9 Database Managers Compared

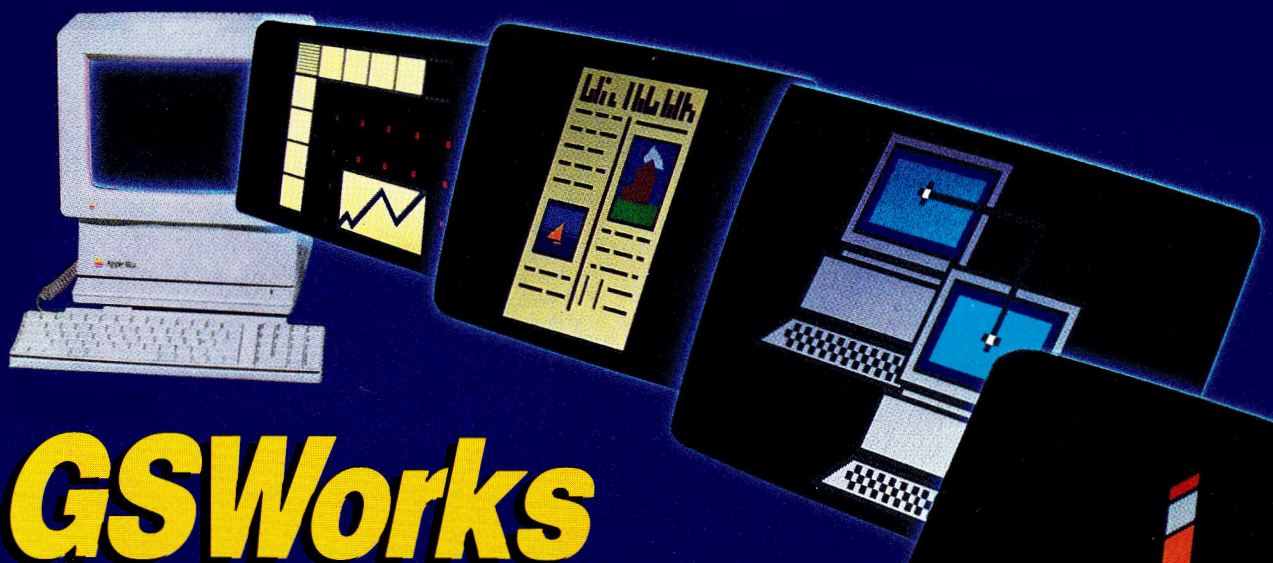
USE APPLEWORKS: Organize Your Job Search P. 64

THE APPLE II MAGAZINE

inCider

AN IDG COMMUNICATIONS PUBLICATION

July 1988
USA $2.95
Canada $3.95



GSWorks

- SPREADSHEET
- PAGE LAYOUT
- COMMUNICATIONS
- WORD PROCESSING
- DATABASE MANAGEMENT
- GRAPHICS



REVIEWS:
Destroyer
GS ComputerEyes
Pharaoh's Revenge
WordPerfect IIgs 2.0
PLUS:
22 Other Products Rated!

0 74470 12066 07

WHAT'S A TAITO®?

That's a very good question. Taito (pronounced Tie-toe) is one of the oldest and biggest names in the arcade industry. We're the world's largest manufacturer and operator of arcade games. Taito's been in the business since 1953.

And that's just the beginning. Taito practically started the video game industry with our classic arcade hit, Space Invaders.™ And over the years, Taito has created more than 1,000 other great action games for arcade and home play.

Now Taito has something equally exciting for you to slip into your home computer. Taito is bringing the same pioneering spirit, technical quality and excitement that made us the arcade leader to your Commodore, Amiga, IBM, Apple and Atari computers. Home computers will never be the same.

Taito is the arcade leader for a very good reason. We consistently make great video games that bring more action and value to the people who play our games. And literally millions of people play our games in arcades and homes all over the world.

*Our strength comes from the massive development effort we put into creating the kind of games that satisfy the ever-growing arcade appetite and the research gathered from the more than 100,000 arcade machines Taito operates in Japan. (The money in the coin boxes at the end of the day tells you very quickly if you've got a good game or not.) And Taito is always working hard to develop the most exciting action-packed new video games that push the technology to its limits.**

Because arcade games are the benchmark for home video games, Taito's continuing leadership in the arcade industry means that when you buy Taito products you'll know you're getting the most video thrills, mesmerizing arcade quality graphics, spell-binding sound and above all, action!

That's why nobody but Taito can bring you more of what you're looking for in home computer video games. One thing's for sure. You don't get to be the biggest in the arcade business by making run of the mill video games.

When you buy Taito games you're getting more than just fun. We bring you games that test your nerve and your strategy. Taito games will make you laugh and put you on the edge of your seat with adventure, action and excitement. Taito takes you on voyages to places you've never been before–to brave new worlds of imagination and fantasy. After all, isn't that what great video games are all about?



ARKANOID: 33 screens of space-age excitement. Award winning coin-op hit. Over 1 million sold in Japan. "One of the best ever."—Electronic Game Player Magazine.

And every action game we put our name on is more than just competitive confrontation. Taito home video games are all about the values of good triumphing over evil, of being the best you can be. That's what you'll get in a game like Arkanoid.™ Soon we'll bring you Bubble Bobble,™ Renegade,™ Alcon,™ Rastan,™ Operation Wolf,™ Sky Shark™ and Gladiator.™ And we've got even more arcade block-busters coming on software formats for play on your home computer. Taito's home-bound hit parade of video fun has just begun.

Who but the arcade leader could bring you so much? That's Taito! Aren't you glad you asked?

Buy Taito products at leading computer stores everywhere. If no stores are near you, Visa/MasterCard holders can order direct from anywhere in the U.S. by calling toll free 1-800-663-8067.

TAITO®

Taito Software Inc., 267 West Esplanade, North Vancouver, B.C., Canada V7M1A5. Tel: 604-984-3344. Taito,® Arkanoid,™ Renegade,™ Alcon,™ Rastan,™ Bubble Bobble,™ Operation Wolf,™ Sky Shark™ and Gladiator™ are trademarks of Taito America, Inc. Copyright ©1988. All rights reserved. Amiga, Commodore, Apple, IBM and Atari are trademarks respectively of Commodore-Amiga, Inc., Commodore Electronics, Ltd., Apple Computer Inc., International Business Machines and Atari Corporation. Advertisement by Qually & Company Inc., (Chicago). *If you think you've got the technical and creative ability to develop mind-blowing video games, write to Taito, Attention: Product Development, at the above address.

Circle 110 on Reader Service Card.

Sharpen Your Apple II™ Skills and Build a Great Software Collection

ONLY $6.65!

Monthly Software for your Apple II (+,c,e,GS) Computer.



Learn From the Experts

Draw on the vast experience of our editors to provide you with carefully selected software you can use each month, from spreadsheets to role-playing games, from telecommunications to accounting to recipe programs. With easy-to-use documentation, you will master each new application with confidence and ease.

Become Experienced Inexpensively

Without investing a fortune, SOFTDISK will help you to see why your Apple II is the most versatile and powerful tool you own. You will know more about your Apple, its capabilities, and software for it, than you would have thought possible. At $6.65 a month, SOFTDISK is the best value in software today.

Try our Monthly Software for Three Months

Every month your postman will bring you the latest issue of SOFTDISK, contained on two unprotected 5¼" diskettes. Each issue is chock-full of great software, including utilities, games, home and business applications, and educational programs. Order now and you will receive 400 Print Shop graphics absolutely free.

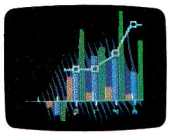
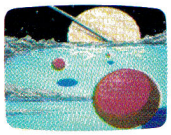
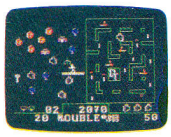
Reviewers Love SOFTDISK!

"Having now looked at the three 'disk magazines' that I know of, I have to tip my hat to Softdisk, who seemed to have produced the most professional-looking disk, more programs, and at the least cost." . . . . APPLECART, NOV/DEC 1987

"■■■■" . . . . . INCIDER, APR 1987

Contents of Issue #76

- **Tharolian Tunnels** *Complete* arcade game from Datamost™!
- **No-Liners** EXECable routines.
- **Twittering Birds** Bird call tutorial.
- **World Cities** Geography Quiz.
- **Hangman** Unbeatable version.
- **Pixel Puzzler** CATastrophic hi-res jigsaw puzzle.
- **Volume Control** Units of volume measurement conversion program.
- **The Crossword Machine** Hi-res crossword puzzle game.
- ***And Much More,*** *including some great April Fool's Day fun!*

Apple II is a trademark of Apple Computer Inc. Print Shop is a trademark of Broderbund Software.

Available at Waldenbooks, B. Dalton Booksellers, and fine bookstores everywhere (cover price $9.95). Commodore 64/128 and IBM PC versions also available.

FREE *"Premium Collection"* – a collection of 400 images for use with Brøderbund's Print Shop™ program – when you order the next three issues of SOFTDISK for your Apple II or compatible computer. Image categories include:

Disk 1	Disk 2
Buildings and Places	Artifacts
Monograms	Signs and Symbols
Food and Plants	Graphic Designs
Games and Hobbies	Animals
People and Sports	Holidays
Tile Patterns	Transportation

Your Satisfaction Guaranteed

If you are not satisfied with your purchase for any reason, return your first issue for a full $19.95 refund. The 400 Print Shop Images is yours to keep. You can't lose.

Yes! Please rush my free 400 Print Shop Image and start my 3 month subscription to SOFTDISK for my 64K Apple II+, IIe, IIc or IIGS for only $19.95 postage paid. I understand that this is a **trial subscription** and that I am under no obligation to continue beyond three months. (*Overseas $27.95*)

Name_____

Address_____

City_____ State_____ Zip_____

Telephone_____

☐ VISA/MC ☐ AmEx ☐ Payment Enclosed

Card #_____ Exp. Date_____

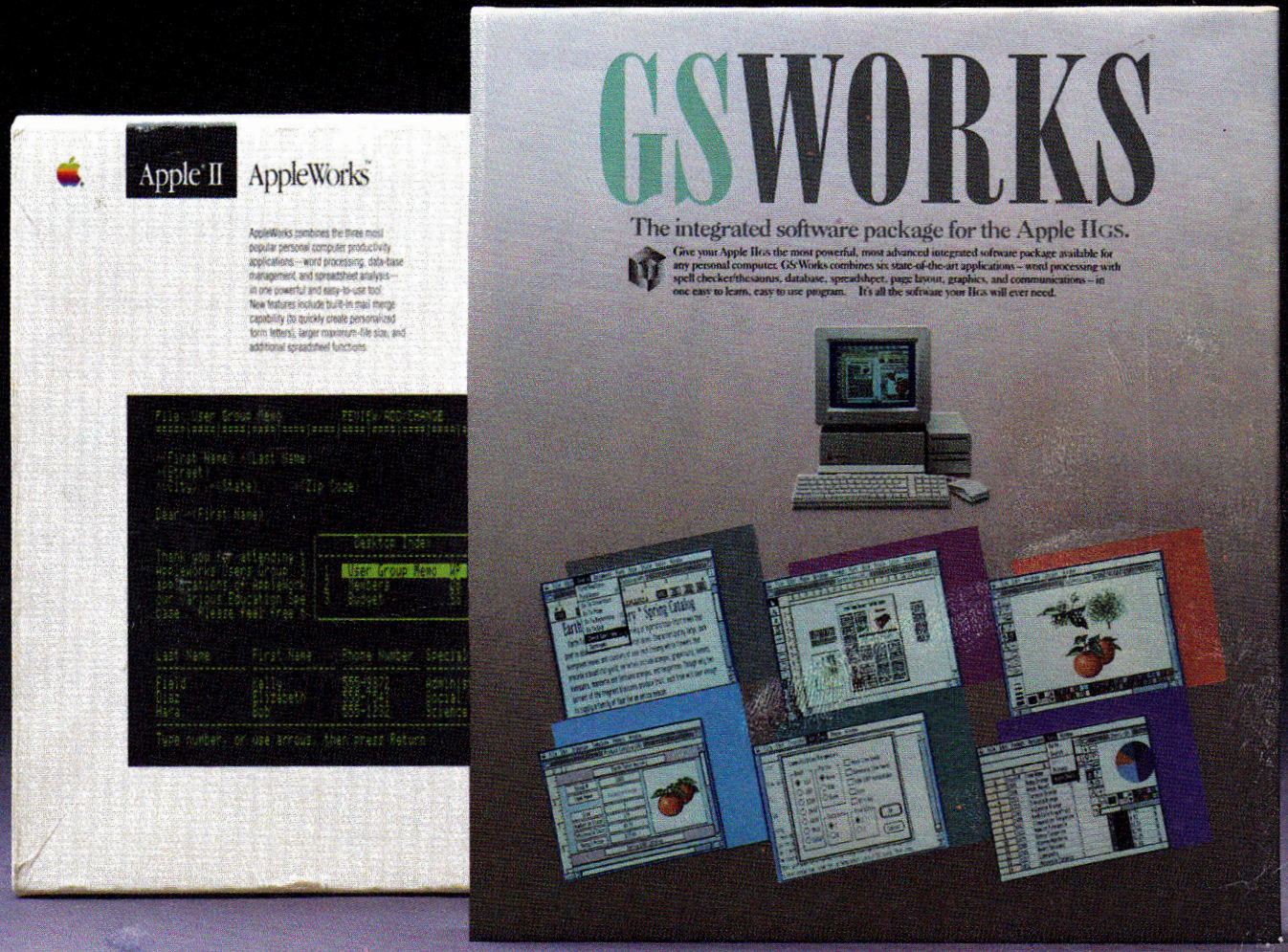
Call Toll Free 1-800-831-2694

(Louisiana residents include 4% sales tax) IN078

SOFTDISK • P.O. Box 30008 • Shreveport, LA 71130-0008

Circle 292 on Reader Service Card.

Now and then a single program
sets a new standard
in personal computing.



That was Then.

This is Now.

Introducing GSWorks. Think Of It As "AppleWorks GS."

In the beginning there was AppleWorks® for the Apple® IIe™, and it was good. Now there's GSWorks™ for the Apple IIGS®. And it's better.

Better because GSWorks is created especially for the IIGS. To take advantage of the speed, color graphics, and Mac-like interface of the IIGS.

Better because it improves on the three AppleWorks applications — word processing, database, and spreadsheet — with new features and dramatically increased power and sophistication. And adds the other three applications you need and use most — page layout, graphics, and communications.

Better because it combines these six productivity applications in a seamless, window-based environment. To give you an integrated package so advanced — yet so easy to use — that it has no equal on any personal computer. Not even Macintosh™ or IBM™.

Better because it's all the software you'll ever need for your Apple IIGS.

Upgrading The Three AppleWorks Applications . . .



GSWorks reads AppleWorks files as easily as it reads its own. So you can move from AppleWorks to GSWorks without missing a byte.

But GSWorks improves on the three AppleWorks applications by giving them all the features of true IIGS software. All GSWorks applications work the same way, using pull-down menus and WYSIWYG ("what you see is what you get") document display. Making GSWorks easy to learn, easy to use.

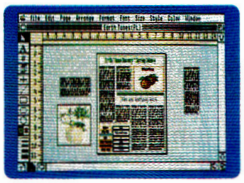
And each GSWorks application is so powerful, so complete, it could stand alone with the best IIGS software in its field.

Our high-powered word processor lets you create stylish documents using different fonts, print styles, and character sizes. With special features like automatic mail merge and the most advanced on-line spell checker/thesaurus ever available for an Apple II computer.

The versatile database lets you create forms, search and sort data, and print reports by just pointing and clicking. So you can keep track of even your most complicated information without complicated commands.

And for number-crunching, there's our mouse-based spreadsheet, with fast, intelligent recalculation and a host of number formatting features. And automatic color charting, when you want to make a splash with your figures.

. . . And Adding Three Of Our Own.



To give you *the* integrated software package for the Apple IIGS, we've added three new applications that fully exploit the advanced graphics, increased power, and enhanced communications connectivity of the IIGS.

Our state-of-the-art page layout application gives you the sort of desktop publishing power previously available only for Macintosh and IBM. To help you create professional-quality publications quickly and easily.

The GSWorks graphics application is revolutionary, combining the best features of draw and paint programs. With it, you'll have illustration capabilities never before available on a personal computer.

Finally, there's our communications application, connecting your IIGS to a whole world of on-line communications services. And letting you send and receive files from other computers.

What Integration Is All About.

What really makes GSWorks special is that it's much more than the sum of its parts. It's not just six great applications in a single box. It's six great applications in a single program.

Because GSWorks offers a whole new level of sophistication in integrated software. You can have all six applications on-screen at once. And open as many application windows as you need.

Move from one application to another by simply clicking on a different window. And move information between applications with a single movement of your mouse. Bring spreadsheet figures into a database file. Edit communications files with the word processor. Use the page layout application to combine graphics and text in polished multi-column documents.

So now that you've upgraded your Apple, upgrade your AppleWorks. To GSWorks. Because AppleWorks was then. And GSWorks is now.



STYLEWARE

Available August!!

StyleWare, 5250 Gulfton, Suite 2E, Houston, Texas 77081

Toll-free GSWorks Hot Line number: (800) 458-3873

GSWorks is a trademark of StyleWare, Inc. AppleWorks is a trademark licensed to Claris Corporation, Apple and Apple IIGS are registered trademarks of Apple Computer, Inc. Macintosh is a trademark of Apple Computer, Inc. IBM is a registered trademark of International Business Machines Corporation.

Circle 239 on Reader Service Card.

NOW TOLL FREE: 1-800-777-2822
ORDERS ONLY

IIe/IIc/IIgs

Want the best, easiest-to-use & only 80 column RAM card on the market w/BATTERY BACKED-UP RAM options (unlike Ramworks III™), that save programs like AppleWorks for years — at the best price & most support? Buy Checkmate's **MULTIRAM RGB CARD™** from us! 100% compatible w/all 3rd party software/hardware, (RGB monitor not required) 80 columns/Double Hi-Res! Direct substitute for Apple's 80 col card or Ramworks. **FREE APPLEWORKS EXPANDER/RAM DISK/RAM LOAD/& MORE W/EVERY CARD, 7 YR WARRANTY. 15 DAY MULTIRAM MONEY BACK GUARANTEE & FREE SOFTWARE UPDATES ONLY FROM US! Schools & approved PO's welcome.**

	MultiRam RGB Card	MultiRam IIe Card
0k MultiRam	144.	111.
64k MultiRam	172.	139.
256k MultiRam	222.	189.
512k - 1024k cards	Call	Call

	MultiRam-PLUS Piggyback
256k MultiRam Plus	239.
512k MultiRam Plus	324.
1 to 4 meg MultiRam Plus	Call
Battery/AC Kit (for Plus)	36.

MultiRam CX easily expands your IIc to 640k and has a CX+ Piggyback to add another 512k (1152k total)! It's 100% compatible with all IIc software/hardware & upgradable — all at about 50% less power than Z-RAM™. **SAME SOFTWARE & 7 YR WARRANTY AS ABOVE.**

256k MultiRam CX	**178.**
512k to 1024k CX or combo	**Call**

Cermetek 1200 internal modem IIe/II+/IIgs ***136.***
(+ FREE Source & Compuserve subscription/ProTERM™ Setup Instructions)
1200 Baud universal ext modem (IIc/IIgs/Mac/IBM. Cables $21) ... ***102.***
2400 Baud universal ext modem (IIc/IIgs/Mac/IBM. Cables $21) ... ***182.***
ProTERM Modem Software 2.0 (NEW — Best Modem Software) ***77.***

MultiRam gs RAM cards* — 1/3 more RAM & about 1/3 less power than gsRAM™ — *2 megs, most versatile card with Memory Saver, 7 yr warranty, free software, less cost, less hype.

0k MultiRam gs	127. NEW
256k MultiRam gs	204. NEW
512k to 2048k MultiRam gs	Call. NEW
MemorySaver gs card	**119.**
(Battery protects most gs RAM cards — even Apples')	
MemorySaver Extender (more space & more cards)	**38.**

0k Q RAM card IIe (Ext 80 col + more — req 64k or 256k RAM)	**79.**
256k Q RAM card for IIe (Ext 80 col + more)	**159.**
CMS 20 meg hard drive w/SCSI card (IIgs/IIe)	**659.**
CMS 40 meg hard drive w/SCSI card (IIgs/IIe)	**855.**
CMS 60 meg hard drive w/SCSI card (IIgs/IIe)	**912.**
ProAPP hard drive or Apple repairs	**Call**
Prairie Power IIc/Laser 8 hr battery/case	**129.**
Apple IIgs/IIe/accessories	**Call**
Apple IIgs 100% Compatible daisy-chainable Drive	**179.**
Clockworks Clock (Thunder/Timemaster HO™ compat)	**69.**
14" RGB Monitor (IIgs/IIe/IIc-Cables extra)	**299.**
IIc or IIe RGB monitor adapters/cables	**Call**
Copy II Plus 8.x (NEW—Best 3.5/5.25 Utility)	**27.**
Timeout Thesarus/PowerPack/Macrotools/Desktools II — NEW	**Call**
Timeout DeskTools/Filemaster/Sidespread (ea)	**36.**
Timeout QuickSpell (BEST AW Spell Checker)	**45.**
Timeout UltraMacros (BEST AW stepsaver/Macro)	**40.**
Timeout Superfonts (AW Fonts + More)	**51.**
Timeout Graph (AW Graphs + More)	**55.**

Terms: Add $4-Ground or $6-Air shipping & phone # to each U.S. MultiRam card order (foreign orders/FPO/APO extra). Add 3% for MasterCard/Visa/Amex (include expir date) & P.O.'s. For fast delivery send Cashier's/Certcheck/MO. C.O.D. (add $5) & personal checks accepted (allow 16 days). Tex res add 8% tax.
Ordering: CALL or PRINT name & address, Res & Bus phone, credit card name/number/expir date where appropriate, qty/description/price/shipping charges if known. Call for questions.

Prices subject to change. Software non-returnable. 20% restocking on non-MultiRam approved returns. Ramworks/Timemaster/Z-ram/gsRAM trademarks of Applied Engineering. **Telex 6502969684 MCI UW** **Compuserve 70131,235** **MCI 2969684**

COIT VALLEY COMPUTERS 14055 Waterfall Way
(214) 234-5047 Dallas, Texas 75240

Publisher Paul Boulé
Editor in Chief Dan Muse
Managing Editor Eileen T. Terrill
Senior Editor Paul Statt
Technical Editor William Kennedy, Ph.D.
Review Editor Lafe Low
Copy Editor Ellen Ratner Otis
Associate Editor Patricia O'Dell
Contributing Editors Cynthia E. Field, Eric Grevstad, Scott Mace, Robert M. Ryan, Tom Sherman
Field Editor Babs Cringely

Design

Art Director Donna Wohlfarth
Senior Designer/Ad Graphics Dianne K. Ritson
Production Manager/Designer Rosemary Ryan

Advertising

National Sales Manager Dale Strang (800) 441-4403
Northeast Sales Representative Peter Slingluff (800) 441-4403.
Western Sales Representative James Burns, 3350 W. Bayshore Rd. Suite 201, Palo Alto, CA 94303, (415) 328-3470
Northwest Sales Representative Janet Wright (415) 328-3470
Marketplace/Classifieds Sales Representative Fiona Davies (800) 441-4403
Advertising Coordinator Mary Hartwell (800) 441-4403
Advertising Assistant Carmen Bryer
Western Sales Assistant Kathleen Roberts

Marketing Services/Promotion

Marketing Manager Peg Brown
Marketing Assistant Rita Rivard

Corporate Production

Director of Corporate Production Dennis Christensen
Manufacturing Manager Susan Gross
Typesetting Manager Lindy Palmisano
Typographer Cynthia Swan

IDG Communications/Peterborough

President/CEO Michael S. Perlis
Vice President/General Manager Roger Murphy
Group Publisher Consumer/Home Publications Stephen Twombly
Director of Circulation Frank S. Smith
Circulation Manager Bonnie Welsh
Direct-Marketing Manager Paul Ruess
Direct Sales Manager Linda Ruth
Distribution Manager Veronica Hradecky
Telemarketing Manager Michael Carroll
Director of Credit, Sales, and Collection William M. Boyer
Audits and Statistics Cecile Giguere
Founder Wayne Green

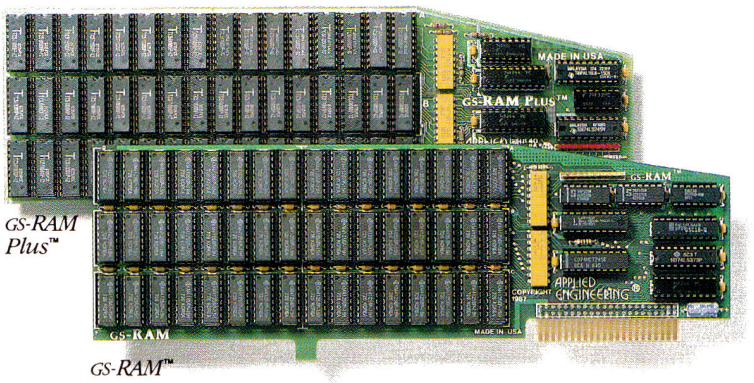
inCider's BBS (bulletin-board system)
On line 24 hours: (603) 924-9801

inCider (ISSN #0740-0101) is published monthly by IDG Communications/Peterborough, Inc., 80 Elm Street, Peterborough, NH 03458. Phone: (603) 924-9471. Second-class postage paid at Peterborough, NH, and additional mailing offices. (Canadian second class mail registration number 9590.) Subscription rates in U.S. are $27.97 for one year, $43.00 for two years and $59.00 for three years. In Canada, $34.97, U.S. funds, one year only. In Mexico, $32.97—one year only, U.S. funds drawn on a U.S. bank. Nationally distributed by International Circulation Distributors. Foreign subscriptions (surface mail), $47.97—one year only, U.S. funds drawn on a U.S. bank. Foreign subscriptions (air mail), $82.97 prepaid, U.S. funds drawn on U.S. bank, one year only. **Postmaster:** Send address changes to *inCider*, Subscription Services, P.O. Box 58618, Boulder, CO 80322-8618. (Send Canadian changes of address to: *inCider*, P.O. Box 1051, Fort Erie, Ontario L2A 5N8.)

Photo & Illustration credits: *Cover, pp. 42, 43, 44, 45, 46, 47, Dale Crawford and Chromographics Inc., pp. 51, 57, Kris Stevenson; p. 96, Frank Cordelle and Chromographics.*

For Those Who Want the Most. From Those Who Make the Best. GS-RAM.™

Now expand the IIGS' RAM and ROM with up to 8 MEG of "Instant On" memory with the all new GS-RAM!



GS-RAM Plus™

GS-RAM™

GS-RAM has an all new design. A design that delivers higher performance including increased speed, greater expandability, and improved software.

More Sophisticated, Yet Easier to Use

GS-RAM works with all IIGS software. In fact *any* program that runs on Apple's smaller memory card runs on the GS-RAM. But with GS-RAM you can have more memory, improved performance, and almost unlimited expansion capabilities. We've designed the new GS-RAM to be easier to use too—you don't have to adjust the size of your RAM disk every time you use a DMA device. No other RAM card with more than 4 banks of memory installed can make the same claim.

More than Just Hardware

Each GS-RAM and GS-RAM Plus includes the most powerful set of IIGS software enhancements available anywhere. In fact, our nearest competitor offers only a fraction of the invaluable programs that we include with each GS-RAM card. This software includes the most powerful disk-caching program available, the GS-RAM Cache. The Cache will make most of your applications run up to 7 *times faster.* Also included is a diagnostic utility that lets you test your GS-RAM by graphically showing the location of any bad or improperly installed RAM chips. And for AppleWorks users, we give you our exclusive Expander program that dramatically enhances both the capabilities and speed of AppleWorks.

Making AppleWorks Even Better

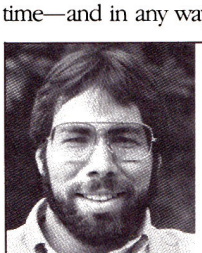
Applied Engineering's Expander program eliminates AppleWorks internal memory limits allowing it to recognize up to 8 megabytes of desktop workspace. You can increase the limits from only 7,250 lines to 22,600 lines in the word processor and from 6,350 records to 22,600 records in the database. The Expander allows all of AppleWorks, including print functions, to automatically load into RAM. The clipboard size will increase from 255 to 2,042 lines maximum. GS-RAM will automatically segment larger files so you can save them onto multiple floppies. And GS-RAM provides a built-in print buffer that allows you to continue working in AppleWorks while your printer is still processing text. You can even load Pinpoint or MacroWorks and your favorite spelling checker into RAM for instant response.

Grow by Kilobytes or Megabytes

We offer GS-RAM in two configurations so you can increase your memory 256K at a time (GS-RAM) or a megabyte at a time (GS-RAM Plus). Both are IIGS compatible and both come with our powerful enhancement software. GS-RAM can hold up to 1.5 MEG of 256K chips and GS-RAM Plus can hold up to 6 MEG using 1 MEG chips. And since both use standard RAM chips (not high-priced SIMM's), you'll find expanding your GS-RAM or GS-RAM Plus easy, convenient, and very economical. For further expansion, you can plug a 2 MEG "piggyback" card into the GS-RAM's expansion port for up to 3.5 MEG of total capacity. Or up to a whopping 8 MEG on GS-RAM Plus. If a GS-RAM owner outgrows 3.5 MEG, he can easily upgrade to GS-RAM Plus for a nominal charge.

Permanent Storage for an "Instant On" Apple

With our RamKeeper™ back-up option, your GS-RAM or GS-RAM Plus will retain both programs and data while your IIGS is turned off! Now when you turn your IIGS back on, your favorite software is on your screen in under 4 seconds! With RamKeeper you can divide your IIGS memory into part "electronic hard disk," and part extended RAM. Even change the memory boundaries at any time—and in any way—you want. Because Applied Engineering has the most experience in the industry with battery-backed memory for the Apple, you are assured of the most reliable memory back-up system available. And in the world of battery-backed memory, *Reliability* is everything. That's why Applied Engineering uses state-of-the-art "GEL-CELL's" instead of Ni-Cad batteries (if Ni-Cads aren't discharged periodically, they lose much of their capacity). RamKeeper has about 6 hours of "total power failure" back-up time. That's 6 times the amount of other systems. But with power from your wall outlet, RamKeeper will back-up GS-RAM, GS-RAM Plus, or most other IIGS memory cards indefinitely. Should you ever have a "total power failure," RamKeeper switches to its 6-hour battery. When power returns, RamKeeper will automatically recharge the battery to full power. RamKeeper incorporates a dual-rate charger, status L.E.D.'s, and advanced power reducing circuitry. RamKeeper comes *complete* with battery, software, and documentation.



"In quality, performance, compatibility, expandability and support, Applied Engineering's GSRAM and GSRAM Plus are number one."

Steve Wozniak, the creator of Apple Computer

GS-RAM's Got it ALL!

- 5-year warranty — parts & labor
- 6 RAM banks (most cards have 4)
- Memory expansion port
- ROM expansion port
- Ultra-fast disk caching on ProDOS 8 *AND* ProDOS 16.
- Expands AppleWorks internal limits
- Includes hi-res self test
- No soldered-in RAM chips
- Expandable to 8 MEG
- No configuration blocks to set
- RamKeeper back-up option allows permanent storage of programs & data
- 15-day money-back guarantee
- Proudly made in the U.S.A.

GS-RAM with 256K	**$219**
GS-RAM with 512K	**$339**
GS-RAM with 1 MEG	**$579**
GS-RAM with 1.5 MEG	**$819**
GS-RAM with 2.5 to 3.5 MEG	**CALL**
GS-RAM Plus with 1-8 MEG	**CALL**
RamKeeper Option	**$189**

Order today!

See your dealer or call Applied Engineering today, 9 a.m. to 11 p.m. 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 outside U.S.A.

APPLIED ENGINEERING™

The Apple enhancement experts.

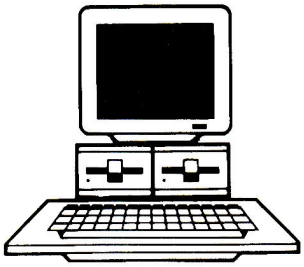
(214) 241-6060

P.O. Box 5100, Carrollton, TX 75011

Prices subject to change without notice.

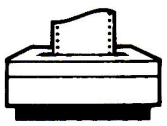
GS-RAM, GS-RAM Plus and RamKeeper are trademarks of Applied Engineering. Other brands and product names are registered trademarks of their respective holders.

Mon. thru Fri. 7am - 6pm
Sat. 9am - 4pm Pacific Time — **ORDERS ONLY 1-800-248-0363**



GOLEM COMPUTERS

P.O. BOX 6698 • WESTLAKE VILLAGE, CA 91360



*** * * Special of the Month * * ***
Berkley Softworks
GEOS - $75.00

Software - Hardware - Peripherals at DISCOUNT Prices

SOFTWARE

ENTERTAINMENT

ACCOLADE Hardball	19.50
Mean 18 (IIGS), Hardball (IIGS)	ea. 25.00
ACTIVISION	
Shanghai (IIGS), Hacker II (IIGS)	29.00
Tass Times (IIGS), Maniac Mansion	ea. 24.00
Hacker II, Shanghai	ea. 24.00
Championship Baseball or Football	ea. 24.00
Championship Basketball (IIGS)	29.70
Gamemaker, Might & Magic	ea. 31.00
BRODERBUND Airheart, Lode Runner	ea. 22.00
Championship Lode Runner, Karataka	ea. 22.00
Ultima I, III, 2400 A.D.	ea. 26.90
Wings of Fury	23.10
Ultima IV, V	ea. 40.15
ELECTRONIC ARTS Bard's Tale	29.70
Marble Madness (IIGS), Strike Fleet	ea. 24.60
World Tour Golf (IIGS)	26.40
Bard's Tale (IIGS), Bard's Tale II, III	ea. 33.00
Chessmaster 2000, Chuck Yeager AFS	ea. 26.40
Legacy of Ancient, Deathlords	ea. 26.40
EPYX World Games, Winter Games	ea. 24.00
World Games (IIGS), Winter Games (IIGS)	ea. 26.40
Summer Games I or II,	ea. 24.00
Street Sports: Basketball or Baseball	ea. 26.00
Championship Wrestling,	24.00
California Games (IIc/IIe/IIGS)	26.40
Destroyer IIe, IIGS	ea. 26.40
HAYDEN SOFTWARE Sargon III	21.00
INFOCOM Zork Trilogy	44.00
Beyond Zork	33.00
MICROPROSE Pirates	26.40
Silent Service, F-15 Strike Eagle	ea. 22.00
Silent Service (IIGS)	26.40
MINDSCAPE Balance of Power	29.70
Defender of the Crown	33.00
Gautlet, Paper Boy	ea. 26.40
PBI Software (All IIGS)	26.40
Sea Strike, Monte Carlo	ea. 24.00
The Tower of Myraglen	32.00
Cavern Cobra, Strategic Conquest	ea. 30.00
SIERRA ON-LINE King's Quest I, II, III	ea. 31.00
Thexder (IIGS)	24.00
King Quest (IIGS), Space Quest (IIGS)	ea. 31.00
Leisure Suit Larry (IIGS)	26.40
Police Quest (IIGS)	33.00
SIR-TECH Wizardry	31.00
Knight of Diamonds,	31.00
Legacy of Llylgamyn,	31.00
Return of Werda	39.60
SUBLOGIC Flight Simulator II	32.50
Jet	26.40
Scenary Disk 1 thru 6	ea. 14.75

EDUCATION

BARRON'S Study Program For SAT V2.0	32.50
BRODERBUND Science Tool Kit	50.00
Science Tool Kit Module 1, 2, 3	ea. 26.40
Where in the USA is Carmen San Diego	27.40
Where in the World is Carmen San Diego	24.40
Where in Europe is Carmen San Diego	27.40
DAVIDSON & ASSO. Homeworker	52.00
Math Blaster Plus, Alge-Blaster	ea. 28.00
Read and Roll, Math & Me	ea. 28.00
Word Attack, Spell It, Grammar Gremlins	ea. 28.00
DESIGNWARE Spellicopter, Math Maze	ea. 25.40
Grammar Examinar, States & Traits	ea. 25.40
The Body Transparent, European Nations	ea. 25.40
EDU-WARE Algebra I, II, III, IV	ea. 26.40
Algebra V & VI	33.00
ELECTRONIC ARTS	
Mavis Beacon Teaches Typing (IIGS)	29.70
FIRST BYTE (for IIGS) (786K Req.)	
Mathtalk, First Shapes, Kidtalk	ea. 29.50
Speller Bee, Smoothtalker	ea. 29.50
Mathtalk Fractions, First Letter & Words	ea. 29.50
GREAT WAVE, Kids Time II (IIGS)	26.40
HARDCOURT, BRACE, JOVANOVICH	
Computer Prep for the GRE	59.40
Computer Prep for the ACT,	29.00
Computer Prep for the SAT	26.40
MINDSCAPE Crossword Magic	33.00
RANDOM HOUSE	
Garfield Double Dares, Fix It,	ea. 23.10
SCHOLASTIC	
Storymaker, Storytree, Math Shop	ea. 26.40
SIMON & SCHUSTER	
Typing Tutor IV (IIe/IIc/IIGS)	ea. 29.15
SPINNAKER Kidwriter	26.40
SPRINGBOARD	
Early Games, Piece of Cake	ea. 23.10
THE LEARNING COMPANY	
Reader Rabbit (IIGS)	36.00
Writer Rabbit, Think Quick, Robot Odyssey, Rocky's Boots (IIe/IIc/IIGS)	ea. 29.50
Math Rabbit, Reader Rabbit, Gertrudes Secrets, Magic Spells (IIe/IIc/IIGS)	ea. 26.40
WEEKLY READER Sticky Bears - ABC's, Numbers, Shapes, Opposites, Reading, Basics, Typing, Drawing, Music, Spellgrabber, Town Builder	ea. 25.00

BUSINESS

BPI (PRODOS runs on IIGS)	
General Accounting, AP, AR, Payroll, Inventory Control	ea. 131.00
BRODERBUND Bank Street Writer Plus	50.00
On Balance	40.00
Show Off	39.60
DAC SOFTWARE DAC-Easy Accounting	48.00
DATAPAK Graphics Writer (IIGS)	85.00
Notes and Files (IIGS)	75.00
PBI Visualizer (IIGS)	51.45
Visualizer (IIc/IIe)	47.00
PEACHTREE Back to Basics Acct. Sys.	129.00
PINPOINT	
Spellchecker, Document Checker	ea. 37.75
Speller/Document Checker Combo	53.45
Profiler 3.0	66.85
SENSIBLE SOFTWARE Sensible Writer	57.00
Sensible Speller IV (DOS, PRO DOS)	ea. 64.60
Sensible Grammar Checker	57.00
Graphics Department	64.60
SOFTWARE PUBLISHING	
PFS: Graph, Plan (128K PRO DOS)	ea. 65.00
PFS: File & Report (128K PRO DOS)	65.00
PFS: Workmates (128K PRO DOS)	110.00
PFS: Write w/Speller (128K PRO DOS)	65.00
SOFTWOOD Softwood GS File	61.00
SPRINGBOARD Publisher	78.20
STYLEWARE Multiscribe (IIGS)	60.40
Font Library (IIGS)	26.40
Deskworks (IIGS)	36.00
Multiscribe 3.0 (IIe/IIc)	46.20
Font Paks 1-5	ea. 15.00
TIMEWORKS Publish it	66.00
WORDPERFECT	
Wordperfect (IIGS), (IIe/IIc)	ea. 83.60

HOME/PERSONAL

ACTIVISION Writer's Choice Elite (IIGS)	59.40
Paintworks Plus (IIGS)	46.20
Paintworks Gold (1.25MB Req.)	66.00
Draw Plus (IIGS), Music Studio (IIGS)	59.40
Paint, Write, Draw Bundle (IIGS)	115.00
BAUDVILLE 816/Paint (IIGS)	39.10
Award Maker Plus	24.00
BRODERBUND	
The Print Shop (IIGS), Fantavision (IIGS)	ea. 37.00
The Print Shop Library (IIGS)- Sampler, Party	ea. 23.10
The Print Shop	29.15
The Print Shop Library 1, 2, 3	ea. 15.25
ELECTRONIC ARTS	
Delux Paint II (IIGS)	73.00
Arts Part I, II, Seasons & Holidays	ea. 22.00
Delux Print II (IIGS)	33.00
Music Construction Set (IIGS)	36.00
Instant Music (IIGS)	36.00
FUNK SOFTWARE Sideways	45.00
INTUIT Quicken	32.00
MECA Managing Your Money 3.0	88.55
MONOGRAM Dollars & Sense (128K/48K)	ea. 69.85
PINPOINT Micro Cookbook	33.00
Bon Appetit	39.60
ROGER WAGNER The Write Choice	42.90
Mousewriter (IIc/IIe, IIGS)	87.45
SOFTSYNC	
Personal Newsletter	39.60
SPRINGBOARD The Newsroom	36.00
Clip Art Collection 1, 3	ea. 19.80
Clip Art Collection 2	26.40
Certificate Maker	26.40
STYLEWARE Top Draw (IIGS)	59.40
UNISON WORLD	
Printmaster Plus	31.00
Art Galery I, II	ea. 19.00

UTILITY/LANGUAGE

BEAGLE BROS. Super Maqroworks	31.00
Timeout - Superfonts	47.00
Timeout, Quickspell	ea. 43.00
Timeout-Filemaster, Sidespread, DeskTools	ea. 31.00
Timeout Ultramacros	35.00
Timeout Graph	52.00
BERKLEY SOFTWORKS	
GEOS	85.80
BORLAND Turbo Pascal (Req. CP/M)	46.80
CENTRAL POINT Copy Two Plus	23.00
PINPOINT Pinpoint Starter Pak (IIGS)	83.50
Pinpoint, Graphics Edge	ea. 52.00
Run, Run, Key Player	ea. 28.00
Point to Point	66.80
Infomerge	45.00
Command Com, Tool Kit	ea. 40.00
ROGER WAGNER Merlin 8/16(PRO DOS)	75.00
Softswitch (IIGS)	39.60
TERRAPIN Logo	60.00
TML Pascal (IIGS), Basic (IIGS)	ea. 82.50
Source Code Library (IIGS)	32.00
Speach Toolkit (IIGS)	46.20
UNITED SOFTWARE	
ASCII Express (PRO DOS)	70.00
ASCII Express Mousetalk	57.00

HARDWARE

COMPUTERS

CENTRAL POINT	
Laser 128EX	460.00
External Disk Drive (5¼")	90.00
External Disk Drive (3½")	185.00
Laser Expansion Box (2 slots)	41.00
Cables - Parallel, Serial, RGB	ea. 16.00
Amber Monitor	92.00
Mouse	51.00

MEMORY & INTERFACE

APPLIED ENGINEERING
Prices change frequently
Call for Current Pricing

Ram Factor 256K (II+, IIe, IIGS)	191.00
Ram Factor 512K (II+, IIe, IIGS)	292.00
Ram Factor IMB (II+, IIe, IIGS)	440.00
Ram Works III 256K (IIe)	170.00
Ram Works III 512K (IIe)	255.00
Ram Works III IMB (IIe)	416.00
GS-Ram 256K (IIGS)	170.00
GS-Ram 512K (IIGS)	260.00
GS-Ram 1MB (IIGS)	416.00
GS-Ram PLUS 1MB	465.00
Z-Ram Ultra 3 512K + Clock + Z-80 (IIc)	357.00
Z-Ram Ultra 3 1MB + Clock + Z-80 (IIc)	514.00
Trans Warp (II+, IIe)	167.00
Z-80Plus (II+, IIe, IIGS)	114.00
Z-80c (IIc)	118.00
Timemaster H.O. (II+, IIe, IIGS)	77.00
Phasor (II+, IIe, IIGS)	137.50
Serial Pro (II+, IIe, IIGS)	117.30
Parallel Pro	77.00
PC Transporter 384K	377.00
PC Transporter 512K	440.00
PC Transporter 640K	491.00
PC Transporter 768K	555.00
Ramcharger, RamKeeper	144.00
ORANGE MICRO Hotlink (IIc)	46.20
Grapler C/MAC/GS	74.00
Prograpler (IIe)	74.00

HARD DISK DRIVES

CMS External w/SCSI Interface (IIe,IIGS)	
20MB (Stackable)	650.00
40MB (Stackable)	850.00
60MB (Stackable)	975.00

MODEMS

APPLIED ENGINEERING Datalink	170.00
EPIC TECHNOLOGY	
Epic 2400 BPS (Internal)	160.00
PROMETHEUS Promodem 300c (IIc)	82.00
Promodem 1200A	155.00

MONITORS

THOMPSON 14" RGB/Composit (4120)	258.00

ACCESSORIES

BLANK MEDIA (Bulk)	Call
CH PRODUCTS	
Mach III w/fire Button (II+, IIe/IIc, IIGS)	ea. 34.00
Mach IV (IIe/IIc)	44.00
Flight Stick	50.00
KENSINGTON System Saver	64.00
Turbo Mouse ADB (IIGS)	85.80
System Saver IIGS	73.00
KOALA TECHNOLOGIES Koala Pad Plus	82.50
KURTA Apple IS/GS Tablet (IIGS)	341.00
MOUSE SYSTEMS A + Mouse	74.80
Apple ADB Mouse (IIGS)	88.50

PRINTERS

CITIZEN	
MSP 180D (80 col., 180 cps, NLQ)	195.00
PANASONIC	
KX 1080i (80 col., 120 cps, NLQ)	184.00
KX-1091i (80 col., 160 cps, NLQ)	225.00
STAR MICRONICS NX-1000	210.00
C. ITOH C310	495.00
SEIKOSHA 1000AP (Imagewriter I)	225.00

FOR CUSTOMER SERVICE CALL 1-805-499-7785 **Monday thru Friday 9 a.m. to 5 p.m. - Pacific Time**

To order call toll free or send check or money order to the P.O. Box only. VISA/MC orders welcome. Sorry, no C.O.D. Personal and company checks, allow 10 working days to clear. Specify computer type, if to back order or to send refund. California residents add 6% sales tax. Include phone number with order. All sales are final. Defective items will be replaced or money refunded, at our descretion. Call for Return Authorization number. We are not responsible for suitability or compatability. Restocking fee of 15% will apply. Shipping and handling: All shipments U.P.S. if possible. Continental U.S.- Software: add $4.00 min., Hardware: add 5% ($6.00 min). APO, FPO Alaska, Hawaii, Puerto Rico and Canada. Software: add $8.00 min. Hardware: add 10% ($10.00 min).

ALL ITEMS SUBJECT TO AVAILABILITY. PRICES AND STIPULATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

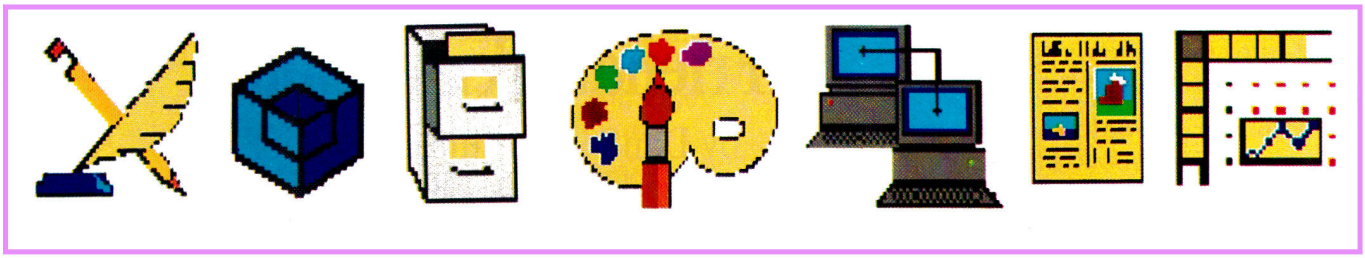
1111 Rancho Conejo Blvd. #407 **IN CALIFORNIA CALL 1-805-499-0197** Newbury Park, CA 91320

Mon. thru Fri. 7am - 6pm
Sat. 9am - 4pm Pacific Time — **ORDERS ONLY 1-800-248-0363**

inCider

AN IDG COMMUNICATIONS PUBLICATION

Vol. 6 No. 7
July 1988



ON THE COVER

42 The Six-in-One Solution

With six powerful, integrated 16-bit applications—word processor, database manager, spreadsheet, painting and drawing tools, page-layout module, and telecommunications software—StyleWare's new GSWorks challenges the productivity marketplace.

ARTICLES

50 GS Databases: The Easy Solution

What can grids, mice, and pull-down menus do for your filing? Graphics-oriented GS database managers make information organization fun and easy.

57 Tame Your Files

Everybody collects *something*—stamps, baseball cards, statistics—but how can you keep track of all those records? Don't let information storage turn into a three-ring circus—an Apple II database manager can whip those files into shape.

TUTORIALS

AppleWorks in Action 64
Focusing on Prospective Employers
by Ruth K. Witkin

Applesoft Adviser 68
Function Grapher II
by Dan Bishop

***inCider* On Line** 74
Summer Reading
by Tom Sherman

DEPARTMENTS

***inCider*'s View** 8
Friendly Persuasion?
by Dan Muse

Letters 12

News Line 16
A Quantum Leap • Spotlight on . . . Caddying for the LPGA • Creative Contest • Apple Bits

Stattus Report 20
Dear Claris
by Paul Statt

Apple Clinic 22
Transformations • Speaking Up • Apple Writer to the GS • Drive Crazy • Quickies
by William P. Kennedy, Ph.D.

Reviews 28
WordPerfect IIGS 2.0 • ComputerEyes for the IIGS • Playing with Science Part 1: Temperature • Science Toolkit Modules: Speed and Motion, Earthquake Lab, The Body Lab • At a Glance

Games Editors Play 38
Destroyer GS • Lane Mastodon vs. the Blubbermen • Gamma Force in Pit of a Thousand Screams • Pharaoh's Revenge • Short Takes

New Products 78

Mace on Games 85
The "Wimp" Factor
by Scott Mace

Hints/Techniques 88
Formatting Revisited • Grade Assigner • Sound Digitizer • Cat.Text Correction

Coming Attractions 95

Reader Services 95

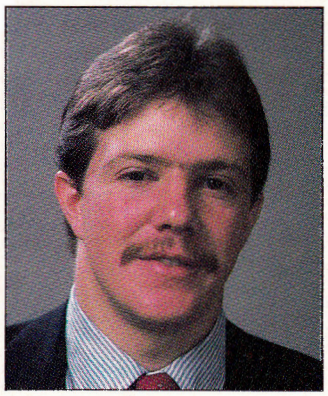
Editors' Choice 96

Downloaded from www.Apple2Online.com

Field Trip will return in August with a look at biology software for kids.

Friendly Persuasion?

by Dan Muse, Editor in Chief



"Three-and-a-half-inch technology is superior, so Apple isn't really trying to create the future; it's simply trying to push it along."

There's talk on the street of a new IIc. There's no cause for commotion yet. Apple has made no official announcement or unofficial indication—at least not to *inCider*—that it will announce a new IIc before Christmas. But we spend more time on the street than we do talking to Apple, and we hear that this new IIc will feature an internal 3½-inch disk drive and a faster microprocessor, but that Apple doesn't plan to expand the IIc's 128K of memory. It's important, however, to remember that Apple was developing a new IIc last year, but put the project on hold.

Now, as an Apple II magazine, we're usually excited to hear about upgrades to existing Apple IIs. And we could be excited about the possibility of a new IIc, if someone could answer one question: Why?

The only reason we can think of is to push the 3½-inch disk format. We agree that the handwriting is on the wall—3½-inch disks are more civilized than 5¼-inch. The former holds 800K of information compared to the latter's 143K, and because of their plastic casing, they're sturdier than their less-protected cousins. Three-and-a-half-inch technology is superior, so Apple isn't really trying to create the future; it's simply trying to push it along.

It's our guess that the "new" IIc is actually the IIc Apple didn't release last year, with the addition of a faster microprocessor. By selling a IIc with an internal 3½-inch disk drive, it can now put more pressure on software developers to adopt the format.

Apple's "persuading" developers to put their software on 3½-inch disks, however, creates a problem for those developers, who must either include both disk formats in the package or sell separate 3½- and 5¼-inch packages. This situation may also force the consumer to pay higher prices for software. While some companies will absorb the extra cost of the 3½-inch disk, others will raise prices to cover their expenses. Publishers may also be forced to increase software prices because by offering both disk sizes in one package, they're in a sense pirating their own software.

If you have the traditional setup—two 5¼-inch disk drives—what should you do? The answer is simple, but won't be popular with many II users. Buy a 3½-inch disk drive. It's not cheap, and no one likes to be forced to buy something, but in this case, it may be inevitable. We recommend that you buy an Apple UniDisk 3.5 because it will make your computing life easier, not because Apple and some software companies want you to.

Perhaps we have Apple all wrong. Maybe there's more to this new IIc than a 3½-inch disk drive. The addition of a faster microprocessor is a welcome upgrade. But if this is more than a campaign to push the 3½-inch format, why not add an internal battery-backed power supply, a flat-panel screen, extra memory, an internal modem—in short, why not make it a portable Apple II? But unless Apple drops the price of the IIc, the new disk drive and faster speed aren't much to get excited about.

It's not that we don't like the IIc. It was a great computer when it was first produced about four years ago, and it's still doing the job for several hundred thousand people. However, the IIc and IIe aren't selling well compared to the IIGS. The price points of the IIGS and the 8-bit IIs aren't far enough apart to make purchasing a IIc a logical alternative.

We're happy to see Apple paying attention to the II line, but we can't commend it for announcing a new IIc just to push a disk format. Apple could do more for II users by lowering the price of the UniDisk 3.5 and letting nature take its course. As with most good ideas, 3½-inch disk drives will catch on by themselves.■

A disk each month delivered to you...

packed with eight programs for your Apple.

DISCOVER UPTIME. You deserve the best from your Apple. Have the best and save the most with UPTIME.

We make it easy and inexpensive — a disk each month. You deserve value. At UPTIME we believe in value. That's why each month 21,000 people like you enjoy a disk packed full of programs and information.

Make your life easier & get more from your computer. Organize your life and be more productive with **home management** and **finance programs.** Have fun learning with our **educational** programs and fun relaxing with **games** and **adventures.** You'll find **business, graphics, utilities** & more!

Ten programs and more on every disk. What's the opposite of "downtime"? It's UPTIME, of course. Just imagine...a disk each and every month, delivered right to your door and packed with programs for your Apple.

Subscribe now, with our introductory offer! Make the very next disk yours! Fill in the coupon and return it to us, or simply call. We'll start your subscription immediately, in addition to sending you...

17 FREE PROGRAMS

Put work gloves on your Apple with UTILITY TIME — 17 programs including *Banner Maker, Musical Keys* and *Graphix Fun.* For **immediate service,** call toll-free: **1-800-437-0033** anytime, day or night.



LESS THAN 60¢ PER PROGRAM

NOW FOR ALL APPLE II COMPUTERS

A Typical Disk Includes:

Puzzle Time · Playing the Market · Zippi Zombi
College Bound · Spellpruf · Graf Edit
Electronic Jukebox · Spell Evasion

Look for us in Waldenbooks, B. Dalton and other book and computer stores in your area.

I'LL BYTE!!! SAVE 60% ➜ **12** Disk Issues $69.95 ☐

I'm an Apple enthusiast who wants more. Please start my subscription to **UPTIME** immediately.

6 Disk Issues $49.95 ☐ **3** Disk Issues $29.95 ☐ **1** Disk Issue $11.95 ☐

(Add $2 per issue in foreign countries, except Canada and APO)

Name _____

Address _____

City _____ State _____ Zip _____

☐ Please send my **FREE Utility Time** disk ($18.45 value)

☐ Payment enclosed. (Make checks payable to **UPTIME.**)

Bill my: ☐ Visa ☐ MC Exp. Date _____

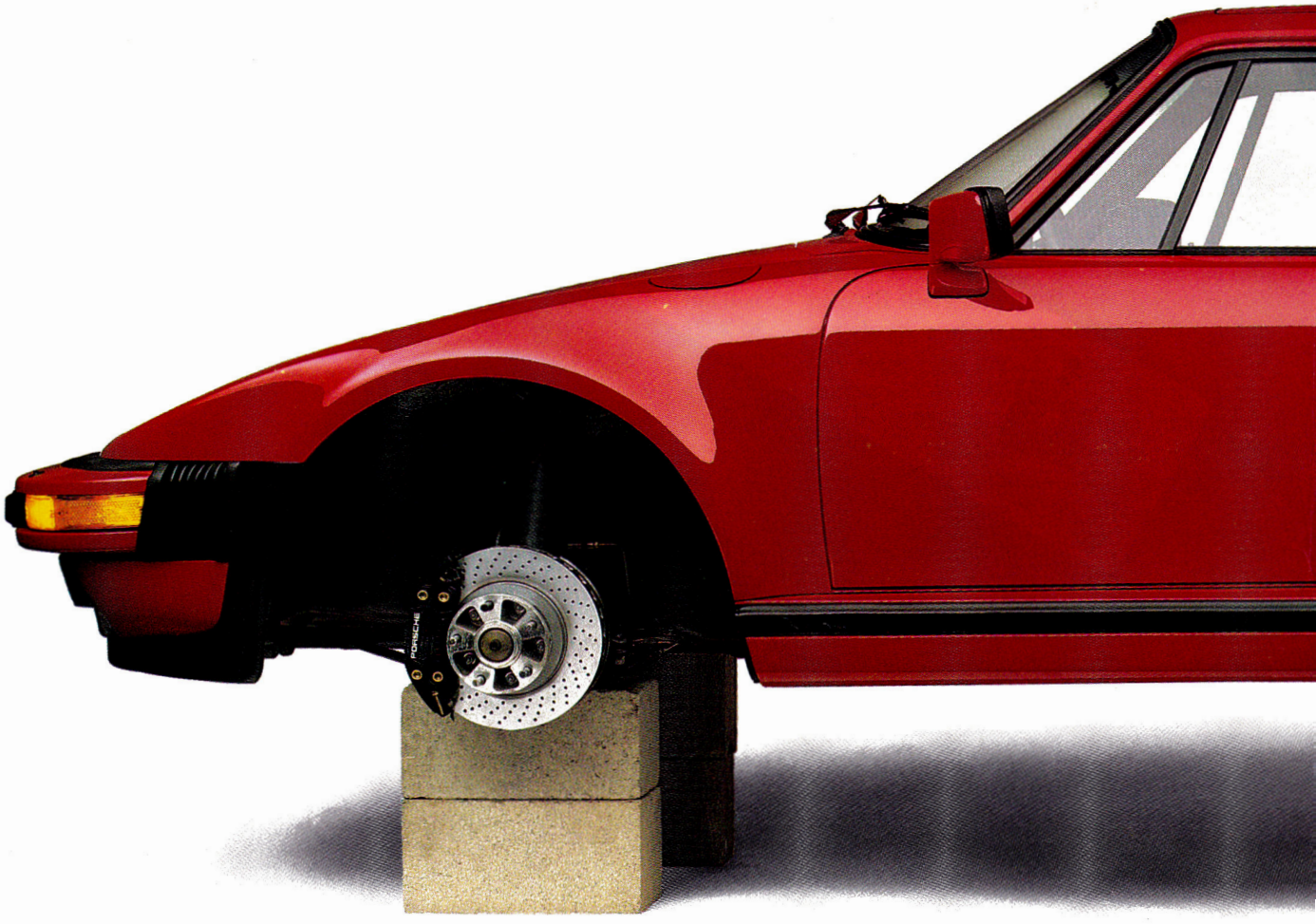
Signature _____

Account No. _____

Send to:
UPTIME · PO Box 299
Newport, RI 02840
(401) 849-4925
IN07

Circle 15 on Reader Service Card.

Some Apple II owners still



It's like listening to Beethoven's 9th on a transistor radio. Or watching the Super Bowl on a five-inch screen.

Sure, your Apple II probably seems great just the way it is. But until you boot AppleWorks® 2.0, you won't really know what it's capable of doing.

