VOL. 4, NO. 4
1983
$2.50

Peelings II™

THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

APPLE® GRAPHICS

GRAPHICS

- The Prime Plotter
  One of the Most Comprehensive Plotting Packages Available for Your Apple
- PFS GRAPH
- Versaplot
- Apple II Business Graphics
- Graphics Processing System
- The Graphics Solution
- ACCU-SHAPES
- Delta Drawing
- Paper Graphics

FLIGHT SIMULATORS

- Spitfire Simulator
  The Best Dogfight Simulator on the Market
- IFR Simulator

HARDWARE

- Omniscan Laser VideoDisc Interface
  Complements of the Future: Your Apple & the Laser Videodisc

DATA MANAGEMENT

- NOTEBOOK
- SUPER FILE CABINET

BEGINNER COLUMN "The Anything Machine"
CHAPTER FOUR: "DOS"

RH ELECTRONICS, INC.

COPYRIGHT © 1981 · PATENTS PENDING

566 IRELAN, BUELLTON, CA 93427
(805) 688-2047

COMPUTER PRODUCTS
DESIGNING • MANUFACTURING
ELECTRONIC ENGINEERING

"COOL IT"

SUPER FAN II™ FOR YOUR APPLE II* COMPUTER **$74.95**
SUPER FAN II™ WITH ZENER RAY OPTION **$109.00**

- TAN OR BLACK COLOR • QUIETEST FAN ON THE MARKET
- INCREASED RELIABILITY — SAVES DOWN TIME AND REPAIR CHARGES
- REDUCES HEAT CAUSED BY EXTRA PLUG-IN CARDS

ZENER RAY™ TRANSIENT VOLTAGE SUPPRESSOR

INCLUDES FAIL SAFE WARNING LAMP SYSTEM

OUR BUILT IN ADVANCED DESIGN UNIT GIVES:

DRAMATIC COST SAVINGS — STOPS ANNOYING DOWN TIME
INSURANCE FROM VOLTAGE SPIKES - GLITCHES
DANGEROUS VOLTAGE SPIKES CAN JEOPARDIZE YOUR COMPUTER SYSTEMS
PROTECT COMPUTER - DISK DRIVE - PRINTER AND MONITOR

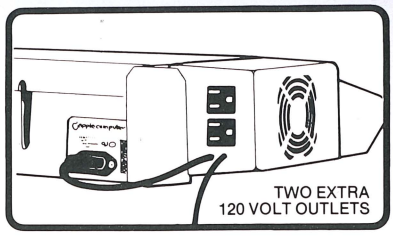
NO CUTTING WIRES • WON'T VOID WARRANTY, JUST PLUG IN SUPERFAN II WITH ZENER RAY

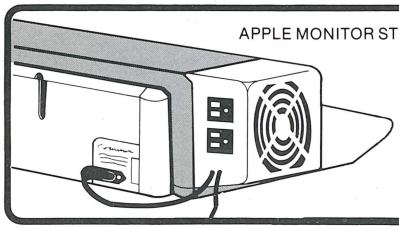
*Registered trademark of Apple Computer Inc.

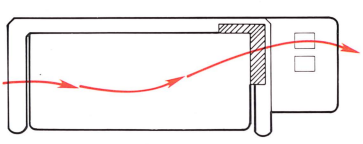
ONE YEAR WARRANTY • VISA/MASTERCARD

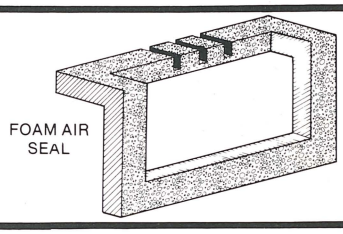
ALSO AVAILABLE FROM
RH ELECTRONICS, INC.

GUARDIAN ANGEL
AN UNINTERRUPTABLE POWER SOURCE
$595









Word processing.

It's simple.

The typewriter was a wonder in its time. **Letter Perfect**™ is a wonder for today. Letter Perfect from LJK lets you use your computer to write letters and create reports and edit your work. Change a word. Move a line. Combine two paragraphs. You can do it all with Letter Perfect, and more. Much more.

When it comes to practical software for Ataris and Apples, Letter Perfect is simple to learn. And hard to beat. Ask your dealer for a demonstration, or write LJK for more information.

LJK™

LJK, INC. • 7852 Big Bend Blvd., St. Louis, MO 63119 • (314) 962-1855

Take a bite...

...of Apple Orchard!

Your Apple will love you for subscribing to APPLE ORCHARD! An official publication of the International Apple Core, APPLE ORCHARD has all the information you need for your Apple. In addition to outstanding feature articles, we present new product information, product and book reviews, program listings, articles and news from member clubs (maybe yours!), and IAC information, including club listings, sponsor listings, and upcoming events.

Please enter a subscription to APPLE ORCHARD for:

NAME_____

ADDRESS _____

CITY_____ STATE_____ ZIP_____

Annual Subscription Rate: $19.50 for 9 issues
Canada, Mexico, APO, and FPO addresses: $27.00
Overseas and other foreign surface postage: $36.00

☐ Check or money order enclosed ☐ VISA ☐ MasterCard

No. _____ Exp. _____

Reply to: **Apple Orchard Subscriptions**
908 George Street
Santa Clara, CA 95050

Subscribe today! You. . . and your Apple. . . won't want to miss a single issue!

NEW Beagle Bros Unlocked Utilities!

All Beagle Bros disks are Unlocked and Copyable, giving you the MOST for your Software Dollar. Don't settle for less!

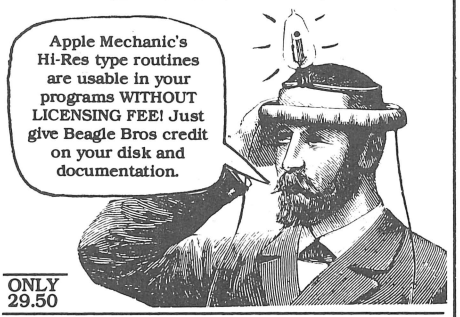
NEW! DOUBLE-TAKE — ONLY 34.95

2-WAY-LIST/MULTIPLE UTILITY
BY MARK SIMONSEN

LISTS & CATALOGS SCROLL UP and DOWN, making file names & program lines much easier to access. Arrow-keys control scroll direction. NEW LIST FORMAT lists each program statement on new line— FAST program trace/de-bugging.

VARIABLE-DISPLAY shows all of a program's strings & variables with current values. CROSS-REFERENCE shows line nos. on which each variable/string appears. Better RENUMBER/APPEND lets you merge programs (not just end-to-end). Applesoft AUTO-LINE-NUMBER as you type. Instant Hex/Dec Converter, Program Stats, Cursor Eliminate/Redefine, Free Space-On-Disk...

(includes Peeks/Pokes Chart)



ONLY 29.50

APPLE MECHANIC

SHAPE-WRITER/BYTE-ZAP UTILITY
BY BERT KERSEY

SHAPE EDITOR: Keyboard-draw shapes for hi-res animation in your programs. Design Proportionally-Spaced TYPEFACES with special characters. Six fonts on the disk. Listable demos show how to use shape tables to animate games, graphics and professional Charts & Graphs.

BYTE-ZAP: Rewrite any byte on a disk for repair or alteration. Load entire sectors on the screen for inspection. Hex/Dec/Ascii displays and input. Complete instructions & experiments for making trick file names, restoring deleted files, etc.

MORE: Useful music, text and hi-res tricks for your programs. Educational documentation.

(includes Peeks/Pokes Chart & Tip Book#5)

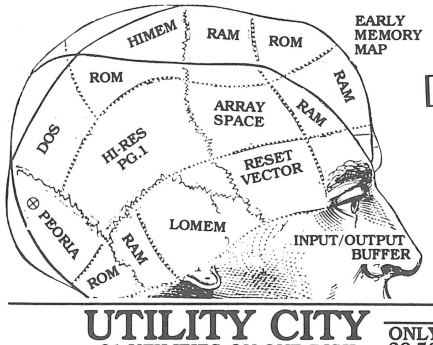
TYPEFACES — ONLY 20.00

FOR APPLE MECHANIC

26 NEW FONTS for Apple Mechanic programs. All sizes of fully-editable characters.

BEAGLE MENU: Display only filenames you want from YOUR DISKS (e.g. only Applesoft or only Locked files) for one-key selection.

(includes Peeks/Pokes Chart & Beagle Menu Utility)



UTILITY CITY — ONLY 29.50

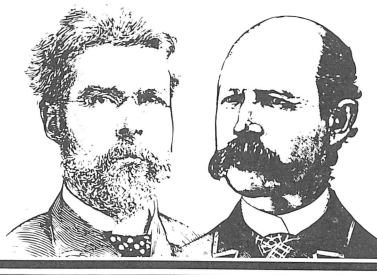
21 UTILITIES ON ONE DISK
BY BERT KERSEY

LIST FORMATTER prints each program statement on a new line. Loops indented with printer page breaks. A great de-bugger! Also...

MULTI-COLUMN catalogs for printouts, auto-post Run-number & Date in programs, put invisible commands in programs, create INVISIBLE file names, alphabetize/store info on disk, convert decimal to hex or INT to FP, renumber to 65535, append programs, dump text-screen to printer...

MORE TOO: 21 Programs Total, a best-seller!

