2 Analog Board, Power Supply, Mouse & Keyboard schematics plus block diagram, timing diagrams and memory map

only \$9.95 each

Size 22"x34" (56cm x 87cm)
Black on White Poster Stock

add \$3.00 shipping & handling per order - California addresses
add 6.5% sales tax - allow two to four weeks for delivery

MasterCard, VISA, American Express, check* or money order
*check may require 2 weeks additional to clear - MacMEGABYTES
and FACTS of MAC are trademarks of Beck-Tech - Macintosh and
MAC are trademarks of APPLE computer corporation

order from: or call toll-free:
BECK-TECH 800-227-2400, ext. 999
41 Tunnel Road within California call:
Berkeley, CA 94705 800-772-2666, ext. 999

Creators of MacMEGABYTES™
One Megabyte Memory Expansion Board
Circle 425 on reader service card

Open Window

(continued from page 168)

cable that lets me print Model 100 files on the Imagewriter (see "Model 100-to-Imagewriter Cable"). Before printing, start the Model 100's Telcom program and change the communications parameters to 9600 bps, 8-bit word length, no parity, 1 stop bit, and Xon/Xoff handshaking disabled (88NIE PP). The print quality can't match the Mac's, but the Imagewriter prints clearly and quickly.

Gordon Haig
Oakland, California

*In case you missed the solution to the Model 100/MacTerminal line-feed problem, here it is: Start the Model 100's BASIC by pressing the Enter key while the main menu is displayed. Next, type **POKE 63066,255** and press Enter. That statement alters 1 byte of the Model 100's memory, causing the Model 100 to send line-feed codes following carriage returns. The byte remains altered until you perform a "cold start" on the Model 100 or until you execute the statement **POKE 63066,0**.*

You need to make the same modification to successfully print Model 100

(continues on page 172)

Imagewriter	Model 100
1 _____	1
2 _____	3
3 _____	2
7 _____	7
20 _____	6

Model 100-to-Imagewriter Cable

Using two male DB-25 connectors and some ribbon cable, you can make a cable that connects the Radio Shack Model 100 portable computer to the Imagewriter.

"We will match any mail order price in this issue."

We'll support, service and warranty everything we sell and stand behind it 100%. We won't charge you for shipping or handling, nor will we penalize you for using a credit card.



William F. Golan
President BCP

PERIPHERALS & ACCESSORIES

Apple		Imagewriter 10"	
Mac 128k & 512k	494.95	5 Mb. Removable	1289.95
Imagewriter 15"	564.95	Cartridges	39.95
External Drive	409.95	Head Cleaner	59.95
Numeric Pad	89.95	Joysticks	
Assimilation		Kraft Quick Stk.	54.95
All Products	CALL	Video 7 Mouse Six	39.95
Creighton		Kensington	
Pro Print w/cable	64.95	A-B Box w/Cable	74.95
Pro Print A/B	144.95	Control Cnt.	69.95
Curtis		Dust Mac	9.95
Diamond	34.95	Dust Image 10"	9.95
Emerald	39.95	Surge	39.95
Ruby	59.95	Swivel	24.95
Safe Strip	19.95	Starter Pac	59.95
Command Center	114.95	Printer Stand	19.95
DC Hayes		Mouse Cleaner WiPox	19.95
Smartmodem 1200	384.95	Head Cleaner	22.95
Smartmodem 2400	594.95	Polarizing Fil.	37.95
Disks		Koala	
BASF (5)	13.95	MacVision	179.95
Maxell (10)	32.95	Microsoft	
Memorex (10)	28.95	Enhancer	159.95
Sony SS/DD (10)	29.95	Okidata	
Sony DS/DD (10)	39.95	192 Image	379.95
Verbatim (10)	31.95	193 Image	569.95
Fip & File (40)	21.95	PCPC	
Ergotron		Mac Bottom 10 mb	1229.95
Mac Tri	69.95	Pro 1200	344.95
General Computer		Thunderware	
Hyper Drive 20 mb	CALL	ThunderScan	179.95

ACCOUNTING SOFTWARE

Arrays		Peachtree	
Home Accountant	69.95	A/R	94.95
Digital Etc.		A/P	94.95
Mac Accountant	169.95	G/L	94.95
Future Design		Softsync	
Stricky Bus. G/L	CALL	Personal Acct.	54.95
Monogram		State of Art	
Dollars & Cents	89.95	Electric Chk. B.	49.95
Forecast	44.95	Symposium	
Palantir		G/L	119.95
G/L	89.95		
A/R	89.95		

BUSINESS SOFTWARE

Advanced Logic		Enterset	
Mighty Mac	64.95	Quick Sat	64.95
Aegis		Quick Word	39.95
Mac Mail Telecom	CALL	Forethought	
ZapInvoice	CALL	Factfinder	89.95
House Keeper	CALL	Filemaker	119.95
Alegro		Haba	
Personal Finance	34.95	Habadek	39.95
Business Analy.	34.95	Quartet	134.95
Apple		Hayden	
Mac Project	99.95	Mac Base	119.95
Brain Power		Ensemble	169.95
Statview	109.95	Know it's There	29.95
CSD		Speller +	49.95
Mac Lion	219.95	Human Edge	
Creighton		Mind Probe	34.95
Mac Office	34.95	Living Videotext	
Mac Home	34.95	Think Tank 128	79.95
Mac Spell +	59.95	Think Tank 512	134.95
Desktop		Lotus	
1st Base	109.95	JAZZ	Cal
Merge/Port	129.95	Megahaus	
Dow Jones		Megamerge	79.95
Straight Talk	59.95	Megalife	117.95
Market Mng. +	144.95	Megalorm	174.95
Spreadsh. Link	64.95	Megadesk	79.95

BUSINESS SOFTWARE

Microsoft		Omnia 3	
Chart	79.95	Paladin	
File	119.95	Crunch 512	169.95
Multiplan	119.95	ProVue	
Word	119.95	OverVue	169.95
Business Pack	349.95	Sierra On Line	
Excel	244.95	Mac One Write	149.95
Mirage		Software Publishing	
Express (cp)	19.95	PFS:File/Report	104.95
Express (ncp)	34.95	StoneWare	
Odesta		DB Master	114.95
Helix 512	234.95	Telos	
Organizational		Filvision	109.95
Omnia 2	149.95		

LANGUAGES & UTILITY SOFTWARE

Borland		Hippopotamus	
Sidekick	54.95	Hippo C Lev. 1	99.95
Phone Link	29.95	Hippo C Lev. 2	249.95
Central Point		Hippo Lock	79.95
Copy II Mac	24.95	Microsoft	
Creative Solutions		Basic	89.95
Mac Forth Lev. 1	89.95	Logo	79.95
Mac Forth Lev. 2	144.95	Nevins	
Expertelligence		Turbo Charger 512	69.95
Expert Logo	69.95	Pirates Harbor	
Expert Lisp	279.95	Mac Crack	39.95
ExpertOps 5 (need Lisp)	194.95		

GRAPHICS & PUBLISHING SOFTWARE

Axon		Magnum	
Art Portfolio	39.95	MacPic V. 1	34.95
Card Shop	39.95	MacPic V. 2	34.95
Mac Match	34.95	Slide Show	39.95
Datafood		Manhattan	
Mac Forms	54.95	Ready-Set-Go 512 V. 2.0	77.95
Enterset		Matrix	
Quick Paint	34.95	Images	29.95
Hayden		Miles	
Art Grabber	34.95	Mac Knife V. 1	27.95
DaVinci Bldg. Bks	49.95	Mac Knife V. 2	34.95
DaVinci Comm. Int.	119.95	Silicon Beach	
DaVinci Houses	34.95	Accessory Pak # 1	27.95
DaVinci Int.	34.95	Springboard	
DaVinci Landsc.	34.95	Art a'la Mac #1	27.95
Body Shop	34.95	Art a'la Mac #2	27.95
Video Works	64.95	T/Maker	
Home Design	49.95	Click Art	34.95
Kensington		Click Art Pub.	34.95
Font Set	64.95	Click Art Let.	34.95
Text Fonts	34.95	Click Art Ell.	34.95
Headline Fonts	49.95	ClickOn Wks.	74.95

MONTHLY SPECIAL

Brain Power
Save Almost 50%

* Chipwits	49.95	26.95
* Tele Chess	69.95	37.95
* Think Fast	39.95	22.95
* Torpedo Run	49.95	26.95
* Stat View	199.95	99.95

EDUCATIONAL & PERSONAL SOFTWARE

ATI		Mark of Unicorn	
Mac Coach	49.95	Professional Composer	289.95
Mac Multiplan	49.95	Microsoft	
Mac Value Pk	119.95	Learn MultiChart	39.95
Mac Coach	119.95	Apple Mac (Bk)	16.95
Think Tank	119.95	Presentation G. (Bk)	15.95
Brain Power		Mac WorkPlay (Bk)	15.95
Chipwits	34.95	Inside MacPaint (Bk)	15.95
TeleChess	44.95	Multi MacMen (Bk)	14.95
Thinkfast	29.95	Palantir	
Torpedo Run	39.95	MacType	34.95
First Byte		Math Flash	34.95
Smooth Talker	89.95	Word Play	34.95
Davidson Assoc.		Rubicon	
Speed Reader II	49.95	Song Painter	39.95
Spell It	34.95	Deja Vu	27.95
Math Blaster	34.95	Scarborough	
Word Attack	34.95	Make Millions	34.95
Forethought		Mastertype	34.95
Typing Intrigue	34.95	Run for the \$	34.95
Great Wave		Tri-Pac (3)	79.95
Concertware	44.95	Simon & Schuster	
Hayden		Typing Tutor III	39.95
Musicworks	49.95	Great Paper Air	27.95
Turbo Turtle	39.95	Think Educational	
SAT Combo	64.95	Mind Ov. Mac	34.95
Word Challenge	27.95	Mac Edge	34.95

GAME SOFTWARE

Acivision		Microsoft	
Champ Baseball	24.95	Entrepreneur	34.95
Artworx		Miles Computing	
Strip Poker	27.95	Mac Attack	32.95
Aegis		Strike Mission	34.95
Pyramid of Peril	34.95	Mindscape	
Mac Challenge	34.95	Balance of Power	32.95
Blue Chip		De Java	34.95
Barron	35.95	Origin Systems	
Milonaire	35.95	Exodus Ultima III	44.95
Squire	44.95	PBI Software	
Tycoon	35.95	Feathers & Space	24.95
Broderbund		Penguin	
Cyborg	27.95	Pensate	27.95
Lode Runner	27.95	The Quest	27.95
CBS		Transylvania	27.95
Murder by Dozen	29.95	Xyphus	27.95
Creighton		Priority	
Mac Command	24.95	Forbidden Quest	29.95
Epyx		Gateway	34.95
Rogue	27.95	Sierra On Line	
General		Champ Boxing	27.95
Ground Zero	27.95	Frogger	27.95
Hayden		Ultima II	39.95
Holy Grail	34.95	Silicon Beach	
Masterpieces	27.95	Airborne	24.95
Sargon III	34.95	Sir Tech	
Infocom		Wizardry I	39.95
Wishbringer	27.95	Softlife	
Cutthroats	27.95	Mac Slots	34.95
Deadline	34.95	Spectrum	
Enchanter	27.95	Gato	39.95
Hitchhiker's G	27.95	Spinnaker/Telarium	
Intidel	29.95	Amazon	27.95
Mind F. Voyaging	29.95	Dragon World	27.95
Planetfall	27.95	Fahrenheit 451	27.95
Seastar	27.95	R with Rama	27.95
Sorcerer	29.95	Synapse	
Starcross	29.95	Essex	29.95
Suspect	29.95	Mindwheel	29.95
Suspended	29.95	Brimstone	29.95
Witness	27.95	Unicon	
Zork I	27.95	Mac Robot	34.95
Zork II, III (ea)	29.95	Animal Kingdom	32.95
Magnum		Vindex	
Gypsy	27.95	Mac Checkers	32.95
Mark of Unicorn		Mac Gammon	32.95
Mouse Stampede	24.95	Mac Vegas	37.95

BC BUSINESS COMPUTERS
OF PETERBOROUGH
GOLF & COUNTRY

766 RT. 101 W. • P.O. Box 389 • Peterborough, NH 03458

ORDERS ONLY 800-845-3003

QUESTIONS
603-924-9406

FREE SHIPPING
CONTINENTAL USA/UPS ONLY
APO/FPO WELCOME

MasterCard

VISA

Open Window

```

'CONCENTRATE BY T.E. WHITE VERSION 2.0 7-2-85
              620 KIRBY LANE PERMISSION GRANTED
              RICHARDSON, TEXAS FOR PUBLIC DOMAIN USE.

'BEST RESULTS REQUIRE CAIRO 18 AND/OR CAIRO 36 FONTS IN THE SYSTEM.
'CLICK-IN SQUARE TO SEE HIDDEN PICTURE, THEN CLICK ANOTHER SQUARE,
'IF THE TWO PICTURES MATCH THEY REMAIN; IF NOT, THEY VANISH.
'KEEP CLICKING UNTIL ALL PICTURES ARE VISIBLE
'YOUR TIME WILL BE DISPLAYED.

GOSUB INITIALIZE
GOSUB CALCULATE.GRID
GOSUB PRINT.GRID
GOSUB DEAL.IMAGE
GOSUB MAKE.MENUS
ON MENU GOSUB MENU.CHECK
ON MOUSE GOSUB GET.PICK

LOOP:
  MOUSE ON
  MENU ON
GOTO LOOP

INITIALIZE:
  LI=1
  RANDOMIZE(TIMER/4)
  DEFINT A=2
  IF PEEK(4194313)=255 THEN LI=1 'CHECK IF LISA OR MACINTOSH
  DIM E(520+LI*320)
  SIZE = 4
  LX=1
RETURN

MAKE.MENUS:
  IF SIZE=4 THEN A=2:B=1:C=1
  IF SIZE=6 THEN A=1:B=2:C=1
  IF SIZE=8 THEN A=1:B=1:C=2
  MENU 6,0,1,"Concentrate"
  MENU 6,1,1,"New game"
  MENU 6,2,A,"4 x 4 grid"
  MENU 6,3,B,"6 x 6 grid"
  MENU 6,4,C,"8 x 8 grid"
  MENU 6,5,1,"Quit"
  CALL TEXTFONT(11)
  CALL TEXTSIZE(8/SIZE*18)
  STARTI=TIMER
RETURN

DEAL.IMAGE:
  DEAL=(33+96*RND)
  D=0:
PUT.NUMBER:
  X=1+(SIZE-1)*RND
  Y=1+(SIZE-1)*RND
  IF IMAGE(X,Y)=0 THEN IMAGE(X,Y)=DEAL:GOTO CHECK
  FOR X=LX TO SIZE:FOR Y=1 TO SIZE
  IF IMAGE(X,Y)=0 THEN IMAGE(X,Y)=DEAL:LX=X:GOTO CHECK
  NEXT Y,X
RETURN

CHECK:
  D=D+1
  IF D=1 THEN GOTO PUT.NUMBER ELSE GOTO DEAL.IMAGE

CALCULATE.GRID:
  LSX=(496+LI*128)/SIZE:LSY=(248+LI*32)/SIZE 'LS=GRID LINE SPACING
  XM=LI*32+4
  YM=0 'M= GRID MARGIN
  FOR L=0 TO SIZE+1:
  X(L)=XM+(L-1)*LSX
  Y(L)=YM+L*LSY
  NEXT L
RETURN

```

```

SHOW.PICK:
  CALL MOVETO((PICK.X-1)*LSX+XM+LSX/4,PICK.Y*LSY+YM+LSY/6)
  PRINT CHR$(IMAGE(PICK.X,PICK.Y)),
  LINE(XM+PICK.X*LSX,YM)-(XM+PICK.X*LSX,YM+LSY*SIZE)
RETURN

PRINT.GRID:
  FOR L=1 TO SIZE+1:
  LINE(X(L),Y(0))-(X(L),Y(SIZE))
  LINE(X(1),Y(L-1))-(X(SIZE+1),Y(L-1))
  NEXT L
  PICK=0
RETURN

GET.PICK:
  MOUSE OFF:MENU OFF
  MO=MOUSE(0):MX=MOUSE(1):MY=MOUSE(2)
  PICK.X=INT((MX-XM)/LSX)+1
  PICK.Y=INT((MY-YM)/LSY)+1
  IF PICK.X=FIRST.X AND PICK.Y=FIRST.Y THEN RETURN
  IF IMAGE(PICK.X,PICK.Y)=0 THEN RETURN
  GOSUB SHOW.PICK
  IF PICK=1 GOTO SECONDPICK:
  PICK=1
  FIRST.X=PICK.X:FIRST.Y=PICK.Y
RETURN

SECONDPICK:
  PICK=0
  IF IMAGE(FIRST.X,FIRST.Y) <> IMAGE(PICK.X,PICK.Y) GOTO ERASE.UM
  IF FIRST.X=PICK.X AND FIRST.Y=PICK.Y THEN PICK=1
  IMAGE(FIRST.X,FIRST.Y)=0
  IMAGE(PICK.X,PICK.Y)=0
  FOR X=1 TO SIZE
  FOR Y=1 TO SIZE
  IF IMAGE(X,Y) <> 0 THEN RETURN
  NEXT Y,X
  FINISHI=TIMER
  CALL TEXTFONT(11)
  CALL TEXTSIZE(12)
  CALL MOVETO(180+90*LI,265+32*LI)
  PRINT "YOU TOOK ";FINISHI-STARTI;"SECONDS"
RETURN

ERASE.UM:
  GET(XM+(FIRST.X-1)*LSX+1,YM+(FIRST.Y-1)*LSY+1)-(XM+FIRST.X*LSX-1,YM+FIRST.Y*LSY-1),E
  PUT(XM+(FIRST.X-1)*LSX+1,YM+(FIRST.Y-1)*LSY+1)-(XM+FIRST.X*LSX-1,YM+FIRST.Y*LSY-1),E
  GET(XM+(PICK.X-1)*LSX+1,YM+(PICK.Y-1)*LSY+1)-(XM+PICK.X*LSX-1,YM+PICK.Y*LSY-1),E
  PUT(XM+(PICK.X-1)*LSX+1,YM+(PICK.Y-1)*LSY+1)-(XM+PICK.X*LSX-1,YM+PICK.Y*LSY-1),E
  PICK.X=0:PICK.Y=0:FIRST.X=0:FIRST.Y=0
RETURN

MENU.CHECK:
  MOUSE OFF:MENU OFF
  MO=MENU(0):M1=MENU(1)
  IF M1=2 THEN SIZE=4:A=2:B=1:C=1
  IF M1=3 THEN SIZE=6:A=1:B=2:C=1
  IF M1=4 THEN SIZE=8:A=1:B=1:C=2
  IF M1=5 THEN END
  CALL TEXTSIZE(8/SIZE*18)
  FOR X=1 TO SIZE:FOR Y=1 TO SIZE 'ERASE OLD DEAL
  IMAGE(X,Y)=0:NEXT Y,X
  LX=1
  GOSUB CALCULATE.GRID
  CLS
  GOSUB PRINT.GRID
  GOSUB DEAL.IMAGE
  GOSUB MAKE.MENUS
RETURN

END

```

Concentrate Listing

This MBASIC program lets you test your concentration skills. The object of the game is to match all the sets of pictures in the shortest time.

(continued from page 170)

files on the Imagewriter. If you don't, the same problem will occur: the Imagewriter's carriage will return to the left margin without advancing one line. You can close switch 8 of the Imagewriter's DIP switch SW1 as an alternative to the POKE statement; however, doing so requires that you open the switch to print from the Mac. See page 47 of the Imagewriter manual for information on line-feed settings.—Ed.

Concentrate in BASIC

I've written an MBASIC 2.0 game that lets you test your concentration skills (see "Concentrate Listing"). The game works best if your System file contains the Cairo font. After carefully typing the game's listing, save it. Then choose Run from MBASIC's Program menu. A grid appears on the screen. Click in any square and you see a picture. You see a letter or other character if your System file lacks Cairo. Next, click in another square. If the two pictures match, they both remain on the screen. If they don't match, they both disappear. The object of the game is to keep clicking until all pictures are visible, at which point the elapsed time is displayed. For a real challenge use the 6 x 6 or 8 x 8 command in the Concentrate menu.

Thomas E. White
Richardson, Texas

Rambo's Type

I've discovered that most of the graphic images in Miles Computing's *MacAttack* arcade game come from four fonts—Tank, Missile, MATitle, and Landscape—that are

(continues on page 174)

Drives Your Mac Twice As Hard

The Mirror Magnum™ 800K Drive

The Magnum™ Drive

The Mirror Magnum™ doubles the capacity and power of your Mac, and it's 50% faster than your standard Mac drive. Know what that means? You can finally use your Mac to its fullest potential.