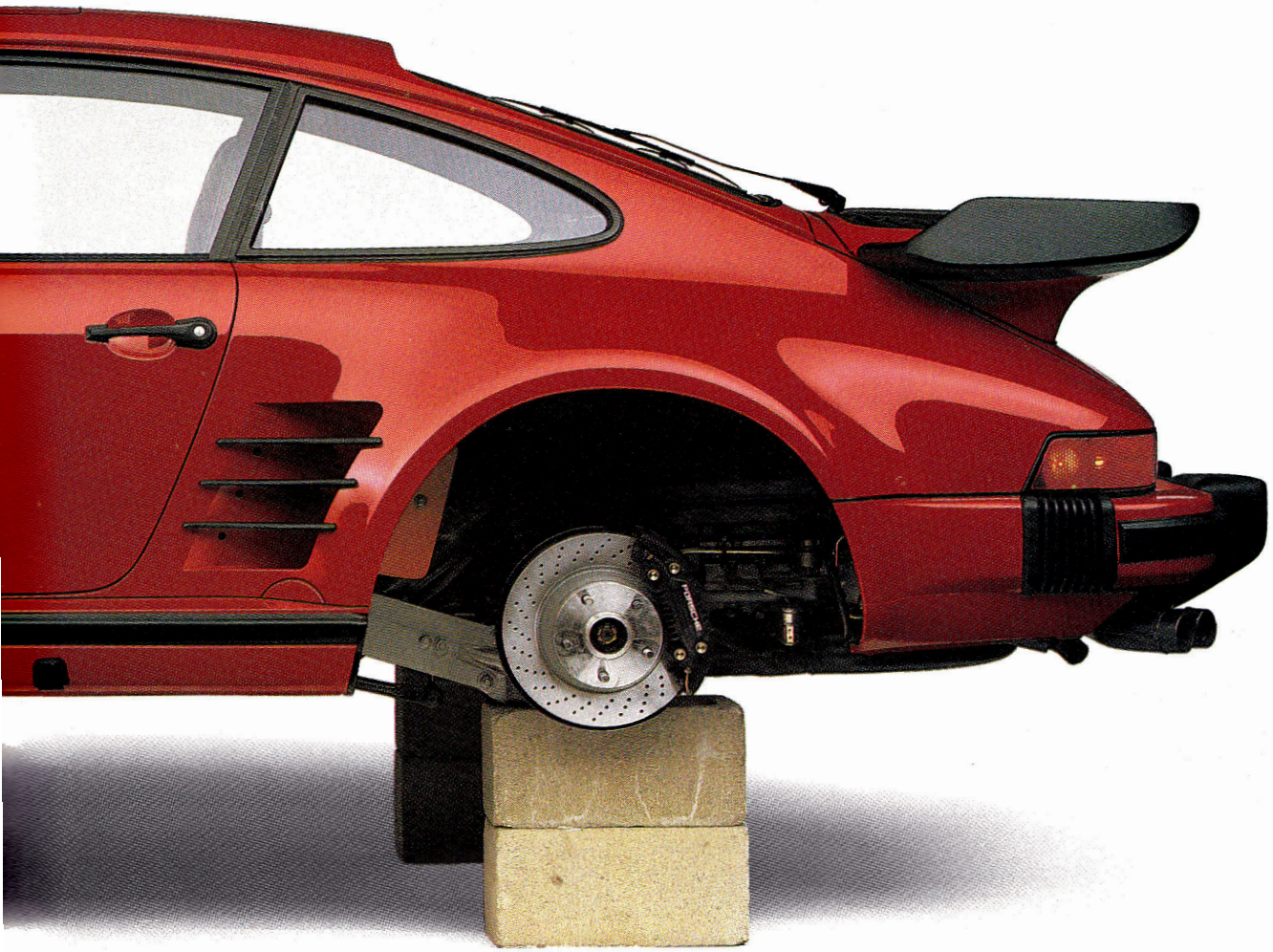
AppleWorks combines three of the most popular applications in one powerful, easy-to-use package: a sophisticated word processor for swiftly creating dynamic marketing plans or compelling letters home to mom. A spreadsheet for compiling everything from next month's sales forecast to last month's household expenses—then changing the numbers in a flash as you ask questions like "what if I win the lottery tomorrow?" And finally, a database manager to store, sort and organize just about any kind of information you can think of.

Alone, each of these programs is a potent, practical tool.

But put them all together and your Apple II is suddenly traveling in a fast lane you didn't even know existed.

© 1988, Claris Corporation, 440 Clyde Ave., Mountain View, California 94043. ***415-960-1500.*** *Claris is a trademark of Claris Corporation. AppleWorks is a registered trademark of Apple Computer.*

don't have AppleWorks.



You can zip from your stock portfolio to your monthly budget with a few deft keystrokes. Cut sales projections from a spreadsheet and paste them into a business plan in a matter of seconds. Or use the mail merge function to speed addresses from the data base to a form letter. All without swapping disks or rebooting. Even the learning process is accelerated, since you only have to learn one set of commands.

If all this isn't enough, you can choose from dozens of add-on programs to do things like draw graphs or check your spelling. Or use a RAM disk to take advantage of AppleWorks' extended memory support.

It's no wonder over 750,000 Apple II owners already work with AppleWorks (which is compatible with the entire Apple II family).

For more information and the location of a nearby Claris dealer, call 800-334-3535, ext. 150. If you've got an Apple II parked on your desk, we'll get it on the road to bigger and better things.

CLARIS™

Inc., licensed to Claris Corporation. Apple is a registered trademark of Apple Computer, Inc. For upgrade information, call ***800-544-8554.*** *In Canada, call* ***800-668-8948.***

Circle 282 on Reader Service Card.

LETTERS

Preview vs. Review

Before endorsing a product, you should test it more thoroughly. Cynthia Field's sidebar "Publishing with 128K" (February 1988, p. 44) was a mini-review of Personal Newsletter in which she wrote, "Here's a real bargain for IIe and IIc users. . . ." A large glass window for $1 might be a bargain, but what kind of bargain is it if it's broken into pieces?

The package states that the program works with the Apple RAM board. According to its documentation, Personal Newsletter works with a hard disk and you can use ProDOS pathnames to select your files. This isn't so. You must have your program disk in your drive at all times, and the program will access only a data disk in one of your drives.

The printout's quality is terrible. Additionally, I had to crop pictures—to print a whole face, I had to enter it in pieces.

Don Prohaska
7711 Bay Avenue
California City, CA 93505

The sidebar's introductory paragraphs state that it's a preview. *All versions were 1.0, indicating that they were available only recently. Cynthia Field also noted that Softsync had just started shipping when she wrote the article. Please recognize the difference between a review and a preview: When we preview a product, we don't grade it because it's still in the testing stage.*

According to Rod Campbell, Softsync's Product Manager (162 Madison Avenue, New York, NY, 212-685-2080), when the article appeared in inCider, *an upgrade, version 1.2, was available from the company at no charge to correct both the RAM-board and hard-disk problems you encountered.*

Your printing difficulty was a documentation problem. You're right—the manual didn't explain this clearly. To print, you must double the size vertically. This lets you see more on your screen when inputting so that you can better judge what you're creating. Also, because of your Apple's limited memory, it's not unusual to have to crop digitized images.

Readers can contact Softsync for any available product upgrades. (The current version of Personal Newsletter is 1.4.) —eds.

Data-Strips Update

inCider will no longer be printing data strips to accompany the program listings in each issue. Data strips will be offered, however, on a subscription basis—just mail us your name and address and $9.95 (check or money order) to cover our costs and we'll send you 12 monthly sets. All programs published in *inCider* are also offered on the *inCider* BBS (603-924-9801) and can be downloaded free of charge. *inCider*'s editorial offices are located at 80 Elm Street, Peterborough, NH 03458.

Guard Your Manuals

I purchased Beagle Bros' MacroWorks last year and was very satisfied with the product. Unfortunately, during the Christmas confusion I threw the manual away. When I called the company, customer-support people informed me that because the program wasn't copy-protected, they couldn't sell me the manual only. I explained that I understood the company's position and that I wasn't purchasing documentation for a friend.

I then wrote a letter in which I again explained my position and asked whether the Beagle Bros support personnel could at least tell me how to use two functions I didn't understand. I offered to pay for their trouble and enclosed a self-addressed, stamped envelope.

The company responded by returning my letter in the self-addressed envelope—not even a scrawled "Sorry, we can't help."

Lafayette French
33 Knox Street
Thomaston, ME 04861

Beagle Bros' software is so easy to copy the company has to take steps to make illegal copies worthless. The moral of the story is take care of the manual. If you lose the manual, you lose the program. —eds.

CORRECTION

In our May 1988 issue, we inadvertently omitted mentioning Passport Designs in the article "Apple Serenade" (p. 70) and the sidebar "Making Music with MIDI" (p. 82). Passport Designs (625 Miramontes Street, Suite 103, Half Moon Bay, CA 94019, 415-726-0280) produces the MIDI sequencing software Master Tracks and Master Tracks Pro for $249.95 and $299.95, respectively. Music Tutor—MIDI, a three-part music-training series, sells for $229.95, and Polywriter, a music-recording, -transcribing, and -printing program, sells for $299.95. We also accidentally overlooked the GS MIDI program MusicShapes, from Music Systems for Learning (311 East 38th Street, Suite 20C, New York, NY 10016, 212-661-6096). According to company president Mary Jane De Genaro, MusicShapes provides sampled and synthesized sounds, composition features, and prerecorded music.

inCider *welcomes readers' comments regarding articles, letters, or other topics of interest. We reserve the right to edit letters for clarity, style, and space. Please address your correspondence to Letters,* inCider, *Elm Street, Peterborough, NH 03458.*

BLAZE YOUR WAY TO GLORY!

WINGS OF FURY

A flame-red dawn streaks the South Pacific skies as your crippled WWII carrier limps for home, enemy planes harassing its every move.

Your F6F Hellcat is the flattop's last battle-worthy plane. Launch yourself into action, armed with bombs, torpedoes, rockets, and blazing machine guns.

Brave a storm of fire as you attack enemy warships and islands. Stay vigilant and ready to outmaneuver their planes in desperate dogfights.

Find out if you have what it takes to earn the most precious wings of all—Wings of Fury.



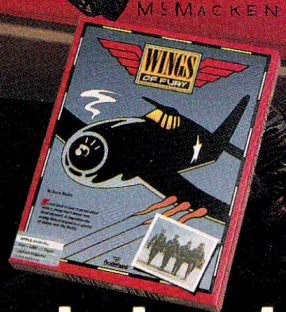
Use your joystick to maneuver your agile Hellcat as you dogfight, strafe and dive bomb.



Discipline and blind faith will bring you home from a rocket raid against the enemy fleet.

HOW TO ORDER: WINGS OF FURY Apple® 128K IIe, IIc, IIGS, joystick required. $34.95 Visit your software dealer or call 1-800-527-6263, 8am-5pm PT, for direct credit card orders (VISA, MasterCard, Amex). To order by mail, send check, money order or credit card information to Brøderbund Software-Direct, P.O. Box 12947, San Rafael, CA 94913-2947. Californians add 6% sales tax. Add $3.50 for delivery of one program and $1.00 for each additional program. Direct orders carry a 10-day money-back guarantee. Allow 4 weeks for delivery.

M.S MACKEN



Brøderbund®

17 Paul Drive, San Rafael, CA 94903-2101. Apple is a registered trademark of Apple Computer, Inc., © 1988 Brøderbund Software, Inc.

55ICJ

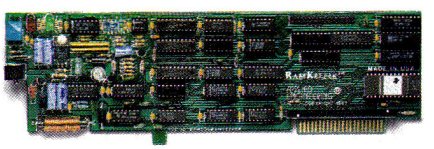
In about the time it takes to read this headline, you can have the Finder up and



Imagine. Turn on your IIGS and instantly the finder comes to life! All the speed and RAM power your IIGS was meant to have, packed into one, affordable "electronic hard disk."

Applied Engineering's RamKeeper.™ A system that works like a hard disk, only better. It retains stored programs *and* data while your computer is turned off (like a hard disk), but gets up and running five times faster. RamKeeper is solid state, has no moving parts and, unlike a hard disk, has no heads to crash and no parts to wear out. And RamKeeper saves wear and tear on your disk drive, because you don't need it nearly as often.

RamKeeper even powers up to two memory cards *simultaneously* while your computer is off. And the battery backup we include keeps power to the boards, even during power failures.



RamKeeper lets you keep programs and data in permanent, "electronic hard disk" memory. Turn your Apple IIGS on and you're ready to work.

Your programs and data remain stored in a permanently accessible state, always ready to run. Your computer waits for *you* . . . instead of you waiting for it.

Superior power backup.

RamKeeper comes complete with sealed Gel/Cell batteries for emergency backup in the event of a power outage. Gel/Cell's are by far the most reliable backup power source in this application. Unlike the Ni-Cads others use, Gel/Cell batteries don't lose capacity if not discharged periodically.

Our Gel/Cell pack gives you up to six hours of total power failure backup. And the sealed battery pack stays *outside* your computer case, where an unlikely leak won't ruin your computer circuitry.

RamKeeper uses a Switching Power Supply — the same technology used by Apple for the IIGS power supply. This design uses energy much more

Prices subject to change without notice. Brands and product names are registered trademarks of their respective holders.

efficiently to keep your Apple running cooler.

Powers two memory cards in the same slot.

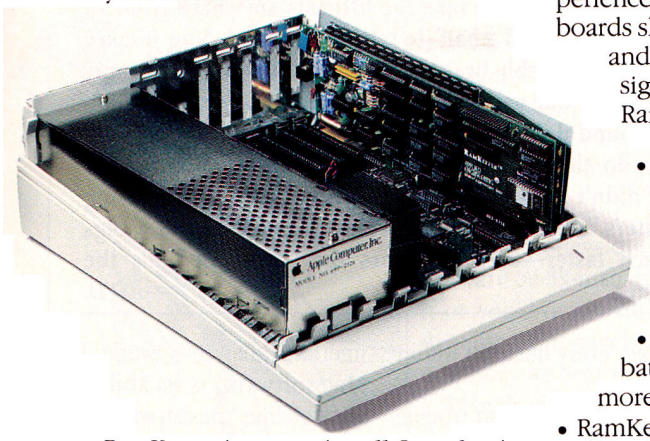
Have Apple's memory card, but now want the features of Applied's GS-RAM card? With RamKeeper, both cards act as one larger card. In one slot. Just attach one memory card to each side of RamKeeper and plug RamKeeper into the slot. And even with two cards, you can still keep slot 7 open with our optional Slot-Mover. All without changing the way either your memory card or your software now operate.

RamKeeper also works fine with only one memory card.

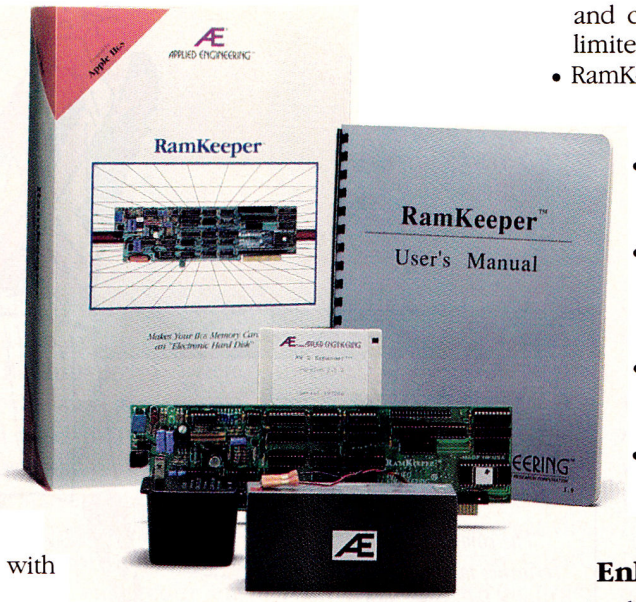
Makes all your memory usable memory.

RamKeeper powers up to 16 Meg. of memory. You can also mix and match different types of memory cards. For example, an Apple card that uses 256K RAM chips and an Applied Engineering card using 1 Meg. RAM chips. RamKeeper firmware automatically configures for two cards when the second card is installed. No need to manually move jumpers.

RamKeeper configures memory linearly to avoid memory gaps that can cause crashes. And *you* decide how much memory to devote to ROM and to RAM from the IIGS Desk Accessories menu. You can configure Kilobytes or Megabytes of instant ROM storage for your favorite programs. And you can change ROM and RAM sizes at any time without affecting your stored files.



RamKeeper is easy to install. Just plug it in. Even when you use two memory boards, you don't have jumpers. You can have two memory boards but use only one slot.



It all comes with RamKeeper ... board, Gel/Cell battery pack, easy-to-understand instructions, and Applied's powerful AppleWorks Expander software.

Protect from program crashes.

Reinstalling operating software is not fun. With RamKeeper you'll never have to. Since RamKeeper controlling firmware is in an EPROM, a program crash can't take out the operating software.

Verifies data security.

RamKeeper firmware uses optional startup checksums to verify that no data was lost while the power was off. The firmware also runs ROM and RAM memory tests without disturbing data on the card.

Significant differences.

Applied Engineering's longer experience with battery-backed memory boards shows in the way we designed and built RamKeeper. There are significant differences between RamKeeper and other systems:

- RamKeeper includes a Gel/-Cell battery for 6 hours of total power failure backup, others use the shorter-life Ni-Cads and charge extra for them
- RamKeeper has external battery storage, others have a more risky internal storage
- RamKeeper powers up to 16 Meg., others power only up to 8 Meg. maximum
- RamKeeper permits mixing and matching different memory cards and chip sizes, others have more limited combinations
- RamKeeper automatically configures for two cards, others have manually-moved jumpers
- RamKeeper configures linearly to eliminate memory gaps, others don't
- RamKeeper includes EPROM-protected operating software, others use floppy installation
- RamKeeper's software expands AppleWorks internal limits, others don't
- RamKeeper includes disk-caching software, others don't

Free AppleWorks Enhancement software.

Applied Engineering's powerful AppleWorks Enhancement software comes free with RamKeeper. It's well worth the purchase price alone. Our software makes AppleWorks faster and far more powerful by eliminating internal memory limits. Word processor limits increase from 7,250 to 22,600 lines. Database limits increase from 6,350 to 22,600 records. Clipboard limits increase from 255 to 2,042 lines. Our software even automatically segments large files so you can save them on multiple floppies.

In addition, RamKeeper comes with the most powerful disk-caching program available anywhere. The cache tremendously accelerates access time to the Apple 3.5 Drive. Creating, in effect, a speed booster on top of a speed booster . . . a potent combination that runs most applications up to *seven times faster.*

RamKeeper is proudly made in the U.S.A. and is backed with a five year parts and labor warranty. And a 15-day money-back guarantee.

Only $189.

To order or for more information, see your dealer or call (214) 241-6060, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA, C.O.D. welcome. Texas residents add 7% sales tax. Add $10 outside U.S.A.

APPLIED ENGINEERING™

The Apple enhancement experts.

P.O. Box 5100 • Carrollton, Texas 75011.
(214) 241-6060

NEWS LINE

by *inCider* staff

A QUANTUM LEAP

Apple Computer (Cupertino, CA) and Quantum Computer Services (Vienna, VA) announced in May that "AppleLink Personal Edition" would become available to the Apple II public this summer.

AppleLink, Apple's in-house telecommunications network, previously available outside Apple only to dealers and computer magazines with Macintoshes, is now open to anybody with an Apple IIe, IIc, or IIGS and a modem. At press time, Apple and Quantum had not decided what AppleLink Personal Edition would cost, but they assured us the price would be reasonable and comparable to other on-line services.

AppleLink Personal Edition will have two parts, The Apple Community and General Services. General Services offers everything that made QuantumLink such a hit for Commodore 64/128 users: People Connection, Financial District, Recreation Center, Clubhouse, News Room, Mall, and Learning Center.

The Apple Community is specifically for Apple II owners. You can take a class in Applesoft BASIC programming or AppleWorks applications at Apple University, or test-drive some demo software from Apple developers such as Beagle Bros, Broderbund, and Davidson. Your Apple can automatically download all the technical notes that pertain to your machine every month. AppleLink also holds an extensive Apple reference library, with product information and reviews.

The Industry Connection lets you talk back to major software and hardware developers—and to all the publications, like *inCider*, on the Magazine Rack. An Ask Apple Forum promises to answer every question within 48 hours.

You should have no trouble using AppleLink, especially if you have a mouse as well as a modem. More important to AppleLink's ease of use than the Apple interface (that is, it works like Mac software) is its ability to work off line: You can write whatever messages, mail, or bulletins you want to send *before* you log on, and you can save the mail you receive to disk and read it later,

SPOTLIGHT ON . . . . . .

CADDYING FOR THE LPGA



"The computer has certainly made all our lives a lot easier, and we can do more than we ever dreamed."

Not so unusual, your might say—but you might be surprised to learn that statement comes from an official on the pro-golf circuit. Tracking down birdies and bogies is par for the course for a team of Apple IIs following the Ladies Professional Golf Association tour. Four Apple IIcs and modems travel with the LPGA to its numerous tournaments across the country; the fifth computer, an Apple IIe with expanded memory, modem, and letter-quality printer, waits back at the LPGA's headquarters in Houston, Texas.



The modems mean that Jim Webb, director of operations for the LPGA, can send scores "instantly" back to Houston for compilation, and even to wire services and newspapers such as *USA Today* as soon as the tournament's over. Webb notes that newspapers like to get tour results by modem, because "they don't have to type it all in."

The LPGA's first Apple belonged to a tournament official. Webb hired a programmer to create the BASIC software that manages the statistics; it tracks each player's daily hole-by-hole scores, tournament-round scores, number of career wins, and average score.

"At night, it used to take the officials anywhere from an hour to an hour and a half [to tabulate results]. Now it takes six minutes," Webb brags. "Last year, we were the only professional tour using computers. Everyone else was fumbling around doing statistics by hand."

How do the golfers react to the creeping technology? "They didn't even know for two years that we were using computers," Webb recalls. "But now they know that things go much faster—over the years they've learned it's the computer." ***—P.O'D.***

after you log off. You waste less money and less time, which is the promise of telecommunications.

Your local Apple dealer sells AppleLink Personal Edition, or call Apple for details at (408) 996-1010. **—P.S.**

CREATIVE CONTEST

Okay, all you Paintworks Gold owners, get painting and create something!

First prize in the Paintworks Gold Contest is a complete library of Activision IIGS software. Second prize is your choice of two Activision games or productivity packages; third prize brings you one piece of software.

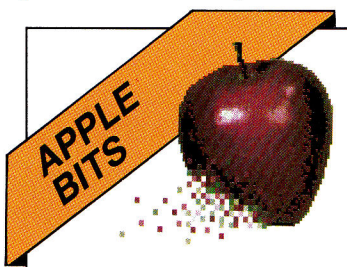
But you have to paint fast—the deadline's July 1. If you're really in a hurry, call the Activision Bulletin Board System (BBS) with your modem and upload your picture. Leave your name and phone number with the system operator.

If you don't have a modem, print a copy of your work of genius, and rush your entry—on disk and paper—to Paintworks Gold Contest, Activision, P.O. Box 7286, Mountain View, CA 94043.

An independent crew of critics from Activision and *inCider* will select the best artwork on the basis of creativity, originality, and raw talent. Your work will grace the pages of *inCider*. Start painting, and good luck. **—L.L.**

We're always looking for news of the Apple world. If you're making news, send your press releases and photographs to News Line, inCider, *Elm Street, Peterborough, NH 03458.*





■ **Video Technology** and **Central Point Software**, the wizards of the Laser 128, are putting together a **GS clone**.

■ Apple will introduce a new operating system for the IIGS, called **GS OS**, in the fall. It will allow an Apple IIGS to read Macintosh and MS-DOS text files.

■ HyperDyne Software, the folks who brought you Command.Com, the MS-DOS look-alike interface for the Apple II, will release a **BASIC dialect** that will run under Command.Com. Next will be a C interpreter.

■ **Apple** applied all kinds of muscle to get developers to put software on **3½-inch disks**. "Do it or you'll never see another development machine" was one story we heard. "If it's not a 3½-inch disk you can't show it in an Apple booth at an Apple show," was another.

■ Bad news: our first report of a **ProDOS "virus"** on an online service. Let us know if you hear more.

■ **Steve Wozniak** thinks the choice of cheap, plentiful, **8K DRAM** chips for the original Apple II had a lot to do with its success. Where does that leave the IIGS with dear, scarce, 256K DRAMs, Woz?

■ The Federal Office for Examination of Harmful Publications in **West Germany** has changed its mind: MicroProse's popular submarine simulation, **Silent Service**, isn't a harmful publication after all. Maybe F-15 Strike Eagle, Gunship, and Airborne Ranger will get a fair shake now. But what will the censors make of CinemaWare's Rocket Ranger?

■ Silicon Valley is crowded with Mac programmers, MS-DOS programmers, Amiga programmers, and marketing assistants. But where are the **GS programmers**?

■ **Activision** has hit the road. Its new home is 3885 Bohannon Drive, Menlo Park, CA 94025. The number is (415) 329-0800 or 329-0500.

■ The educational folks at **Mindscape** have agreed to produce a series of multimedia mathematics materials for grades K–6 in conjunction with the state of California. **Adventures in Mathland** will be based on the California Mathematics Framework, and will include software, guided off-line activities, and an optional videodisc.

■ Donald F. DeSorte, of Acto, NJ, became the 100,000th user of the **GEnie** consumer-information service (Rockville, MD) in March. DeSorte and his family took a three-day trip to the nation's capital, courtesy of GEnie. The deal was especially sweet for DeSorte, who had a free trial subscription to GEnie in the first place in conjunction with his subscription to *Open-Apple* (Overland Park, KS). (We assume he paid for that.)

■ The word among hardware makers (at press time, early May) is that the price of random-access-memory (RAM) chips is so high that development is crawling. Is using "bizarre" chips that nobody else needs or wants the solution?

Break into Apple Corporate Headquarters.



Before you get overly excited, we're not giving you direct access to our CRAY mainframe.

But if you have an Apple® II personal computer* and a modem, we do have a wonderful new information and communications tool for you.

It's called AppleLink®-Personal Edition. And it lets you tap into a wide array of information sources provided by Apple Computer. And a whole lot more.

You can check out the latest products from Apple. Download hundreds of public domain software programs from business applications to educational games. Try out "demoware" programs so you can test run software before you pay for the actual programs.

You can attend on-line Forums with software wizards, hardware gurus and other prominent personalities from the Apple community.

You'll be able to take classes at Apple University where you'll learn how to master the intricacies and the short-cuts of Apple software programs. You'll have access to special Apple reference libraries where you'll find technical and product information, software reviews and Apple user group news.

In addition to being able to commandeer all this information directly from your keyboard, you'll also

*To be very specific, you need an Apple IIc, Apple IIGS or Apple IIe enhanced with 128K of ROM, an 80 column card and a Super Serial card. **General Services is provided to you by Quantum Computer*



be able to tap into a much richer source of what's new and now: Apple users just like yourself from all over the country. You can chat live on-line with other users, share tips, get insights into program quirks, find out about how other people have solved the problems you're facing now. And soon, you'll be joined on-line by thousands of Macintosh® personal computer users. Which will be even more fun and informative.

And that's just one side of the story.

The other side of the story is something called General Services** where you can watch Wall Street, check out the news or join a group of people who love the same things you do. Whatever they may be.

AppleLink is so easy to use, you can get on-line with a few clicks of a mouse or a couple of touches to the old cursor buttons. It's really that easy.

Just pick up the phone and call 800-538-9696 ext. 450 for the name of the authorized Apple dealer nearest you. Then get ready to modem.

We're waiting for you with open arms.

The power to be your best.™

Services, Inc. Just so you know: ©1988 Apple Computer, Inc. Apple, the Apple logo and AppleLink are registered trademarks of Apple Computer, Inc. CRAY is a trademark of Cray Research Incorporated.

Dear Claris

by Paul Statt, Senior Editor



"You can make AppleWorks fans work smarter and still make millions of dollars. Start selling AppleWorks templates."

Dear Claris Corporation:

Let's declare a truce: I promise to stop complaining if you'll do just one little thing that will make you rich.

I won't let your statements in the press that "Claris is a Macintosh software company" upset me. I know you don't mean it; I know you want to "just say no" to MS-DOS. It's not AppleWorks you hate, it's Lotus 1-2-3.

You do like AppleWorks, don't you, Claris? AppleWorks—the most popular software ever, remember? I know you exhibited AppleWorks at AppleFest in Boston in May. The sponsors only had to twist an arm at Apple, call a senator, adopt a U.N. Security Council resolution, and convince the Pope to issue an encyclical to get you to come. But I know you wouldn't have missed AppleFest for the world—your mind was probably on Microsoft. Heck, I miss deadlines, too, Claris—but I'm hardly ever late when the party's for me.

I hear you're lavishing attention on AppleWorks. Is it true that you got the guys at Apple Computer to rewrite it for the IIGS? As Priscilla Mullins might have said, "Why don't you speak for yourself, Claris?" But it's hard to find good GS programmers these days, isn't it? They all run off to Houston—nine of 'em showed up at StyleWare. Guess your new million-dollar headquarters just can't compete with that industrial park.

But Claris, you can make me happy, make AppleWorks fans work smarter, and still make millions of dollars. Start selling AppleWorks *templates*—AppleWorks word-processor, spreadsheet, or database files that *do something*: balance the checkbook, compute grades, write a résumé, check a term paper's style, or run a small business.

People buy templates, Claris. They buy them from *inCider* (*Success with AppleWorks*) and they buy them from tiny companies with tinier ads in the back of *inCider*. I'll bet they'd buy more templates from you, Claris, because you're a big company close to the source—Apple.

You could establish standards for templates. Beagle Bros' UltraMacros might make a nice standard, for instance. UltraMacro programmers could write "task files" to automate a big AppleWorks job without requiring the end user to buy the macro program.

Robert Fowler and Johnny Roller (that's his real name, I think), a couple of landscapers in Ohio with a lot of employees, have written a great UltraMacros task file that automates the payroll for their small business. But they're just that, a small business; they don't have the time to hawk payroll templates nationwide. You do, Claris. You could put a template like PayCalc (that's its real name) into the hands of the small businesses that need it.

But you have to cut Mother Apple's apron strings to do this right, Claris. You have to admit that Mom and Pop sometimes have an Apple II and AppleWorks on the payroll of their small business. Some people who graduated from the eighth grade years ago still use Apple IIs. It hurts to learn that a parent lied; people do use Apple IIs for something besides education.

And make your templates affordable for Jane and John Doe. Mr. and Mrs. Doe have a computer, they have software, but they don't have any idea what to *do* with them.

Greg Hastings, vice president of Pinpoint, a company that makes AppleWorks add-ons but also milks a cash cow called Micro Cookbook, once confided to me the secret of that program's success. I had offered the opinion that a cookbook on disk wasn't versatile—it does only one job. Hastings admitted that you can make a computer do anything, "but people don't want to do everything with their computers, they want to do *one* thing."

That's true of the people who buy AppleWorks and your competitors' integrated software, Claris. I'd rather do it myself, but if your customer wants to pay somebody else to do it, Claris, shouldn't that somebody be you?

Your loyal opposition,
Paul Statt

"COPY II PLUS®

WIPED, REFORMATTED AND DELETED ITS COMPETITION."

–*inCider*

Disk Utilities • Backup Program for Copy-Protected Disks



• **AWARD-WINNING UTILITIES.** Over 20 built-in utilities, including the ability to delete and undelete files, map disk usage, copy disks and files, view and print files, format and verify disks, and alphabetize the catalog. Also contains drive diagnostics for checking and adjusting drive speed. Plus much more–all in an easy-to-use menu perfect for both novices and professionals.

• **VERSATILE PERFORMER.** Copy II Plus enables you to convert DOS 3.3 files to ProDOS files and vice versa–automatically.

• **SUPPORTS THE IIGS.** Runs great on the IIGS, and makes full use of Apple 1-Megabyte RAM boards.

• **PROTECT YOUR SOFTWARE INVESTMENT.** Make backup copies of protected and unprotected programs–even those with the most sophisticated protection schemes. Use Copy II and you'll always have a backup handy should anything happen to your original disk.

• **EASY TO USE.** Backup parameters for most programs are already on the disk. Simply select which program you want to backup, insert that program disk and you're off. Data and unprotected disks are copied in less than a minute and require only two passes on an Apple IIc, Laser 128 or IIGS.

Take a look at Copy II Plus today and see why *inCider* magazine says Copy II Plus deleted its competition. **For the dealer nearest you, or to order direct, call (503) 690-8090,** M–F, 8 a.m.–5 p.m. (West Coast time).

Hardware requirements. Apple II or Laser computer with 128K memory and one disk drive.

3.5-inch bit copy requires Laser 128EX or IIGS (or Apple II computer with Central Point Universal Disk Controller) and a 3.5-inch IIGS, Chinon or Laser drive.

Copy II Plus is a trademark of Central Point Software. Apple II, IIe, IIc and IIGS are trademarks of Apple.

Central Point Software
INCORPORATED

15220 N.W. Greenbrier Pkwy. #200
Beaverton, Oregon 97006
(503) 690-8090 Sales/Info
(503) 690-8080 Tech Support

Circle 62 on Reader Service Card.

APPLE CLINIC

by William Kennedy, Ph.D.,
Technical Editor

Apple Clinic is a forum for discussing and answering your questions and concerns about Apple II hardware and software. Address your correspondence to Apple Clinic, inCider, *80 Elm Street, Peterborough, NH 03458. Because of the volume of letters, most won't appear in print, but expect a response from Dr. Kennedy via postcard.*

Transformations

I'd like to convert data I prepared with PFS:File to AppleWorks database files. How do you do it?

Paul Gerlach
North Tonawanda, NY

Not easily. PFS:File uses its own DOS and file structures, so you can't even use Apple DOS commands to load and examine your data.

Fortunately, file-translation services are currently available: Send them your disks and they'll convert the files for a reasonable fee. Check our Marketplace ad pages for leads. Burke Software, Data Transfer Division, P.O. Box 515, Dept. 1C, Park Ridge, IL 60068, (312) 823-1357, is one such service.

Most of these translation services are fledgling businesses that, I would assume, are eager to please. But I don't have personal experience with any of them, so I recommend you contact them before sending disks.

Speaking Up

I recently purchased Applied Engineering's (P.O. Box 798, Carrollton, TX 75006) Phasor card. It has excellent stereo sound, and I can enter text from a BASIC program and hear the Phasor card "speak" using its text-to-speech capabilities.

The system apparently uses a program called TTS, supplied on the Applied Engineering disk, for text-to-speech conversion. I read the documentation, but I don't understand how to write my own programs. Can you help?

Bruce Painter
Rainier, WA

The Phasor is an excellent sound-generation card for the otherwise tink-tonk beeper installed in the Apple IIe and IIc. Several other similar products are available as well, including some that don't require any additional hardware. And most provide "driver" software that interfaces easily with your programs for sound and/or text-to-speech production. (Cricket owners should read the September 1987 Apple Clinic, "Echo, Echo," p. 20, for programming tips. See also "Making Music," August 1987, p. 38; "The Power of Speech," December 1987, p. 97; and "Apple Serenade," May 1988, p. 70.)

Text-to-speech conversion with the Phasor card is also simple to program; all you need is a rudimentary knowledge of BASIC and DOS 3.3 or ProDOS text-file management.

The accompanying ***Program listing*** *is a sample BASIC program that reads a text file from disk and sends the text to the Phasor card. You can use any of a variety of word processors to prepare the text file. Just remember to create a "TXT" file from your document: Using AppleWorks, for example, "print" (Open apple-P) the document to a "text file."*

The demo program first uses the AE-supplied TTS program to load and initialize the Phasor software and hardware (line 10). Note that to work, your Phasor card must be set to "Phasor" mode (switches 1 and 2 closed).

The demo program then asks for the name of your text file (line 50). If you press Return alone, the program will disconnect the Phasor and stop. Otherwise, line 70 attempts to OPEN and READ your text file. If it doesn't find a text file, the error trap set in line 60 transfers program control to lines 200–220, where the program notifies you of the failure and lets you continue.

If it can OPEN the text file, line 90 INPUTs a sentence (T$: a maximum of 256 characters before a Return) and calls the Phasor to convert it to speech (& T command). The following line (100) makes your program wait (& W) until the speech is finished, then re-initializes the card. Line 110 then repeats INPUT of your text-file sentences until an end-of-file error occurs and is trapped via line 60, and the file is properly CLOSEd in line 120, before restarting the program.

That should get you talking.

Apple Writer to the GS

I've owned an Apple IIe and created more than 50 disks containing Apple Writer (DOS 3.3) documents. Now I own an Apple IIGS and Apple Writer won't work correctly. I can't load, but I can save documents. None of the Control-O disk

Program listing. *Demonstration BASIC program reads a text file from disk and sends it to the Phasor speech-generation board.*

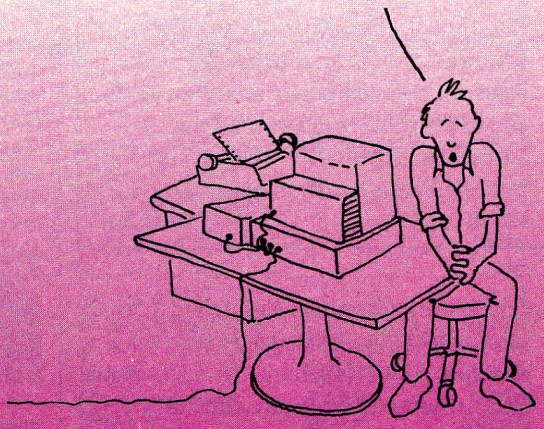
```
10  REM   Text File to PHASOR Speech Demo  [2894]
20 D$ =  CHR$ (4): PRINT D$;"BRUN TTS": REM  Load and
     initialize the AE PHASOR  [4874]
30  TEXT : HOME   [376]
40  VTAB 10: INPUT "Text file name ";N$  [2080]
50  IF N$ = "" THEN 250: REM  Quit  [1647]
60  ONERR  GOTO 200  [542]
70  PRINT D$;"OPEN ";N$: PRINT D$;"READ ";N$  [1962]
80  ONERR  GOTO 120: REM   Trap end of file  [2306]
90  INPUT T$: & T,A$: REM  # Get sentence and speek it
      [3472]
100  & W: & I: REM   Wait until done & reinit card  [3610]
110  GOTO 90  [386]
120  PRINT D$;"CLOSE ";N$: GOTO 30  [1444]
200  PRINT : PRINT  CHR$ (7);"Text file not found!"  [2967]
210  PRINT "Press any key to try again -->";  [3139]
220  GET A$: PRINT A$: POKE 216,0: GOTO 40  [1673]
250  & Q: END : REM  Disconnect PHASOR and stop  [1312]
```

New! EasyDrive & RAMUP 4.0
The Storage Management Team

If only I had storage management software that could give me complete control of my hard-disk by installing itself onto my hard-disk and then installing my programs automatically . . .
. . . it could have a menu where I could choose the applications I want by just touching a key . . .
. . . it could run programs, remove programs, back up, restore, index, copy, and other stuff, too, automatically. And it could be incredibly fast and easy to use.

And there could be another program just like it, for my RamCard. It could load my programs onto my RamCard and present them to me on a menu . . . and I could flip from program to program like turning a page . . . and would have great features like autoload, back up, restore and statistical displays. And it could be incredibly fast and easy to use.

And they could work together to give me the greatest storage management system ever . . .
. . . and come with a manual that could explain ProDOS in a way that even I could understand . . .
. . . and be sold and serviced by friendly people . . . and be affordable . . .



Your prayers are answered.

You need powerful storage management. It's an absolute must for today's Apple user. Having a RamCard and/or Hard-Disk is great, but unless you can use them with speed and ease, you're not doing yourself any favors.

EasyDrive (for the Hard-Disk) and RAMUP 4.0 (for the RamCard) are the ONLY utility programs of their kind — bringing speed and manageability to your computer — bridging the gap between you and your Hard-Disk/RamCard.

Nothing is faster — nothing is easier. If you have a Hard-Disk or RamCard or both, you need EasyDrive and RAMUP 4.0.

EasyDrive ***$69.95***
RAMUP 4.0 ..... ***$39.95***
EasyDrive/RAMUP Combo ***$94.95***

DEAR DEALER: EasyDrive and RAMUP 4.0 are available to you at a significant discount.

Quality Computers
POWER FOR PERFORMANCE

15102 Charlevoix
Grosse Pointe, MI 48230 (313) 331-0700

We carry a full line of Hard-Disks, RamCards, and programs of every kind. Call today for current prices. All our products are backed by a 30 day money back guarantee. When ordering a Hard-Disk, ask about our Hard-Disk Insurance Plan, and repair service. With your purchase you'll receive, free, *Enhance*, our technical, informative, entertaining newsletter. We are THE full service dealer.

HARD-DISKS

APPLIED ENGINEERING

Transwarp
RamKeeper
RamCharger
Serial Pro
Data Link
Phasor
Parallel Pro
Time Master
View Master
PC Transporter
RamWorks III
RamFactor
GS Ram
GS Ram +
Z Ram I, II, III

CMS

20 Meg. SD
40 Meg. SD
60 Meg. SD
SCSI Controller

Sider

20 Meg.
40 Meg.
C46
C96
T6

IN STOCK!

To Order Call: 1-800-443-6697

Circle 136 on Reader Service Card.

Quickies

When you're using the ProDOS Filer from Apple's USERS.DISK, take advantage of the "upper" 64K of memory on Applied Engineering's RamWorks card. Copy PRODRIVE from the AE Super Desktop Expander disk to a backup of your USERS.DISK. From BASIC with the modified USERS.DISK in drive 1, type the following:

```
UNLOCK STARTUP
LOAD STARTUP
2720 ?:HTAB 16: ?"-MENU"
SAVE MENU
LOCK MENU
NEW
10 ? CHR$(4);"BRUN PRODRIVE"
20 ? CHR$(4);"RUN MENU"
SAVE STARTUP
LOCK STARTUP
```

When you reboot the disk, /RAM will be assigned in slot 3, drive 2.

—James Forsmark, Flint, MI

Oops! Messed up the MOD equation shown in April's Apple Clinic Quickie (p. 24). Use Remainder = Number – Mod factor * INT(Number / Mod factor). Positive numbers only! Special thanks to Barry Schwarz of Norman, Oklahoma.

—W.K.

No, the Applesoft Program Typing Proofer hasn't been retired—we'll publish a listing every other month or so. If you need a copy sooner, send me a self-addressed, stamped envelope and I'll put one in the return mail.

—W.K.

or Control-P printer commands works. Is there some "patch" I can buy?

Julia Galusha
Syracuse, NY

First, obtain a later version of Apple Writer (1.2 or 1.3). It'll work fine on your IIGS. Then use the utilities application found in the IIGS' System Disk's "system" subdirectory to transfer your files from DOS 3.3 to ProDOS, the operating system your new Apple Writer uses. That's all there is to it.

To convert Apple Writer files to AppleWorks documents, first convert your DOS 3.3 documents to ProDOS. Then, in AppleWorks, select "Add files to the Desktop," followed by "Make a new file for the word processor" and "From a text (ASCII) file." Remove any "embedded" Apple Writer control commands and replace them with equivalent AppleWorks commands.

Drive Crazy

I'm the proud owner of an Apple IIGS, but I have a problem with my disk drives, an Apple 3½-inch and a Meiji 5¼-inch. When I boot from the 5¼-inch drive, my 3½-inch drive becomes inaccessible. If I boot the IIGS and turn the modem on while the drive is loading a program, both drives start spinning. And when I try to use Copy II Plus, both drives turn on and just spin until I reboot. In fact, many times when I try to write files to my 5¼-inch disk, both drives start spinning.

I took my system to a dealer and left it for more than a week, only to have the serviceman tell me it's probably the Meiji drive. The dealer doesn't service Meiji drives, so I'm back to square one. Is there any way to figure this one out?

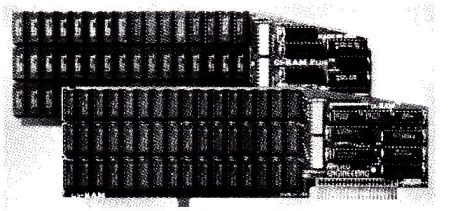
Greg Muscarella
Santa Paula, CA

I've received a number of queries similar to yours about third-party disk drives, modems, printers—just about any device that'll plug into an Apple IIGS expansion slot.

I honestly can't recommend a fix for your problem: It appears that, although the drive is otherwise functioning properly, non-Apple devices are sometimes partially incompatible with the GS' SmartPort system or interface bus. You should contact the manufacturer in hopes that the company's technicians are aware of the problem and have upgraded versions of their systems that are compatible with the GS.■

AE APPLIED ENGINEERING™

gs-RAM & gs-RAM Plus *These cards offer higher performance and greater expansion capabilities than Apple's card. AE Cache, AppleWorks expansion, printer buffer, time display, graphic self diagnostics, DMA compatibility, RamKeeper option, and much more.*



GS-RAM & GS-RAM Plus

gs-RAM 256K ***$169***
gs-RAM 512K ***$259***
gs-RAM 1 MEG ***$439***
gs-RAM 1.5 MEG ***$619***
gs-RAM Plus 1 MEG ***$499***
gs-RAM Plus 2-6 MEG ..... ***CALL***

RamKeeper *IIGS System Finder in 12 seconds. AppleWorks in 5. Store program and data reliability. Battery back-up protection against power failure. Allows the use of two RamCards in the IIGS.* ***IN STOCK NOW. $149***

Serial Pro™ *Multifunction card for IIGS, IIe & II+. Serial port and a ProDOS clock...* ***$102***

Parallel Pro™ *Centronics compatible graphics printer interface. IIGS, IIe, and II+ ...* ***$79***

Buffer Pro™ *Printer buffer option for the Parallel Pro. Allows you to keep working while the printer is engaged.*
Buffer Pro with 32K buffer ***$79***
Buffer Pro with 128K buffer. ***$119***
Buffer Pro with 256K buffer. ***$169***

Phasor™ *Simply the best sound and speech synthesizer for the IIGS, IIe, and II+...* ***$139***

Heavy Duty Power Supply *Direct replacement for IIe and II+ with over twice the output of the stock supply. Easy installation....* ***$59***

5¼" Half height disk drive. *Direct drive, compatible with all Apple software. Works with the IIGS, IIe, IIc, & II+. Compatible with disk II controller card. Please specify computer* ***$119***



5¼ Disk Drive

5¼" Disk Drive Controller *Standard 2 drive disk controller. Supports Disk II and compatible drives. For the IIGS, IIe, II+...* ***$49***

RamFactor™ *Slot 1-7 memory expansion card. Expands AppleWorks on a IIGS, IIe, and II+. RamCharger battery back up option allows permanent storage and instant access to data.*
RamFactor 256K ***$209***
RamFactor 512K ***$299***
RamFactor 1 MEG ***$479***
RamCharger Battery back up ... ***$139***

DataLink™ *1200/300 baud internal modem for the IIGS, IIe, and II+. 100% Hayes AT*

Preferred Computing
P.O. Box 815828
Dallas, Texas 75381

Preferred Computing

ORDER TOLL FREE
1-800-327-7234

Computer Accessories — **When Only the Best Will Do!**

VISA COD MasterCard

We only sell proven products that work. By selling only the industry best, we can assure you of the highest level of reliability and performance. Selling large volumes of a smaller product line allows us to have the lowest discount prices and fast same day shipment.

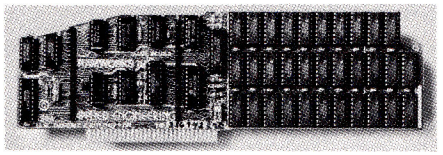
AE Hardware continued

compatible.Compact design X-Modem File transfers, Auto-dial, Auto-answer, built in speaker for call progress status. Complete system includes hardware, cables, manuals, and full featured, terminal emulation software **$169**

Viewmaster 80™ Super resolution 80 column card. Compatible with all 80 column software. Includes software patch enabling AppleWorks to run on a 64K II+ or Franklin. **$124**

Pocket Rocket™ 16K RAM Card Upgrade your Apple II or II+ to 64K and run ProDOS **$69**

RamWorks III™ If you have a IIe this card is perfect, and if you use AppleWorks it's an absolute must! Stay current with the latest software (FREE AE SOFTWARE UPGRADES). Expands main memory up to 3 MEG. Don't settle for a partial compatible, get the real RamWorks III at the right price.



RamWorks III

RamWorks III 256K..... $169
RamWorks III 512K..... $259
RamWorks III 1 MEG $439
RamWorks III 1.5 MEG $659

RamWorks RGB Options

ColorLink™ For analog RGB and digital RGB monitors **$99**

Digital Prism™ For Apple Color 100 and IBM style digital RGB monitors..... **$99**

512K RamWorks Expander™ Piggyback for all RamWorks cards. Adds 512K... **$269**

2 MEG Plus RamWorks Expander™ For RamWorks basic, II and III.

2 Meg expander with 1 Meg..... $539
2 Meg expander with 2 Meg..... $919

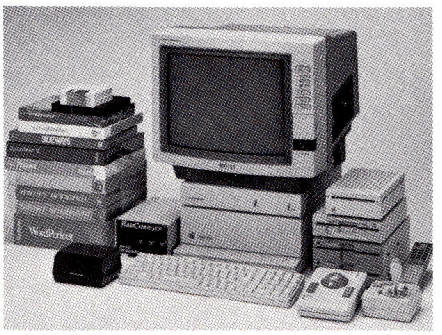
256K RAMS Set of 8 ..... **$89**

1 MEG RAMS Set of 8 ..... **$385**

RamWorks™ Original Comes with 512K installed. Expands to 1 MEG with optional 512K RamWorks Expander. Manual and latest AE expansion software included... **$199**

Extended 80 Column card with 64K Upgrade your Apple IIe to 128K plus 80 column text display. Plugs into the Auxiliary slot..... **$69**

Timemaster II H.O.™ Has the most features and is easiest to use. Automatically recognized by ProDOS. Includes AppleWorks time display patch. Adds 15 commands to BASIC..... **$73**



PC Transporter, TransDrive, System Saver, Sony Monitor, Turbo Mouse

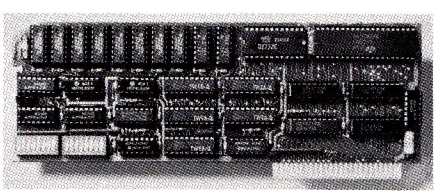
PC Transporter™ & Accessories Your Apple IIGS, IIe or II+ is now the most versatile personal computer in history. This card enables you to run Apple and IBM software on the same computer. Compatible with Apple monitors, printers, hard disk, 3.5 disk, modems, etc. . . .

IN STOCK NOW

384K (256K IBM)..... **$399**
768K (640K IBM)..... **$579**
IIGS Install Kit..... **$40**
IIe Install Kit..... **$34**
Single TransDrive..... **$209**

Z-Ram Ultra Compatible with all IIc systems

Ultra 1	**256K**	**$399**
Memory only	**512K**	**$259**
Ultra 2	**256K**	**$229**
Memory, clock	**512K**	**$319**
	1 MEG	**$499**
Ultra 3	**256K**	**$289**
Memory, Clock	**512K**	**$379**
Z-80	**1 MEG**	**$589**



TransWarp

TransWarp™ Have a large database, spreadsheet, or a slow program? This card will run all calculations, searches, alphabetizing, etc. 3.6 times faster. For the IIe and II+. . . . **$169**

Z-80 Plus™ Runs all Apple CP/M software. Includes operating system and manuals. For the IIGS, IIe and the II+..... **$119**

More Quality Products

Ultra High-Res RGB Monitor/TV This Sony model KV1311CR monitor features a 13" ultra high-res, Micro black Trinitron tube for super sharp 80 column text and graphics display. Compatible with analog, digital, and composite video. In addition to being the BEST RGB monitor available, it is also a 180 channel cable ready, remote control color TV **$519**

Digital RGB cable ($29 sep.) **W/Sony $19**

Analog RGB cable ($29 sep.) **W/Sony $19**

MACH III Joystick..... $39

ADB Turbo Mouse..... $84

Kensington System Saver® II+, IIe... **$69**

Kenginston System Saver® IIGS... **$74**

Pinpoint™ AppleWorks Accessories.
Requires enhanced IIe..... **$39**

Pinpoint Spell Checker Pinpoint AppleWorks Accessories required..... **$39**

PinPoint™ Point-to-Point..... **$78**

MacroWorks For AppleWorks 1.0-1.3... **$29**

TimeOut™ AppleWorks enhancements
Enhancements for AppleWorks 2.0 or later

UltraMacros™ **$40**
QuickSpell™ **$45**
Graph™ **$69**
SuperFonts™ **$49**
SideSpread™ **$39**
FileMaster™ **$39**
DeskTools™ **$39**
VIP Professional™ IIc, IIe **$109**
VIP Professional™ IIGS..... **$139**
WordPerfect™ (Specify IIc, IIe, or IIGS) **$89**
SideWays™ **$46**
Deluxe Paint II™ **$74**
Managing Your Money 3.0™..... **$98**
MultiScribe GS™ **$64**
Chuck Yeager's Advanced Flight Trainer™ 14 different aircraft simulations **$34**
F-15 Strike Eagle..... **$24**
(10) 5¼ DS/DD disk with sleeve... **$8**
(10) 3½ DS/DD disk..... **$15**

Why buy from us?

1. Toll free 800 numbers for orders.
2. We almost always ship from OUR stock. Call us before 3 P.M. and it ships today.
3. Memory cards have all factory installed, and tested RAM chips.
4. We're nice guys that want to help. We want our business to grow because of repeat customers and word of mouth.
5. We handle only the industry's best. We've tested and used all of the products we sell.
6. 15 day money back satisfaction guarantee on all hardware. If you don't like something we'll give you your money back. No hassles.
7. We'll support, service and warranty everything we sell.
8. No surcharge is added for charge cards and we won't charge your card until we ship.
9. No sales tax is collected on orders outside Texas.
10. All shipments are insured by us.

Order by mail: Send check or money order to Preferred Computing, P.O. Box 815828, Dallas, TX 75381

Order by phone: 1-800-327-7234 Visa, MasterCard or COD Texas, Hawaii and Alaska 1-214-484-5464

Orders only call 1-800-327-7234

Questions and Customer Service call 1-214-484-5464

Texas residents add 7% sales tax

Prices subject to change without notice



Now Apple speaks IBM. Three times faster than IBM.

Introducing PC Transporter.™ The Apple® II expansion board that lets you run MS®-DOS programs.

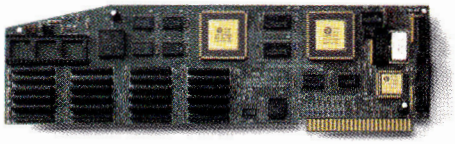
Now your Apple II can run over 10,000 programs you could never use before. Like Lotus® 1-2-3.® MultiMate.® dBASE III PLUS.® Even Flight Simulator.®

With PC Transporter, MS-DOS programs run on your Apple II like they do on IBM® PC's or compatibles. With one important difference. PC Transporter runs most of those programs *three times faster* than an IBM PC/XT.®

Plus, to speed through number-crunching tasks, you can use our optional 8087-2 math co-processor chip. It plugs into a socket on the PC Transporter.

Less expensive than an IBM clone.

Sure, a stripped-down IBM clone costs about the same as the PC Transporter. But the peripherals it takes to get the clone up and running make the clone cost about three times what our American-made card costs.



You don't have to buy new hardware to use PC Transporter.

Works with the hardware you already own.

With PC Transporter, MS-DOS programs see your Apple hardware as IBM hardware. You can use the same hardware you have now.

With IBM software, your Apple hardware works just like IBM hardware. Including your drives, monitors, printers, printer cards, clock cards and serial clocks.

You can use your IIe® or IIGS™ keyboard with IBM software. Or use our optional IBM-style keyboard (required for the II Plus).

You can use your Apple mouse. Or an IBM compatible serial mouse.

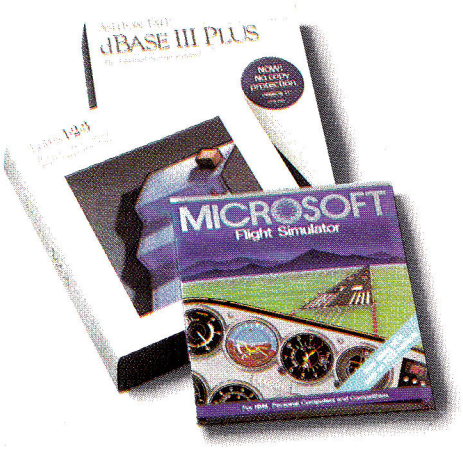
Plenty of power.

PC Transporter gives you as much as 640K of user RAM and 128K of system RAM in the IBM mode.

PC Transporter also is an Apple expansion card, adding up to 768K of extra RAM in the Apple mode. The Apple expansion alone is a $300 value.

Easy to install.

You can install PC Transporter in about 15 minutes, even if you've never added an expansion board. You don't need special tools. Simply plug it into an Apple expansion slot (1 through 7 except 3), connect a few cables and a disk drive, and go!



PC Transporter taps into the world's largest software library. Now your Apple can run most of the IBM software you use at work. And it opens a new world of communications programs, games and bulletin boards.

A universal disk drive controller.

PC Transporter supports 3.5″ and 5.25″ MS-DOS and ProDOS formatted diskettes. You'll shift instantly between Apple ProDOS and IBM MS-DOS.

You'll need our versatile 5.25″ 360K drive system to run IBM applications from 5.25″ floppy disks. Use your Apple 5.25″ drive for Apple 5.25″ disks.

An Apple Disk 3.5 Drive will support the new 3.5″disks whether they're IBM MS-DOS formatted or Apple ProDOS formatted. The PC Transporter acts like an Apple Disk 3.5 Drive disk controller for IIGS, IIe, and II Plus users.

PC Transporter supports up to 5 drives in a number of combinations.

For example, you can connect a 5.25 Applied Engineering 360K dual-drive system directly to the card. Then plug two daisy-chained Apple 3.5 Drives (not the Apple UniDisk 3.5) to the dual-drive system. For a fifth drive, use a ProDOS file as an IBM hard disk.

PC Transporter controls Apple and IBM compatible disk drives. It supports 3.5″ and 5.25″ MS-DOS and ProDOS formatted diskettes.



Versatile data storage.

PC Transporter reads MS-DOS and translates it into Apple native ProDOS. You can store IBM programs and data on any ProDOS storage device including the Apple 3.5 Drive, Apple UniDisk™ 3.5, Apple 5.25″ drive, SCSI or ProDOS compatible hard drives. (You can use the Apple UniDisk 3.5 with its own controller card for storing programs and data, but not for directly booting an IBM formatted disk.)

You can even use our 360K PC compatible drive for ProDOS storage and a 143K Apple 5.25″ drive for MS-DOS storage.

Make your Apple speak IBM.

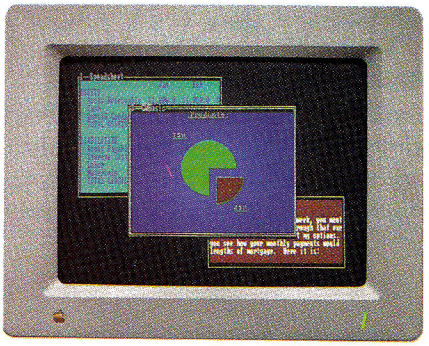
PC Transporter memory choices.

RAM in Apple mode:	RAM in IBM mode:	Price:
384K	**256K**	**$519.00**
512K	**384K**	**599.00**
640K	**512K**	**679.00**
768K	**640K**	**759.00**

Note: The IBM mode is 128K less because the PC Transporter uses 128K for system memory.

IIGS Installation Kit	**49.00**
IIe/II Plus Installation Kit	**39.00**
PC Transporter Accessories	
5.25″ IBM Format 360K Drive Systems	
Single-Drive System	**269.00**
Dual-Drive System	**399.00**
Half-Height Drive (add to Single-Drive system to make Dual-Drive)	**135.00**
IBM-Style Keyboard (required for Apple II Plus.)	**139.00**
IBM Keyboard Cable	**34.00**
Sony RGB Monitor	**529.00**
Analog RGB Cable (for use with Sony monitor)	**39.00**
Digital RGB Cable (for use with Sony monitor)	**39.00**
Digital RGB Adapter	**24.00**
ColorSwitch (included with IIGS Installation Kit)	**44.00**
128K ZIP PC Transporter Memory Expansion Chip Set	**80.00 per set**
8087-2 Math Co-processor Chip	**269.00**

See your dealer or call or send check or money order to Applied Engineering. MasterCard, VISA and COD welcome. Texas residents add 7% sales tax.