(includes Peeks/Pokes Chart & Tip Book#3)



Beagle Bros™
Micro Software Inc.

4315 SIERRA VISTA / SAN DIEGO, CA 92103
619-296-6400

"APPLE" is a registered trade mark of You-Know-Who.

DOS BOSS — ONLY 24.00

DISK COMMAND EDITOR
BY BERT KERSEY & JACK CASSIDY

RENAME COMMANDS & ERROR MESSAGES: "Catalog" can be "Cat"; "Syntax Error" can be "Oops" or anything you want. Protect your programs; unauthorized save-attempt can produce "Not Copyable" message. Also LIST-prevention and one-key program-run from catalog.

CUSTOMIZE DOS: Change Disk Volume heading to your message. Omit/alter catalog file codes. Fascinating documentation and tips; hours of juicy reading and Apple experiments.

ANYONE USING YOUR DISKS (booted or not) will be formatting DOS the way you designed it.

(includes Peeks/Pokes Chart & Tip Book#2)

NEW! FLEX TEXT — ONLY 29.50

70-COLUMN-TEXT WITHOUT HARDWARE
BY MARK SIMONSEN

PRINT VARIABLE-WIDTH TEXT on the hi-res screens with normal Applesoft commands (including Htab 1-70). Normal, expanded & compressed text on same screen— no hardware!

ADD GRAPHICS TO TEXT or vice-versa. Run existing programs under Flex Text control. Easy to use and compatible with PLE© and GPLE.©

DOS TOOL KIT© FONT compatibility, or use Flex Text fonts. Select up to 9 fonts with ctrl-key commands. Print/List/Catalog in any style! Custom TEXT CHARACTER EDITOR included.

REQUIRES MONITOR, not TV; (includes Peeks/Pokes)

BEAGLE BAG — ONLY 29.50

12-GAMES-PLUS ON ONE DISK
BY BERT KERSEY

COMPARE BEAGLE BAG with any one-game locked-up game disk on the market today. All 12 games are a blast, the price is right, the instructions are crystal clear, AND the disk is copyable. You can even change the programs or list them to LEARN, and see what makes them tick.

TWELVE GAMES from the Applesoft Ace, Bert Kersey— TextTrain, Slippery Digits, Wowzo, Buzzword, Magic Pack... A GREAT VARIETY of games that tap your Apple's flexibility. Excellent review in January 83 Softalk (page 148).

BEAGLE MENU TOO: See "Typefaces" disk.

(includes Peeks/Pokes Chart & Beagle Menu Utility)

FRAME-UP — ONLY 29.50

HIGH-SPEED DISPLAY UTILITY
BY TOM WEISHAAR

MAKE PROFESSIONAL PRESENTATIONS of existing hi-res, lo-res & text frames. FAST hi-res loads in 2½-seconds! Paddle or Keyboard-advance frames. UNATTENDED SHOWS optional— each pic arranged & pre-programmed to display from 1 to 99 seconds. TEXT SCREEN EDITOR lets you create b/w text "slides". Add type "live" from keyboard during shows. Send copies of presentations-on-disk to your friends and associates.

(includes Peeks/Pokes Chart)

NEW! ProntoDOS+ — ONLY 29.50

HIGH-SPEED DISK UTILITY
BY TOM WEISHAAR

Put HIGH-SPEED DOS in your Apple's normal memory, Language Card or IIe high-memory—

Function	Normal	Pronto
BLOAD HI-RES IMAGE	10 sec.	3 sec.
LOAD 60-SECTOR PROGRAM	16 sec.	4 sec.
SAVE 60-SECTOR PROGRAM	24 sec.	9 sec.
BLOAD LANGUAGE CARD	13 sec.	4 sec.

(TEXT FILES: No Change)

BOOT PRONTO disk or your updated disks. Create new high-speed disks with normal INIT command. Compatible with ALL DOS COMMANDS and almost ALL of your programs.

LANGUAGE CARD or IIe high-memory can hold DOS— 10,000 Extra-Bytes of program space!

MORE DISK SPACE: ProntoDOS frees-up 15-extra-sectors per disk, almost one full track!

PLUS: Auto-Free-Disk-Space, New "TYPE" Command displays Text Files, and much more...

(includes Peeks/Pokes Chart)

ALPHA PLOT — ONLY 39.50

HI-RES GRAPHICS/TEXT UTILITY
BY BERT KERSEY & JACK CASSIDY

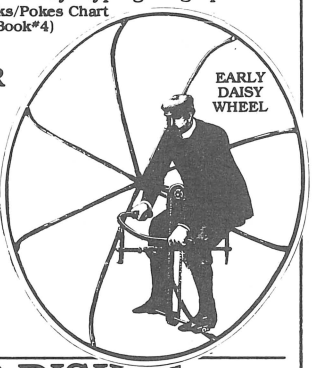
DRAW IN HI-RES, on 2 pages, using keyboard OR paddles/joystick. View lines before plotting. Mixed-colors and reverse (background opposite). Fast circles, boxes and ellipses; filled or outlined.

COMPRESS HI-RES PICS TO 1/3 DISK-SPACE. Superimpose pages or re-locate any rectangular image area anywhere on either hi-res page.

HI-RES TEXT: Proportional spacing, adjustable character size and color, upper & lower case, no htab/vtab limits, sideways typing for graphs.

(includes Peeks/Pokes Chart & Tip Book#4)

GOTO YOUR Apple Software Store for Beagle Bros disks. If they don't have what you want, tell them to GET ON THE STICK by phoning Beagle Bros, 619-296-6400, or ANY Apple SOFTWARE DISTRIBUTOR.



TIP DISK #1 — ONLY 20.00

100 TIP BOOK TIPS ON DISK
BY BERT KERSEY

100 LISTABLE PROGRAMS from Beagle Bros Tip Books 1-4. Make your Apple do things it's never done! All programs changeable for experimentation. Includes our Apple Command Chart with ALL Applesoft, Integer & DOS Commands!

(includes Peeks/Pokes AND Apple Command Charts)

RUSH the following disks by First Class Mail:

☐ Alpha Plot . 39.50	☐ Pronto-Plus 29.50
☐ A.Mechanic 29.50	☐ Tip Disk#1 . 20.00
☐ Beagle Bag . 29.50	☐ Typefaces . . 20.00
☐ DOS Boss . . 24.00	☐ Utility City . 29.50
☐ Double-Take 34.95	
☐ Flex Text . . . 29.50	☐ Add me to mail list.
☐ Frame-Up . . 29.50	☐ I'm already ON it.

AT YOUR APPLE DEALER NOW!
Or order directly from Beagle Bros—

VISA — master charge

Visa/MasterCard/COD, call TOLL-FREE
Nationwide: 1-800-854-2003 ext. 827
California: 1-800-522-1500 ext. 827
Alaska/Hawaii: 1-800-854-2622 ext. 827

OR mail U.S.Check, Money-Order or Visa/MC# to BEAGLE BROS, 17th-Floor
4315 SIERRA VISTA, SAN DIEGO, CA 92103

Add 1.50 First Class Shipping, any-size order.
Overseas add 4.00. COD add 3.00. California add 6%.
ALL ORDERS SHIPPED IMMEDIATELY

Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

Volume 4, Number 4, 1983

GRAPHICS

14 **The Prime Plotter**
Published by PrimeSoft Corp.

16 **PFS Graph**
Published by Software Publishing Corp.

20 **Versaplot**
Published by Spectrasoft

25 **Apple II Business Graphics**
Distributed by Apple Computer, Inc.

29 **Plot Summary**

31 **Graphics Processing System**
Published by Stoneware, Inc.

33 **TGS: The Graphics Solution**
Published by Accent Software, Inc.

35 **Accu-Shapes**
Published by Accent Software, Inc.

36 **Delta Drawing**
Published by Spinnaker Software Corp.

39 **Paper Graphics**
Published by Penguin Software

43 **Reviews Revisited**
Gibson Light Pen
Published by Gibson Laboratories
Printographer
Published by Southwestern Data Systems

44 **Graphics Dump Chart**

BEGINNER COLUMN:

9 **The Anything Machine**
Chapter 4: DOS

DATA MANAGEMENT

47 **Super FIle Cabinet**
Published by Abacus Computing

51 **Notebook**
Published by NIKROM Technical Products, Inc.

APPLESOFT PROGRAM EDITOR

55 **ES-CAPE**
Published by S-C Software

FLIGHT SIMULATORS

58 **Spitfire Simulator**
Published by Mind Systems Corporation

61 **IFR Simulator**
Published by Programmers Software

64 **Simulator Comparison Chart**

HARDWARE

65 **Omniscan Laser Disc Controller**
Distributed by Anthro-Digital, Inc.