Twice the Power. 50% Faster.

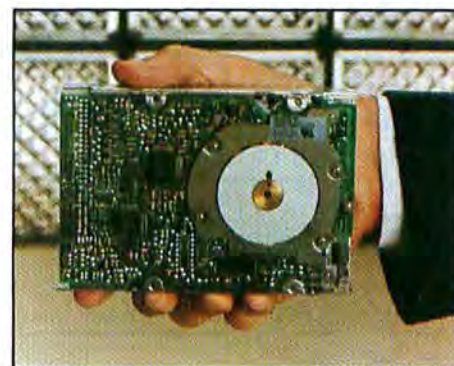
Run Jazz™, Excel™, Microsoft Word™ and File™. Use your most powerful software for all it's worth. Of course, Magnum isn't just brute force. It's also incredibly intelligent. It will recognize your single and dual-sided disks, writing to and reading from them accordingly. No modifications. No special formats. Just plug and play.

Great Hard Drive Backup

Take your Mac. Add Apple's Hard Disk 20™. Now, plug in the Magnum for 800K of powerful, fast backup. Its enormous capacity and world-class speed make this a natural combination.

Apple Support

Mirror technologies is certified by Apple Computer as a Macintosh Developer. Apples support made the Magnum possible, and Sonys support helped us to make the Magnum the reliable, high quality drive you and your Mac deserve. We thank Apple and Sony. So will you.



Sony's quality. Our concept.

We based the Mirror Magnum on Sony's 800K 3.5-inch microfloppy disk drive.* That's the same fine quality drive already in your Macintosh. We figured it just made sense to start with the best. The result is a fast, powerful drive that is everything it should be...to make your Mac everything it should be.

To Order: Call 612-426-3276 for the name of your nearest Mirror Technologies dealer.

Start driving your Mac twice as hard.

MIRROR TECHNOLOGIES

2209 Phelps Road
Hugo, Minnesota 55038

Circle 406 on reader service card

* Also available with the high-quality Chinon mechanism.

Apple and Macintosh are registered trademarks of Apple Computer, Inc. / Sony is a trademark of the Sony Corp. / Pagemaker is a trademark of the Argus Corp. / Excel, Microsoft Word and File are trademarks of Microsoft Corporation

Open Window

(continued from page 172)

part of the *MacAttack* system disk (see "Fighting Fonts"). You can use Apple's Font/DA Mover to copy the fonts to other disks for use with other applications.

The Landscape font contains the scenery from the game. Characters 0 through 9, for example, give you the city pictured in the game, while A through Z display mountains. The Tank font contains the tanks, the planes, and the missiles used in the game. The Missile font is a stencil-like typeface, while MATitle contains the game's control-

Brian Kalt

Southfield, Michigan

Aligning with Decimal Tabs

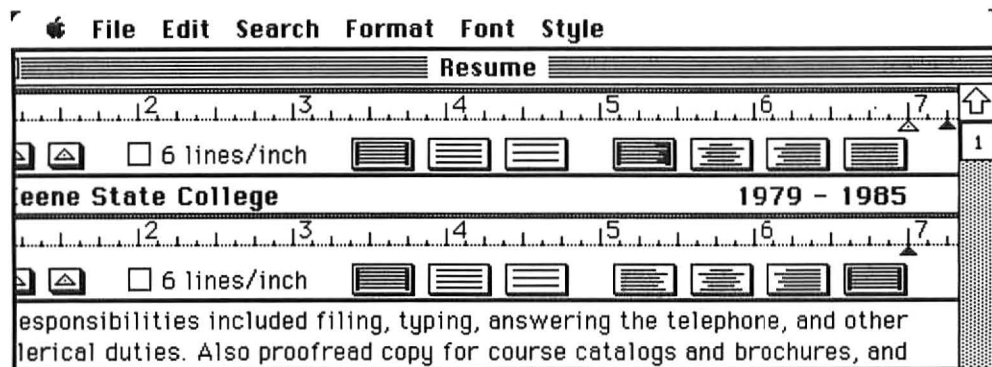
In a resume I recently put together, I wanted each job title to appear at the far-left side of a line and information about years worked at the far right. The rest of the text was justified, and I wanted the years to line up with the paragraphs' right margins. I first used *MacWrite*'s Option-Space trick to create a "hard" space (see "Hard MacWrite Spaces," *Open Window*, *Macworld*, May 1985). That worked until I changed fonts or sizes. The spacing was ruined and put me back to square one.

Then I found I could use the decimal tab to do the aligning. Even with a dash

separating two separate years, a decimal tab located at the far-right margin aligns the year information properly. With *MacWrite* there's just one problem: you cannot put a decimal tab exactly at the right margin, presumably to allow room for the decimal point. So I made a "template" containing two rulers. The first has a right margin of 7¼ inches and a decimal tab at the 7-inch mark (see "Decimal Tab Alignment"). That ruler is followed by a dummy line, which I later replace with actual text, and another ruler with the right margin at 7 inches. I then copy the template to the Clipboard and paste it wherever I need it. The decimal tab keeps things aligned even after changing fonts.

Paul J. Cohen

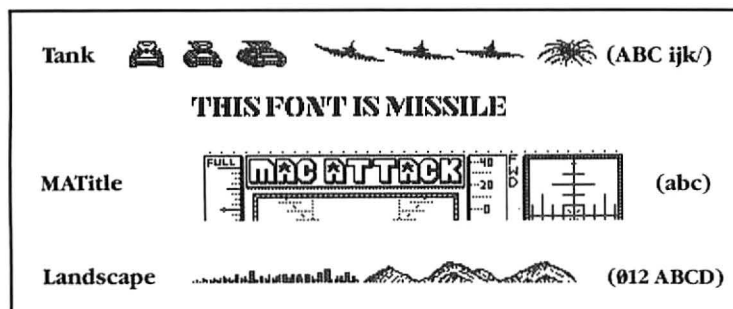
Beverly, Massachusetts



Decimal Tab

Alignment

To align numbers with the right margin in *MacWrite*, use a decimal tab. Widen the window and make a template with one ruler that has the right margin at 7¼ inches and a decimal tab at the 7-inch mark.



Fighting Fonts

The graphic images in Miles Computing's *MacAttack* are from four fonts that you can copy, using the Font/DA Mover, for use with other applications. Here, samples of the four fonts are shown along with the keys that created them.

Perhaps you've come up with a nifty routine, gained some insight into how the Mac or an application program works, or even written a short program that performs a useful function or creates an interesting diversion. Tell us about it, and we'll pass your discovery along. We'll also pay \$25 to \$100 for each *Open Window* item published. Please send your Macintosh discoveries on disk—which we will return—along with a brief hard-copy description to *Open Window*, *Macworld*, 555 De Haro St., San Francisco, CA 94107, or electronically to CompuServe 70370,702 or The Source BCW440. All published submissions become the property of *Macworld*. □



MacSational Savings on 128K and Fat Macs

SOFTWARE

ACTIVISION	
Championship Baseball	22.99
AEGIS DEVELOPMENT	
Mac-Challenger	31.99
Pyramid of Peril	31.99
BATTERIES INCLUDED	
Battery Pack	32.99
BLUE CHIP SOFTWARE	
Barron	35.99
Millionaire	35.99
Tycoon	35.99
BRODERBUND	
Lode Runner	25.99
COMPUTER SOFTWARE DESIGNS	
MacLion	239.00
COUNTERPOINT	
Copy II MAC	29.99
CREATIVE SOLUTIONS	
MacFORTH Level I	94.99
MacFORTH Level II	139.00
CREIGHTON DEVELOPMENT	
MacHome	31.99
MacOffice	31.99
MacSpell	59.99
Proprint with cable	69.99
DAVIDSON & ASSOCIATES	
Speed Reader II	44.99
DOW JONES	
Market Manager Plus	129.00
Spreadsheet Link	64.99
Straight Talk	49.99
EXPERTTELLIGENCE	
ExperLisp	319.00
Exper Logo	94.99
FORETHOUGHT	
Factfinder	94.99
Typing Intrigue	31.99
GREAT WAVE	
Concert Ware Plus	44.99
HAYDEN SOFTWARE	
Art Grabber w/Body Shop	31.99
Home Design	49.99
Video Works	63.99
Davinci Building Blocks	49.99
Davinci Commercial Interiors	119.99
Davinci: Houses	30.99
Davinci: Interiors	30.99
Davinci: Landscapes	30.99
Ensemble	199.00
Hayden Speller	49.99
Sargon III	30.99

HUMAN EDGE	
Mind Prober	30.99
Sales Edge	119.00
Negotiation Edge	139.00
INFOCOM	
Cutthroats	24.99
Hitchhiker's Guide/Galaxy	24.99
Wishbringer	24.99
KENSINGTON	
Headline Fonts	44.99
Text Fonts	31.99
Font Set	64.99
LIVING VIDEO TEXT	
Think Tank 512K	139.00
Think Tank	84.99
LOTUS	
Jazz	399.00
MANHATTAN GRAPHICS	
ReadySetGo 512K	79.99
MICROSOFT	
Mac Business Pak	389.00
Mac File	125.00
Macintosh Basic	99.99
Macintosh Chart	79.99
Macintosh Multiplan	119.00
Microsoft Mac Word	119.00
Excel	259.00
MacFortran	189.00
MILES COMPUTING	
Mac Attack	29.99
Mac the Knife Volume I	26.99
Mac the Knife Volume II	29.99
MINDSCAPE	
Deja Vu	34.99
Racter	29.99
Perfect Score	49.99
Balance of Power	29.99
MONOGRAM	
Dollars & Sense	84.99
PEACHTREE	
Back to Basics—Accounts Payable	99.99
Back to Basics—Accounts Receivable	99.99
Back to Basics—General Ledger	99.99
ORIGIN SYSTEMS	
Ultima III Exodus	99.99
PALADIN SOFTWARE	
Crunch 512	189.00
PENGUIN	
Transylvania	24.99
Graphic Edition Picture Painter	22.99
SILICON BEACH SOFTWARE	
Airborne	21.99
SIMON & SCHUST	
Typing Tutor III	39.99

SOFTWARE PUBLISHING	
PFS: File/Report Bundle	109.00
SPECTRUM HOLOBYTE	
Gato	29.99
SPINNAKER	
Amazon	28.99
Dragon World	28.99
Fahrenheit 451	28.99
Rendezvous w/Rama	28.99
STATE OF THE ART	
Mac Checkbook	49.99
THINK EDUCATIONAL	
Macedge	31.99
Mind Over Mac	31.99
T/MAKER GRAPHICS	
ClickArt	31.99
ClickArt Effects	31.99
ClickArt Publications	31.99
Clickon Worksheet	54.99
HARD DRIVES	
IOmega	
Macnoui (5 meg)	1379.00
5 meg cartridge	49.99
PARADISE	
Mac 10 (10 meg)	1249.00
ACCESSORIES	
ALPENLITE	
Mac Pro Carrying Case	49.99
AMARAY	
3.5" Disktub (holds 30)	12.99
KENSINGTON MICROWARE	
Accessories Dust Cover	9.99
Accessories Imagewriter Dust Cover	9.99
Accessories Start Pack	54.99
Accessories Disk Case	24.99
Accessories Universal Printer Stand	14.99
Accessories Surge Suppressor	37.99
Mac Control Center	69.99
Accessories Swivel Base	24.99
KOALA	
MacVision	219.00
CURTIS Surge Protectors	
Diamond	32.99
Emerald	42.99
Sapphire	52.99
Ruby	62.99
DISKETTES	
Elephant 3.5" Diskettes (10)	29.99
Maxell 3.5" MacDisks (5 pk)	18.99
Maxell 3.5" MacDisks (10)	29.00

MODEMS

ANCHOR	
Volksmodem 1200	199.00
Mac Cable 12G	9.99
Volksmodem 300	59.99
Mac Cable G	9.99
HAYES	
300 Baud	159.00
1200 Baud	389.00
2400 Baud	629.00
Smartcom II Mac Software	89.99
Transtet 1000	289.00
KENSINGTON	
Portable Modem	89.99
NOVATION	
Smart cat + MAC	299.00
2400 Baud MAC	599.00
PROMETHEUS	
Promodem 1200M	359.00
Communications Buffer	79.99
Alpha Display	79.99

PRINTERS

CITON	
FIO40S Starwriter	CALL
FIO55S Printmaster	CALL
EPSON	
FX-85 80 column, 160 cps, 8K-NLQ	CALL
FX-185 136 Column, 160 cps, 32K-NLQ	CALL
RX-100 136 Column, 120 cps	CALL
HEWLETT PACKARD	
Thinkjet (Serial)	399.00
Laserjet	CALL
Laserjet Plus	CALL
JUKI	
6300S	CALL
6200	CALL
6100	CALL
OKIDATA	
OK92M 80 Column, Imagewriter Font	CALL
OK93M 136 Column, Imagewriter Font	CALL
PANASONIC	
1091	269.00
Serial Interface	79.99
TOSHIBA	
PB-1340S 80 Column, 160 cps	579.00
PB-351S 136 Column, 160 cps	1149.00
ASSIMILATION	
Mac•Port Adaptor	59.99
Mac•Daisywheel	79.99
Mac•Epson	69.99

COMPUTER MAIL ORDER

CALL TOLL FREE 1-800-233-8950



477 East Third Street, Dept. B812, Williamsport, PA 17701



SHIPPING: Add 3%, minimum \$5.00 shipping and handling on all orders. Larger shipments may require additional charges. All items subject to availability and price change. Returned shipments may be subject to restocking fee.

Circle 371 on reader service card

PC NETWORK

**BUY HARDWARE AND SOFTWARE AT WHOLESALE + 8%,
AND GET 14-30 DAY SOFTWARE RENTALS†...**

Every few months, *The NETWORK* saves its members more than \$24,000,000 and processes over 100,000 orders.

The nation's largest corporations depend on PC NETWORK!

On our corporate roster are some of the nation's largest financial industrial and professional concerns *including some of the most important names in the computer industry:*

AT&T	General Motors
Barclays Bank	Gillette
Bell & Howell	Hewlett Packard
Citibank	Hughes Aircraft
Columbia University	IBM
Data General	ITT
Exxon	Kodak
Farm Bureau Insurance	Multimate
Frontier Airlines	United Nations
General Mills	Yale University
General Electric	Veteran's Administration

plus thousands of satisfied consulting firms, small businesses, user groups, municipalities, government agencies and value-wise individuals ACROSS THE NATION! Their buyers know that purchasing or renting from PC NETWORK saves them time, money and trouble. They also count on us for product evaluation, professional consultation and the broadest spectrum of products and brands around.

**CALL TOLL FREE
1-800-621-S-A-V-E**

In Illinois call (312) 280-0002
Your Membership Validation Number **U7Z5**

You can validate your membership number and, if you wish, place your first money-saving order over the phone by using your VISA, MASTERCARD or AMERICAN EXPRESS. Our knowledgeable service consultants are on duty Mon-Fri. 7:30 AM to 9 PM, SAT 9 AM to 7 PM CST.

PERSONAL COMPUTER NETWORK
320 West Ohio
Chicago, Illinois 60610

Call now...Join the PC NETWORK and start saving today!

NEW HOLIDAY HOURS
M-F 7:30 AM-9:00 PM CST
SAT 9:00 AM-7:00 PM CST



*Members pay 8% above this wholesale price plus shipping.

Brand Name Macintosh Diskettes

Guaranteed for Life!

Box of 10 Includes Free Flip & File Case . . . **\$21.95***

Living Video Text

THINKTANK™

128K Version . . . \$65.00*
512K Version . . . 130.00*

MONOGRAM

DOLLARS AND SENSE™
for the MAC

\$70.00*

ProVUE™

OverVUE™

\$135.00*

HAYDEN

Videoworks
or
Musicworks

\$50.00*

SOFTech
MICROSYSTEMS

MAC ADVANTAGE:
UCSD Pascal

\$140.00*

**ORGANIZATIONAL
SOFTWARE**

OMNIS 3™

\$225.00*

IBM PC HARD DISK SYSTEM



IBM PC w/256K
Floppy Drive Controller
1 Double Sided Double
Density Disk Drive
Half Height 10MB
Disk Subsystem

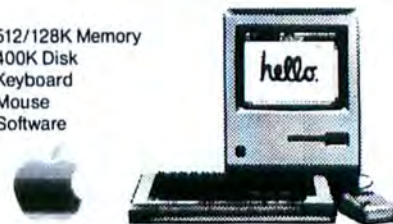
CALL FOR
LATEST IBM
ANNOUNCEMENTS

CUSTOM
CONFIGURATIONS
WELCOME

\$1,749.00*

MACINTOSH SYSTEMS

512/128K Memory
400K Disk
Keyboard
Mouse
Software



Price Too Low To Print!!!

APPLE MACINTOSH

400KB EXTERNAL
Disk Drive



\$349.95*

APPLE 15" WIDE IMAGEWRITER

with MAC Accessory Kit



\$485.00*

MICROSOFT

(At Unheard of Prices!!!)



Multiplan, File or Word \$102.00*
BASIC 79.00*
Chart. 66.00*

PRENTICE® POF-COM



1200BPS Fully MAC Compatible!
Includes **Free** Dow Jones
Straight Talk Terminal Software
and Time on News Service

\$245.00*

APPLE

MAC TERMINAL
Mac's Most Popular
Communication Package

\$65.00*

MAC DRAW
Apple's Most Complete
Design Package
for the Mac

\$125.00*

SONY MACINTOSH DISKETTES *Guaranteed for Life!*

Box of 10 Quantity Discounts Available. **\$22.95***

Central Point Copy II MAC

Back-up Protected Software. **\$20.00***

1st Byte Smooth Talker

Voice Synthesis for the MAC. **47.00***

GTE Sylvania 1700 Watt

Filtered Surge Protector **29.95***

EPSON® PRINTERS

Unbelievable Low Prices!!!



LX-80 80COL/100CPS. . . \$199.00*
FX-85 80COL/160CPS. . . 299.00*
FX-185 132COL/160CPS. . 429.00*
LQ-1500 132COL/200CPS. . 799.00*

MILES
Computing

**HARRIER
STRIKE MISSION**
Jet Simulator for Mac

Each **\$22.00***

GATO

WWII Submarine
Simulation for The Mac

\$318.00*

MICROSOFT.

EXCEL

\$208.00*

Wholesale Prices Change Rapidly...if you ever see a lower price advertised anywhere please call! You will find the Network's Price will always be the best!

PC NETWORK • MEMBERSHIP APPLICATION

YES! Please enroll me as a member in the PC NETWORK™ and send my catalog featuring thousands of computer products, all at just 8% above DEALER WHOLESALE PRICES. I will also periodically receive "THE PRINTOUT", a special up-date on merchandise at prices BELOW even those in my wholesale catalog, and all the other exclusive, money-saving services available to Members.

I am under no obligation to buy anything. My complete satisfaction is guaranteed.

Please check (✓) all boxes that apply:

● Basic Membership

With 14 Day Rentals

- ☐ One-year membership for \$8
☐ Two-year membership for \$15 (SAVE \$1)
☐ Business Software Rental Library for \$25 add'l. per year—members only
☐ Games Software Rental Library for \$10 add'l. per year—members only
☐ Bill my credit card: ☐ VISA ☐ MasterCard ☐ American Express

● Special V.I.P. Membership

With 30 Day Rentals

- ☐ One-year membership for \$15
☐ Two-year membership for \$25 (SAVE \$5)
☐ BOTH Business and Game Software Rental Libraries for \$30 add'l. per year—V.I.P. members only

725

Account Number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Exp. Date

mo. year

☐ Check or money order enclosed for \$ _____.

Name _____

Address _____ Apt. No. _____

City _____ State _____ Zip _____

Telephone (_____) _____

My computer(s) is: ☐ IBM PC ☐ IBM-XT ☐ IBM-AT ☐ Apple II ☐ Macintosh ☐ Other _____

Signature _____

(Signature required to validate membership) Copyright © 1985, PC NETWORK INC.

PC NETWORK • MEMBERSHIP APPLICATION

YES! Please enroll me as a member in the PC NETWORK™ and send my catalog featuring thousands of computer products, all at just 8% above DEALER WHOLESALE PRICES. I will also periodically receive "THE PRINTOUT", a special up-date on merchandise at prices BELOW even those in my wholesale catalog, and all the other exclusive, money-saving services available to Members.

I am under no obligation to buy anything. My complete satisfaction is guaranteed.