PC Transporter produces better IBM graphics than IBM. Analog is sharper than digital. So with an analog RGB monitor, PC Transporter's CGA graphics and text are superior to IBM's digital display — even while running IBM *software!*

And, you can also use an Apple composite monitor in IBM text or graphics mode.

Created by Apple's original designers.

The brains behind PC Transporter were also behind your Apple II.

The PC Transporter design team includes the former project managers for the creation of the Apple IIe and IIc. The co-designer of the Apple II disk controller. And the first full-time Apple programmer and author of the ProDOS operating system.

So you know the PC Transporter and your Apple were made for each other.

Support and service from the leader in Apple add-ons.

Applied Engineering sells more Apple peripheral boards than anyone else — including Apple Computer. So you know we'll be around after the sale.

PC Transporter comes with a 15-day money back guarantee. If you're not fully satisfied after using it, return it for a full refund. PC Transporter also comes with a 1-year warranty.

How to get your PC Transporter today.

See your dealer. Or call Applied Engineering any day between 9 a.m. and 11 p.m. CST at 214-241-6060.

APPLIED ENGINEERING™

The Apple enhancement experts.

P.O. Box 5100, Carrollton, TX 75011
214-241-6060
A Division of AE Research Corporation.

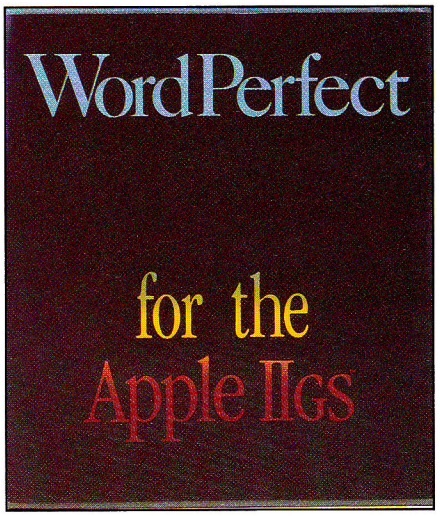
Apple II Plus must be FCC Certified. IBM and PC/XT are registered trademarks of International Business Machines. Lotus and 1-2-3 are registered trademarks of Lotus Development Corporation. MultiMate and dBASE III PLUS are registered trademarks of Ashton-Tate, Inc. MS and Flight Simulator are registered trademarks of Microsoft. Apple IIe and ProDOS are registered trademarks and IIGS and UniDisk are trademarks of Apple Computer.

WordPerfect IIGS 2.0; GS ComputerEyes; Playing with Science Part 1: Temperature; Science Toolkit Modules: Speed and Motion, Earthquake Lab, The Body Lab; At a Glance; Games Editors Play: GS Destroyer; Lane Mastodon vs. The Blubbermen; Gamma Force in Pit of a Thousand Screams; Pharaoh's Revenge; Short Takes

The Last Word

WORDPERFECT IIGS 2.0

WordPerfect Corporation, 288 West Center Street, Orem, UT 84057, (801) 225-5000
Word-processing software;
512K Apple IIGS
$179
Rating: ■■■■



If you're a professional author or businessperson hoping to team up your 512K GS (ROM version 01) with some high-octane word-processing software, test drive WordPerfect for the latest Apple II. WordPerfect GS offers power users more than 100 word-processing features that as a collection are offered nowhere else.

FINDING THE RIGHT M.O.

By its nature, WordPerfect GS offers so many choices for creating and formatting documents—even book-length manuscripts—that learning it can be daunting. Gone is the "crib-sheet" keyboard template that graces Apple IIes and IIcs running their own version of this program. In place of the template with its open-apple and closed-apple commands, the GS version offers not one, not two, but three ways of interacting with this high-performance software.

WordPerfect GS includes built-in scroll bars, dialog boxes, option buttons, mouse support, and ten pull-down menus (Apple, File, Edit, Search, Print, Line, Page, Style, Footnote, and Special).

Now, word-processing purists have long complained about switching back and forth from mouse to keyboard. They argue, and justifiably so, that it slows them down. No doubt figuring on that response, WordPerfect's developers added a second interface—a scrolling command box disguised under the Apple menu and unabashedly titled "Help." This menu provides easy access to an alphabetized listing of WordPerfect's dozens of features.

Want to check the spelling in your document? Press the control-S key combination. The Help menu pulls down to highlight the word "save," the first command listed beginning with the letter *S*. Continue to use the keyboard to fine-tune your "feature search." Having pressed *S*, now press *P*, then *E*, and finally the return key to activate WordPerfect's spelling checker. Next time, just press Control-S P E Return.

Still not fast enough? Power users can memorize the program's keyboard-equivalent commands. Don't use the mouse to pull down that File menu and click on "Save as." Don't type Control-Save A Return to go through the Help menu's feature search. Instead, just press an apple-S combination. Using keyboard equivalents keeps not only the mouse but the Help menu and its feature search tucked away unobtrusively—most of the time.

Those who prefer a strictly keyboard-oriented interface may be disappointed to discover that certain features—such as sizing or moving the program's multiple document windows or working in File Management mode—seem to require the mouse.

To be frank, WordPerfect's generous number of features can make learning the program especially tough on keyboard users, even though the program comes with a Quick Reference folder listing the program's options and the commands for perhaps half of them. Some are apple-key-based, while others use the option key. Until you master these commands—or alter them, as WordPerfect GS allows—you'll be wasting some of the precious time you saved by not using the mouse.

What's your best bet? Spend a few days experimenting with WordPerfect GS. See what interface combination you use intuitively. The mouse definitely works best for some features (such as accessing the spelling checker), while the keyboard works best for others (such as flipping the underline toggle).

Change the keyboard equivalents to suit your past experience with other Apple II or GS-specific programs. Set up new page-format parameters if you want and save them as defaults. (For some strange reason, right justification was turned on as a default in the version I tested.) Once these steps are accomplished, you can settle in to use the rest of WordPerfect's features to your advantage.

WORD-PROCESSING EVOLUTION

This edition of WordPerfect offers features found in previous versions, as well as some new features. In fact, name any word-processing feature, and WordPerfect GS has probably perfected it. Take

inCider's Ratings

Excellent—remarkable, a must buy	■■■■■
Very good—impressive and recommended	■■■■
Good—average, solid performance	■■■
Fair—flawed but adequate	■■
Poor—unacceptable or unusable	■



Why we make them where we make them.

Applied Engineering's products are made in America. Our main competitor's are manufactured in the Orient. We don't make ours in the U.S. out of habit or by accident.

There are patriotic reasons like doing something to favorably affect the trade imbalance and keeping American money in America.

There are also some very sound reasons why "Made in USA" makes a good deal of sense - to us as manufacturers and to you as our customers.

Quality control. We firmly believe that by manufacturing in America we can maintain better quality control by having a shorter communications pipeline between our engineering, technical support and production staffs.

Customer Service. Our business is one of continuous, close contact with our customers . . . often working with you on new ideas; always offering advice and technical support for the optimal use of our products. We're much better able to maintain that closeness by making our products here.

Flexibility. By manufacturing here, we can more quickly adapt to the Apple market's rapidly changing conditions: responding to sudden demand, avoiding excessive inventories, utilizing available capital more efficiently.

Eight years ago, we began as a tiny garage operation, not unlike a couple of now-famous friends. Today, we have more than 185 products in our line, and Applied Engineering is universally recognized as the industry leader.

Applied Engineering's products are operating today from the White House to the Wozniak house. From helping the Department of Defense and NASA to helping save the whales off San Diego.

It was no accident our success story happened in America. We Americans may not have a monopoly on good ideas, or even technological innovation, but we DO have an environment in which a couple of folks with a good idea can make it work.

We're grateful for that. And today, on America's birthday, we wanted you to know.

APPLIED ENGINEERING™

The Apple enhancement experts.

headers and footers—not only can you define two of each but you can place them (and page numbers, as well) virtually anywhere you want.

Users who complain that certain programs, such as MultiScribe GS, GraphicWriter, and others, support only the ImageWriter II will have a field day with WordPerfect GS. I'd wager that this program supports every printer model I've ever seen listed anywhere, including the LaserWriter and LaserWriter Plus. And, like the Apple IIe version, WordPerfect GS lets you define as many as three custom printers.

In the rare event that your printer isn't listed, the Utilities disk that accompanies WordPerfect GS includes programs for modifying printer and interface definitions, as well as system utilities, file-conversion, file-recovery, and dictionary-creation programs.

Writers and business professionals will appreciate having a 115,000-word spelling checker and a 10,000-headword thesaurus built into WordPerfect GS. The spelling checker, which finds not only spelling errors but assorted typos (including double words), also provides a word count. The speller is reasonably fast and gives you the opportunity to skip, change, or add to the dictionary each suspected error it discovers. The thesaurus is just as easy to use, and the program can automatically substitute in the text the synonyms or antonyms you select.

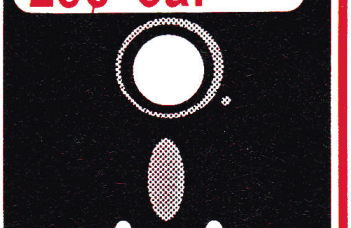
Advanced WordPerfect GS features include the ability to create, store, and respond to macros you've created—another time-saving feature. With the program's assorted merging capabilities, businesspeople can create personalized mass mailings and reports based on information integrated from two separate files. Just set up the second file as you might a database.

DISKETTES!

3.5" DS/DD
135 TPI Diskettes
$1.19 ea.
Qty of 100

FREE shipping for orders of $100 or more! (Otherwise add only $3.50!)
Prices subject to change.

5.25" DS/DD Diskettes
29¢ ea. Qty of 100



Incl. Color-Coded User Labels
$1.29 ea. qty of 50
$1.39 ea. qty of 25

IN STOCK!

Incl. Paper Sleeves (Tyvek add 4¢), Labels, & Write Protect Tabs

Imagewriter™ Ribbons!
$3.95 ea.
Other Products Available!

•NO EXTRA CHARGE for VISA/MC.
•Check or Money Order accepted.
•Please add $2.50 for C.O.D.
•Ohio residents add 5.5% sales tax.
•School PURCHASE ORDERS accepted!

GUARANTEE!
ORDERS SHIP IN ONE BUSINESS DAY!
-Diskettes are 100% certified DS/DD Error Free!
-If you are not completely satisfied, simply return the product for refund or replacement.

DIRECT MICRO
1776 Dividend Drive
Columbus, Ohio 43228
(614)-771-8771

TO ORDER CALL 1-800-288-2887
Hours: Monday-Friday, 9 a.m.-7 p.m. EST

Circle 24 on Reader Service Card.

At a Glance

Picture Manager (February 1988, p. 28), StyleWare, 5250 Gulfton, Suite 2E, Houston, TX 77081, (713) 668-1360, $39.95
Rating: ■■■■

Picture Manager is an add-on to StyleWare's MultiScribe word processor that lets you merge Dazzle Draw and Mouse Paint graphics into your MultiScribe documents. The document you're working on remains in memory, so there's no need to leave the program.

Select a graphic and Picture Manager displays it in double-hi-res in a small box you can shrink, expand, or position anywhere on screen. Frame the drawing you want to merge, select the copy option from the Edit menu, then return to MultiScribe. When the text you were working on reappears, move your cursor to the point on the page where you want the picture. Select "paste" from the Edit menu and within seconds, your text and graphic are merged—just like that.

The MultiScribe editing window is narrower than the full screen, so it doesn't always let you display and merge an entire picture. That's not a problem as long as you don't need to import a large graphic. Picture Manager uses the same Mac-like interface as MultiScribe, and it's very easy to operate.

Desk Accessories (February 1988, p. 28), StyleWare, 5250 Gulfton, Suite 2E, Houston, TX 77081, (713) 668-1360 $39.95
Rating: ■■■■

Also an add-on for the word processor MultiScribe, Desk Accessories adds a calendar with notepad, scientific calculator, control panel, clock, and puzzle. These are online accessories, so there's no need to exit from MultiScribe; you return to your current document after using them.

The calendar lets you enter notes for any date between January 1, 1901, and December 31, 2156. You flip through months with a scroll-bar elevator or the arrow keys. The left-right arrow keys move through months; the up-down arrow keys move through years.

The calculator is a full-featured scientific tool, including addition, subtraction, multiplication, and division, plus trigonometric, logarithmic, and square functions. You can define eight separate macros from the control panel. Each macro can contain up to 31 keystrokes. Macros can contain text only, a series of commands, or both.

The clock displays the system time and date from a ProDOS-compatible clock card. The puzzle is the standard 16-square array of 15 numbers you have to rearrange in order—a nice diversion. Overall this collection of Desk Accessories is a useful addition to MultiScribe.

Bank Street School Filer (February 1988, p. 31), Sunburst Communications, 39 Washington Avenue, Pleasantville, NY 10570, (800) 431-1934, $99
Rating: ■■■■■

Bank Street School Filer is designed for wide-ranging classroom instruction. Ten sequential lessons cover everything from how to boot the program disk and retrieve a file to creating and revising your own database.

The core of the database activities is a group of 27 "canned" files ranging in subject matter from whales, dinosaurs, and eats to finance, inventory, and overdue items (for keeping track of library books). These prepared databases save students and teachers the frustration of

Continued

Continued

creating their own, and are helpful in teaching database terminology and concepts.

The Print Shop IIGS (March 1988, p. 28), Broderbund Software, 17 Paul Drive, San Rafael, CA 94903, (415) 492-3200, $59.95
Rating: ■■■■■

The Print Shop is back. The IIGS version has retained the familiar listed-menu setup, but now the colors are striking. Print Shop IIGS features 24 built-in single- or multicolor borders, 64 color graphics, and 12 fonts. Choose designs by number to speed up selection. Print text in black, purple, blue, green, yellow, orange, red, and "rainbow."

Creating signs, letterheads, banners, and cards is as easy as ever. Use the predrawn letterhead and banner images, or use the Graphic Editor to modify and create your own. Printing is easier than ever. Instead of the blinking "Thinking" and "Printing" messages of the previous Print Shop, the GS version has a moving square cursor that shows you how far it has to go—and printouts are among the best available.

GraphicWriter 2.0 (March 1988, p. 34), DataPak Software, 14011 Ventura Boulevard #507, Sherman Oaks, CA 91423, (818) 905-6419, $149.95
Rating: ■■■■

The 2.0 in GraphicWriter 2.0 is very important. DataPak has made quite a few improvements on the original. The new GraphicWriter features automatic multicolumn formatting, more than 1100 type-style variations, define-your-own point sizing, graphics and text integration wth automatic word wrap, and a number of other "desktop publishing" features.

The word-processing portion includes advanced formatting commands such as justification, tab setting, variable lines per inch, headers and footers, and free-form page numbering. The most powerful feature is the ability to create regions. Each region is independent of the others, can take on different sizes and shapes, and can be moved without disturbing the other regions. Object regions can include text and graphics; canvas regions can only contain graphics images. GraphicWriter 2.0 is a powerful, easy way to produce sophisticated page layouts.

ThunderScan (January 1988, p. 26), Thunderware, 21 Orinda Way, Orinda, CA 94563, (415) 254-6581, $219
Rating: ■■■■■

ThunderScan is an Apple II image-acquisition system, letting you transfer real-world images to your computer's graphics screen. Its optical sensor attaches to an Apple ImageWriter or ImageWriter II; it replaces your ribbon cartridge and "reads" pictures and documents you insert into the printer's paper feed.

ThunderScan differs from ComputerEyes, VisionPlus, and other similar devices that transfer images from a video camera or videotape machine. ThunderScan's digitized images are of better quality than ComputerEyes' and are comparable to those produced with VisionPlus on the GS. Palette control is on a par with VisionPlus', but it's not as simple. Unlike a video digitizer, ThunderScan can capture only images you feed through your ImageWriter. It's an economical way to digitize if you already own an ImageWriter.

Postcards (GS version) (January 1988, p. 29), Activision, Inc., P.O. Box 7286, Mountain View, CA 94039, (415) 960-0410, $29.95; blank Postcards $4.50 (50), $7 (100), $9 (150)
Rating: ■■■■

Continued

SPECIAL GS FEATURES

Besides its mouse-based graphics interface, WordPerfect offers some other singularly GS features. You can use the program's RGB (red, green, and blue) sliders to alter screen appearance by "mixing" colors for background, text, boldface, and inverse boldface.

WordPerfect GS is nearly perfectly WYSIWYG (what you see is what you get) in still other respects: Underlined text shows up underlined on screen, for instance, though in actual printing you have a choice of underline styles—continuous or broken, single or double, depending on your printer's capabilities.

Nevertheless, your printer may have some acumen WordPerfect GS can't exploit. While the program supports various type-style features (bold, underline, superscript, subscript, and pitch), it doesn't support fancy fonts and color printing. If you prefer a graphics word processor, you may be better off with MultiScribe GS or the AppleWorks/TimeOut SuperFonts combination—that is, unless you require WordPerfect's word-processing features, many of which these other programs lack.

WordPerfect doesn't suffer from some practical limitation on file size; your file can be as large as the medium on which it's stored. A single document on a 3½-inch disk can be about 800K long. The maximum file size the program can handle is 16 megabytes.

You can hasten operations by setting up a RAM disk, as long as your GS has at least 1 megabyte of memory. Regardless of disk size or type (RAM, floppy, or fixed), the program manual recommends that you limit documents to between 20 and 70 pages each to maximize scrolling and editing speed.

FINISHING TOUCHES

Like AppleWorks, WordPerfect hides formatting codes until you want to see them. When you're ready to edit your document, press Option-S or use the mouse to select "Show Codes" from the Edit menu. WordPerfect splits the screen horizontally to display codeless text in the top half and code-riddled text at the bottom.

During text creation, you can select WordPerfect's "Clean Screen" feature to remove extraneous entities, such as the menu bar and other graphics features. Only your text and the status line appear.

While you may take many of WordPerfect GS' basic features for granted, you'll fully appreciate options like Insert Date. Define any date/time format you want and the program enters it for you wherever and whenever you like. WordPerfect reads the GS' built-in clock automatically.

Other convenient features include Center Page (for creating neatly printed title pages) and Binding Width (for shifting margins on even and odd pages to accommodate staples, punched holes, or other binding methods).

Improved documentation and error handling could help flatten and smooth WordPerfect's learning curve. Although the tutorial is clear and well written, it seems to have been prepared almost exclusively for the mouse user. Virtually all instructions tell you to pull down this and click on that. As mentioned before, keyboard users actually need more assistance in learning WordPerfect GS.

The manual includes what appears to be a complete listing of error messages and explanations. The program itself is careful to ask questions such as "Replace existing file?" Still, there are times when more dialog would help. For instance, displaying the message "Pathname too long" would have clearer meaning for ProDOS initiates than the vague "Invalid Pathname" retort.

WordPerfect Corporation offers exemplary support. WordPerfect GS comes with a 90-day warranty that covers more than just the disks. Unlike many companies that guarantee the medium only, "WordPerfect Corporation warrants that the program will perform in substantial compliance with the enclosed documentation." The company assures users that if it can't fix defects you find and report in writing within 90 days of purchase, it will refund your money.

While you're learning the program, remember that technical assistance is just a toll-free phone call away, though you shouldn't be surprised if the number is often busy.

Continued

The GS version of Postcards is an enhancement product for Activision's Paintworks Plus. It works like a single-function clip-art disk, and features the same colorful screens, pull-down menus, and mouse power. You begin with a postcard template resembling a blank picture frame. After selecting a background scene from the ten pictures offered or creating your own, you choose from nearly 200 graphics, ranging from realistic to bizarre. If this selection falls short, you can also import pictures from Activision's Clip Art Gallery.

Select an appropriate postcard message in a variety of fancy fonts and print your card. (Paintworks Plus supports the ImageWriter II for both black-and-white and color printing.) Although the program's noncopy-protected, it's good form to use the Paintworks Plus "save as" command as you create. The final stage is cutting and pasting (literally) your creation from ordinary printer paper to postcard stock—the glue stick is included. Postcards gives you a chance to show off your talent, your sense of humor, and your Apple IIGS.

First Letters and Words (March 1988, p. 44), First Byte, 3333 East Spring Street, Suite 302, Long Beach, CA 90806, (213) 595-7006, $49.95
Rating: ■■■

First Letters and Words includes four separate activities. With varied success, three attempt to expand reading-readiness skills. The most elementary module introduces upper- and lowercase letters, related sounds and objects, and a sentence using digitized words. Video and audio combine to reinforce these concepts in module 2, followed by Who Am I, a riddle game.

Although voice reproduction is reasonably good, children at reading-readiness level will have difficulty understanding the words and solving the riddles. The fourth module attempts to teach children color and body parts, but kids can play it without benefiting from its instruction. The program's educational goals are hazy and the results tough to tell. Although the program needs 768K of memory and does some interesting things, it doesn't really take full advantage of the GS' capabilities.

End

WordPerfect GS isn't copy protected, but you can use the program on only one Apple at a time. If you have more than one GS in your office, you should purchase a complete WordPerfect package for each one.

Earlier versions of WordPerfect for the IIe and IIc have helped earn the program its widespread reputation as perhaps the only truly full-featured word processor for the Apple II family. With the GS version, WordPerfect maintains and enhances that well-deserved reputation.

But for all its many wonderful features, WordPerfect may challenge you to negotiate a very steep learning curve. As with most GS programs, mouse users have a clear advantage in learning and using WordPerfect GS.■

Cynthia E. Field, Ph.D.
Wakefield, RI



P.O. Box 293067 • Dayton, Ohio 45429

"Request Line" for your Favorite Hit. . .

1-800-356-9566

Open 9 a.m.-8 p.m. • Mon-Fri • 1-513-299-2325

ACCESS
Famous Course Disk #1 for WCLB $14
Famous Course Disk #2 for WCLB 14
World Class Leader Board 25
ACCOLADE
Graphic Studio GS $39
Hardball 19
Hardball GS 25
Mean 18 Golf GS 25
Famous Course Disks #2 for Mean 18 GS 14
Famous Course Disks #3&4 for Mean 18 GS 23
ACTIVISION
Aliens 128K $23
Draw GS 57
Ghostbusters 10
Little Computer People 10
List Plus-GS 65
Maniac Mansion 128K 23
Might and Magic 32
Music Studio GS 57
Paintworks w/Clip Art GS 42
Rampage 128 K 23
Shanghai 23
Shanghai GS 29
Teleworks Plus GS 65
Writer's Choice Elite GS 57
ARTWORKX
Bridge 5.0 $19
International Hockey 19
Strip Poker 19
Data Disk #1 (Female) 14
Data Disk #2 (Male) 14

BAUDVILLE
Award Maker Plus $24
Dream Zone GS 32
Ski Crazed 19
Video Vegas 19
BERKELEY SOFTWORKS
GEOS $79
BRODERBUND
Animate 128K $42
Bank St. Writer Plus 128K 47
Carmen San Diego Europe 128K 29
Carmen San Diego USA World 28
Dazzle Draw 128K 25
Fantavision GS 34
On Balance 128K 39
Print Shop (Enhanced) 39
Print Shop Companion 29
Print Shop GS 23
P.S. Graphics Library #1, 2, 3 ea. 14
P.S. Graphics Library Sampler Edition GS 23
Show Off GS 39
Wings of Fury 128K 23
CENTRAL POINT
Copy 2 $25
DAVIDSON
Math Blaster Plus 128K $29
Math & Me 128K 23
Read 'N Roll 128K 29
Spell It 29

ELECTRONIC ARTS
Adv. Const. Set $10
Archon 1 or 2 ea. 10
Arcticfox 26
Bard's Tale 29
Bard's Tale GS 32
Bard's Tale 2 32
Bard's Tale 3 Call
Chessmaster 2000 26
Chuck Yaegar's AFT 26
Death Lord 26
Deluxe Paint II GS 65
D. Paint Art #1 GS 19
D. Paint Art #2 GS 19
Deluxe Print 2 GS 32
Earth Orbit Station 23
Empire 32
Instant Music GS 32
Legacy of the Ancients 26
Lords of Conquest 10
Marble Madness 128K 26
Marble Madness GS 26
Mavis Beacon Teaches Typing GS 29
Murder Party 10
Music Const. Set 10
Music Const. Set GS 32
One-on-One 10
Pegasus 23
Pegasus Advanced Battle Disk 10
Pinball Const. Set 10
Scrabble 10
Skyfox **GAMESTAR**
Strike Fleet 26 Champ. Baseball 128K $24
Wasteland 10 Champ. Basketball 128K 24
World Tour Golf GS 23 Champ. Basketball GS 29
Call Champ. Football 128K 24
26 Star Rank Box 2 128K 24

EPYX
Boulder Dash Const. Kit $16
California Games 128K 24
Champ. Wrestling 128K 14
Destroyer 128K 24
Destroyer GS 24
Print Magic 128K 39
P.S. Graphics Scrapbook #1 Sports 10
P.S. Graphics Scrapbook #2 Off the Wall 10
P.S. Graphics Scrapbook #3 School 10
Rad Warrior 128K 16
Spy vs. Spy 3 128K 16
S.S. Baseball 128K 24
Sub Battle Simulator 24
Sub Battle Sim. GS 24
Summer Games 1 14
Summer Games 2 14
Temple Apshai Trilogy 14
Winter Games 14
Winter Games GS 24
World Games 128K 24
World Games GS 24

INFOCOM
Beyond Zork 128K $32
Border Zone 128K 24
Hitchhikers Guide 24
Leather Goddesses 24
Nord & Bert 24
Sherlock Holmes 24
Stationfall 24
The Lurking Horror 24
Zork 1 10
Zork Trilogy 32
LEARNING COMPANY
Math Rabbit $24
Reader Rabbit GS 39
Reader Rabbit 24
Think Quick 32
Writer Rabbit 30
MICROPOSE
F-15 Strike Eagle $21
Pirates 128K 25
Silent Service 21
Silent Service GS 25
MINDSCAPE
Balance of Power 128K $29
Crossword Magic 32
Indoor Sports 128K 19
Infiltrator 2 19
Into the Eagle's Nest 128K 23
Perfect Score SAT 44

ORIGIN
Autoduel $32
Moebius 24
2400 A.D. 16
Ultima 1 or 3 ea. 24
Ultima 4 24
Ultima 5 36
39
SHARE DATA
Family Feud $10
Jeopardy 10
Wheel of Fortune 128K 10
SIERRA
Black Cauldron $24
King's Quest 1 GS 24
King's Quest 1 32
King's Quest 2 or 3 ea. 32
Leisure Suit Larry GS 24
Leisure Suit Larry 128K 24
Mother Goose 128K 19
Police Quest GS Call
Space Quest GS 32
Space Quest 128K 32
Thexder GS 23
SIR TECH
Deep Space $24
Return of Werdna 39
Wizadry Series: Knight of Diamonds 32
Legacy of Lylgamin 32
Proving Ground 32

SSI
B-24 $21
Phantasie 1 or 2 ea. 24
Realms of Darkness 24
Rings of Zilfin 24
Roadwar 2000 24
Roadwar 2000 GS 29
Roadwar Europa 24
Shiloh: Grant's Trial in the West 24
Wizard's Crown 24
SPRINGBOARD
Certificate Maker $24
C.M. Library Vol. 1 19
Early Games 24
Easy as ABC 24
Newsroom 35
N.R. Clip Art #1 or #3 17
N.R. Clip Art #2 23
Publisher 79
STYLEWARE
Desk Works GS $39
Multiscribe 3.0 (128K) 49
Multiscribe GS 65
M.S. Font Library GS 24
Top Draw GS 59
SUBLOGIC
Flight Simulator 2 $31
F.S. Scenery Disks Call
Jet 26
TIMEWORKS
Publish It! 128K $65
ROGER WAGNER
Merlin 8/16 $79
Mouse Write 128K 89
Softswitch GS 39

SPECIALS

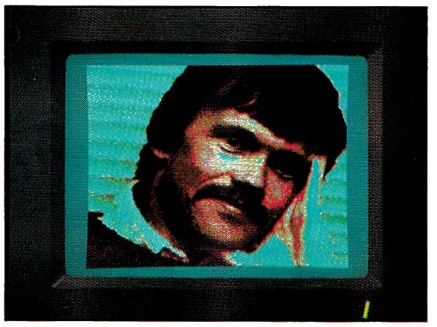
	Retail	Special
ACTIVISION		
Greet Card Maker	39.95	15.00
DAVIDSON		
Alge-Blasters	49.95	20.00
Grammar Gremlins	49.95	20.00
Math Blasters	49.95	20.00
Word Attack	49.95	20.00
EPYX		
Worlds Gr. Baseball	19.95	8.00
Worlds Gr. Football	19.95	8.00
MECA		
Managing Your Money	149.95	50.00
MEGAHAUS		
Mega Works	99.95	40.00
Report Works	99.95	40.00
MICROLEAGUE		
Baseball	39.95	15.00
Box Score/Stat Comp	24.95	10.00
1986 NL/AL Teams	19.95	8.00
GM/Owners Disk	29.95	12.00
MINDSCAPE		
Graphics Works	99.95	40.00
Bank St. Music Writer	49.95	15.00
PINPOINT		
Micro Cookbook	39.95	15.00
SOFTWARE TOUCH		
Font Works A	49.95	20.00
Font Disk A	29.95	12.00
Auto Works A	39.95	15.00
Program Wtier A	49.95	20.00
SPINNAKER		
Kindercomp	29.95	12.00
SSI		
Computer Quarter Back	14.95	7.50
Phantasie III	39.95	15.00
UNITED SOFTWARE		
ASC II Express	129.95	50.00
WEEKLY READER		
ABC	39.95	15.00
TYPING	39.95	15.00
Town Builder	39.95	15.00
Math 3-5	39.95	15.00
Math 2	39.95	15.00
Music	39.95	15.00
Numbers	39.95	15.00
Spell Grabber	39.95	15.00
Printer	39.95	15.00

*Limited quatitites on these specials.

TERMS

We accept all major credit cards with no handling charges. We do not charge your account until your order is shipped. Cashiers checks and money orders shipped immediately. Personal and company checks, allow three (3) weeks clearance. CODs, add $4.00. Orders under $100.00 add $3.00 shipping: over $100 free shipping. AK, HI, FPO, APO add $5.00 on all orders. Canada and Puerto Rico add $10.00 on all orders. Ohio residents add 6.0% sales tax. Defectives replaced within 10 days (call 1-513-299-2325 for RA#). Compatibility not guaranteed. Prices subject to change without notice.

Circle 130 on Reader Service Card.



These Eyes

COMPUTEREYES FOR THE IIGS

Digital Vision, 66 Eastern Avenue, Dedham, MA 02026, (617) 329-5400
Color video digitizer; 512K Apple IIGS
$249.95
Rating: ■■■■

The *G* in GS stands for *graphics*, of course, reminding you that the Apple IIGS can display brilliant, multicolor images. You can buy any number of tools, particularly paint programs like Deluxe Paint II and Paintworks Plus, to create images with the GS, but to be useful they require at least a modicum of talent on your part. ComputerEyes for the Apple IIGS is also a tool for creating high-quality graphics—but to demonstrate your graphics ability with ComputerEyes, *G* doesn't have to be your middle name.

CAPTURING COLORS

ComputerEyes for the IIGS is a color video digitizer with two major components: a GS expansion card that converts analog video signals to the digital data your computer can manipulate, and software to perform that manipulation. The result is a system that lets you capture a video picture and display it as an Apple IIGS picture.

ComputerEyes for the IIGS requires 512K; it won't run on a bare-bones 256K machine. (Remember when 256K was considered a lot of memory for an Apple II?) The digitizing board is a compact unit you can plug into any GS expansion slot. To avoid conflicts with the machine's ports, however, the manual recommends you use slot 3, 4, or 7. I installed ComputerEyes in slot 4 without any difficulty; the board didn't interfere with the operation of any other GS peripherals.

The ComputerEyes board carries 13 chips and a couple dozen discrete components—resistors and capacitors and such. The presence of two jumpers on the back indicated last-minute modifications, but my concern proved ill-founded, as the board never failed to do its job.

Three RCA cables are connected to the board; the most important connects the ComputerEyes board to a video source—a VCR, videodisc player, video camera, or camcorder. To test the board, I hooked it up to an 8mm Kodak camcorder.

The other two cables are useful only if you use a composite monitor with your GS: One cable connects to the composite-video slot of your computer, while the other connects to your composite monitor. You can switch your viewing between signals from the computer and the video source to preview the video signal on a composite monitor before you digitize it. Note that ComputerEyes doesn't put out an RGB signal, so you can't preview the video source on the standard GS monitor.

Once the board was in place, I booted the system with a backup copy of ComputerEyes' software. The first time you boot it you must specify the slot in which you've installed the ComputerEyes board and the type of monitor you're using—composite or RGB. Once you've configured it, the system's ready to go.

DIGITAL CONTROL

The ComputerEyes software uses an AppleWorks-style interface. The main menu includes seven items you can select with either the keyboard or a mouse: View Video Image, Capture Image, Ad-

ProTERM™

Easy to Use! For the IIGS, //e, //c & Laser

ProTERM 2.0 is simply the best telecommunications package ever released for the Apple II computer. It is an integrated package with the most advanced features available anywhere, yet it is still the easiest-to-use modem software around. ProTERM is the **new standard** for communications packages on the Apple II.

	ProTERM	Point-To-Point	MouseTalk
VT-100 Emulation	**Y**	N	N
Expanded RAM cards supported	**Y**	N	N
Capture buffer	**2.5 Mb**	N	4 pages
Copy buffer	**45K**	17K	36K
Dial lists	**unlimited**	16	—
File transfer protocols	**7**	4	3
Copy files, Format disk	**Y**	N	N
Load/Save AppleWorks™ files	**Y**	N	N
Editor commands	**42**	12	14
Set page margins	**Y**	N	N
Print formatting commands	**Y**	N	N
Automatic learn keyboard macros	**Y**	N	N
Procedure macros	**unlimited**	N	N
Commands available	**20**	N	N
PRICE	**$129.95**	$129.95	$99.95

Also, fine hardware products from Checkmate Technology:

MemorySaver - ROM disk system for the Apple IIGS	$149.95
MultiRam GS - Up to 2 Mb of memory for the Apple IIGS	from $229.95
MultiRam CX - memory upgrades for the Apple //c	from $219.95
MultiRam //e & RGB - memory upgrades for the Apple //e	from $144.95

For more information about Checkmate's full line of Apple II & Macintosh products, see your favorite dealer or order directly from:

Checkmate Technology, Inc.
509 S. Rockford Dr. - Tempe, AZ 85281
(800) 325-7347 • (602) 966-5802

All prices are subject to change without notice.

VISA

Circle 123 on Reader Service Card.

Re-ink ANY FABRIC RIBBON automatically for LESS THAN 5 CENTS with

MAC INKER™

Over 100,000 sold



FREE BOTTLE OF INK, RESERVOIR CAP & INK METER

MAC INKER

IMAGEWRITER I AND II	$42.00
EPSON	$42.00
UNIVERSAL (INCL. IMAGE LQ)	$68.50
MULTICOLOR IMAGEWRITER	$80.00
MULTICOLOR ADAPTER ONLY	$40.00

Shipping $3.00

- Applications: Dark, lubricated ink extends print-head life. Re-ink in color too. 2 oz. bottle $3.00; pint $18.50. We have a full range of special inks, heat transfer inks, cartridges and Mac Inkers available.
- Over 16,000 cart./spools supported.
- Dedicated Mac Inkers available for extra large or special cartridges

RIBBONS

Imagewriter Cartridge	$3.15 ea
4 Color Imagewriter Cartridge	$10.00 ea

MODEMS

Mercury 1200AT	$109.00
Mercury 2400	$239.00
Capricorn World Minimodem *	$169.00
Quick Link MAC software (w/ modem)	$15.00
Commworks Apple software w/ modem	$60.00
Cable	$15.00

* Capricorn - 300/1200 baud, supports both US & European standards.

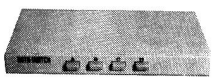
100% Hayes Compatible!

Shipping $5.00



- 24 month warranty
- Status lights
- Speaker
- Call progress monitoring

DATA SWITCHES



$50.00

Cable $15.00
Shipping $5.00

8 or 9 pin models available

We have switches and buffers for any application, at the best prices in the nation. Ask for brochure.

Cables: We carry cables for Apple computers and peripherals. Rapid turnaround on custom orders. Competitively priced.

SPECIAL OFFER: For orders of $100.00 or more. Tell us where you read this ad and get a free keychain, beeper, and flashlight combined! A $15.00 value!

30 day money back guarantee
on all products. 24 hour shipping.

ORDER TOLL-FREE
1-800-547-3303

IN OREGON
(503) 626-2291

Computer Friends®
14250 N.W. Science Park Drive
Portland, OR 97229,
Telex 4949559, Dealers Welcome.

Circle 288 on Reader Service Card.

just, Options, View Current Image, Modify Image, and Disk Access/Printing.

Not bothering to read the manual (as usual), I pointed the camcorder at my dog and selected Capture Image from the menu. After indicating I wanted a Color 320 Super image, the software began scanning the video signal coming in from the camcorder. After six seconds, it began assembling a palette. Four seconds after that, it displayed a slightly blurred but recognizable picture of puppy Mae.

The blurring occurred because Mae can't sit still for six seconds, the time required by ComputerEyes to complete its scan. That's one of the limitations of this system—it's useful only for digitizing still objects. It's not practical to digitize moving objects with a camera or to digitize from a VCR that doesn't have a high-quality pause or stop-action feature. Blurring aside, ComputerEyes had passed the first test: It's straightforward enough to use without reading the documentation.

Of course, using it and using it well are two different things. Shortly thereafter, I referred to the manual for help in capturing high-quality images. The first and most important adjustment I made was to do a *white balance*, which fine-tuned the color of the subsequent images I captured.

ComputerEyes lets you set other parameters, as well, such as brightness and contrast, before you digitize an image. I found it best, however, to make these adjustments (with the exception of changing capture speed) after capturing an image. It saves a lot of time, because the software can recalculate an image in four seconds as opposed to the ten seconds it takes to capture and calculate a new image. Also, any changes you make in a captured image are reversible.

The Adjust menu lets you change the brightness and contrast of a captured picture. You can change the color balance manually here also, although I found I got the best results by leaving the color balance alone after setting it from the Capture menu.

The ComputerEyes software lets you make many other changes in images you've captured or those you've loaded from disk. Routines selected from the Options menu let you convert any Apple II image to any other Apple II graphics mode. Conversions the system supports directly, such as Color 320 Super to Double-Hi-Res, produce the best results, but even conversions that require multiple steps generally yield good results.

Other changes you can make from the Options menu include setting the number of colors or grey levels (below the maximum number available in a particular display mode), setting the separation (or minimum difference between any two colors in the palette), and changing the capture speed from six to 12 seconds (in 320 mode), which may result in a sharper image. The last item on the Options menu lets you choose between displaying double-hi-res images in color or black-and-white.

You can make further changes from the Modify Image menu. Here you can adjust the threshold levels of an image, mirror it, invert (negate) it, scroll (with or without wrap), and resize it. If you don't like any of the modifications you've made, you can always restore the original.

From the main menu, View Current Image displays the image you have in memory, while Disk Access/Printing lets you load and save images and print them with an Apple ImageWriter.

A HELPFUL TOOL

Within limits, ComputerEyes for the Apple IIGS is a very good image-acquisition system. It lets you capture beautiful shots you can use with your GS software or modify with a paint program. ComputerEyes also provides powerful tools for manipulation you can use with any picture file, not simply those you capture with the system.

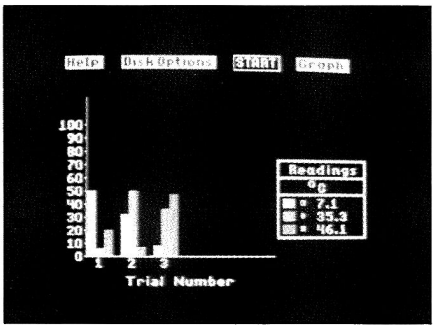
Remember, though, that GS ComputerEyes is limited by its slow scan rate and by the computer itself. The slow scan rate restricts the types of images you can capture to still shots and the type of video device you can use for input to a camera or a multihead VCR. The GS limits the result to 16 colors or 16 shades of grey. You'll get the

best effects if you restrict your digitizing to simple scenes that don't have a lot of subtle shading.

ComputerEyes is a powerful, affordable image-acquisition system. If you want to capture and display beautiful images on your GS or if you want raw material for your paint program, ComputerEyes is a good tool at a good price.■

Robert M. Ryan
Hancock, NH

Editor's note: Since this review was written, Digital Vision has updated the ComputerEyes IIGS software. Version 2.0 now offers nine additional or updated features—refined color calibration, compatibility with Print Shop GS, optional color and black-and-white image dithering, restoration of the previous version of an image, a freeze-palette option, a new keyboard interface, an option to save and load "raw image data," and standard hi-res display.



Hot Stuff

PLAYING WITH SCIENCE PART 1: TEMPERATURE

Sunburst Communications Inc., 39 Washington Avenue, Pleasantville, NY 10570, (800) 431-1934, (914) 769-5030
Experiments to measure temperature; any 64K Apple II (Apple II Plus requires 16-pin I/O game-port adapter cable), printer optional
$85
Rating: ■■■■

Why does the liquid in a thermometer rise when the temperature increases? Can you boil water in a paper bag? How come it takes so long for a large block of ice to melt? Can water be hot and cold at the same time?

If you'd like scientific answers to these real-life questions, take a look at Playing with Science, Part 1: Temperature. This exciting package lets you turn your Apple II into an interactive science lab. Kids in kindergarten through seventh grade can perform as many as 33 different temperature experiments with the help of their Apples and some common objects.

GETTING WARMER

As they "play" with science, students will learn how a thermometer measures temperature (in Celsius as well as Fahrenheit). The program challenges them to perceive differences between hot and cold. They can examine the effects of sunshine and discover how human skin detects temperature. Some experiments focus on why things get warmer. Others look at why we feel cold when the wind blows, what color clothing retains the most heat, and why gloves are warm on the inside.

Playing with Science is easy to use. Even young children can explore and record a variety of temperature changes. In the process, they gather valuable insights while practicing the scientific method.

Teachers don't need any science background to perform the experiments in their classrooms. The accompanying 259-page *Teacher's Guide* contains all the instructions necessary to explain activities and carry them out, as well as lesson plans for each of the experiments and suggestions for using them in single-computer or multicomputer classrooms. There are student activity sheets, topics for post-experiment discussion, ideas for additional follow-up exercises, and teacher-oriented essays.

Playing with Science comes with all the hardware necessary to perform the suggested experiments. Attach thermistors directly to the central connector to perform the experiments. Daring, electrically minded souls can construct their own inexpensive extension cables and thermistor probes by following the detailed technical instructions at the back of the *Teacher's Guide*.

TEMPERATURE ZONES

Before beginning any experiments, you'll need to calibrate the thermistors to give accurate temperature readings. Load the program and press Control-T from the main menu to access the utilities. Select "Calibration" and follow the on-screen instructions.

You'll have to place the thermistor probes in very hot water along with a standard thermometer. Wait about three minutes for the temperature of the water to stabilize. Then take the temperature reading from the standard thermometer and type it into the computer. Repeat the procedure with ice water. Calibrate the thermistors a number of times for greater accuracy.

The utilities also include a number of valuable options—Disk Commands, Program Control, Printer Selection, and Calibration Utility—to modify the program setup for your specific hardware configuration. Disk Commands lets you format a data disk, catalog the files on your disk, copy data files from one disk to another, and erase data disk files. Program Control lets you select a temperature scale, designate your second drive as the data disk drive, and set the highest and lowest temperature values to be displayed during data collection. The range is 0 to 100 degrees Celsius or 32 to 212 degrees Fahrenheit.

Program Control also lets you specify the data-display format. You can have the program present your data as a line or bar graph, or you can read the data from an on-screen thermometer complete with simulated mercury movement. For classrooms with only one computer, there's an optional digital display with large, easy-to-read numbers.

To print the data you collect during an experiment, choose Printer Selection from the Utilities menu, then the appropriate printer, interface card, and printer slot.

Playing with Science can take temperature readings for as long as 23 hours 59 minutes. Students can leave an experiment going overnight and analyze the results of their data during class the following day. Most experiments should work quite well with a designated data-collection period of about 5–7 minutes.

Temperature range, type of display, time of experiment, and number of active thermistors are variables determined by each experiment. Refer to the *Teacher's Guide* for particular setup details. You can designate the number of active thermistors with the Program Control utility.

EXPERIMENT AWAY

Once you've worked your way through the Utilities to familiarize yourself with the program features, you're ready to conduct an experiment. Pick one from the *Teacher's Guide* and follow the setup instructions. Then select "Do an Experiment" from the main menu and "Start" to begin gathering data.

You can preset the setup defaults to let students begin collecting data right after loading the program. At the bottom of the experiment screen is a memory indicator. When the bar is full, the program stops collecting data and lets you know it's time to save the information you've already gathered. Once you've saved your data, you can clear memory and begin a new experiment or continue the one in progress. A load/link option makes it easy to add new information to previously saved data.

When you've collected all the data, it's time to look at the results. Doing the analysis is probably the most difficult part of the entire program. It would have been helpful if Sunburst had included a sample data file on disk. Students could then practice a variety of analyses and print options before actually dealing with the results from an ongoing experiment.

You can display and print data in several formats. There's a zoom feature for taking a closer look at small data segments; you can also isolate particular data points for special display. Students can graph one or all of their thermistor readings. If they prefer, they can even eliminate the graph and look at just the numerical values of the data.

SILENT HELPER

Playing with Science demonstrates that your Apple II can indeed serve as a sophisticated lab aide. It challenges students to conduct real-life experiments, rather than mere on-screen simulations. The program gathers and records data, then assists with the analysis.



Circle 156 on Reader Service Card.

The emphasis for the student is on interpreting the results, rather than recording data. Youngsters are encouraged to design their own experiments and think critically about the results. For these reasons, Playing with Science is a welcome addition to the interactive science packages currently available for the Apple II line.■

Carol S. Holzberg, Ph.D.
Shutesbury, MA

Exploring Your World

SCIENCE TOOLKIT MODULES: SPEED AND MOTION EARTHQUAKE LAB THE BODY LAB

Broderbund Software Inc., 17 Paul Drive, San Rafael, CA 94903-2101, (415) 492-3500
Expansion modules for Broderbund's Science Toolkit; any 64K Apple II
$39.95 per module
Rating: ■■■■

When Broderbund first released its Science Toolkit Master Module, it looked as if it might become another shelf decoration. By creating a series of expansion modules, though, Broderbund has ensured that this super program will be active for many years. Like magic boxes, Science Toolkit expansion modules transform the Master Module into a set of new instruments with which you can conduct new experiments. The first three modules cover motion, earthquakes, and the human body.

SHAKE, RATTLE, AND ROLL

Speed and Motion provides two on-screen instruments, a speedometer and a tachometer. In one experiment, you set up a little car, powered by air escaping from an inflated balloon, to race past a pair of photocells set a precise distance apart. One of the photocells starts a timer and the second one stops it. The software computes the speed of the car in miles per hour or in kilometers per hour.

Using the tachometer, you can measure the rate at which a fan blade rotates or measure the flicker of fluorescent lamps. You can also study the way a pendulum swings—and you'll learn the similarities between a grandfather clock and a playground swing. Variations of the basic experiment demonstrate how moving objects accelerate and decelerate while in motion.

GRAPHING EARTH TREMORS

In Earthquake Lab you'll assemble a real seismoscope, an instrument that detects movements of the earth, from parts supplied with the module. This simple kit is actually more sensitive than many of the earliest instruments constructed by professional geologists at the turn of the century.

The seismoscope is designed around a photocell. A hanging weight makes the amount of light reaching the cell vary as the earth, or your table, vibrates, while an on-screen seismograph measures and displays the changes. The graphic shows a continuous "strip of paper" passing under a pen that moves left and right in response to the movement of the seismoscope. One really nice feature of this module is that you can print any trace of an earthquake you've recorded.

Because timing is critical in the study of earthquakes, a series of accurate timing marks along the display margin would have been a useful option for measuring the arrival and interval of any earthquake waves.

INSIDE THE HUMAN BODY

Few things on earth have been investigated and measured more than the human body. Still, most people know relatively little about the way it works. With The Body Lab, you can learn about two critical organs—your heart and your lungs.

The Body Lab shows you three instruments on screen—a heart-rate meter, a response timer, and lung-volume meter. The first two are basically clocks. The heart-rate meter displays a pattern in response to timed counts you enter. Over a period of time, you can measure how someone's pulse changes while he or she is resting or exercising. You can also print the results of your experiments.

The response timer measures how long it takes you to react to either a light flashing on screen or a beep from your computer. You can also make your own mechanical switches and attach them to the interface box to time other physical responses, such as the reaction time of your leg jumping to hit a simulated automobile brake.

The Body Lab module comes with components you put together into a spirometer. Along with the lung-volume meter on your screen, the spirometer measures the volume of air you exhale. Blowing into the palm-sized device makes a turbine spin, thus interrupting a beam of light. The software converts the rate of spin into a display that shows how much air your lungs hold.

Like the seismoscope, proper use of the spirometer is critical. For one thing, you have to hold it steady in relation to the light source while in use. Even small, erratic movements can affect your results radically. It may be difficult at first, but repeated trials should yield reasonably accurate results.

PUTTING IT ALL TOGETHER

If you have Broderbund's Science Toolkit Master Module, check out these programs. They provide more than enough activity to keep the fires of interest alive in the minds of young scientists. While the Science Toolkit can do many things, it's not intended to be an all-purpose lab assistant. Use the Toolkit and the accompanying modules with that in mind, and you won't be disappointed.

According to Broderbund spokespeople, the company plans to offer more science modules—a working weather station and another program described as an open toolkit your students can use for a wide variety of measurements. The Science Toolkit series looks as though it will be around for a long time to come.■

Jerry D. Greer
Park City, UT

GAMES
EDITORS PLAY



Lafe Low plays . . .

Destroyer (GS version), *Epyx, P.O. Box 8020, 600 Galveston Drive, Redwood City, CA 94063, (415) 366-0606. $39.95.*

As the first wave of Zeroes swoops in low over your decks, brace yourself for the thunderous explosions that are sure to follow. Destroyer is back.

You're still at the helm (or the anti-aircraft guns, the depth-charge racks, or any of eight other battle stations) of a Fletcher-class destroyer sweeping up the Pacific sea lanes in World War II. It's the same Destroyer that came charging out of your screen awhile back, but on the GS it looks and sounds even more authentic.

Deep in the ship's sonar room, you hear the muffled ping of sound waves bouncing off potential targets. Out on deck your anti-aircraft guns chatter away. The incoming planes crash and splash as you hit them. When you're aft at the depth-charge racks, you'll hear those canisters splash when they hit the water.

I haven't become any better a sea captain in the months since my last war patrol. Oh sure, I've sent my share of Zeroes spinning into the ocean and kept a couple of submarines from returning to port, but as soon as they come at me from all sides, I'm in deep trouble (no pun intended). To quote my review of the original version of this game (October 1987, p. 123), "If I'd been a real destroyer captain, we'd be speaking Japanese right now."



Eric Grevstad plays . . .

Lane Mastodon vs. The Blubbermen, *Infocom Inc., 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000. $12.*

Mighty Meteors of Mercury! It's handsome space lummox Lane Mastodon, teamed up with whiz kid Lambert Edison and his big sister Ivory (who makes red-blooded men wish for better graphics) against the vile Jovian Blubbermen and their plan to enslave Earth! Can Lane stop the tubby ones, avoid being killed by Earth's counter-attack, and figure out who's a friend and who's a Jovian clone?

Infocom's newest adventure has nothing to do with interactive fiction. It's an Infocomic, an animated comic book with no puzzles to solve and, unlike Accolade's comics, no arcade games to play. You simply sit and watch the story as if it were a video movie, using pause, fast-forward, and rewind controls.

To make any sense of the action, you'll need to loop back and follow many forks in the road—leaving the main story for a flashback, or abandoning Lane to follow Lambert, Ivory, the villains, or the Earth's defenders. If you sit and watch one story line to the end, it'll make even less sense to you than most things do to Lane.

The concept and the page-turning controls are neat, as you'd expect from a Tom Snyder Productions venture. (The company collaborated with Infocom on the whole Infocomics series.) The pictures are minimal cartoon sketches—not very impressive compared to other graphics adventures, but much quicker to load from disk—with some very nice animated scenes of ships flying through tunnels and so on.

This first Infocomic may not be the best of the series—we'll have to wait and see. The story veers from comedy to duller stretches of playing it straight. Author Steve Meretzky proved his chauvinist credentials with Leather Goddesses of Phobos—and Ivory is just a bimbo who gets her clothes torn off by monsters.

But it's fun to watch Lane Mastodon fall heroically off a cliff or pout, "Gosh, I just hate it when the bad guys have the upper hand." Infocomics give you a lot of fun for 12 bucks.



Paul Statt plays . . .

Gamma Force in Pit of a Thousand Screams, *Infocom, 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000. $12.*

Pit of a Thousand Screams is a game for the future. Ignore the comic-book name and the comic-book cover—there's nothing Mickey Mouse about the graphics or the story.

The plot's simple. In fact, when I first played Pit of a Thousand Screams, I watched the straight-line story—the shortest distance between beginning and end. The plot was dull: Gamma Force saves planet from evil ogre and reunites princess with deposed father, the king.

But, like interactive fiction, an Infocomic is a dynamic story. I played Pit of a Thousand Screams again and again, poking up and down different paths through the history of Zuron, and the story began to resonate. It's as deep as a folktale: Because you know the ending anyway, you concentrate on the details. And Pit of a Thousand Screams is filled with detail.

The program is worth watching just for the animation. Moving pictures are commonplace in computer games; cinematic quality is rare. Pit of a Thousand Screams looks like a movie. I'm not talking about photographic realism—this is a comic book, not a photo-novel—but style. You've never before seen a computer use close-ups, pans, fading, and tracking the way Pit of a Thousand Screams does.

Watch the shifting angles, too. The "camera" moves with the story. Pit of a Thousand Screams matches form with content as a poem does in words.

Buy every Infocomic as soon as you can. They're priced at only $12 each and will entertain you as no book, no movie, and certainly no computer game ever has before.■

. . . *and plays* . . .

Pharaoh's Revenge, *Publishing International, 333 West El Camino Real, Suite 222, Sunnyvale, CA 94087, (408) 738-4311. $29.95 (5¼-inch disk), $32.95 (3½-inch disk).*

Imagine you're an archaeologist, poking around a dark Egyptian pyramid. In the course of attempting to escape from one of a countless number of deep tunnels, you're trying to rest a ladder against some ancient bricks—when the ghostly remains of a pharaoh's mummy rise to block the way.

That's the story of Pharaoh's Revenge, an old-fashioned arcade game that surprised me—it's fun to play. Pharaoh's Revenge combines strategy, tactics, and manual dexterity.

You expect to have to coordinate your hand on the joystick with your eyes on the screen in an arcade game. Pharaoh's Revenge meets your expectations: Split-second timing and precise placement of your archaeologist are the tricks that will beat the mummy.

There's no best strategy. I like to explore as many of the 200 levels as I can, ignoring my point total, but I guess you're supposed to play for points. I'll probably play for points later, after about three hours of raising ladders for the sake of climbing them. But here's a hint: The best tactic is to put ladders up in more than one place; that way you have somewhere to hide from the evil mummy.

Fact: Pharaoh's Revenge works on the Apple IIc, IIe, and IIGS. Opinion: It looks okay in black-and-white, better in color, needs a joystick, and is more fun on a GS or a IIe/c with accelerator card.

I'd forgotten how much fun an arcade game can be. Pharaoh's Revenge looks easy, but it gets impossible fast. There's still something compelling about a game "I know I can win, if I play just once more," despite overwhelming evidence that I'll never come out on top.■

Short Takes . . .

Nord and Bert Couldn't Make Head or Tail of It, *Infocom, 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000. $39.95.*

■■■

Definitely designed for the quick-witted, Nord and Bert is a series of short interactive puzzles. Full of puns and other forms of word play. (See Games Editors Play, March 1988, p. 48.)

Xevious, *Mindscape, 3444 Dundee Road, Northbrook, IL 60062, (800) 221-9884. $29.95.*

■■■

A fairly basic arcade game—shoot 'em up faster then they can shoot you— but lots of fun. Uncomplicated and mildly addictive. Joystick required. (See Games Editors Play, February 1988, p. 36.)

Silent Service (GS version), *Microprose, 180 Lakefront Drive, Hunt Valley, MD 21030, (301) 771-1151. $39.95.*

■■■■■

Reality factors (such as limited visibility, dud torpedoes, or convoy zig-zags), excellent graphics, and authentic sound effects are the highlights of this realistic simulation of submarine warfare in World War II. Apple IIGS and mouse required. (See Games Editors Play, December 1987, p. 58.)

Ski Crazed, *Baudville, 5380 52nd St. SE, Grand Rapids, MI 49508, (616) 698-0888. $29.95.*

■■■■

Ski down the 15 daredevil slopes of Mount Kilimanjaro, or create your own challenging trails. Conquer moguls, jumps, ice, and slalom gates—good clean fun. Joystick required. (See Games Editors Play, January 1988, p. 37.)

California Games, *Epyx, P.O. Box 8020, 600 Galveston Drive, Redwood City, CA 94063, (415) 366-0606. $39.95.*

■■■■

Surf, skateboard, frisbee, roller-skate, bicycle, and hacky-sack your way through the Golden State in this wild collection of games. Joystick required. (See Games Editors Play, February 1988, p. 37.)

Pirates, *Microprose, 180 Lakefront Drive, Hunt Valley, MD 21030, (301) 771-1151. $39.95.*

■■■■■

If ye be searching for a taste of the pirating life, this is it. It's back to the Caribbean Sea in the 1600s for pillage and plunder as the captain of your own vessel. You won't want to miss this one. (See Games Editors Play, April 1988, p. 43.)

GBA Championship Basketball, *Gamestar/Activision, 3885 Bohannon Drive, Menlo Park, CA 94025, (415) 329-0500. $39.95 IIe/IIc, $44.95 GS.*

■■■■

Takes great advantage of the GS' sound and graphics. The two-on-two approach, versatile practice sessions, and the ability to play an entire league schedule are particularly nice features. (See Games Editors Play, August 1987, p. 90.)