DEPARTMENTS

5 **Authors**
6 **Peelings Ratings**
7 **Cut & Dried**
43 **Reviews Revisited**

ADVERTISER INDEX

Advertiser	Page
APPLE ORCHARD	2
AXLON	C3
BEAGLE BROS	3
CENTRAL POINT	27
COMPUTER TAX SERVICE	30
CRAWFORD DATA	13
DARK STAR SYSTEMS	12
DAVID DATA	19
DIGITAL ACOUSTICS	28
DILITHIUM PRESS	54
DIVERSIFIED SOFTWARE RESEARCH	49
EAST SIDE SOFTWARE	38
HARCOURT BRACE JOVANOVICH	42
HUNTINGTON COMPUTING	46
INTERACTIVE MICROWARE	40
KENSINGTON MICROWARE	67
LJK ENTERPRISES	1
MICRO-SPARC	50, 63
MODERN INFORMATION METHODS	56
RH ELECTRONICS	C2, 52
SENSIBLE SOFTWARE	60
SIERRA ON-LINE	C4
SKYLINE COMPUTING CO.	41
SOFTKEY PUBLISHING	34
SOFTSIDE	57
SOUTHWESTERN DATA SYSTEMS	68
SSM MICROCOMPUTER	8
ST. MARTIN'S PRESS	6
UNITED COMPUTER	23
WILDCAT COMPUTING	18

THE AUTHORS

Sandy Abernathy, who taught elementary school for thirteen years, now teaches courses in microcomputer applications and management technology at New Mexico State University. In addition, she presents workshops on educational applications of microcomputers for teachers and administrators and uses her Apple for word processing and consulting projects. She holds a B.S. in Biology, a M.A.T. in Elementary Education and a Ph.D. in Educational Management and Development. Her hobbies include fishing, camping, swimming, reading, and using her Apple.

Edward Burlbaw is staff scientist and the regional manager for Science and Technology Corporation. His background is in physics, electronics, and mathematics. He has a B.S. in physics, an M.S. in mathematics, an M.S. and a Ph.D. in physics. His other interests include snow skiing and electronics.

Montgomery Lee is a U.S. Air Force Captain currently assigned to the DoD Shuttle Program Office in Los Angeles as a Manager for Shuttle Payload Flight Readiness. He is also an F-4 pilot. He has a B.S. in mathematics and astronautical engineering and an M.B.A. His hobbies are science fiction and photography.

Tom Little has a B.S. in physics and computer science. He is currently pursuing his studies in physics at Oxford University. Tom's hobbies are writing computer languages and writing science fiction.

John Martellaro is an operations research analyst for TRASANA, White Sands Missle Range working in computer graphics and combat simulation models. He has a B.S. in astrophysics and a M.S. in physics. John enjoys computer chess, science fiction, astronomy and soaring.

John Mitchener is a Personnel Management Specialist at White Sands Missle Range. He is a former Electronics Warfare Analyst for the U.S. Army and has a B.S. in psychology. John's hobbies are ballooning , cooking and ham radio.

Alan Shalette is president of Shalette & Company, Inc., a Chicago-based management consulting firm. The firm provides market, product, business and operational systems planning assistance for clients mainly in the finance industry. He holds a B.S. (ChE) and an M.B.A. Alan's outside interests include astronomy, photography, camping and reading.

Michael Weasner is a U.S. Air Force Captain and a fighter pilot/instructor with multiple FAA ratings. He is currently assigned to the Air Force's Space Division in Los Angeles where he is manager of the Computer Resources Division in the Launch Vehicles Program Office. Mike holds a B.S. in astrophysics. Besides flying, his interests include space exploration and computers.

Publisher
Peelings II, Inc.

Associate Editors
Edward Burlbaw
John Martellaro
John Mitchener

Contributing Editors
William Daugherty
Tom Little
Alan Shalette
Michael Weasner

Administrative Assistant
Pamela Carmody

Director Marketing & Communications
Rebecca Winecup

Copy Editor
Richard Bishop

Editorial Assistants
Jane Trego
Jack Moran
Ruth Moran

Circulation Director
Lorie Browne

SUBSCRIPTION RATES

9 issues (1 year)	$21.00
18 issues (2 years)	$38.00
27 issues (3 years)	$54.00
Sample Copy	$ 4.00
Back Issues	$ 4.00
Canada, Mexico, APO, FPO (First Class)	
9 issues	$36.00
Back issues	$ 5.00
South America & Europe (Air Mail)	
9 issues	$48.00
Back issues	$ 6.00
All Other Foreign (Air Mail)	
9 issues	$57.00
Back issues	$ 6.00

All remittances must be in U.S. funds and drawn on U.S. bank.

Credits

Cover Art: Richard D. Bishop

Printing: Meredith Corp., Albuquerque, NM.

Typesetting (via modem): CrazyQuilt Graphics, Las Cruces, NM.

Apple and Applesoft are registered trademarks of Apple Computer, Inc.

Copyright 1983 by Peelings II, Inc. All rights reserved. Material in this publication may not be stored or reproduced in any form without permission. Requests for permission should be directed to Rights and Permissions Editor, Peelings II, P.O. Box 188, Las Cruces, NM 88004.

ISSN:0744-2475. Peelings II is published monthly except June, Aug., and Oct. by Peelings II, Inc., 2260 Oleander, Las Cruces, NM. Second class postage paid at Las Cruces, NM and additional mailing offices.

Telephone: (505) 526-8364 **The Source:** TCT120

Postmaster: Send address changes to Peelings II, P.O. Box 188, Las Cruces, NM 88004.

Correspondence: Send all regular mail to Peelings II, P.O. Box 188, Las Cruces, NM 88004. U.P.S. Address: 2260 Oleander, Las Cruces, NM 88001. New product information and other editorial correspondence should be sent to the attention of Pamela Carmody. Dealer inquiries should be sent to the attention of Lorie Browne. Change of address and all subscription correspondence should be addressed to Peelings II, P.O. Box 625, Holmes, PA 19043. For address changes please include your old address as well as new and enclose, if possible, an address label from a recent issue.

Volume 4, Number 4, 1983

PEELINGS RATINGS

The Peelings Rating is a letter grade designed to indicate an overall impression of the product. It is a measure of how well the publisher did the job he intended to do taking into consideration comparison to other similar products, price to performance, ease of use, documentation, and sophistication.

We stress that you should not skip a review or disparage a program because it receives a low rating. The rating alone can never tell the whole story. Only reading the entire review will give you all the information you need. For this reason, the rating should never be quoted alone without reference to text of the review.

The Peelings II rating categories follow: some example criteria are given for the categories, but they are not meant to be all inclusive.

AAA — Absolutely astounding software. We have seen one program in two years that fits this category.

AA — Top notch, superb. These programs generally use the most sophisticated programming techniques and have excellent documentation.

A — Very good. Software in this class incorporates very good programming techniques and has clear and informative documentation.

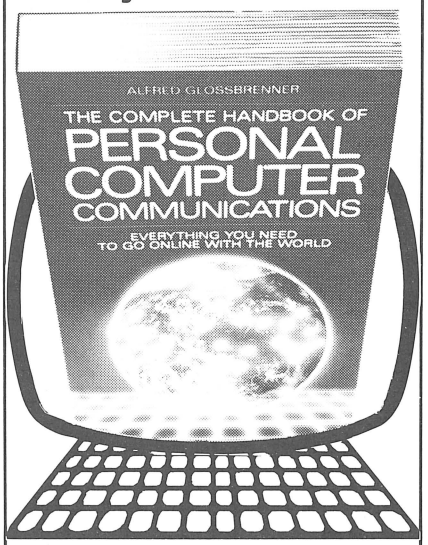
B — Good. This software may have minor errors or be slightly flawed, it may be lacking in thorough documentation, or it may just be unexciting.

C — Average. Software of a mediocre nature. There may be a lack of good programming concepts or poor error trapping. It may be a repeat of other work, or have a low performance/price ratio.

D — Below Average. Software with a blatant disregard for the user in terms of programming design, unacceptable documentation or performance/price ratio.

F — Unacceptable. Software of such poor quality or usability that it should not be marketed.

Bring thousands of dollars worth of information home for only $14.95!



"The best reason to buy a computer. Packed with useful information—it's an absolute must for computer owners everywhere."
—Gary G. Reibsamen, Vice-President of NewsNet Inc.

Your passport to the electronic universe—how to turn any personal computer or word processor into a communication/information machine of incredible versatility and power, even without a knowledge of programming. Here's just a sampling of what you get—✻ **How to select a modem and communications software** ✻ How to send electronic letters, telexes and MailGrams™ ✻ **Money-saving techniques for using The Source, Dow Jones News/Retrieval, DIALOG, BRS and more** ✻ Get *free* software! Download thousands of programs ✻ **Get privileged information from $30,000 worth of newsletters** ✻ Get discounts of 10% to 40% by shopping on-line ✻ **Trouble-shooter's guide to problem-free communications** ✻ Hundreds of *free* computer bulletin boards (CBBS) ✻ **Access vast libraries (Library of Congress, *N.Y. Times*, magazines, and whole encyclopedias)** ✻ Get real-time computer games and tournaments ✻ **Electronic banking, investment management, and then barter** ✻ Get toll-free numbers, valuable short-cut commands ✻ **Get on-line advice from experienced users of your equipment.**

Plus much more! In just two days you'll see what this unique handbook can do for you—but we'll give you two weeks to decide. Send for your copy *now*; if you're not satisfied return it in two weeks for a full refund.

Main Selection of The Small Computer Book Club Alternate Book-of-the-Month Club/Science Selection

Please return this coupon to your bookseller or direct to:
St. Martin's Press
175 Fifth Avenue, New York, N.Y. 10010 Attn: ML P

Please send me_____copy(ies) of *The Complete Handbook of Personal Computer Communications* @ $14.95 paperback each. Please add $1.50 per book for postage and handling. My check or money order is enclosed in the amount of $_____. I may examine the book for two weeks and, if not 100% satisfied, I can return it for a complete refund.