Please check (✓) all boxes that apply:

● Basic Membership

With 14 Day Rentals

- ☐ One-year membership for \$8
☐ Two-year membership for \$15 (SAVE \$1)
☐ Business Software Rental Library for \$25 add'l. per year—members only
☐ Games Software Rental Library for \$10 add'l. per year—members only
☐ Bill my credit card: ☐ VISA ☐ MasterCard ☐ American Express

● Special V.I.P. Membership

With 30 Day Rentals

- ☐ One-year membership for \$15
☐ Two-year membership for \$25 (SAVE \$5)
☐ BOTH Business and Game Software Rental Libraries for \$30 add'l. per year—V.I.P. members only

725

Account Number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Exp. Date

mo. year

☐ Check or money order enclosed for \$ _____.

Name _____

Address _____ Apt. No. _____

City _____ State _____ Zip _____

Telephone (_____) _____

My computer(s) is: ☐ IBM PC ☐ IBM-XT ☐ IBM-AT ☐ Apple II ☐ Macintosh ☐ Other _____

Signature _____

(Signature required to validate membership) Copyright © 1985, PC NETWORK INC.



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

First Class

Permit No. 14823

Chicago, IL

POSTAGE WILL BE PAID BY ADDRESSEE

PC NETWORK

320 West Ohio
Chicago, Illinois 60610



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

First Class

Permit No. 14823

Chicago, IL

POSTAGE WILL BE PAID BY ADDRESSEE

PC NETWORK

320 West Ohio
Chicago, Illinois 60610



...AS A PC NETWORK MEMBER ONLY!

Listed below are just a few of the over 30,000 products available at our EVERYDAY LOW PRICES!

GAMES & EDUCATIONAL

(Please add \$1 shipping and handling for each title ordered from below.)

	Wholesale		Wholesale
Axon Art Portfolio	\$ 31.00*	Mirage Concepts Trivia	\$ 11.00*
Axon Card Shoppe	31.00*	Miles Computing Mac Attack	23.00*
Bluechip Baron, Millionaire, Tycoon	26.00*	Palantir Mac Type	23.50*
CBS Software Murder by the Dozen	20.97*	Penguin Graphics Magician	28.97*
Expertelligence ExpertLogo	65.00*	Penguin Pensate or Xyphus	20.00*
1st Byte Smooth Talker	47.00*	Penguin Transylvania	20.00*
Hayden Videoworks	50.00*	Professional Software Trivia Fever	19.00*
Hayden Sargon III	25.75*	Priority Software Forbidden Quest	21.00*
Hayden DaVinci—Houses, Interiors or Landscapes	24.75*	Scarborough Mastertyping	26.50*
Hayden Word Challenge	21.00*	Scarborough Run for the Money	26.00*
Infocom Deadline, Suspended	24.00*	Sierra On-Line Frogger	20.00*
Infocom Enchanter, Planet Fall, Cutthroats	20.00*	Silicon Beach Software Airborne!	18.25*
Infocom Zork II, Zork III	22.00*	Simon & Schuster Typing Tutor III	28.25*
Infocom Zork I, Witness	20.00*	T-Maker Click Art	25.00*
Infocom Suspect, Infidel, Sorcerer	22.00*	Videx Fun Pack	19.77*
Infocom Hitchhiker's Guide, Seastalker	20.00*	Videx Mac Checkers & Reversal	25.17*
Mark of the Unicorn Mouse Stampede	19.00*	Videx Mac Vegas	31.00*
Miles Computing Mac the Knife	18.00*	Videx Mac Gammon & Cribbage	25.17*

BUSINESS SOFTWARE

(Please add \$2.50 shipping and handling for each title ordered from below.)

Apple MacTerminal	\$ 70.00*	Manhattan Graphics Ready Set Go	\$ 50.00*
Apple MacPascal	85.00*	Megahaus Megafiler	85.00*
Assimilation Process Mac•Tracks or Lock•it	19.25*	Microsoft Basic	79.00*
Assimilation Process Mac•Memory Disk	19.25*	Microsoft Chart	66.00*
Boston Software Mac Publisher	65.00*	Microsoft File	102.00*
Creative Solutions MacForth Level I	66.00*	Microsoft Multiplan	102.00*
Creative Solutions MacForth Level II	110.00*	Microsoft Word	102.00*
Desktop Software Test Base	90.00*	Odesta Helix Reg's 512 K Mac	200.00*
Dillithium PC to MAC & Back w/cables	90.00*	Organizational OMNIS 3	225.00*
Dow Jones Software Straighttalk	40.00*	Peachtree Software G/L, A/P, A/R	77.00*
Dow Jones Software Market Manager	103.50*	Each Only	
Dow Jones Software Spreadsheet Link	45.00*	Provue Overview	135.00*
Funsort Macasm	60.00*	Rio Grande Software Softmaker II	85.00*
Haba Habadex	40.00*	Sierra Online Mac One Write	125.00*
Haba Quartet	101.95*	Softstyle EpStart	23.97*
Harvard MacManager	29.95*	(USE YOUR EPSON ON A MAC)	
Human Edge Communications Edge	99.00*	Softtek Microsystems UCSD Pascal	140.00*
Human Edge Mind Prober	24.00*	Software Arts TK Solver	134.00*
Layered Software Front Desk	73.00*	Software Publishing PFS: File, or Report	68.00*
Living Videotext Think•Tank (128K VER.)	65.00*	Stoneware DB Master	95.00*
Main Street Main Street Filter	67.00*	Telos Software Fivision	87.50*
		Tronix/Minogram Dollars & Sense	70.00*

HARDWARE

(Add 2% to the member price for each item for shipping and handling.)

COMPLETE SYSTEMS

Apple Macintosh Base Systems	CALL
Apple Apple IIc	CALL
Apple Apple IIe	CALL
AT&T 6300 PC CPU2	\$1,575.00* (34.02)
128K/2 Floppy/1 Serial/1 Parallel	
COMPAQ Desk Pro System with Tape Backup w/640K/1 Floppy/10MB Hard Disk/10MB Tape Drive/Monitor	2,551.94* (63.70)
▶ COMPAQ Hard Disk Portable 10MB Hard Disk/1 Floppy/256K	2,235.00* (48.28)
▶ IBM PC Base System 2 DSD/1FDC/256K	1,495.02* (32.55)
▶ IBM PC Professional Hard Disk (1 DSD/1FDC/10MB Hard Disk/256K)	1,749.00* (37.78)
▶ IBM PC/AT Base System 1.2 MB Floppy/256K	2,795.00* (60.37)
IBM PC/AT At All Configs	CALL
Texas Instruments Professional	CALL

DISK DRIVES

Apple 400KB External Drive	\$ 349.95*
Corvus 5.5 MB Hard Drive	939.00*
Haba 800KB Double sided	CALL
Macintosh Add on Drive—Twice the Capacity! Reads Standard Disks!	
IOMEGA 5MB Bernoulli Box	1,250.00*
Paradise 10MB Hard Disk & Subsystem	969.00*
Tecmar 5MB Removable Drive	999.00*
Tecmar 10MB Mac Drive	999.00*

MODEMS

Apple Modem 300	\$169.00*
Apple Modem 1200	371.00*
Computable Mac to Smartmodem Cable	16.00*
Hayes Smartmodem 1200	355.00*
Hayes Smartmodem 2400	535.00*
Microcom Mac Modem	360.00*
Prentice Pop Com Mac Pack 1200 Baud Modem, Cable, Straighttalk	245.00*
Prometheus Promodem 1200 w/Mac Pac	299.00*
U.S. Robotics Password	195.00*
LOWEST PRICES 1200 BPS Available!	
U.S. Robotics Courier 2400BPS Modem	450.00*

PRINTERS

Apple Imagewriter 10" Carriage (with Mac kit)	\$ 419.95*
Apple Imagewriter 15" Carriage (with Mac kit)	485.00*
Apple Laser Writer Turns the Mac into a typesetter!	4,895.00*
▶ Epson LX-80 10" Platen 100CPS	199.00*
▶ Epson FX-85 10" Platen 160CPS	299.00*
▶ Epson FX-185 15" Platen 160CPS	429.00*
▶ Epson LQ-1500 15" Platen 200CPS	799.00*
Hanzon Hanzon Board turns your Epson into an Imagewriter	60.00*
NEC 3510 33CPS Letter Quality Printer	960.00*
NEC 8810 55CPS Letter Quality Printer. Both these printers are compatible with Microsoft Word!	1,275.00*
Okidata ML-192/Mac/Apple New Slimline Design/10" Platen/160CPS/Imagewriter Look-Alike	CALL
Okidata ML-193/Mac/Apple New Slimline Design/15" Platen/160CPS/Imagewriter Look-Alike	CALL

ACCESSORIES

(Freight minimum \$1 per item)

Apple Macintosh Carrying Case	\$ 69.00*
Apple Macintosh Security Kit	29.00*
Apple Numeric Keypad	69.00*
Assimilation Process Mac•Turbo•Touch	79.00*
Innovative Concepts Flip N File II	28.08*
Innovative Concepts Flip N File Micro (25)	6.69*
Kensington Disk Case	20.00*
Kensington Dust Cover	8.25*
Kensington Starter Pack	54.00*
Kensington Surge Protector	33.47*
Kensington Swivel	21.00*
Kensington Portable Modem	91.00*
▶ Koala MacVision	159.00*
Maxell Mac Diskettes (Box of 10)	29.95*
Mouse Systems A+ Mouse	55.00*
PC Network Mac Diskettes (Box of 10)	21.95*
Includes Free Flip N File	
PC Network Imagewriter Ribbons (Per 12)	36.00*
▶ Thunderware Thundercan Turns your Imagewriter into an Optical digitizer!	155.00*
Sony 3.5" Diskettes (Box of 10)	22.95*
WP Printer Paper 2600 Sheets Microline Perfs	17.00*

...WITH THESE 15 UNIQUE BENEFITS

1 COST + 8% PRICING—The NETWORK purchases millions of dollars in merchandise each month. You benefit in receiving the lowest price available and all at just 8% above published dealer wholesale price.

2 OUR 600 PAGE WHOLESALE CATALOG—Members receive our 600 page wholesale catalog containing over 30,000 hardware and software products for the IBM PC, APPLE and over 50 other popular computer systems. THE NETWORK'S CATALOG IS THE LARGEST SINGLE COMPILATION OF PERSONAL COMPUTER PRODUCTS AVAILABLE TODAY. NOW UPDATED QUARTERLY!

3 IN-STOCK INSURED FAST HOME DELIVERY—The NETWORK maintains a giant multi-million dollar inventory of most popular products, allowing us to ship many orders from stock. Non-stock items are typically maintained in local warehouses just days away from The NETWORK and YOU. We pay all insurance expenses on your shipment. EMERGENCY OVERNIGHT SERVICE IS AVAILABLE ON REQUEST.

4 10 DAY RETURN POLICY—If you are not satisfied, for any reason with any hardware component purchased from The NETWORK within 10 days of receipt, we will refund your entire purchase (less shipping) with no questions asked.

5 MEMBERSHIP SATISFACTION GUARANTEE—If for any reason you are not satisfied with your membership within 30 days, we will refund your dues IN FULL.

6 EXPERIENCED CONSULTANTS—The NETWORK hires consultants, not order takers, to aid you in product selection. Our consulting staff possesses in excess of 150 man years of personal computer product experience. We back our consultants with our money back guarantee: IF ANY PRODUCT RECOMMENDED BY OUR CONSULTING STAFF FAILS TO PERFORM AS PROMISED—WE WILL TAKE IT BACK AT OUR EXPENSE FOR A 100% REFUND.

7 FREE TECHNICAL SUPPORT—The NETWORK supports every product it sells. Our qualified TECH-SUPPORT staff will help you assemble your system, interpret vendor documentation and get your software and hardware to work. WE WILL GIVE YOU ALL THE HELP YOU NEED, WHEN YOU NEED IT—FREE!

+8 OPTIONAL BUSINESS RENTAL LIBRARY—All members can join our BUSINESS RENTAL LIBRARY featuring over 1000 available titles for just \$25 PER YEAR above the base membership fee. This entitles you to rent business software AT JUST 20% OF THE DISCOUNT PRICE FOR A 14 DAY PERIOD. If you decide to keep the software, the entire rental fee is deducted from the purchase price. VIP MEMBERS GET A FULL 30 DAYS for just \$30 above the V.I.P. base fee. This also includes the game library privileges for a \$5 combination savings.

+9 OPTIONAL GAME SOFTWARE RENTAL LIBRARY—The Game Rental library is available to members for just \$10 PER YEAR and permits evaluation (or just enjoyment) of any game or educational software product as above.

10 SPECIAL SAVINGS BULLETINS—THE PRINTOUT—Issued Quarterly at no charge to Network members only! The Printout contains all the New Product listings and price changes you need to keep your Catalog up to date. Also, we buy excess dealer inventories, and store bankruptcy closeouts, which we turn around and make available to our members at fantastic savings via THE PRINTOUT.

11 DISCOUNT BOOK LIBRARY—Working with numerous publishers and distributors, The NETWORK has assembled a library of over 1000 computer related books and manuals at savings of up to 75% from the normal store price.

12 MEMBERSHIP REFERRAL BONUS—Our most valuable source of new members is you! To date almost 40% of our members have been referred by word of mouth from other satisfied members. For those of you who refer new members, The NETWORK will credit a cash bonus to your account applicable to any future purchase.

13 CORPORATE ACCOUNT PROGRAM—Almost 50% of The NETWORK's members are corporate buyers and users (see opposite page left). The NETWORK can establish open account status and assign designated account managers to expedite orders, and coordinate multiple location shipments.

14 QUANTITY DISCOUNTS—For large corporations, clubs, and repeat or quantity buyers The NETWORK can extend additional single order discounts, when available to us from our manufacturers and distributors.

15 PRICE PROTECTION—The PC Industry is crazy!! Prices change not yearly or monthly or even weekly but often day by day! These changes are sometimes up but are mostly down!! THE NETWORK GUARANTEES THAT IN THE EVENT OF A PRODUCT PRICE REDUCTION, BETWEEN THE TIME YOU PLACE YOUR ORDER AND THE TIME THE PRODUCT SHIPS YOU WILL ONLY PAY THE LOWER AMOUNT!!

CALL TOLL FREE 1-800-621-S-A-V-E (orders and memberships only)

In Illinois call (312) 280-0002 validation code U7Z5

Circle 45 on reader service card

DISCOUNT WAREHOUSE

P.O. BOX 396

EAST HAVEN, CT 06512

* UP TO 50% OFF

* SOFTWARE PURCHASES OVER \$300 AN ADDITIONAL 2% OFF

* CORPORATE PURCHASE ORDERS ACCEPTED*

* NO ADDITIONAL CHARGE FOR CREDIT CARD ORDERS

HARDWARE

MAC 128K	\$1,645.00
MAC 512K	\$1,950.00
MAC EXTERNAL DRIVE	\$345.00
MAC BOTTOM HARD DISK	\$1,345.00
0	
1200 BAUD MODEM	\$349.00
IMAGEWRITER 15"	\$549.00
IMAGWRITER 10"	\$449.00
APPLE //C COMPUTER	\$975.00
APPLE PROFESSIONAL SYS.	\$1275.00

PERIPHERALS

MAC DISKETTES	\$25.00
FONT SET	\$59.25
MAC DAISY WHEEL CONNECTION	\$73.97
MAC EPSON CONNECTION	\$66.10
MAC PORT ADAPTOR	\$57.97
MAC TURBO TOUCH	\$81.55
MIDI-CONDUCTOR	\$64.97
NUMERIC-TURBO	\$110.45
THUNDERSCAN	\$185.00

SOFTWARE

MAC NUMERIC PAD	\$73.45
MAC CARRYING CASE	\$73.45
-BUSINESS-	
APPLEWORKS	\$181.50
BACK TO BASICS ACC. PAY.	\$103.50
BACK TO BASICS GEN. LED.	\$103.50
BUSINESS ESSENTIALS	\$54.97
CLICKART	\$29.97
CONSTRUCTION ESTIMAT.	\$41.50
DAVINCI BUILDING BLCKS	\$47.50
DAVINCI COMM. INT.	\$118.25
DAVINCI HOUSES	\$29.75
DAVINCI INTERIORS	\$29.75
DAVINCI LANDSCAPES	\$29.75
DB MASTER	\$115.50
DOLLARS & SENSE	\$88.75
ENSEMBLE	\$177.50

EXCEL	\$265.50
EXPERLISP	\$292.75
FACTFINDER	\$88.75
FILEMAKER	\$115.50
FILEVISION	\$115.50
FORECAST	\$41.50
HELIX	\$265.50
MAC BUSINESS PAK	\$351.97
MAC DRAW	\$131.25
MAC FILE	\$115.50
MAC MEMORY DISK	\$21.97
ONE-WRITE GEN. ACC.	\$178.50
MAC SPELL RIGHT	\$66.25
MAC THE KNIFE I	\$23.25
MAC THE KNIFE II	\$28.97
MAC TRACKS	\$21.97
MAC WORD	\$115.50
MACEDGE	\$29.75
MACFORMS	\$47.50
MACFORTH LEVEL I	\$88.25
MACINTOSH BASIC	\$88.75
MACINTOSH CHART	\$73.97
MACINTOSH MULTIPLAN	\$115.50
MACLION	\$225.00
MACOFFICE	\$28.97
MACTERMINAL	\$84.00
MACVISION	\$236.75
MAFORTH LEVEL II	\$147.25
MASTERPIECES	\$23.75
MEGAFILER	\$115.50
MEGAFORM	\$175.00
MEGAMERGE	\$73.97
MIGHTY MAC	\$58.60
MIND OVER MAC	\$29.75
OVERVUE	\$174.50
PFS FILE/REPORT COMBO	\$103.50
PROF. COMPOSER	\$292.75
QUICKSET	\$59.25
READYSETGO512K	\$73.97
SMOOTH TALKER	\$88.75
THE RIGHT WORD	\$66.25
TK SOLVER	\$147.25
WORK-N-PRINT	\$21.97

BACK TO BASICS ACC. REC. \$103.50

-EDUCATIONAL-	
SAT COMBO PACK	\$59.25
TYPING TUTOR III	\$34.97
HAYDEN SPELLER	\$47.50
MAC GAMMON	\$28.97
MACSPELL	\$58.75
MAC TYPE	\$29.75
MASTERTYPE NEW & IMP.	\$29.75
MICROSOFT LOGO	\$73.90
TYPING INTRIQUE	\$29.75
-ENTERTAINMENT-	
AIRBORNE	\$20.97
AMAZON	\$26.75
BARRON	\$35.50
CHIPWITS	\$29.55
CUT THROATS	\$23.75
CYBORG	\$23.75
DEADLINE	\$29.75
DRAGON WORLD	\$26.75
FAHNEHEIT 451	\$26.75
FEATHERS & SPACE	\$20.75
FORBIDDEN QUEST	\$26.75
FROGGER	\$23.75
FUN PAK	\$23.50
GATO	\$29.97
GROUND ZERO	\$23.75
HITCH ER'S GUIDE/GALAXY	\$23.75
HOLY GRAIL	\$29.75
KNOW IT'S THERE	\$35.50
LODE RUNNER	\$23.75
MAC ATTACK	\$28.97
MAC CHALLENGER	\$29.60
MAC CHECKERS	\$28.97
MAC PAC	\$73.97
MAC-SLOTS	\$34.97
MAKE MILLIONS	\$29.75
M-I-D-I COMPOSER	\$21.97
MILLIONAIRE	\$35.50
MOUSE STAMPEDE	\$23.75
MURDER BY THE DOZEN	\$26.75
PENSATE	\$23.75
PYRAMID OF PERIL	\$29.55

QUEST	\$23.75
RENDEZVOUS W/RAMA	\$26.75
ROGUE	\$23.75
RUN FOR THE MONEY	\$29.75
SARGON III	\$29.75
STRIP POKER	\$23.97
SUPER SPORTS	\$17.97
THE GREAT INT'L PAPER	
AIRPLANE CONS. KIT	\$22.97
THRU THE LOOKING GLASS	\$26.97
TRANSLYLVANIA	\$23.75
TRIVIA	\$29.75
TRIVIA FEVER	\$23.75
TRIVIA FEVER VOL 2	\$14.97
TRIVIA ARCADE MAC	\$20.75
TYCOON	\$35.50
ULTIMA II	\$35.50
WIZARDRY I PROV GRNDS	\$34.97
XYPHUS	\$23.75
ZORK I	\$23.75
ZORK II	\$26.75
ZORK III	\$26.75
-HOME-	
HOME ACCOUNTANT	\$88.97
MACHOME	\$28.97
PERSONAL ACCOUNTANT	\$29.75
TURBO TURTLE	\$35.50
-LANGUAGE-	
EXPER LOGO	\$88.75
MAC LOGO	\$73.97
MACINTOSH PASCAL	\$84.00
MAC VEGAS	\$34.97

IF SOMETHING YOU WOULD LIKE IS NOT LISTED, JUST CALL. FOR ORDERS IN CT CALL 1-800-624-3231. OUTSIDE CT CALL 1-800-523-7274.