Championship Baseball, *Gamestar/Activision, 3885 Bohannon Drive, Menlo Park, CA 94025, (415) 329-0500. $39.95.*

■■■

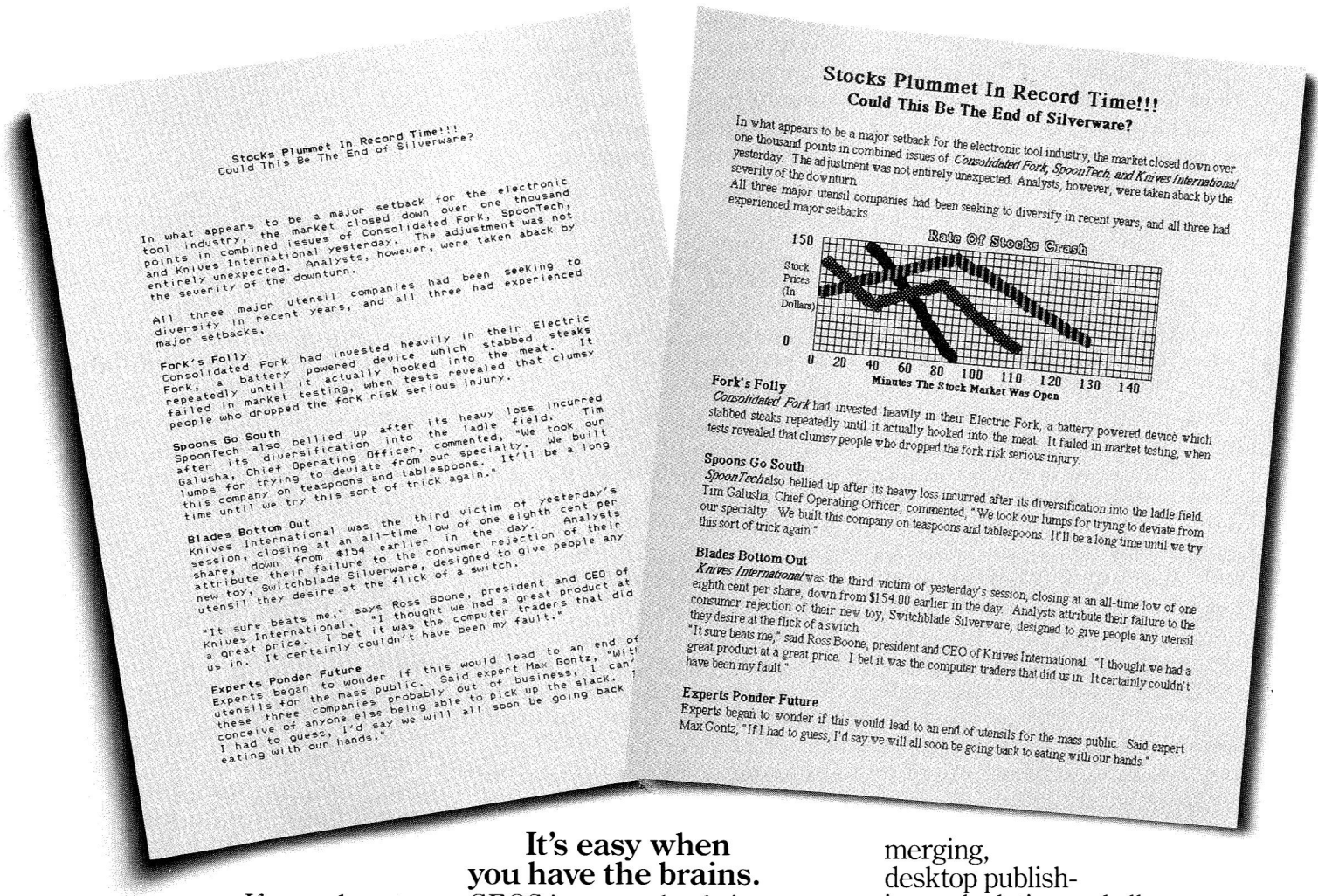
Not as slick as Hardball!, but the ability to create your own team and compete in a 24-team league adds to the game's fun factor. (See Games Editors Play, June 1987, p. 91.)

Infiltrator II, *Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (800) 221-9884. $29.95.*

■■■

Like most helicopter simulations, this one is complicated. Graphics screens are nice, especially because they require only 64K. In addition to flying, you get to run around on special "ground missions." Joystick required. (See Mace on Games, May 1987, p. 98.)□

IMPROVE Y
WITH A BRAIN



If your documents aren't winning any beauty contests, maybe your Apple IIe or IIc's problem isn't just cosmetic. Maybe what it really needs is a new brain. Like GEOS.

GEOS is the new graphic operating system that takes everything you do—including AppleWorks files—and makes them even better. Better looking. Better working. Better everything.

It's easy when you have the brains.

GEOS is a completely integrated environment that runs circles around every other operating system, mostly because it starts out a lot smarter. For example, it comes with a desktop file manager, three utility programs, four applications, five desk accessories, eleven fonts and, well, you get the idea. All of which opens your Apple II to all kinds of graphically-oriented applications, like writing, painting, merging, desktop publishing, calculating and all that other fun stuff the more expensive Apples do.

There's even a set of pop-up desk accessories, like an alarm clock, a notepad and a calculator.

Now, you'd think it would take a rocket scientist to operate a system this smart, but with GEOS, all it takes is a point and a click of your mouse. Or touch of a joystick. Or a tap of a keyboard.

OUR LOOKS TRANSPLANT.

That's it.

With GEOS, you just pull down a menu or point to an icon. Click and zap—you're there. No complicated commands. No perplexing problems.

Pretty easy, right?

Well, GEOS is easier on your eyes, too. Because the clear, sharp hi-res stuff you see on the screen is exactly what you get when it's all printed out.

Turn your ugly ducklings into prints charming.

Of course, the real beauty of GEOS is how it turns any word processing document into a work of art—in seconds. And you can do it because GEOS comes with a TextGrabber™ that's ProDOS compatible. You just pour in your AppleWorks, WordPerfect or MultiScribe text, and in less time than it takes to say, "Yikes! What a great looking document!," your text is converted into geoWrite™ 2.1, the What-You-See-Is-What-You-Get word processor that lets you center, justify, search and replace text, move blocks of copy, cut, paste graphics and select fonts of different styles and sizes right on the screen.

You still with us? Okay. Now get ready to squeeze your Apple for all it's worth.

For those really plain Jane's, we recommended a beauty treatment with geoPaint,™ which lets you draw, shade, fill, and pattern with incredible detail. There are all kinds of textures and brushes and graphic devices that ingeniously turn ordinary work into works of genius.

Manage this. Merge with that. Proof the spelling with geoSpell™ and pretty soon you're ready to print it all out with hi-res clarity on any dot matrix printer.

Or if you're really out to break some hearts, a LaserWriter.™

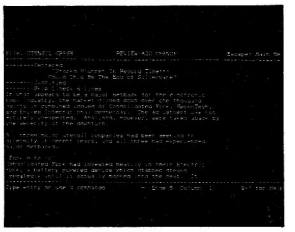
The incredible expanding brain.

There are even more GEOS applications on the way, too. Spreadsheets, databases, desktop publishers—you name it. All of them importing and exporting to and from each other, so that you can manage everything with one integrated system.

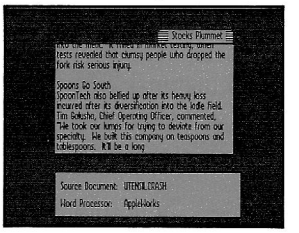
So if you think your document could do with a facelift, don't just do a little cosmetic surgery. Give your Apple II a brain transplant.

After all, what good are looks if you ain't got the brains to go with 'em?

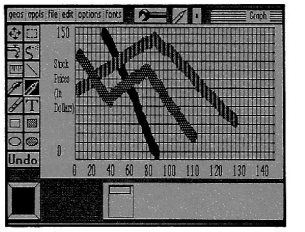
Take an ordinary AppleWorks file...

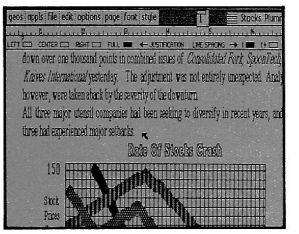


let Text Grabber import the text...

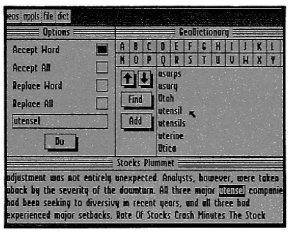


geoPaint creates eye-catching graphics...

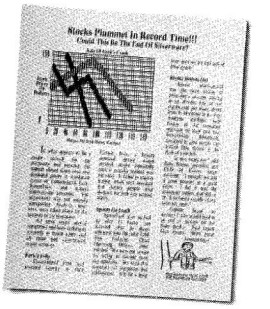




geoWrite spruces up formats, fonts, styles and adds those graphics...



geoSpell checks the spelling...



Print out a perfect presentation.

For orders only, call 1-800-443-0100 ext. 234. $129.95 (Suggested Retail)

(California residents add 7% sales tax.) $4.50 US/$7.50 Foreign for shipping and handling. Allow six weeks for delivery.

GEOS, geoWrite, geoPaint, Text Grabber, geoSpell, geoMerge and Berkeley Softworks are trademarks of Berkeley Softworks. Apple IIc, IIe, Appleworks, LaserWriter and ProDos are trademarks of Apple, Inc. WordPerfect and MultiScribe are trademarks of companies other than Berkeley Softworks.



Berkeley Softworks

The brightest minds are working with Berkeley.

GEOS

Circle 285 on Reader Service Card.

THE SIX-IN-ONE SOLUTION

It's a new breed of 16-bit software: With six *powerful integrated applications—including telecommunications and page layout—StyleWare's unique GSWorks challenges the productivity marketplace.*

by Dan Muse, Editor in Chief, and Paul Statt, Senior Editor

The six programs that combine to make up GSWorks are solid stand-alone performers; however, it's the software's focus on integration that makes StyleWare's ambitious GSWorks different from anything else on the GS market—different from any other program on any market, for that matter.

GSWorks gives you up to 14 active "application windows" at a time. That is, you can have two word-processor files, two database files, four spreadsheet files, four graphics files, a page-layout file, and the telecommunications module all open at one time. It's similar to the AppleWorks Desktop, but goes a step beyond: You can use the mouse and control key to drag text from file to file—or window to window—or you can use the more traditional cut-and-paste to and from the clipboard, as you would in AppleWorks.

The following evaluation is a product *preview*, not a review. *inCider* spent several days in April experimenting with a pre-release version of GSWorks. We couldn't perform any quantitative tests with the incomplete program. Look for a full review, with benchmark tests, in the fall.

WORD PROCESSING—MOUSE VS. KEYBOARD



The word processor is the heart of any integrated package. StyleWare apparently agrees, so it made the GSWorks word processor similar to MultiScribe GS—the company's best-selling GS word processor—but made it a little faster and smoother. It's also paragraph-based. That is, any changes in the ruler, which sets margins, justification, and spacing, affect the paragraph where the cursor is located. You can copy ruler specifications anywhere in the document. StyleWare also offers an 80,000-word on-line spelling checker and thesaurus for GSWorks on a separate disk.

All GSWorks programs support multiple fonts and point sizes, as well as italic, underlining, boldface, and so on. If you'd like to add color to your text, you're covered there, as well.

One of the biggest obstacles GSWorks faces is making people give up AppleWorks and adapt to graphics-based word processing, which is generally slower and clumsier than text-based word processing with a program such as AppleWorks. If you're not a fan of mouse-based word processors, StyleWare provides keyboard alternatives to many file commands in pull-down menus. For example, you can open a new or existing file, as well as close, save, print, or quit a file from the GS keyboard.

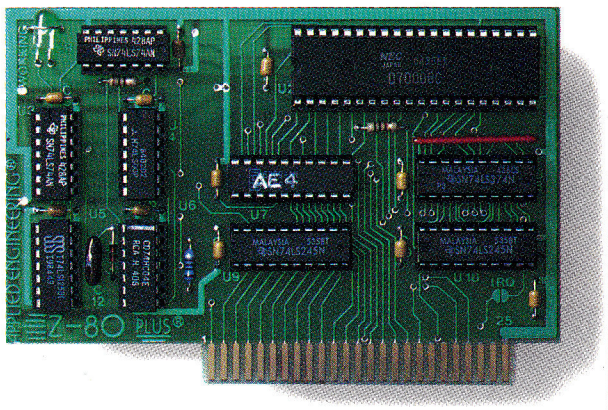
Perhaps more importantly, most of the program's editing commands have keyboard equivalents. You can undo mistakes, cut, copy, paste, copy ruler, paste ruler, select all, or select paragraph. You can also access various style commands from the keyboard—plain, bold, italic, or underlined text, for instance. Playing with mouse-based commands is fun at first, but when you get into serious writing you'll appreciate the ability to let the mouse sleep while you work.

In testing GSWorks in mid-April StyleWare had yet to implement several features; however, the word processor did import AppleWorks word-processor files. By release, StyleWare assures us the program will also import database and spreadsheet files from AppleWorks.



Clockwise from top: With intelligent recalculation, color graphing, and a number of unique commands geared to easy programming, GSWorks' spreadsheet module sets a new standard; the efficient telecommunications program also sports a text editor; graphics-based word processing includes plenty of equivalent keyboard commands, plus multiple fonts, spelling checker, and thesaurus; GSWorks' database manager includes spreadsheet functions, flexible field definition, and the ability to incorporate graphics images; the graphics module offers both drawing and painting functions; versatile page layout, with seamless integration and a comprehensive toolset, means high-quality desktop publishing on your GS. Center: An array of palettes, tools, windows, formats, and functions make GSWorks the star of the productivity-software show.

With the Z-80 Plus®, run over 5000 new CP/M® programs.



Now, get two computers in one, and all the advantages of both.

Enter the CP/M world with the new Z-80 Plus card from Applied Engineering, and introduce your Apple IIe, IIGS or II+ to thousands of CP/M programs. Only the Z-80 Plus comes standard with the new 5.1 software, the most advanced system ever for running CP/M programs.

The new 5.1 boasts advanced features like built-in disk emulation for popular memory expansion boards, boosting both system speed and storage capacity. And menu-driven utilities that let you get to work faster. The Z-80 Plus also lets you run older CP/M programs—all the way down to Version 1.6 (2.2 is the most popular).

The Z-80 Plus is the only card on the market capable of accessing more than 64K. If you have an extended 80-column card, all 128K is usable. And if you have RamWorks, RamFactor, GSRam, GSRam Plus, or an Apple memory card in your IIe, IIGS or II+, up to 1088K is available.

Each Z-80 Plus comes with our CP/M Ram Drive software, enabling most memory cards to work as a high-speed Ram disk so CP/M software can run up to *twenty times faster.* So packages like WordStar, dBASE II, Turbo Pascal and most others run at blinding speed.

Simply plug the Z-80 Plus into any slot in your Apple. You'll get the benefits of two computers in one—all at an unbelievably low price (only $149!).

• Fully compatible with ALL CP/M software • Fully compatible with 5¼" *and* 3½" disk drives as well as most hard disks including the Sider • Fully compatible with Microsoft disks (no pre-boot required) • Specifically designed for high speed operation • Runs WordStar, dBASE II, Turbo Pascal, and ALL other CP/M software with *no pre-boot.* • Semi-custom I.C. and low parts count allows Z-80 Plus to fly through CP/M programs with extremely low power consumption (we use the Z-80B) • Does EVERYTHING other Z-80 boards do, *plus* Z-80 interrupts • Five-year warranty

To get your Z-80 Plus or for more information see your dealer, or call 214-241-6060 9 a.m. to 11 p.m. seven days, or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 outside U.S.A.

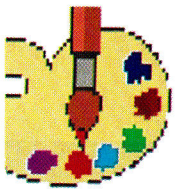
APPLIED ENGINEERING™

The Apple enhancement experts.

P.O. Box 5100, Carrollton, TX 75011 (214) 241-6060

CPM is a registered trademark of Digital Research.

GRAPHICS—THE RIGHT COMBINATION



GSWorks' graphics module features an interface that's similar to that of many drawing and painting programs on the market. Painting and drawing tools are on the left-hand side of the screen, and the color palette lies horizontally at the bottom. The program combines many of the capabilities of a drawing program with those of a painting program, offering the ease of use and freedom of painting programs such as Activision's Paintworks Plus and Electronic Arts' Deluxe Paint combined with the object-oriented precision of a drawing program such as StyleWare's own Top Draw or Activision's Draw Plus.

You can paint with a paintbrush, pencil, or spray can, or draw geometric objects such as squares, rectangles, circles, ovals, and so on. Click on any image to make it an object, then move it to the front or back under the main menu's Arrange heading. Or you can move an object anywhere on screen by selecting it and dragging it with the mouse.

PAGE-LAYOUT PARTICULARS



The matinée idol of GSWorks is its page-layout program, one of the first GS-specific publishing programs available. This is where the images and text you've created with the graphics program and word processor come together, and where the benefit of GSWorks' integration is most obvious. After writing a document in the word processor, creating artwork in the graphics program, and making a pie or bar chart in the spreadsheet, you can bring them together in the desktop-publishing program by either dragging text from window to window or cutting and pasting from the clipboard.

You can set columns manually by clicking on the vertical ruler on the left side of the screen and dragging the vertical line to the location you want. Or use the Set Guide choice under the Options heading to establish a grid with two or three columns.

You can also set standard page formats. For example, you can have the top of every page show the document title and date and the bottom show the page number. Or you can set it up so that left-hand pages (odd-numbered) show the document title and right-hand pages (even-numbered) show the date and page number. You can also thread text through pages. That is, you can import different files or text objects into the page-layout program and "thread" them together so that the different text objects become one complete line of text. If you have four text objects on a page, for example, and edit or move the first one, it affects the other objects on the thread.

The page-layout application also has some drawing tools, so you don't need to rely on the graphics program completely for your artwork.

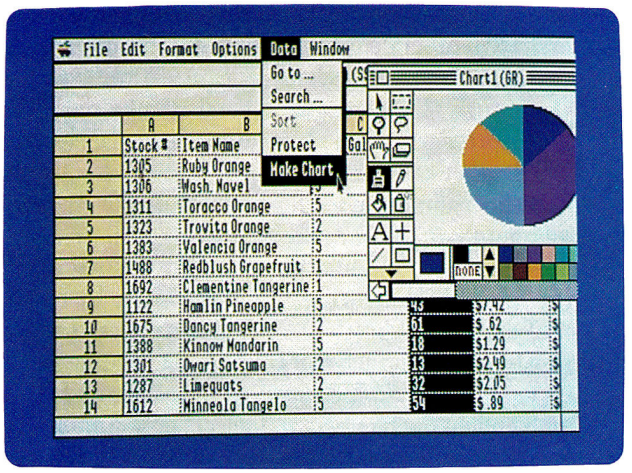
INTEGRATION AT WORK

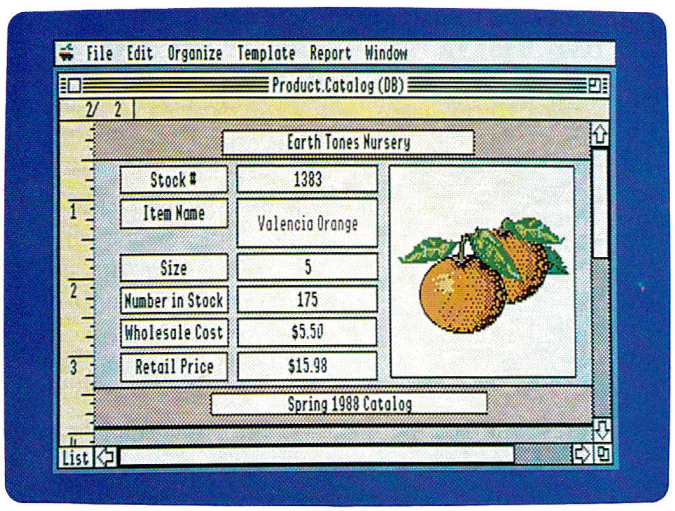


The GSWorks spreadsheet and database-management programs are so tightly integrated you may have trouble telling them apart. In fact, head programmers Tom Hoke and Mike Hibbetts admitted to us that they

considered making the two applications a single module, much as Lotus 1-2-3 on IBM machines combines the computational power of a spreadsheet with the recordkeeping ability of a database manager. But StyleWare decided that Apple II owners (read AppleWorks users) were accustomed to a distinct database manager and spreadsheet.

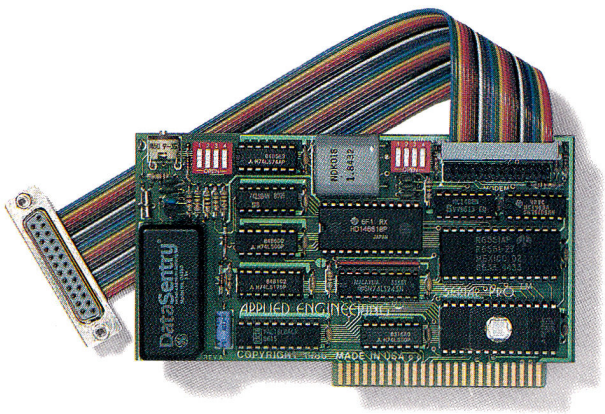
The GSWorks compromise is a database manager that uses many spreadsheet functions, and a spreadsheet that uses database commands. The database manager can display either single records or multiple records; multiple-record format is indistinguishable from the spreadsheet, except for the menu bar. Turning a database file in multiple-record format into a spreadsheet file is as simple as highlighting a block of data and dragging it into a spreadsheet file.





Top, GSWorks lets you turn spreadsheet data into a pie chart, then access the graphics module to modify and enhance it. Bottom, create a "visual database" by importing pictures from the GSWorks graphics module or another GS paint program.

Serial Pro®
The intelligent multifunction card from Applied Engineering.



Serial Pro is a powerful multifunction card for the Apple IIe, II+, IIGS and compatible computers. Serial Pro combines a powerful serial port for interfacing to a printer, modem or other serial device, with a full function clock/calendar. Serial Pro's serial port is compatible with virtually all letter quality and dot matrix printers, including Apple's Imagewriter and Imagewriter II, and can communicate with the fastest external modems at baud rates from 50 to 19,200.

Set up is easy, because unlike other cards, there are no switches to program serial parameters or disks to use. Serial Pro has a built-in setup screen that allows all parameters to be set. And on-screen help that makes it super-easy. An on-board battery stores your selections for over 20 years, but you can change them at any time. Serial Pro is the perfect upgrade for Super Serial card owners looking for more performance or a built-in clock.

Serial Port Features • Fully Super Serial Card compatible but more versatile and easier to use • Compatible with printers • Compatible with modems • Prints graphics to printer (without software) in normal mode, 90° rotation, double size, side by side, and black/white inversion • Variable word length, number of stop bits and parity selection • Crystal controlled circuits are used to provide ultra accurate baud rates.

Clock Calendar Features • ProDos, DOS and AppleWorks compatible. Displays time and date on the AppleWorks screen • Automatically time and date stamps AppleWorks files • 20 year auto recharging nickel-cadmium battery • Realtime interrupts • Built-in on screen time and date settings (no software needed) • Does not use phantom slots.

Serial Pro is perfect for Apple IIe, II+, IIGS or compatible owners in need of a serial port or clock/calendar or both. But unlike other multifunction cards on the market, Serial Pro does not use phantom slots, so all the slots in your computer are useable.

Serial Pro comes complete with manual, cable and instructions for connecting to all the leading printers and modems.

Serial Pro **$139**

Order Today! See your dealer or call Applied Engineering, 9 a.m. to 11 p.m. 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 outside U.S.A.

APPLIED ENGINEERING™

The Apple enhancement experts.

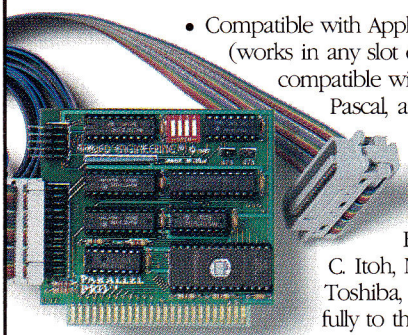
(214) 241-6060

P.O. Box 5100, Carrollton, TX 75011

Parallel Pro™

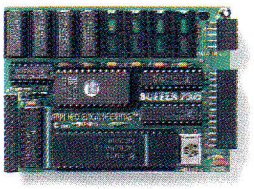
The Most Powerful Apple Printer Interface You Can Buy

When you're trying to find the right parallel interface for your printer, look to Applied Engineering to bring you the best in quality and features.



• Compatible with Apple IIe, IIGS, and II+ (works in any slot except 3). • Fully compatible with ProDOS, Dos 3.3, Pascal, and CP/M. • Works automatically with all software. • Supports almost all parallel printers including: Epson, IBM, Okidata, C. Itoh, NEC, Star Micronics, Toshiba, and more. • Conforms fully to the Centronic Standard • Built-in control panel allows easy access to set-up information • Automatic formatting of basic listings. • Built-in self test and Buffer Pro™ support. • Extensive graphics print capability for the hi-res, double hi-res, and the IIGS super hi-res screens • Buffer option available (see below). • Includes 6-ft. cable for connecting to your printer.

Buffer Pro™



Buffer Pro adds memory to Parallel Pro, freeing your Apple from running the printer. With Buffer Pro, you can continue to use your Apple while the printer is printing. To add Buffer Pro to Parallel Pro, simply unplug the cable on Parallel Pro and plug Buffer Pro where the cable was, then plug the cable onto Buffer Pro, That's it!

• Compatible with IIe, IIGS, and II+. • Fits in a IIGS with or without fan. • Adds 32 to 256 pages of printer buffering. • User expandable using 64K or 256K RAM chips one chip at a time and in any combination. Each 256K chip adds 32 pages (maximum of 8 chips). • Connects directly to Parallel Pro. • Works automatically with all software • May be paused or cleared with simple commands (unlike other buffers, you don't have to "shoot the computer" if you want to stop the print-out before it's done).

Both Parallel Pro and Buffer Pro come with a comprehensive manual, a 5-year warranty — parts & labor, and outstanding technical support if needed.

Parallel Pro **$99.00**

Buffer Pro Option: with 32-page buffer..... **$109.00**
with 128-page buffer..... **$159.00**
with 256-page buffer..... **$219.00**

Order today!

See your dealer or call Applied Engineering today, 9 a.m. to 11 p.m. 7 days. Or send check or money order to Applied Engineering, MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 outside U.S.A.

APPLIED ENGINEERING™

The Apple enhancement experts.

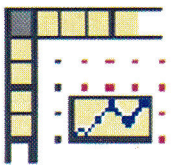
(214) 241-6060

P.O. Box 5100, Carrollton, TX 75011

Prices subject to change without notice.

Parallel Pro and Buffer Pro are trademarks of Applied Engineering.
Other brands and product names are registered trademarks of their respective holders.

SPREADSHEET STATISTICS



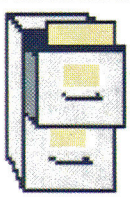
A GSWorks spreadsheet file can be as big as 702 columns by 10,000 rows—if your GS has the memory.

At press time the StyleWare programmers had not completed all the built-in functions of the spreadsheet—but the only lack we noted was a logarithm facility. The GSWorks spreadsheet offers a number of unheard-of commands that are designed to make programming easier—for instance, an IF command that works with text, performing a particular task only if a certain word appears in a cell. Serious spreadsheeters will drool over the ASCII and CHR$ commands; the rest of us will be happy to have not only functions that return the date, but built-in date math (a nightmare in AppleWorks).

GSWorks is one of only a few Apple II spreadsheets that perform intelligent recalculation: It recalculates only those cells that have been affected by a change you made. For example, if cells A1 through A101 calculate the first hundred perfect squares, the spreadsheet won't have to recalculate all 100 if you make a change in cell B1. (You can change the frequency of calaculation to manual, but intelligent recalculation makes that less important than it is in AppleWorks.)

A spreadsheet is one application that needs a mouse, and the GSWorks spreadsheet uses the mouse smoothly to highlight sections of your spreadsheet and scroll from one part to another. GSWorks also takes advantage of GS color by printing negative numbers in red if you choose. If you want a color graph of your data, just highlight the numbers and select "draw a graph" from the menu. Your full-color bar, line, or pie graph is ready to paste into a page-layout document.

THE DATABASE DETAIL—A REVOLUTIONARY DESIGN



The GSWorks database manager, according to StyleWare, can sort as many as 32,000 records, with 256 categories per record, if your GS has enough memory.

According to the authors, the database manager is written to sort records fast, while the spreadsheet is optimized for calculation. As a result, although the database manager can calculate fields, it's probably faster to move the records you want to calculate into a spreadsheet file. Nevertheless, the database manager operates according to a complex language that offers all the functions of the spreadsheet.

GSWorks sorts database files differently from AppleWorks. It uses a "stable sort," which simply means you can use each subset of a database file as if it were a separate file, and that the order in which the program sorts records will always be the order you choose. (AppleWorks, on the other hand, always reverts to the original order in which you typed the records.)

A milestone in database design is GSWorks' incorporation of graphics images into database files. You can define a field in a database file to be text, numerical, time, date, or a picture. You can create a picture with the GSWorks painting/drawing program, or import one from some other GS paint program. Database pictures represent a whole new level of integration, for which ingenious users will surely find bizarre applications:

stamp collections, little black books (in color!), and insurance inventories, for instance. Imagine what you could do with the GSWorks database manager and a video digitizer.

TALES OF TELECOMMUNICATION



StyleWare was frank with us about the status of GSWorks' telecommunications module: It works. That is, it dials and answers the telephone, works with the IIGS modem port, and sends GSWorks files effortlessly. It supports 300-, 1200-, and 2400-baud communication. There's not really much need for a text editor in a seamlessly integrated package like GSWorks, but the telecommunications module offers one.

If telecommunications is your GS' primary use, you may want to wait for GSWorks. It supports most protocols, even the new Binary II file transfers, and most common modems. But telecommunications is a growing, changing business, with new software standards and hardware all the time. StyleWare will support more modems and protocols as that becomes necessary in the future, depending on what GSWorks owners ask for. The company has earned a reputation for listening to its customers, so we're sure it will keep users informed and send updated disks as they become available.

A BREED APART

GSWorks is a big, ambitious project. Like most GS software, its Achilles' heel is speed. But Apple's rumored accelerated ProDOS 16 operating system should speed up GSWorks, if, as we hope, the programmers at StyleWare have planned for it. StyleWare suggests 768K in your GS; we lean toward a megabyte, and at least two 3½-inch disk drives or a hard drive.

Although StyleWare hopes to spare itself the promiscuous copying that made AppleWorks "the most popular program never sold," you can copy GSWorks to your hard disk, RAM disk, ROM disk, or any other kind of disk. StyleWare hadn't completed the protection scheme at press time, but it will probably involve use of a "key disk." We tested GSWorks with a ROM disk (Checkmate's Memory Saver) and found that an elegant solution for handling this mammoth program.

While we won't be certain until production copies become available, the integration of six applications and the inclusion of a quality page-layout program appear to set GSWorks apart from the rest of the GS productivity-software field. StyleWare has covered the bases by making provisions for incorporating text and graphics from other programs, but we're betting you may never want to leave GSWorks.■

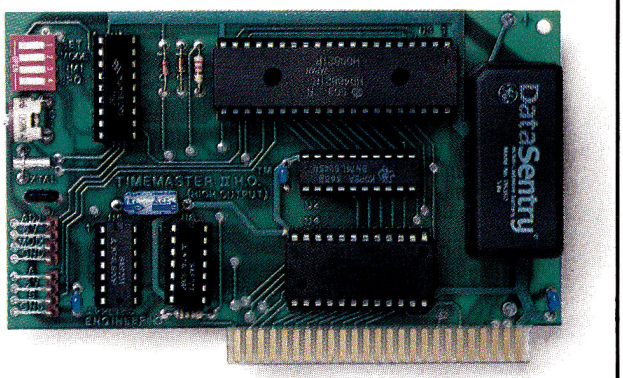
Product Information

GSWorks
StyleWare, Inc.

5250 Gulfton
Suite 2E
Houston, TX 77081
(713) 668-1360
$249.95

Reader Service No. 375

The first clock card to add time and date to AppleWorks' screens and files.



Timemaster H.O. So many features it's become the world's best selling clock card.

It's the smart way to put the time and date on your Apple IIe or II+. Because only the Timemaster H.O. packs *ALL* the important features of all the competition *combined,* including leap year, year (not just in ProDOS), month, date, day of week, hours, minutes, seconds and milliseconds. It's totally ProDOS, DOS 3.3, PASCAL and CP/M compatible. And, of course, it works better than any other clock with AppleWorks.

With the Timemaster H.O. you're assured of reliable, trouble-free operation along with simple, built-in, one-command time setting, accuracy through leap years, and a firmware maintained interrupt setting.

If you're using or writing software for other clock cards, you're still covered. Because the H.O. will *automatically* emulate them. And only the Timemaster H.O. adds 15 new commands to BASIC. The H.O. even comes complete with two disks full of sample programs, including a computerized appointment book, a DOS dating program, interrupt programs, and over 30 programs that others charge you extra for — or don't even offer. As a low-cost option, you can add true BSR remote control to the H.O., giving you remote control of up to 16 lights and appliances in your home or office.

• Time in hours, minutes, seconds and milliseconds; date with year, month, day of week and leap year • 24-hour military format or 12-hour AM/PM format • Eight software controlled interrupts so you can run two programs at the same time (many examples included) • Can be set precisely to the exact second • Digital I/O port for advanced applications • Allows AppleWorks to time and date stamp all data automatically • Displays time and date on AppleWorks screens and files • Five-year warranty.

Timemaster H.O. $99.00
BSR option (may be added later) $29.00

Order Timemaster today ... with 15-day money back guarantee and our five-year parts and labor warranty. See your dealer or call (214) 241-6060, 9 a.m. to 11 p.m. 7 days, or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 if outside U.S.A. Prices subject to change without notice.

APPLIED ENGINEERING™
The Apple enhancement experts

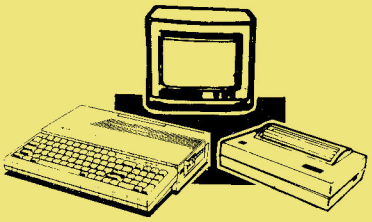
P.O. Box 5100, Carrollton, TX 75011 (214) 241-6060

Timemaster H.O. is a trademark of Applied Engineering. Other brand and product names are registered trademarks of their respective holders.

COMPUTER DIRECT
Will Not Be UNDERSOLD!
AND WE MEAN IT!*

Prices Expire 7-31-88

Complete Apple® Compatible System



The Complete System Includes:

- Laser 128 Apple Compatible Computer
- Genuine IBM® Printer With Laser 128 Interface & 1 Roll Of Heat Transfer Paper
- 12" Hi-Resolution Monochrome Monitor
- Quality Word Processor, Spreadsheet And Data Base

Our Low Sale Price

$479.95 List $1409

(Add $27.50 shipping.*)

300/1200 BPS External Modem

- 1200 Baud Bell 212A at 1200 or 300 Bits/Sec
- Fully Hayes Compatible
- Automatic Dialing & Answering
- Auto Redial At Receipt Of Busy Signal
- Built-In Speaker With Volume Control
- Built-In Help Commands
- Both Touch Tone and Pulse Dialing
- Uses RS-232 Interface
  (RS-232 Interface Cable Required

Sale Price $79.95 List $139

(Add $3.00 shipping.*)

300/1200/2400 BPS External Modem

- Fully Hayes Compatible
- Both Tone & Pulse Dialing
- Built-In Speaker With Volume Control
- Command Buffer That Holds Up To 40 Characters
- 2400 Baud Bell 212A At 300, 1200 & 2400 BPS
- Uses RS-232C Interface
  (RS-232C Interface Cable Required)

Sale Price $159.95 List $249

(Add $3.00 shipping.*)

5¼" Floppy Disks

Double Sided Double Density
Minimum Quantity 50
Maximum Quantity 250

19¢ each

(Add $4.00 shipping.*)

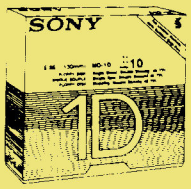
Box of 50 ..... $9.50 (19¢ each)
(without sleeves)

Box of 50 ..... $10.50 (21¢ each)
(with sleeves)

Box of 100 (no limit) **... $24.00 (24¢ each)**
(with sleeves & labels)

Economy Sleeves .... $1.00 per quantity of 50
Disk Labels ..... $3.95 per quantity of 100
Disk Notchers ..... $3.95 each

5¼" Sony Disks



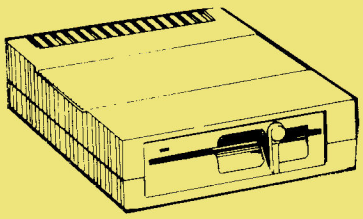
49¢ each

Limited Quanties

(Add $4.00 shipping.*)

Single-Sided, Double Density
Sold In Packages Of 5 With Sleeves, Labels & Write Protects Included
$2.45 Per Box

5¼" External Disk Drive



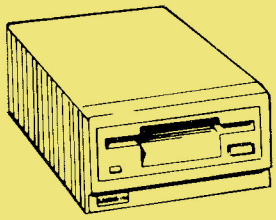
256 Bytes/Sector
160K Bytes Capacity
Double Sided/ Double Density
5¼" Floppy Disk Drive
For Laser 128/Apple IIc or IIe

Our Low Sale Price

$119.95 List $299

(Add $10.00 shipping.*)

880K 3½" Disk Drive



800K Memory
Double Sided/ Double Density
3½" Micro Disk Drive
For Laser 128, Macintosh
Apple IIc, IIe or II Plus

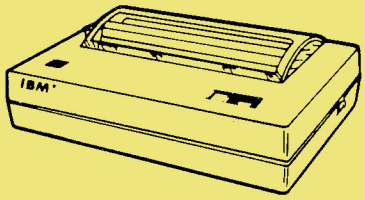
Our Low Sale Price

$199.95 List $299

(Add $10.00 shipping.*)

Genuine IBM® Printer

8½" Letter Size • 80 Column
Limited Quantities



- Upper & Lower Case
  (with true lower descenders)
- Advanced Dot Matrix - Heat Transfer
- Graphics With Commodore, & Apple Interfaces
- Ready to Hook Up To Serial Port Of IBM® PCjr.
- Low Cost Adapters For IBM®, Apple, Commodore, & Laser Computers
- Underline & Enlarged

Our Low Sale Price

$44.95 List $199

(Add $7.50 shipping.*)

15 Day Home Trial • 90 Day Immediate Replacement Policy

COMPUTER DIRECT
22292 N. Pepper Rd, Barrington, IL. 60010
Call (312) 382-5050 To Order!

* Illinois residents add 6¼% sales tax. All orders must be in U.S. Dollars. We ship to all points in the U.S., CANADA, PUERTO RICO, & APO-FPO. Please call for charges outside continental U.S. or C.O.D. **MAIL ORDERS** enclose cashier check, money order, or personal check. Allow 14 days delivery, 2 to 7 days for phone orders and 1 day express mail. Prices, specifications & availability subject to change without notice. Shipping and handling charges are not refundable. (Monitors only shipped in continental U.S.) **COMPUTER DIRECT** will match any valid nationally advertised delivered price on the exact same product with a comparable payment method (excluding any applicable sales taxes). A physical copy order of the current valid lower priced ad must be supplied with the order, or within 15 days of date of purchase.

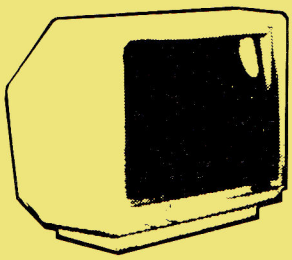
VISA — MASTERCARD — C.O.D.

Circle 205 on Reader Service Card.

COMPUTER DIRECT
Is 1st In PRICE, SUPPORT, & GUARANTEE!
WE LOVE OUR CUSTOMERS!

Prices Expire 7-31-88

12" Monochrome Monitor



- High Resolution
- 80 Column
- 1000 Lines At Center
- Great For Business
- Fantastic Value

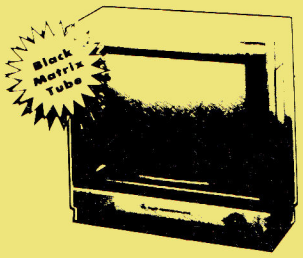
Our Low Sale Price

$79.95

List $329

(Add $10.00 shipping.*)

13" Color Composite Monitor



- Anti-Glare Screen
- Audio Speaker
- Volume Control
- Black Matrix Tube
- Horizontal Resolution 260 Lines
- Includes Composite Cable

Our Low Sale Price

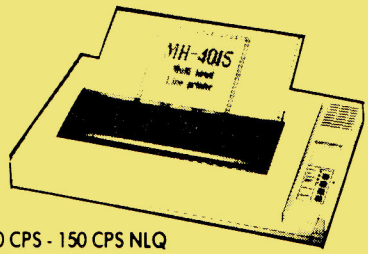
$169.95

List $329

(Add $14.50 shipping.*)

720 CPS 15" Printer

Multi-Head Wide Carriage Printer With High Dot Resolution



- 720 CPS - 150 CPS NLQ
- 8K Print Buffer
- Print Speed of 228 LPM In Draft
- 6 Print Heads Achieve High Dot Resolution In Higher Speed
- NLQ Speed Of 47.4 LPM
- 136 Column Wide Carriage
- IBM and Epson Mode
- Parallel Centronics Port

Our Low Sale Price

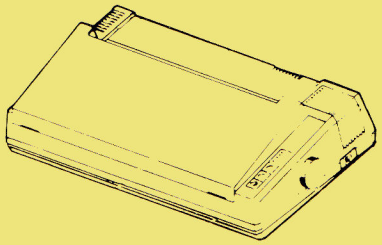
$799.95

List $1995

(Add $14.50 shipping.*)

15" 160 CPS Printer

Star Micronics LV-1615 With High Speed And Near Letter Quality



- IBM Compatible
- Skip Over Perforation
- Continuous Underline
- Friction and Tractor Feeds
- High Res Graphics Printing
- NLQ and High Speed Draft
- Both Parallel and Serial Interface Ports Standard

Our Low Sale Price

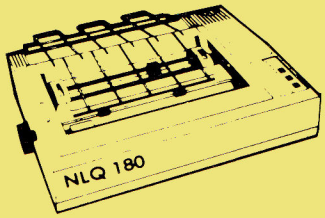
$229.95

List $499

(Add $14.50 shipping.*)

Hi-Speed NLQ Printer

Superb Near Letter Quality 160 — 180 CPS



- High Speed Dot Matrix
- Near Letter Quality Selectable From Front Panel
- Italics - Elite - Condensed - Pica
- Tractor/Friction Feed
- Centronics Parallel Port
- * Lifetime Warranty On Print Head
- 6 Month Replacement Policy For Printer
- Super Graphics
- 8K Print Buffer

Our Low Sale Price

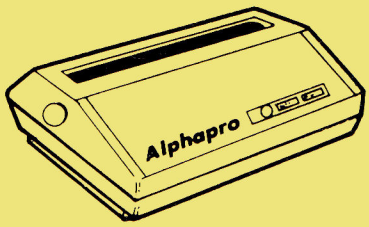
$179.95

List $499

(Add $10.00 shipping.*)

22 CPS Daisy Wheel

13" Daisy Wheel Printer With True Letter Quality



- Daisy Wheel Printing Below Wholesale Cost
- 22 CPS, AAA Text & 13" Wide Carriage
- Both Daisy Print Wheel & Ribbons Compatible with Diablo & Qume®
- Single Sheet or Continuous Feed
- Includes Interface for Apple IIGS, IIc & Laser 128
- True Letter Quality

Our Low Sale Price

$99.95

List $499

(Add $12.00 shipping.*)

15 Day Home Trial • 90 Day Immediate Replacement Policy

Call

(312) 382-5050

We Love Our Customers!

Mail

COMPUTER DIRECT
22292 N. Pepper Road
Barrington, IL. 60010

Circle 206 on Reader Service Card.



THE EASY SOLUTION

What can mice, menus, and matrices do for your filing? With a graphics-oriented GS database manager in hand, getting organized has never been so simple.

by Cynthia E. Field, Ph.D.,
Contributing Editor

Tell the truth, now. Your file cabinet's bulging at the seams and you've got that beautiful, brand-new Apple IIGS sitting there—but somehow you just can't find the time to haul out all those folders and set up a database. It's a pain in the neck, it's boring, it's difficult, right?

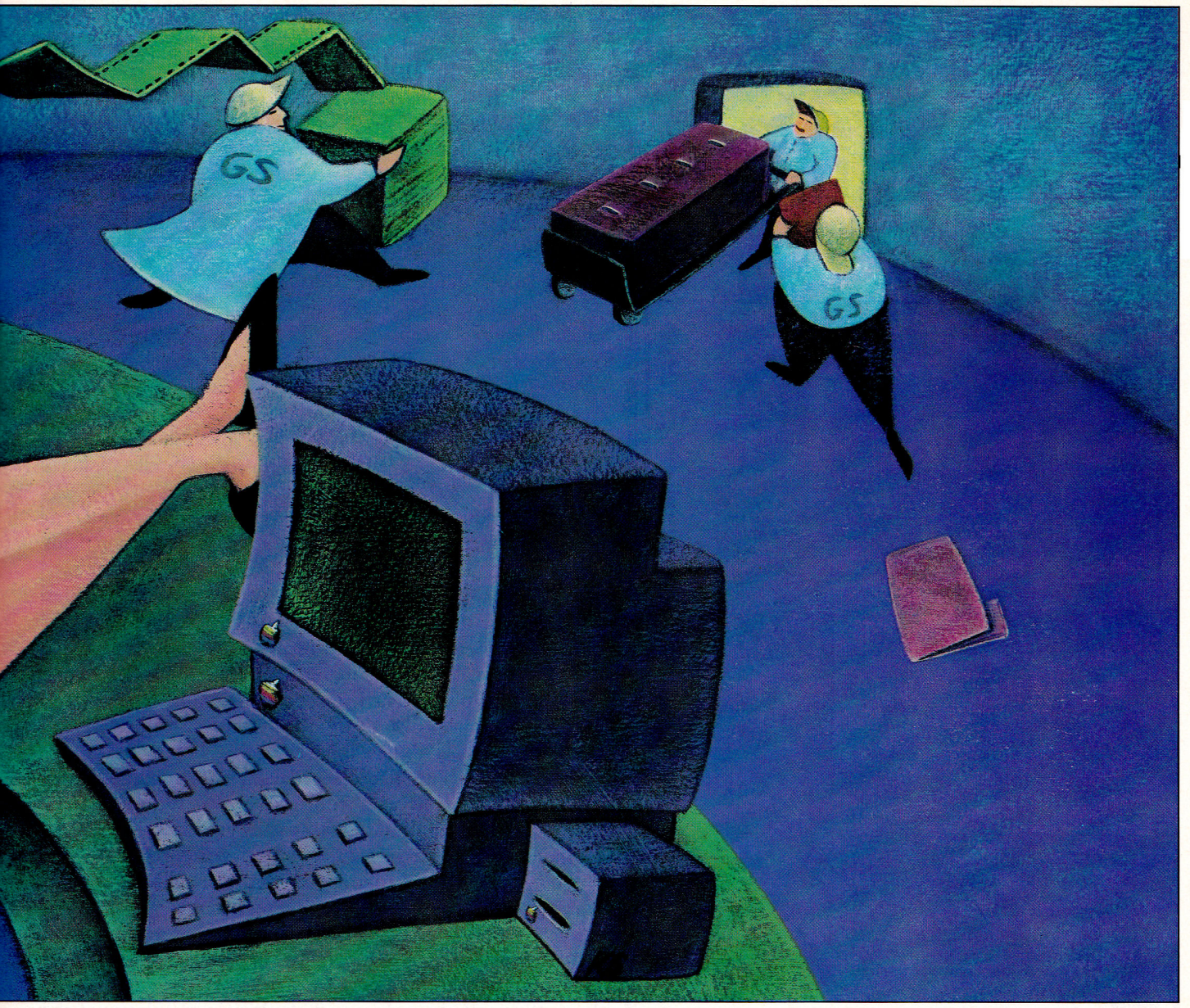
You can stop procrastinating: Three graphics-oriented database-management programs for the Apple IIGS—**List Plus** (Activision), **Softwood GS File** (Brown-Wagh Publishing), and **Notes 'n' Files** (DataPak)—prove that information organization and management *can* be enjoyable, even entertaining.

How come? The IIGS makes it easy. Like other GS programs that espouse Apple's "human interface" standards, List Plus, Softwood GS File, and Notes 'n' Files feature pull-down menus, for one thing. That's where you'll find customary GS program functions like File and Edit as well as special database-management functions such as Sort and Calculate. Mouse control makes these GS database programs simple to use, though mnemonic keyboard equivalents offer more direct access to some features. Keyboard equivalents can speed up certain database-specific processes—defining fields, for instance.

In fact, Softwood GS File's "Define Data" setup makes this process a snap. Press Open apple-D, then type the new category's name in its designated box. Next, using the mouse, click on "radio buttons" to select the category's closest attribute: Text, Amount, Date, Time, Yes/No, Phone, Alphabetic, or Alphanumeric.

List Plus and Notes 'n' Files include their share of radio buttons, too. In List Plus they can help you set up single- or multiple-record reports with centered, right-, or left-justified headers. In Notes 'n' Files, click on the designated radio button to print one-across, two-across, or three-across mailing labels.

While these three programs share many ease-of-use and productivity functions (see the accompanying **Table** for a feature-



by-feature comparison), GS database managers differ strikingly from each other and probably from any database programs you've seen before. Depending on your GS' memory, your computing budget, and your visual preference, any one of these programs can help you *enjoy* keeping track of life's otherwise-boring details.

LIST PLUS—THE HYBRID

Activision's program requires 768K, a RAM expenditure that results in some extraordinary database features.

If you're one of those people who, to the dismay of purists, use a spreadsheet program habitually for "database" functions, take a close look at List Plus. Just boot it up and the main data-entry screen appears as a grid with columns and rows. Remind you of something you've seen before?

Just like a spreadsheet, List Plus lets you enter, edit, and manipulate data within this graphics-based, on-screen matrix. Columns are fields; rows are records. You can toggle to the program's "index card" screen—a second appealing graphics display—and fill in individual records. If you've used AppleWorks, you're already adept at zooming in and out like this.

Unlike most database programs, GS or not, List Plus offers more than 30 mathematical operations and functions, affording you the option of building complex formulas containing not just numbers and functions, but constants, dates, column names, alphanumeric characters, and conditional if/then/else expressions, as well.

Commonly used analytical functions (Total, Count, Minimum, Maximum, and Average) are listed in the program's easily accessed, pull-down menu Calculate. Built-in functions that support advanced "spreadsheet" math, including trigonometric calculations, are not available, however.

List Plus stands apart from Softwood GS File and Notes 'n'

QUALITY SOFTWARE AT UNBELIEVABLE PRICES!

Public Domain and Shareware



The Best of Apple II Public Domain Software, Edition II

The most complete and well-indexed directory of public domain and shareware.

☐ *The Best of Apple II P.D., Edition II, 350 pages (plus $2 s/h)* **$9.95**

APPLE IIGS 3½" DISKS

☐ **GS1** Diversi Utilities: Diversi-Cache/Copy/Key/Hack 1.6 (SHAREWARE) . . . **$9**
☐ **GS2** Desk Accessories — Notepad, Calendar, Diskinfo **$9**
☐ **GS3** More DAs! Setspeed, Setslot, Picsaver **$9**
☐ **GS4** Watch your screen melt! Display time & date, plus 5 DAs **$9**
☐ **GS5** Graphic utilities: convert pics from any computer to IIGS format . . . **$9**
☐ **GS6** Freeterm telecom.: rated A+ Mag's 1987 "All Stars," needs 512K . . **$9**
☐ **GS7,GS8,GS9** Lots of pictures to run with PaintWorks Plus, Deluxe Paint II, or our GS5: Enterprise, MaxHeadroom, etc. (3 disks) **$27**
☐ **GS10** Songs: Beethoven, Beatles, + more, for use w/Music Construc. Set . **$9**
☐ ***NEW* GS11** Graphics package: birthday card, sunrise scene, plus more . **$9**
☐ ***NEW* GS12** Paintings, drawings: Bloom county, Monet painting, robot, more . **$9**
☐ ***NEW* GS13** 40 songs played w/Music Studio,™ incl. "Sound of Music" . **$9**
☐ ***NEW* GS14** 50 fonts from formal to fancy, incl. sign language font **$9**
☐ ***NEW* GS15** Games: Towers of Hanoi puzzle, Othello, plus more **$9**
☐ **Any 10 Disks for Only** **$49.95**
☐ **All 15 Disks for Only** **$65**

APPLE II 5¼" DISKS

CAD
☐ **310/311/312** CAD & graphing pkg. (3 disks) . **$15**
Genealogy
☐ **192** Family Tree Surgeon, hi res movies **$5**
Business/Home
☐ **039** G/L, 15 financial programs, payroll **$5**
☐ **056** Versatile check balancer, w/doc. **$5**
☐ **057** Database:simple, w/doc. (SHAREWARE) . . **$5**
☐ **404** Personal & home accounting **$5**
☐ **406** Address/phone Dbase w/RAM drive **$5**
☐ ***NEW* 418** Cash flow, sales analysis, pie chart . **$5**
Word Processing
☐ **037** Freewriter (II+ needs paddles or joystick) . **$5**
Education
☐ **062** Alphabet, spelling, word games **$5**
☐ **064** Drills: typing, spelling, history, SAT **$5**
☐ **066** Teacher's aid: grader, make tests **$5**
☐ **069** Geography, fractions/decimals **$5**
☐ **085** Elem math: +,−,×,÷, 23 levels **$5**
☐ **502** Flash cards, speed reading, Spanish . . . **$5**
☐ **505** Grammar Quest II adventure game **$5**
☐ **517** Spelling tutor with multiple levels **$5**
☐ **602** Genetics, anatomy, biology **$5**
☐ **605** Chem: gases, acid/base, quant mech . . . **$5**
☐ ***NEW* 518** History, vocabulary, math, astronomy, (SHAREWARE) **$5**

SPECIAL!
Any 6 disks plus Apple Directory 1 Yr. Membership
(IIgs disks may be included)
Only $39.95
(plus $4 s/h)

1 Yr. Membership includes:
1. 350 pg indexed directory of our software library
2. Qtrly. magazine w/software updates + reviews
3. Special discounts!

Games
☐ **118** ANDROMIDA: Hi res space shoot-em-up game **$5**
☐ **123** Missile Command, Star Trek, Life **$5**
☐ **126** Anti-Gravity—Fast action—Addictive! **$5**
☐ **127** Defender (like arcade version), D-Day **$5**
☐ ***NEW* 131** Electronic jigsaw puzzle of Churchill, King Tut, etc. **$5**
Tutorials
☐ **000** Learn BASIC programming, assembler **$5**
Art
☐ **023** Make drawings, paint w/23 textures **$5**
☐ **026/027** Make animated movies! (2 disks) **$10**
Communication
☐ **264** Talk is Cheap terminal emulator — A+ Mag's "All Star" rated (SHAREWARE) . **$5**
☐ **267/268** BBS sys.; create terminal programs & BBSs. (2 disk set, SHAREWARE) . **$10**
Music
☐ **186** Compose, edit & play music, with documentation on disk **$5**
Passion
☐ **190/191** Graphics and games, adults only (2 disks) **$10**
Utilities
☐ **213** Best of Utilities: Disk arranger, disk catalog, free space, etc. **$5**
☐ **226** Diversi-DOS:read, save, load, and write many times faster than DOS 3.3 . . **$5**
☐ **244** 30 useful disk & programming utilities **$5**

Add $4 ($10 foreign) shipping and handling for disk orders, or $2 ($5 foreign) if ordering directory only. California orders add sales tax.

Enclosed $_____ by ☐ Check ☐ VISA ☐ MC

Card no. _____ Exp. _____

Name _____

Address _____

City _____ State ___ Zip _____

THE ◆PUBLIC◆DOMAIN EXCHANGE
2074C Walsh, Ste. 759
Santa Clara, CA 95050

CALL NOW: In CA **408-496-0624**

DEALER INQUIRIES INVITED

ORDER TOLL FREE 800-331-8125

Files in yet another way. You can work with four "lists" at a time, corralling each in its own movable, resizable window. Want to transfer a customer name from one list to another? It's as easy as using the program's Copy and Paste commands.

SOFTWOOD GS FILE— GRID LINES KEEP YOU ORGANIZED

When Softwood GS File loads, you immediately notice its sedately colored screen display—the worksheet area may remind you of a sheet of ruled paper. Enter a field name, and the screen draws a vertical line, creating the first database category or "column." More fields yield more columns, until Softwood GS File, like List Plus, almost looks like a spreadsheet. (You can turn "grid" lines off if you want.) Softwood GS File supports basic mathematical operations only.

Like List Plus, Softwood GS File lets you use the mouse to expand column widths (field sizes) or to drag and position fields when you're laying out report formats. And this database program, like Activision's, lets you toggle between "list" and "index card" views. You can enter, edit, and manipulate database information in either mode. Fill in spreadsheet-like cells or fill in forms—it's all the same to Softwood GS File.

To speed up data entry, the program capitalizes the first character automatically. If you don't want this feature, disable it via the program's Open apple-U toggle.

Softwood GS File, like other database programs, searches through listings and sorts information in a variety of ways. Search criteria include the usual—equals, greater than, less than, contains, and so on. Instead of typing arcane codes, "press" radio buttons for the criteria you want. Sort selected records (or the whole database) by clicking on a single column or by clicking on sequential columns for multiple sorts.

Both List Plus and Softwood GS File let you create, format, and print free-form, table-, or label-style reports with an ImageWriter II. According to Terry Wright, developer of the program, Softwood GS File can theoretically support nearly any serial printer because of the way the program sends characters. There's no printer-configuration setup.

Softwood GS File appears "non-GS" in other, mostly trivial, ways. No ellipses trail the "save as" option, for example; and you don't "close" a file, you "abandon" it.

For 512K GSs, Softwood GS File is an attractive database option. Best of all, version 2.0, which should be available by the time you read this, promises to include graphics and sound capabilities at an upgrade cost of $30 to registered owners of previous editions.

Wright says Softwood GS File 2.0 will include "a sound field and a picture field." He explains that the sound field can access digitized music on disk, for instance, while the picture field can integrate graphics from most popular GS paint programs. With these two field types, you'd be able to run slide shows, sound shows, or movies (combinations of slides and sounds). Wright suggests one particularly appealing application: "Say you have a music database of LP records. You could digitize music from a record (Brown-Wagh uses Applied Visions' FutureSound dig-

Product Information

List Plus 1.0
Activision, Inc.
3885 Bohannon Drive
Menlo Park, CA 94025
(415) 329-0500
(415) 329-7699,
product support
$99.95

Reader Service No. 300

Notes 'n' Files 1.3
DataPak Software, Inc.
14011 Ventura Boulevard
Suite 507
Sherman Oaks, CA
91423-3587
(800) 327-6703
(818) 905-6419
$129.95

Reader Service No. 301

Softwood GS File 1.00.7
Brown-Wagh Publishing
16795 Lark Avenue
Suite 210
Los Gatos, CA 95030
(800) 451-0900
(408) 395-3838
$99.95

Reader Service No. 302

itizer) and a picture of the album's cover."

These enhanced features will likely require additional memory—probably about 1 megabyte, Wright indicates.

NOTES 'N' FILES—ICONS GALORE

If you like graphics features in database management, you'll take a shine to Notes 'n' Files.

To DataPak's program, databases filled with records are double-drawer file cabinets stuffed with manila folders. The program's graphics screen expands the metaphor further. A large file-cabinet icon representing the Master List (the main database) and smaller index-card icons representing two subsets of the Master List decorate the screen. There's even an icon of a copy machine (darned if it doesn't look like one) and the Macintosh-style trash can.

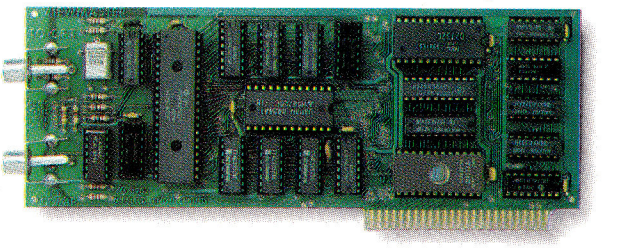
Wooing a new customer? Select a file folder from the "Stationery" stockroom (another icon on the Notes 'n' Files screen), open it (with a double click), and fill in customer information on the Folder Summary Form, preformatted with 15 fields, including name, address, and phone numbers, to help you organize your data. There are fields for miscellaneous entries and others for automatic date-stamping. A field for "Comments" is also provided. If you want to reconfigure the Folder Summary form, you can change field names to accommodate your needs.

Extending the office file-cabinet scenario, Notes 'n' Files' word processor lets you open document windows to create memos, customized form letters, and reports as long as ten pages. Integrate database information into these documents and store them in the file drawer containing a dedicated folder for each friend, customer, or association member.

Notes 'n' Files' word processor offers you a choice of two fonts (Helvetica and Bookman) in four styles (Plain, Bold, Italic,

Viewmaster 80

Now run AppleWorks™ on your II+ *and* keep full 80 column compatibility!



	BUILT-IN SOFTSWITCH	SHIFT KEY SUPPORT	LOW POWER DESIGN	80 COLUMN HOME	7 × 9 DOT MATRIX	LIGHT PEN INPUTS	40 COLUMN OVERRIDE	INVERSE CHARACTERS	
VIEWMASTER 80	√	√	√	√	√	√	√	√	
SUPRTERM		√					√	√	
WIZARD 80					√		√	√	
VISION 80	√	√			√				
OMNIVISION		√					√	√	
VIEWMAX 80	√	√			√			√	
SMARTERM	√	√				√	√		
VIDEOTERM		√	√		√	√		√	

One look at the chart will give you some of the reasons there's only one smart choice in 80 column cards for your Apple. But the real secret to Viewmaster 80's success is something even better: Total compatibility.