Name_____
Address_____
City_____
State_____ Zip_____

CUT & DRIED

by John Martellaro

A continuing column of rantings, ravings, and highly personal opinions. Any congruence of attitudes between Mr. Martellaro and the other editors is purely coincidental.

In March and April I had the opportunity to attend the West Coast Computer Faire in San Francisco and the Applefest in Anaheim. Here is what I learned. The West Coast Computer Faire seems to be drifting in its purpose. Other than the Apple Lisa and the Analytical Engines 12 MHz 68000 card (which is still not ready for delivery), there did not appear to be many new and exciting products. Were it not for those two items, I would have been even more depressed than I was. It certainly is no fun to walk around for hours in the Civic Center and Brooks Hall seeing the same old things while fighting the crowd. Brooks Hall is never well ventilated even on those breezy March days. There never seems to be a place to sit. And I don't recall seeing anyone extraordinarily impressive on the speaker list. For those who are especially interested in the Apple, there is just too much dilution of effort in this San Francisco perennial. Those who want to announce great new products tend to do it at NCC and COMDEX. Where does that leave the West Coast Computer Faire?

The Anaheim Applefest had a whole different character. The creature comforts were enormously better and were designed to keep the interested buyer hanging around longer. Among these comforts were carpeting, adequate ventilation, more open space, and a large pavilion of tables with real table cloths and chairs where one could have lunch, sip a coke, and gather his wits. I felt comfortable and relaxed. It was an enjoyable way to spend a day. Also, the Applefest is more consumer oriented in that many retail outlets set up booths to sell their wares, often at a festive discount. There were representatives from Apple Computer who discussed the //e and the Lisa and answered questions in seminars. On the whole, I felt that the execution of the Fest was excellent overall. The event was marred only by some confusion at the entrance gate about what to do depending on whether or not you held a pre-purchased ticket.

The Gibson Light Pen was there with new software (see the update elsewhere in this issue), and there were several other interesting products: the Viewmax-80e from Micromax, an extended 80-column card for the //e with 128K instead of 64K; the Sweet-P from Enter Computer Inc., a multi-color plotter; a voice-input module from Voice Machine Communications; a personal language operating system from Savvy Marketing, and a couple of new auxillary processor boards that have 6502Cs running at about 4 MHz (Standard Memories, and Saturn Systems). The Analytical Engines Saybrook 68000 board, which runs at 12.5 MHz, will eventually have Pascal and Fortran 77 compiling into p-code and, it is claimed, Applesoft compiling into 68000 machine code. As soon as this product is available, we will have a review for you.

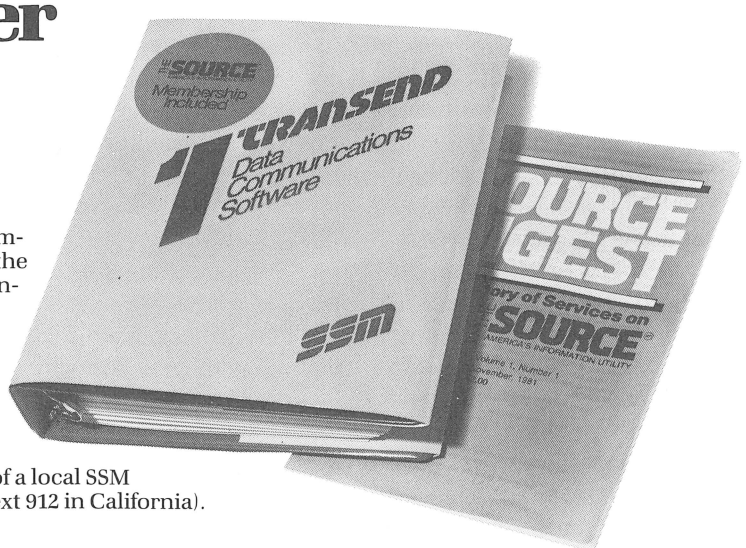
I attended a conference session in which the future of computing was discussed. Some interesting facts: In 1978 Apple Computer had 97 employees and grossed about $7million. In 1983 Apple has about 4500 employees and will gross about $1 billion. There are currently about five million personal computers in place. By 1986 it is estimated that there will be 20 million; in 1987, 30 million. Feedback to Apple Computer indicates that many Apple owners are using their computers at home to help them in their primary or secondary businesses. A show of hands in the audience even confirmed this. The TI-994A, which started out (deservedly) as an abysmal failure, has been turned around. By lowering the price to near $150 and pushing it in department stores, T.I. has pushed their production up to 150,000 units a month. While Apple is selling //e's and IBM is selling PCs both at about 40 - 50,000 units a

month, Commodore is selling 150,000 VIC-20s a month. Timex is doing the same with the Sinclair 1000. Toys-R-Us is selling the VIC-20 for $88 which is less than many Apple program packages. The impact of this is that a potentially huge market is being penetrated: the market in which people have only hundreds, not thousands of dollars to spend on their system. As a result, the larger Apple software vendors are jumping into the software market for these small computers. It appears that the failure of Apple to lower their price on the Apple II substantially through its period of explosive growth has left inroads for Commodore, Atari, and Texas Instruments. How this will affect the industry and Apple is not yet clear. I have read some articles calling for Apple to immediately reduce the price of the //e to about $500. Since 80% of the personal computers that will be in place in 1987 have not yet been sold, it may not be too late.

What can you expect for your Apple II in the near future? Those who need to write specialized application software that runs very fast will be helped considerably by Applesoft compilers and auxillary processors, either 4 MHz 6502Cs or 12 MHz 68000s. It will be the year of the mouse and the light pen. Integrated packages that switch more easily between applications and have common data structures are on the way. I suspect that you will see word processors on the //e that will be momentarily interruptable so that another task can be performed. Cannon and Diablo have announced multi-color ink-jet printers in the $1000 price class, single quantity. The problem of compatibility among products is still with us, however. Many new buyers are not inclined to take a soldering iron to their computers. It is more important than ever that compatibility issues be concentrated on. We have a long way to go in this area. Another problem area is the exorbitant price of some software. I particularly feel that when an average user spends over $500 on a program in 1983, that it has little excuse for not being AA software on the *Peelings II* scale.

Stay tuned. Many of the products described above will be evaluated in the coming months including a special issue on hard disks later this year. Make sure your *Peelings II* connection is plugged in and in good working order.□

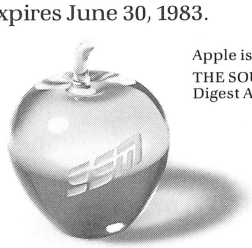
Apple™ users: Buy Transend 1™ for only $89. And get a valuable subscription offer from THE SOURCE℠.



For just $89. Transend 1 software can make your Apple communicate with any computer or information service over the telephone lines. And, for a limited time, you can take advantage of a valuable subscription offer from THE SOURCE, AMERICA'S INFORMATION UTILITY℠—your connection to up-to-the-minute business and UPI news; stock prices; information and shopping services—virtually unlimited uses.

Right now, SSM's complete line of Transend communication software includes this subscription offer. For details, ask your local dealer about Transend. For the name of a local SSM dealer, please call: 800-227-2400, ext 912 (or 800-772-2666, ext 912 in California).

Offer expires June 30, 1983.



Apple is a trademark of Apple Computer, Inc. Transend is a trademark of SSM Microcomputer Products, Inc.

THE SOURCE and AMERICA'S INFORMATION UTILITY is a servicemark of Source Telecomputing Corporation, a subsidiary of The Reader's Digest Association, Inc.

Transend it.
SSM Microcomputer Products Inc.
2190 Paragon Drive, San Jose, CA 95131

THE ANYTHING MACHINE

Chapter Four: DOS

Last time we talked about the Applesoft BASIC programming language: How to convey your best intentions to an unthinking machine, using Applesoft as an interpreter. Now it's time to consider another interpreter which is co-resident (meaning it's in memory at the same time) with Applesoft: DOS.

DOS stands for "Disk Operating System." Whenever the computer does something with the floppy disks in the disk drives, you can bet that it is DOS that's working. But what is the need for two interpreters (DOS and Applesoft)? Couldn't Applesoft handle the disks perfectly well? It can do just about everything else, it seems.

The answer is two-fold. First of all, when Applesoft first came out there weren't disk drives for the Apple, and even for several years after that they were a rarity. So Applesoft was (naturally) written without built-in disk capabilities. Later, when disks were available, DOS was written as an "extra" program, rather than a modification of Applesoft, purely for simplicity's sake.

The other reason that DOS and Applesoft are separate is so that DOS can run with *any* arbitrary language, not just Applesoft. DOS is an operating system, which means it is a program for *general* control of the machine (saving files, selecting I/O devices, etc.), whereas a programming language is much more specific. So keep in mind that DOS and Applesoft are two separate personalities in the mind of the machine, but they do cooperate on occasion.

THE FILING STATION

We have already encountered the commands LOAD and SAVE for bringing programs from disk to memory and vice versa. These are in fact DOS commands. When you type these commands, it is DOS which interprets and executes them, not Applesoft.