For fast delivery send cashier's check, certified or money order. Personal and company check allow 3 weeks to clear. Shipping-software (\$2.50 minimum). C.O.D. add an additional \$1.75. Shipping-Hardware (please call). Mastercard & Visa (include card # and expiration date). Connecticut residents add 7.5% sales tax. We ship same day most orders. Prices are subject to change without notice. School purchase orders accepted. All returns must have a return authorization number. Call 1 800 624-3231 to obtain one before returning goods for replacement.

Macworld Directory

The Macworld Directory is a comprehensive listing, by category, of products and services available for the Apple Macintosh. It provides advertisers with a low-cost advertising alternative and our readers with an easy reference guide.

FORMAT: The standard format includes a product ID, a 300-character descriptive ad, and a company name, address, and telephone number.

Advertisers may choose among categories already in use, or they may create their own. Display advertisers can cross-reference their current ad to the Macworld Directory for increased exposure.

RATES: Listings are accepted for a three-time consecutive insertion at a rate of \$726. We offer a six-time insertion at \$1230 that reflects a 15% frequency discount. Listings must be prepaid (except for established display advertisers) upon submission of ad copy. Checks, money orders, Visa, and MasterCard are accepted.

DEADLINE: For copy deadlines and further information please contact Niki Stranz, your Macworld Directory Account Manager, at 415/861-3861 or 800/872-7800 (800/872-7808 in California). Please send copy and prepayment to the Macworld Directory, 555 De Haro St., San Francisco, CA 94107.

■ Accessories

○ Cables

AppleTalk Cable

Apple-approved Network Cable in stock for your bulk requirements. Available in FEP Teflon or PVC. Also in stock, Apple-approved Assembly Plugs and Extenders. Please call or write:

H-B Associates, P.O. Box 857, Union City, CA 94587, 800/423-3014 (Natl.), 800/423-4224 (CA)

Mac Products

MacLock secures Mac, keyboard, mouse, 2nd drive, modem, & printer. Attractive red vinyl-covered steel 1/8" cables. Lock incl. \$40. Any length MacCables custom connect any modem, printer to your Mac. Most \$29. TaxMaster prepares U.S. taxes w/ Multiplan. P1, 2, Scha-E, W, SE, 2106. \$99. MacPlot \$130. \$5 s/h. CA tax 6.5%.

Mac Products, 20231 San Gabriel Valley Dr., Walnut, CA 91789, 714/595-4838

○ Index

Quarterly Macworld Index

Now you can find any article, column, or product review that runs in Macworld. A complete quarterly index ends searching thru back issues for the info you need on Mac products, applications, software. Our index covers every Macworld ever published. Makes Macworld a Mac Library. Only \$3.95/ea., \$12.95/yr. Indexmasters, P.O. Box 520337, Salt Lake City, UT 84152

○ Supplies

MacStac™ Work Station

Tired of stiff necks and cluttered desk tops? MacStac raises the screen to eye level and holds ext. drive, disks, and modem underneath in same space as the Mac. Available in clear or bronze. \$54.95 + \$3 s/h. MacStacPS—matching stand for Image-writer. \$29.95 + \$2 s/h. Visa/MC. Call or write today.

Adex Inc., P.O. Box 74142, Metairie, LA 70033, 504/288-5472

Under \$9 Helpers

Mouse MATe II,™ the preferred, long-lasting, PORON tracking pad: \$8.95; MacBelt with Mouse Holster,™ the colorful disk slot protector and mouse holder in one, RED, WHITE, or BLUE: \$5.95; dePlug,™ rubber disk slot insert for dust/dirt protection: \$2.95. Add \$2 s/h. Visa/MC. For brochure send SASE to: Windsock Corp., P.O. Box 93, Mulvane, KS 67110

○ Switches

Mac A/B Switch

Switch conveniently between your letter-quality and Imagewriter printers with only a flip of a switch. Occupies only one port and provides instant access to either printer. Compatible with all LQ printers. Complete with one cable \$99 Add'l cable for LQ printer (Std.) \$25

Add'l cable for LQ printer (API) \$39 Visa/MC welcome. See display ad in this issue. Creighton Development, Inc., 714/472-0488

■ Business Opportunities

Looking for a Publisher

for your Mac application? CSI, the publisher of many microcomputer software products would like to talk with you about publishing your innovative product ideas. Complete publishing services—documentation thru distribution. In-depth technical knowledge of the Mac. Flexible royalty %'s.

Creative Solutions, Inc., 4701 Randolph Rd. #12, Rockville, MD 20852, 301/984-0262

■ Colleges

Colorado Mtn. College

Alpine Campus in Steamboat Springs uses Mac Office. AppleTalk-connected Macintosh 512Ks, hard disk file server, LaserWriter, etc., and BEC MS-DOS micros and super mini-computer support. Accredited programs in Information Processing Technology, Computerized Accounting, and Liberal Arts. Contact: Colorado Mountain College, Alpine Campus, Admissions Office, Dept. MC, P.O. Box 775288, Steamboat Springs, CO 80477, 303/879-3288

■ Expert Systems

MacKIT™—512K Mac Req.

The Knowledge Integration Toolkit for building Expert Systems. Since 7/85, MacKIT™ users across the U.S. and Europe to Nairobi, Kenya, are developing their skills in Knowledge Engineering and exploring new technologies in building Expert Systems. Be part of the next computer revolution. \$149 MC/Visa.

Knowledge System Environments Inc., P.O. Box 261, Dept. M2, Grantam, PA 17027, 717/766-4496

■ Hardware

○ Interfaces

Granny Smith Connection

A parallel printer interface for your Macintosh that gives you the freedom to use parallel printers & plotters. Comes with integral cable & software for dot matrix, daisy wheel, ink jet, laser, & more. (Epson, IBM, HP, etc.) Also available for Apple IIe and IIc. Apple Certified Developer.

*ZAP Logic Corporation, 290 Larkin St., Buffalo, NY 14210
208-5647 Yonge St., Toronto, M2M 4E9, Canada, 416/225-8815.*

○ Memory Upgrades

Memory Enhancements

Upgrade your Mac to 512K, 1024K, or 2048K of contiguous memory. Local 20-minute installation available. All enhancements under warranty for 120 days with one-year warranty available. Please call for nearest distributor and current pricing. Distributorship inquiries welcome.

Ebman Engineering, 2721 La Gran Via, Carlsbad, CA 92008, 800/257-1666

\$39 512K Upgrade Kit

Patent Pending method—no desoldering necessary!! 100% 512K Mac compatible. Basic kit includes assembled PC board, connector, & instructions \$39. With memory \$99. For factory-assembled & tested, one-year warranty \$199. Satisfaction guaranteed or your money back. Immediate delivery. Visa/MC/MO. Add \$5 s/h. *Immoventions, Inc., 1669 S. Voss #880, Houston, TX 77057, 713/728-0938*

○ Monitors

MacMonitor \$1295

23-inch hi-res monochrome monitor with antiglare makes viewing your Mac easy in classrooms, trade shows, seminars, offices. Horizontal scan rate is switch selectable: 15-25 kHz. Guess what else? MacMonitor works with Apple IIe, IBM PC, Amiga, etc. MacMonitor does it all. Ask about our Mac Projectors for \$3995.

National Data Systems, 2419 Rutland Dr., Austin, TX 78758, 512/837-1760, 800/531-5143 (U.S.), 800/252-8286 (TX)

○ Terminal Emulators

IBM Emulator/File Transfer

VUWTerm allows Macintosh to communicate with IBM via the Yale IUP/ Series 1 protocol converter. File transfer and 3370 emulation are supported as for YTerm on the IBM PC. Similar links to VAX/VMS provided. Individual and site licenses.

Computing Services, Victoria University, Private Bag, Wellington, New Zealand

○ Video Adaptors

The Mentaurs CVA

Provides any Mac with a high-quality video output port. Ideal for all large-screen viewing applications. Easily installs internally, no soldering, splicing, or mounting hardware required. Housing disassembly tools also available. Call for competitive pricing, product brochures, and technical assistance.

Mentaurs Technologies, P.O. Box 1467, San Marcos, TX 78667-1467, 512/396-1565

■ Insurance

Safeware

If your computer is important to you, insure it! SAFEWARE provides full replacement of hardware, media, & purchased software. As little as \$39 a year covers fire, theft, power surges,

earthquake, water damage, auto accident. Call 8 a.m. to 8 p.m. Mon. thru Fri.; Sat. 9 a.m. to 5 p.m.

Safeware, The Insurance Agency Inc., 2929 N. High St., P.O. Box 02211, Columbus, OH 43202, 800/848-3469 (Nat'l), 614/262-0559 (OH)

■ Publications

Macintosh Typefaces

A Reference Guide to Shapes, Sizes and Styles. Written for the non-technical user, it includes over 100 pages of complete font listings and many useful appendices. A must for anyone who needs to present text professionally. Send \$14.95 plus \$2.50 postage & handling. In CA add \$.90 sales tax.

Houlberg Development, P.O. Box 271075, Escondido, CA 92027

Accessories & Supplies

A catalog of Mac products for Mac users containing 100s of super-valued items for the everyday use of the Macintosh. Books to help explore the unlimited potential of you and the machine. Supplies to store and show off your creativity. Accessories to keep it all organized. Aids to tap the graphic powers. Call or write for free catalog.

Desktop Supplies, Ltd., P.O. Box 441, Lake Geneva, WI 53147, 414/248-2422

Microcomputer Books

Computer books for the mail-order market: *Macintosh Multiplan* (\$15.95), *Basic Microsoft BASIC for the Macintosh* (\$16.95), *Macintosh Notebook: Lotus Jazz* (\$14.95), *Macintosh Notebook: MacPascal* (\$14.95) MC/Visa. Current directory \$1.

Micro Books, P.O. Box 60203, Grand Junction, CO 81506, 800/874-5280 (Nat'l.), 800/874-3426 (CO)

Mac Fun/Profit Projects

Big 353-pg. book bursting w/ ideas. Easy illustrated steps guide you to produce newsletters, books, animation, slide shows, digitized photos, music, & others. Crammed w/ tips & shortcuts. Only \$24.95 now, postpaid. After Dec. 31 add \$2.50 post/handling. CA res. \$1.50 tax. Visa/MC/chk/MO. Dealers welcome.

Callectron Systems Publications, 1165 N. Normandie #2, Los Angeles, CA 90029, 213/668-0711

■ Services

○ Graphics/Printing

MacPublishingNet

EXQUISITE LASERWRITER PRINTING for MAC text, graphics and IBM PC Word. (MAC by modem or disk; IBM by modem only.) ALSO, our professional artists do MAC-aided DESIGN, TYPESETTING, and LAYOUT for brochures, newsletters, advertising, stationery, etc. Fast service. Write or call for more information.

Center Associates, P.O. Box 2291, Southfield, MI 48037, 313/569-7171, 313/352-7777

○ Typesetting

MacTypeNet

Professional typesetting services for the Macintosh. Text and/or graphics output at 300 to 2450 lines per inch resolution from Apple LaserWriter™ or Allied Linotype™ L300 laser typesetter. Disk and modem service. 24-hour turnaround. Full printing and bindery services. Write or call for user info.

Lasergraphics, P.O. Box 5218, Livonia, MI 48152-0188, 313/477-2733

■ Software

○ Accounting

Shopkeeper

For retailers and service firms, Integrated Accounts Receivable, Billing, Inventory, Point of Sale, & Invoicing program. Use all or any parts. (880 customers, no limit inventory.) Written just for the Macintosh. Works with any general ledger system. For the 512K Macintosh with external or hard disk drive. Introductory offer \$149.95.

Woodtec, 320 W. Maple, P.O. Box 445, Arkansas City, KS 67005, 316/441-0187

The Best General Ledger 1.0

Standard general ledger features and extensive use of the Macintosh user interface combine to make this a powerful financial tool. The low price makes it the best general ledger program for the MAC. \$49

(MA res. add \$2.45 sales tax).
Thomas A. Lawler, CPA, 59 Alden Rd., Weymouth, MA 02188, 617/335-2129

○ Architecture

MacPerspective™

Allows architects, draftspeople, and artists to rapidly construct perspective drawings of houses, buildings, or other objects. Viewpoint can easily be changed. Drawings can be printed in any size up to 100 inches. Easy to learn and use. Fast, professional program with many features, thorough manual. \$189.

B. Knick Drafting, 313 Marlin Pl., Melbourne Beach, FL 32951, 305/727-8071

○ Backup Restore

COPY II MAC

COPY II MAC backs up nearly all protected software easily! Allows running some direct from your hard disk—so put that original 3½" safely away! Repairs damaged disks and undeleted files, too! For 128-512K Mac, 1-2 drives. \$39.95 + \$3 s/h (\$8 overseas). Visa/MC/chk/c.o.d. (We also have backup programs for IBM, Apple, Comm 64!)

Central Point Software, Inc., 9700 S.W. Capitol Hwy. #100, Portland, OR 97219, 503/244-5782

○ Backup Upload

Hard Disk Utility

Allows any Mac owner to BACK UP protected software & UPLOAD most software pkgs. to HARD/RAM disks. No more "Insert Master Disk" messages w/ copies made w/ our software, so you need not shuffle floppies! Works on all the latest pkgs. Comprehensive documentation makes it easy to use; technical info. makes it a must for the hard-core hacker. Only \$79.95 + \$5.20 (CA) + \$3 s/h.

FWB Software, 2040 Polk St. #215, San Francisco, CA 94109, 415/474-8055

○ Building Design

Architects and Engineers

Structural design templates for wood-frame projects (req. *Multiplan*). Save hours of analysis, calculation,

and design time on each job. Easy to Use—Well Documented—Money-Back Guarantee!
THE DESIGNER SOFTWARE SERIES
● Vol. I—Gravity Load File \$150
● Vol. II—Lateral Load File \$125
Sheehan and Associates, 3509 Ocean Dr., Hollywood Beach, Ox-nard, CA 93030, 805/985-5318

○ Business

ZipFinder

Analyzes your mailing list files created with virtually any database program and automatically inserts the correct zip codes into the zip code fields. Also verifies existing zip codes on file and finds zips according to addresses entered by operator. Sold by state or partial state.
Softidea, 8177 S. Harvard #619, Tulsa, OK 74137, 918/745-9792.

Profit Planning

Technically advanced & easy-to-use spreadsheets for *Multiplan™* & *Excel™*: ● Operating Plans (order Forecasts, Production Plans, Inventory, and Shipments) ● Expense Plans ● Income Plans. Automatic computation & summarization of multiple business units & company Profit Plans. \$29 per plan or \$75 for the set of 3. Send for brochure.
Softouch Software, Inc., P.O. Box 1744, Lake Oswego, OR 97034, 503/638-1400

Time Management 1.0

This easy-to-use program stores employee time data & prints various useful reports. Suitable for service companies, professional offices, and job order costing. Requires *Microsoft BASIC*. Stored in unprotected format to provide for customization. \$29 (MA res. add \$1.45 sales tax).
Thomas Lawler, C.P.A., 59 Alden Rd., Weymouth, MA 02188, 617/335-2129

Macintosh Budget Aids

Tools to assist in the management of personnel, facility, and cost budgets. Requires *Multiplan*. Chart optional.
● Facility budget
● 12/24-month personnel budgets

● 12/24-month cost budgets
● Linked budget vs. actual
● Linked graphs
● Labor, cost, and facilities worksheets
\$59 + \$3 s/h (Visa/MC/chk.). VA res. add 4% tax.
Synectics Corporation, Commercial Operations, 10400 Eaton Pl. #200, Fairfax, VA 22030, 703/385-0190

○ Business Forms

The MacForms™ Series

● *MacForms*—a 4-disk set w/over 100 *MacPaint* business forms. Virtually every business form you'll ever need \$79.95.
● *DrawForms*—business forms designed for use w/*MacDraw*. Features click-tab data entry & reduced layout to minimize scrolling. \$59.
● *CalcForms*—*Multiplan* business forms w/built-in calculators & advanced *Multiplan* functions. \$59.
Datafood Software Co., 400 Country Dr., Ste. H, Dover, DE 19901, 302/736-9098

MacForms™ & DrawForms™

Business forms on disk. Invoices, Purchase Orders, Statements, etc.
● Personalized w/ your logo
● Customized to satisfy your needs
● Fill out on Mac or by hand ● Print out and/or use copier ● Save on disk. *MacForms* for *MacPaint*: four-disk set w/ 100+ Financial, Purchasing, Inventory, Personnel, Time, & Sales Forms \$79.95. *DrawForms* for *MacDraw*: 40+ popular forms providing easier data entry & editing capabilities \$59.
Datafood Software Co., 400 Country Dr., Ste. H, Dover, DE 19901, 302/736-9098

○ Communications

MacDasher—DG Emulator

MacDasher simulates the operation of a Data General D210 terminal on a Macintosh. All D210 screen attributes are supported. *MacDasher* also offers text file transfer, printer pass-

through, log-on macros, and pull-down function key templates. Works through either serial port at all settings. \$59.

Kaz Business Systems, 10 Columbus Circle #1620, New York, NY 10019, 212/757-9566

○ Compilers

MacLanguages Series Pascal

A complete native code Pascal compiler and development system for the Macintosh. Provides full access to all ROM routines and other Apple software like *MacinTalk* and *Three D Quickdraw*. Creates stand-alone double-clickable applications and desk accessories, and it's compatible with Apple's MDS. \$99.95 + \$5 s/h.
TML Systems, P.O. Box 361626, Melbourne, FL 32936, 305/242-1873

○ Data Management

DATAFAST

A powerful yet SUPER-EASY-to-use professional database management program. Create mailing lists, directories of customers, inventories, etc. Use predefined formats or create your own. Easy entering, sorting, and updating of data. "Copy" and "Paste" records into your *MacWrite* documents. \$49. Req. 128K, 1dd.
Statsoft, 2831 E. Tenth St. #3, Tulsa, OK 74104, 918/583-4149

○ Educational

New Test Generation Pkg.

MicroTest II creates, updates, generates, and stores a wide variety of tests. Easy question entry, on-screen edit, prints multiple versions with separate answer keys. Writes *MacWrite*/*MacPaint* compatible files for WP and graphics. Ideal for trainers, educators. Send for free brochure.
Chariot Software Group, 3659 India St., San Diego, CA 92103, 619/298-0202

Astronomy for the Mac

ASTRONOMY plots a polestar's-eye view of the solar system and an earth-bound observer's image of the heavens for a given date, time, longitude, and latitude. ASTRONOMY plots the sun, moon, planets, comets,

and many major constellations. Written in compiled C for 512K Macintosh. Send \$35 to:
E & M Software Co., 95 Richardson Rd., Chelmsford, MA 01863, 617/251-7451

○ Engineering

Digital Logic Design Aid

LogiMac is an interactive digital logic drawing and simulation package for the Macintosh. It is intended for use by engineers, students, teachers, and hobbyists interested in designing, documenting, and experimenting with digital logic hardware. It supports most common gates, flip-flops, etc. \$79.95 (U.S.).

Capilano Computing, 554 Beatty St., Vancouver, B.C. V6B 2L3 Canada, 604/669-6343

BEAMAC II for CEs/MES

Analyzes & helps design continuous beams, uses stiffness matrix. Any # of nodes, loads, etc. Reads section data from disk. Shows load, tension, shear, moment & defl. diagrams, input & output text, section table, more. Full Mac interface. \$295; determine: \$95. Money-back guarantee. Other CE programs under development.

Erez Anzel, 5800 Arlington Ave. #5T, Riverdale, NY 10471, 212/884-5798

Structural Eng'rs/Designers

MacFrame2D analyzes 2D frames of up to 30 members with a 128K Mac. Full use of Macintosh tools allows easy creation, storing, and editing of data files. Printed output includes member end loads & moments, deflections, reactions, and frame plot with numbered joints. Includes user manual w/ examples. \$150.
Design Source Software, P.O. Box 91219, Houston, TX 77291-1219, 713/820-7026

Engineering Tool Kit

Graphs & stats software for Mac & Apple provides: Trends, Scatter Plots, Histograms, best fit curves (Linear, Exponential, Power, Logarithmic, & Polynomial), Multiple Linear Regression, ANOVA, & more. MBASIC 2.0 req. \$99. (PROCESS CONTROL CHART TOOL KIT also available.)
SofWare Tools, P.O. Box 8751, Boise, ID 83707, 208/343-1437

DraftMath 512™

Make blueprints with Mac. Best \$*@&*% interactive CAD program under \$100. If you want detailed and documented 2D working drawings but don't require the inside view of a rotating ellipsoid, get *DraftMath*. Full Mac interface. Instruction book. Not a template. Req. MBASIC V2 & 512 Mac. \$60.