Each Viewmaster 80 includes our powerful AppleWorks expand software, allowing AppleWorks to run on the II+ with only 64K (or more) memory. (We recommend the RamFactor memory card, but any compatible Apple memory card will work.) The software provides our full range of AppleWorks enhancements, including expanded records, word processor, multi-disk saving, time and date display on screen with any ProDOS clock, and more!

The Viewmaster 80 works with all 80 column applications, including DOS 3.3, ProDOS, CP/M, Pascal, WordStar, Format II, Applewriter II, dBase II, VisiCalc, Multiplan, and *hundreds* of others — including AppleWorks.

Here are just a few of the powerful features the Viewmaster 80 delivers for a great price: • 80 Characters by 24 lines • Very low power consumption • High speed (18 MHz) scroll rate • Upper and lower case characters and true descenders, both inverse and normal; all on-screen editing functions are supported • User-definable cursor shape • Compatible with Apple II, II+ and IIe • Five-year warranty.

Viewmaster 80 $159.00 **16K RAM Card $89.00**

See your dealer or call today, 9 a.m. to 11 p.m. seven days, or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 outside U.S.A.

CP/M is a registered trademark of Digital Research, Inc.

Applied Engineering
The Apple enhancement experts.
P.O. Box 5100, Carrollton, TX 75011
214-241-6060
Prices subject to change without notice.

and Underline) and three sizes (9-, 12-, and 18-point). In addition to supporting the ImageWriter II in all black-and-white printing modes, Notes 'n' Files supports "letter-quality" printers in draft.

Notes 'n' Files is appealing not only for its iconic interface, but for its real-world file-cabinet analogy and its graphics-oriented word-processing features, as well. The program's preconfigured File Summary setup may be too constrained for some applications, and a lack of mathematical functions may preclude the program's acceptance by some database users. Still, Notes 'n' Files probably offers as much database-management performance as many GS-enhanced homes and small businesses need.



Top to bottom: Softwood GS File features "radio buttons" and organizational grids; Notes 'n' Files' interface is based on an iconic office file-cabinet scenario; List Plus offers basic spreadsheet functions.

THE BEST YET

No database program I'm aware of can free you from the thought-intensive process of designing appropriate database record "forms." Furthermore, once you've set up your format, no database program I know of will type all that information for you!

Nevertheless, the software described here and in the accompanying **Table** provides GS owners with three distinctive, attractive ways of organizing everyday personal, professional, and business information. These programs do a creditable job linking the GS' present with its future—a future that's looking more appealing all the time.■

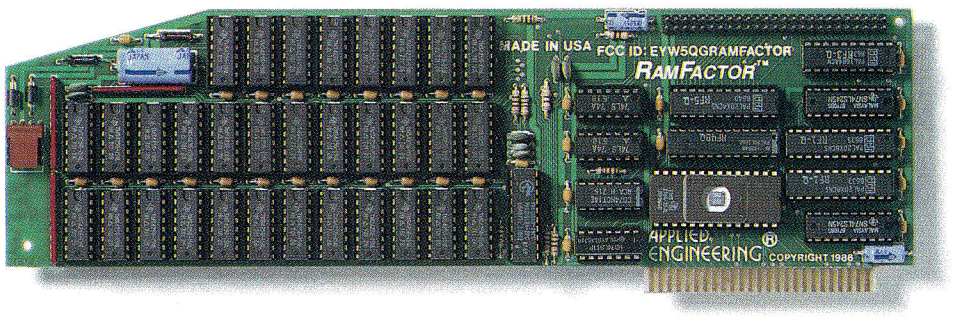
	List Plus	Notes 'n' Files	Softwood GS File
Version	1.0	1.3	1.00.7
Price	$99.95	$129.95	$99.95
RAM Required	768K	512K	512K
Approximate Loading Time (min:sec)	2:40	2:16	2:17
Main-Screen Appearance	spreadsheet	file cabinet	ruled paper
Pull-Down Menus	8	7	8
Keyboard Equivalents for Some Commands?	Y	Y	Y
Movable Windows?	Y	Y	N
GS Paint Palette?	N	N	N
Maximum # Fields per Record	50–60+ (RAM-dependent)	15	32
Maximum Field-Name Length (Characters)	16	40	15
Maximum Field-Entry Length (Characters)	255	37	64 (text field)
Maximum # Records per File Depends on Size of	RAM	disk	RAM
Maximum Limit	none	about 2500 records on 3½-inch disk	32,000 records
Math?	Y	N	Y
Built-In Mail Merge?	N	Y	N
Integrate Graphics?	N	N	N
Choice of Fonts?	N	Y	N
Copy-Protected?	N	N	N
Part of Integrated Series?	N	N	N
Imports AppleWorks Database Files?	Y	Y	Y
Imports/Exports ASCII Files?	Y/Y	Y/Y	Y/Y
Free Templates?	Y (8)	N	N
Printers	ImageWriter LaserWriter	ImageWriter daisywheel	ImageWriter
Color Printing?	N	N	N

Table. *Three GS database managers compared.*

Cynthia E. Field is the author of Field Trip, inCider's *column on educational software, and Press Room, our column on desktop publishing. She is a free-lance journalist specializing in computer-related topics. Write to her at 60 Border Drive, Wakefield, RI 02879. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*

RamFactor™

The Ultimate Slot 1-7 Memory Card



RamFactor is automatically recognized as additional workspace memory by AppleWorks 1.3 and 2.0. In addition, RamFactor's memory can be used for creating the ultimate in program speed—a lightning-fast RAMdisk for the Apple IIGS, IIe, II+, Franklin and Laser 128. A RAMdisk does not depend on the slow moving parts of a conventional floppy drive. RAMdisks eliminate wear and tear on your disk drive plus your programs run up to 20 times faster! When a program is in RAM, your computer won't have to search for it in the mechanical disk drive during program operation. With RamFactor, you can have up to 9 seperate simultaneous RAMdisks—even in different operating systems! Now you can instantly switch from one program to another or even switch from AppleWorks to DOS 3.3 to CP/AM to Apple Pascal 1.3 to ProDOS.

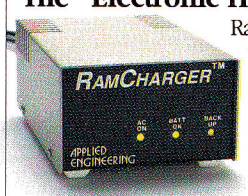
Apple Memory Expansion Card Compatible

RamFactor is 100% Apple Memory Expansion Card compatible. This means that software designed for Apple's card is automatically compatible with RamFactor. Thousands of software programs—including AppleWorks, Pinpoint, MacroWorks, MultiScribe, and Managing Your Money—can take advantage of the speed and performance RamFactor provides. But with Apple's card, you can have only one RAMdrive partition instead of the 9 simultaneous RAMdrives that RamFactor offers. And that's only part of the story . . .

2.0 AppleWorks Power

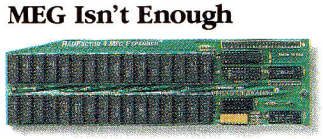
Other slot 1-7 cards can give AppleWorks a larger desktop, but that's the end of their story. RamFactor provides many more powerful functions. It's the only slot 1-7 card that increases AppleWorks 2.0 internal limits by increasing the maximum number of records in the database to 22,600, increasing the maximum number of lines permitted in the word processor to 22,600, and expanding the clipboard size to 2,250 lines maximum. RamFactor is the only standard slot card that will automatically load all of AppleWorks into RAM, dramatically increasing speed and eliminating the time required to access the program disk. It will even display the time and date on the AppleWorks screen with a ProDOS clock. RamFactor will automatically segment large files so they can be saved on multiple 5¼" and 3½" floppies or a hard disk. All this performance is available for the Apple IIe, Laser 128, Franklin or 64K Apple II Plus when used with an 80 column card. No other standard slot card comes dose to enhancing AppleWorks so much.

The "Electronic Hard Disk"



RamCharger is an optional battery back-up device, (about the size of a disk drive), that can plug into a connector on RamFactor. With RamCharger added to RamFactor, your program will appear almost instantaneously when you turn on your computer. RamCharger contains LED's that let you know RamFactor's reserve power status. Since RamCharger has its own built-in power supply, it can retain RamFactor's memory indefinitely. Plus, RamCharger's battery will continue backing up RamFactor's memory for up to 10 hours during power failures. An optional "Y" cable is also available that allows one RamCharger to power two fully expanded RamFactors.

If 1 MEG Isn't Enough



A 4 MEG RamFactor Expander can be plugged into the expansion port on RamFactor for up to 5 MEG's total. RamFactor Expander uses standard 1 MEG chips and can be expanded in 1 MEG increments. With the addition of RamCharger, both RamFactor and the expander will provide up to 5 MEG's of lightning-fast battery backed storage.

Features

- Compatible with Apple IIGS, IIe, II+, Franklin and Laser 128
- 256K to 1 MEG on main board with 256K memory chips; expansion port supports up to 5 MEG with Expander option
- 100% Apple Memory Expansion Card compatible
- RamCharger battery back-up option available for permanent storage
- Reduces power strain to internal power supply with RamCharger option
- Fully socketed and user upgradeable
- Expands internal limits of AppleWorks 2.0
- Automatically recognized by ProDOS, DOS 3.3, Apple Pascal 1.3 and CP/AM
- Built-in RAMDrive software (true RAMdisk not disk caching)
- Graphic memory test included
- Allows Apple II+ to run AppleWorks 2.0 without buying additional software
- Automatically recognized by AppleWorks 1.3 and 2.0
- Fits in any I/O slot except slot 3
- 5 year warranty — parts and labor
- Proudly made in the U.S.A.

RamFactor with 256K	**$269**
RamFactor with 512K	**$389**
RamFactor with 1 MEG	**$629**
RamFactor Expander with 1-4 MEG	**CALL**
RamCharger backup option	**$179**
"Y" cable	**$24**

(Allows one RamCharger to power two RamFactors.)

Order RamFactor today . . . with 15 day money back guarantee and our five year warranty. *See* your dealer or *call* (214) 241-6060, 9 a.m. to 11 p.m., 7 days, or *send* check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 if outside U.S.A.

APPLIED ENGINEERING™

The Apple enhancement experts.

(214) 241-6060

P.O. Box 5100, Carrollton, TX 75011

Prices subject to change without notice.

RamFactor and RamCharger are registered trademarks of Applied Engineering. Other brands and product names are registered trademarks of their respective holders.

SILICON EXPRESS DISKS SS/DD 6.95 DS/DD 7.95

VERBATIM OR MAXELL SS/DD 13.95 DS/DD 16.95

YOUR TOLL FREE ACCESS CALL...FOR THE BEST PRICES...BEST DELIVERY

1-800-999-6868

We have hundreds of other programs in stock at Fantastic savings.

SILICON EXPRESS

LASER 128 EX—APPLE COMPATIBLE COMPUTER $449.95

ACT (Harcourt)	29.95
Adventure Const.	11.95
Airheart	22.95
Algeblaster	28.95
Alphabet Zoo	18.95
Alpha Plot	20.95
American Challenge	24.95
Animate	42.95
Architectural Design	71.95
Archon II	11.95
ASC II Express	73.95
Assembly Lines Bk.	13.95
Auto Duel	32.95
Award Maker Plus	27.95
Bag of Tricks #2	28.95
Balance of Power	34.95
Ball Blazer	9.95
Ballyhoo	19.95
Bank Street Filer	39.95
Bank Street Mailer	39.95
Bank Street Music	34.95
Bank St. Writer Plus	49.95
Bank Street Speller	39.95
Bard's Tale	29.95
Bard's Tale II	31.95
Baron	30.95
Beagle Bag	19.95
Beagle Basic	22.95
Beagle Compiler	49.95
Beagle Graphics	39.95
Beagle Screens	22.95
Bnth. Apple Pro DOS	12.95
Big U	22.95
Blazing paddles	24.95
Blue Powder	34.95
Bookends	69.95
Bookends Extended	84.95
Bop & Wrestle	18.95
Breakers	27.95
Bureaucracy	26.95
Bus.works Bundle	394.95
Bus.works Payroll	154.95
Cad Apple	69.95
California Games	27.95
Carmen Sandiego USA	28.95
Carmen Sandiego World	27.95
Certificate Maker	27.95
Library Vol. 1	20.95
Chshp. Load Runner	19.95
Chart 'n Graph Tlbx.	23.95
Chessmaster 2000	27.95
Choplifter	10.95
Clan Accountant	54.95
Classmates	28.95
Clip Art Vol. 1 or 3	19.95
Clip Art Vol. 2	23.95
Commworks	57.95
Complete Graphics	25.95
Compuserve Starter	21.95
Conflict in Vietnam	24.95
Copy II +	21.95
Create a Calendar	20.95
Create with Garfield	20.95
Crimson Crown	11.95
Crossword Magic	31.95
Crusade in Europe	23.95
D Code	26.95
Database Toolbox	23.95
Dazzle Draw	36.95
Decision in Desert	27.95
Deluxe Paint IIGS	69.95
Desk Accessories	27.95
Destroyer	26.95
DiskQuick	19.95
Document Checker	43.95
Dollars & Sense	74.95
DOS Boss	15.95
Double-Take	22.95
Dragonworld	10.95
Draw Plus IIGS	62.95
Early Games	20.95
Easy as ABC	23.95
Eidolon	9.95
816 Paint	52.95
Essential Data Dup 4	19.95
Europe Ablaze	32.95
Extra K	26.95
F-15 Strike Eagle	20.95
Facemaker	26.95
Factory	31.95
Family Roots	149.95
Fantavision	29.95
Fat Cat	22.95
Financial Cookbook	10.95
Fleet System III	39.95
Flight Sim. II	32.95
Flight Scenery	CALL
Fontrix	64.95
Fntpaks 1 thru 13 ea.	17.95
Font Mechanics	19.95
Fraction Factory	17.95
Fraction Fever	17.95
Game Maker	32.95
Gato	24.95
Gertrude's Puzzles	27.95
Gertrude's Secrets	27.95
Ghostbusters	10.95
GI Joe	13.95
GPLE	32.95
Grafix Pro	18.95
Grammar Gremlins	28.95
Graphics Department	69.95
Graphics Expander	23.95
Graphics Magician	25.95
Graphics Scrapbook	16.95
Hacker or Hacker II	24.95
Handlers Package	69.95
High Sea	34.95
High Stakes	24.95
Hitchhiker's Guide	10.95
Homeword +	43.95
Homeworker	51.95
Infiltrator	19.95
Infomerge	47.95
Instant Art	20.95
Interior Design	52.95
I.O. Silver	16.95
Jet	28.95
Karateka	21.95
Key Player	30.95
Kid Writer	24.95
Kids on Keys	17.95
Kinder Comp	27.95
Knight of Diamonds	34.95
King's Quest I, II or III	29.95
Koronis Rift	19.95
Landscape Design	52.95
Leather Goddess	25.95
Leisure Larry	27.95
Legacy of Llylgamyn	32.95
List Handler	39.95
Locksmith	38.95
Lode Runner	21.95
Macroworks	22.95
Magic Spells	24.95
Man. Your Money	99.95
Master Type	23.95
Math & Me	24.95
Math Blaster +	29.95
Math Rabbit	24.95
Megaworks	48.95
Merlin	39.95
Merlin 8/16	88.95
Merlin Combo	67.95
Merlin Pro	57.95
Micro Cookbook	26.95
Micro Lg. Baseball	23.95
Micro Lg. Manager	23.95
Micro Lg. Team Disk	13.95
Might & Magic	34.95
Millionaire II	39.95
Minipix 1, 2 or 3	19.95
Missing Links	31.95
Moebius	39.95
Monty Plays Scrabble	31.95
Moon Mist	24.95
Mouse Talk	58.95
MouseWrite	87.95
Multiplan DOS 3.3	69.95
Multiscribe 3.0	54.95
Multiscribe GS 3.0	64.95
Multiscribe Fonts	13.95
Munch-A-Bug	23.95
Music Construction	11.95
Nam	24.95
NATO Commander	20.95
Newsroom	33.95
Nord & Bert	27.95
Ogre	21.95
On Balance	39.95
One-On-One	11.95
Paintworks	62.95
PFS: File & Report	69.95
PFS: Graph	69.95
PFS: Workmates	148.95
PFS: Write	69.95
Piece of Cake Math	20.95
Picture Manager	27.95
Pinball Construction	11.95
Pinpoint	49.95
Pinpoint Spell Chker.	43.95
Pinpoint Toolkit	27.95
Point-to-Point	68.95
Pond	31.95
Power Print	26.95
Printermate	44.95
Printographer	24.95
Printmaster Plus	34.95
Print Quick	34.95
Printrix	44.95
Print Shop	28.95
Print Shop Gs	42.95
Print Shop Holiday	14.95
Pr. Shp. Gr. #1,2 or 3	14.95
Print Shp. Companion	23.95
Print Shop Refill	11.95
Probyter	22.95
Profiler 3.0	89.95
Program Writer	32.95
Pronto DOS	19.95
Pro Team	79.95
Publish It	69.95
Quicken	33.95
Ram-Up	32.95
Reach for the Stars	31.95
Read and Roll	28.95
Reader Rabbit	23.95
Report Card	34.95
Report Works	49.95
Rescue on Fractalus	6.95
Road Race	10.95
Rocky Horror Show	13.95
Robot Odyssey I	29.95
Rocky's Boots	29.95
Run Run	29.95
Sargon III	13.95
Sat (Harcort Brace)	24.95
Science Tool Kit	52.95
Sensible Grammar	54.95
Sensible Speller	69.95
Sensible Writer	59.95
Shanghai	24.95
Shape Mechanic	26.95
Shard of Spring	27.95
Sideways Pro Dos	41.95
Silent Service	20.95
Silicon Salad	16.95
Skyfox	11.95
Smart Money	49.95
Soft Switch	34.95
Solo Flight	20.95
Speed Reader II	41.95
Spellicopter	24.95
Spell It	29.95
Spin Dizzy	10.95
Springboard Publisher	94.95
Squire	31.95
Star Fleet I	33.95
Star Trek I or II	25.95
Sticky Bear ABC	22.95
Basic	22.95
Basket Bounce	22.95
BOP	22.95
Car Builder	22.95
Drawing	22.95
Math Word Problems	22.95
Music	22.95
Math 1 or 2	22.95
Numbers	22.95
Opposites	22.95
Parts of Speech	22.95
Printer	22.95
Reading	22.95
Rd. Comprehension	22.95
Shapes	22.95
Spellgrabber	22.95
Town Builder	22.95
Typing	22.95
Word Problems	22.95
Story Maker	27.95
Sub Battle	27.95
Sum. Games I or II	13.95
Super Huey	20.95
Super Macroworks	32.95
Take 1	34.95
Tass Times	24.95
Temple of Apshai Tri.	13.95
Terrapin Logo	59.95
Terrapin Utilities	13.95
Think Quick	34.95
Think Tank	89.95
Thinkworks	49.95
Timeout Desktools	32.95
Timeout Filemaster	32.95
Timeout Graph	59.95
Timeout Quickspell	46.95
Timeout Sidespread	32.95
Timeout Superfonts	52.95
Timeout Ultramacros	39.95
Tip Disk #1	13.95
Top Draw	62.95
Toy Shop	32.95
Transylvania	11.95
Trinity	24.95
Triple-Dump	26.95
Turbo Pascal 3.0	44.95
Turbo Database Tlbx	45.95
Turbo Tutor	21.95
Tycoon	31.95
Type!	28.95
Typing Tutor IV	30.95
Ultima III	27.95
Ultima IV	39.95
Understanding IIE	17.95
Utility City	19.95
Video Toolbox	23.95
V.I.P. Professional	164.95
Visable 6502	39.95
Visualizer IIE	58.95
Visualizer IIGS	64.95
Webster Spell Chker.	37.95
Whitehead Chess	44.95
Wilderness	20.95
Will Writer	29.95
Winter Games	13.95
Wishbringer	10.95
Wizardry	30.95
Wizard's Toolbox	23.95
Wizprint	15.95
Word Attack	29.95
Word Handler	36.95
Word Juggler	69.95
Word Perfect	88.95
Word Perfect GS	88.95
World's Great. Bball	13.95
World's Great. Ftball	13.95
Writer Rabbit	34.95
Write Choice	41.95
Writer's Choice	62.95
Zork Trilogy	34.95

HARDWARE

80 Col. 64K Card (II E)	49.95
Datalink Modem	179.95
Disk Notcher	4.95
Disk Drive Controller	46.95
Disk Drive American	129.95
Essential Data Dup 4+	CALL
Fingerprint Plus	88.95
Flight Stick	51.95
Gibson Lightpen	CALL
Grappler Buf. (16K)	114.95
Grappler Pro	79.95
Grappler (serial)	73.95
Grappler C Mac IIGS	73.95
GS-Ram 256K	CALL
GS-Ram 512K	CALL
GS-Ram 1 MEG	CALL
GS Ram 1½ MEG	CALL
GStero	34.95
Hotlink	44.95
Juice Box	67.95
Koala Pad +	77.95
Kraft 2 Button	27.95
Kraft 3 Button	34.95
Laser 128 Computer	378.95
Laser 128 EX	449.95
Laser Disk Drive	88.95
Laser Mouse	58.95
Lemon	26.95
Mach II Joystick	26.95
Mach III Joystick	34.95
Mach IV Joystick	49.95
Micromodem IIE	153.95
No Slot Clock	49.95
Paddlesticks	29.95
Parallel Printer Card	44.95
Power Supply	59.95
Print-It	122.95
Ram Factor 256K	CALL
Ram Factor 512K	CALL
Ram Factor 1 Meg	CALL
Ramworks 64K	CALL
Ramworks 256K	CALL
Ramworks 512K	CALL
Ramworks 1 Meg	CALL
Ram Keeper	139.95
Super Serial Card	84.95
System Saver Fan	60.95
System Saver IIGS	79.95
Uni Drive American	149.95
Univ. Disk Controller	79.95

PRINTERS

Citizen 120D	174.95
Star LV-1210	189.95
Star NX-1000	209.95
Okimate 20	209.95
Printer Stand	16.95
Printer Ribbons	CALL
Imagewriter Black	4.49
Imagewriter Color	4.99
Imagewriter II Color	11.99
Color Paper Pack	12.95

SILICON EXPRESS
5955 E. Main St. Columbus, Ohio 43213
1-614-868-6868

SILICON EXPRESS
5955 E. Main St. Columbus, Ohio 43213

Name _____

Address _____

City _____ State _____ Zip _____

Charge # _____ Exp. Date _____

QTY.	DESCRIPTION	PRICE

Computer Type _____ SHIPPING

Phone No. _____ TOTAL

Add $3.50 min. U.S. shipping. C.O.D. $5.00 extra. Hawaii and Alaska $5.95 min. Orders outside U.S. are not insured. Canada & Mexico 10% min. $10.00. All other countries 30% min. $30.00. MasterCard, Visa and school purchase orders accepted. Personal checks allow 3 weeks. 5.5% sales tax for Ohio residents. Defective replaced within 20 days. 20% restocking fee if not replaced with same item. Compatibility not guaranteed. Prices subject to change without notice.

Don't let information storage turn into a three-ring circus. From stamps to membership rosters to bibliographic notes, an Apple II database manager can whip those records into shape.

Tame Your FILES



by Cynthia E. Field, Ph.D.,
Contributing Editor

Baseball cards, coins, books, ancestors, correspondence, team lists, videotapes, personnel records, sales and inventory statistics, reference lists—everybody collects *something*. Keeping track of things seems to be a natural human urge—you don't have to be wealthy and you may not be organized. What do you do with that mountain of information? Let your Apple II store it, sift it, and tell you about it: Database-management programs for the Apple IIe and IIc appeal to a broad spectrum of personal, professional, and business users. (For classroom applications, see the accompanying sidebar, "Databases Go to School.")

Whether your information-filing needs are workaday or extraordinary, take a close look at these six ProDOS contenders: **AppleWorks** (Claris), **Trio** (Softsync), **The Filer** (Spinnaker), **ProFiler** (Pinpoint Publishing), **DB Master Version Five**, and **DB Master Version Five Professional** (Stone Edge Technologies). (See the accompanying **Table** for a feature-by-feature comparison of these products.)

A seventh program, the ProDOS version of the integrated word processor, spreadsheet, and database manager **DoReMe**, was released recently, as well. (DOS version 1.0 was reviewed in *inCider*'s September 1987 issue, p. 30.) According to its manufacturer, Multisoft, DoReMe now includes business graphics, a keyboard-macro facility, and the ability to read AppleWorks files. Look for a review in an upcoming issue.

APPLEWORKS—AN OLD FAVORITE

It's no wonder AppleWorks places consistently in the Apple II "top ten." To begin with, AppleWorks is integrated: Its database component can share information with its word-processing and spreadsheet modules, letting you mail personalized letters to sales prospects or to transfer account data to financial worksheets.

AppleWorks' stacking-file-card menus and mnemonic open-apple key commands make the program easy to learn, though the other programs we'll describe are at least as amicable. When you consider the multitude of preformatted database templates you can acquire—often from users like yourself at little or no cost—you'll begin to appreciate AppleWorks' cosmopolitan appeal.

Whether you use AppleWorks or another database program, setting up an information file is as simple as typing in category (field) names. Next, complete a record by typing in appropriate information for each category. Each AppleWorks database file—analogous to a traditional flip-top box filled with index cards—can accommodate as many as 6350 "cards" (records), each with up to 30 categories whose entries can be as long as 76 characters each. If 76 characters seems too restrictive, you'll soon find ways to devise meaningful abbreviations to squeeze more information into a particular record and maximize use of computer memory.



	AppleWorks	Trio	The Filer	ProFiler	DB Master 5	DB Master 5 Pro
Version	2.0	1.2	N/A	3.1	8060	prerelease 4.3
Price	$250	$59.95	$9.95	$129.95	$179	$295
RAM Required	128K	128K	128K	128K *	128K *	128K *
Menu Appearance	stacking file-card menus	bottom menu bar	drop-down menus	pull-down menus	boxed menus	boxed menus
Reads ProDOS Clock?	Y	N	N	Y	Y	Y
Mouse?	N	N	N	optional	N	N
Maximum # Fields per Record	30	99	10	250	200	200
Maximum Field-Name Length (Characters)	20	76	12	76	20	20
Maximum Field-Entry Length (Characters)	76	76	25	full screen 1680	varies 250 (alpha)	varies 250 (alpha)
Maximum File Size	6350 records (750 with 128K)	999 records	10,000 records	8 MB	10 MB	10 MB
Built-in Macros?	N	N	N	Y	N	N
Relational?	N	N	N	Y	N	Y
Math?	Y	N	N	Y	Y	Y
Graphing?	N	N	N	N	Y	Y
Built-In Mail Merge?	Y	Y	N	N	Y	Y
Copy-Protected?	N	N	N	N	N	N
Part of Integrated Series?	Y	Y	Y	N	N	N
Imports AppleWorks Database Files?	N/A	N	N	Y	Y	Y
Imports/Exports ASCII Files?	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y
Imports/Exports DIF Files?	Y/Y	N/N	N/N	N/N	N/Y	N/Y
Free Templates?	N	N	N	Y	Y	Y
Password Protection?	N	N	N	N	N	Y

** IIe must be enhanced*

Table. *Six Apple IIe/IIc databases compared.*

cards—can accommodate as many as 6350 "cards" (records), each with up to 30 categories whose entries can be as long as 76 characters each. If 76 characters seems too restrictive, you'll soon find ways to devise meaningful abbreviations to squeeze more information into a particular record and maximize use of computer memory.

As with other database programs, AppleWorks lets you manipulate the information in your growing database in a number of ways. You can use the Find command to search for a particular piece of information (your contact person at XYZ Corporation, for instance) or use the Record Selection command to sift through the database and locate only those records that meet up to three specific criteria: United States commemorative stamps printed since 1945, videotape movies starring John Wayne and Maureen O'Hara, or New England plumbing-supply houses offering discounts greater than 15 percent. Sort records alphabetically or numerically (in forward or reverse order) and print variously formatted label- or table-style (columnar) reports—with or without basic computations, such as column totals.

AppleWorks is no heavyweight in the database-management arena, but Claris' program seems to suffice for many people who participate in a wide variety of projects—from collecting stamps to maintaining a club roster.

TRIO—FOR THE BUDGET-MINDED

Trio, priced at $59.95, is a low-cost alternative to AppleWorks, especially for users who need an integrated program but don't care about commercially available add-ons (such as Beagle Bros' **TimeOut** series, reviewed in May 1988, p. 22, or Pinpoint's **Desktop Accessories**) and want to bank the $190 price differential. This three-in-one product includes Trio Word (the word processor), Trio Calc (the spreadsheet), and Trio File (the database).

Like ready reminders, Trio File's commands are displayed in menu strings across the bottom of the program screen. To execute a command, press the first letter of the option together with the open-apple or closed-apple key. If you forget an AppleWorks command, you have to access on-line help or dig out the AppleWorks Quick Reference Card. With Trio, commands are in plain view.

Like other database-management programs, Trio File offers shortcuts that help you save time during data-entry or -editing sessions. In AppleWorks you can implement the ditto command to replicate information from one record to the next. In ProFiler, use Fixed Fields. In Trio File, choose the Copy command.

Like AppleWorks, Trio wasn't designed for power users. Trio File doesn't even "do" math, for instance—you have to transfer data to the spreadsheet for that. And Trio database files are limited to 999 records and single-field searches.

On the plus side, each Trio File record can have as many as 99 information categories, compared to AppleWorks' 30. Like other programs described here, Trio is noncopy-protected.



Product Information

AppleWorks 2.0
Claris Corporation
440 Clyde Avenue
Mountain View, CA 94043
(800) 334-3535
(800) 668-8948 (Canada)
$250

Reader Service No. 304

DB Master Version Five, $179
DB Master Version Five Multiuser, $500
DB Master Version Five Classroom, $500
DB Master Version Five Professional, $295
Stone Edge Technologies
P.O. Box 200
Maple Glen, PA 19002
(215) 641-1825

Reader Service No. 305

DoReMe
Multisoft
120 East 90th Street
Box 5J
New York, NY 10128
(212) 534-4047
$79.95
$39.95 plus $5 shipping, upgrade from DOS 3.3

Reader Service No. 306

ProFiler 3.1, $129
ProFiler Multiuser Version (10 independent workstations), $349
ProFiler File Server Version, $695
ProFiler Multifile/Multiuser Network Version, $995
ProFiler Label Utility, $49.95

Desktop Accessories, $89
Graphic Edge, $89
Pinpoint Publishing
5865 Doyle Street
Suite 112
Emeryville, CA 94608
(415) 654-3050
(800) 633-2252

Reader Service No. 307

Easy Working: The Filer
Spinnaker Software Corp.
1 Kendall Square
Cambridge, MA 02139
(617) 494-1200
(800) 826-0706
$9.95

Reader Service No. 308

TimeOut Series
SuperFonts, $69.95
Graph, $89.95
QuickSpell, $69.95
UltraMacros, $59.95
SideSpread, $49.95
FileMaster, $49.95
DeskTools, $49.95
Beagle Bros
6215 Ferris Square
Suite 100
San Diego, CA 92121
(619) 452-5502
(800) 345-1750
(800) 992-4022 (CA)

Reader Service No. 309

Trio 1.2
Softsync, Inc.
162 Madison Avenue
New York, NY 10016
(212) 685-2080
$59.95

Reader Service No. 310

EASY WORKING FILER—SIMPLICITY ITSELF

It's natural to be cynical about products that cost less than $10, but you may be pleasantly surprised by The Filer, one of three productivity programs in Spinnaker's integrated Easy Working Series. The two "partner" programs, at $9.95 each, are called The Writer (a word-processing program) and The Planner (a spreadsheet program).

The Filer is not only easy on your pocketbook, it's easy on your memory. (Your Apple needs 128K, however.) Program options are organized within drop-down main menus and subsequent pop-up submenus. The program doesn't support the mouse.

These attractive features notwithstanding, The Filer is probably too limited for most database users, though it would be an excellent first database program for children or those new to computing. Each record can have only ten categories, and each field entry is limited to 25 characters—not powerful enough to run a business perhaps, but perfect for keeping track of paper-route customers, favorite rock videos, or a baseball-card collection.

PROFILER—POWER AND VERSATILITY

If you want a Mac-like database manager that's evolved well beyond AppleWorks, consider ProFiler. Not graphics-oriented in the Apple IIGS sense of the word, ProFiler is built around mousetext. Program options are collated within seven pull-down menus: Apple, File, Edit, Search, Print, Setup, and Utility.

ProFiler doesn't require a mouse, though that little critter can facilitate the layout of free-form reports. Feature by feature, you can pick and choose the input mode—mouse, keyboard, or "mouseless mouse"—that works best for you.

Each ProFiler record can accommodate as many as 250 fields; field names can be as long as one screen line (76 characters), and a single field can fill a screen page (about 1680 characters).

Users who need to keep track of copious amounts of text-based material—bibliographic abstracts, for example—should find ProFiler's scrolling, eight-screen recordkeeping capability a boon to their productivity. ProFiler database files can be as large as 8 megabytes.

ProFiler offers other advanced features: built-in macros, word wrap of field entries longer than 79 characters, and a search-

Databases Go to School

Kids today think nothing of doing two things at once—whether it's skateboarding while listening to a Sony Walkman or doing their homework while chatting (incessantly!) on the phone.

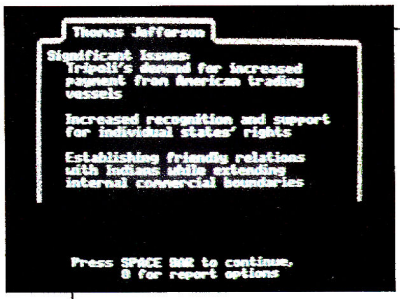
At least four publishers of educational software products offer programs that should appeal to children's natural "multitasking" abilities. MECC, Mindscape, Sunburst, and Scholastic offer database packages that, together with a concerned teacher's guidance, can help develop your son's or daughter's level of computer literacy, increase knowledge of traditional subjects like science or history, and enhance analytical skills.

MECC's series revolves around the company's proprietary database-management program, **MECC Dataquest**. Teachers can create custom databases with **MECC Dataquest Composer** or use preconfigured databases such as **The Fifty States** (grades 5–11), **The Presidents** (grades 7–12), and **The World Community** (grades 7–12).

Besides the MECC Dataquest series, the company offers **Databases in the Classroom** (grades 6–12) in two versions. One series of files is MECC Dataquest-compatible; the other sampler requires **AppleWorks**.

Mindscape's curriculum-based programs, collectively known as **Quest for Files** (grades 9–12), include some databases that focus on social studies: **Dawn's Early Light**, **Hail to the Chief**, and **The Melting Plot**. The Quest for Files: Science series includes **The Upper Crust** (geology), **A Matter of Mystery** (chemistry), and **Food, Glorious Food** (nutrition).

Sunburst's databases are based on Broderbund Software's unintimidating, anyone-can-use-it database program, **Bank Street Filer**. Like its predecessor, the word processor **Bank Street Writer**,



MECC's educational database series Dataquest includes files on U.S. Presidents.

Product Information

Bank Street Beginner's Filer, $79
Bank Street School Filer, $99
Animal Life, **Astronomy**, **Climate and Weather**, **Colonial Times**, **Endangered Species**, **North America**, **Space**, **U.S.**, $59 each
Sunburst Communications
39 Washington Avenue
Pleasantville, NY 10570
(800) 431-1934
(800) 247-6756 (Canada)
(914) 769-5030 (collect)

Reader Service No. 311

Bank Street Filer, $69.95
Bank Street Mailer, $24.95
Bank Street Writer, $69.95
Bank Street Writer Plus, $79.95
Broderbund Software
17 Paul Drive
San Rafael, CA 94903-2101
(415) 492-3200
(800) 527-6263

Dataquest Composer, $55
Dataquest Sampler, **AppleWorks Sampler**, $45 each
MECC Dataquest: The Fifty States, **The Presidents**, **The World Community**, $55 each
MECC
3490 Lexington Ave. North
St. Paul, MN 55126
(612) 481-3500
(800) 228-3504

Reader Service No. 312

and-replace command for one-shot database editing.

Jim Kuhlman, author of ProFiler, has outfitted the latest edition of the program with even more productivity boosters. Version 3.1 includes a zoom window to provide a scrolling, seven-field record summary. Four new field types expand the program's power exponentially. You can have "calculated" fields *within* a record, and a "relational" field that searches for information in another database file. New "graphics" fields let you display hi-res, double-hi-res, super-hi-res, or packed-format graphics within a record. Pinpoint's Greg Hastings explains that you can "put a series of graphics fields in a record and import some charts from **Graphic Edge** to display your company's first- through fourth-quarter earnings. Or use this new feature to create geography lesson plans." A unique "launch" field lets you leave your place in ProFiler temporarily and go to another program. Finish typing a letter to a client, say, and return to ProFiler to resume working with your database.

ProFiler isn't part of an integrated series, however, and lacks a couple of fundamental features: built-in mail merge (you can perform merges via Apple Writer's Word Processing Language or an ASCII file) and the capability to print two- or more-across mailing labels. This latter enhancement is offered through the $49.95 add-on product, **ProFiler Label Utility**.

Business and academic users have a choice of configurations for installing ProFiler in their locations. Various types of lab packs and networking versions are available.

DB MASTER—ADAPTING TO DIFFERENT NEEDS

DB Master Version Five (see this month's Editors' Choice, p. 96) is a powerful, menu-driven, page-oriented database program whose main competition probably comes from ProFiler in terms of power and AppleWorks in terms of popularity.

In some ways, DB Master Version Five may represent the best of both worlds. Each record can have as many as 200 fields; maximum file size is 10 megabytes. The program features free-form text insertion (via a built-in mini word processor), and multiple-across label-printing capabilites.

DB Master Version Five doesn't wear a "modern" face or support the mouse, however. Neither does it offer the special fields ProFiler 3.1 does.

Quest for Files:
Social Studies:
Dawn's Early Light,
Hail to the Chief,
The Melting Plot
Quest for Files: Science:
The Upper Crust,
A Matter of Mystery,
Food, Glorious Food
Mindscape
3444 Dundee Road
Northbrook, IL 60062
(312) 480-7667
(800) 221-9884
$49.95 each, $99.95 lab pack

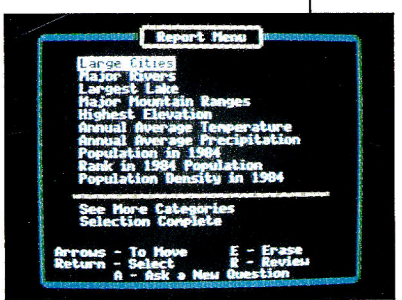
Reader Service No. 313

PFS:File & Report
Software Publishing Corp.
1901 Landings Drive
Mountain View, CA
94039-7210
(415) 962-8910
$99

Reader Service No. 314

Scholastic Data Files for Bank Street Filer, $69.95
Data File/Bank Street Filer Package, $99.95
Scholastic Data Files for AppleWorks:
The U.S. Constitution Then and Now,
Weather and Climate Lab,
$59.95 each
Scholastic, Inc.
2931 East McCarty Street
P.O. Box 7502
Jefferson City, MO 65102
(800) 325-6149
(800) 392-2179 (MO)

Reader Service No. 315



MECC Dataquest's Fifty States files are geared to students in grades 5–11.

Filer is reasonably priced and can be used by the whole family. A third companion product, **Bank Street Mailer,** helps individuals keep mailing lists and send personalized form letters.

Sunburst publishes two versions of Bank Street Filer: **Bank Street Beginner's Filer** (a "learner's version" for children in grades 2–6) and **Bank Street School Filer** (grades 5–12).

Sunburst offers a well-rounded series of eight preconfigured science and social-studies databases for students in grades 4–12: **Animal Life**, **Astronomy**, **Endangered Species**, **Space**, **Climate and Weather**, **North America**, **U.S.**, and **Colonial Times**.

The **Scholastic Data Files** package for Bank Street Filer (grades 5–9) includes three databases on a single disk: Zoos, News, and Animals. In addition to learning how to use Bank Street Filer and ultimately how to create their own database files, students can play "roving reporter" or "scientist," improving their writing and analytical skills.

Scholastic also sells Data Files for AppleWorks users: **The U.S. Constitution Then and Now** and **Weather and Climate Lab** (both for grades 7–12). A series of databases for users of **PFS:File** is also available.

By and large, these databases from MECC, Mindscape, Sunburst, and Scholastic are not ordinarily intended for home use. They generally cost in excess of $50 and come with manuals that address teachers' concerns.

Database programs like these probably work best when a teacher prompts and challenges a student to test hypotheses or discover new relationships among seemingly stale pieces of information. But if your son or daughter has a special interest in database management or in any of these curriculum areas, by all means consider these educational products for your home library.□ **—C.F.**

AppleWorks Is Great!

But...

Let's face it. AppleWorks is a great program, but as a data base manager it leaves a lot to the imagination. Like, imagine more than 30 categories per record. (Lots more!) And using up to 30 screens in the single record display. Or scrolling left and right to see more fields in a multi-record display. And entering up to 250 characters per category.

ACE REPORTER

Imagine printing reports in almost any form: multiple-across mailing labels, columnar reports, mail-merge letters. Even complex forms like school or medical records or invoices. Reports that include free-form text, and printstyles like bold, large and underline, and every easy-to-use formatting option you're ever likely to need.

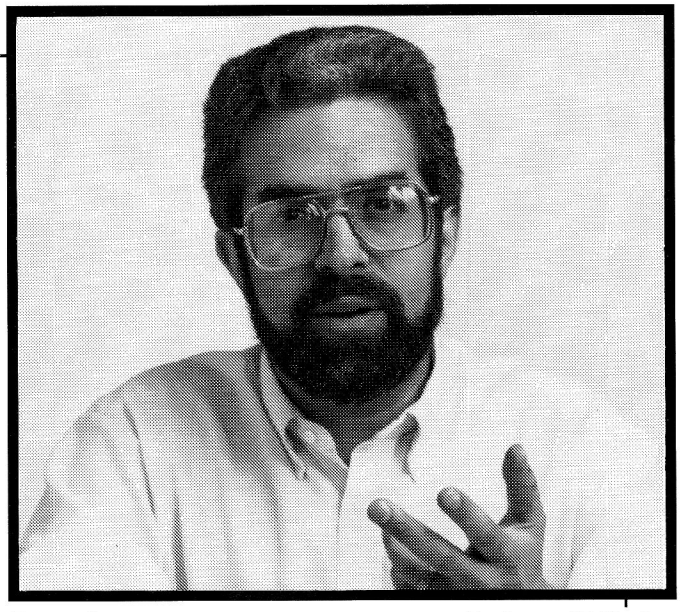
FORMULAS FOR SUCCESS

Imagine calculated categories–lots of them. Not just in reports, but within the records themselves, too. Using multiple levels of parentheses, and date math and string comparisons and other functions. Imagine reports with calculations based on subtotals and totals. Reports that can even group records by week, month, calendar quarter or year.

DB Master vs. AppleWorks

Features and Maximum Capacities	AppleWorks	DB Master Version Five	DB Master Version Five *Professional*
■ RELATIONAL IMPORT (look-up) and EXPORT (posting) RULES	No	No	YES!
■ fields (categories) per record	30	200	200
■ max. record length (bytes)	1,024	2,000	2,000
■ screens per record	1	30	30
■ characters per field (category)	76	250	250
■ RAM or disk based?	RAM	Disk (1)	Disk (1)
■ passwords for file security	No	No	Yes
■ required fields	No	No	Yes
■ field validation rules	No	No	Yes
■ criteria per search or select	3	20-50	20-50
■ computed values within records	None	99 (2)	99 (2)
■ computed values per report	3	50 (2)	50 (2)
■ date calculations	No	Yes	Yes
■ field types	3	13 (3)	13 (3)
■ automatic date and time fields	No	Yes	Yes
■ current mon/day/year searches	No	Yes	Yes
■ report formats per file	8	255	255
■ multiple-across mailing labels	No	Yes	Yes
■ forms-style reports	No	Yes	Yes
■ report lines per record	15	255	255
■ calculations based on subtotals	No	Yes	Yes
■ free-form text in reports	No	Yes	Yes
■ print fields and/or free-form text in various printstyles	No	Yes (4)	Yes (4)
■ print simple bar graphs	No	Yes	Yes
■ multiple levels of header and footer lines for reports	No	Yes	Yes
■ include fields in header and footer lines	No	Yes	Yes
■ multiple levels of group subtotals in reports	No	Yes	Yes
■ add and/or delete fields without losing report formats	No	Yes	Yes
■ works with RAM disks	Yes	Yes	Yes
■ copy protected?	No	No	No

(1) up to 50 disks per file: 5 1/4", 3.5" or mixed: up to 10 megabytes per file on hard disk
(2) use + - * / > < = <> AND, OR, NOT, SQR, ABS, SGN, INT, MIN, MAX, up to 7 levels of parenthesis; text comparisons, days-between dates, calculated dates, special "Current Date" function, etc.
(3) text, 3 numeric types, $/cents, yes/no, date, add date, edit date, add time, edit time, user-defined, label
(4) underlined, bold, compressed, large, italics and user-defined print styles; depend on printer's capabilities



Barney Stone ***Designer, DB Master***

RELATIONAL? SENSATIONAL!

And if that's not enough, imagine a *relational* data base manager. One that does automatic look-ups and posting. Imagine an invoice file that looks up customer names and addresses in a customer file, then descriptions and prices in an inventory file, then posts quantities shipped and back-ordered back to the inventory file, and finally posts the amount due to the appropriate record in the customer file. Imagine doing this easily, without any programming.

RECOMBINANT DBM

Is your AppleWorks data split into several files? Imagine combining them into one convenient file. Do the AppleWorks files have different categories, so each record in one file has a corresponding record in the other file? And they really should have been a single record, but there were too many categories? Imagine combining them properly, so the information that belongs together is in one record.

DREAM ON!

Imagine that all of this, and much, much more, is available **right now,** in DB Master Version Five and DB Master Version Five *Professional.*

Sometimes wishes do come true!

DB MASTER®
VERSION FIVE

The Ultimate Data Base Manager for the Apple //

Requires Apple //e (enhanced with extended 80-column card), //gs, //c or Laser 128. At least two 5 1/4" floppy disk drives, or any combination of 5 1/4" and 3 1/2" floppies, ProDOS compatible hard disk, or RAM disk.

Version Five — $179. *Professional* — $295. Demo — $10.

Available now from your local dealer or direct from:

Stone Edge Technologies, Inc. (215) 641-1825
P.O. Box 200, Maple Glen, PA 19002

Add $5 for shipping/handling ($30 outside U.S.A. or Canada)

DB Master is a registered trademark of DB Master Associates. Apple is a registered trademark and AppleWorks is a trademark of Apple Computer, Inc.

Take the program one quantum leap further and you have DB Master Version Five Professional. This relational database program can move information automatically between one file and as many as ten others in either direction in one fell swoop.

With DB Master Version Five Professional you can type a customer number, item number, and quantity on a screen-based invoice form and watch the program fill in customer information (such as a billing address) automatically; check inventory files to see whether you've got enough items in stock (and whether you need to reorder); complete the product's description on the invoice; calculate discounts, shipping and handling charges, and sales tax; and tally the amount due.

Truth is, not everyone needs or wants this level of power. Some want less, some want more—different strokes that haven't escaped Stone Edge Technologies' attention.

For example, a lightweight classroom version offers many DB Master Version Five features, but supports only 100 records per file. The $500 licensing fee lets you make as many copies as necessary to equip each Apple in your classroom or computer lab.

In another development, Stone Edge Technologies hopes its new DB Master Version Five multiuser option will make inroads into the small-business market. As many as 16 people can enjoy read/write access to any given file at the same time. Password protection is built in. This networking version is compatible with Apple's AppleTalk, Corvus' OmniNet, and Lantech's E-LAN networks, according to Barney Stone of Stone Edge.

The company is beginning to address vertical markets, too. Stone's company sells a malleable DB Master Version Five to developers, who then customize the program's screens and features for professional offices. So far, dental-office management and executive-search-service packages have been created this way.

Visions of a GS-type DB Master Version Five are starting to come into focus. Stone's wish list for the GS version—which he says he hopes to ship in early 1989—includes improved word-processing features (with automatic word wrap—something current versions lack), increased space for text within a field, and built-in macros. To preserve DB Master's power and speed, however, the GS version may use the machine's text screen, a mousetext approach similar to ProFiler's.

DECISIONS, DECISIONS

Which database-management program is right for you? As with any kind of program for your Apple, your choice depends as much on your current and anticipated needs—and your budget—as on any program's "special" functions. What good are features you'll never use? On the other hand, you don't want to run into a logjam when your business outgrows a flat-file system and needs relational capabilities, for instance.

Hordes of users cling to AppleWorks, while others crave the power that only ProFiler or the newest DB Master programs can provide. Still others have casual database requirements and shy away from spending hundreds of dollars just to mail personalized form letters to members of the local bridge club or condo owners' association. For these folks, EasyWorking Filer or Trio just might do the trick. Whatever your files' special requirements, however, the range of Apple II database managers is broad enough to offer something for every collector.■

Cynthia E. Field is the author of Field Trip, inCider's *column on educational software, and Press Room, our column on desktop publishing. She is a free-lance journalist specializing in computer-related topics. Write to her at 60 Border Drive, Wakefield, RI 02879. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*

ZIMCO
INTERNATIONAL, INC.
85-39 213 St., Queens Village, NY 11427

★★★ HARDWARE ★★★
LASER 128 Computer.....Scall
LASER 128EX Computer.....Scall
APPLE IIGS Computer.....$819
Applied Engineering:
RGB Colorlink.....$99
RAMWORKS III 256K.....$179
GS-RAM 512k.....$265
PC Transporter's.....$Call
Parallel Pro.....$89
Timemaster.....$79
Viewmaster80.....$110
Z-RAM ULTRA #1 512K...$269
#2-$310.....#3 for IIc $359
Apple IIe MOUSE.....$119
APLUS MOUSE IIc,Mac.....$79
AST VISION IIGS.....$290
DISKETTES (Box of 10) ➡➡➡ $7
3.5" Maxell MF2DS/DD.....$21
3.5" Verbatim DS/DD.....$21
Verbatim 3.5 Cleaning Kit....$15
Disk Storage 100 ➡➡➡➡➡ $11
Fan & Surge Prot.....$24

★★★ HARDWARE ★★★
JOYSTICK for IIe.....$33
KRAFT 3-but. Joystick.....$36
Kensington System Saver....$62
SYSTEM SAVER IIGS.....79
OM Pro-Grappler +/IIc.....$79
OM Pro-Grappler w/buffer. $115
Parallel Printer Interface...➡$40
Graphics Printer Card.....➡$55
80 Column Card II+.....$59
Extended 80 col. for IIe.....$29
16K RAM CARD.....$35
SUPER SERIAL CARD.....$59
Surge Surpressor w/6 outlets and circuit breaker.....$24
Thunderscan(Imgwtr).....$190

★★★ MONITORS ★★★
APPLE Color Comp.....$299
APPLE Color RGB.....$399
APPLE Monochrome.....$129
Amber Monochrome.....$129
Tompson hi-resolution RGB 540 x 240 pixel.....$250

NO EXTRA CHARGE FOR VISA/MASTERCARD

★★★ SOFTWARE ★★★
If it's not here call us!
APPLEWORKS v2.0.....$197
ASCII EXPRESS ProDos.....$70
BANK STREET WRITER PLUS IIe/c$48
BAUDVILLE 816 PAINT.....$40
CLIPART vol.1....$16, vol.2....$23
DEFENDER OF THE CROWN....$31
DELUXE PAINT IIGS.....$73
FANTAVISION Broderbund.....$36
FONTWORKS/AUTOWORKS.....$45
GRAPHIC WRITER IIGS.....$109

APPLE IMAGEWRITER II $465
LASER 128EX $CALL
✽NO ONE BEATS US ON LASERS!✽
CMS SD20 HARDRIVE $632
MIDI HARDWARE & SOFTWARE

Graphics Edge.....$69
HACKER IIGS.....$25
HITCHHIKER'S GUIDE Infocom..$18
INSTANT MUSIC IIGS.....$37
Mindscape KING OF CHICAGO..$29
Managing Your Money MECA...$90
MIGHT & MAGIC IIGS.....$34
MUSIC CONSTRUCTION IIGS....$38
MUSIC STUDIO IIGS.....$54
NEWSMAKER GS.....$55
NEWSROOM.....$33
PAINTWORKS PLUS IIGS.....$54
PINPOINT.....$46

★★★ SOFTWARE ★★★
Pinpoint IIGS Starter Pack.....$97
Pinpoint Spell Checker GS.....$67
Print Shop COLOR.....$33
Print Shop Compan.....$23
Print Shop Gr. Lib.1/2/3.....$15
PRINT SHOP IIGS.....$36
Sensible Grammar.....$53
Sensible Speller ProDos.....$64
SHANGHAI.....$27
SIDEWAYS Funk Software.....$43
Talking Textwriter IIGS.....$150

TASS TIME in TONETOWN.....$25
TOP DRAWER IIGS.....$63
VISUALIZER IIGS.....$75
WIZARDRY Siritech.....$30
WORDPERFECT IIGS,e,c.....$85
☛☛ MIDI SOFTWARE ☚☚
Mastertracks IIGS.....$170
Sonus Super Sequencer..$197
Sonus Pers. Musician IIGS..$87
PASSPORT Polywriter....205
Passport Music Tutor....$159
☛☛ MIDI INTERFACE ☚☚
PASSPORT, w/tape sych..$135

FREE SHIPPING ON ALL ORDERS*

★★★ DRIVES ★★★
CENTRAL POINT 3.5" Drive $187.....Controller $69
CMS Hard Drives for IIe/IIGS SC20-A2S $705; SC40-A2S $1000
CMS Stack Drive for IIe/IIGS SD20-A2S $632; SD43-A2S $830
Genuine Apple 3½" 800K drive (IIGS/Mac).....$299
Apple UniDisk 3.5 w/Catalyst (IIC,IIE,II+).....$339
App. Eng. 5¼" - 1 yr.warr.$110.....Contlr,$46
Genuine Apple 5¼" drive IIe,IIc,IIGS.....$236

★★★ PRINTERS ★★★
APPLE LASERWRITER.....$3885
APPLE IMAGEWRITER II.....$465
CITIZEN 120D $189.....MSP-10 $289
OKIDATA 192+p. $315, s.$389;.....#193+p.$465, s.$532
PANASONIC KXP-1080I Scall.....KXP-1091I $209
Panasonic KXP-1592 $439.....KXP-1595 $485
STAR NX-1000 Parallel.....$205

★★★ MODEMS ★★★
APP. ENG. DATALINK 300/1200bps Int. for II+/e/GS.....$169
HAYES SmartModem 300 (IIc).....$172
Hayes SmartModem 1200A $308 Hayes SmartModem 2400-call
Hayes Compatible External 1200bps Scall.....2400bps Scall
US ROBOTICS Courier 2400➡$359.....2400E➡$429

✆1-800-227-6647
Inquiries, Tech Support & New York:
Call 718-479-7888

Free shipping via United Parcel or USPS ground service anyplace in the continental United States. *Add insurance and handling fee to all orders.
We cannot guarantee prices or weather; both tend to change. Call for current prices & sale flyer. Minimum restocking fee 20%.

Circle 260 on Reader Service Card.

Why pound the pavement? An AppleWorks database brings ease and efficiency to your job search.

Focusing on Prospective Employers

by Ruth K. Witkin

If you're thinking seriously about a new, more challenging position, you need to do some serious legwork. The primary task is uncovering job leads. For starters, you'll want to explore personal and business contacts, trade or professional associations, help-wanted advertisements, and employment and executive-search firms.

Gathering, organizing, and keeping track of information require a great amount of time and effort. Then you have to compose, print, and present your credentials (cover letter and résumé) to prospective employers—more time and effort. There's also followup to find out where you stand with a company or to provide additional information. More time and effort.

AppleWorks can minimize the time you spend in behind-the-scenes activities and maximize the time available for pursuing leads. In this session, you'll create a database of prospective employers to simplify data storage. This database is the second installment in a job-hunt series that started last month with a résumé ("Résumé On File," June 1988, p. 82) and ends next month with a cover letter mail-merged with database records.

A database does double duty during a job hunt. As well as being a vast storage area that gives instant access to details, it provides the necessary information for the cover letter, so that you don't have to type items twice.

When you see such key combinations as OA-Y, hold down the open-apple key and type **Y**. With repeated combinations, such as OA-left arrow (3 times), hold down the open-apple key and press the left-arrow key three times.

A DATABASE FROM SCRATCH

Now use the AppleWorks Startup and Program disks to bring up a new database screen. Name this file **EMPLOYERS**. You should now see the Change Name/Category screen. To make it easier for you next month when you exchange data between files, store **EMPLOYERS** on the data disk containing the résumé file RÉSUMÉ.

The EMPLOYERS database will contain 14 categories, three of which are spares. A spare is a safety net. It's a good idea to include at least one in every database, even when you're convinced you've covered every contingency. In this database, for example, you can use spares later for company phone numbers, separate state and zip-code categories (they're lumped together here to speed up data entry), company business if listed in the advertisement, or responses to your résumé.

Without spares, you'd have to insert categories, which makes custom-screen layouts and report formats vanish. You can reconstruct them, of course, but why spend the time? Simply make spares an integral part of every database.

Now enter the category names. Press OA-Y to erase *Category 1*. Type each of the following category names (in uppercase, to make them stand out), and press Return after each one:

```
FIRST MI
LAST NAME
TITLE
COMPANY NAME
DIVISION
STREET
CITY/ST/ZIP
COURTESY
NEWSPAPER
APPEARED
POSITION
SPARE
SPARE
SPARE
```

Check to make sure you've entered every category. If one's missing, place the cursor on the category name immediately below the spot where the missing one belongs, press OA-I to insert a blank line, and type the category name. Then press OA-Y to delete the dash at the end, and press Return.

Press OA-S to store the database on disk. AppleWorks now informs you that you'll enter Insert New Records mode automatically. Press Return, and Record 1 appears with all categories awaiting your entries.

INSERTING THE RECORDS

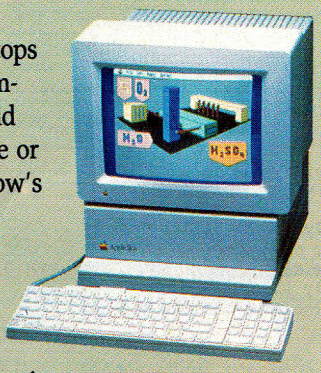
Figure 1 shows the entries in Records 1–6, which reflect (fictitious) help-wanted ads in several newspapers. Records 1, 2, and 5 contain contact name, title, and address of the company. Record 6 has all these entries but no contact title. Records 3 and 4 came from blind ads that gave only a post-office box number, but no company or contact.

Companies that omit a contact name and/or title in their advertisements make it difficult to phrase a proper courtesy salutation (pulled from the COURTESY category) in a cover letter. As you can see in Records 3 and 4, when you don't know who'll receive your letter, it's wise to use the innocuous **Dear Mr. or Ms.**, not the stilted **Dear Sir or Madam** or the sexist **Dear Sir** or **Dear Madam**.

SETTING STANDARD VALUES

A standard value is an entry common to many or all records. The same newspaper (*Newsday*) appears in three of the six records, as does the date (July 10, 1988). Make them both standard values. Press the down-arrow key eight times to move the

ARE YOU PREPARED FOR TOMORROW?



STAY ON TOP!

inCider knows that change never stops in the exciting world of Apple II computing. What's new today may be old tomorrow. And as an Apple IIGS, IIe or IIc user, not being ready for tomorrow's changes will mean less productivity and efficiency.

inCider has everything an Apple II user needs to know. That's why an **inCider** subscription can be the best investment you make for your entire computing future. Your "Apple II magazine" will keep you informed about all the new products for the Apple II family, and give you the hands-on know how to get the most from your machine.

THE BEST REVIEWS AND FEATURES IN THE INDUSTRY

Each month **inCider's** reviewers rate the latest in new hardware and software developed especially for the Apple II, so you get the help you need to make the right buying decision. No other Apple II magazine will do that for you! Plus you'll get the latest programming tips in our popular Hints/Techniques Department.

Do you use APPLEWORKS? **inCider's** monthly tutorial section APPLEWORKS IN ACTION tells you how to get the most from this best-selling Apple II program.

And for insight into the powerful new IIGS, look to **inCider's** up-to-date reviews on IIGS hardware and software.

THE "APPLE II MAGAZINE" YOU'VE BEEN LOOKING FOR

inCider is today's Apple II magazine, dedicated to meeting the challenges you'll face tomorrow.