Before discussing the other DOS commands, let's try to picture the World According to DOS. DOS's life centers around disk files. A file is just a lot of information stored under a single name on the disk. A program is a good example. When a program is in memory, it is just a program. But when it's on disk it is also a file, having its own name (known to DOS), and taking up a certain amount of space on the disk. To see the names of the files on disk, type "CATALOG". This is a DOS command, and it produces a result (on the screen) something like this:

```
DISK VOLUME 254
A 002 HELLO
B 034 ROSE.PIC
*A 004 MY PROGRAM
T 002 NOT MUCH.EXEC
B 005 PRINTER DRIVER
```

This shows you (the human) what DOS (the program) thinks is the state of affairs back at the disk. It shows the file type ("A" for "Applesoft program", "B" for "Binary file", "T" for "Text file"), and the number of sectors (256 bytes each) that the file is using. An asterisk means the file is "locked", to prevent accidental removal. The different file types will be explained later on. The thing to notice now is that DOS knows some important information about your files.

Several DOS commands are just simple-minded things to do with files. DELETE causes a file to be removed from DOS's World-View. (NOTE: DELETE does not erase the *contents* of a file, it just makes DOS forget about the file. If DOS hasn't used the disk space for anything else, you can often "reclaim" a DELETEd file. It's better though, to avoid DELETEing files you may wish you hadn't. An important project should be backed up (additional copies of the files made) on a separate disk. RENAME changes the name of a file. For example "RENAME MY PROGRAM, AQ34-P" changes the name of the file "MY PROGRAM" to "AQ34-P". The contents of the file are not affected. You may also "lock" and "unlock" files with the (surprise!) LOCK and UNLOCK commands. When a file is locked, DOS will not DELETE it unless you UNLOCK it first.

SYSTEM CALLS: LONG-DISTANCE DOS

Now all these DOS commands are certainly great fun for a quiet Saturday afternoon. However, last time we soon discovered that the real power of Applesoft commands was in the ability to make programs out of them. The natural next step is to put DOS commands in programs too.

This is a relatively easy thing to do. On most computers this is referred

to as "making a system call", the idea being that your program is calling on the operating system (DOS in this case) to perform one of its many functions. From Applesoft, DOS system calls are made by simply PRINTing the DOS command line with a control-D character as a lead-in.

What in Wozniak's name is a control-D character? Well, it's a long story, but the upshot is that in addition to the letters, digits, and widgets a computer can print, there are also other characters, the "unprintables" (honest!), and control-D is one of them. You can type it by holding down the CTRL key and pressing D. This is the simplest way to insert it into the text of a program:

```
10 PRINT "CATALOG"
```

where an invisible control-D was typed between the first quote and the C. When this program is run, a CATALOG system call will be made to DOS and the catalog display will appear on the screen. The word "CATALOG" will not appear. The PRINT, you see, is not an honest PRINT, but is a system call instead.

Although this may be the simplest way to put a control-D in a PRINT statement, it is not the best way. This is because it is invisible (you may not even be sure you've typed it), and if you copy over the line while editing the program, the control-D will not get copied. It is best to define a string variable which contains just a control-D, then PRINT this string just before every DOS command, like so:

```
5 D$ = CHR$(4)
10 PRINT D$;"CATALOG"
```

This program runs exactly like the one before, but is less subversive. CHR$(4) is an Applesoft expression which is equivalent to " " with a control-D between the quotes. There is no need to even type the control-D at all; the CHR$(4) creates it automatically.

Now this is all well and good. Still if you have not yet given up all hope of understanding the mentality of the people who design computers, languages, and operating systems, you will probably be muttering "Yes, yes, yes, but *why*?". This control-D thing seems almost too bizarre to be real. I will try to give some rationale for it, which will lead naturally into the next topic of discussion.

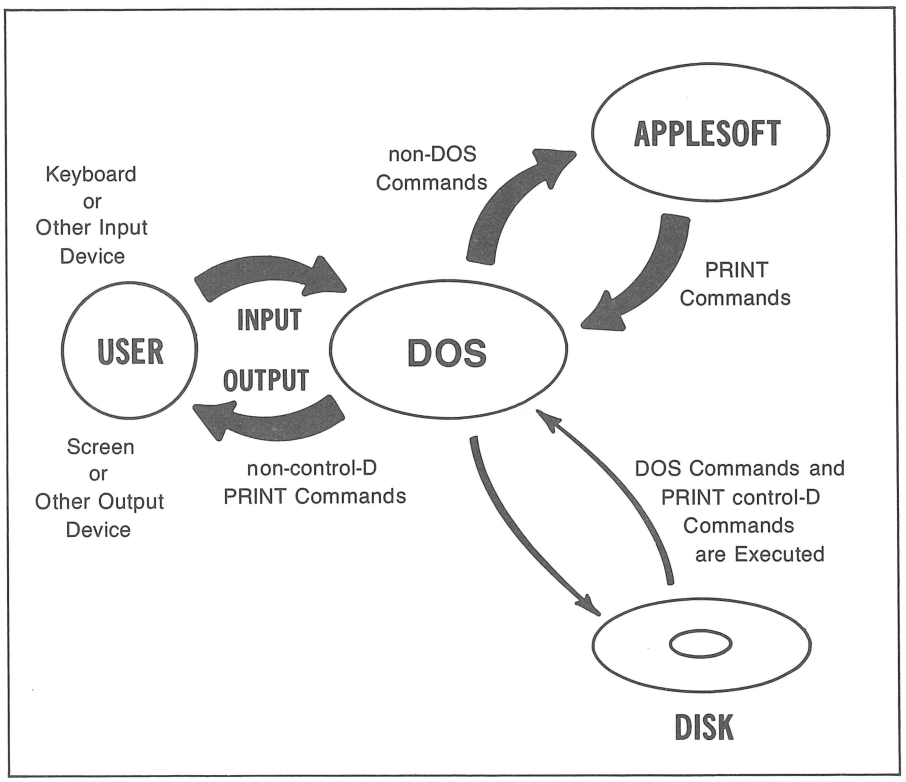
Let's return briefly to using DOS not from an Applesoft program, but from the keyboard. DOS and Applesoft are co-resident, so how do the commands you type end up at the right one? It turns out that DOS is actually in control. *DOS*, reads all the command lines. If it finds a DOS command it executes it. If the command line is something DOS can't recognize, it hands it on to Applesoft with a shrug of its software shoulders. In effect, it censors all the mail between you and Applesoft.

The incredibly clever part about this arrangement is that DOS can get ahold of anything Applesoft tries to send to you, too. In other words, an Applesoft PRINT statement actually goes through DOS to you. So, you see, DOS can recognize commands both from you, and from Applesoft in the form of PRINT statements.

A little thought will show that it would be disastrous to have DOS try to act on every PRINT statement as though it were a system call. For example, suppose you ran this program:

```
10 PRINT "LOCKIN' AND
   LOLLIN' ALL NIGHT
   LONG"
```

It would not be a good idea to have DOS interpret this as a LOCK command. The solution to the dilemma is to have DOS only interpret Applesoft PRINT statements as commands when preceded by some horrendously unlikely, obscure, and blatantly improbable lead-in. Enter control-D.



DOS THE BUSY-BODY

See figure 1 for a picture of how DOS censors the mail. DOS has its fingers (claws? fangs? tentacles?) in to both the input and output channels of your Apple. This means that there's a risk of "disconnecting DOS" if you redirect output to the printer (normally done with the command "PR#1") or some other device. DOS has your best interests at heart.

TO SUBSCRIBE or RENEW YOUR SUBSCRIPTION
Please See Postage-Paid Subcription Cards Attached
MasterCard & VISA Orders / Dealer Inquiries
For Your Convenience Use This 24hr / Day Toll-Free Number
800-345-8112 (In Pennsylvania: 800-662-2444)
Peelings™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION
DEALER INQUIRIES INVITED

files ("A"-type, or "I"-type for Integer BASIC).

There is also a BRUN command, which is just like a BLOAD except that after the file is loaded into memory, DOS will try to run it as a machine language program. However, it is important to remember that not all "B"-type files will be machine language programs (the Hi-Res picture mentioned above clearly is not), and BRUNing something which is not a machine language program will yield unpredictable results, as they say in the business.

TEXT FILES AND WHAT THEY'RE GOOD FOR

The last file type is "T". These files contain text: character strings, words, letters, digits, and so on. Using text files, information from (or for) a program can be easily stored permanently on the disk. Consider this program:

```
5 D$=CHR$(4)
10 PRINT D$;"OPEN GREAT TEXT"
20 PRINT D$;"WRITE GREAT TEXT"
30 PRINT "HELLO WORLD"
40 PRINT 5;",";5*5
50 PRINT "THE END"
60 PRINT D$;"CLOSE GREAT TEXT"
70 PRINT "PROGRAM DONE"
```

The commands OPEN, WRITE and CLOSE *must* be used as system calls: they cannot be typed directly from the keyboard. The OPEN gets DOS ready to use a text file having the given name (it will create the file if it's not there already). The WRITE tells DOS to send all subsequent output to the named text file. The CLOSE cancels the WRITE and the OPEN and puts us back in the real world again. It is important to CLOSE every file you open, so that no strange things happen.