DM Systems, P.O. Box 364-M, Bayshore, NY 11706, 516/666-6176

○ Financial

Profit Stalker II

This version features upload capability w/ automatic dial-up & untended data acquisition. Point-and-figure charts have been added. A condensed charting mode allows up to four yrs. of weekly price data on one screen. Retains & enhances all the great features of the original program. Comprehensive manual. \$250. Request info. packet.

Button-down Software, P.O. Box 19493, San Diego, CA 92119, 619/463-7474

Overture™

Provides solutions to discounted cash flow analysis: NPV & IRR. With amortization & depreciation functions, *Overture* offers productivity solutions for professionals in the finance industry. And customers can be proficient users in an ordinary lunch hour. Works with Switcher. Supports hard disks. \$99.95. Site licensing available.

Brainstorm Development Ltd., P.O. Box 26948, Austin, TX 78755, 512/346-7864

○ Games

MacGolf™

This is the ultimate graphic game of skill. So much like real golf, your game may actually improve. 3 different 18-hole courses. View trees, sand traps, fairways, flags, & lakes in full perspective. Check the wind, choose your club, position your stance for a hook or a slice, & swing with the mouse. You can become a pro Mac-Golfer for only \$59.95 + shipping.
Practical Computer Applications, Inc., 1305 Jefferson Hwy., Champlin, MN 55316, 612/427-4789

○ Graphics

Mac-n-Pack

Plots charts on the HP 7475A plotters. Includes scaling and rotation. Special features allow plotting of borders, pattern-filled areas, and super text handling. Exclusive "plotter control" allows user to "see" plot size before actual plot. (Requires BASIC 2.0.) Software alone \$149. Plotter & software \$1925.

Tan Technologies, Inc., P.O. Box 445, Utica, MI 48087, 313/247-0470

Master Graphics Made Easy

A 2-D graphics pkg. for your Mac that's easy to use. Features: ● pie charts ● bar graphs ● x-y plots ● linear/logarithmic scales ● contour maps. Operates in 2 modes. Nonprogrammers may create simple command file, or programmers may access graphics subprograms directly. Use with MBASIC 2.0 or MacPascal. Incl. disk & detailed manual. \$59.95 + \$3 s/h.
KeySoft Corporation, 1817 Welton #402, Denver, CO 80202, 307/742-5702

MacIllustrations, Vol. 1

Enhance your personal and business communications as you add your individual touch to letters, memos, newsletters, invitations, and announcements with these quality illustrations of people, animals, cars, cartoons, borders, and more. \$35 + \$2 s/h. (CA res. add 6% sales tax.)
RiverCity Software, 7250 Auburn Blvd. #200, Citrus Heights, CA 95610, 916/722-4191

Mac-Art Library

Mac-Art Library is 11 full disks of professional quality *MacPaint* art files. At \$29.95/disk, choose from *Animals, Plants, Transportation, Sports, The Farm, Tools, The Kitchen, Buildings, Signs/Symbols, Greeting Card Art, Geography*. Or get all for \$200. Also available: a Library Sampler for \$39.95.

CompuCRAFT, P.O. Box 3155, Englewood, CO 80155, 303/850-7472

○ Languages

NEON™

An object-oriented programming language, NEON™ offers a Small-talk-like environment implemented as an efficient threaded language to provide new power, flexibility and

speed for developing for the Mac-on the Mac. \$150.

Kriya Systems, Inc., 505 N. Lake Shore Dr. #5510, Chicago, IL 60611, 312/822-0624

MacFORTH™

The Language of Innovation. Create windows, menus, graphics, mouse events quickly & easily using this interactive & fast language.

Level 1 - Explorer's Systems	\$149
Level 2 - Professional System	\$249
Level 3 - Developer's Kit	\$499

Royalty Free License for commercial development.

Creative Solutions, Inc., 4701 Randolph Rd. #12, Rockville, MD 20852, 301/984-0262

Multitasking for the Mac

Mac1™ is Forth-83 with:
 ● True multitasking
 ● Twice the speed of other FORTHs
 ● Hi-level access to Toolbox, floating-point, & speech routines
 ● A standard MC68000 assembler
 ● Normal text source files
 ● Turnkey applications
 ● \$99 Visa/MC
 ● No licensing fees
The Palo Alto Shipping Company, P.O. Box 7430, Menlo Park, CA 94026, 415/854-7994

○ Mathematics

Pascal FFT Math Library

● N-dimensional Fast Fourier Transform arbitrary # of points
 ● Bessel, err functions
 ● 1-3 interpolation
 ● 1-5 order least square
 ● solve linear, transcendental, differential equations
 ● integration, differentiation
 ● examples, documentation excellent for students, research. \$100.
Coherent Cognition, P.O. Box 24114, San Diego, CA 92124, 619/695-9764

○ Medical

MacHealth Series

Office solutions systems for Dentistry, Optometry, Medicine, and Chiropractic. Complete billing/insurance processing, record keeping, and

practice management. Integrated word processing and database search. Powerful, fast, easy to use. Master it in hours. Demo disks available for only \$10.

HealthCare Communications, 245 S. 84th St. #301, Lincoln, NE 68510, 800/HCC-MACS

○ Miscellaneous

WHAT A DEAL

● **31 ALL-TIME FAVORITES:** An abundance of 31 programs for the Mac including education, games, and home databases all on one disk for only \$29.95.

● **MC-FAIR:** Go to the Fair on your Mac and play the Shooting Gallery, Dart Throw, Shell Game, Strongman, and Beer Tent for only \$39.95. Both for only \$64.95. Req. MBASIC. *Brownbag Software, 8208 N. University St., Peoria, IL 61615, 309/692-7786*

○ Music

StudioMac Music Kit

No experience required! StudioMac™ comes complete with Casio CZ-101 keyboard synthesizer, MIDI adapter, and easy-to-use software. Play new creations or *MusicWorks* pieces through the synthesizer. Great family entertainment. Synthesizer Kit \$595, MIDI Kit \$214, software only \$125.

Creative Solutions, Inc., 4701 Randolph Rd. #12, Rockville, MD 20852, 301/984-0262

○ Public Domain

Mac Public Domain

Mac Public Domain Software—Hundreds available, \$10 per disk. Choose from applications, *Multiplan* templates, games, art, utilities, backup programs, disk editors, music, templates for business, desk accessories. Carefully organized with documentation. Send \$1 for a catalog. *Educomp, 2139 Newcastle Ave., Cardiff, CA 92007, 619/942-3838*

Public-Domain Disks \$9

Have access to 800 public-domain programs by mail! Members pay \$9 per disk plus \$1 postage & handling. Send \$20 for 1-year subscription. Includes intro disk with ten neat programs, plus listing of all disks in li-

brary, plus quarterly newsletter describing latest public-domain software.

PD Mac, Dept. L, P.O. Box 5626, Sherman Oaks, CA 91423

Fight Downloader's Blues!

Up-to-date public-domain software on 35 disks. No membership dues! 3 MBASIC utility disks—\$30 3 font disks (create own)—\$30 3 MBASIC game disks—\$30 2 desk accessory disks—\$20 2 *MusicWorks* disks—\$20 Rolodex/Life disk—\$10 *Multiplan* business/nutrition—\$10 \$4 s/h for order. Complete catalog—\$2. Visa/MC/chk. *The Public Domain Exchange, 673 Hermitage Pl. #1A, San Jose, CA 95134*

45 Public Domain Disks!

\$9/disk. No dues! No min. order. Up-to-date categorized library. 3 MBASIC utility disks—\$27 2 font disks (create own)—\$18 2 game disks—\$18 2 desk accessories—\$18 2 *MacPaint* disks—\$18 Rolodex screen maker—\$9 *Multiplan* business/nutrition—\$9 \$4 s/h. 50-pg. catalog \$3. Visa/MC/chk. *The Public Domain Exchange, 673 Hermitage Pl. #1A, San Jose, CA 95134, 408/942-0309*

○ Real Estate

REMS Investor 2000

Perform powerful investment analysis on your Macintosh. Over ten different loan types, latest depreciation, variable assumptions, industry standard reports. Stand-alone program uses all the Mac features. Easy to learn. For more information ask your dealer or call REMS direct. *REMS Software, 526 N.W. Second St., Corvallis, OR 97330, 503/757-8887*

Property Management

Comprehensive program for managing residential and commercial properties. Many management reports including: operating statement, delinquent rent, lease expiration, and transaction register. Provides check writing, check reconciliation, posting late fees, recurring expenses—\$395. Investment analysis—\$245.

Yardi Systems, 3324 State St. Ste. O, Santa Barbara, CA 93105, 805/687-4245

ProAnalysis

A comprehensive real estate analysis program written specifically to incorporate Macintosh easy-to-use features. Facilitates property selection, refinancing decisions, and tax planning. Full modeling capability, sensitivity analysis, IRR, help features, clear format. \$295. Brochure available.

Technalysis Services, 14555 DeBell Rd., Los Altos Hills, CA 94022

○ Rental

Test Flight Software

It's only \$9.95. Rent any program on *Macworld's* top best-selling business software list. For only \$6.99 buy a disk full of the latest public-domain software (35-disk selection). Buy a rebuilt ThunderScan for only \$99.95 (90-day warranty—limited supply). Send for catalog now! Call to order! MC/Visa.

Paul Ashe, 16302 Parksley, Houston, TX 77059, 713/488-6524

○ Science

MacStronomy

Displays and prints maps of the stars, moon, planets, and Halley's comet at correct locations in the sky for any selected date, time, direction, and field of view. Displays descriptions of objects when selected with the mouse. Users can add their own stars/planets. Runs on 128K or 512K Mac. \$90.

Alphabyte Software, P.O. Box 649, Lafayette, CO 80026, 303/665-3444

○ Spec Writing

MacSpec

MacSpec is a specialized word processor designed for easy creation of professional specifications, proposals, and technical papers. Features include:

- Automatic section numbering & indentation
 - Sections that are easily moved & renumbered
 - Table of contents builder.
- Works well on 128K. First update free. \$199.95 (CA + tax) MC/Visa. *LM Software, 702 Newport Circle, Redwood City, CA 94065, 415/594-0627*

○ Speech Synthesis

SmoothTalker

SmoothTalker is a software-only Macintosh speech synthesizer. Give your Macintosh "the freedom of speech." Hear a demonstration of this "highest rated!" best-seller 24 hours a day at 213/427-0178. Now available at better software dealers worldwide.

First Byte, 2845 Temple Ave., Long Beach, CA 90806, 213/595-7006

○ Statistics

Number Cruncher Stat Sys

Integrated, menu-driven, Mac statistical system including: Multiple and stepwise regression, t-tests, correlation, scatter plots, up to 4-way ANOVA, principal components, cross tabulation, transformation, non-parametrics and much more. Complete Mac interface. Transfer data to/from clipboard. \$149. Requires 2dd. *NCSS-Mac, 865 E. 400 N., Kaysville, UT 84037, 801/546-0445*

STATFAST

Professional but easy-to-use, SUPER-FAST statistical package. Unlimited size of data files. Incl. two flexible data editors (can access *Multiplan* & other files), descriptive stats, t-tests, correlations, cross-tabulation, non-parametric stats, general multifactor ANOVA/ANCOVA, multiple regression, charts, plots, and more. \$119. Req. 128K, 1dd.

Statsoft, 2831 E. Tenth St. #3, Tulsa, OK 74104, 918/583-4149

○ Tax

Professional Tax Planner

Multiplan or *Excel* users, plan indiv. or corporate strategy, incl. current & prop. tax law changes, easy spreadsheet commands. Compute deprec. & ITC, compare side by side, project ten yr. +. Fully adjust. EZTax-PLAN PRO \$295 + \$3 s/h. Specify your spreadsheet & machine. MC/Visa. Individual pkg. also avail. Free info. *EZWare Corporation, Dept. 5, P.O. Box 620, Bala Cynwyd, PA 19004, 215/667-4064*

Almost Free—Try It Now

Multiplan users: pre-season tax sale, try our complete TAX-PREP '85 NOW for ONLY \$15 + \$3 s/h. Incl. 22 schedules, prepares & prints IRS-ready '84 returns, use for '85 planning. Req. *Multiplan*. Trial includes

Macworld Directory

\$15 credit on TAX-PREP '86, avail. Jan. at \$99.95 for Mac with *Multiplan* or *Excel*. MC/Visa.
EZWare Corporation, Dept. 5, P.O. Box 620, Bala Cynwyd, PA 19004, 215/667-4064

○ Templates

Soft Start™

Save time with predone *Multiplan* worksheets! The *Personal Finance* disk (12 templates) and the *Business Analysis* disk (11 templates) can help you with budgeting, checkbooks, investments, break-even and financial statement analysis, payroll, and much more. \$49.95 each disk + \$3 s/h. Visa/MC/chk. MA res. add 5% tax. *Allegro Software*, 79 Milk St. #1108, Boston, MA 02109

○ Utilities

GRIDS™ Tools for MacPaint

Know where the window is! 2 disks of utility templates for MacPaint for producing professional-looking drawings and charts. A collection of various grids, scales, rulers, protractors and charts with instruction man-

ual. Use it once and wonder how you did without it! \$40 ppd. To order or request information:

Soft Wares Inc., 19 Monroe Dr., Williamsville, NY 14221, U.S. 800/848-5500, NY 800/447-5500, Ext. 50

MacBackup™

The quickest & easiest way to make exact duplicates of your original software. You'll never see "Insert your master," because this duplicate is your master. Loads many protected programs to hard drives. For 128K, 512K, 1 or 2 drives. You can prevent destruction to your original software for only \$69.95 + shipping.

Practical Computer Applications, Inc., 1305 Jefferson Hwy., Champlin, MN 55316, 612/427-4789

PACKER

Shrinks most files 30-50%, saving disk space. Compress, back up, & password protect any or all data files on your disk... all in one step. PACKER shrinks, scrambles, & rewrites spreadsheets, source, text files, etc., and later reverses the process, restoring full-size files for use. Only \$29! Visa/MC.

Bobbing Software, 67 County Oaks Dr., Buda, TX 78610, 512/295-5045

Advertiser Index

Reader
Service
Number

274 Affinity Microsystems, 169
306 Aldus Corporation, 192
227 Altsys Corp., 133
204 Ann Arbor Softworks, 52
265 Assimilation, 139, 141, 143
370 Atari Corp., 165
407 Atlantis Software, 5
425 Beck-Tech, 170
373 Best Computer Supplies, 164
381 Borland International, 73
— Business Computers of
Peterborough, 171
— C.O.M.B. Co., 189
298 CWare Corporation, 137
165 Casady Company, 95
175 Central Point Software, 152
120 Challenger Software, 54
332 Clear Lake Research, 190
134 Comark, Inc., 94
226 CompServCo, 158
271 Computer Friends, 130
371 Computer Mail Order, 175
— Computer Museum, The, 167
220 Conroy-LaPointe, 49
418 Cortland Computer, Inc., 168
313 Creative Computer Company,
The, 154
129 Creative Solutions, 50
95 Creighton Development, 58, 67
159 DataPak Software, 118
354 DataSpace Corp., 188
281 DataViz, Inc., 33
365 Discount Warehouse, 178
— Disk World, 190
164 Diversions, 62
— Dow Jones Software, 51, 53
358 Dubl-Click Software, 140
193 Echo Data Services, 185
410 Educamp, 186
350 Electronic Arts, 187
403 Enabling Technologies, 153
5 Eqtron, 65
83 Ergotron, Inc., 14
318 Execucum, 135
56 Expertelligence, 120
114 Forethought, 24
23 Foundation Systems, 55
143 General Computer, 35
166 Great Wave Software, 134
231 H & E Computronics, Inc., 34
431 Hayden Software, 6-7
257 Hayes Microcomputer
Products, IBC
— Human Touch, 55, 57, 59
272 Icon Review, 122-123
208 Ideafarm, Inc., 144
429 Image Communications, 119
427 Indexed Software, Inc., 188
249 Infosphere, 121
422 Innovative Products, 119
305 Innovative Technologies, 145
— International Apple Core, 166
11 Kensington Microwave, 22
246 Kriya Systems, Inc., 144
428 Layered, Inc., 56
295 MACohm Projects, 133
291 MPH Electronics, 138
4 MacConnection, 112-115
28 MacPacks, 159
368 MacRentals, 184
16 MacStore, 191
— Macworld Exposition, 162-163
2 Manhattan Graphics, 28
112 Manx Software, 63
261 MassTech, 66

Reader
Service
Number

369 meacom, 136
109 Megamax, 62
414 Megasoftware, 190
219 Micro Analyst, 57
424 Micromax Systems, 101
421 Microsoft Press, 26
— Microsoft, 8-9, 46
37 Miles Computing, 44-45, 147
389 Mindscape, Inc., 27, 29
406 Mirror Technologies, 173
426 Model Office Company, The, 124
353 N² Products, Inc., 188
142 NEC Information Systems, Inc., 38
327 Nevins Microsystems, 12-13
90 New Image Technology, 59
215 Northeastern Software, 148-151
13 Odesta, 30
392 Orion Training Systems, 48
394 Other Valley Software, The, 118
233 PBI Software, 36
386 PBI Software, 37
4 PC Connection, 112-115
45 PC Network, 176-177
388 Palantir Software, 125
74 Palantir Software, 127
387 Palantir Software, 129
— Paradise Systems, Inc., 81
304 Peripherals Computers &
Supplies, 187
223 Personal Computer Peripherals
Corp., 1
85 Personics, 32
216 Programs Plus, 60-61
49 RealData, 191
— Rubicon Publishing, IFC
432 SMB Development Assoc., 186
— Satori Software, 25
35 Shaherazam, 18
372 Sir-Tech Software, 10
259 SoftStyle, Inc., 31
260 SoftStyle, Inc., 33
343 SoftStyle, Inc., 142
— Software Concepts, 131
— Software Dimensions, 186
— Software Ventures Corp., 155
377 Southern Software, 15
398 Southern Software, 17
408 Southern Software, 19
47 Spectrum Holobyte, 128
302 StatSoft, 187
225 StatSoft, 191
244 Summagraphics Corp., 16
303 Symmetry Corp., 160
177 Systems Control, 31
357 T/Maker Graphics, 20-21
430 Technalysis Services, 133
14 Tecmar, BC
55 Telemart, 126
217 Tesseract Distributing, 146
167 Thunderware, 157
311 TransAmerican Exchange, 156
6 Voad Systems, 152
374 Williams & Macias Microcomputer
Products, 154

MacRENTALS™

P.O. Box 6093
Kingwood, Tx.
77325-6093

Try before you buy!



\$20.00 Club Membership
Applies as credit to first rental

Pagemaker \$116.25
Hellx 58.25
Thunder Scan 47.75
Factfinder 23.65
Rags to Riches 26.25
Deluxe Music Const 15.50
Smartcom II 24.65
Dollars & Sense 21.75

Macdraft \$40.25
OverVUE 2.0 43.75
Jazz 92.50
Excel 58.25
Omnis 3 71.75
Video Works 16.35
Mac 3D 32.25
Ribbons & Sony disks

Other software available!!!

Order Hotline: 1-800-972-3018



In Texas &
Information (713) 360-4649



Circle 368 on reader service card

Get more data on products
you're interested in—
simply return this card today.
There's no cost.
And no obligation.

It's easy to get more information on products advertised in Macworld.
Here's how:

- Print or type your name and address in the spaces provided, and answer the questions that apply to you or your company. (These questions help us to better meet your needs and the needs of our advertisers.)
- Circle the number(s) on the card that corresponds to the reader service number(s) for the product(s) in which you're interested. For your convenience, the reader service number appears in the ad and in the Advertiser Index.
- Detach the card from the magazine, fold, seal with tape (please do not staple), apply first-class postage, and mail. Literature on the products you're interested in will be mailed to you directly from the manufacturer, free of charge.

Free Product Information Service

Please print or type all information.

Name _____

Company _____

Address _____

City, State, Zip _____ (Zip code needed to insure delivery)

Phone: Area Code/Number _____

PLEASE NOTE: This card is for your convenience in obtaining information on products advertised in *Macworld*. Please send editorial comments or inquiries to: The Editor, *Macworld*, 555 De Haro St., San Francisco, CA 94107. Thank you.