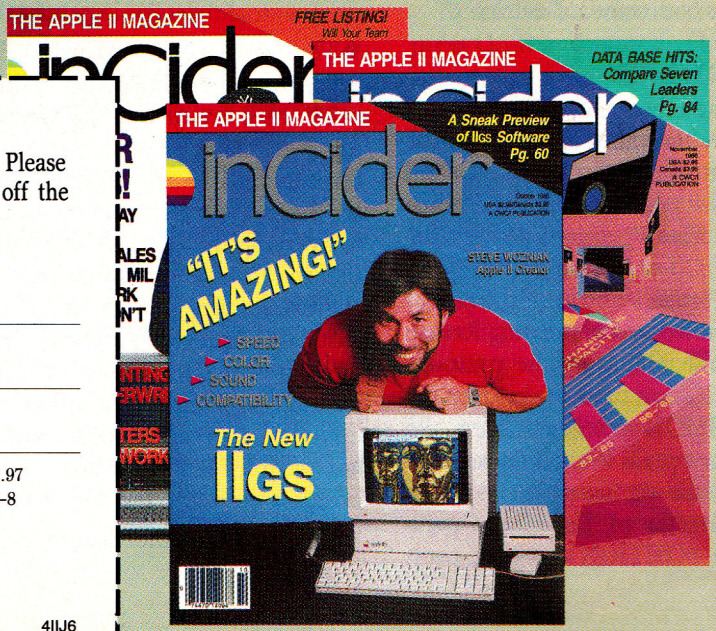
Subscribe now and you'll get 12 issues of **inCider** for just $27.97—a 21% savings off the cover price! To order, just return the coupon or call



1-800-258-5473.

inCider

WHERE THE FUTURE TAKES SHAPE TODAY.



Yes! I want to be a well-informed Apple II user! Please send me 12 issues of **inCider** for $27.97. I'll save 21% off the newsstand price.

☐ Payment enclosed ☐ Bill me

Name _____

Address _____

City _____ State _____ Zip _____

Canada 34.97, Mexico $32.97, Foreign Surface $47.97, Foreign Airmail $82.97 (U.S. Funds drawn on U.S. Bank). All rates are 1 year only. Please allow 6–8 weeks for delivery.

inCider
P.O. Box 58618, Boulder, CO 80322-8618

4IIJ6

*Apple II is a registered trademark of Apple Computer, Inc.

CATEGORY	RECORD 1	RECORD 2
FIRST MI:	William C.	Lois
LAST NAME:	Carter	Maiwald
TITLE:	Vice President	Personnel Director
COMPANY NAME:	Norden Technologies	Atlantic Communications
DIVISION:		Telephone Systems Division
STREET:	21 Maxwell Road	457 Route 114
CITY/ST/ZIP:	Whitman NY 11753	Greenville NY 11740
COURTESY:	Mr.	Ms.
NEWSPAPER:	Newsday	Newsday
APPEARED:	July 10, 1988	July 10, 1988
POSITION:	Director of Technical Operations	Vice President, Communications
SPARE:		
SPARE:		
SPARE:		

CATEGORY	RECORD 3	RECORD 4
FIRST MI:		
LAST NAME:		
TITLE:	Professional Staffing	
COMPANY NAME:	P.O. Box 228, Dept. 10A	Newsday Box 5678
DIVISION:		
STREET:	79 Hawthorne Boulevard	
CITY/ST/ZIP:	New York NY 10021	Melville NY 11747
COURTESY:	Mr. or Ms.	Mr. or Ms.
NEWSPAPER:	The Wall Street Journal	Newsday
APPEARED:	July 10, 1988	July 13, 1988
POSITION:	Field Service Director	Telecommunications Manager
SPARE:		
SPARE:		
SPARE:		

CATEGORY	RECORD 5	RECORD 6
FIRST MI:	Brian	Karen E.
LAST NAME:	Bostwick	Spolberg
TITLE:	Placement Manager	
COMPANY NAME:	Commac Communications Corp.	Hannaman & Co.
DIVISION:	Employment Section	
STREET:	788 Seldon Street	540 West 58th Street
CITY/ST/ZIP:	New York NY 11009	New York NY 10101
COURTESY:	Mr.	Dr.
NEWSPAPER:	The New York Times	The Wall Street Journal
APPEARED:	July 13, 1988	July 13, 1988
POSITION:	Director, Information Systems	Director of Communications
SPARE:		
SPARE:		
SPARE:		

Figure 1. Records 1–6 in prospective-employers database.

cursor to the NEWSPAPER category. Press OA-V to bring up the Set Standard Values screen. Type **Newsday** and hit Return. Type **July 10, 1988** and hit Return again. Press Escape to return to Record 1, which now contains both standard entries.

FILLING RECORD 1

Now fill the other categories. Press the up-arrow key ten times to return to the FIRST MI category. Type **William C.** and press Return. Type **Carter** and hit Return again. Type **Vice President** and hit Return again.

Refer to **Figure 1** and type the rest of the entries in Record 1, pressing Return after each one. Following the company name, press Return twice to skip past the empty DIVISION category. After the courtesy entry, press Return three times to skip past the standard entries. After you type **Director of Technical Operations** in the POSITION category, press Return, then OA-down arrow to move past the spares and bring up Record 2.

FILLING RECORDS 2–6

Before filling Records 2–6, take a few moments to read the following instructions:

- The newspaper in Records 3, 5, and 6 isn't *Newsday*. When you get to this entry, press OA-E to switch to the overtype cursor (a blinking rectangle) and overtype the standard entry with the newspaper shown in **Figure 1**. In Records 4, 5, and 6, overtype the *0* in the date with **3**, so that the date becomes July 13, 1988.
- Press Return enough times to move past blank categories. When you get to the spares, press Return after typing the position, then OA-down arrow to bring up the next record. Since Record 6 is the last record, hit Return after typing the position and leave the cursor there.

Now enter the information in Records 2–6. When you've finished, the cursor should be in the first SPARE category in Record 6. Press OA-S to store the database on disk.

CHANGING THE LAYOUT OF THE MULTIPLE-RECORD SCREEN

Now press OA-Z, then OA-1 to see all records in multiple-record layout. AppleWorks displays the first five categories, but some entries (titles and company names) are truncated and others (mr/ms, first names, and last names) have too much room.

Adjust column widths to display long entries completely. Press OA-L to bring up the Change Record Layout screen. The cursor is in the FIRST MI category. Reduce the width by pressing OA-left arrow (3 times). Press the right-arrow key to move the cursor to each of the following categories and adjust the width the same way:

LAST NAME	press OA-left arrow (3 times)
TITLE	press OA-right arrow (8 times)
COMPANY NAME	press OA-right arrow (13 times)

Now press Escape. AppleWorks asks which way to move the cursor when you press Return. The standard *Down* is fine, so hit Return. The Review/Add/Change screen returns with the categories nicely spaced.

CREATING A LABELS REPORT FORMAT

Now create a labels format, so that you can print every entry in every record in this database, as shown in **Figure 2** (first page of a two-page printout). Press OA-P to start the Print command. Type **3** to select the labels format, and press Return. Type **LABELS LIST** and hit Return again. AppleWorks brings up the Report Format screen with a list of category names.

Some entries tend to be ambiguous, so have AppleWorks print a category name before each one. Your cursor is on FIRST MI. Press OA-V. AppleWorks places *William C.*, the FIRST MI entry in the first record, next to the category name. This says

```
File:   EMPLOYERS
Report: LABELS LIST

FIRST MI: William C.
LAST NAME: Carter
TITLE: Vice President
COMPANY NAME: Norden Technologies
DIVISION:
STREET: 21 Maxwell Road
CITY/ST/ZIP: Whitman NY 11753
COURTESY: Mr.
NEWSPAPER: Newsday
APPEARED: July 10, 1988
POSITION: Director of Technical Operations
SPARE:
SPARE:
SPARE:

FIRST MI: Lois
LAST NAME: Maiwald
TITLE: Personnel Director
COMPANY NAME: Atlantic Communications
DIVISION: Telephone Systems Division
STREET: 457 Route 114
CITY/ST/ZIP: Greenville NY 11740
COURTESY: Ms.
NEWSPAPER: Newsday
APPEARED: July 10, 1988
POSITION: Vice President, Communications
SPARE:
SPARE:
SPARE:

FIRST MI:
LAST NAME:
TITLE: Professional Staffing
COMPANY NAME: P.O. Box 228, Dept. 10A
DIVISION:
STREET: 79 Hawthorne Boulevard
CITY/ST/ZIP: New York NY 10021
COURTESY: Mr. or Ms.
NEWSPAPER: The Wall Street Journal
APPEARED: July 10, 1988
POSITION: Field Service Director
SPARE:
SPARE:
SPARE:

FIRST MI:
LAST NAME:
TITLE:
COMPANY NAME: Newsday Box 5678
DIVISION:
STREET:
CITY/ST/ZIP: Melville NY 11747
COURTESY: Mr. or Ms.
NEWSPAPER: Newsday
APPEARED: July 13, 1988
POSITION: Telecommunications Manager
SPARE:
SPARE:
SPARE:
```

***Figure 2.** First four records printed in labels layout with category names.*

that AppleWorks will print the category name.

Press Return to move the cursor to the next category, and press OA-V again. Now AppleWorks displays *Carter*, the LAST NAME entry in the first record.

Continue moving down the category list and pressing OA-V, then Return, to produce entries on screen. Where there's no entry in a category (DIVISION and three spares), AppleWorks shows only a colon. When you've finished, the cursor should be on the S in the last SPARE category.

To separate each record from the next during printing, press Return to insert a blank line. AppleWorks now displays *Each record will print 15 lines.*

VIEWING THE REPORT ON SCREEN

You can get an idea of what this report will look like on paper by displaying it on screen: Press OA-P, then type **2** and hit Return. Type today's date and hit Return again. The first record appears. Hit Return again, and you can see the second record. Scan the other records the same way. After the last record, AppleWorks returns you to the Report Format screen.

```
File: EMPLOYERS                    REPORT FORMAT              Escape: Report Menu
Report: LABELS LIST
Selection: POSITION contains TECHNICAL OPERATIONS



================================================================================
FIRST MI: William C.
LAST NAME: Carter
TITLE: Vice President
COMPANY NAME: Norden Technologies
DIVISION:
STREET: 21 Maxwell Road
CITY/ST/ZIP: Whitman NY 11753
COURTESY: Mr.
NEWSPAPER: Newsday
APPEARED: July 10, 1988
POSITION: Director of Technical Operations
SPARE:
SPARE:
SPARE:

-----------------------Each record will print 15 lines-----------------------
Use options shown on Help Screen                                  @-? for Help
```

***Figure 3.** Selected record in Report Format screen.*

Now print the report. AppleWorks' standard print settings are fine, so all you need to do is turn on your printer. Type OA-P to start the Print command. Type a printer number and press Return. Hit Return twice to confirm the date and one copy. And here's the two-page labels report with the first page looking like the one in **Figure 2**.

Your résumé impressed the company seeking a Director of Technical Operations, and you have an appointment for an interview. Now you want to refresh your memory on the original ad. You can do this quickly by having AppleWorks search for and display the record.

You're still in the Report Format screen. Press OA-R, and AppleWorks brings up the Select Records screen with a list of categories. You want to search for the position of Director of Technical Operations, so type **11** and hit Return.

The screen now shows 12 selection criteria, with the highlight on *equals*. When you choose *equals*, AppleWorks expects an exact match of information. Equals isn't what you want in this instance because in the next step, AppleWorks asks for a comparison criterion (the searched-for entry). You can type only 20 characters worth of comparison criteria, and **Director of Technical Operations** is far longer than that. If you type only part of the title, such as **Director** or **Technical Operations**, AppleWorks won't find the record because the comparison criterion won't match (or equal) any entry in the POSITION category.

The simple solution is to use *contains* instead. Type **7** and hit Return. Type **Technical Operations** (the comparison information) and press Return again. Comparison information can be any sequence of characters, even **Tec** or **Tech** if you're sure that will zero in on the proper record.

The Selection line at the top left of the screen shows *POSITION contains TECHNICAL OPERATIONS*. AppleWorks now brings up connectors so that you can narrow the selection further. Since you have no more comparison information, press Escape.

Instantly, AppleWorks displays Record 1. You can scan this record on screen as well as print it. Be sure your printer is on. Now press OA-H. Your result should match the one in **Figure 3**.

To return the selection to all records, press OA-R and type **Y**. That's all there is to it. Press OA-S to store the database on disk, which also returns the records in multiple-record layout.

Next month, when you compose the cover letter and merge it with these records, you'll want everything exactly as is, so resist the temptation to change anything. You can, of course, duplicate this database by giving it another name (OA-N) and experimenting with that file.■

Write to Ruth Witkin at 5 Patricia Street, Plainview, NY 11803. Enclose a stamped, self-addressed envelope if you'd like a personal reply.

Function Grapher II

Add the appropriate equations to May's program listing, and your Apple can graph any math function.



by Dan Bishop

Shapes and sizes—an elementary concept, but one that computer scientists grapple with often. May's column ("Hi-Res Graphing Techniques," p. 94) on math functions left you dangling with a high-resolution-graphics image of a lopsided half circle. May's program listing, Function Grapher, handles simple concepts such as sines and cosines, but falls disappointingly short in applying the equation for a circle: X*X + Y*Y = RD*RD, where RD is the desired radius.

This month's **Program listing**, Function Grapher II, improves on our first attempt in several significant ways. Though it's slightly more complicated, it's also a much more versatile program. Use Function Grapher II to construct graphs of circles and ovals, as well as many other functions, to your heart's content.

A TALE OF FOUR FUNCTIONS

By definition, a function can have only a single Y-value for every X-value presented. When your Apple calculates and plots points from the equation below, only the upper half of the circle appears on screen:

```
Y = SQR( RD * RD - X * X )
```

To plot the lower half, you must include a second plotting routine for the equation:

```
Y = -SQR( RD * RD - X * X )
```

Although these two functions plot a figure that appears more like a football than a circle, at least the figure is complete.

There's still a problem, however. For every X-value, the program plots two Y-values. The screen displays the circle's top and bottom as solid, curving lines. But the left and right edges consist of widely spaced dots, because the Y-values are changing much faster than the X-values. Y-values corresponding to two adjacent X-values will be separated by a significant amount of space.

One approach to closing these gaps relies on the symmetry of the circle. You can solve the equation for a circle in terms of X, yielding the following two additional equations:

```
X = SQR( RD * RD - Y * Y )
X = -SQR( RD * RD - Y * Y )
```

When you add these two equations to the program, you're forcing your Apple to calculate and plot two X values for every Y value in the graph. In effect, you're drawing the circle twice, but the result is a more completely filled curved line.

Lines 500–585 contain these calculations and the corresponding plotting, using two loops—one for the Y-values and one for the X-values. In lines 510–540, the variable X1 takes every possible value for the X-positions (0–279), while the program calculates two Y-values, Y1 and Y2. Function Grapher II then plots X1,Y1 and X1,Y2 on screen. Similarly, in lines 550–580, the variable Y1 takes every possible value for the Y-positions (0–159), while the program calculates two X-values, X1 and X2. Then it plots X1,Y1 and X2,Y2.

The limits on FOR loops are XZ to XX and YZ to YY, the corresponding minimum and maximum data values for X and Y that will fit on screen, based on the origin's location and the values for X-max and Y-max you enter at the start of the program. Step values correspond to changes in X and Y for each pixel position on the graph.

SAFETY TESTING

As you write a program, no matter how simple, you should always keep asking yourself, "Yes, but what if. . .?" Try to catch any errors that could crash the program or make it perform improperly. In most cases, a simple IF command can handle the situation.

In lines 515 and 555, an IF test keeps your Apple from attempting to perform a

TML Pascal

TML Pascal is the most powerful programming language available for the Apple IIGS. TML Pascal enables you to write, edit, compile and run applications and desk accessories with incredible speed and simplicity without ever leaving the TML Pascal environment.

- Implemented in the same Macintosh-like desktop environment as TML BASIC - mouse, menus, windows, etc.
- Provides complete access to the IIGS Toolbox using predefined libraries.
- Creates stand-alone ProDOS16 applications as well as Classic and New Desk Accessories.
- Conforms to ANSI & UCSD standards.
- Test drive an evaluation copy of TML Pascal at any Apple Dealer.
- Requires only 768K total memory.

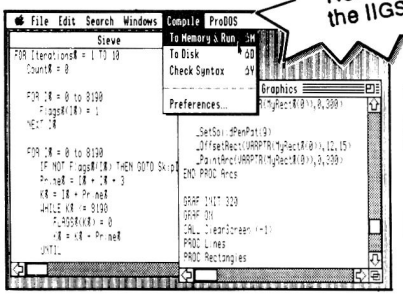
TML Source Code Library

Developed as a companion product for TML Pascal, the TML Source Code Library is a collection of over twenty example applications and desk accessories with complete TML Pascal source code and documentation.

TML Speech Toolkit

TML Speech Toolkit lets you add the latest in computer-synthesized English text-to-speech capabilities to your programs written in either TML BASIC or TML Pascal.

- Complete control over the speed, pitch, volume, tone and gender of the generated speech.
- Dictionary support for customizing word pronunciation.
- Complete documentation with TML BASIC and TML Pascal source code examples on disk.



New for the IIGS

TML BASIC

Introducing TML BASIC, a modern, 16-bit BASIC compiler designed specifically for the Apple IIGS. TML BASIC allows you to create stand-alone ProDOS16 applications and provides complete access to the Apple IIGS Toolbox, including Super Hi-Res Graphics, Menus, Dialogs, Windows, Sound and more.

Advanced Integrated Editor:

- Integrated with the compiler to make programming fast and efficient.
- Open up to four windows, each containing a different program.
- Incorporates the Macintosh-like desktop interface to create a powerful environment which is extremely easy to learn and use.

Powerful Compiler:

- Compile to Disk or Memory.
- Incredible compilation speed retains the interactiveness of an interpreter.
- Creates stand-alone applications in seconds without leaving the TML BASIC environment.
- Compiles 6,000 + lines per minute.
- Complete IIGS Toolbox support.

Built-in Debugger:

- Built-in debugger detects and high-lights runtime errors interactively.

Structured Programming Support:

- Implements advanced statements like PRING USING, INPUT USING, IF/THEN/ELSE, DO/WHILE/UNTIL and more.
- Allows for user defined procedures and functions using parameters, local variables and recursion.
- Supports separate compilation of libraries.
- Alphanumeric labels supported.

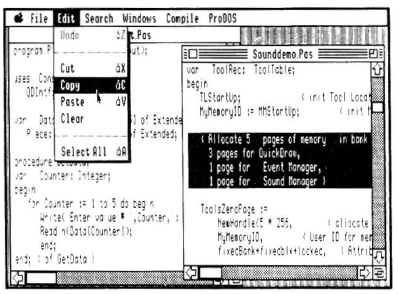
Compatibility:

- Compiles programs written using Apple's GSBASIC interpreter.
- Education network version available.
- Works with the Apple IIGS Finder.

Package Features:

- Complete documentation including a BASIC tutorial, language reference and guide of the Apple IIGS Toolbox.
- Numerous example programs on disk.
- Requires only 512K total memory and one 3.5" disk drive.

We've got a lot to say about programming the Apple IIGs.



TML Pascal	**$125.00**
TML BASIC	**$125.00**
TML Source Code Library *(for TML Pascal)*	**$49.00**
TML Speech Toolkit *(for TML Pascal or BASIC)*	**$69.00**

When ordering by phone ask about our special offers for software bundles.

CALL (904) 636-8592

MC VISA COD

TML SYSTEMS

8837-B Goodby's Executive Drive
Jacksonville, Florida 32217

Circle 210 on Reader Service Card.

square root on a negative number. The program first sets Y or X to zero, so they'll appear to fall on the axes (and be invisible) if you don't calculate the square roots. The listing then carries out the square-root calculation only if the arguments are positive or zero, thus avoiding the program crash that would result from taking the square root of a negative number.

Another common trap to avoid when working with graphics is attempting to HPLOT a point that's off screen. This also makes the program crash with an "illegal quantity" error. Note that lines 530, 535, 570, and 575 all test the X1, X2, Y1, and Y2 values of points before plotting them. This step makes sure the values lie within the ranges of the screen display.

INTERACTIVE INPUT

Function Grapher II includes a subroutine (lines 100–170) that allows interactive user input to locate the position of the graph's origin on screen (XO,YO). It also allows keyboard input of the maximum X and Y values (XM and YM) you'll plot. These four values control the function's appearance on screen.

The values you enter for maximum X and Y determine the scale of the graph by specifying how you'll divide the positive-X and positive-Y axes on the graph. For example, if you place the origin in the center of your screen and enter +2 for both XM and YM, your circle, with a radius of 1, will occupy half the screen.

On the other hand, if you enter XM as +2 and YM as +4, with the origin still in the center of the screen, your circle will be flattened to an oval with height equal to half the width. You can achieve a similar effect by relocating the origin. Keeping XM and YM at +2, but moving the origin to XO = 140, YO = 40 will produce the same oval, since you've compressed the positive Y-axis to half its former length.

ASPECT RATIO

Two effects work together to cause distortion of the images on screen. First, your screen is wider than it is high. If your screen measures 280 pixels wide by 160 pixels high, each one-pixel change

Program listing. *Function Grapher II graphs a circle centered about the graph's origin. With slight modifications, you can graph many different functions, singly or in combination.*

```
1  REM    FUNCTION GRAPHER II  [1620]
2  REM  APPLESOFT ADVISER, 6/88  [1745]
3  REM   BY DAN BISHOP  [1128]
4  REM   COPYRIGHT 1988, INCIDER  [1779]
5  REM  ********************  [1097]
6  REM   [184]
10  HIMEM: 8192  [385]
14  REM  CALC. ASPECT RATIO ADJ  [1679]
15  GOSUB 100: REM  GET USER INPUT  [1611]
20 XA = (160 / 280) * 20 / 17  [1577]
25 XN = (280 - XO) / XM:YN = YO / YM: REM  SET NORMALI
     ZATION FACTORS  [4437]
30  GOSUB 200: REM  SET UP GRAPHICS AND DRAW COORDINAT
     E AXES  [3368]
35  GOSUB 500: REM  PLOT FUNCTION  [1593]
40  GOSUB 600: REM  PRINT TEXT  [1388]
45  INPUT X$: TEXT : GOTO 15  [827]
95  REM   [273]
96  REM  ************************  [1356]
97  REM   USER INPUT ROUTINES  [1755]
98  REM  ************************  [1358]
99  REM   [277]
100  HOME   [251]
105  PRINT "FUNCTION GRAPHER II - JUNE (88) INCIDER"  [2886]
110  PRINT "=======================================":
      PRINT   [3048]
115  PRINT "ENTER SCREEN LOCATION OF GRAPH ORIGIN   (O
     R ZERO TO END):"  [4125]
120  INPUT "     X (2 TO 277): ";XO: IF XO = 0 THEN  END
      [2412]
125  INPUT "     Y (2 TO 157): ";YO  [1438]
130  IF XO > 277 OR XO < 2 OR YO > 157 OR YO < 0 THEN
      GOTO 100  [3350]
135  PRINT : PRINT "ENTER MAX. POSITIVE X,Y TO BE PLOT
     TED:"  [3227]
140  INPUT "     X-MAX: ";XM  [1177]
145  INPUT "     Y-MAX: ";YM  [1184]
150  IF XM > 0 AND YM > O THEN  GOTO 160  [1918]
155  PRINT : PRINT "BOTH VALUES MUST BE POSITIVE!:PRIN
     T:GOTO 135  [3647]
160  PRINT : PRINT "ENTER TITLE FOR GRAPH:"  [2181]
165  INPUT T$  [417]
170  RETURN   [347]
195  REM   [373]
196  REM  ********************  [1246]
197  REM  HI-RES PG.1 GRAPHICS  [1734]
198  REM  SET-UP.  [900]
199  REM  ********************  [1249]
200  HGR   [345]
205  HCOLOR= 3:N = 0  [794]
210  HPLOT XO,0 TO XO,159: REM  Y-AXIS  [1890]
215  HPLOT 0,YO TO 279,YO: REM  X-AXIS  [1899]
220 XI = XM / 10:YI = YM / 10: REM  HASH MARK INCREMEN
     TS  [3631]
230  FOR I = XO TO 279 STEP XI * XN * XA  [2245]
235  HPLOT I,YO - 2 TO I,YO + 2:N = N + 1  [2317]
240  NEXT I:XX = N * XI:N = 0  [1718]
245  FOR I = XO TO 0 STEP  - XI * XN * XA  [2347]
250  HPLOT I,YO - 2 TO I,YO + 2:N = N + 1  [2332]
255  NEXT I:XZ =  - N * XI:N = 0  [1936]
265  FOR I = YO TO 159 STEP YI * YN  [1670]
270  HPLOT XO - 2,I TO XO + 2,I:N = N + 1  [2095]
275  NEXT I:YZ =  - N * YI:N = 0  [1703]
280  FOR I = YO TO 0 STEP  - YI * YN  [1775]
285  HPLOT XO - 2,I TO XO + 2,I:N = N + 1  [2110]
290  NEXT I:YY = N * YI  [1124]
295  HPLOT 0,158 TO 279,158 TO 279,159 TO 0,159: RETURN
      [2231]
495  REM   [418]
496  REM  ********************  [1375]
```

Listing continued.

Listing continued.

```
497  REM  LOOP TO PLOT FUNCTIONS  [2041]
498  REM  ********************  [1377]
499  REM   [422]
500 RD = 1  [652]
510  FOR X = XZ TO XX STEP ((XX - XZ) / 280)  [2500]
515 Y = 0: IF (RD * RD - X * X) >  = 0 THEN Y =  SQR (
     RD * RD - X * X)  [4079]
520 X1 = X * XN * XA + XO: PRINT "PLOTTING X = "X  [2803]
525 Y1 = YO - YN * Y:Y2 = YO + YN * Y  [2419]
530  IF X1 > 0 AND X1 < 280 AND Y1 > 0 AND Y1 < 160 THEN
      HPLOT X1,Y1  [3253]
535  IF X1 > 0 AND X1 < 280 AND Y2 > 0 AND Y2 < 160 THEN
      HPLOT X1,Y2  [3261]
540  NEXT X  [248]
550  FOR Y = YZ TO YY STEP ((YY - YZ) / 160)  [2289]
555 X = 0: IF (RD * RD - Y * Y) >  = 0 THEN X =  SQR (
     RD * RD - Y * Y)  [4121]
560 Y1 = YO - Y * YN: PRINT "PLOTTING Y = "Y  [2495]
565 X1 = X * XN * XA + XO:X2 = XO - X * XN * XA  [3161]
570  IF X1 > 0 AND X1 < 280 AND Y1 > 0 AND Y1 < 160 THEN
      HPLOT X1,Y1  [3293]
575  IF X2 > 0 AND X2 < 280 AND Y1 > 0 AND Y1 < 160 THEN
      HPLOT X2,Y1  [3301]
580  NEXT Y  [289]
585  RETURN  [252]
595  REM  [263]
596  REM  ******************  [1136]
597  REM   PRINT TEXT MESSAGE  [1632]
598  REM  ******************  [1138]
599  REM  [267]
600  HOME : VTAB 21  [560]
605  PRINT T$  [401]
610  PRINT "EACH X-UNIT IS "XI  [1493]
615  PRINT "EACH Y-UNIT IS "YI  [1500]
620  PRINT "   **** PRESS <RETURN> TO END **** ";  [2424]
625  RETURN  [292]
```

End of listing.

in the horizontal (X) direction will actually cover less distance on your graph than a one-pixel change in the vertical (Y) direction. Consequently, graphing a circle will produce an oval, with the shorter axis in the Y direction.

To combat this distortion, you need to reduce all X-values by a set amount equal to the height-to-width ratio, or 160/280. The program achieves this by multiplying all X values by this factor before applying the offset, XO, and plotting the point.

The second distorting effect is similar. Look closely at a single pixel on your screen and you'll note that it's not perfectly round; it's wider than it is high. If you plot a ten-pixel square on your screen, you'll see that horizontally adjacent pixels join each other, while there's a space between vertically adjacent pixels. The resulting figure will be a rectangle rather than a square. The height-to-width ratio of the rectangle is 20/17. To counteract this problem, the program must multiply every X value by (20/17) before plotting it.

Line 20 introduces XA, the X-aspect ratio factor:

XA = (160/280) * (20/17)

The program uses this value in the plotting routine (lines 520 and 565) every time it calculates an X value. In addition to multiplying the X-values by XN (the normalization factor discussed in last month's column), you must multiply them by XA. Then add the X-offset, XO, last, yielding the screen X-value you'll be plotting.

Function Grapher II also uses XA in a routine to draw axes and hash marks (lines 200–295). Because XA compresses the figure along the X-axis, your displayed graph's axes will extend slightly farther to the right than the maximum-X value, which you enter when running the program, has specified.

You must also account for aspect ratio in programs that print graphics from

For APPLE IIGS

SYSTEM SAVER$79, JUICEBOX $49,Conserver $119
MDIDeas Supersonic Sterio Card $59, Digitizer add on$ 49
Fingerprint GSi for Screendump.....$89
GRAPPLER GS/c..$79, **PROGRAPPLER..$89**
ADAPTOR to connect IIGS to two 20 pin DRIVES ...$39
GSRAM 256K..$179, RAMKEEPER.....$149
MAGNAVOX RGB 13" Monitor for IIGS $329
CABLES: IIGS to Modem, Imagewriter, specify ...$20ea

New! Paintworks Gold1.25MB$69
MECC Calendar Crafter $45
Typing Tutor IV 512K.....$45
Paperboy...$39, Aesop's Fables$39
Police Quest $39, Gauntlet $39
King's Quest $39,Magical Myth $39

Deskworks $49, Multiscribe $79; **Fontpak** $39
DELUXE PAINT II$69;Art Part V1,V2,Holiday**$25ea**
GRAPHIC WRITER V2 (For Desktop Publishing)$99
FANTAVISION GS..$45, **School Version**..$59
WORDPERFECT 2.0 w/Spellet & Thesaurus ..$99
Mavis Beacon TEACHES TYPING, IIGS $39
PRINTSHOP.$45; Add-on Disk Sampler#$29
LIST PLUS...$69, SHOW OFF....$45
WRITER's Choice Elite $59 TOP DRAW $59
GRAPHIC STUDIO...$49, DRAW PLUS .$59
Instant Music $39, Add-on Hot & Cool Jazz $29
MUSIC STUDIO(Midi Compatible)..$59
MARBLE MADNESS..$29, **DREAM ZONE** $39
TOWER of MYRAGLEN, SEASTRIKE $35ea
Basketball,Hardball,Shanghai,Silent Service$35ea
Hacker II, Tasstimes, Talking Reader Rabbit$39ea
Math Rabbit$35,Writer Rabbit$35,Thinkquick$49
ORCA/M $59, ORCA or TML Pascal .$99ea
TML BASIC for Apple IIGS $99
Math Fractions $35, First Letters & Words $35
World Games, Winter Games, Space Quest ....$39ea.
Destroyer$29, LeisureSuit $29, MonteCarlo $39
ROADWAR 2000....$39, **Cavern Cobra** .$35
SpellerBee,Kidtalk,Mathtalk,FirstShapes$35ea
Visualizer$79,Softwood File$79, Madlibs$19

For APPLE IIGS,e,c

IMAGEWRITER Compatibles (Single color):-
Wide Carriage 240 cps Friction/Tractor $499
130 cps Letter Width Friction/Tractor $279

EPIC Classic 2400B Internal Modem$175
DATALINK Internal Modem IIGS,e $179
MITSUBA 1200B External Modem $129
Practical 2400 B External Modem $199
20 MB SIDER Hard Drive $695, **40 MB** $895
128 K Internal **Buffer for Imagewriter I**.....$79
64K 80 Col Card for IIe $59, **256K Card**$119
RAMWORKS III 256K$199, 256K Chips $Call
SYSTEM SAVER for IIe/II+ Beige/Platinum $69
KOALAPAD IIe $89,Half Height Drive $139
DRIVE CONTROLLER for 20 pin drives $59
CH Mach III Joystick$39, CH Flightstick $59
4Way **Joyport Selector $39, Thunderscan**$199
HEAVY DUTY POWER SUPPLY IIe,II+ .$59
6 SCRIBE Ribbons $30, 6 Multicolor for Image II $60
6 Ribbons for Imagewrtr $30, Better Q...$48

Springboard Publisher$99, Geo$99
Works of Art for Springboard Pu$29ea
TIMEOUT Desktools, Filemaster, Sidespread $35ea
TIMEOUT Graph$59, Spell$49,Font$59,Macros$39
Home Accountant Expanded Version for 128K IIc,e ... $49
CHUCK YEAGER's Flight Trainer IIGS,e,c $35
CROSSWORD Magic $35, **PRINTSHOP** $35
WINGS of FURY $29, Certificate Maker $29
Where in world is Carmen SD $29, Where in USA$35
DB MASTER Version 5 $149,Turbo Pascal $45
Merlin Pro $99, Assembly Lines (by RW) Disk+Book ...$39
COPY II PLUS 8.1 $29, LOCKSMITH6.0 $45
PUBLISH IT! Desktop Publishing IIGS,e,c.$79
PRINTRIX $49, **PRINT-QUICK** $39,Fontdisks Call
Universal File Conversion (DOS,ProDOS,Pascal)..$34
APPLEWORKS MADE EASY BOOK.....$19
Circle Reader Service Card for a Catalog.
(This A+/Incider July 88 AD was Mailed in April 88.)

SCHOOL PURCHASE ORDERS WELCOME
NOTE1 : Shipping $3/100 in Continental USA. Others Call.
NOTE 2: We do not guarantee product compatibility.
NOTE 3: Prices & Discriptions subject to change any time.
NOTE 4: Returns without Pre-Authorization not accepted.
NOTE 5: Written Return Request must be made within 10 days of receipt. We shall replace or issue credit at our option.

AMERICAN EXPRESS **COD** VISA MasterCard

COMPUTERS PLUS COMPANY
2303 N. 44th Street #2, PHOENIX AZ 85008
PHONE:602-955-1404

screen images. Rarely will the aspect ratio of a video screen be the same as that of a graphics printer. Without adjusting for these differences, the printed image will be a distorted version of the screen image. You can apply the concepts discussed above in exactly the same way to printed output.

SETTING UP AXES

The subroutine for drawing axes and hash marks is also a little more complex than the one you used last month. Function Grapher II calculates two values, XI and YI, as the X-increment and the Y-increment. These are one-tenth the values you entered as maximum X and Y.

The program then uses four loops to draw the hash marks radiating from the origin in four directions. At the same time, it tabulates four new values from N, the number of hash marks drawn. These values are YZ, YY, XZ, and XX, which correspond to the minimum Y and X (YZ and XZ) and the maximum Y and X (YY and XX) that could possibly fit on the graph. These are the YZ,YY and XZ,XX values the program uses in loops to calculate and plot the individual points of the function.

OTHER FUNCTIONS

You can easily modify the **Program listing** to handle other common functions, including SIN, COS, TAN, and so on. With error-trapping routines, you don't need to worry about adding program lines to limit your functions to special cases or ranges. For example, to plot a TAN function, add the following lines:

```
514 Y = TAN (X*3.14159) : GOTO 520
531 GOTO 540
541 RETURN
```

This leaves your circle equations in place should you want to use them later. The GOTOs simply jump over them.

Try using the following equations in place of the TAN function in line 514, and run the program with each:

```
514 Y = 0.5 * X + 1:GOTO 520
514 Y = ABS(X):GOTO 520
514 Y = SIN(X*3.14159):GOTO 520
514 Y = LOG(X):GOTO 520
514 Y = EXP(X):GOTO 520
```

In each case, vary your origin placement and X-max,Y-max values to see the effects such changes produce on the image.

You can also plot several functions at once. Math teachers like to assign such problems and ask students to determine where the functions intersect. To do this, use the same technique the original program uses for the circle.

For example, say you want to plot a straight line, Y = 0.5*X + 1, and a circle of radius 1 centered on the origin. First, be sure you've removed lines 514, 531, and 541. Next add lines 526 and 527:

```
526 Y = 0.5 * X + 1: Y3 = YO - YN
    * Y
527 IF X1 > 0 AND X1 < 280 AND Y3
    > 0 AND Y3 < 160 THEN HPLOT
    X1,Y3
```

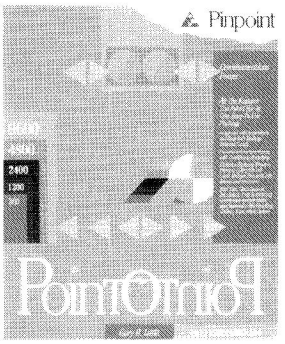
The circle-drawing program as presented here is slow. After all, it's plotting four separate functions. To handle a variety of functions, it checks each X position between the left and right edges of the graph, and each Y position between the top and bottom, to see whether there's a point to plot. If your figure occupies only a small part of the screen, you may have to wait a while for the points to appear.

Faster circle-drawing algorithms exist, but their relationship to the circle's actual equation is a little more difficult to follow—ask any computer scientist. These professionals spend a great deal of time trying to invent faster, more efficient algorithms for the myriad operations computers must perform.■

Write to Dan Bishop at 4124 Beaver Creek Drive, Fort Collins, CO 80526.

You Could Be Online In The Time It Takes To Read This Ad.

Point-to-Point is quick and simple to learn and use.
It's also powerful and complete. In every respect.
And because you can be online in the time it takes to read this ad, Point-to-Point is also the #1 communications program among Apple II computer users.



Pinpoint

Pinpoint Publishing • 5865 Doyle St. #112 • Emeryville, CA 94608 (415) 654-3050

© 1987 Pinpoint Publishing. Pinpoint and Point-to-Point are trademarks of Pinpoint Publishing.

SOFTWARE DISCOUNTERS OF AMERICA

S.D. of A.

For Orders Only — 1-800-225-7638
PA Orders — 1-800-223-7784
Customer Service 412-361-5291

- Free shipping on orders over $100 in continental USA
- No Surcharge for VISA/MasterCard
- Your card is not charged until we ship

ELECTRONIC ARTS®

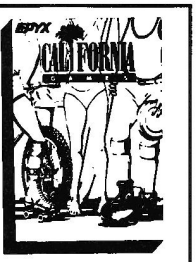


Your fighters are all thumbs, your mages speechless, and your bard is scared sober. Things are looking pretty bleak...

Bards Tale 3
List $49.95
64K
Our Discount Price $32

ACCESS
Famous Course Disk #1 for WCLB..$14
Famous Course Disk #2 for WCLB..$14
World Class Leader Board.....$25
ACCOLADE
Graphic Studio GS...$39
Hardball.....$19
Hardball GS.....$25
Mean 18 Golf GS....$25
Famous Course Disks #2 for Mean 18 GS....$14
Famous Course Disks #3 & #4 for Mean 18 GS..$23
ACTION SOFT
Thunder Chopper....$19
ACTIVISION
Aliens 128K.....$23
Black Jack Academy GS$25
Draw GS.....$57
Ghostbusters.....$9.88
Great American Cross Country Road Race$9.88
Hacker 1 or 2..$9.88 Ea.
Little Computer People$9.88
List Manager Plus GS..$65
Maniac Mansion 128K $23
Might and Magic....$32
Music Studio 2.0 GS..$65
Paintworks w/Clip Art GS.....$42
Paintworks Gold GS..$65
Shanghai.....$23
Teleworks Plus GS...$65
ARTWORX
Bridge 5.0.....$19
International Hockey..$19
Strip Poker.....$19
Data Disk #1 (Female) $14
Data Disk #2 (Male)..$14
Strip Poker 2 GS.....$25
AVALON HILL
NBA Basketball.....$25
Super Bowl Sunday...$21
SBS Gen. Mgr. Disk..$19
SBS 1986 Team Disk .$14
BAUDVILLE
Award Maker Plus...$24
Dream Zone GS.....$32
Video Vegas.....$19
BERKELEY SOFTWORKS
GEOS 128K.....$87
BRODERBUND
Animate 128K.....$42
Bank St. Writer Plus 128K.....$47
Carmen San Diego Europe.....$29
USA.....$27
World.....$24
Choplifter/David's Midnight Magic..$9.88
Dazzle Draw 128K...$34
Fantavision GS.....$39
On Balance 128K....$39
Print Shop (Enhanced) $29
Print Shop Companion $23
Print Shop GS.....$39
P.S. Graphics Library #1, 2, 3.....$14 Ea.
P.S. Graphics Library Party Edition GS...$23
Sampler Edition GS .$23
Wings of Fury 128K..$23
CENTRAL POINT
Copy 2.....$21
COMPUSERVE
Starter Kit ($25 Usage Credit).....$19
DATA EAST
Commando 128K....$14
Ikari Warriors 128K..$23
Tag Team Wrestling..$14
DAVIDSON
Algeblaster.....$29
Grammar Gremlins...$29
Math Blaster Plus 128K$29
Math & Me 128K....$23
Read 'N Roll 128K...$29
Spell It.....$29
Word Attack.....$29
DESIGNWARE
Designasaurus 128K..$24
EDUWARE
Algebra 1.....$23
Algebra 2.....$23
Algebra 3.....$23
ELECTRONIC ARTS
Adv. Const. Set....$9.88
Archon 1 or 2..$9.88 Ea.
Arcticfox.....$26
Bard's Tale.....$29
Bard's Tale GS.....$32
Bard's Tale 2.....$32
Bard's Tale 3.....$32
Chessmaster 2000....$26
Print Magic 128K....$39
P.S. Graphics Scrapbook:
#1 Sports.....$9.88
#2 Off The Wall..$9.88
#3 School.....$9.88
Rad Warrior 128K...$14
Spy vs. Spy 3 128K...$14
S.S. Baseball 128K...$24
S.S. Basketball 128K..$24
Sub Battle Simulator..$24
Sub Battle Sim. GS...$24
Summer Games 1 or 2$14 Ea.
Temple Apshai Trilogy $14
Winter Games.....$14
Winter Games GS....$24
World Games 128K..$24
World Games GS....$24
GAMESTAR
Champ. Baseball 128K $24
Champ. Basketball 128K$24
Champ. Basketball GS $29
Champ. Football 128K $24
HI-TECH EXPRESSIONS
Award Ware.....$9.88
Big Bird's Spc. Delivery$6.88
Ernie's Magic Shapes..$6.88
Print Power.....$9.88
Sesame Street Print Kit$9.88

EPYX®



Shoot the tube while surfing at Santa Cruz, do hand plants skateboarding in Hollywood, & cruise Venice in roller skates.

California Games
List $39.95
128K
Our Discount Price $24

Chuck Yaegar's AFT..$26
Death Lord.....$26
Deluxe Paint II GS...$65
D. Paint Art #1 GS...$19
D. Paint Art #2 GS...$19
Deluxe Print 2 GS...$32
Earth Orbit Station...$23
Instant Music GS....$32
Legacy of the Ancients$26
Lords of Conquest..$9.88
Marble Madness 128K $26
Marble Madness GS..$26
Mavis Beacon Teaches Typing GS .$29
Murder Party.....$9.88
Music Const. Set...$9.88
Music Const. Set GS..$32
One-on-One.....$9.88
Pegasus.....$23
Pinball Const. Set..$9.88
Scrabble.....$26
Skyfox.....$9.88
Strike Fleet.....$23
Wasteland.....$32
World Tour Golf GS..$26
EPYX
Boulder Dash Const. Kit$14
California Games 128K$24
Champ Wrestling 128K$14
Destroyer GS.....$24
Destroyer 128K.....$24
L.A. Crackdown.....Call
INFOCOM
Beyond Zork 128K...$32
Borderzone 128K....$24
Hitchhikers Guide...$9.88
Infocomics.....Call
Leather Goddesses...$24
Nord & Bert.....$24
Sherlock 128K.....$24
The Lurking Horror..$24
Zork 1.....$9.88
Zork Trilogy.....$32
LEARNING COMPANY
Math Rabbit.....$24
Reader Rabbit GS....$39
Reader Rabbit.....$24
Think Quick!.....$32
Writer Rabbit.....$32
MECA
Andrew Tobias: Managing Your Money.....$95
MICROPROSE
F-15 Strike Eagle.....$21
Pirates 128K.....$25
Pirates GS.....$25
Silent Service.....$21
Silent Service GS....$25
MINDSCAPE
Balance of Power 128K$29
Crossword Magic....$32
Gauntlet 128K.....$25
Gauntlet GS.....$29

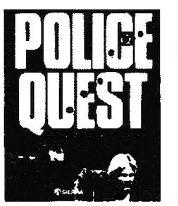
SIERRA



A science fiction parody straight from the outer limits of space. State-of-the-art graphics & animation.

Space Quest
List Price $49.95
128K or GS
Our Discount Price $32

SIERRA



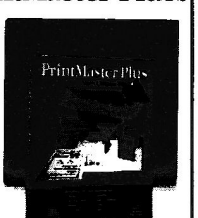
Trek into the world of vice, drugs and homicide. An adult perspective on the life of a police officer.

GS
Police Quest
List $49.95
Our Discount Price $32

Indoor Sports 128K..$19
Into the Eagle's Nest 128K$23
Paperboy 128K.....$25
Perfect Score SAT.....$44
ORIGIN
Autoduel.....$32
Moebius.....$36
2400 A.D.....$24
Ultima 1 or 3.....$24 Ea.
Ultima 4.....$36
Ultima 5.....$39
SHARE DATA
Family Feud.....$8.88
Wheel of Fortune 128K$8.88
SIERRA
Black Cauldron.....$24
King's Quest 1 GS...$32
King's Quest 1, 2 or 3$32 Ea.
Leisure Suit Larry GS .$25
Leisure Suit Larry 128K$24
Mother Goose 128K..$19
Police Quest GS.....$32
Smart Money 128K...$49
Space Quest GS.....$32
Space Quest 128K...$32
Space Quest 2 (128K).$32
Thexder GS.....$23
SIR TECH
Deep Space.....$24
Return of Werdna....$39
Wizardry Series:
Knight of Diamonds $32
Legacy of Lylgamin .$32
Proving Ground....$32
SOFTSYNC
Personal Newsletter 128K$39
SPRINGBOARD
Certificate Maker.....$24
C.M. Library Vol. 1...$19
Early Games.....$24
Easy as ABC.....$24
Newsroom.....$32
N.R. Clip Art #1 or #3..$17
N.R. Clip Art #2.....$23
STYLEWARE
Clip Art Gallery GS...$25
Desk Works GS.....$39
Multiscribe 3.0 (128K)..$49
Multiscribe GS.....$65
M.S. Font Library GS..$24
Top Draw GS.....$59
SUBLOGIC
Flight Simulator 2.....$32
F.S. Scenery Disks.....Call
Jet.....$26
THUNDER MOUNTAIN
Dig Dug.....$6.88
Pac Man.....$6.88
TIMEWORKS
Publish It! 128K.....$65
Publish It Clip Art
Font Pack 1.....$24
People Places & Things$24
Symbols & Slogans..$24
ROGER WAGNER
Merlin 8/16.....$79
Softswitch GS.....$39
UNICORN
Aesop's Fables GS.....$29
Magical Myths GS...$29
WEEKLY READER
Stickybear Series:
ABC's.....$23
Math 1 or 2.....$23
Music.....$23
Numbers.....$23
Reading.....$23
Reading Comp.....$23
Spell Grabber.....$23
Word Problems.....$23

UU Unison World

PrintMaster Plus.



Everything you need to design and print: Banners, Calendars, Custom Stationery, Flyers, Greeting Cards, Invitations and Posters.

Print Master Plus
List $39.95
128K
Our Discount Price $24

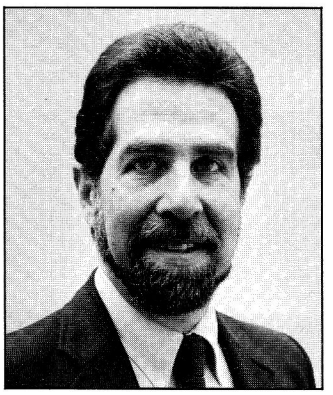
P.O. BOX 111327—DEPT. AP—BLAWNOX, PA 15238

*Please Read The Following Ordering Terms & Conditions Carefully Before Placing Your Order: Orders with cashiers check or money order shipped immediately on in stock items! Personal & Company checks, allow 3 weeks clearance. No C.O.D.'s! Shipping: Continental U.S.A.-Orders under $100 add $3; free shipping on orders over $100. AK, HI, FPO, APO-add $5 on all orders. Canada & Puerto Rico-add $10 on all orders. Sorry, no other International orders accepted! PA residents add 6% sales tax on the total amount of order including shipping charges. CUSTOMER SERVICE HOURS: Mon.-Fri. 9 AM-5:30 PM Eastern Time. REASONS FOR CALLING CUSTOMER SERVICE—412-361-5291 (1)Status of order or back order (2)if any merchandise purchased within 60 days from S.D.of A. is defective, please call for a return authorization number. We will not process a return without a return auth. #! Defective merchandise will be replaced with the same merchandise only. Other returns subject to a 20% restocking charge! After 60 days from your purchase date, please refer to the warranty included with the product purchased & return directly to the manufacturer. Customer service will not accept collect calls or calls on S.D.of A.'s 800# order lines! Prices & availability are subject to change! New titles are arriving daily! Please call for more information. NEW, MORE CONVENIENT ORDER LINE HOURS: Mon.-Thurs. 8:30 AM-7:00 PM Fri. 8:30 AM-5:30 PM Sat. 10:00 AM-4:00 PM Eastern Time.

Circle 270 on Reader Service Card.

Summer Reading

Hardware, software, services, philosophies, technologies—if you're a telecommunicator looking for advice, assistance, or a discussion of recent developments in any of these areas, check out inCider*'s list of references.*



by Tom Sherman

A man was arrested for attempting to extort funds from ignorant and superstitious people by exhibiting a device he says will convey the human voice any distance over metallic wires. He calls the instrument a telephone. *Well-informed people confirm that it is impossible to transmit voice over wires, and if it were possible to do so, the thing would have no practical value.*

—a New York newspaper, 1865
—Telecommunications Management Planning,
by Robert K. Heldman

Everyone takes the telephone for granted, but for many computer users the same mystery that surrounded that convenient, easy-to-use device more than a century ago shrouds telecommunications today.

To help solve the enigma of telecommunications—on-line services, electronic mail, bulletin-board systems, and so on—experts have written hundreds of books, including practical guides as well as philosophical discussions of the benefits of on-line communications today and tomorrow. In fact, the telecommunications picture is changing so rapidly that it's difficult for even the newest releases to keep up with the latest electronic pathways. To assist both novice and skilled telecommunicators, here's a guide to about two dozen current references.

ATLASES OF MAJOR TERRITORIES

For most of us, the major on-line territories are databases, electronic mailboxes, bulletin-board systems (BBSs), and information services. "Atlases" of computer communications in these areas cover many subjects: modems and communications software, various on-line systems, and lists of additional resources. These books are ideal for beginners.

Mike Cane's ***The Computer Phone Book***, for example, comes in two volumes: *Guide to Using On-Line Systems* and *Directory of On-Line Systems*. This set provides detailed information about particular BBSs, but discusses few major services and is weaker in its discussion of technology than some other books on the market. The *Directory* includes phone numbers, access information, and the author's comments about 30 national systems (such as CompuServe), 15 systems providing information of local interest, and more than 600 BBSs around the country.

Alfred Glossbrenner's ***The Complete Handbook of Personal Computer Communications: Everything You Need to Go On Line with the World*** has taught thousands of anxious beginnners how to make connections. Like Glossbrenner's other books, the *Handbook* is enthusiastic, easy to read, and crammed with useful, intriguing, money-saving tips.

The most up-to-date book of this group is Michael Banks' ***Modem Book***, scheduled for release this summer. Judging from a preview copy, I'd say it presents a clear explanation of technical details such as data transmission and modem features.

EVERYONE USES DATABASES

Even if you've never been on line, you're familiar with at least one database—the telephone directory. If you need long-distance phone numbers often, you probably have quite a stack of directories. Imagine the savings in time and space if you could use your Apple II to seach for those phone numbers. When you consider the libraries of on-line data you might search, you'll begin to understand the extraordinary growth in publicly accessible electronic databases—from a few dozen in 1973 to more than 3000 today. Although simplified searches are now possible, the cost and complexity of on-line retrieval have spawned many books on databases.

A good place to start is ***On-Line Searching: A Primer***. This short introduction describes general search strategies and lists important resources. A more extensive book, ***Inside Information: Business and Professional, Electronic Libraries, Databases***

Product Information

Alfred Glossbrenner's Master Guide to CompuServe, 1987, $19.95
Alfred Glossbrenner
Delphi: The Official Guide, 1987, $21.95
Michael A. Banks and General Videotex Corporation
The Modem Book, 1988, $21.95
Michael Banks
Brady Books
Division of Simon & Schuster
One Gulf & Western Plaza
New York, NY 10023
(212) 767-5937
(800) 624-0023
(800) 624-0024 (NJ)

Reader Service Number 335

The Complete Handbook of Personal Computer Communications: Everything You Need to Go On Line with the World, 1985, $14.95
Alfred Glossbrenner

How to Look It Up On Line: Get the Information Edge with Your Personal Computer, 1987, $14.95
Alfred Glossbrenner
St. Martin's Press
175 Fifth Avenue
New York, NY 10010
(212) 674-5151
(800) 221-7945

Reader Service Number 336

The Computer Phone Book: Directory of On-Line Systems, 1986, $18.95
Mike Cane
The Computer Phone Book: Guide to Using On-Line Systems, 1986, $14.95
Mike Cane
Inside Information: Business and Professional, Electronic Libraries, Databases, and Messaging, 1986, $14.95
John Hellwell
Plume Books
New American Library
1633 Broadway
New York, NY 10019
(212) 397-8127

Reader Service Number 337

Electronic Mail: A Revolution in Business Communications, 1982, $22.95
Stephen Connell and Ian A. Galbraith
Executive's Guide to On-Line Information Services, 1984, $24.95
Ryan E. Hoover
G.K. Hall & Company
70 Lincoln Street
Boston, MA 02111
(617) 423-3990
(800) 343-2806

Reader Service Number 338

Essential Guide to Bulletin-Board Systems
Patrick R. Dewey
Meckler Corporation
11 Ferry Lane West
Westport, CT 06880
(203) 226-6967
1987
$24.95

Reader Service Number 339

How to Get the Most Out of CompuServe (3rd edition), 1987, $19.95
Charles Bowen and David Peyton
How to Get the Most Out of Dow Jones News/Retrieval, 1987, $19.95
Charles Bowen and David Peyton
How to Get the Most Out of The Source, 1986, $14.95
Charles Bowen and David Peyton
Bantam Books
666 Fifth Avenue
New York, NY 10103
(212) 492-9479
(800) 223-6834 x9479

Reader Service Number 340

Introduction to Telecommunications Systems, 1987, $14.95
P.H. Smale
Telecommunications Management Planning, 1987, $49.94
Robert K. Heldman
TAB Books
13311 Monterey Lane
Blue Ridge Summit, PA 17294-0850
(717) 794-2191

Reader Service Number 341

Networking: An Electronic-Mail Handbook
Thomas B. Cross & Marjorie B. Raizman
Scott, Foresman, & Company
1900 East Lake Avenue
Glenview, IL 60025
(312) 729-3000
1986
$18.95

Reader Service Number 342

On-Line Searching: A Primer
Carol H. Fenichel and Thomas H. Hogan
Learned Information, Inc.
143 Old Marlton Pike
Medford, NJ 08055
(609) 654-6266
1984
$14.95

Reader Service Number 343

Searching DIALOG: The Complete Guide
DIALOG Information Services
3460 Hillview Avenue
Palo Alto, CA 94034
(415) 858-2700
(800) 334-2564
1987
$25

Reader Service Number 344

Telecommunications Networks: A Technical Introduction
Howard W. Sams & Company
4300 West 62nd Street
Indianapolis, IN 46268
(317) 298-5565
(800) 428-7267
1987
$29.95

Reader Service Number 345

Understanding Modern Telecommunications
Herbert S. Dordick
McGraw-Hill Publishing
Princeton Road
Hightstown, NJ 08520
(609) 426-5000
1986
$42.95

Reader Service Number 346

and Messaging, considers specific kinds of database information available and discusses electronic mail.

As you might imagine, the ***Executive's Guide to On-Line Information Services*** is more narrowly focused, comparing and offering detailed looks at the major vendors. For an easy-to-understand overview, the most complete book is Alfred Glossbrenner's ***How to Look It Up On Line***, which gives you a good sense of how and where to find different kinds of information.

Fewer books are currently available about electronic mail (e-mail) and computerized BBSs. It's hard to take a picture of something that won't stand still. Designed to help managers evaluate improvements in communication, ***Electronic Mail: A Revolution in Business Communications*** (published in 1982) states, "Because the complexion of the industry changes almost daily, it is impossible to give a fully up-to-date picture of those changes."

Networking: An Electronic Mail Handbook does provide a clear, if generalized, view of the field. Not limited to e-mail from microcomputers, it also introduces the basics of facsimile, telex, videotex, video, and the various networks that support them.

If you're thinking about setting up your own BBS, take a look at the ***Essential Guide to Bulletin-Board Systems***. It includes some basic details that are likely to be old knowledge to prospective system operators (sysops), but it will help you select BBS programs and estimate the cost of managing a board.

To develop more detailed search strategies, you'll want to use the manuals provided by the various vendors. ***Searching DIALOG: The Complete Guide***, for example, helps both beginners and experts navigate the world's largest collection of on-line databases.

In the case of Delphi, the best explanatory book is the manual—***Delphi: The Official Guide***. Beginning with the basics of connection and commands, author Michael Banks discusses the system's major features—business and finance, real-time conferencing, mail, entertainment, groups and clubs, publications, shopping, sports, and other areas. The book concludes with tips on how to get the most information for the least effort and cost. Though not lively reading, it's a straightforward presentation of system features, well illustrated with helpful examples.

Charles Bowen and David Peyton are the authors of three books—***How to Get the Most Out of The Source***, ***How to Get the Most Out of Dow Jones News/Retrieval***, and ***How to Get the Most Out of CompuServe***. They've perfected a friendly style as they tour each



- **Create programs with super high resolution graphics in up to 256 colors at once, plot shapes and text fonts in color, produce animated effects and more, with ICONIX.**
- **Sample and record your own sounds, compose music in up to 30 voices, create sound effects and much more, with SONIX.**
- **Trace and locate files, recover deleted files, create a mouse-driven program launcher and much more, with DISC COMMANDER.**

With ***"The Power Trio"*** from **So What Software,** now you can create your own BASIC software programs using the **full** range of graphics and sound power of the Apple IIGS.

Create colorful animated programs using the super high resolution power of **ICONIX.** Orchestrate compositions through the full sound and music environment of **SONIX.** Or trace and locate files with the powerful disk editor, **DISC COMMANDER,** and much more.

Easy-to-use and very affordable, ***"The Power Trio"*** will turn your BASIC programs into FANTASTIC programs!

SONIX, ICONIX, and **DISC COMMANDER:** the hands-on favorites!

Call us today, at **(714) 964-4298**
(714) 963-3392

SO WHAT SOFTWARE

10221 SLATER AVENUE, SUITE 103, FOUNTAIN VALLEY, CA 92708

Circle 277 on Reader Service Card.

system, taking beginners step-by-step through the electronic passageways.

Alfred Glossbrenner's Master Guide to CompuServe emphasizes the system's professional, business, news, and communications areas, complementing Bowen and Peyton's focus on games, forums, and real-time conferencing (often called *CB* or *chat*). Glossbrenner includes information of special use to Apple II owners—in this case, details for ordering public-domain telecommunications software and utilities.

HOW DO WE GET THERE?

Many people use the computer as they would a car, without ever caring to look under the hood. But if you're curious about how those little electronic bits move from your Apple II to other computers, here are a few suggestions. First, P.H. Smale's ***Introduction to Telecommunications Systems*** helps you understand the basics of radio, television, radar, and the telephone, as well as the networks that connect them.