After this program runs, there will be a "T"-type file on the disk bearing the name "GREAT TEXT" and having the following contents:

```
HELLO WORLD
5,25
THE END
```

This file can now be read by another program (or the same program at a later time):

```
100 PRINT D$;"OPEN GREAT TEXT"
110 PRINT D$;"READ GREAT TEXT"
120 INPUT A$
130 INPUT N, M
140 INPUT B$
150 PRINT D$;"CLOSE GREAT TEXT"
160 PRINT A$
161 PRINT N,M
162 PRINT B$
```

This shows that in general, the program which reads a text file must know quite a bit about how it was written.

Most word processors can save text as text files. However, "B"-type files are faster to load and save, so they are usually used as the default file type. Unless you have a word processor that can create text files, the only way to make them is by the process illustrated in lines 10-60 above.

This talk about text files is really an introduction to the wonderful world of EXEC files: DOS by remote control.

EXEC-UTIONER'S SONG

As John Martellaro pointed out after first viewing *Star Trek II: The Wrath of Khan*, the Federation has finally discovered EXEC files. Apple owners are way ahead of them (neglecting the two hundred year discrepancy, of course). An EXEC file is a way to run your computer by remote control. Although you can't do anything quite as spectacular as making a star ship drop its shields, you can be exactly that devious.

An EXEC file is nothing but a simple text file, in which all of the lines are valid commands to the Apple. The command EXEC with the name of such a text file will cause the Apple to think that the contents of the file are being typed in, one line at a time, from the keyboard. Consider the following text file:

```
TEXT
HOME
INVERSE
```

to as "making a system call", the idea being that your program is calling on the operating system (DOS in this case) to perform one of its many functions. From Applesoft, DOS system calls are made by simply PRINTing the DOS command line with a control-D character as a lead-in.

What in Wozniak's name is a control-D character? Well, it's a long story, but the upshot is that in addition to the letters, digits, and widgets a computer can print, there are also other characters, the "unprintables" (honest!), and control-D is one of them. You can type it by holding down the CTRL key and pressing D. This is the simplest way to insert it into the text of a program:

```
10 PRINT "CATALOG"
```

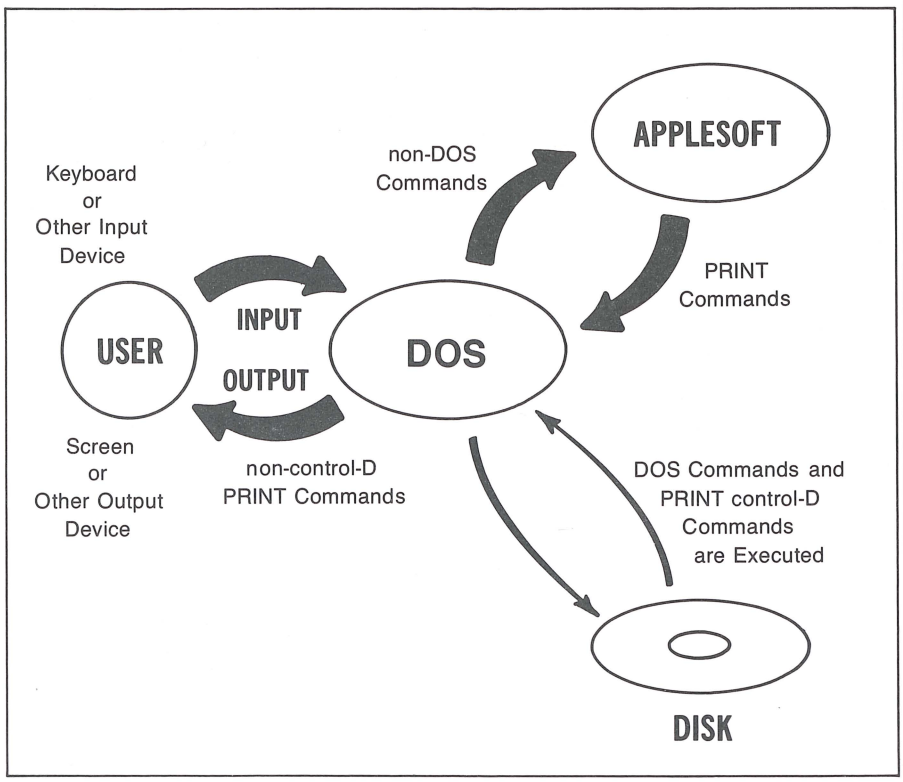
where an invisible control-D was typed between the first quote and the C. When this program is run, a CATALOG system call will be made to DOS and the catalog display will appear on the screen. The word "CATALOG" will not appear. The PRINT, you see, is not an honest PRINT, but is a system call instead.

Although this may be the simplest way to put a control-D in a PRINT statement, it is not the best way. This is because it is invisible (you may not even be sure you've typed it), and if you copy over the line while editing the program, the control-D will not get copied. It is best to define a string variable which contains just a control-D, then PRINT this string just before every DOS command, like so:

```
5 D$ = CHR$(4)
10 PRINT D$;"CATALOG"
```

This program runs exactly like the one before, but is less subversive. CHR$(4) is an Applesoft expression which is equivalent to " " with a control-D between the quotes. There is no need to even type the control-D at all; the CHR$(4) creates it automatically.

Now this is all well and good. Still if you have not yet given up all hope of understanding the mentality of the people who design computers, languages, and operating systems, you will probably be muttering "Yes, yes, yes, but *why*?". This control-D thing seems almost too bizarre to be real. I will try to give some rationale for



Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION
DEALER INQUIRIES INVITED
TO SUBSCRIBE or RENEW YOUR SUBSCRIPTION
Please See Postage-Paid Subcription Cards Attached
MasterCard & VISA Orders / Dealer Inquiries
For Your Convenience Use This 24hr / Day Toll-Free Number
800-345-8112 (In Pennsylvania: 800-662-2444)

It knows it will be missed if disconnected, so it makes a tremendous attempt to hang in there. When you type "PR#" or "IN#" from the keyboard, DOS handles it — Applesoft never gets these commands when DOS is running. This way DOS can send all of your output to the printer (or wherever), and still be around to censor it, looking for more DOS commands. This is how DOS is intended to work.

This means that an Applesoft program running under DOS should not have any "PR#"s or "IN#"s. Instead it should have the DOS system calls " PRINT D$;"PR#" " and " PRINT D$;"IN#" ". This prevents DOS from getting disconnected.

Perhaps by this point you're beginning to think they should have incorporated DOS into Applesoft, instead of having the two interpreters dance this tangled tango. There are clearly advantages to both strategies. We *do* want to be able to run DOS with other languages besides Applesoft. Let's see how this happens in the case of machine language programs. Now at last can be revealed the true nature of a "B"-type file. A "B" file is an exact copy of part of the Apple's memory. It doesn't have to be an Applesoft program. It doesn't have to be anything at all. It's just a chunk of information. For example, if we know the memory range where a Hi-Res graphics image is stored, we can save it on disk as a "B" file:

```
BSAVE PICTURE, A$2000, L$2000
```

This instructs DOS to save the contents of memory starting at address (the "$" means base 16, or hexadecimal numbers) $2000, and going for a length of $2000 bytes, as a file named "PICTURE". There is also a "BLOAD" command to bring it back into memory. (By the way, almost all graphics pictures start at address $2000; a few start a $4000 (Hi-Res page two)).

BSAVE and BLOAD are special commands used for saving and loading "B"-type files. SAVE and LOAD, in contrast, only work on program files ("A"-type, or "I"-type for Integer BASIC).

There is also a BRUN command, which is just like a BLOAD except that after the file is loaded into memory, DOS will try to run it as a machine language program. However, it is important to remember that not all "B"-type files will be machine language programs (the Hi-Res picture mentioned above clearly is not), and BRUNing something which is not a machine language program will yield unpredictable results, as they say in the business.

TEXT FILES AND WHAT THEY'RE GOOD FOR

The last file type is "T". These files contain text: character strings, words, letters, digits, and so on. Using text files, information from (or for) a program can be easily stored permanently on the disk. Consider this program:

```
5 D$=CHR$(4)
10 PRINT D$;"OPEN GREAT TEXT"
20 PRINT D$;"WRITE GREAT TEXT"
30 PRINT "HELLO WORLD"
40 PRINT 5;",";5*5
50 PRINT "THE END"
60 PRINT D$;"CLOSE GREAT TEXT"
70 PRINT "PROGRAM DONE"
```

The commands OPEN, WRITE and CLOSE *must* be used as system calls: they cannot be typed directly from the keyboard. The OPEN gets DOS ready to use a text file having the given name (it will create the file if it's not there already). The WRITE tells DOS to send all subsequent output to the named text file. The CLOSE cancels the WRITE and the OPEN and puts us back in the real world again. It is important to CLOSE every file you open, so that no strange things happen.

After this program runs, there will be a "T"-type file on the disk bearing the name "GREAT TEXT" and having the following contents:

```
HELLO WORLD
5,25
THE END
```

This file can now be read by another program (or the same program at a later time):

```
100 PRINT D$;"OPEN GREAT TEXT"
110 PRINT D$;"READ GREAT TEXT"
120 INPUT A$
130 INPUT N, M
140 INPUT B$
150 PRINT D$;"CLOSE GREAT TEXT"
160 PRINT A$
161 PRINT N,M
162 PRINT B$
```

This shows that in general, the program which reads a text file must know quite a bit about how it was written.