Valid through 2/14/86

1. Your primary job function:

- ☐ (A) Corporate or general management
☐ (B) Department manager
☐ (C) MIS manager
☐ (D) Professional
☐ (E) Other _____

2. Number of employees in your company:

- ☐ (1) 25 or less ☐ (4) 500-999
☐ (2) 26-99 ☐ (5) 1000+
☐ (3) 100-499

3. Information requested for:

- ☐ (A) Business applications
☐ (B) Home applications

4. Reason for inquiring:

- ☐ (1) Plan to buy—next 3 months
☐ (2) Plan to buy—4-6 months
☐ (3) Plan to buy—7-12 months
☐ (4) Plan to buy—beyond 12 months
☐ (5) Reference only

5. For how many personal computers do you buy products? (Include both company and personal units, please.)

- ☐ (A) 1 ☐ (C) 5-9
☐ (B) 2-4 ☐ (D) 10 or more

6. How many of the above are Macintoshes?

- ☐ (1) 1 ☐ (3) 5-9
☐ (2) 2-4 ☐ (4) 10 or more

7. How much do you plan to spend in the next 12 months for peripherals and other add-ons for the Macintosh(es)?

- ☐ Less than \$250 ☐ \$500-\$999
☐ \$250-\$499 ☐ \$1000 or more

8. How much do you plan to spend in the next 12 months on software for the Macintosh(es)?

- ☐ Less than \$250 ☐ \$500-\$999
☐ \$250-\$499 ☐ \$1000 or more

☐ Please bill me \$30 for a 1-year (12-issue) subscription to *Macworld* (U.S. only).

W[1-2] December 85

1 2 3 4 5 6 7 8 9 10 11 12
 13 14 15 16 17 18 19 20 21 22 23 24
 25 26 27 28 29 30 31 32 33 34 35 36
 37 38 39 40 41 42 43 44 45 46 47 48
 49 50 51 52 53 54 55 56 57 58 59 60
 61 62 63 64 65 66 67 68 69 70 71 72
 73 74 75 76 77 78 79 80 81 82 83 84
 85 86 87 88 89 90 91 92 93 94 95 96
 289 290 291 292 293 294 295 296 297 298 299 300
 301 302 303 304 305 306 307 308 309 310 311 312
 313 314 315 316 317 318 319 320 321 322 323 324
 325 326 327 328 329 330 331 332 333 334 335 336
 337 338 339 340 341 342 343 344 345 346 347 348
 349 350 351 352 353 354 355 356 357 358 359 360
 361 362 363 364 365 366 367 368 369 370 371 372
 373 374 375 376 377 378 379 380 381 382 383 384

97 98 99 100 101 102 103 104 105 106 107 108
 109 110 111 112 113 114 115 116 117 118 119 120
 121 122 123 124 125 126 127 128 129 130 131 132
 133 134 135 136 137 138 139 140 141 142 143 144
 145 146 147 148 149 150 151 152 153 154 155 156
 157 158 159 160 161 162 163 164 165 166 167 168
 169 170 171 172 173 174 175 176 177 178 179 180
 181 182 183 184 185 186 187 188 189 190 191 192
 385 386 387 388 389 390 391 392 393 394 395 396
 397 398 399 400 401 402 403 404 405 406 407 408
 409 410 411 412 413 414 415 416 417 418 419 420
 421 422 423 424 425 426 427 428 429 430 431 432
 433 434 435 436 437 438 439 440 441 442 443 444
 445 446 447 448 449 450 451 452 453 454 455 456
 457 458 459 460 461 462 463 464 465 466 467 468
 469 470 471 472 473 474 475 476 477 478 479 480

193 194 195 196 197 198 199 200 201 202 203 204
 205 206 207 208 209 210 211 212 213 214 215 216
 217 218 219 220 221 222 223 224 225 226 227 228
 229 230 231 232 233 234 235 236 237 238 239 240
 241 242 243 244 245 246 247 248 249 250 251 252
 253 254 255 256 257 258 259 260 261 262 263 264
 265 266 267 268 269 270 271 272 273 274 275 276
 277 278 279 280 281 282 283 284 285 286 287 288
 481 482 483 484 485 486 487 488 489 490 491 492
 493 494 495 496 497 498 499 500 501 502 503 504
 505 506 507 508 509 510 511 512 513 514 515 516
 517 518 519 520 521 522 523 524 525 526 527 528
 529 530 531 532 533 534 535 536 537 538 539 540
 541 542 543 544 545 546 547 548 549 550 551 552
 553 554 555 556 557 558 559 560 561 562 563 564
 565 566 567 568 569 570 571 572 573 574 575 576



MACWORLD

Free Product Information Service

**Just return the card—
to get more facts on the products that interest you!**

PLACE
FIRST-CLASS
POSTAGE HERE.
(POST OFFICE
WILL NOT DELIVER
WITHOUT STAMP.)

**Macworld
Product Information Service
P.O. Box 92844
Rochester, NY 14692**

Product Index

Reader
Service
Number

Reader
Service
Number

Reader
Service
Number

Reader
Service
Number

Software

Business

- 274 Affinity Microsystems, 169
- 306 Aldus Corporation, 192
- 227 Altsys Corp., 133
- 407 Atlantis Software, 5
- 381 Borland International, 73
- 226 CompServCo, 158
- 418 Cortland Computer, Inc., 168
- 95 Creighton Development, 67
- 159 DataPak Software, 118
- 5 Eqtron, 65
- 249 Infosphere, 121
- 424 Micromax Systems, 101
- Microsoft, 8-9
- 426 Model Office Company, The, 124
- 49 RealData, 191
- Satori Software, 25
- 343 SoftStyle, Inc., 142
- 377 Southern Software, 15
- 225 StatSoft, 191
- 357 T/Maker Graphics, 20-21
- 430 Technalysis Services, 133

Communications

- 281 DataViz, Inc., 33
- 249 Infosphere, 121
- 369 meacom, 136
- 387 Palantir Software, 129
- 304 Peripherals Computers & Supplies, 187
- Software Ventures Corp., 155

Data Management

- 381 Borland International, 73
- C.O.M.B. Co., 189
- 5 Eqtron, 65
- 114 Forethought, 24
- 13 Odesta, 30
- 408 Southern Software, 19
- 302 StatSoft, 187

Educational

- 431 Hayden Software, 6-7
- 428 Layered, Inc., 56
- 388 Palantir Software, 125
- Software Concepts, 131
- 225 StatSoft, 191

Entertainment/Strategy

- 204 Ann Arbor Softworks, 52
- 129 Creative Solutions, 50
- 95 Creighton Development, 58
- 350 Electronic Arts, 187
- 166 Great Wave Software, 134
- 37 Miles Computing, 44-45
- 389 Mindscape, Inc., 27, 29
- 394 Other Valley Software, The, 118
- 233 PBI Software, 36
- 386 PBI Software, 37
- Rubicon Publishing, IFC
- 35 Shaherazam, 18
- 372 Sir-Tech Software, 10
- Software Concepts, 131
- 398 Southern Software, 17
- 47 Spectrum Holobyte, 128

Financial

- 407 Atlantis Software, 5
- Dow Jones Software, 51, 53
- 231 H & E Computronics, Inc., 34
- 424 Micromax Systems, 101
- Microsoft, 8-9
- 74 Palantir Software, 127
- 357 T/Maker Graphics, 20-21
- 430 Technalysis Services, 133

Graphics

- 306 Aldus Corporation, 192
- 165 Casady Company, 95

- 120 Challenger Software, 54
- 226 CompServCo, 158
- 403 Enabling Technologies, 153
- 23 Foundation Systems, 55
- 2 Manhattan Graphics, 28
- 37 Miles Computing, 147
- 304 Peripherals Computers & Supplies, 187
- 357 T/Maker Graphics, 20-21
- 374 Williams & Macias Microcomputer Products, 154

Languages/Development Systems

- 298 C.Ware Corporation, 137
- 56 Expertelligence, 120
- 427 Indexed Software, Inc., 188
- 246 Kriya Systems, Inc., 144
- 112 Manx Software, 63
- 109 Megamax, 62
- Microsoft, 46

Personal Business/Home

- 227 Altsys Corp., 133
- 381 Borland International, 73
- 418 Cortland Computer, Inc., 168
- 95 Creighton Development, 67
- 358 Dubl-Click Software, 140
- 392 Orion Training Systems, 48
- 35 Shaherazam, 18
- 374 William & Macias Microcomputer Products, 154

Word Processing/Spelling Checkers

- 265 Assimilation, 139
- 95 Creighton Development, 67
- 23 Foundation Systems, 55

Miscellaneous

- 306 Aldus Corporation, 192
- 265 Assimilation, 141
- 175 Central Point Software, 152
- 332 Clear Lake Research, 190
- 410 Educomp, 186
- 23 Foundation Systems, 55
- 208 Ideaform, Inc., 144
- 219 Micro Analyst, 57
- 327 Nevins Microsystems, 12-13
- Satori Software, 25
- 303 Symmetry Corp., 160
- 217 Tesseract Distributing, 146
- 374 William & Macias Microcomputer Products, 154

Hardware

Computers

- 370 Atari Corp., 165

Digitizers

- 422 Innovative Products, 119
- 90 New Image Technology, 59
- 244 Summagraphics Corp., 16
- 167 Thunderware, 157

Hard Disks

- 143 General Computer, 35
- Paradise Systems, Inc., 81
- 223 Personal Computer Peripherals Corp., 1
- 14 Tecmar, BC

Modems

- 257 Hayes Microcomputer Products, IBC

Printers/Printer Accessories

- 265 Assimilation, 141
- 354 DataSpace Corp., 188
- 164 Diversions, 62
- 142 NEC Information Systems, 38
- 432 SMB Development Assoc., 186
- 259 SoftStyle, Inc., 31
- 260 SoftStyle, Inc., 33

Miscellaneous

- 265 Assimilation, 143
- C.O.M.B. Co., 189
- 422 Innovative Products, 119
- 11 Kensington Microware, 22
- 295 MACohm Projects, 133
- 261 MassTech, 66
- 406 Mirror Technologies, 173
- 353 N² Products, Inc., 188
- 85 Personics, 32
- 177 Systems Control, 31
- 6 Voad Systems, 152

Accessories

Disks

- 134 Comark, Inc., 94
- 193 Echo Data Services, 185
- 414 Megasoftware, 190

Miscellaneous

- 373 Best Computer Supplies, 164
- 134 Comark, Inc., 94
- 83 Ergotron, Inc., 14
- 305 Innovative Technologies, 145
- 11 Kensington Microware, 22
- 28 MacPacks 159
- 291 MPH Electronics, 138
- 353 N² Products, Inc., 188

Mail Order

- 425 Beck-Tech, 170
- 373 Best Computer Supplies, 164
- Business Computers of Peterborough, 171
- 371 Computer Mail Order, 175
- 220 Conroy-LaPointe, 49
- 313 Creative Computer Company, The, 154

- 365 Discount Warehouse, 178
- Disk World, 190
- 272 Icon Review, 122-123
- 4 MacConnection, 112-115
- 368 MacRentals, 184
- 16 MacStore, 191
- 215 Northeastern Software, 148-151
- 4 PC Connection, 112-115
- 45 PC Network, 176-177
- 216 Programs Plus, 60-61
- Software Dimensions, 186
- 55 Telemart, 126
- 311 TransAmerican Exchange, 156

Organizations

- International Apple Core, 166
- Computer Museum, The, 167

Books

- 425 Beck-Tech, 170
- 421 Microsoft Press, 26

Events

- Macworld Exposition, 162-163

The Product Index is published as a service to our advertisers and may be discontinued at the publisher's discretion. Every reasonable effort is made to categorize advertisers correctly. If a listing should be changed, please write us at Macworld, 555 De Haro Street, San Francisco, CA 94107, so that we have the opportunity to change it.

24 HOUR DUPLICATION

VERY COMPETITIVE PRICES

100% SATISFACTION GUARANTEE

ECHO DATA is a leading national software duplicator. We copy and protect all formats -- 3.5", 5.25" & 8". Custom labels and sleeves are our specialty. We can also handle your packaging and fulfillment needs with top quality control! **Why call anyone else in the U.S.A.?**

Our exclusive "Peace of Mind" copy protection leaves Macintosh "pirates" dead in the water!

WHOLESALE DISKETTES

WE WILL NOT BE UNDERSOLD !!!

We pass along distributor prices to you on name-brand diskettes. NO MINIMUM ORDER. Mac disks as low as \$1.60 ea., 5.25" S/S disks as low as \$.55 ea. We carry Maxell, 3M, BASF, etc.-- all fully guaranteed!

CALL: 800-533-4188

or 215-363-2400



DATA SERVICES, INC.
Marsh Creek Corp Center
Lionville, Pennsylvania 19353

Circle 193 on reader service card

FREE SHIPPING

SOFTWARE DIMENSIONS

- Free UPS ground shipping. For next day air service add \$7.
- Free air shipping on orders over \$300.
- VISA & MASTERCARD
- For C.O.D.'s add 2%—minimal service charge is \$3.
- Company & school administration purchase orders accepted upon approval.
- Personal & company checks will delay shipping 2 weeks.
- Prices & availabilities subject to change without notice.
- We do not guarantee machine compatibility.

MACINTOSH

SPECIALS

Electric Checkbook	\$47	MAC Office	\$27
Filevision	\$89	MAC Pic 1 & 2	\$29

BUSINESS

Ensemble	\$209.96
File	136.50
1st Base	136.50
1st Merge	66.50
1st Port	66.50
Helix	276.50
Jazz	416.50
Mailmanager	83.96
Main Street Filer	139.30
Microsoft Business Pack ..	416.50
Microsoft Chart	87.50
Microsoft Multiplan	136.50
OverVUE	206.50
PFS: File & Report	136.50
Word	136.50

EDUCATION

Macedge	\$ 34.96
Mind Over Mac	34.96
SAT	69.96
Typing Tutor III	41.96

GAMES

Airborne	\$ 24.46
Baron	25.18
Cutthroats	27.96
Cyborg	27.96
Deadline	34.96
Enchanter	27.96
Gato	34.96
Gypsy	34.96
Hitchhiker's Guide to the Galaxy	27.96
Lode Runner	27.96
Mac Command	24.46
Mac Slots	34.96
Mac Vegas	41.30
Make Millions	34.96
Millionaire	34.96

Murder by the Dozen	24.46
Pensate	27.96
Planetfall	27.96
Run for the Money	34.96
Sargon III	34.96
Seastalker	27.96
Sorcer	31.46
Squire	34.96
Starcross	34.96
Suspect	31.46
Suspended	34.96
The Witness	27.96
Trivia Fever	69.96
Trivia Fever Vol. #2	17.46
Tycoon	25.18
Ultima II	41.96
Ultima III	45.46
Wishbringer	27.96
Word Challenger	27.96
Zork I	27.96
Zork II	31.46
Zork III	31.46

HOME

Dollars and Sense	\$104.96
Financial Cookbook	35.00
Home Accountant	105.00
MasterPieces	27.96
MusicWorks	55.96
Slide Show Magician	34.96

UTILITIES

Animation Tool Kit	\$ 34.96
C Language Development S ..	139.30
McPic	34.96
McPic Vol. 2	34.96
Quickset	69.96
Smoothtalker	104.96
Speller	27.96
Videoworks	69.96

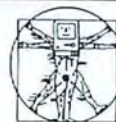
IF YOU DON'T SEE THE TITLE YOU WANT, CALL US
Call Toll Free to place your order

1-800-826-2447 1-800-222-0697

Calls originating outside Colorado Calls originating inside Colorado
Pacific time: Mon.-Sat. 6 am-8 pm, Sun. 11 am-4 pm

7830-A North Academy Blvd., Colorado Springs, CO 80918

MACINTOSH PUBLIC DOMAIN SOFTWARE



The most complete, quality MAC public domain software available. Over 1,000 programs to choose from. Average price of a program is 65 cents! Constantly updated catalog. Instructions included. Many programs are better than those available commercially. Why pay more?

- Fonts by the dozen
- Essential desk accessories
- Multiplan templates for home and business finance, real estate, etc.
- Terrific games
- RAM disk & hacker's tools
- Disk backup utilities, even protected
- Statistics programs
- Font editor and font tools
- Bill Atkinson's PaintMover pgm.
- Spell check & word count
- Items we can't tell you about here

MAC DISK DUPLICATION

Prices from \$1.75 to \$1.99

Includes disk, verify and label application

To order our recent catalog, send \$1.00 to cover postage & handling to:

EDUCOMP

(619) 942-3838

2139 Newcastle Ave., Cardiff, CA 92007

Circle 410 on reader service card

Less Wait with MacMate!

MacMate™ Print Spooler and Ram Disk for 512K.

- Allows printing on ImageWriter while continuing to work with Mac.
- Save/load data and applications from ultra fast drive in memory.
- Occupies only 8K disk space — written in 100% machine language.

ONLY \$49.95!

plus \$2.50 shipping

TO ORDER CALL

(805) 251-4673 • (818) 341-2523
Dealer Inquiries Invited

Send check/MO to:

SMB Development Associates
P.O. Box 3082
Chatsworth, CA 91313

Not for use with Mac XL or LaserWriter.

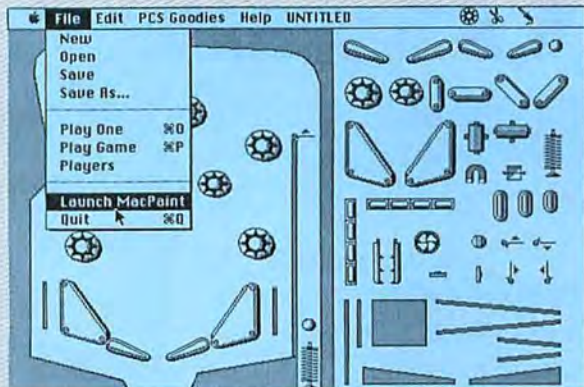
MacMate is a trademark of SMB Development Assoc. Macintosh and ImageWriter trademarks of Apple Computer, Inc.

Circle 432 on reader service card

The Classic Hit - New and Improved for the Mac!

Pinball Construction Set

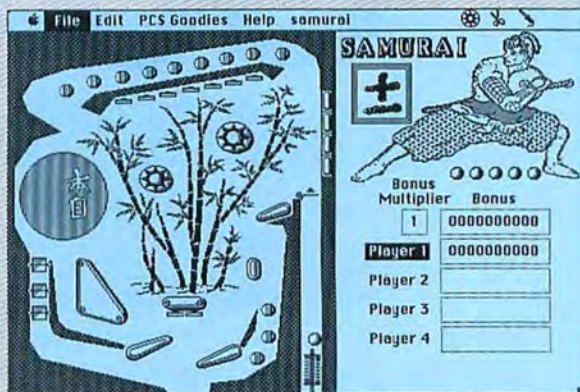
Design and play the pinball games of your dreams.



Unlimited creative power! Up to 128 parts per game. Balls, flippers, bumpers, ball eaters, ball catchers, and more. Design your own scoring systems. Change ball speed and bounce. Change the bumper kick. Reverse gravity. Whatever you want! Winner of 11 major awards for quality, including InfoWorld's Game Generator of the Year.

How to order: Visit your retailer or call 800-227-6703 for direct VISA or Mastercard orders (in CA, call 800-632-7979). To buy by mail, send check or money order to Electronic Arts, P.O. Box 306, Half Moon Bay, CA 94019. Add \$3 for shipping. Allow 4 weeks for delivery. We offer a 14-day money back guarantee on direct orders. MacPaint is a trademark of Apple Computer Inc.

5 different games already on the disk.



Uses all the Mac's sound and graphics power. Hands-on sculpting tools let you create the shapes in each game. Use MacPaint™ to paint them. All the great sound effects of real pinball games are included, or you can design your own. Everything you need to design and play the perfect pinball game!

ELECTRONIC ARTS™

Circle 350 on reader service card

A COMPLETE DATA-BASE MANAGEMENT PROGRAM FOR ONLY: DATAFAST

\$49!

DATAFAST is super-easy to use. We guarantee that you will be able to start using this program in 3 minutes (even without reading the manual)! Select options from menus and answer simple questions to do things that require a programming language in other data-base programs!