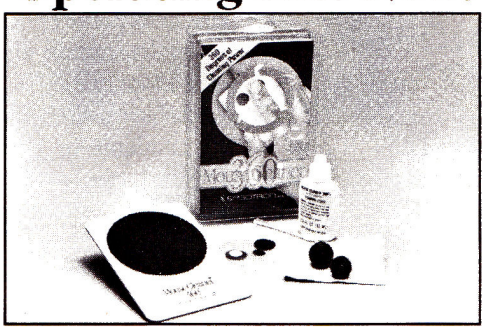
You'll find similar introductory information in ***Understanding Modern Telecommunications***, by Herbert S. Dordick, and in ***Telecommunications Networks: A Technical Introduction***, by R.J. Murphy. Dordick's book, though less technical, treats the semiconductor chip, the satellite, the telephone, broadcasting, and computer technology in the context of "emerging information societies." Carefully selected lists of related books make Dordick's text especially useful. Murphy focuses on current and future telecommunications networks, with special emphasis on planning and management. Diagrams and illustrations make these topics accessible.

MAKE THE CONNECTION

If you're not already on line, these books may persuade you that making the connection will, as author Glossbrenner says, "place an entire range of new and innovative services at your fingertips, help you work smarter, faster, and more productively, and spark the creativity lying dormant in your soul." If you're already a member of the network nation, they'll help you choose productive, entertaining destinations and speed your journey.■

Tom Sherman is a communications consultant specializing in computer-related activities. Write to him at 224 South Chester Road, Swarthmore, PA 19081, or contact him on line through GEnie (SHERMAN), CompuServe (72010,12), The Source (CPA177), Delphi (Sherm), The WELL (sherman), PeaceNet (tsherman), and PARTI on NWI, Unison, and The Source (Tom Sherman).

Keep Your Mouse Operating Like New!



Clean It Regularly With Mouse Cleaner 360°™

Even with minimal use, the positioning rollers of your Mouse build up dust, dirt, and other substances. If not cleaned regularly, this unwanted grime will interfere with cursor response and may lead to expensive repair bills or premature replacement of the Mouse.

Mouse Cleaner 360° uses an ingenious concept to scour your Mouse and keep it operating as it should. Simply insert the patented Scrubber Ball into the Mouse cavity. With a few circular motions on the Scrubber Board, your Mouse is clean.

Contact your local Computer Dealer, Distributor (including Micro D, Bonsu, & Ingram) or call:

ERGOTRON inc

3450 Yankee Drive, Ste. 100
Eagan, MN 55121
612/452-8135 • 800/888-8458

Circle 35 on Reader Service Card.

Banned in the USSR ©

So useful that Congress prohibits export to Soviets!

FASTDATA Pro — Hi-Speed Data Retrieval
"Highly recommended" - Apple User Groups — Search 25,000 chrs. in 1 sec. AND/OR/NOT & Wildcards

• **RAM "Expander"** lets you expand word processor & database files without buying more RAM. Links any number of files into a giant pseudo file that FASTDATA Pro can search, print, count, split, merge, copy, **cut & paste**. So fast it's almost like a 30 megabyte desktop. **Hypertext** program - even links different file TYPES, e.g., TXT to AWP to ADB. Needs no extra disk or memory space!

• **Free-Form Database Manager** - Use with your word processor to create huge databases. Variable delimiter lets you build records of any size or form. You can even re-define records instantly, e.g., as sentence, line, paragraph, chapter, or entire file. Prints: all matches, last match, screen dump.

• **AppleWorks Utility** - Retrieves text from **ALL TYPES** of files. Breaks AppleWorks' category and record barriers. Ideal for databases of exam questions, real estate listings, writer's journals, bibliographies, recipes, contracts, lab diaries, genealogies, resumes, etc. Switch to/from FASTDATA Pro in 8 secs.

• **Plus:** File converter, finder & previewer. Zoom & scroll up/down. Line-end converter. Magic cursor ends pathname typing. **FREE Program Selector**. For //+, //e, //c, //gs, min. 64K.

SUPER INDEX Databases

On disk **summaries** of every article, review, program, tip & letter in your magazines. **Cross-references** corrections. Like a **"tip book"** cites 1000's of answers. **SAVE TIME**: Ends fruitless searches through stacks of magazines. Prevents "re-inventing the wheel". Helps find & fix bugs in published programs. **SAVE MONEY**: Find all the reviews before buying. Reduce repair shop visits. Cut long-distance help calls. Costs less than using most commercial databases just once! **Pays for itself**. Search with FASTDATA.

Not-Copy-Protected Hi Mom
90-day Money-Back Guarantee

FASTDATA Pro (ProDOS) **$49.95**
FASTDATA 3.3 (DOS 3.3, search) & print only, 48K) **$19**
SUPER INDEX Databases - Any one **FREE** with FASTDATA:
A+ .....'87 **$6**, '86 **$6**, '85-'83 **$10**
Call-A.P.P.L.E. '87 **$6**, '86-'85 **$10**, '84-78 **$12**
inCider '87 **$6**, '86 **$6**, '85-'84 **$10**
National Geographic.... '87 **$9**
NIBBLE®..... '87 **$12**
OPEN-APPLE '87 **$6**, '86-'85 **$10**
Sampler (12 database excerpts)..... **$9**
On 3.5 inch disks..... add **$2**

LINC Resources SpecialWare (for handicapped children).... **call**

Add: $2 Ship/hand., CA res. 6.5% tax, Overseas $4 **VISA/MC (213) 544-2350**
FASTFIND Co. **28503 Coveridge Dr., Dept. CX1, Rancho Palos Verdes, CA 90274**

Circle 11 on Reader Service Card.

NEW PRODUCTS

edited by Pat O'Dell

Resources

SPECIAL SUGGESTIONS

Mindscape Methods for Mastery is a new reference guide developed by Mindscape to help teachers use the company's software to best advantage in **special-needs classes**. It also offers lesson plans and suggestions for supplementary learning aids. *Mindscape Methods for Mastery* sells for $19.95. For more information, contact Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667, or circle Reader Service number 361.

ALL YOU EVER WANTED

The *Programmer's Introduction to the Apple IIGS*, new from Addison-Wesley, was written by the the developers of the GS. Loaded with **advice and suggestions for programmers**, it also includes three versions—65816 assembly language, C, and Pascal—of a sample routine called HodgePodge.

Using HodgePodge as an example, the book demonstrates how to write event-driven programs, how to use the GS Toolbox, and how to write programs that use the DeskTop user interface, among other topics. Copies of HodgePodge on disk are included with the book. The *Programmer's Introduction to the Apple IIGS* is available for $32.95 from Addison-Wesley Publishing Company, Route 128, Reading, MA 01867, (617) 944-3700, or (800) 447-2226 (orders only, outside Massachusetts). Circle Reader Service number 362 for more information.

SHOPPING AROUND

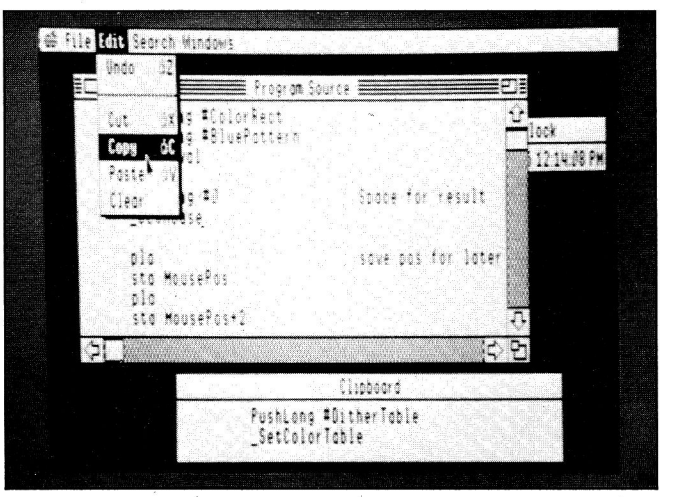
With the help of your computer and Travelshopper, you can book your own **airline flights** now. Travelshopper is offered on the American Home Network, a subscription on-line shopping service. Once you book a flight, you can send the information electronically to any travel agency that subscribes to Travelshopper. Contact PARS Travel Information Systems, P.O. Box 20326, Kansas City, MO 64153, (816) 891-5300, or circle Reader Service number 375 for more information.

EXCHANGING INFORMATION

You can get new **public-domain** and **shareware software** for the GS from the Public Domain Exchange. The programs available include desk accessories, graphics utilities, songs, artwork, games, fonts, and telecommunications programs. The disks are available for $9 each, plus $4 shipping and handling. For more information, contact the Public Domain Exchange, 2074C Walsh Avenue, Santa Clara, CA 95050, (408) 496-0624, or circle Reader Service number 374.

HEY, GOOD-LOOKIN'

Now that you've got desktop-publishing software, all you need to know is how to use it to its best effect. *Looking Good in Print: A Guide to Basic Design for Desktop Publishing* can teach you the basics of **graphic design**. It doesn't focus on specific hardware or software—it's simply about how to make your documents look better. (It even includes 14 different "design makeovers.") *Looking Good in Print: A Guide to Basic Design for Desktop Publishing* is available for $23.95 from Ventana Press, P.O. Box 2468, Chapel Hill, NC 27515, (919) 490-0062. Circle Reader Service number 360 for more information.



How-to for GS programmers from Addison-Wesley.

Software

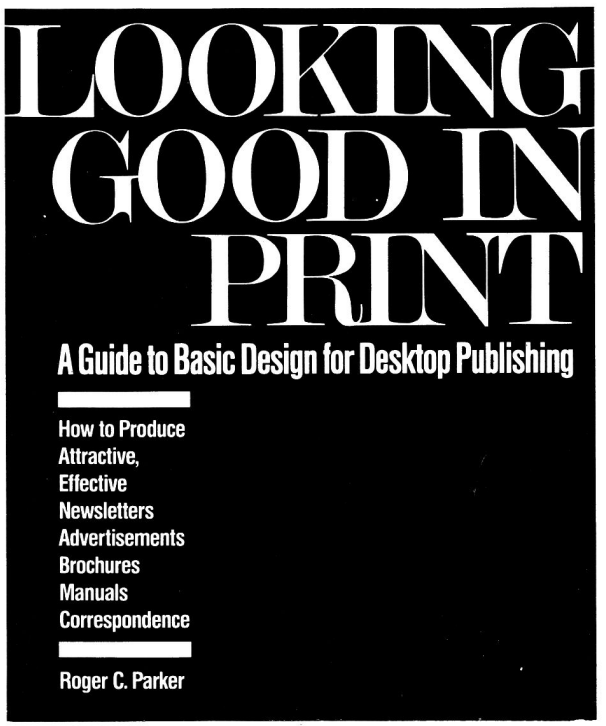
READ 'EM AND WEEP

Rebus Writer will help your kids have **fun with the English language**. A rebus is a sentence that uses pictures, letters, and numbers instead of words to make a puzzle.

Rebus Writer is designed for students in grades 3–12. Students can create their own puzzles by selecting illustrations on disk or by drawing their own. The program is available for $49.95 from Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667. For more information, circle Reader Service number 350.

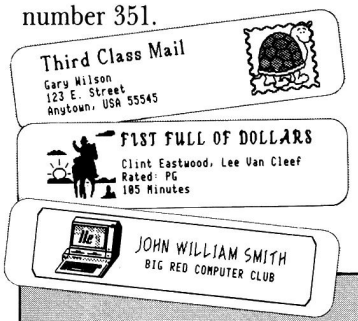
PLAIN AND FANCY

With Labels, Labels, Labels you can **create fancy labels** with Print Shop graphics, then merge them with AppleWorks database files. In addition to mailing labels, you can produce disk and videotape labels, badges, postcards, and



Looking Good in Print can help you improve the looks of your desktop publishing.

price tags by merging Print Shop graphics, fonts, and borders, each of which can print in one of seven colors. The program costs $39.95 and is designed for the entire Apple family. For more information, contact Big Red Computer Club, 423 Norfolk Avenue, Norfolk, NE 68701, (402) 379-4680, or circle Reader Service number 351.



LOGGING ON

Numeric Concepts/Memory Skills, the latest addition to the Captain's Log software series, is designed to help anyone with learning disabilities develop **basic skills**, including memory skills. The package is divided into seven separate programs, each covering a different capability. The seven-program set is available for $395 from Network Services, 1915 Huguenot Road, Richmond, VA 23235, (804) 379-2253. For more information, circle Reader Service number 356.

Hardware

ALL ABOARD

On-Board is a **memory-expansion card** designed for the Apple IIGS. It can hold up to 4096K (4 megabytes) and can be populated in increments of 1, 2, or 4 megabytes. On-Board doesn't come with any memory; you're responsible for buying and installing the chips. On-Board is compatible with Checkmate Technology's MemorySaver boards, as well as all direct-memory-access devices (such as RAM disks). On-Board is available for $149.95. Contact On Three, Inc., 4478 Market Street, Suites 701-702, Ventura, CA 93003, (805) 644-3514, or circle Reader Service number 357 for more information.

PRETTY PICTURES

With the Video-Microcomputer Interface, you can **connect your Apple II to a videodisc player**. By installing more than one board, you can control several videodisc players with one computer. VMI allows both serial and parallel communication and lets you direct video output to a television set. Machine-code drivers are included with the board. The Video-Microcomputer Interface is available for $395 from Allen Communications, 140 Lakeside Plaza II, 5225 Wiley Post Way, Salt Lake City, UT 84116, (801) 537-7800. For more information, circle Reader Service number 358.

GOING MOBILE

The **Mobile Computer Stand** from Wheelit may be a lifesaver if you're living or working in cramped quarters. It rolls on locking casters and features two adjustable shelves—one for the CPU and one for your monitor. The Mobile Computer Stand (model #8400) is available for $150 from WHEELIT, Inc., P.O. Box 7350, Toledo, OH 43615, (419) 531-4900. Circle Reader Service number 359.

Product Updates

•Optimum Resource now offers **Weekly Reader Lab-Packs** for its popular Weekly Reader Software line. The Lab-Packs consist of five disks and one set of documentation. They're available for $75 from Optimum Resource, Inc., Station Place, Norfolk, CT 06058, (203) 542-5553.

•Mindscape's **Color Me: The Computer Coloring Kit** has been updated to include more activities. It now comes with two picture disks and all the materials needed to create a coloring book. For more information, contact Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667.

•Now you can buy a ProDOS version of **LogoWriter**. Logo Computer Systems' new edition requires 128K and can run on a network. It's available under a site-licensing agreement from Logo Computer Systems, Inc., 1000 Roche Boulevard, 9th Floor, Vaudreuil, Quebec, Canada J7V 6B3, (514) 455-0870.

Product descriptions contained in this section are based on information supplied to us by the respective manufacturers. These announcements are provided solely as a service to our readers and do not constitute endorsement by inCider *of any given product.*

INDEX TO ADVERTISERS

Reader Service		Page
286	Abracadata	86
*	Apple Computer Inc.	18, 19
*	Applied Engineering	5, 14, 15, 26, 27, 29, 44, 45, 46, 47, 53, 55
54	Applied Ingenuity	94
46	Ayl Software	92
65	Az-Tech Computer Services	93
48	Barnum Software	93
44	Behavioral Engineering	93
285	Berkeley Softworks	40, 41
151	Big Red Apple Club	80
*	Broderbund	13
25	Burke Transfer Service	92
116	Canadian Computer Outlet	94
62	Central Point Software	21
123	Checkmate Technology, Inc.	33
*	Claris Corp.	10, 11
79	Coit Valley Computers	4
205	Computer Direct	48
206	Computer Direct	49
288	Computer Friends	34
228	Computer Network	94
142	Computers Plus Co.	71
20	Computer Supply	93
80	Dandam Software	92
134	Dayton Computer Co.	92
24	Direct Micro	30
108	Diversified Software Research	87
28	Eclat Micro Products	94
35	Ergotron Inc.	77
11	FastFind Co.	77
*	Golem Computers	6
17	Hi-Tech Distributors	92
	inCider	
	Corp Ad	69
	Apple Works in Action	65
	Sub Ad	64
	Contest Ad	81
	Help	94
	Success with AppleWorks	84
	Moving	95
2	L&L Productions	93
6	Master Media Supply	93
4	Merritt Computer Products	93
167	Micro-Frame Software Inc.	86
55	National AppleWorks User Group	93
98	Nexo Distribution	92
89	North Forty Ent.	94
*	Open-Apple	87
191	Pegasus Data	CV3
77	PIE	92
*	Pinpoint Publishing	72
*	Preferred Computing	24, 25
49	Prof Jones	80
128	Programs Plus	82, 83
269	Public Domain Exchange	52
136	Quality Computers	23
143	Silicon Express	56
64	Silver Burdett & Ginn	92
277	So What Software	76
68	Soft-byte	93
292	Softdisk	1
96	Softronics	92
270	Software Discount of Am.	73
*	Southern Calif. Research	94
290	Stone Edge Tech Inc.	62
239	StyleWare, Inc.	2, 3
156	subLOGIC Corp.	36
110	Taito Software, Inc.	CV2
78	TCX Ltd.	94
15	Uptime	9
260	Zimco	63
189	Zip Technology	CV4

This index is provided as an additional service. The publisher does not assume liability for errors or omissions.

Get more out of
Print Shop™ and **AppleWorks™**
with these great values.

Labels, Labels, Labels

Use Print Shop™ graphics, borders and fonts to create any size label, badge or postcard. Merge fancy labels with your AppleWorks database. Print in color on color printers. Use new GS multi-color graphics. Retail price $39.95 for product PS03.

P.L.U.S.

Do you love Print Shop™? We do! That's why we've created P.L.U.S., a set of ten "Print Shop™" related utility programs that are so useful, you'll wonder how you ever got along without them. Retail price is $39.95 for product PS01.

Big Red Computer Club

An international Apple™II user group with over 8,000 members. Members receive a monthly newsletter called *Scarlett*, a large catalog of public domain software and group discounts on software products. Membership is only $12.00 a year.

PRINT COLOR LABELS

Big Red Computer Club
423 Norfolk Avenue
Norfolk, NE 68701
Phone orders welcome! Call 402-379-4680.
Print Shop is a trademark of Broderbund Software.

Circle 151 on Reader Service Card.

Prof Jones ®

PROFESSIONAL HANDICAPPING SYSTEMS™

"COMPUTER SOFTWARE FOR THE SERIOUS HANDICAPPER"

Mini-Pro Analysis	$149.95
Professional Analysis	$249.95
Analysis w/Multiple Regression	$399.90
Professional Lottery/Lotto	$149.95
Professional Football	$199.95
Bookie Buster	$149.95
Pro-Bookie Combination	$299.95
Basketball Addition	$149.95

WATCH FOR THESE NEW PRODUCTS COMING SOON!

Market-Maker™ Stock market analysis
Bookie Buster II™ Football predictor--60 analysis
Professional Speed Handicapper™ for horses

CALL NOW--TOLL FREE **1-800-553-2256**

TO RECIEVE YOUR **FREE CATALOG**

DEMO SOFTWARE *w/manual*
$15.00--$25.00 each

1940 West State Street, Boise, Idaho 83702 (208) 342-6939

Circle 49 on Reader Service Card.

TO RECEIVE MORE INFORMATION

TEAR out the perforated card. Please print or type your name and address where indicated.

CIRCLE the numbers on the card that correspond to the reader service numbers on the advertisements that interest you.

ORDER a one year subscription to inCider by circling 400 on the card.

MAIL the card with your check, money order or U.S. currency to:
inCider
Reader Service Dept.
P.O. Box 5145
Pittsfield, MA 01202-9936
Or, you may request billing.

LOOK FOR your subscription in 10 to 12 weeks.

REMEMBER the postage is on us.

JULY 1988 Card valid until August 31, 1988

► Are you a subscriber? 1. ☐ Yes 2. ☐ No

A. How many people, other than yourself, read your copy of inCider?
1. ☐ One 2. ☐ Two 3. ☐ Three 4. ☐ None

Indicate which of the following you currently own and/or plan to buy in the next 3 months:

	B. Own	C. Plan to buy in 1-3 months
Apple IIe	1. ☐	1. ☐
Apple IIc	2. ☐	2. ☐
Apple IIGS	3. ☐	3. ☐
Laser 128	4. ☐	4. ☐
Apple II +	5. ☐	

D. How long have you owned your Apple II?
1. ☐ Less than a year 2. ☐ 1-2 years 3. ☐ More than 2 years

Indicate the following types of software or hardware you plan to purchase in the next 3 months:

E. 1. ☐ Entertainment
2. ☐ Education
3. ☐ Productivity software/home
4. ☐ Productivity software/work

F. 1. ☐ Printer
2. ☐ Modem
3. ☐ RAM Card
4. ☐ Hard Disk

G. How often do you recommend /influence the purchase of software or hardware to friends or work associates:
1. ☐ Once a week
2. ☐ One time per month
3. ☐ Two times per month
4. ☐ More than three times per month

H. On a scale of 1 (no interest) to 4 (great interest) please rate the following columns in inCider:

1. inCider On Line	1 2 3 4	4. AppleSoft Advisor	1 2 3 4
2. New Products	1 2 3 4	5. Editor's Choice	1 2 3 4
3. AppleWorks in Action	1 2 3 4	6. Features	1 2 3 4

Name _____ Home Phone _____
Title _____ Business Phone _____
Address _____
City/State/Zip _____

READER SERVICE

1	6	11	16	21	151	156	161	166	171	301	306	311	316	321
2	7	12	17	22	152	157	162	167	172	302	307	312	317	322
3	8	13	18	23	153	158	163	168	173	303	308	313	318	323
4	9	14	19	24	154	159	164	169	174	304	309	314	319	324
5	10	15	20	25	155	160	165	170	175	305	310	315	320	325
26	31	36	41	46	176	181	186	191	196	326	331	336	341	346
27	32	37	42	47	177	182	187	192	197	327	332	337	342	347
28	33	38	43	48	178	183	188	193	198	328	333	338	343	348
29	34	39	44	49	179	184	189	194	199	329	334	339	344	349
30	35	40	45	50	180	185	190	195	200	330	335	340	345	350
51	56	61	66	71	201	206	211	216	221	351	356	361	366	371
52	57	62	67	72	202	207	212	217	222	352	357	362	367	372
53	58	63	68	73	203	208	213	218	223	353	358	363	368	373
54	59	64	69	74	204	209	214	219	224	354	359	364	369	374
55	60	65	70	75	205	210	215	220	225	355	360	365	370	375
76	81	86	91	96	226	231	236	241	246	376	381	386	391	396
77	82	87	92	97	227	232	237	242	247	377	382	387	392	397
78	83	88	93	98	228	233	238	243	248	378	383	388	393	398
79	84	89	94	99	229	234	239	244	249	379	384	389	394	399
80	85	90	95	100	230	235	240	245	250	380	385	390	395	400
101	106	111	116	121	251	256	261	266	271	401	406	411	416	421
102	107	112	117	122	252	257	262	267	272	402	407	412	417	422
103	108	113	118	123	253	258	263	268	273	403	408	413	418	423
104	109	114	119	124	254	259	264	269	274	404	409	414	419	424
105	110	115	120	125	255	260	265	270	275	405	410	415	420	425
126	131	136	141	146	276	281	286	291	296					
127	132	137	142	147	277	282	287	292	297					
128	133	138	143	148	278	283	288	293	298					
129	134	139	144	149	279	284	289	294	299					
130	135	140	145	150	280	285	290	295	300					

Circle 400 to start your subscription to inCider today! You will be billed $24.97 for one year (12 issues).

JULY 1988 Card valid until August 31, 1988

► Are you a subscriber? 1. ☐ Yes 2. ☐ No

A. How many people, other than yourself, read your copy of inCider?
1. ☐ One 2. ☐ Two 3. ☐ Three 4. ☐ None

Indicate which of the following you currently own and/or plan to buy in the next 3 months:

	B. Own	C. Plan to buy in 1-3 months
Apple IIe	1. ☐	1. ☐
Apple IIc	2. ☐	2. ☐
Apple IIGS	3. ☐	3. ☐
Laser 128	4. ☐	4. ☐
Apple II +	5. ☐	

D. How long have you owned your Apple II?
1. ☐ Less than a year 2. ☐ 1-2 years 3. ☐ More than 2 years

Indicate the following types of software or hardware you plan to purchase in the next 3 months:

E. 1. ☐ Entertainment
2. ☐ Education
3. ☐ Productivity software/home
4. ☐ Productivity software/work

F. 1. ☐ Printer
2. ☐ Modem
3. ☐ RAM Card
4. ☐ Hard Disk

G. How often do you recommend /influence the purchase of software or hardware to friends or work associates:
1. ☐ Once a week
2. ☐ One time per month
3. ☐ Two times per month
4. ☐ More than three times per month

H. On a scale of 1 (no interest) to 4 (great interest) please rate the following columns in inCider:

1. inCider On Line	1 2 3 4	4. AppleSoft Advisor	1 2 3 4
2. New Products	1 2 3 4	5. Editor's Choice	1 2 3 4
3. AppleWorks in Action	1 2 3 4	6. Features	1 2 3 4

Name _____ Home Phone _____
Title _____ Business Phone _____
Address _____
City/State/Zip _____

READER SERVICE

1	6	11	16	21	151	156	161	166	171	301	306	311	316	321
2	7	12	17	22	152	157	162	167	172	302	307	312	317	322
3	8	13	18	23	153	158	163	168	173	303	308	313	318	323
4	9	14	19	24	154	159	164	169	174	304	309	314	319	324
5	10	15	20	25	155	160	165	170	175	305	310	315	320	325
26	31	36	41	46	176	181	186	191	196	326	331	336	341	346
27	32	37	42	47	177	182	187	192	197	327	332	337	342	347
28	33	38	43	48	178	183	188	193	198	328	333	338	343	348
29	34	39	44	49	179	184	189	194	199	329	334	339	344	349
30	35	40	45	50	180	185	190	195	200	330	335	340	345	350
51	56	61	66	71	201	206	211	216	221	351	356	361	366	371
52	57	62	67	72	202	207	212	217	222	352	357	362	367	372
53	58	63	68	73	203	208	213	218	223	353	358	363	368	373
54	59	64	69	74	204	209	214	219	224	354	359	364	369	374
55	60	65	70	75	205	210	215	220	225	355	360	365	370	375
76	81	86	91	96	226	231	236	241	246	376	381	386	391	396
77	82	87	92	97	227	232	237	242	247	377	382	387	392	397
78	83	88	93	98	228	233	238	243	248	378	383	388	393	398
79	84	89	94	99	229	234	239	244	249	379	384	389	394	399
80	85	90	95	100	230	235	240	245	250	380	385	390	395	400
101	106	111	116	121	251	256	261	266	271	401	406	411	416	421
102	107	112	117	122	252	257	262	267	272	402	407	412	417	422
103	108	113	118	123	253	258	263	268	273	403	408	413	418	423
104	109	114	119	124	254	259	264	269	274	404	409	414	419	424
105	110	115	120	125	255	260	265	270	275	405	410	415	420	425
126	131	136	141	146	276	281	286	291	296					
127	132	137	142	147	277	282	287	292	297					
128	133	138	143	148	278	283	288	293	298					
129	134	139	144	149	279	284	289	294	299					
130	135	140	145	150	280	285	290	295	300					

Circle 400 to start your subscription to inCider today! You will be billed $24.97 for one year (12 issues).

► Use this reader service card to get more information about products advertised in inCider. **Circle the reader service number that corresponds with the ad or new product listing.**

► Subscribe to inCider and save 21% off the cover price! Circle 400 on this card and mail it today!

inCider
THE APPLE II MAGAZINE

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 27 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

inCider
ATTN: Reader Service Dept.
P.O. Box 5145
Pittsfield, MA 01202-9936

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 27 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

inCider
ATTN: Reader Service Dept.
P.O. Box 5145
Pittsfield, MA 01202-9936

TO RECEIVE MORE INFOR-MATION

TEAR
out the perforated card. Please print or type your name and address where indicated.

CIRCLE
the numbers on the card that correspond to the reader service numbers on the advertisements that interest you.

ORDER
a one year subscription to inCider by circling 400 on the card.

MAIL
the card with your check, money order or U.S. currency to:
inCider
Reader Service Dept.
P.O. Box 5145
Pittsfield, MA 01202-9936
Or, you may request billing.

LOOK FOR
your subscription in 10 to 12 weeks.

REMEMBER
the postage is on us.

► Use this reader service card to get more information about products advertised in inCider. **Circle the reader service number that corresponds with the ad or new product listing.**

► Subscribe to inCider and save 21% off the cover price! Circle 400 on this card and mail it today!

inCider
THE APPLE II MAGAZINE

Extra!! Extra!!

inCider Announces DESKTOP PUBLISHING CONTEST

Leading Apple II Pub Plugs Publishing

inCider—the Apple II magazine with heart and soul—will give away hundreds of prizes to winners and runners-up in the inCider Desktop Publishing Contest.

WIN A IIGS

TWO CONTESTS IN ONE!

Apple II Plus, IIe, and IIc owners can enter the 8-bit contest. The grand prize: an Apple IIGS. If you already own a IIGS, enter the 16-bit contest and soup up your system with the GS Grand Prize Package, which includes Apple's ImageWriter LQ printer. Dozens of other companies have agreed to donate prizes and the list is growing all the time. (See the box at right for a list of sponsors.)

WHAT SHOULD YOU SUBMIT?

Newsletters, Church Bulletins, School Newspapers, Brochures, Posters, Post Cards, Invitations, Banners, Bumper Stickers. Or anything else you can dream up. If you can print it, you can submit it.

There's mo look for details in next mont issu

MAC USERS ENVIOUS

Joy Reigns in the Apple II World

SPONSORS

Abracadata
Accolade
Activision
Apple Computer
Bose
Broderbund
Checkmate Technology
CompuTeach
Computer Friends
Digital Vision, Inc.
Electronic Arts
EPYX
K–12 MicroMedia Publishing
MDIdeas
Milliken
PBI
Pinpoint Publishing
Scholastic Software
Sensible Software
Softsync
Springboard
The Learning Company
Thunderware
Timeworks
UnisonWorld

Mail your desktop creation (before July 31, 1988) to

inCider Publishing Contest, 80 Elm St., Peterborough, NH 03458

Programs, Peripherals,

Apple Compatible Computers

Central Point Software
Laser 128 Computer 379.
The Laser 128 includes an Expansion Slot, RGB Video Output, Parallel Printer Port, and a 10 Key Numeric Keypad!
Laser 128EX Computer 479.
The Laser EX includes a Built-in RAM Expansion Board, Universal Disk Controller, Built-In Expansion Slot, and Ports for all Peripherals!
Laser 128 2nd Disk Drive *(5¼", ½ height)* 89.
Laser 128 800K 3.5" Drive w/Controller 259.
Laser 128 Cables
(Parallel, Serial, RGB or Modem) 16.
Laser 128 Mouse 49.
Amdek
Amdek Color 600 TRGB
(Inc. Tilt & Swivel) 369.
Taxan 118 Green 110.
119 Amber 115.

Backup Utilities & Boards

Alpha Logic Locksmith 6.0 36.
Central Point Software
Copy II Plus *(5.25" & 3.5" Bit Copy)* 23.
FWB Software
Disk Util II *(IIgs)* 52.

Business Software

Activision
Writer's Choice Elite *(Not Protected IIgs)* 62.
List Plus *(Merges w/Writer's Choice IIgs)* 68.
Beagle Brothers Tineout Graph 55.
Timeout SuperFonts 45.
Timeout QuickSpell 45.
Timeout UltraMacros 37.
Timeout SideSpread, FileMaster, or DeskTools 32.
BPI Systems
(Accounting Systems for the IIe, IIc & IIGs)
BPI General Accounting ProDos 139.
BPI AR/AP or Inventory ProDos *(ea.)* 139.
BPI Payroll ProDos 139.
Broderbund On Balance 41.
Bank Street Writer *Plus* 55.
Claris Apple Works *(IIe, IIc, IIGs)* 215.
Dac Software Dac-Easy Accounting 68.
Datapak Graphicwriter 2.0 *(IIGs)* 85.
Notes 'N Files *(IIGs)* 74.
DHA Systems Software FastPak Mail 43.
Electronic Arts DeluxeWrite 69.
Intuit Quicken 34.
Manzanita *BusinessWorks*
System Manager *(Required)* 69.
GL/AR/AP/ or Inventory Control 139.
Payroll Module 139.
BusinessWorks Bundle *(Sys. Manager, G/L, A/P, A/R, Inventory)* 299.
MECA
Managing Your Money 3.0 *(IIe, IIc, IIGs)* 96.
Monogram
Dollars and Sense *(II+, IIe or IIc)* 75.
Nolo Press Will Maker *(Version 2.0)* 36.
Peachtree Back To Basics Accounting System: *GL/AR/AP* 135.
Pinpoint Publishing
Pinpoint IIGs Starter Kit 92.
Pinpoint 50.
PinPoint Spelling Checker 43.
PinPoint Document Checker 43.
PinPoint Speller/Document Checker Combo 61.
PinPoint Toolkit 43.
Key Player 30.
Command.Com 43.
Graphics Edge 55.
Pinpoint IIe Upgrade Kit 19.
PinPoint Ram Enhancement 19.
ProFILER 3.0 74.
Random House *II* Write *(IIe, IIc, IIGs)* 55.
II File *(IIe, IIc, IIGs)* 55.
Roger Wagner Publishing
Mouse Write *(IIe, IIc, IIGs)* 95.
Sensible Software
Sensible Grammar ProDos *(3.5" & 5.25")* 61.
Sensible Speller-Dos or ProDos w/3.5 & 5.25" 71.
Sierra On-Line Smart Money 55.
Simon & Schuster
Webster's Spelling Checker *(ProDos)* 41.
Software Publishing
All Programs for IIe with 128K or IIc
PFS: Workmates *(File/Report/Plan/Write)* 119.
PFS: Write w/Speller 69.
Softsync
Personal Newsletter with Clip Art 39.
Softwood GS File 61.
StyleWare, Inc. GSWorks Multiscribe 3.0 w/Speller *(128K IIe or IIc)* 52.
Multiscribe GS 3.0 *(IIGs)* 65.
DeskWorks or FontSmith *(IIGs)* 39.
Picture Manager, Desk Accessories or Font Library *(IIGs)* 26.
Multiscribe Fontpaks 1-8 *(each)* 15.
Timeworks Publish-It 69.
VIP Software
VIP Professional *(Apple IIc or Enhanced IIe)* 152.
VIP Professional *(IIGs Version)* 179.
Word Perfect Corporation
WordPerfect V1.1 w/Speller *(IIe & IIc)* 89.
WordPerfect *(Apple IIGs)* 89.

800/832-3201 Customer Service (203) 378-3662
FAX# (203) 381-9043 Mon. thru Fri. 9 A.M. to 9 P.M.
Sat. 10 A.M. to 6 P.M. *(Eastern Time)*

OUR POLICIES
- We accept MASTERCARD and VISA with no added surcharge.
- Your credit card is not charged until we ship.
- If we must ship a partial order the shipment that completes the order is sent freight free.
- If you are ordering by mail, we accept private and company checks. With MASTERCARD and VISA orders include card number and expiration date. Connecticut residents add 7.5% sales tax.
- Locations more than 1 day away shipped via Federal Express Standard Air Service*
- Federal Express Priority 1 Service also available.
- Sorry, we cannot accept COD orders.

SHIPPING
- **Software Only- Continental US:** $4.00 *(Minimum)* charge per order to cover Federal Express Standard Air Service. APO/FPO orders shipped 1st Class Mail *(add 3% $5.00 Min charge)*. **Alaska, Hawaii and Outside Continental US:** call or write for information.
- **Hardware Items:** Please call for shipping charges.

RETURNS
- All goods are new and guaranteed by the manufacturer, but we cannot guarantee machine compatibility. Due to software copyright laws, all sales are final. Defective software will be replaced immediately by the same item. Defective hardware will be replaced or repaired at our own discretion. Call customer service at *(203) 378-3662* to obtain a Return Authorization Number before returning goods for replacement. Products purchased in error subject to a 20% restocking fee.

All items subject to availability. Prices subject to change without notice.
Mail-in orders (especially from foreign countries), please furnish telephone number.
***When your order is shipped from our facility in Stratford, CT, Federal Express Standard Air Service will deliver the package in 1 to 2 days. This service *does not* guarantee next day delivery.**

Now Shipping Standard Air Service by FEDERAL EXPRESS®

Entertainment Software

Access Software
World Class Leader Board Golf 27.
Famous Courses of the World 14.
Accolade Mean 18 *(IIGs)* or Hardball *(IIGs)* 27.
Famous Course Disk Vol. 2 12.
Famous Course Disk Vol. 3 & 4 21.
Hard Ball, Test Drive or Bubble Ghost *(IIGs)* 21.
Echelon 31.
Action Software
Thunder Chopper or Periscope 21.
Activision Aliens, The Last Ninja or Rampage 24.
Blackjack Academy 27.
Firepower 18.
GBA Championship Basketball *(IIGs)* 31.
GFL Championship Football or Baseball 27.
The Last Ninja *(IIGs)* or Hacker II *(IIGs)* 27.
Might & Magic or Faery Tale Adventure *(IIGs)* 34.
Sky Travel 34.
Music Studio II *(IIGs)* 68.
Portal, Star Glider or Shanghai *(IIGs)* 31.
Star Rank Boxing II 27.
Tass Times In Tonetown or Maniac Mansion 24.
Jinxter 24.
Artworx Bridge 5.0 21.
Baudville Dream Zone *(IIGs)* 31.
Ski Crazed 19.
BlueLion Ticket to London, Paris, or Spain 27.
Ticket to Washington D.C. 30.
Broderbund 2400 A.D. 27.
Wings of Fury *(IIe, IIC, IIGs)* 24.
Championship Lode Runner or Karateka 24.
Ultima IV or Ultima V 41.
Autoduel 34.
Data East Karate Champ or Kung Fu Master 15.
Kid Niki or Commando 24.
Datasoft Goonies 15.
Tomahawk 23.
Tomahawk *(IIGs)* 30.
Electronic Arts
Bards Tale *(IIGs)*, Instant Music *(IIGs)*, Music Construction Set *(IIGs)*, Bards Tale II, Bards Tale III,Twist & Shout or Wasteland 37.
It's Only Rock & Roll or Hot & Cool Jazz 23.
ChessMaster 2000, Legacy of the Ancients, Deathlord, Chuck Yeager Flight Sim., Scrabble, PHM Pegasus, Halls of Montezuma *(IIe or IIGs)*, World Tour Golf *(IIGs)* or Earl Weaver Baseball 30.
Strike Fleet or Marble Madness *(IIe or IIGs)* 26.
Dark Lord or Force 7 16.
EPYX California Games *(IIe or IIGs)*, Dive Bomber, Destroyer *(IIe or IIGs)*, Omnicron Conspiracy, Sub Battle Simulator *(IIe or IIGs)*, Street Sports: Baseball or L.A. Crackdown, Street Sports: Basketball, Winter Games *(IIGs)*, Home Video Producer, Sporting News Baseball, Sticker Maker, Street Sport Soccer, The Games: Winter Edition, Impossible Mission II or World Games *(IIe or IIGs)* 27.
Rad Warrior 18.
Movie Monster Game or Championship Wrestling 15.
World's Greatest Baseball or Football Game 15.
Winter Games, Summer Games II, or Death Sword 15.
Firebird Elite 17.
Guild of Thieves 27.
Hayden Software Sargon III 15.
Infocom Hollywood Hyjinx, Leather Goddesses Of Phobos, Moon Mist, Nord & Bert, Plundered Hearts, Stationfall, The Lurking Horror, or Zork I *(each)* 25.
Hitchhiker's Guide to The Galaxy 15.
Sherlock 27.
Beyond Zork or Beyond Zork *(IIGs)* 34.
The Zork Trilogy 34.
Micro League Sports Micro League Baseball 27.
General Manager/Owner Disk 21.
Team Disk 14.
Microprose F-15 Strike Eagle or Silent Service 24.
Silent Service *(IIGs)* or Pirates 27.
Mindscape
Defender of the Crown, Rocket Ranger or The Three Stooges *(IIGs)* 34.
Infiltrator II or Into the Eagles Nest 24.
Balance of Power 31.
Bad Street Brawler or Bad Street Brawler *(IIGs)* 24.
Super Ice Hockey 27.
Gauntlet or Gauntlet *(IIGs)* 27.
Paperboy or Paperboy *(IIGs)* 27.
Sinbad, S.D.I. or King of Chicago *(IIGs)* 34.
Indoor Sports, Uridium, or Xevious 21.
PBI Software The Tower Of Myraglen *(IIGs)* or Alien Mind *(IIGs)* 34.
Strategic Conquest II *(IIGs)* or Cavern Cobra *(IIGs)* 31.
Sea Strike *(IIGs)* or Monte Carlo *(IIGs)* 25.
Sierra On-Line Space Quest, Space Quest II or Space Quest *(IIGs)* 34.
Kings Quest I, II, or III *(APII or IIGs Ver.)* 34.
Leisure Suit Larry *(APII or IIGs Ver.)* 27.
Thexder *(IIGs)* 24.
The Black Cauldron 27.
3-D Helicopter Simulation *(IIGs)* 34.
Mother Goose 21.
Police Quest or Police Quest *(IIGs)* 34.
Simon & Schuster
Star Trek *(Kobayashi Alternative)* 21.
Star Trek *(The Promethean Prophesy)* 27.
Sir-Tech Wizardry or Legacy of Llylgamyn 34.
Return of Werdna 41.
Spectrum Holobyte Gato 12.
Gato *(IIGs)* 25.
Orbiter *(IIGs)*, Wilderness or Dondra 31.
Strategic Simulations
Colonial Conquest, Eternal Dagger, Sons of Liberty or Questron II 27.
Chickamunga 33.
Carriers At War 37.
War in the South Pacific 41.
Sublogic Flight Simulator II 39.
Jet 31.
Scenery Disks 1, 2, 3, 4, 5 or 6 16.
Scenery Disks 7 or 11 20.

Utilities & Languages

Absoft
AC/Basic *(16-bit BASIC Compiler for IIGs)* 84.
Beagle Brothers Beagle Compiler 46.
MacroWorks or Pro-Byter 21.
Beagle G.P.L.E. or Super MacroWorks 31.
D-Code, Extra K, Power Print or Triple Dump *(each)* 25.
Borland Turbo Pascal 3.0 *(Req. CP/M)* 48.
Funk Software Sideways Prodos & Dos 3.3 48.
Roger Wagner SoftSwitch *(IIGs)* 41.
Merlin 8/16 *(IIe, IIc, IIGs)* 79.
The Byte Works
ORCA/Pascal *(IIGs)* 72.
ORCA/Pascal Desktop Debugger 80.
ORCA/M GS 39.
ORCA DeskTop 34.
TML Systems TML Basic for the GS 84.
TML Pascal for the GS 84.
TML Source Code Library for the GS 35.
TML Speech Toolkit 49.
TML Pascal APW 84.
Zedcor ZBasic 4.0 39.

Accessories

Abaton Propoint ADB Turbo Mouse *(IIGs)* 119.
Apple Computer Apple Mouse IIe 125.
Apple Mouse IIc 89.
Applied Engineering TimeMaster H.O. 85.
IIc System Clock 55.
IBM Style Keyboard 120.
Applied Visions Future Sound Digitizer *(IIGs)* 179.
CH Products
Hayes Mach II Joystick *(Beige or Platinum)* 29.
Hayes Mach III Joystick *(Beige or Platinum)* 38.
Hayes Flight Stick 52.
Curtis Curtis Emerald 36.
Curtis Ruby 54.
Curtis Ruby Plus 60.
Curtis Diamond Plus 40.
DataDesk DataDesk ADB-101 Enhanced Keyboard *(IIGs)* 149.
Kalmar
Teakwood Rolltop Disk Case *(Holds 50)* 18.
Kensington Mouse Pocket *(Reg. or ADB)* 8.
Mouseway *(Mousepad)* 8.
Apple IIGs Dust Cover or Imagewriter I or II Cover 10.
Mouse Cleaning Kit w/Pocket 17.
Disk Drive Cleaning Kit *(3.5" Drives Only)* 20.
Apple Security System 34.
Printer Muffler 80 38.
Printer Muffler 132 51.
Printer Muffler Stand 80 or 132 21.
A/B Box *(IIGs)* 63.
System Saver *(Platinum or Beige)* 69.
System Saver *(IIGs)* 79.
Turbo Mouse *(Reg. or ADB)* 89.
Kraft Kraft Universal 3 Button Joystick *(II+ IIe, IIc)* 34.
Koala Technologies
Koala Pad Plus w/Graphics Exhibitor 84.
Kurta IS ADB Tablet w/stylus *(IIGs)* 339.
MDideas Conserver *(IIGs Switched Surge Suppressor w/Fan)* 119.
SuperSonic *(Stereo Card for IIGs)* 52.
SuperSonic Digitizer *(IIGs)* 52.
Mouse Systems A+ Mouse *(IIc)* 67.
A+ ADB Mouse *(IIGs)* 87.
MousTrak MousePad 7"x9" Size 8.
MousePad 9"x11" Size 9.
MousePad L/F *(Low Friction)* 9.
Orange Micro Juice Box *(IIGs Switched Surge Suppressor w/Fan)* 69.
SMT No Slot Clock *(II+ & IIe)* 42.
Street Electronics
Echo IIb Speech Synthesizer *(II+, IIe, IIGs)* 109.
Cricket IIc 125.
Ribbons
Available colors: black, blue, brown, green, orange, purple, red, yellow, silver or gold
ImageWriter Ribbon-Color 4.
ImageWriter Ribbon-Black six pack 20.
ImageWriter II - 4 Color Ribbon 9.
ImageWriter Rainbow Pk. (6 Colors) 20.
Thunderware
Thunderscan Apple *(IIGs, IIe, and IIc)* 179.

Phenomenal Prices...

Educational Software

Activision
Term Paper Writer 34.
Barron's
Computer SAT Review Module 34.
Baudville
Guitar Wizard 19.
Ted Bear Discovery, Riding Day Games 19.
Britannica
Algebra 1, 2, 3, or 4 25.
Algebra 5 & 6 31.
Designasaurus (Filing) 24.
Body Management 25.
States & Traits 25.
Broderbund Geometry *(IIGS)* 68.
Science Tool Kit Master Module 55.
Science Tool Kit Module I, II or III 27.
Type! 31.
Variable Fonts 34.
Where in the World is Carmen Sandiego? 27.
Where in the USA is Carmen Sandiego? 31.
Where in Europe is Carmen Sandiego? 31.
Compu-Teach
Once Upon A Time 25.
Stepping Stones Level I 25.
Stepping Stones Level II 25.
See the U.S.A. 37.
Davidson & Associates
Apple II and IIGS Versions Available:
Alge-Blaster or Math Blaster Plus 31.
Grammar Gremlins or Read 'N' Roll 31.
Homeworker 55.
Speed Reader II 43.
Spell-It or Word Attack! 31.
Math & Me 25.
Electronic Arts
Mavis Beacon Typing 30.
Mavis Beacon Typing *(IIGS)* 32.
First Byte/Electronic Arts
Mathtalk, Kidtalk, First Shapes, Speller Bee, or Smoothtalker *(IIGS) (each)* 37.
Mathtalk Fractions or First Letters & Words *(IIGS)* 37.
Great Wave Kidstime II *(IIGS)* 24.
SpaceLace 20.
Harcourt, Brace, Jovanovich
Computer SAT or Computer GRE 29.
Learning Company
Reader Rabbit *(IIGS)* 41.
Writer Rabbit *(IIGS)*, Think Quick *(IIGS)* or Rockys Boots *(IIGS)* 34.
Magic Spells *(IIGS)* 27.
Gertrude's Secrets *(IIGS)* 31.
Think Quick or Writer Rabbit 34.
Reader Rabbit or Magic Spells 27.
Gertrude's Puzzles or Secrets 31.
Math Rabbit 27.
Robot Odyssey I or Rocky's Boots 34.
Mindscape Crossword Magic 34.
Perfect Score SAT 48.
PinPoint Micro Cookbook *(IIe or IIc)* 31.
Bon Appetit 37.
Simon & Schuster
Speed Reading Tutor IV 27.
Speed Reader Tutor IV *(IIGS)* 34.
Typing Tutor IV *(IIe, IIc, or IIGS)* 34.
Spinnaker Kindercomp Gold 26.
Homework Helpers Writing or Math *(IIe or IIGS Ver.)* 34.
Typing Made Easy 34.
Facemaker: Golden Edition 27.
Kidwriter 27.
Terrapin Enhanced Terrapin Logo V3.0 69.
Weekly Reader
Stickybear Series: Sticky Bear ABC, Car Builder, Basic, Drawing, Math I, Math II, Math Word Problems, Numbers, Opposites, Parts of Speech, Vocabulary Development Printer, Reading, Reading Comprehension, Shapes, Spellgrabber, Typing or Townbuilder *(each)* 25.

Modems

Anchor Automation
Signalman Lightning 2400 299.
1200E 119.
2400E 159.
Applied Engineering
DataLink Modem *(300/1200 Baud Internal Modem II+, IIe, IIGS)* 175.
EPIC Epic 2400 Classic Internal 155.
Hayes Hayes Micromodem IIe *(Internal)* 165.
Hayes Smartmodem 1200A *(Internal)* 265.
Hayes 300 Baud Smartmodem IIc w/Smartcom I 187.
Hayes 1200 Baud Smartmodem 299.
Hayes 2400 Baud Smartmodem 449.
Practical Peripherals
Practical Modem 1200 SA 129.
Practical Modem 2400 SA 199.
Prometheus Pro Modem 1200 *(External)* 239.
Pro Modem 1200G *(Non Expandable)* 139.
Pro Modem 2400 *(External)* 309.
Pro Modem 2400G *(Non Expandable)* 179.
Pro Modem 2400A *(Single Card)* 199.
Pro Modem 1200A *(Single Card)* 169.
Pro Modem 300c 89.
Communications Buffer *(2K Exp. to 512K)* 105.
Supra Corporation
Supra Modem 2400 *(Hayes Compatible)* 149.
U.S. Robotics U.S. Robotics Sportster 1200 119.
U.S. Robotics Courier 1200 199.
U.S. Robotics Courier 2400 319.
U.S. Robotics Courier 2400E 379.
U.S. Robotics Courier HST 9600 689.

Blank Media

5¼" Blank Diskettes
BASF 5.25" SS/DD *(box of 10)* 8.
Verbatim 5.25" SS/DD *(box of 10)* 10.
Sony 5.25" SS/DD *(box of 10)* 9.
Maxell 5.25" SS/DD *(box of 10)* 10.
3M 5.25" SS/DD *(box of 10)* 11.
3½" Blank Diskettes
BASF 3.5" DS/DD *(box of 5)* 9.
Bulk *(Sony)* 3½" DS/DD *(box of 10)* 16.
Centech 3½" DS/DD Color Disks *(box of 10)* 19.
Sony 3.5" DS/DD *(box of 10)* 18.
Fuji 3.5" DS/DD *(box of 10)* 20.
Maxell 3.5" DS/DD *(box of 10)* 20.
Verbatim DS/DD *(box of 10)* 19.
3M 3.5" DS/DD *(box of 10)* 20.
C. Itoh 3.5" DS/DD Color Disks *(box of 10)* 25.

Printers

Brother
M-1109AP *ImageWriter Comp.* 249.
Epson LX-800 219.
FX-86e 419.
FX-286e 529.
EX-1000 499.
LQ-1000 739.
Okidata
Microline 182P *(120cps Dot Matrix 10")* 249.
Microline 192*Plus (200cps Dot Matrix 10")* 349.
Microline 193*Plus (200cps Dot Matrix 15")* 489.
Panasonic
KXP-1080 I/M2 *(144 cps)* NLQ Mode 199.
KXP-1091 I/M2 *(192 cps)* NLQ Mode 229.
KXP-1092 I *(240 cps)* NLQ Mode 329.
Seikosha
Seikosha SP 1000 *(Imagewriter Compatible)* 219.

Disk Drives & Hard Disk SubSystems

American Micro Research *(Micro Sci)*
A5 D Half Height 5¼" Drive *(IIGs Daisychain)* 165.
A.5 Half Height *(II+ & IIe)* 139.
A.5C Half Height *(IIc)* 139.
Micro Sci C2 Controller 52.
Applied Engineering
Transdrive 360K 215.
Transdrive Dual 360K 319.
Transdrive Half Height 360K 109.
Central Point Software
Universal Disk Controller 79.
Central Point 800KB Drive 185.
Universal Disk Controller/800KB Drive Bundle 259.
CMS
"Compact Series" Beige IIe, IIGS
20 MB w/SCSI II card 765.
40 MB w/SCSI II card 1075.
"SD Series - Stack" Platinum IIe, IIGS
20 MB w/SCSI II card 675.
43 MB w/SCSI II card 895.
60 MB w/SCSI II card 955.
First Class Peripherals
Sider 20MB or 40MB Hard Drive Call
B-Sider 60MB Tape Backup Call
Blank Tape 5 Pack 65.
Revision D *(Chip/Software for CP/M)* 52.
Hi-Tech Peripherals
Full Height 5¼" Drive for Apple IIe *(Beige)* 139.
Half Height 5¼" Drive for Apple IIe or IIc *(Beige)* 139.
Half Height 5¼" Drive for Apple IIe or IIc *(Platinum)* 149.
Half Height 5¼" Drive Platinum for IIGs 169.
Apple IIc Drive Adaptor 15.
Mitac AD-3C Slimline IIc 129.
Rodime Rodime 20Plus Ext HD *(IIe, IIGs)* 629.
Rodime 40Plus Ext HD *(IIe, IIGs)* 939.
Rodime 60Plus Ext HD *(IIe, IIGs)* 1039.
Rodime 100 Plus Ext HD *(IIe, IIGs)* 1169.
Rodime 140 Plus Ext HD *(IIe, IIGs)* 1319.

Graphics Packages

Activision Draw Plus *(Not Protected IIGs)* 62.
Paint/Write/Draw *(Not Protected IIGs)* 115.
Clip Art Gallery *(Req. PaintWorks Plus IIGs)* 21.
GameMaker Bundle 34.
PaintWorks Gold 68.
Postcards *(IIGs)* 21.
Postcards *(IIe & IIc)* 18.
Bantam Software
Walt Disney Card & Party Shop 27.
Walt Disney Comic Strip Maker 27.
Baudville 816/Paint *(Works On All Apples)* 46.
Award Maker Plus 25.
Take 1 Deluxe 37.
Animation Library or Zany Characters 19.
Beagle Brothers Beagle Graphics 36.
Minipix Disk #1, #2 or #3 *(each)* 19.
Berkeley Softworks GEOS 80.
Broderbund Toy Shop 34.
Dazzle Draw 41.
Drawing Table *(IIGs)* 62.
Print Shop Enhanced or Fantavision 34.
Print Shop *(IIGs)* or Fantavision *(IIGs)* 41.
Print Shop School Edition 41.
Dazzle Draw School Edition 48.
Print Shop Companion 27.
Print Shop Graphics Library I, II, III or Holiday Ed. 17.
Print Shop Graphics Library Sampler Edition 24.
Print Shop Graphics Library Party Edition 24.
Show Off *(IIGs)* 41.
Data Transforms Printrix 1.1 46.
Monster Font Pack 21.
Electronic Arts DeluxePaint II *(IIGs)* 69.
DeluxePrint II *(IIGs)* 37.
Art Parts I or II, or Seasons & Holidays *(IIGs)* 23.
EPYX Printmagic 41.
Graphics Scrapbook Chapter #1, #2, or #3 17.
Create-A-Calendar 21.
Intracorp Bumper Sticker Maker 34.
Business Card Maker 37.
PBI Software Visualizer *(IIGs)* 56.
Visualizer IIe 52.
Scholastic SuperPrint *(IIGs)* 31.
Spinnaker T-Shirt Shop 34.
T-Shirt Shop Graphics 15.
Springboard Newsroom 39.
Springboard Publisher *(IIe, IIc, IIGs)* 84.
Certificate Maker 26.
Certificate Maker Library #1 20.
Fonts For Springboard Publisher 26.
Newsroom Clip Art Collection Vol. 1 or 3 20.
Newsroom Clip Art Collection Vol. 2 26.
Laser Drivers 26.
Style Sheets/Newletters 20.
Works of Art Education, Holidays or Assortment *(IIe or IIGs)* 26.
StyleWare, Inc. TopDraw *(IIGs)* 58.
Unison World Printmaster Plus 31.
Art Gallery I or Art Gallery II 19.
Art Gallery Fantasy 19.

Communication Software

Activision Teleworks Plus *(IIGs)* 68.
Checkmate Technology
ProTERM *(IIGs, IIe, IIc)* 80.
Compuserve Compuserve Starter Kit 24.
Pinpoint Point-To-Point 74.
United Software Industries
ASCII: Express Pro: Prodos or Dos 3.3 74.
ASCII: Express Mousetalk 61.

Accelerators/Ramcards/Z-80/80 Column Cards

Apple Computer
Apple IIe Extended 80 Col. Card 89.
Apple IIe Enhancement Kit 49.
Applied Engineering
Ramkeeper or SlotMover *(Option)* Call
RamWorks Basic *(256K or 512K)* Call
RamWorks III *(64K to 3 MB)* Call
2 Meg Plus RamWorks Expander *(1 or 2MB)* Call
PC Transporter *(384K to 768K)* Call
PC Transporter Installation Kit *(IIe or IIGs)* Call
RamFactor *(256K to 1MB)* Call
Z-RAM Ultra 1 *(256K or 512K)* Call
Z-RAM Ultra 2 or 3 *(256K to 1MB)* Call
GS-RAM *(256K to 1.5Meg)* Call
GS-Ram Plus *(1MB to 6MB)* Call
Phasor *(II+, IIe, and IIGs)* 145.
TransWarp Accelerator *(II+ and IIe)* 179.
ViewMaster 80 *(II+)* 135.
Z-80 Plus *(II+, IIe, IIGs)* 129.
Checkmate Technology MemorySaver *(IIGs)* 125.
Orange Micro RamPak 4GS *(512k Exp. to 4MB w/Utilities)* 229.

Printer Interface Cards

Apple Apple Super Serial Card 119.
Applied Engineering BufferPro 32K 94.
BufferPro 128K or 256K Call
Serial Pro *(II+, IIe, IIGs)* 119.
Parallel Pro *(II+, IIe, IIGs)* 85.
Orange Micro ProGrappler *(Apple IIe or IIGs)* 84.
Serial Grappler Plus 64.
Grappler C/Mac/GS 84.
Hot Link 54.
SMT Envoy *(Super Serial type Interface)* 67.
Printech II *(Parallel Interface)* 37.
Thirdware Finger Print GSi 69.
Finger Print Plus *(Specify Cables: Parallel, Serial or ImageWriter II-II+ & IIe)* 89.
Fingerprint IIc *(Internal or External Ver.)* 74.
Finger Print G+ *(With Parallel Cable II+, IIe, IIGs)* 55.

Positively A Plus!



© Copyright 1988 Programs Plus, Inc.

Circle 128 on Reader Service Card.

Announcing the Second in a Popular Series . . .

A GREAT GIFT IDEA!

ADD POWER TO APPLEWORKS!

- CALCULATE YOUR MONTHLY PAYMENTS WHEN YOU SHOP FOR A CAR.
- MAKE LARGE MAILINGS A SNAP WITH THREE-ACROSS LABELS.
- KEEP YOUR BUSINESS IN THE BLACK WITH A HANDY CASH-FLOW SPREADSHEET.
- GET THE JOB YOU WANT WITH A PROFESSIONAL-LOOKING COVER LETTER FOR YOUR RESUME.
- TURN A HUMDRUM DOCUMENT INTO A WINNER WITH FANCY FORMATTING.
- FIGURE YOUR PERSONAL AND FAMILY INCOME.
- DETERMINE THE BREAKEVEN AND PROFIT POINTS OF YOUR PRODUCT OR SERVICE.
- DECIDE IF IT MAKES MORE SENSE TO BUY OR RENT A HOME.
- PROTECT YOURSELF WITH A CREDIT CARD AND DOCUMENT REGISTRY.
- TRACK YOUR NET WORTH FROM YEAR TO YEAR.

All 10 ready-to-run templates conveniently packaged on one disk PLUS handbook—only $29.97!



Get 10 time-saving, easy-to-use applications for the spreadsheet, database, and word processor. Another exclusive collection with a detailed documentation handbook created by Ruth K. Witkin, *inCider*'s APPLEWORKS IN ACTION columnist. Great templates to figure your finances, boost your business, speed your mailings, refresh your resume, and more. Anyone—beginner to expert— can use these programs immediately and efficiently.

Order today. Complete and mail the coupon or attached order card or CALL TOLL FREE 24 hours a day.
1-800-343-0728

☐ YES! Send me **SUCCESS WITH APPLEWORKS II** for only $29.97.