Most word processors can save text as text files. However, "B"-type files are faster to load and save, so they are usually used as the default file type. Unless you have a word processor that can create text files, the only way to make them is by the process illustrated in lines 10-60 above.

This talk about text files is really an introduction to the wonderful world of EXEC files: DOS by remote control.

EXEC-UTIONER'S SONG

As John Martellaro pointed out after first viewing *Star Trek II: The Wrath of Khan*, the Federation has finally discovered EXEC files. Apple owners are way ahead of them (neglecting the two hundred year discrepancy, of course). An EXEC file is a way to run your computer by remote control. Although you can't do anything quite as spectacular as making a star ship drop its shields, you can be exactly that devious.

An EXEC file is nothing but a simple text file, in which all of the lines are valid commands to the Apple. The command EXEC with the name of such a text file will cause the Apple to think that the contents of the file are being typed in, one line at a time, from the keyboard. Consider the following text file:

```
TEXT
HOME
INVERSE
```

ANNOUNCING...

snapshot //

The Ultimate Unlock System - Apple disk copy card - Only 129.95*

"Picture this: another last-minute rush, another presentation to our Big Client. The company Apple goes weird. I called in the in-house Apple 'expert' who promptly bombed my program disk. IF THAT DISK HADN'T BEEN A BACKUP, I would be rewriting my resume. Thank you, Snapshot."

"Thank you, Snapshot."

SNAPSHOT // makes unprotected backup copies of most memory-resident programs that run on the 48K Apple II, II+ or Franklin in *just 30 seconds*. Easy 1-2-3 copy procedure: *Peelings II* said "easiest and clearest of the three cards." Copies programs no nibble copier can touch. SNAPSHOT // has more features and capabilities than any copy system on the market. NO "UTILITY" DISK NEEDED. You get it all for one low price . . . $129.95.

- **NEW built in remote switch and extension cable**
- **FAST! Faster than any other system available**
- **COMPRESSED BRUN files (automatically, instantly)**
- **LIST and SAVE protected Basic programs automatically**
- **Copy, interrupt & restart, list, analyze, debug, trace, disassemble, modify . . . move protected programs to hard or 8-inch disk**
- **Expert technical consulting**
- **Full, normal use of other hardware and software**
- **MORE! Write for our information packet or leave your address with our answering service (413) 584-7600. TO ORDER: Mail check payable to Dark Star Systems. Add $3 shipping in the U.S. ($7.50 to Canada, $15 elsewhere). Mass. residents add $5.50 tax.**
  BE SURE TO SPECIFY YOUR 16K CARD WHEN ORDERING.

NEW DEALER PRICING AND RETAIL PACKAGE. Dealer inquiries invited.

darkStar SYSTEMS

P.O. Box 140, Dept. P, Amherst, MA 01004

One drive and 16K card required. Works with most popular cards (Apple, Microsoft, MPC, Ramex, RH Electronics, Orange, Digitek, U-Micros, Ace, Computer Stop). Other brands, specify when ordering. *Apple is a TM of Apple Computer.

```
PRINT "MAGICAL EXEC FILE
  ACTIVATED"
NORMAL
10 PRINT "HELLO WORLD"
20 X=2*3.14159
30 PRINT X, SIN(X), COS(X)
SAVE TRIGGY
RUN
NEW
HOME
VTAB 10
HTAB 16:PRINT "BYE BYE"
```

This file would have to be created by a word processor and saved as a text file, or manufactured "by hand" using OPEN and WRITE, as shown above. If the file is saved under the name MAGICAL, then typing EXEC MAGICAL will have exactly the same effect as typing each of its individual lines, one at a time. The EXEC file is not only faster than human fingers, it makes this whole complicated procedure (specified by these 14 command lines) totally automatic! The person sitting at the keyboard doesn't have to do anything (in fact he *can't* do anything) while the EXEC file is EXECing.

In a sense, an EXEC file is a program: a program which replaces the human operator. Many computer systems have something very much like Apple DOS EXEC files. In fact, all of the commands available under DOS are quite typical of operating systems in general.

Dealing with DOS is not a tremendous difficulty. DOS commands are fewer and simpler than Applesoft commands. The important thing to realize is that DOS has its own personality, and it hears everything you say.

DOS MODIFIED

DOS is in an interesting position by virtue of being the standard operating system for the Apple. As discussed in a previous column (chapter one), the operating system is "bootstrapped" into memory when the computer is first powered on. DOS is kept on the disk as a machine language program (though it's not a file — if it were it would be in danger of being DELETEd or changed). When the power to the Apple is turned on, a section of the disk (if there is one in the drive) is read into memory and run. On a standard disk, this is DOS. This means that DOS is there first, and has control of the machine from the beginning. So it is not easily avoided or outsmarted.

All disks have some kind of operating system on them. Pascal disks have the Pascal system, CP/M disks have CP/M, and game disks usually have their own primitive systems. In general, files made under one system are not intelligible to another. The disk formatting may be so different that it is impossible to even read the contents of an alien disk into memory. This is the basic idea of copy protection. The data on a copy-protected disk is stored in a manner which DOS cannot comprehend. This is possible because there are an infinite number of ways to encode information on the magnetic surface of a floppy disk.

A less radical departure from standard DOS is customization of DOS. Some software uses a slightly modified DOS, which can still use standard DOS files but has some extra tricks up its sleeve. There are even utilities available now which allow you to customize DOS yourself. Beware, however, that DOS is a complicated program. Only the standard, unmodified DOS can guarantee compatibility with all the different Apple software available.

Before concluding, I will list a few of the shortcomings of DOS. It is not hard to find material telling you what DOS does. It is more difficult to find a description of what it doesn't do.

There is no simple way to copy files. FID is Apple DOS's general purpose copy program, and it works. But it's not part of DOS. It is a separate program which you have to locate, load (destroying whatever else is in memory) and run.

There is no easy way to save and load text files. If you don't have a word processor, you must use the "brute force" method of writing an Applesoft program with lots of OPENs, READs, WRITEs, and CLOSEs. This makes the use of EXEC files less common than it should be, and hinders the identification of the contents of forgotten files.

There is no way to inspect the contents of any file without loading it into memory.

It is impossible to have several text files open for reading or writing at the same time. This makes some database applications difficult.

To summarize, DOS is essentially a disk file controller. It is a program which acts as interpreter between the user and the permanent storage available through the use of a disk drive. Its world consists of files, which are either BASIC programs, text, or memory images. DOS can be called from Applesoft BASIC with PRINT D$ commands.

Next time we'll do a whirlwind tour of the Pascal language. Till then, beware the DOS.□

STOCK MARKET SOFTWARE

Increase your profits with OPTIONX,™ the ultimate option analysis program for the Apple computer.

Extremely easy to use. For experienced option writers and speculators. Includes the Cleeton model and Bookstaber's extension of the Black-Scholes model. Automatic calendar, stock data base manager, recursive calculation of volatility, and much more. 65 page manual completely describes the program and the equations used. Requires DOS 3.3 and 48K.

Send $145.00 for the program and manual. Return for full refund in 15 days if not satisfied.

Request free brochure describing OPTIONX™ and other sophisticated stock market software.

Crawford Data Systems
P.O. Box 3000 - 561F
Camarillo, CA 93011
(805) 484-4159

CA residents please add 6% tax.

The Prime Plotter

by Eli Argon
PrimeSoft Corp
P.O. Box 40
Cabin John, MD 20818
301-229-4229

$240.00 (Introductory price)
$15.00 (demo disk)

16K RAM card required

Rating: A+

Reviewed by Edward Burlbaw

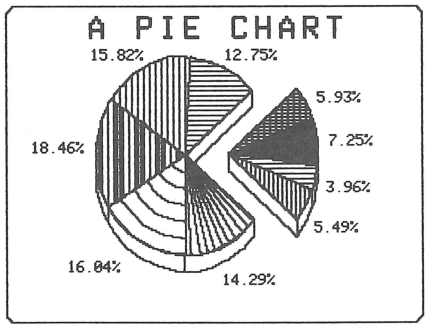
INTRODUCTION

The Prime Plotter is a very comprehensive plotting package containing plot routines applicable to the business, scientific, and technical user. There are X,Y-plots, bar charts, pie charts, curve-fitting algorithms, labeling routines, graphics utilities, and a "slide show," to name the general categories. The plots may be printed directly from the program if a card with integral graphics-dump routines is used.

FEATURES

Just for openers, there are 26 menus, up to three levels deep, with between 6 and 11 items on each menu. The items may be selected from the menus either by number or by using the Left and Right Arrows. A menus flowchart is provided to help the user keep it all straight.

The Prime Plotter is set up in a modular fashion and the required module is brought into memory when required. This is not to imply that there is a great deal of disk I/O; the disk is accessed only when the seven major modules are changed. Two drives are supported but not necessary. With only one drive the program prompts the user when changing disks is necessary. The current modules are the X,Y-plotting, pie charting, statistics, data management, titles and labels, and graphics utilities.



Virtually any type of plot can be created with The Prime Plotter: pie charts in one and three dimensions with up to four groups pushed and/or exploded and any kind of color fill you can imagine. Any number of pieces are allowed. The size and ratio of horizontal to vertical can be user defined to make the circles round when printed on different printers.