- Multipurpose: You can use DATAFAST to store and process data about everything that needs organizing: addresses, mailing lists, clients, patients, customers, inventories, references, bibliographies, collector's items, recipes, you name it... Various serious business applications
- Easy entering, updating, sorting, and reorganizing of your data
- Can access data from other programs and computers
- You can print labels or formatted reports, fill out forms, invoices, "copy" and "paste" any records or sets of records from DATAFAST files into your MacWrite documents (letters, memos, articles), you can also generate "text files" to be accessed by other programs and computers
- You can use predefined formats of records (included) or define your own formats
- DATAFAST is very fast even when your data files are large. It can handle even the most demanding professional applications. DATAFAST supports data files as large as your disk: 6800 lines of text (350k) on a 512k Macintosh, 1500 lines of text on a 128k Macintosh
- Runs on 128k or 512k Macintosh. External disk drive and hard disk are supported but not required

To order send check or money order for \$49
(plus \$5 shipping and handling) to:

STATSOFT

(the developers of STATFAST)

2831 East 10th Street, Suite 3, Tulsa, OK 74104. (918) 583-4149

Macintosh is a registered trademark of Apple Computer, Inc.



Circle 302 on reader service card

VersaTerm™

The First Text and Graphics
Communications • Terminal Emulation
Program for the Macintosh!!

If you use CompuServe™ or manipulate text on a host computer or generate complex mainframe graphics, VersaTerm is the communications program of choice.

Terminal Emulation	File Transfer	New Enhanced Version 2.00!
<ul style="list-style-type: none"> • DEC VT100 • Tektronix 4014 • Data General D200 	<ul style="list-style-type: none"> • TEXT • MacTerminal™ XModem • Text XModem Protocol • MacBinary XModem • Text Kermit Protocol 	<p>A few of the new features are:</p> <ul style="list-style-type: none"> • Now supports LaserWriter and Diablo 630. • Kermit now supports Binary as well as Text. • Text buffer auto sized up to 384 lines in RAM. • Bold and Underline chars, now supported. • Mini-macros implement wait-for-prompt character in the User Commands. • Edit mouse now works with TABS. • Enhancements for Foreign keyboards. • "Copy Table" and "Save Selection" added. <p>Requires a 128K or 512K Mac, and optionally an ImageWriter printer and numeric keypad.</p>

"This solid program (VersaTerm) should be looked at by all power users, especially those with VT100 and Tektronix emulation needs." — MacUser, Premiere Issue '85

List Price \$99

TekPrint™

TekPrint is a new application that allows you to Zoom, Pan, Rotate and Print high resolution Tektronix 4014 graphics on your ImageWriter or LaserWriter. Also, directly create MacDraw documents! Copy a selection of graphics to the Clipboard and pass it to any other graphics application. Use VersaTerm to preview and create TekPrint documents.

Requires a 128K or 512K Macintosh and ImageWriter or LaserWriter Printer.

Shipping Now!

Registered VersaTerm Owners
Including a free VersaTerm update

List Price \$79

VersaTerm Plus Package
Including VersaTerm and TekPrint
List Price \$175



2457 Perkiomen Avenue
Mt. Penn, PA 19606
(215) 779-0522

Circle 304 on reader service card

Up to 80% off*

Save up to 80% of the time required to print with your Macintosh™ MAX from DataSpace is more than a printer buffer. It has single sheet select, it displays its available storage, it has 256K of memory expandable to a full 1 megabyte, and best of all its AppleTalk™ compatible so several Macs can share a printer. If you're tired of waiting, MAXimize your Mac.

DataSpace

205 Riviera Drive
Markham, Canada L3R 2L6
(416) 474-0113

Dealer Inquiries invited Macintosh is a trademark licensed to Apple Computer Inc. AppleTalk is a trademark of Apple Computer Inc.

Circle 354 on reader service card

NEW! *We set you free*



Macintosh† Extended Basic Interpreter

- ☑ The ONE "Basic" you need to program like a pro.
- ☑ Powerful Relational Data Base commands with true multi-key indexed files built in.
- ☑ Access to the Mac's Menus, windows, & dialog boxes.

Take advantage of our Christmas special. **\$99⁰⁰**
Retail \$149⁰⁰

Money orders, checks, C.O.D.,
Mastercharge or Visa accepted



Indexed Software, Inc.
24684 San Jacinto St.
San Jacinto, CA 92383
Call Collect (714) 929-2749

† trademark licensed to Apple Computers, Inc.

Circle 427 on reader service card

The right connections at the right price! Introducing the \$46.95 A-B Switch Box

N² Products' A-B Data Switch Box lets you switch between two peripheral devices and one computer or two computers and one peripheral. All for only \$46.95!

- All 25 lines switched
- High reliability DB-25 connectors with gold plated pins
- Color and Style complements most personal computers
- Packaged in distinctive retail box
- Custom versions available
- One year warranty



Distributor and Dealer inquiries invited

N² Products also manufactures a complete line of *molded* interface cables for the Macintosh™, IIC®, IBM PC®, Hayes Transet 1000™ and custom applications.

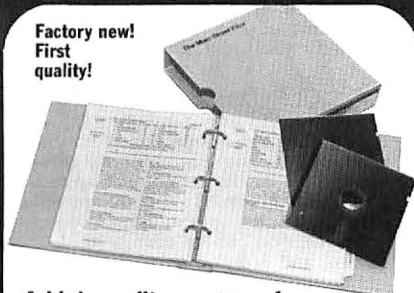
N² PRODUCTS, INC.

2401 Qume Dr.
San Jose, CA 95131
408 435-0227
619 243-3632

Circle 353 on reader service card

MUST LIQUIDATE AT BELOW DEALER COST! IBM/PC & MACINTOSH OFFICE SOFTWARE

Factory new!
First
quality!



A high quality program for OFFICE information management!

The manufacturer changed the packaging for this software, and we acquired the stock in the "old" packages. Now we can liquidate it to our customers at BELOW dealer cost!

Main Street Filer is a high quality office information management tool. It accommodates names and addresses, customer statistics, supplier and inventory records, invoices, appointment dates and much more! It's designed for Apple Macintosh and IBM/PC users regardless of their level of computer ability.

First time computer users will appreciate how easy the software is to use. Advanced users will find the programs very sophisticated! The Filer is straightforward and visual. No fancy languages to learn. No function buttons to memorize.

System capacity: Number of files: dependent on diskette capacity. Number of records: 65,000. Number of fields: 36. Characters per line: approx. 20 per field title; 40 per field data entry.

Included is an easy-to-follow manual, plus a phone number for calling Main Street Software direct for assistance, in case needed!

Mfr. List: \$200.00

\$39

Liquidation

Price Now Only

Item H-781-63684-01 (Macintosh)

Item H-781-63684-00 (IBM)

Price subject to change after 60 days. Sales outside continental U.S. are subject to special conditions. Please call or write to inquire.

Credit card customers can order by phone,
24 hours a day,
7 days a week



Toll-Free: 1-800-328-0609



Your check is welcome!
No delays in orders paid by check.

C.O.M.B. CO.®

Item H-781

14605 28th Ave. N./Minneapolis, MN 55441-3397

Send _____ Main Street File package(s) for Macintosh (Item

H-781-63684-01)

Send _____ Main Street File package(s) for IBM (Item

H-781-63684-00)

Cost is \$39 per package plus \$4 per package for shipping, handling. (Minnesota residents add 6% sales tax. Allow 3-4 weeks for delivery. Sorry, no C.O.D. orders.)

☐ My check or money order is enclosed. (No delays in processing orders paid by check, thanks to TeleCheck.)

Charge: ☐ MasterCard® ☐ Visa

Acct. No. _____ Exp. _____

PLEASE PRINT CLEARLY

Name _____

Address _____

City _____

State _____ ZIP _____

Phone _____

Sign Here _____

C.O.M.B. CO.®

Authorized Liquidator

14605 28TH AVENUE NORTH
MINNEAPOLIS, MINNESOTA 55441-3397

MUST LIQUIDATE! Telemanagement System For MACINTOSH Computers NOW AT A REMARKABLY LOW PRICE!

FACTORY NEW! FIRST QUALITY!

MacPhone™

Works through
your Macintosh
computer to
help you manage
your telephone
usage!

Has a simple, yet
sophisticated
word-processing
function!

NOTE: Computer
is NOT included.

MacPhone is FCC registered



Intermatrix had an overstock of this innovative telecommunication tool. It is completely menu driven and mouse controlled by any Macintosh computer. Now, we're authorized to offer a limited number of these units at a remarkably LOW liquidation price!

A call log! Controls, organizes phone interactions. Logs all outgoing calls, start/stop times, notes and comments. Generates a printed record of telephone usage!

An electronic calendar! Lists all day's activities. Quickly reviews and edits schedules. Saves them, if needed, for permanent records with printouts available to you in seconds!

An executive diary! Documents important dates and events. Quickly calls up and reviews past, current, future events. Searches through past notes to locate exact dates of events or phone calls with pertinent information or comments!

A telephone directory! "Electronic telephone book" with capacity for up to 200 numbers! Auto-dialing and updating ability. Compatible with Sprint, MCI and other long distance services. NOTE: for Touch-Tone phones only. Will not work with rotary-pulse dial systems.

A quick dialer! Instantly locates and automatically dials up to 80 of your most frequently used phone numbers!

A memo pad! No more pad and pencil! Electronic memo pad captures notes, memos, ideas, concepts and stores for future reference. Has a simple, yet sophisticated word processing function. Writing and printing informal documents is virtually effortless! Easy to follow instructions included.

**90-Day Limited Factory Warranty
against defects in
materials or workmanship.**

Credit card customers can order by phone,
24 hours a day,
7 days a week



Toll-Free: 1-800-328-0609



Your check is welcome!
No delays in orders paid by check.

C.O.M.B. CO.®

Authorized Liquidator

14605 28TH AVENUE NORTH
MINNEAPOLIS, MINNESOTA 55441-3397

*Macintosh is a trademark licensed to Apple Computer, Inc.

Manufacturer's
Suggested Retail

\$199.95

OUT THEY GO AT ONLY:

\$49

Item H-780-64017-00

Shipping, handling: \$5.00

Price subject to change after 60 days.
Sales outside continental U.S. are
subject to special conditions. Please
call or write to inquire.

C.O.M.B. CO.®

Item H-780-64017-00

14605 28th Ave. N./Minneapolis, MN 55441-3397

Send _____ MacPhone(s) at \$49 each, plus \$5.00 each for shipping and handling. (Minnesota residents add 6% sales tax. Allow 3-4 weeks for delivery. Sorry, no C.O.D. orders.)

☐ My check or money order is enclosed. (No delays in processing orders paid by check, thanks to TeleCheck.)

Charge: ☐ MasterCard® ☐ VISA

Acct. No. _____ Exp. _____

PLEASE PRINT CLEARLY

Name _____

Address _____

City _____

State _____ ZIP _____

Phone _____

Sign here _____

DISK WORLD!

presents a gift to you:

SONY

3.5" DISKETTES

at \$ 1.99 each!

These are the real McCoy...the diskettes that SONY invented and that made the Mac possible.

Boxed in 10's, fully labelled as SONY product.

Minimum order is 20 diskettes...and before you ask...there is no discount for quantity, unless you want to talk about ordering one thousand or more units at a time.

Why such low prices?

Because we want your business.

Right now, there's a major price war going on between people selling diskettes by mail.

To win a war, you have to win the right battles.

And the battle we want to win right now is your business for genuine SONY 3.5" diskettes..

LIFETIME WARRANTY & LOW PRICES!

It's that simple.


Just call 1-800-621-6827 or in Illinois, try 1-312-256-7140 and order by VISA, MASTERCARD or COD. (Open accounts are available for corporations rated 3A2 or higher and government or quasi-government agencies.)


Shipping charges are \$ 3.00 per 100 diskettes or fraction thereof. C.O.D. orders require a special \$ 5.00 handling fee. APO, FPO, HI, AK and PR orders, add 5 percent to cover parcel post and insurance charges. Illinois residents add 7 percent sales tax.

DISK WORLD!, Inc.

629 Green Bay Road
Wilmette, Illinois 60091

How to FATTEN Microsoft BASIC™

 **CLR ToolLib** adds over 100 statements to Microsoft BASIC. ToolLib makes quickdraw graphics, alert boxes, scroll bars, icons, and more available from BASIC. At last the full power of the ROM Toolbox is easy to use. Even regions, resources, and other unique Macintosh features can be included in your BASIC programs.

 **CLR MathStatLib** adds over 20 statements to Microsoft BASIC. Matrix operations (which are performed in extended precision) include transposition, addition, subtraction, multiplication, and inversion. Statistical functions include minimum, maximum, mean, standard deviation, t test, and evaluation of the cumulative z, t, chi square, and F distributions. Other utilities include numerical and string sorting.

The libraries are \$35 each or \$50 for both. Add \$3 for postage and handling. Texas residents include sales tax. VISA and MasterCard® cards accepted. Microsoft BASIC 2.0 or 2.1 is required. For orders or more information call: 1-800-835-2246 x199 (in Kansas 1-800-362-2421) 24 hours a day, 7 days a week.

* Microsoft Basic is a trademark of Microsoft Corporation.
* Macintosh is a trademark licensed to Apple Computer, Inc.



5353 Dora Street #7
Houston, Texas 77005
Dealer Inquiries Welcome

Circle 332 on reader service card

3 1/2"
maxell®
BULK DISKS

SS \$1.75

DD \$2.30

DUPLICATED
SS \$2.10

VISA

MINIMUM
ORDER 500
C.O.D.

Master
Card

1-800 222-0490
201- 462-7628 in N.J.

MEGAsoft

P.O. Box 1143
Freehold, N.J. 07728

Circle 414 on reader service card

New Release: 2.0

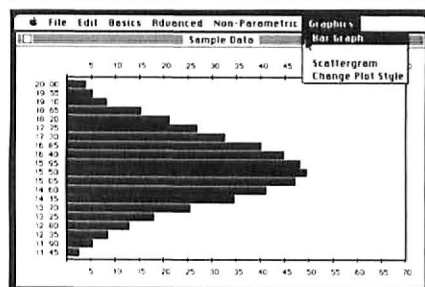
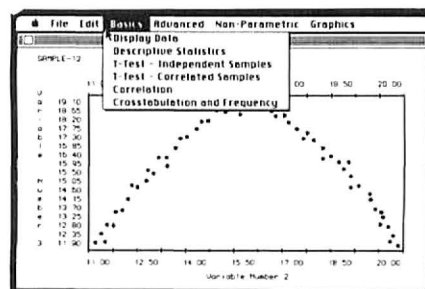
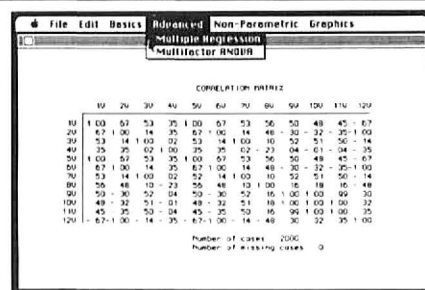
BUSINESS • SCIENCE • EDUCATION

A complete statistical package for only:

STATFAST \$119

A Powerful Tool for Data Analysis and Forecasting

- Very easy to use, even for novices. No commands to memorize, Mac user interface
- Speed is a crucial issue in statistics: STATFAST is a professionally designed superfast stand-alone application (It completes in seconds what takes BASIC or Pascal programs 20 minutes or more)
- Unlimited size of data files!
- Descriptive Statistics, t-tests (indep./dep. samples), Correlations, Cross-Tabulation, Frequency, 10 Nonparametric tests, Multi-factor Analysis of Variance/Covariance (4-way, Repeated Measures, Unbalanced Designs, Contrasts), Multiple Regression (up to 25 predictors, various statistics, plots of residuals), Significance Tests, and much more
- User defined (multiple) conditional selection of sub-sets of cases, various ways of treating missing data
- Two flexible Data Editors (command- and screen-oriented), easy entering/editing, "copying", "pasting" of data, complex (conditional) transformations, sorting, and more
- Can also access files created by spreadsheets (e.g. Multiplan, Jazz), data bases, and from mainframes
- Superb graphics (Bar charts, Scatterplots), clear comprehensive output, can be "pasted" into MacWrite documents
- Clear, comprehensive manual, with step by step examples
- Requires 128k or 512k Macintosh®, external disk drive or hard disk supported by not required



To order send check or money order for \$119 (includes shipping and handling) to:

STATSOFT 2831 East 10th Street, Suite 3, Tulsa, OK 74104. (918) 583-4149

Circle 225 on reader service card

We RENT Mac Software !!

MacStore™

The Apple Logo is a trademark of Apple Computer, Inc.

Don't invest in software without taking it for a test drive first!



	Rent	Buy		Rent	Buy
Accessory Pak 1	9.30	31.20	Mac Draw or Mac Draft	call	call
Airborn	9.30	36.50	Mac Labeler	9.30	38.40
Back to Basics (each package)	26.66	121.20	Mac Lion	53.56	267.80
Bulk Mailer	19.64	98.20	Mac Project	23.90	119.50
Chip Writs	9.30	37.80	Mac Publisher	17.99	89.95
Click Art, Effects, Letters, Publications	call	call	Mac Spell Right	14.00	70.00
Click-on Worksheet	12.12	60.60	Mac Tracks	9.30	22.45
Consultant	30.80	140.00	Mac the Knife Art or Fonts	9.30	call
Copy II Mac	9.30	25.80	Megafile, Megaform, Megamerge	call	call
Crunch	42.05	191.16	Mind Prober	9.30	37.75
Davinci (We have them all!)	call	call	Music Works	11.99	59.95
Dollars and Sense	23.88	119.40	My Office	15.44	70.20
Factfinder	23.76	118.80	Omnis 3	82.37	374.40
FileMaker	32.44	147.45	OverVUE	38.28	174.00
Filevision	29.56	147.80	Quick Disk	9.30	25.90
Fluent Fonts, Fontastic	call	call	Quick Paint, Quick Word	9.30	29.94
Forecast	10.62	53.10	Ready-Set-Go 2.0	19.90	90.75
Frogger	9.30	33.45	Smooth Talker	15.36	76.80
Front Desk	24.95	113.40	Speller	11.99	59.95
Gato	9.30	37.80	Think Tank 128 & 512	call	call
Helix	55.89	279.45	Turbo Charger	14.46	72.30
Infocom Games (We have most of them!)	call	call	Typing Tutor III	9.30	44.95
Jazz	89.80	445.00	Video Works	15.12	75.60
KeyStroke	58.80	294.00			
Languages (Asm, Basic, C, Cobol, Fortran 77, Pascal)	call	call	Accessories		
Microsoft File, Multiplan, Word	26.51	120.50	Disks (box of 10)		24.95
Microsoft Chart	17.71	80.50	Disks (10 wrapped in plastic)		21.95
Mac Attack	9.30	37.40	Paradise 10 Meg Hard Disk		1179.50
Mac Challenger	9.30	39.60	512 K / 1 Megabyte upgrades		call
			Diamond Surge Protector (V/Switch)		31.20

If you don't see what you want, call us anyway... We probably have it !!

Shipping

- \$2.90 for UPS surface
- \$4.90 for UPS 2nd day air
- add \$1.90 for C.O.D.

Rental Club Membership

- One time membership \$20.00
- 14 day rental period
- Rental applies to purchase

MacStore™ 28 Tealwood, New Braunfels, Texas 78130

Orders 1-800-847-0026 Customer Service Line: (512) 629-5419

In Texas 1-800-222-1537 After tone ask operator for extension 993265



Circle 16 on reader service card

NEW FROM REALDATA

Providing Real Estate Software Since 1982

The Loan Qualifier: A complete, menu-driven loan qualification system for real estate brokers and mortgage bankers. Handles VA, FHA and conventional fixed- and adjustable-rate loans. Requires Microsoft's Excel™ and 512k Macintosh™ \$195.00

Property Management, Level 1: For the small investor with fewer than 30 rental units. Includes property profiles, receipts and disbursement journals, expense summaries, receivables report and critical dates calendar. Requires Multiplan™ or Excel™ and 512k Macintosh™. \$250.00 Available soon: *Property Management, Level 2.* Level 1 users can trade up!

...and don't forget RealData's Six Other Real Estate Packages, including Real Estate Investment Analysis, Tax Shelter Syndication Analysis, Residential Real Estate and more. From \$100 to \$295, for Multiplan™ Excel™ or Jazz™.

REALDATA

Software for Real Estate and Financial Professionals
78 North Main St., South Norwalk, CT 06854

TO ORDER, CALL OR WRITE TODAY 203-255-2732

MC/VISA/COD Accepted

RealData is a trademark of RealData, Inc. Multiplan and Excel are trademarks of Microsoft Corp. Jazz is a trademark of Lotus Development Corp. Macintosh is a trademark licensed to Apple Computer Corp.

Circle 49 on reader service card

The Creation

PageMaker™, the remarkable page layout program, gives you the tools to create high-quality business communications such as newsletters, catalog sheets and price lists in your own office.

Combining PageMaker with a Macintosh™ Computer and LaserWriter creates a powerful desktop publishing system that substantially reduces the time and money you spend on publications.