☐ I missed it the first time around. Send **SUCCESS WITH APPLEWORKS I** for $29.97.

☐ Payment enclosed ☐ MasterCard ☐ Visa ☐ Amex

card # exp. date

signature

(print) name

address

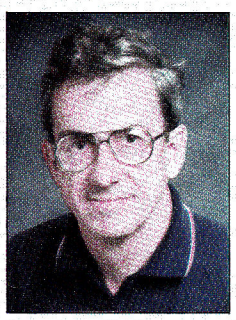
city state zip code

Mail to: **Success with AppleWorks II**
80 Elm Street
Peterborough, NH 03458 S2788

Please allow 3–4 weeks for delivery. Foreign air mail add $1.50 per disk. US funds on US banks only.

"Ruth Witkin's programs and handbook are an unbeatable combination. They're practical, easy to understand, and easy to use. A real help in my office and at home."
Mary L. Henry
Blackburn & Co. Real Estate
Mountain Home, AR

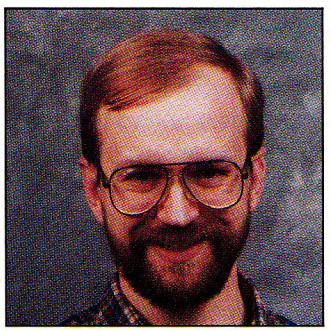




"I use Success with AppleWorks I at school and at home. Ruth did a super job! I'm looking forward to Volume II."
Ronald Jacobs
Computer Science Teacher
St. Vincent Pallotti High School
Laurel, MD

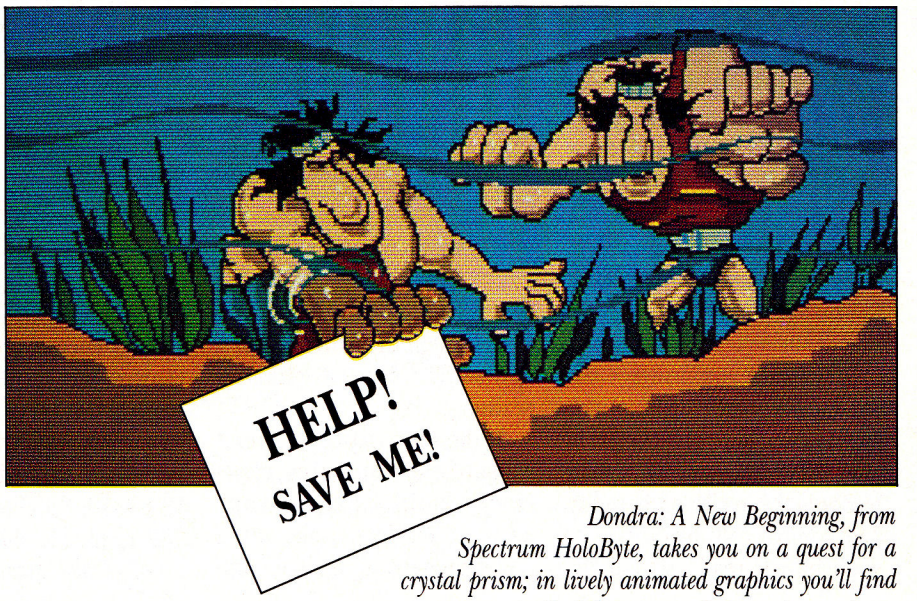
*AppleWorks is a registered trademark of Apple Computer, Inc.

The "Wimp" Factor



by Scott Mace

"Are hint books and saved games a blessing or a curse?"



Dondra: A New Beginning, from Spectrum HoloByte, takes you on a quest for a crystal prism; in lively animated graphics you'll find that danger awaits you at every turn.

How often do you save your place in a typical fantasy role-playing game? Are you timid, saving at every step, or courageous, saving only when an electrical storm passes directly over your house? You may have to scrutinize your game-saving habits more closely as adventures become more sophisticated.

Saving games wasn't possible when the Apple II was new. It's great to be able to eat dinner, sleep, or resume other activities without having to go back to "start." Nowadays, any game without a save feature wouldn't stand a chance in the market.

Occasionally a publisher will remind you that there's no such thing as a free lunch, and besides, true courage means no saves, no undos. Saving games and backing up are wimpy moves.

WHAT'S THE PENALTY?

You may have to pay a price for saving your position. Such is the case with **Dondra: A New Beginning** by Sean Barger (Spectrum HoloByte, 2061 Challenger Drive, Alameda, CA 94501, 415-522-3584, $39.95; GS version, $49.95). It's the first game in the new Questmaster series. The adventure begins in the world of Dondra, where you journey to find the Crystal Prism of Heheutotol, a bauble you'll need to defeat the evil Colnar.

Death lurks in every corner—taking the form of poisonous muck or a pair of bug-eyed carnivorous monsters. As you progress you can save up to 26 games—that's the good news. The bad news is that saving affects your overall experience rating negatively. Why is that important? When you finish Dondra, the program writes a small file to disk—your accumulated experience in the second Questmaster game, as yet unannounced.

Chalk it up to the gamers' code of honor. As I discussed in my August 1987 column ("Sequels: Complexity and Realism," p. 97), most sequels aren't for the meek or casual player. As Apple II games grow more complex, the best of them aren't for amateurs. Dondra comes on six disk sides, with a good portion of the software devoted to numerous animated graphics. Yet that's nothing compared to the games we'll see someday on the newly announced Apple CD ROM drive, which can store the equivalent of 3800 5¼-inch Apple disks! (See "Apple Goes Digital," News Line, June 1988, p. 18.)

MAPPING YOUR STRATEGY

Imagine Ultima IV set in medieval China, Japan, or Korea. That gives you a pretty good

idea of **Deathlord** by Al Escudero and David Wong (Electronic Arts, P.O. Box 7530, San Mateo, CA 94403, 800-245-4525, 415-571-7171, $49.95). Building on the often-imitated Ultima map system, Deathlord lets you assemble a party of six characters. You can use the game's preset party or create your own troupe, molding a warrior or a wizard out of a choice of eight races and seven attributes, such as strength, intelligence, and power.

In Ultima you control the combat between individual enemies and individual members of your party; in Deathlord, you select only the leader of the party. The combat rolls by quickly, so you'll have to read fast to understand the tides of battle before all is said and done.

With two dungeons, each with 16 levels, and 30 towns, mapping the Deathlord world is just too much work. Even if you did map everything, you still have to deal with "whorls," whirlpool-creating creatures that inhabit the trackless seas you must cross—just one of the seagoing hazards you'll face. Try using the map inside the manual as a general guide, even though the world of Lorn spills over into uncharted realms.

At the start, expect to spend a lot of time amassing experience points before your party is ready to take on a more dangerous journey, complete with 128 different kinds of monsters.

Deathlord's secret doors are absolutely hidden. Other games reveal them through subtle signs, such as a brick askew, but in Deathlord you just have to bump into them. Sometimes you'll issue the same search command three or four times before they reveal themselves. It's tedious.

PARTNERS

Two recent games, Bruce Hoffman's **Talisman—Challenging the Sands of Time** (Polarware Software, 1055 Paramont Parkway, Suite A, Batavia, IL 60510, 800-323-0884, 312-232-1984, $19.95) and Dallas Snell's **Ring Quest** (Origin Systems, Inc., 136 Harvey Road, Building B, Londonderry, NH 03053, 603-644-3360, $19.95), prove you don't have to be lonely along the way. These games give you a faithful companion.

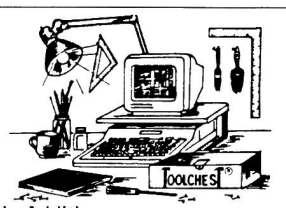
Talisman includes a more specific vocabulary than Dondra, but the game and graphics are slow. Your dim-witted sidekick, Abu, performs all the action-oriented things as you search for the mysterious amulet. The game doesn't have as much animation as Dondra, but objects do appear to move around screens over time.

Talisman is an odd mixture of humor and surprises. Watch out when you take a piece of flint out of the lion's paw, for

NOW

Create your BASIC programs in a way never before possible... *using*

TOOLCHEST®



TOOLCHEST® is an integrated system of 60 utilities that resides in memory above your BASIC programs ready to be called at your command... Do your programs need windows... customized menus, error trapping input routines?

One Call Does It all

That's right!... One simple call statement replaces long, messy lines of BASIC and makes your programs shorter, faster and much more powerful... search for a word in memory or on disk, move data in and out of auxilliary memory or scan and edit disk sectors in a flash!

Unleash Your Creativity

Experiment by combining TOOLCHEST®'s utilities to create innovative programs... use the programmable tone generator, the pop-up window utility... or store and recall the high-res graphics screen.

In Addition

You can use TOOLCHEST®'s sophisticated screen control routines...

- Standardized display screens
- Store and retrieve the 80 col. text screen
- Block print-out of memory pages or disk sectors in Hex/ASCII

and *AS A BONUS* you get a pop-up Hex/Dec converter

Fully Documented

TOOLCHEST® is not copy protected and includes a complete program guide to all utilities for only $29.95... so if you're in the market for a complete programming package with all the tools needed for a really professional job...

say *YES* to TOOLCHEST® today!
VISA, Mastercard customers, call:
1-800-561-0127

Micro-Frame Software, Inc.
105 Charles St., Suite 389
Boston, Mass. 02114
(506) 455-6251

Requires Apple IIe (128K) Apple is a registered trademark of Apple Computer Inc.

Mail to:
Micro-Frame Software, 105 Charles St, Suite 389, Boston, Mass. 02114
YES, I want to add TOOLCHEST® to my programming workshop. Please send me TOOLCHEST® @ $29.95.
☐ Enclosed is my cheque/money order for $29.95 plus $2 P & H.
Name _____
Address _____
City _____ State _____ Zip Code _____

DESIGN YOUR OWN HOME™

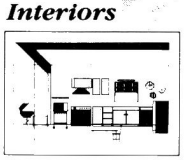
Now you can have a designer home with a most prestigious name: yours

Architecture



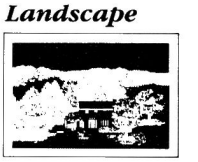
With ***Architecture*** draw floor plans, side views and structural details. Standard Apple II version: $69.95; IIgs-specific: $89.95

Interiors



Arrange and furnish your room with ***Interiors***, then try out color schemes. Automatic side views. Standard Apple II version: $69.95; IIgs-specific: $89.95

Landscape



Enhance your environment and create the perfect ***Landscape***. Automatic side views, shopping lists, aging of trees. Standard Apple II version: $69.95; IIgs-specific: $89.95

Macintosh and IBM versions

NEW!

DESIGN YOUR OWN HOME
LIBRARIES

- Architecture Library 1 (vacation, solar, A-frame, country)
- Architecture Library 2 (traditional, ranch, colonial)
- Architecture Library 3 (modern, Spanish, Tudor, Cape Cod, Victorian, French)
- Architecture Library 4 (offices)
- Interior Library 1 (homes)
- Interior Library 2 (offices)
- Landscape Library 1 (homes)

Each library is only $29.95 and includes 4 dozen plans.

TOLL FREE
(800) 451-3871
orders only please

Visa/MasterCard/American Express
$3.55 shipping

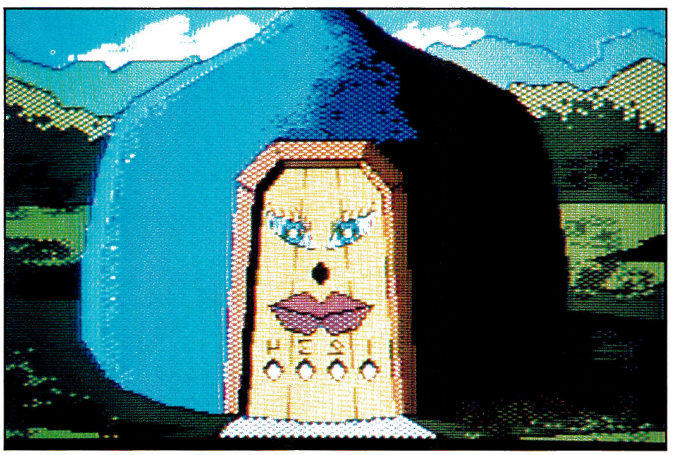
Abracadata
the source of plan-making software
P.O. Box 2440, Dept. D
Eugene, OR 97402
(503) 342-3030

©Copyright 1988 Abracadata, Ltd.

instance—this is no Aesop's Fable.

Ring Quest plays faster because it doesn't use hi-res graphics. Despite that, the pictures are quite impressive. You'll find a lot more game than in the typical graphics adventure, so be prepared for a long stay. As usual in an Origin Systems game, you'll need to make extensive maps.

You can save up to eight games without penalty in Ring Quest. But be warned: This game is definitely for the intermediate to advanced player.



Polarware's Talisman offers a number of humorous twists along the way in your search for a mysterious amulet.

TO SAVE OR NOT TO SAVE?

Someday we'll see adventures with auto-save features. Also, if manufacturers remove copy protection, the day may come when players pass around saved games regularly.

Like hint books, saved games provoke argument among veteran players. Are they a blessing or a curse? I think they're both. Without them, players wander around in the dark in today's multidisk games. Hint books give novice gamers hope; saved games keep them sane. But you can't underestimate the wimp factor of these devices. If you're out to experience what the designer had in mind, you're cheating the designer and yourself if you use either one.■

Scott Mace is editor and publisher of Microcosm, *a monthly newsletter on computer games. Write to him at 6510 Copper Ridge Drive #T-1, Baltimore, MD 21209. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*

DIVERSI-TUNE™

A New Breakthrough In Computer Music!

If you love music, and have an Apple //gs, you're going to ABSOLUTELY LOVE **Diversi-Tune**! Wait, I can prove it. Send me 2 crisp $1 bills and your address, and I'll send you back a **Diversi-Tune** 5.25" sing-a-long demo disk ($2 mail only/$5 phone order).

Diversi-Tune unlocks the full musical potential of the //gs sound chip for the first time. In a word, it sounds INCREDIBLE, on ANY Apple //gs! And **Diversi-Tune** plays REAL music, recorded by REAL humans.

With **Diversi-Tune**, you can actually add words to ANY song, even songs on records, tapes, or CD's! Use **Diversi-Tune** to make sing-a-long videotapes of your favorite records, and follow the **Diversi-Tune** "bouncing ball". It's fantastic for teaching songs in music classes, school holiday programs, or for family sing-a-long parties.

Diversi-Tune is a 2-port, 32-channel in/out, 5-msec resolution, MIDI recorder, with overdub, and punch-in/out audio editing, combined with a 32-voice polyphonic, 128-instrument, multi-timbral, stereo MIDI synthesizer, with 88-key piano, or "bouncing ball" lyrics display.

Whew! If you didn't understand that, it just means a lot of great musicians are going to record a lot of great songs for you to play on your Apple //gs. If you DO understand it, stop drooling and send for **Diversi-Tune**!

Diversi-Tune 3.5" Program Disk... **$55**
5.25" **Demo Disk** ... **$2** mail/**$5** phone
Requires Apple //gs with 512K minimum.

Also From DSR

Diversi-Copy™ **$30**
Fast unprotected 3.5 and 5.25 Back-up
1-pass, 1-drive copying!
For Apple //gs, //e, //c, II+
inCider Editors' Choice
A+ - All Star

Diversi-Cache™ **$35**
Apple Disk 3.5 Speed-up
For 512K Apple //gs
A+ - All Star

Diversi-Key™ **$45**
Adds keyboard macros to any program.
For 512K Apple //gs
"Programmers will drool over Diversi-Key" - inCider

24-Hour Toll-Free Ordering
800 835-2246 ext. 127 (orders only).
For information call 313 553-9460.

Sold by mail-order only. Price includes 1st-class or foreign airmail. Return within 30 days for full refund if not satisfied. Visa/Mastercard (with exp. date), Check, P.O.'s accepted. Sorry, no C.O.D.'s.

Diversified Software Research, Inc.
34880 Bunker Hill
Farmington, MI 48331-3236 dsr

Circle 108 on Reader Service Card.

Free for all



Open-Apple is Tom Weishaar's monthly newsletter for knowledgeable Apple II users. It's thin but packed tight with Apple II lore, humor, letters, tips, advice, and solutions to *your* problems. Compared to other Apple II publications, ***Open-Apple*** has the highest new-idea-per-issue ratio, the clearest writing, the funniest cartoons, the longest index, the best warranty (all your money back if you're not satisfied), *and* it takes up the least shelf space.

II cue #57

When you start up Basic.system from 40-column mode, an inverse U will appear on your screen. This is because Basic.system prints a control-U to turn off 80-columns. If you're already in 40-columns, however, the U shows through. Change the high bit of the control-U and it will be invisible on the 40 column screen.

```
BLOAD BASIC.SYSTEM,A$2000,TSYS
POKE 8293,149
BSAVE BASIC.SYSTEM,A$2000,TSYS
```

Details on page 4.24 of our April issue.

From our fan mail:

About the only thing I don't like about ***Open-Apple*** is that it isn't published daily.
Ed Salners, Silver Spring, Md.

It is rare that a magazine or newsletter is as consistently useful as yours.
Andrew Nelson, Santa Barbara, Calif.

My copy of ***Open-Apple: Vol 1*** arrived in yesterday's mail. I got no work done at all last night. And I was just browsing.
Richard Wigand, Sioux City, Iowa

Open-Apple
POB 7651, Overland Park, KS 66207

Try two months free!

Offer good one time only. Try ***Open-Apple*** at our expense. Cut out or photocopy this coupon and mail it to us for a free two-month trial subscription.
Ad code: MI83

Free airmail worldwide.

Apple users know there's always an easier way to get the job done. A shortcut here, an elegant twist there—that's what Hints/Techniques is all about. It's an information swap for readers who want to share their programming pointers, DOS tips, hardware secrets, AppleWorks applications, WPL enhancements, and all those other insights that make you go "Aha!" in the night.

Formatting Revisited

by James King, Ph.D.

If you do a lot of number formatting in BASIC, you'll recognize the following snag in machine-language routines. Say you want to display the numbers below rounded to one decimal place.

BASIC	Formatted
10.06	10.1
10.05	10.1
10.04	10.0
1.06	1.1
1.05	1.0 (should be 1.1)
1.04	1.0
.06	.1
.05	.1
.04	.0

The BASIC routine INT ($EC23) truncates the number in FAC (floating-point accumulator) $9D-$A2, but occasionally has trouble. Try entering the following:

```
]A = 10.05:B = 1.05:F = .05
]? INT((A + F) * 10)/10 , INT((B + F) *10)/10
```

BASIC prints 10.1 at the left edge of the screen and 1 at the first tab location to the right.

To solve this problem, avoid using the INT routine. FORMAT, a machine-language program, formats numbers without using INT ($EC23). Type in Make .FORMAT (see **Listing 1**) to create the program. Since it's relocatable, you can change its load address by altering line 30. The actual string you want to print is in BUF ($240 to $240 + width).

Listing 1. Make.FORMAT.

```
10  REM Make FORMAT by James King  [2263]
20  REM  Copyright 1988, inCider  [2211]
30  FOR I = 768 TO 908: READ N: POKE I,N: NEXT I  [1929]
40  TEXT : HOME   [386]
50  PRINT "FORMAT in memory:  Don't forget to"  [3209]
60  PRINT "BSAVE it from A768,L141."  [1982]
100  DATA  32,190,222,32,185,246,134,31,133,29  [1989]
110  DATA  133,28,133,30,230,30,32,190,222,32  [1930]
120  DATA  103,221,165,162,72,70,162,198,29,48  [2023]
130  DATA  6,32,57,234,24,144,246,32,160,231  [1918]
140  DATA  32,52,237,160,32,174,0,1,224,49  [1825]
150  DATA  104,144,4,16,2,160,45,132,29,162  [1882]
160  DATA  255,232,189,0,1,240,6,201,46,208  [1896]
170  DATA  246,169,0,157,0,1,164,31,189,0  [1812]
180  DATA  1,153,64,2,136,48,34,198,30,208  [1909]
190  DATA  8,165,28,240,4,169,46,208,238,202  [1994]
200  DATA  16,232,165,30,48,5,232,169,48,208  [2002]
210  DATA  226,169,32,224,255,208,220,165,29,208  [2211]
220  DATA  216,169,64,160,2,32,58,219,32,183  [2022]
230  DATA  0,201,59,240,3,76,251,218,76,210  [1967]
240  DATA  218   [590]
```

Listing 2. Applesoft demonstration program BLOADing format.

```
1  REM  FORMAT Demo  [1089]
2  REM  by James King  [1384]
3  REM  Copyright 1988, inCider  [2194]
5 D$ =  CHR$ (4)  [681]
10  PRINT D$;"BLOAD FORMAT"  [1270]
20 FM = 768: HOME : DIM A(13)  [1187]
40  DATA 10.06,10.05,10.04,1.06,1.05,1.04,.06,.05,.04,
    0,-.04,-.05,-1.04,-1.05  [3416]
50  FOR J = 0 TO 13: READ A(J): NEXT   [1403]
70  PRINT "NORMAL..ROUND..FORMAT..FORMAT..FORMAT": PRINT
    "APLSFT..APLSFT.1 DEC...2 DEC...3 DEC"  [5412]
80  VTAB 4: FOR J = 0 TO 13: PRINT A(J): NEXT : REM NO
    RMAL.APLSFT  [2953]
100  VTAB 4: FOR J = 0 TO 13: HTAB 9: PRINT  INT (( ABS
    (A(J)) + .05) * 10) / 10 *  SGN (A(J)): NEXT : REM
    ROUNDED.APLSFT  [5635]
110  VTAB 4:W = 6:D = 1: FOR J = 0 TO 13: HTAB 14: CALL
    FM,W,D,A(J): NEXT : REM FORMAT.1.DEC  [4311]
120  VTAB 4: FOR J = 0 TO 13: HTAB 23: CALL FM,W,2,A(J
    ): NEXT : REM FORMAT.2.DEC  [3514]
130  VTAB 4: FOR J = 0 TO 13: HTAB 30: CALL FM,8,3,A(J
    ): NEXT : REM FORMAT.3.DEC  [3493]
140  PRINT : PRINT "ANOTHER EXAMPLE": PRINT   [1967]
150  FOR J = 0 TO 13: CALL FM,5,1,A(J);: NEXT : REM FO
    RMAT.USING.";"  [3250]
```

The formatter's limit is nine digits, not including decimal point and sign. If the number of characters in the formatted number exceeds the width, FORMAT cuts off highest-magnitude digits without warning. You can also force some "E" notation with very small numbers and a lot of decimal places or with very large numbers.

To use FORMAT, BLOAD FORMAT anywhere there's free space. Normally, the program loads at 768 ($300). The syntax is:

CALL A,W,D,N {;}

where A = address, W = width, D = decimal places, N = number, {;} = (the semicolon is optional). A, W, D, and N can be numbers or variables. (See **Listing 2.**)

So, the machine-language routine would interpret CALL 768,10,2,1.3 as call format, make a ten-character-wide field, provide two decimal places, and format 1.3.■

Write to Dr. James King at Counselor Education, 168 Doudna, Platteville, WI 53818.

Grade Assigner

by Jonathan M. Bealer

AppleWorks gradebook templates lack one convenience—you can't assign letter grades in the program's spreadsheet section. There's a solution, though—you can use "logical functions" to get around it.

On the right side of your gradebook spreadsheet, just after the column that calculates students' percentages, label additional columns with the grades A, B, C, D, and F. (If your grading scale accommodates plusses and minuses, include those also. You'll just have more formulas to type in and more cutoff points to determine.)

Now, using the percentage column and referring to your department's grading scale, implement a series of formulas located on the same row as the student's grades. In the cell under "A" enter the following formula:

@IF(Y12>=.93,1,0)

This states that if the percentage in cell Y12 is greater than or equal to the given 93-percent cutoff for As, the program enters a 1 in the column labeled A. Otherwise, it enters a zero.

In the column labeled B, enter a similar formula:

@IF(@AND(Y12>=.85,Y12<.93),1,0)

This instructs the program to enter "1" in the B column if Y12 is greater than or equal to 85 percent (the cutoff point for Bs) *and* if Y12 is less than 93 percent. Otherwise the program again enters a zero. In this case, when you're including two criteria, you need the logic function available in AppleWorks 2.0.

Proceed with similar formulas for Cs and Ds. The last, under F, is similar to the formula under A: It deals only with percentages under the cutoff point for failure.

After copying the formulas under each letter for one row, use the copy function to make relative duplicates of the formulas for each student. The spreadsheet totals each column and reports that total back to the row just under the letters. The program changes the letter grades before totaling them, so you have to calculate the spreadsheet twice.

Use similar formulas to assign semester-average grades. Enter first-quarter totals, and average them with second-quarter totals. Return a percentage by totalling possible first-quarter points and possible second-quarter points, then set up an equation the same way you did for quarter grades. You won't have to type in each formula from scratch, though. Use Open apple-U to edit quarter formulas to fit semester percentages.■

Write to Jonathan M. Bealer at R.R. 1 Box 93B, Hereford, AZ 85615.

CORRECTION

In the May 1988 Hint/Technique Cat.Text, we inadvertently omitted part of the accompanying program listing (p. 116). Below is the complete code for Cat.Text.

```
1  REM  CAT.TEXT by Eric Oshlo  [2017]
2  REM  Copyright 1988, inCider  [2193]
10  DIM F$(200),S$(75),L(7),S(7):D$ =  CHR$ (4): PRINT
    D$"PR#3": FOR I = 1 TO 7: READ L(I),S(I): NEXT : DATA
    15,2,3,18,4,25,9,31,9,48,6,66,7,73  [6272]
20  HOME : HTAB 18: PRINT "STORE PRODOS DIRECTORY IN T
    EXT FILE": PRINT : PRINT "Routine stores a File's
     Name, Type, Size, Modified Date and Directory Pa
    th in a TXT file for use in creating an 8 categor
    y AppleWorks Database."  [16532]
30  POKE 34,5: PRINT D$"prefix": INPUT P1$: HOME : INPUT
    "Starting Directory/Subdirectory: ";P$: PRINT : INPUT
    "Output Text File Pathname: ";OP$: PRINT D$"PREFI
    X"P$: PRINT D$"PREFIX": INPUT P$: PRINT D$"OPEN"O
    P$  [12036]
40  PRINT "Processing "P$;:L = 0: PRINT D$"OPEN"P$",TD
    IR": PRINT D$"READ"P$: INPUT F$: INPUT F$  [4609]
50  INPUT F$: IF  LEN (F$) AND  LEFT$ (F$,3) <  > "BLO
    " AND  MID$ (F$,18,3) <  > "DIR" THEN L = L + 1:F
    $(L) = F$  [5374]
60  IF  MID$ (F$,18,3) = "DIR" THEN F$ =  MID$ (F$,2,1
    5): GOSUB 110: FOR I = 0 TO S: IF S$(I) <  > S$(S
     + 1) THEN  NEXT :S = S + 1  [6199]
70  IF  LEFT$ (F$,3) <  > "BLO" THEN 50  [1759]
80 T = T + L: HTAB 45: PRINT  SPC( 4 -  LEN ( STR$ (L)
    ))L" Files Found.": IF L THEN  PRINT D$"WRITE"OP$
    : FOR X = 1 TO L: PRINT  MID$ (P$,2, LEN (P$) - 2
    ): FOR F = 1 TO 7: PRINT  MID$ (F$(X),S(F),L(F)):
     NEXT F: NEXT X: PRINT D$  [10499]
90  PRINT D$"CLOSE"P$: IF C < S THEN C = C + 1:P$ = S$
    (C): GOTO 40  [3293]
100  PRINT D$"CLOSE": PRINT : PRINT S + 1" Directories
    /Subdirectories,  "T" Total Files (excluding Dire
    ctories).": PRINT D$"PREFIX"P1$: POKE 34,0: END  [9736]
110  IF  RIGHT$ (F$,1) = " " THEN F$ =  LEFT$ (F$, LEN
    (F$) - 1): GOTO 110  [3116]
120 S$(S + 1) = P$ + F$ + "/": RETURN  [1832]
```

Sound Digitizer

by Andy Haas

Ever wish your Apple could talk back? If you have an Apple II Plus or IIe, you're in luck. With Sound Digitizer (see **Listing 3**), you can input audio waveforms from your radio, tape recorder, and so forth, then record and save them and reconstruct them through your Apple's speakers.

You need to obtain an audio jumper cable to connect your Apple to the sound source. Match the plug on one end to the size of the audio source's output jack. The other end should be a miniature audio plug you insert into the Apple. You can purchase such a cable from most Radio Shack stores.

Type in Sound Digitizer, and save it to disk. Line 3 POKEs the digitizer program into memory. After RUNning Sound Digitizer, your screen will display the menu shown in the accompanying **Figure**. Various options let you digitize, record, and save, play back sequences, modify the *delay rate* (the speed at which Sound Digitizer records and plays), and load previously saved sounds.

To get sound as clear as possible, try to record high-pitched sounds. If your sound source has a tone selector, put it on its highest setting before recording. Also, avoid complicated sounds, such as a vocalist accompanied by five instruments. Finally, make wise use of the delay rate when recording. Too long a delay can make your recording rough and choppy when you play it. The smaller the delay, however, the more memory the program uses.

Use Sound Digitizer to develop a library of sound files to load and play whenever you need them. By modifiying the delay rate, you can create several different sounds from one: Select a high delay rate to achieve a low, rich sound, for instance, or a low delay rate to obtain a high-pitched sound.■

Figure. *Menu layout.*

```
<1> Digitize          Delay rate: 10
<2> Play back         Start: 4096
<3> Modify delay      End: 4097
<4> Load              Bytes used: 0
<5> Save
<6> Modify start
<7> Quit

Select: <?>
```

Listing 3. Sound Digitizer.

```
1  REM  Sound Digitizer by Andy Haas  [2795]
2  REM  Copyright 1988, inCider  [2193]
3  FOR I = 768 TO 921: READ N: POKE I,N: NEXT I: REM
     Create SOUND.OBJ  [3451]
4  TEXT : HOME : IF  PEEK (104) <  > 8 THEN  POKE 104,
     8: POKE 103,1: POKE 2048,0: PRINT "Relocating pro
     gram...": PRINT  CHR$ (4);"RUN SOUND.DIGITIZER"  [7572]
5  HTAB 13: PRINT "SOUND DIGITIZER": HTAB 13: PRINT "-
     ---- ---------"  [2957]
10  PRINT : PRINT "<1> Digitize": PRINT "<2> Play Back
     ": PRINT "<3> Modify delay": PRINT "<4> Load": PRINT
     "<5> Save": PRINT "<6> Modify start": PRINT "<7>
     Quit": PRINT : PRINT "Select: <?>"  [10476]
15 B = 8192:E = B + 1:D = 10:L = 48857: IF  PEEK (4889
     6) = 76 THEN 25  [3625]
20 L = 43616: POKE 43364,255: REM  For DOS 3.3  [2272]
25  POKE 7, INT (B / 256): POKE 6,B -  PEEK (7) * 256:
      POKE 9, INT (E / 256): POKE 8,E -  PEEK (9) * 25
     6: ONERR  GOTO 200  [5297]
30  VTAB 4: HTAB 23: POKE 0,D: PRINT "Delay rate: ";D;
     " ": HTAB 23: PRINT "Start: ";B;" ": HTAB 23: PRINT
     "End: ";E;" ": HTAB 23: PRINT "Bytes used: ";E -
     1 - B; SPC( 39 -  PEEK (36))  [8753]
40  VTAB 12: HTAB 10: GET I$: PRINT I$:I =  VAL (I$): ON
     I GOTO 60,70,80,100,120,140,170: GOTO 40  [4051]
60  CALL 768:E =  PEEK (8) +  PEEK (9) * 256: GOTO 30  [2314]
70  CALL 855: GOTO 40  [701]
80  VTAB 16: INPUT "Delay rate (1-32): ";I$:I = D:D =
      VAL (I$): IF  NOT D OR D > 32 THEN D = I  [4908]
90  VTAB 16: PRINT  SPC( 40): GOTO 30  [1263]
100  VTAB 16: INPUT "Load what file? ";I$: IF I$ = "" THEN
     90  [3103]
110 I = 8192: PRINT  CHR$ (4);"BLOAD ";I$;",A";I:E = I
      +  PEEK (L) +  PEEK (L + 1) * 256: GOTO 160  [4822]
120  VTAB 16: INPUT "Save under what file name? ";I$: IF
     I$ = "" THEN 90  [4161]
130  PRINT  CHR$ (4);"BSAVE ";I$;",A";B;",L";E - B: GOTO
     90  [2713]
140  VTAB 16: PRINT "New start (8192-";E - 1;"): ";: INPUT
     "";I$  [3055]
150 I =  VAL (I$): IF I < 4096 OR I > E - 1 THEN 90  [2680]
160 B = I: VTAB 16: PRINT  SPC( 40): GOTO 25  [1742]
170  VTAB 24: FOR I = 0 TO 10: PRINT : NEXT : END  [1858]
200  VTAB 16: CALL  - 868: PRINT "Error #"; PEEK (222)
     ;" has occured.": PRINT "Press a key to continue.
     ";: GET I$: VTAB 16: CALL  - 868: PRINT : CALL  -
     868: GOTO 90  [8721]
1000  DATA  169,0,133,215,173,96,192,69,215,16  [2093]
1010  DATA  3,172,48,192,69,215,133,215,173,0  [2042]
1020  DATA  192,16,237,173,16,192,165,6,141,43  [2170]
1030  DATA  3,165,7,141,44,3,162,8,173,96  [1611]
1040  DATA  192,10,46,119,95,164,0,136,208,253  [1868]
1050  DATA  202,208,241,173,0,192,48,15,238,43  [1871]
1060  DATA  3,208,229,238,44,3,173,44,3,201  [1730]
1070  DATA  150,144,219,173,43,3,133,8,173,44  [1843]
1080  DATA  3,133,9,173,16,192,96,169,0,133  [1794]
1090  DATA  215,165,6,141,104,3,165,7,141,105  [1852]
1100  DATA  3,162,8,173,119,95,69,215,16,3  [1736]
1110  DATA  172,48,192,69,215,133,215,164,0,136  [1990]
1120  DATA  208,253,10,202,208,236,173,0,192,48  [1988]
1130  DATA  208,238,104,3,208,3,238,105,3,173  [1898]
1140  DATA  104,3,197,8,208,211,173,105,3,197  [1915]
1150  DATA  9,208,204,96  [929]
```

Write to Andy Haas at 313 East 9th Avenue, Coal Valley, 61240.

Got a hint of your own? inCider *would like to see it. If we can use it in Hints/Techniques, we'll buy it from you. Send your tip to* inCider, *Elm Street, Peterborough, NH 03458.*

CLASSIFIEDS

Software

IBM-APPLE COMPUTER RENTAL CLUB

World's largest, oldest, and best. Choose from over 10,000 public domain programs for only $1.95 per disk. The commercial and professional library also has over 10,000 programs. RENT, BUY, OR TRADE FROM 5 categories, 1) Utility, 2) Personal, 3) Business, 4) Educational, 5) Recreational. ONE year trial membership only $15.00 get FREE the software, "CATALOG ON A DISK," AND THE "CATALOG FILER." This is a $30.00 value. LIFETIME MEMBERSHIP WITH A 10% rent rate and the "DELUXE" catalog on a disk on either a 3.5 disk or 10 5¼ disks, a $50.00 value. MONEY BACK GUARANTEE, VISA & MASTER CARD PHONE ORDERS 9-6pm CST, (502)-275-4343.

CSU/INTERNATIONAL COMPUTER CLUB
9720 Old Hartford Rd.
Utica, KY 42376

WIN LOTTO MILLION$!

Now For Apple! Lotto Picker™ Plus, the original lottery selection software, allows you to store winning Lotto, Keno, & Pick ¾ numbers & choose between three modes of probability analysis (hot, due, unbiased) in order to give you the winning edge! Guaranteed to work for all lotteries. Bonus numbers are easily handled and our full-featured database editor gives you access to your files. We give you the PICKS—not a bunch of jumbled statistics! $34.95 (+5.55 s/h). 64k Apple II. 3.5"/GS add1. $10. NY res. add tax. NOT Copy-protected! IBM, C-64 avail.

GE RIDGE SERVICES
170 Broadway, Suite 201-IC
New York, N.Y. 10038
800-634-5463 ext 293 (M-F 8-5)
Info 718-317-1961

$6,996 EXACTA AND MORE!

Picked by a validated strategy to handicap Thoroughbreds. Designed for novice or expert horse racing fans. Fun- User Friendly- Challenging. Includes step by step manual/support. For Apple 11+, 11e, 11c. ProDos Vers. Free details or Act Now-send $29.95 Check/MO For "SUPER HORSE" to:

FOUR STRING ENTERPRISES
2899 Agoura Rd. Suite #103-C
Westlake Village, CA 91361
(818) 991-0392

Mail-Order

FACTORY FRESH RIBBONS

Ribbon	Black	Color
Apple ImageWriter I, II;	$2.75	$3.30
ImageWriter II 4 color		$9.50
Epson LX80/90	$3.35	$4.25
Epson MX/FX/RX80	$2.90	$3.50
Epson MX/FX/RX100	$3.80	$4.95
Okidata 80/82/92/93	$1.25	$1.45
Okidata 182 (RE-INKER!)	$4.50	
Panasonic KXP (RE-INKER)	$4.25	
Silver Reed EX-EXP M/S	$4.70	$6.70
Star NL/NX/NP10	$4.95	$5.95

Hundreds more, call or write for prices.
S/H $3.00. (Over $50.00 we pay S/H) Check, Money order, C.O.D. NY Res. add sales tax.
MONEY BACK GUARANTEE!
Colors (Blue, Red, Green, Purple). M/S (Blue, Red, Brown).

ISLAND COMPUTER SUPPLY
380 Fulton St. / P.O. Box 3092
Farmingdale, NY 11735-3467
(516) 293-6818

RGB CARDS-RGB MONITORS

Apple IIgs, IIc, IIe, II+, Franklin Ace Cards plug into slot 7. Can be interfaced with II+ 80 Column board or IIe RAM boards. Compatible with all RGB monitors. Cable, connector supplied and more. Color master-$109. Peacock, IIc module-$139. RGB Junior, Monochrome Digital, IIgs-$79. Telemaster CRGB-2000, composite video to RGB outboard adaptor -$129, Analog/Digital monitors: Sony RGB/TV+, KZ1311-$450, ADC-1 Analog RGB to Digital RGB video converter for IIgs-$159. Perfect for IIgs.

TELEMAX
P.O. Box 339
Warrington, PA 18976
(215) 343-3000

Music

NEW MUSIC SOFTWARE CATALOG

Learn how you can compose, edit, play and print music using your Apple II and a synthesizer. 80 pages of detailed info on the leading music software products and MIDI interfaces including sequencers, transcribers, MIDI cables, educational software and more! We carry a full line of music software products for Apple II, MAC, IBM, Atari and Commodore - for professional and home studio use. Visa/MC. World wide shipping! Send $3 for a 2 year subscription.

DIGITAL ARTS & TECHNOLOGIES
Dept. IN2 PO Box 11
Milford, CT 06460
(203)-874-9080

Insurance

INSURE YOUR COMPUTER

Safeware provides full replacement of hardware, media, and purchased software. As little as $39 a year provides comprehensive coverage. With blanket coverage, no lists of equipment are needed. One phone call does it all! Call 8am to 10pm ET (Sat 9 to 5).

SAFEWARE, THE INSURANCE AGENCY INC.
2929 N. High St.
P.O. Box 02211
Columbus, OH 43202
(800) 848-3469 Nat;
(614) 262-0559 (OH)

Game

DARKLORDS

More than a maze game. Lead armies of Elves, Hobbits, Orcs and others to reclaim a world enslaved by the DarkLords. Use terrain to advantage (mountains, deserts, swamps, plains and forest). Form war parties of fighters, wizards, thieves, clerics and assasins. Multi-senarios, Hi-Res, Full Color. Apple II family with 64K minimum. $24.95

RT PRODUCTS
P.O. Box 108, Dept I
Lake Mary, FL. 32746

CATEGORIZE YOUR ADS-MAXIMIZE YOUR PROFITS

Placing your Classified advertisement within inCider will put your product in front of inCider's active Apple II Buyers.

Each Classified ad will receive a bold headline, (23 characters), 15 lines of body copy (36 characters per line, includes punctuation and spacing). A bold company name and address. Each additional line of copy is $10.00 extra. One insertion is $225.00- three insertions are $200 per issue. Prepayment is mandiatory; please make checks payable to inCider Magazine, and mail them to: Fiona Davies, inCider Magazine, 80 Elm St. Peterborough, NH 03458.

CANADIAN
COMPUTER OUTLET INC
Apple Compatible
LASER 128
$576. Canadian Funds
For orders only call COLLECT
(416) 849-0737
or write for a **free** catalog.
Your source for low price, high quality Apple and IBM Compatible Computer products.
P.O. Box 7081
OAKVILLE, ONTARIO L6J6J5

Circle 116 on Reader Service Card.

Satisfaction Guaranteed!
(30 Day Money Back Guarantee)
(516) 249-1200
TCX Ltd. 41 North Mall Plainview. NY 11714

Extended 80 Column Cards (IIe)	$28.50
Z-80 Card/CPM (+/e/gs)	$35.00
Disk Controller (+/e/gs)	$29.00
Graphic Printer Card w/cable (+/e/gs)	$29.00
SMT Super Serial (3 Yr. Warr. +/e/gs)	$59.00
1/2 Height Drive (+/e/gs)	$77.00
A-B Switch Box (Parr./Serial)	$20.00
6ft Cables (for above)	$10.ea
Disks 5 1/4 (SS/DD-DS/DD) quan.-100 (10 pkg)	$39.00
Disks 3 1/2 (DS/DD) quan.-100	$125.00
Diskette Notcher	$6.00
Diskette Tub Tray 5 1/4 100 cap.	$10.00
Diskette Tub Tray 3 1/2 25 cap.	$10.00
16K RAM Cards (II+)	$29.00
128K Ram Cards (II+)	$87.50
80 Column Cards (II+)	$52.00
Cooling Fan/Surge (II+/e)	$28.00
Imagewriter Ribbons (12)	$2.95
Epson 80 Ribbons (12)	$2.95
Surge Prot. 6 OUT, w/reset u/l Listed	$10.00

Call for other ribbons, supplies and software.
• **One year warranty on all products.**
• **Disks have lifetime warranty.**
• **Univ. & School P.O.'s welcome.**
• **Dealers welcome.**
Prices subject to change w/o notice. Add $3.00 min. per $100.00 for shipping. (Cash or Bank Check Net 30 to Univ. & Schools.)

Circle 78 on Reader Service Card.

SCRG PERIPHERALS FOR APPLE COMPUTERS

PADDLE-ADAPPLE. 16-pin game port adapter. Plug in 2 joysticks or devices. "Regular" for 2 16-pin, "D" for 2 9-pin, "COMBO" for one of each. **$29.95**

MOUSTIK SWITCH. Plug joystick & APPLE mouse into //c. **$29.95**

9-16 ADAPTER. Use 16-pin devices on 9-pin //c gameport. **$14.95**

16-9 ADAPTER. Use 9-pin gameport devices on the][+. **$14.95**

Other products available:
SWITCH-A-SLOT EXTEND-A-SLOT
PROmGRAMER quikLoader
Call or write for catalog

SOUTHERN CALIFORNIA RESEARCH GROUP
P. O. Box 593-R Moorpark, CA 93020
(800) 635-8310 (U.S.) (800) 821-0774 (CA)
(805) 529-2082
VISA/MC/COD/CK•Shipping $2.50 U.S. & Canada
10 day return • 6 month warranty

QUALITY AT A DISCOUNT

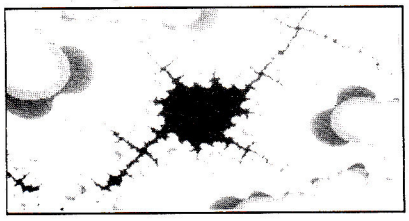
VIDEO TECHNOLOGIES:		**MICROMUX NETWORK MDIDEAS:**	Call	**APPLIED ENGINEERING:**	
Laser 128	$365	Digitizer	$50	Transwarp	$168
Laser 128EX	$450	Supersonic	$50	Data Link	$160
3.5 drive + Controller	$255	OctoRam 256K	$124	Parallel Pro	$79
3.5 drive	$185	Conserver	$124	Buffer Pro 32K	$79
Monochrome Monitor	$105	**ORANGE MICRO INC:**		Ea add'l 32K	$13
RGB Color Monitor	$269	Grappler C/Mac/GS	$74	PC Transp 256K	$380
Laser Mouse	$69	Buffered Grappler	$127	384K ++ (IBM)	Call
Exterior Expan. Box	$47	Serial Grappler	$72	5.25 Dual Drive	$315
FIRST CLASS PERIPHERALS:		Juice Box	$67	Same single	$215
Sider D2 20Mb Hd	Call	Hot Link	$54	Same (2)	$315
D4 40Mb Hd	Call	ProGrappler	$79	GS Ram Plus 1Mb	$455
60Mb Tape	Call	Imagemate Buffer	$31	GS Ram 256K	$159
C46 Combo 40Mb Hd + 60Tape	Call	Grappler C	$95	512K to 1.5Mb	Call
KENSINGTON MICROWARE:		SMT: No Slot Clock	$40	RamKeeper	$147
System Saver GS	$73	Printech	$40	RamFactor 256K	$185
Same 2E	$69	Vidtech 80 64K	$60	Same 512K to 6Mb	Call
				RamCharger	$128

Free illustrated catalog. Pay by check, free shipping. On Credit Card & COD, you pay shipping. We honor Discover Card, also accept with 4% surcharge: Amer Exp, Diners & Carte Blanche. NY residents add sales tax.

NORTH FORTY ENTERPRISES LTD.
P.O. Box 172B, E. Meadow NY 11554 **(516) 679-8790** 7 Days to 11 PM.

Circle 89 on Reader Service Card.

FRACTAL EXPLORER
• **Create and Display Your Own Dazzling Fractal Images–Slide Show With Color Effects Included.**
• **E-Z to Use–All Menus–No Numbers To Enter**
• **Entertaining–Educational**



5¼" Disk For APPLE II, II+, IIe, IIc
4 Color Single Hi Res–16 Color Double Hi Res
—OR—
3½" Disk APPLE II GS Specific
16 Color 320x200 Super Hi Res w/Mouse Control
SEND $29.95 + $3.00 SHIPPING TO

ECLAT Microproducts P.O. Box 570-756
Miami, FL. 33257-0756 Phone (305) 233-4666

Circle 28 on Reader Service Card.

HELP

* Call up on-screen hints—**INSTANTLY!**
* Insert hints in your own **PROGRAMS!**
* Create phone lists, date books, recipe files . . . and **more!**

HELP.DRVR* *comes* enhanced

—**"Silent"** text window displays
—**Internal HELP** ProDOS **prefix**
—**Protected** installation
—Full **Applesoft** and **ProDOS compatibility**

FREE

Purchase **Help!** *now for just $29.97 and receive on the same disk a* **FREE** *copy of* **/HELP/APPLESOFT**. *This* **special hint collection** *contains the* **syntax, description and examples** *for the* **entire** *Applesoft* **command set**.
—*A* **must** *addition to any programming and teaching library.*

VISA **(800) 343-0728** MasterCard
inCider Magazine, 80 Elm St.
Peterborough, NH. 03458
* *As introduced in the June, 1988 issue of inCider.*

APPLE JUICE
UNLIMITED LIFETIME WARRANTY
For registered owners
All products Made in U.S.A.

G.S. JUICE 1 MEG Ram card. O/K $50
O/K to 1 Meg. 100% compatible, works on AppleWorks & Checkmate's Memory Saver. Comes with Divirsi-Cache. G.S. JUICE PLUS, 4 Meg card also available.

Gstereo $49
gives 2 channel Hi-fidelity sound to your IIGS.

APPLIED TIME $59.
Clock/Calendar II, II+, IIE, lazer 128. Time & date stamp files.

64K/80 column IIe $49
Extends IIe to 128K, 80 Columns, double Hi-Res, Ram Disk

II PRINT $49
Parallel printer card. Prints graphics and text

AI Applied Ingenuity
14922–M Ramona Blvd.
Baldwin Park, CA 91706 Inside CA. 818-960-1485
CALL 800-346-0811
Dealer Inquiries Welcome

Circle 54 on Reader Service Card.

NEW Video Training for your Apple Computer and AppleWorks

How to Use the Apple $29
How to Use AppleWorks $39

These "How To" Video's will take you from start to finish—helping you with easy to follow instructions at your own convenience.

VHS Order yours today! BETA
Computer Network
211 W. Fiesta #25 ☐ Carlsbad, NM 88220
Shipping $4.00 min. ☐ Visa M/C accepted.
1 - 800 - 621 - 0937
(505) 885 - 1278

Circle 228 on Reader Service Card.

COMING ATTRACTIONS

- What's in store for the Apple II? How will emerging technologies and a changing marketplace affect its future development? *inCider* interviews Steve Wozniak, codesigner of the original Apple and cofounder of Apple Computer.
- *inCider* surveys Apple II CAD programs for home users—see how computer-aided design can make your drawing and drafting jobs easier.
- Scott Mace on the evolution of Apple II fantasy role-playing games: Is low-memory design killing innovation?
- *inCider* reviews A/C BASIC and TML BASIC, two compilers for the GS. What does a fundamental difference in design philosophy mean for programmers?
- Reviews: MultiScribe 3.0, DeskWorks, Graphics Studio, Mavis Beacon Teaches Typing, Games Editors Play, At a Glance, and more

inCider

inCider magazine is published monthly by IDG Communications/Peterborough, Inc.

Entire contents copyright 1988 IDG Communications/Peterborough, Inc. No part of this IDG Communications publication may be reprinted, or reproduced by any means, without prior written permission from the publisher. All programs are published for personal use only. All rights reserved.

inCider is a publication of IDG Communications, the world's largest publisher of computer-related information. IDG Communications publishes over 90 computer publications in 33 countries. Fourteen million people read one or more IDG Communications publications each month. IDG Communications publications contribute to the new IDG News Servicve offering the latest on domestic and international computer news. IDG Communications publications include: ARGENTINA'S *Computerworld Argentina*, ASIA'S *Communications World, Computerworld Hong Kong, Computerworld Malaysia, Computerworld Singapore, Computerworld SE Asia, PC Review*; AUSTRALIA'S *Computerworld Australia, Communications World, Australian PC World, Australian Macworld*; AUSTRIA'S *Computerwelt Oesterreich*; BRAZIL'S *DataNews, PC Mundo, Micro Mundo*; CANADA'S *Computer Data*; CHILE'S *Informatica, Computacion Personal*; DENMARK'S *Computerworld Danmark, PC World Danmark*; FINLAND'S *Mikro, Tietoviikko*; FRANCE'S *Le Monde Informatique, Distributique, InfoPC, Telecoms International*. GREECE'S *Micro & Computer Age*; HUNGARY'S *ComputerworldSZT, Mikrovilag*; INDIA'S *Dataquest*; ISRAEL'S *People & Computers Weekly, People & Computers Biweekly*; ITALY'S *Computerworld Italia*; JAPAN'S *Computerworld Japan*; MEXICO'S *Computerworld Mexico*, THE NETHERLANDS' *Computerworld Netherlands, PC World Benelux*; NEW ZEALAND'S *Computerworld New Zealand*; NORWAY'S *Computerworld Norge, PC World Norge*; PEOPLE'S REPUBLIC OF CHINA'S *China Computerworld, China Computerworld Monthly*; SAUDI ARABIA'S *Arabian Computer News*; SOUTH KOREA'S *Computerworld Korea, PC World Korea*; SPAIN'S CIMWORLD, *Computerworld Espana, Commodore World, PC World Espana, Comunicaciones World, Informatica Industrial*; SWEDEN'S *Computer Sweden, MikroDatorn, Svenska PC World*; SWITZERLAND'S *Computerworld Schweiz*; UNITED KINGDOM'S *Computer News, DEC Today, ICL Today*, LOTUS, *PC Business World*, UNITED STATES' *AmigaWorld, CD-ROM Review, CIO, Computer Currents, Computerworld, Computers in Science, Digital News, Federal Computer Week, 80 Micro, FOCUS Publications, inCider, InfoWorld, Macintosh Today, MacWorld*, Computer & Software News (Micro Marketworld/Lebhar-Friedman), *Network World, PC World, Portable Computer Review, Publish!, PC Resource, RUN, Windows*; VENEZUELA'S *Computerworld Venezuela*; WEST GERMANY'S *Computerwoche, Information Management, PC Welt, PC Woche, Run*

Problems with Advertisers: Send a description of the problem and your current address to *inCider*, Route 101 and Elm Street, Peterborough, NH 03458, attn. Rita Rivard, Customer Service Manager. If urgent, call (800) 441-4403.

Problems with Subscriptions: Send a description of the problem and your current and/or most recent address to: *inCider*, Subscription Department, P.O. Box 58618, Boulder, CO 80322-8618. Or call (800) 258-5473 between 9 a.m. and 5 p.m. Mountain time, Monday through Friday. If you have a problem with payment, please have your mailing label and your cancelled check or credit card statement in front of you.

Change of Address: Send an old label or a copy of your old address and new address to: *inCider*, P.O. Box 58618, Boulder, CO 80322-8618. Please give eight weeks' advance notice.

Microfilm: This publication is available in microform from University Microfilms International. United States address: 300 North Zeeb Road, Dept. P.R., Ann Arbor, MI 48106. Foreign address: 18 Bedford Row, Dept. P.R., London, WC1R4EJ, England.

Dealers: Contact Linda Ruth, Direct and Newsstand Sales Manager, *inCider*, Route 101 and Elm Street, Peterborough, NH 03458. Call (800) 343-0728.

Back Issues: Send $3.50, plus $1.00 postage for each copy to *inCider*, Back Issues Dept., Route 101 and Elm Street, Peterborough, NH 03458. For ten or more copies postage is a blanket $7.50. To order by telephone using VISA, MasterCard or American Express call (800) 258-5473.

MOVING?

Subscription Problem?

Get help with your subscription by calling our new toll free number:

1-800-258-5473

between 9 a.m. and 5 p.m. EST Monday–Friday

If possible, please have your mailing label in front of you as well as your cancelled check or credit card statement if you are having problems with payment.

If moving, please give both your old address and new address.

inCider
PO Box 911
Farmingdale, NY 11737

THE APPLE II MAGAZINE
inCider

DB Master Version Five:



On the Pole in the Database Derby

It's sleek, it's sophisticated, it does zero to 60 in five seconds flat. Putting your collection of 83 comic books into a **DB Master Version Five** file is like buying a Porsche 944 to drive to the grocery store. If you don't need to manipulate and keep track of a whole lot of data, DB Master Version Five is going to be over your head. But if you need power—this one really *moves*.

The original DB Master was released in 1980. It ran on the Apple II and II Plus—in 40 columns, of course. The company that made it was called Stoneware.

But this is DB Master 5, the company is now called Stone Edge Technologies—and the product's for *serious* database users. From the main-menu screen you have 16 choices—everything from Add Records and Create or Edit Report Formats to Restructure Files and Exit to ProDOS—grouped into four categories: Data Entry and Search, Reports and Data Exchange, Maintenance Functions, and Change Files or Exit. The program runs on an enhanced IIe, IIc, or IIGS, and comes on both 5¼- and 3½-inch disks. It's noncopy-protected, so you can also install it on a hard disk. (Three cheers for Stone Edge.)

Your DB Master files can take a variety of formats: alphanumeric records of 1–150 characters, yes or no entries, dollars-and-cents amounts, any of 11 date styles, numeric entries. You can also find out the date and time you last edited or added a record. Files can be as large as you require. Each record has room for 2K of information in as many as 200 fields. If you need more information than that within a record, you're probably trying to process too much.

Any program of this sort in the Apple II world has to contend with AppleWorks, and DB Master handles that, too. You can import information from an AppleWorks database file into a DB Master file; you can take information from a spreadsheet or word-processor file, as well, for that matter. Users of the original DB Master can also transfer their files to the new format.

And what's this souped-up, high-performance vehicle going to cost you? Fortunately, DB Master Version Five doesn't carry a sports-car price tag—it sells for $179.

In the database-manager races to come, it looks like Stone Edge will continue to cling to the inside track. At press time (early May), the company was hard at work putting the finishing touches on **DB Master Version Five Professional**, with multifile relational capabilities, keystroke macros, and other high-octane goodies. For more information, contact Stone Edge Technologies, P.O. Box 200, Maple Glen, PA 19002, (215) 641-1825.■



Circle 191 on Reader Service Card.

ZIPCHIP™

NOW SHIPPING

THE FASTEST - 400% FASTER!!!

*ZIP CHIP IS A TECHNOLOGICAL BREAKTHROUGH in Apple II speed enhancement; a new microprocessor replacement for your original CPU, running at **4** megahertz speed, four times faster than the original Apple II speed of 1 megahertz.*

*Can you imagine the time you'll save having your **Apple II+, IIe,** or **IIc,** running **400%** faster. No waiting for the machine to catch up with your own thinking speed. AppleWorks just flying, processing data, crunching numbers; Print Shop simply running at the speed of the printer. ZIP CHIP DELIVERS!*

ZIP CHIP™

- *Requires no special tools or knowledge to install.*
- *Is very easy to operate.*
- *Occupies no slot.*
- *Has no switches.*
- *Needs no special boot-up.*
- *Provides IBM PC/AT speeds from an Apple II.*
- *Is compatible with all Apple hardware.*
- *Runs all Apple software.*
- *Uses 1/7th the power of competing boards.*
- *Addresses all memory.*
- *Speeds up the first 2 megabytes of memory.*
- *Speeds up all types of memory, Main, ROM, & Aux.*
- *Operates at 4 megahertz, 400% faster.*
- *Runs at 20 variable speeds.*
- *Controls speed changes by keyboard/software.*
- *Will never wear out or breakdown.*
- *Is faster than any speed-up board.*
- *Costs much less than any speed-up board.*
- *Offers a FREE 30 Day Trial Period.*
- *Carries a LIFETIME Warranty.*
- *Provides a MONEY BACK Guarantee.*

HERE'S HOW IT WORKS

ZIP CHIP contains a fast 65C02 microprocessor, a unique gate array and a special 16K RAM for cache, which allows data and instructions to flow through your Apple II at an accelerated rate without causing a jam-up. Since the normal speed of the 65C02 CPU is only 1 megahertz, the ZIP Technology engineers replaced the normal clock with an internal 16 megahertz crystal and partitioned it such that the enhanced ZIP CHIP will operate at 4 megahertz, a 400% increase in speed.

LIFETIME WARRANTY

ZIP CHIP carries a LIFETIME REPLACEMENT WARRANTY for registered owners. If, for any reason, its internal circuitry fails to function, just return it for a FREE replacement; forever, anytime, for whatever reason.

Apple, Apple II, AppleWorks are trademarks of Apple Computer Inc.
Print Shop is a trademark of Broderbund
IBM PC/AT is a trademark of IBM
Zip Chip is a trademark of Zip Technology
Patent Pending

TRIAL OFFER/MONEY-BACK GUARANTEE

ORDER YOUR ZIP CHIP TODAY and you will also receive a valuable diskette containing a complete diagnostic test program that will put your Apple II through over 309 million separate byte tests. You will also receive a separate Apple memory tester program — plus a ZIP configuration program, and two start-up programs.

*Normally a **$40.00** value, its yours **FREE** for just trying ZIP CHIP. Use ZIP CHIP in your own machine for **30 days.** If it doesn't perform to your satisfaction, return it for your money back and you keep the $40.00 diskette; our **FREE** gift for trying ZIP CHIP.*

TO ORDER

*ZIP CHIP and your FREE diskette are available directly from Zip Technology. Priced at just **$179.00** retail, during this Introductory Offer ZIP CHIP is still only **$129.00**, a savings of **$50.00**. Just add $4.00 for Shipping, Handling and Insurance, for a total of only **$133.00**. (California residents please add $8.39 sales tax for a total of only **$141.39**). Checks, VISA, MasterCard, and American Express accepted. Write to:*

ZIP TECHNOLOGY

Dept. C7
11340 West Olympic Blvd.
Los Angeles, CA 90064

FOR FASTER ORDERING AND DELIVERY, CALL TODAY TOLL-FREE

1-800-321-7200