For example, a 16-page newsletter that takes 26 hours and costs \$960 using traditional methods can be produced with PageMaker in just 8 hours for only \$170.

PageMaker lets you quickly and efficiently integrate text and graphics onto a page which is displayed on the computer screen where you can also see how graphics, type styles, fonts and sizes will look when printed. When layout is completed, the document is ready for reproduction.

You don't have to be a graphic designer or computer expert to work with PageMaker.

The program makes it simple by following standard publishing procedures, eliminating repeated proofreading and incorporating a built-in text editor.

For more information on PageMaker—the most versatile desktop publishing system in all creation—contact your authorized Apple® dealer or Aldus Corporation.

PageMaker

Aldus Corporation
616 First Avenue, Suite 400
Seattle, Washington 98104
(206) 441-8666

©1985, Aldus Corporation

*PageMaker is a trademark of Aldus Corporation.
Apple® is a trademark of Apple Computer, Inc.
Macintosh™ is a trademark licensed to Apple Computer, Inc.



Macworld Gallery

An exhibition of Macintosh graphics

Edited by Erfert Nielson

Each month Macworld Gallery displays the winners of the Macworld Art Contest, as well as several other drawings. Send a paper copy of your artwork to Macworld Gallery, 555 De Haro St., San Francisco, CA 94107. The drawings are viewed by a panel of judges. The first-place winner receives \$500, and two runners-up receive \$250 each. People whose drawings are exhibited in the regular Gallery section receive \$25.

Because of the large number of submissions, we are able to acknowledge only winning entries. Prize-winning entries become the property of Apple Computer.

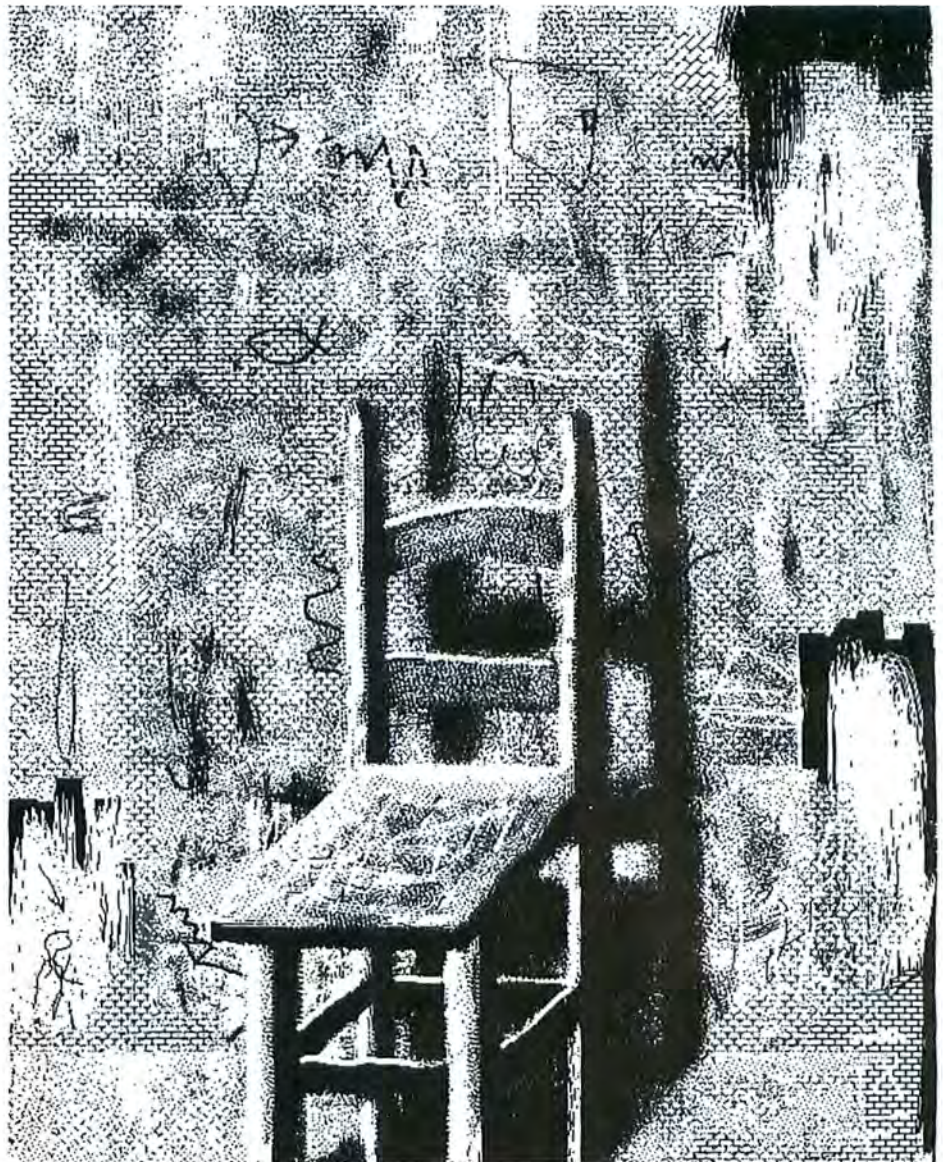
■ \$500—First Prize

Chair

This picture is one of my earliest *MacPaint* efforts. I wanted as many textures as possible, so I used the spray can to overlap several patterns. I used the pencil and a small brush to scrawl the graffiti on the wall behind the chair.

Steve Picker

Boston, Massachusetts



Chair

■ \$250—Second Prize

Mask Drama

For me *MacPaint* is a new medium, with unique assets and imitations. This piece is a continuation of my work in painting, drawing, and collage. I enjoyed creating new patterns and blending them to describe dark and light areas.

Michelle Shelfer

San Francisco, California

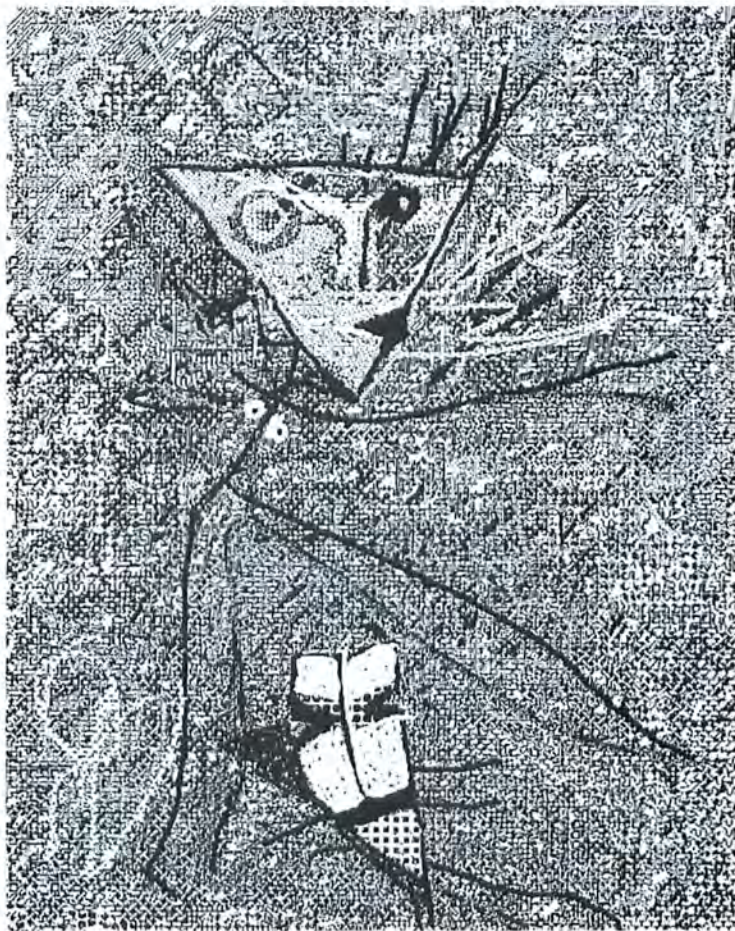
■ \$250—Second Prize

My God!

I'm an illustrator accustomed to working with an airbrush. I got a Mac about a month ago and found that *MacPaint* offers interesting techniques not found in other media. For this drawing I used the selection rectangle to copy patterned areas.

Claude Leonard

Brussels, Belgium



Mask Drama

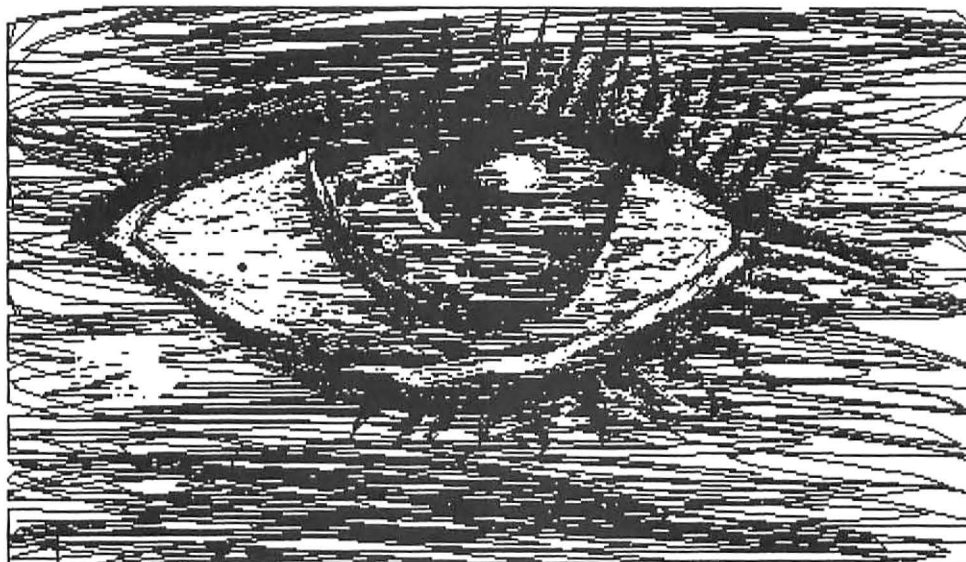


My God!

Scratched Eye

I drew this picture with only one tool: the pencil. I sketched the basic form and then used the pencil's eraser, which changes black pixels to white, to scratch white lines across black areas.

*Alan Eyzaguirre
Hollywood, Florida*

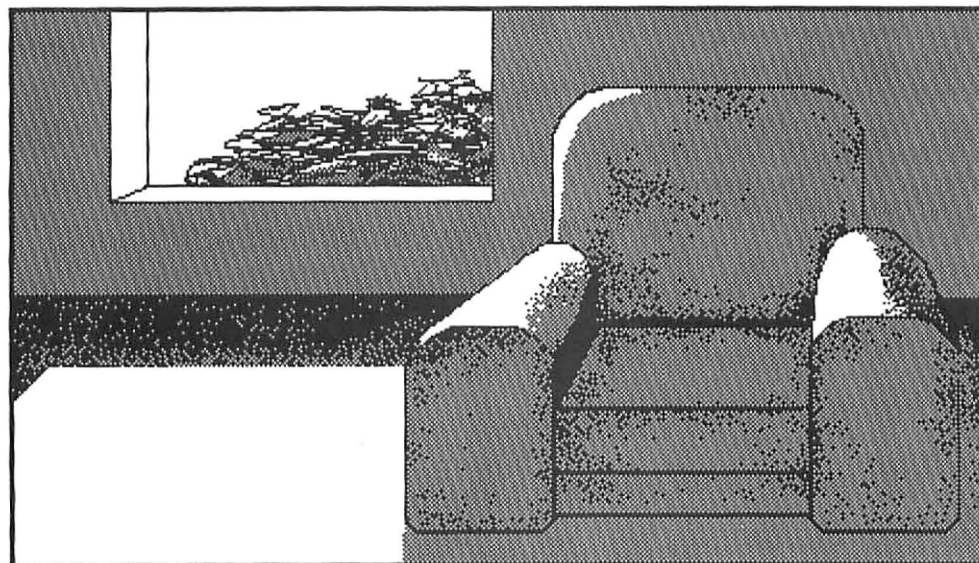


Scratched Eye

Florida Is a Long Ways

I used the rounded-corner rectangle to make the general shape of the chair, changing some edges in FatBits. Then I shaded in the chair with the paint bucket and the spray can. The only other tools I used were the straight line for the window and the pencil for the foliage.

*Carolyn Hunter Thayer
Milwaukee, Wisconsin*



Florida Is a Long Ways

Blake Street

I blocked in the building using the paintbrush and the paint bucket. Then I used the lasso to select and duplicate the windows. Several *MacPaint* tools, including the straight line, the spray can, and the circle, helped me complete the street and the traffic light.

Ted Murphy
Denver, Colorado



Blake Street

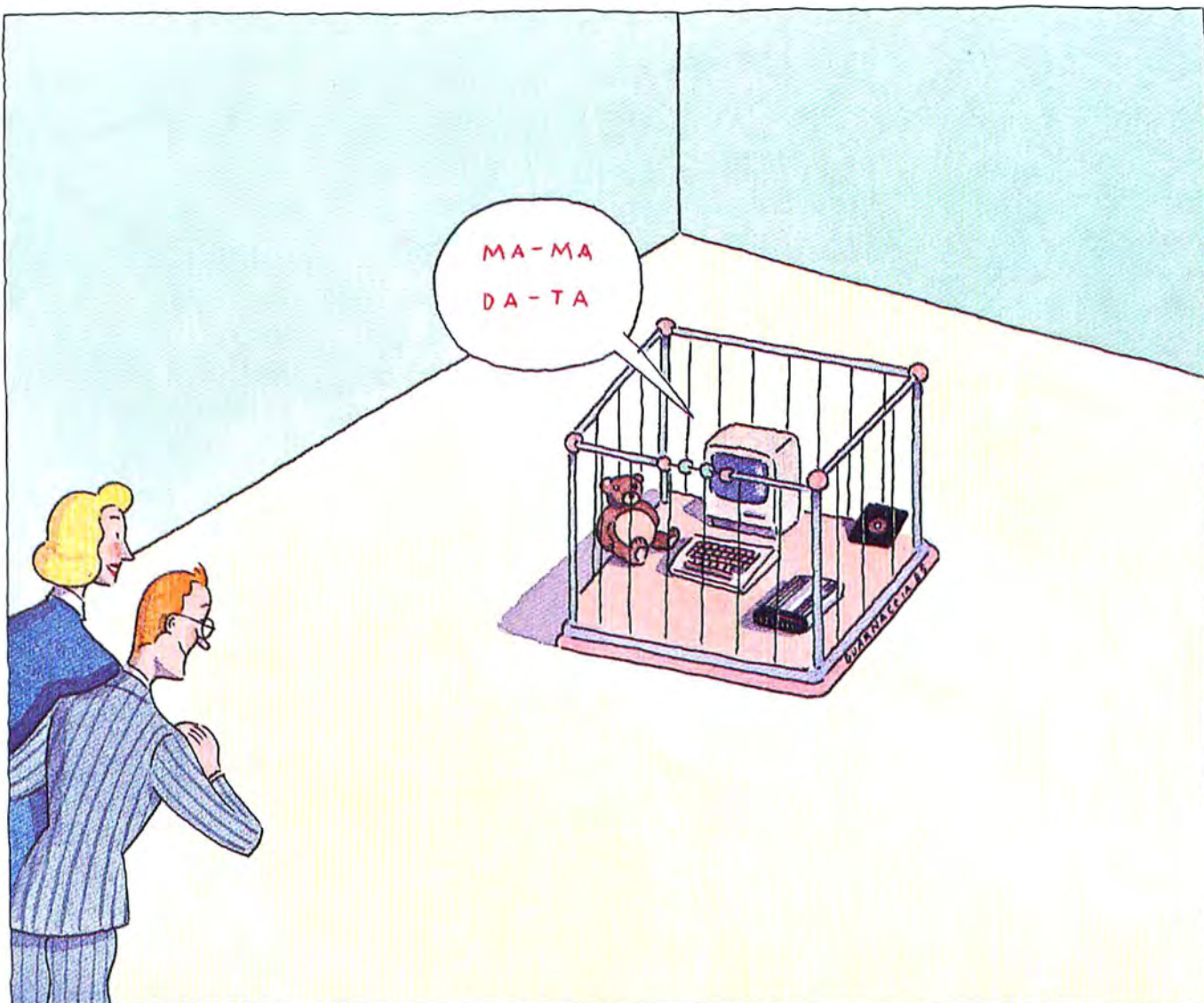
The Kid

This drawing is based on a photograph in which the shadow of the father creates a somewhat ominous mood. The primary tools I used were the straight line, the pencil, and the paint bucket. I was delighted with the flexibility of *MacPaint* when it came time for the details. For example, I used the Outline option from the Style menu for the lettering on the wagon, and I edited a pattern and spray-painted it over another pattern for the cement.

Molly Minnear
Washington, D.C.



The Kid



Now that your Macintosh is two years old,TM isn't it time it learned how to talk?

In fifteen minutes, we can have your Macintosh "talking" on the phone to other computers, to access information, transfer files, transmit electronic mail, and more, for less. With the Hayes® communications package.

Each package includes a Smartmodem 1200TM and Smartcom II,[®] the only communications software that uses the Mac to its maximum. So in one easy lesson your Mac will be talking at 1200 bps.

*A savings of over \$120 vs items purchased separately, based on manufacturer's estimated retail price.



Smartcom II is specially designed to let you mouse your way through familiar Mac icons. It allows Mac users on both ends of the connection to work on the same image or document.

And you can switch from data to voice communications whenever you want.

Plus, you also get a modem-to-Mac cable to make it easy to become well connected quickly. All this for so little,* it'll leave you speechless.

So get a Hayes communications package. And take the first steps toward your Mac's first "words."

SMARTMODEM 1200

- Direct connect • Auto-dial/auto-answer
- Bell 103/212A and CCITT V.22 compatible • Full or half duplex asynchronous
- Call progress monitoring • Voice/Data • 1200 bps or 300 bps • Convenient redialing • Advance diagnostic tests: analog, digital, and remote digital loopback
- Touch tone or pulse • Dial-up or lease line
- Supports single and multi-line phone systems • Modem to Macintosh cable.

SMARTCOM II

- Easy Macintosh icon menu • Autopilot executes stored instructions • Hayes Verification, XMODEM, Macterminal XMODEM, Macbinary XMODEM, and XON/XOFF protocols • VT 102 and VT 52 terminal emulation • Voice/Data switching • Interactive graphics (requires 512K RAM) • Prints, stores, and displays files at the same time.

© 1985 Hayes Microcomputer Products, Inc.

Hayes®

Say yes to the future with Hayes.

Circle 257 on reader service card

How to get the Max out of your MAC

With Tecmar's MacDriveTM and new version 2.0 software, your Macintosh can work up to 4 times faster, store up to 38 times more information.

Certainly the Macintosh is a terrific business tool. Simple. Versatile. Functional. But without a MacDrive hard disk mass storage system, your Macintosh simply isn't working up to its maximum potential.

The MacDrive will never keep you waiting

With a MacDrive, the Macintosh data storage and retrieval functions are accelerated as much as 4 times. You'll load programs faster, save files more quickly. And our unique print spooling feature allows you to continue working even while your printer is running — which means you'll always be functioning at maximum efficiency.

MacDrive backs you up all the way

Your data storage capacity is limited only by the size of the drive you choose. And, regardless of the size of any given file, you can back it up onto floppy disks. MacDrive will even tell you when it's time to put in a fresh floppy.

With MacDrive's new software you can divide and conquer

Thanks to a special partitioning feature, MacDrive software lets you divide the MacDrive into separate, manageably sized volumes. For example, our 10 megabyte hard disk system can be broken up into 20 partitions. So you can set up separate categories for your correspondence, presentations, reports, spreadsheets, games and so on. This smaller-scale organization also means your Macintosh will be able to retrieve the files you want more efficiently.

You'll be up and running in minutes

MacDrive includes all the cables and software you'll need to have the system operating in less than 10 minutes. Just plug in two cords and you're on your way. More good news: MacDrive uses your printer port and comes with its own port for a printer — leaving the modem port free for other important applications.

You've got four great choices

MacDrive is available in four flexible configurations:

- * 10 megabyte fixed hard disk
- * 5 megabyte removable hard disk
- * 10 megabyte fixed hard disk plus 5 megabyte removable disk
- * Two 5 megabyte removable disks

If you'd like to see a Macintosh working to the max, stop in at your nearest Tecmar dealer for a MacDrive demonstration. To find out who that dealer is, call Tecmar at 216/349-1009.



Tecmar
THE POWER BEHIND THE PC

6225 Cochran Road, Solon, Ohio 44139

Circle 14 on reader service card