Single- and multiple-bar charts can be created. The bars can be given thickness or the frame can be thickened to give a 3-D illusion. For a fancy touch, the bars can also be made up of figures of varying heights. Histograms can be generated and plotted with curves fit to the plot.

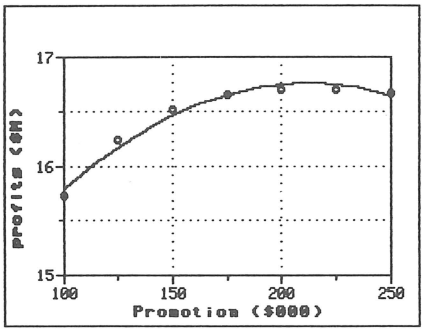
Standard X,Y-plots are just a start. Hi-lo plots can be generated; error bars can be placed either horizontally or vertically. The area under the curve may be filled as can the area between curves; the data can be fit with linear, logarithmic, exponential, n-th order polynomial, and other methods. It appears that the number of data points is limited to 250; this is probably adequate for most uses. This is approaching the resolution of the Hi-Res screen.

Labeling can be done in a variety of fonts and styles. Superscripts and subscripts can be generated automatically from the input-label string. Printing can be in bold, double bold, double size, or combinations of the above. Other character sets can be incorporated into The Prime Plotter, in case you need more than the 20 different types provided. Placement is by X,Y-position, cursor placement (IJKM keys), or paddles/joystick placement; this is true whether the labels are being placed on a graph or on a viewgraph with no plot involved.

Plots and data files may be saved in a variety of ways. The replay file (list of commands which create the plots) can be saved and later reloaded and run. The data can be saved in either PrimeSoft Data Format (PDF) or as Data Interchange Format. The picture files may be saved as 33- to 34-sector binary files or as compressed files (with the compression utility). Standard text files may be used to display pages of text, and EXEC files control the replay program.

Data to be plotted can be input in several ways. The PDF files are standard text files and can be written by

your own program and loaded by The Prime Plotter; the format is given, or input by hand directly. User functions and subroutines may be entered to generate the data. The statistical functions can be applied to create a fit to the data, do trend analyses, and give distributions. The data and statistics may be displayed, printed, or saved at any time.



For the most part, The Prime Plotter is very well error trapped. I did run into a few situations where the computer (program) appeared to be acting strangely. One particular instance was when I attempted to place labels on my pie chart. The label "refused to be placed" where I wanted to put it, for no apparent reason, and subsequent commands didn't occur when they should have. I was able to RESET and recover without losing data, but the incident puzzled me. In general, the Back Arrow does not work as a backspace/delete; CTRL-D must be used instead.

ADDITIONAL FEATURES

In addition to the many plotting features, there are also graphics utilities and a slide show/replay feature. The utilities include freedraw, filling and framing of areas, copying of one part of the Hi-Res screen to another part, and shape-table drawing. Shapes are compatible with the Apple Tool Kit shapes. The replay option uses the replay file to redraw the plot step by step, just as you originally plotted it. The replay file can be edited with steps deleted, inserted, and interchanged. This would allow, for example, replotting without the shading, to determine if that improved the legibility of the plot, and changing it back if you preferred. Each of the Hi-Res pictures can be compressed and later decompressed for increased storage capacity. The algorithm must be able to compress the picture to less than 4K in order to obtain a successful compression. This works on any 33- to 34-sector binary Hi-Res. Files may be linked together in a "slide show" manner. The show may be interrupted, with moves backward and forward through the file. The current screen may be printed and/or saved with a few keystrokes.

FUTURE ENHANCEMENTS

PrimeSoft advertises that it will have interfaces for the STROBE 100 and HP 7470A plotters available soon. The plotter option is included in some of the menus but, when selected, returns with a message stating that this option is not installed. Business-risk analysis, 3-D plotting, mapping, and typesetting will also be available soon. Customized statistical modules that contain the analysis routines of your choice and will interface with TPP can be ordered from PrimeSoft. The manual states that the price of each module is expected to be approximately 100 dollars. Obviously, due to the complex nature of this package, this investment will probably be necessary, even if the program were not locked.

DOCUMENTATION

The instruction manual is over 200 half-size pages and is divided into 16 sections. There are 10 appendices and a glossary. There is no index, but the table of contents is quite adequate. Each section is further divided into several subsections with descriptive headers. These headers also appear in the table of contents. Even with such a large manual, I found that some of the features were described in less detail than I feel is appropriate. The tutorials lead the user through making a pie chart and an X,Y-plot, but sometimes the steps are not clearly justified. Why the particular order of the steps only becomes apparent after more experience is gained. One user spent nearly two hours going through the tutorial but was still unable to create an acceptable plot of his own data, and, obviously, did not learn the program either. Perhaps a simpler tutorial would allow the user to be "up and running" sooner. There is a help feature built into the program, but it is more for refreshing your memory than teaching. A quick-reference card containing a list of the commands and a menus flowchart is also provided.

WARRANTY AND BACKUP POLICY

Recently, PrimeSoft has revised its warranty and backup policies. They currently are: free replacement for a period of 60 days — thereafter, 20 dollars for the MASTER disk and 15 dollars for the REPLAY disk, for registered owners. One backup of the MASTER and multiple backups of the REPLAY disk may be obtained.

CONCLUSION

This package is one of the most comprehensive plot packages available for the Apple today and I have not tried to describe all its features. After all, the manual takes over 200 pages to do that. It has numerous features in both business and scientific applications. While most plot packages seem to be oriented to only one type of user, the Prime Plotter does it all, and does it well. The multiple menus (and features) are sometimes overwhelming, so be prepared to spend several hours running the tutorials and practicing before you are able to obtain a plot of your own data. Even after you become familiar with all the features, I suspect that you will continue to find something new to try. If this package sounds appealing, the $15 demo disk will probably convince you. If you want a comprehensive, no-holds-barred program, this could be it.□

PFS GRAPH

by Bessie Chin and Steve Hill
Software Publishing Corp
1901 Landings Drive
Mountain View, CA 94043
415-962-8910

$125.00

Apple II Plus or //e

Rating: B

Reviewed by John Martellaro

BACKGROUND

PFS GRAPH is a business-oriented plotting package designed to produce line, bar, and pie graphs. The data for these graphs can come from VisiCalc files, PFS FILE, or keyboard entry. It will plot the graphs on a variety of printers or on a Hewlett-Packard HP7470A Color plotter.

Several plot packages have been previously reviewed by *Peelings II*. A comparison chart summarizing the features of seven programs was published in V3N5 (1982). PFS GRAPH most closely resembles the Apple Plot and Apple II Business Graphics series.

INTRODUCTION

PFS Graph is a simple and coherent program as it appears to the user. It does a lot of the tedious work that a computer program should do for a user, and it is designed to do a limited number of things very well. In this sense, it has some of the polish and smoothness of Bank Street Writer (V4N3, 1983). The basic menu looks like this:

PFS: GRAPH MENU

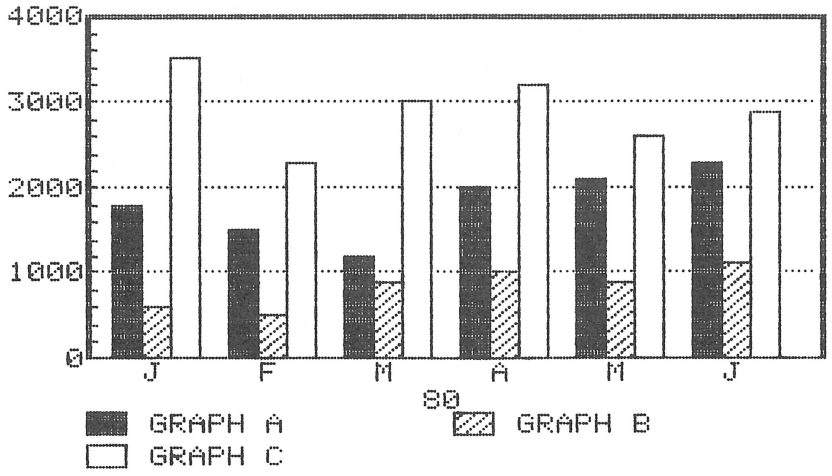
1 GET/EDIT DATA
2 DISPLAY CHART
3 DEFINE CHART
4 SAVE CHART
5 GET/REMOVE CHART
6 PRINT/PLOT

FUNCTIONS

Item 1 in the main menu provides for entering data from the keyboard, a Visicalc file cast in DIF format, or a PFS FILE file. In order to select a menu item or terminate any data entry throughout the program, the CTRL-C is used instead of RETURN. As with PFS FILE, Software Publishing Corp. seems to have an extreme reluctance to make use of the RETURN key. I found this to be irritating and philosophically troublesome. After all, truly friendly software should be using typewriter-like keys. Asking a user to use CTRL-C comes about four years after Apple Computer gave up asking people to enter BASIC with a CTRL-B.

If you select to enter data from the keyboard, you will enter a dual-column page with the columns labelled as X-DATA and Y-DATA. The X-data can be numeric, alphanumeric, or "datic" (this word will be used to indicate date-formatted data). Once you select the option for the format of the X-data, it is frozen for the lifetime of the data set. This can be considered a limitation. Datic data can be in terms of days, months, quarters and years. Certain combinations of these four are not allowed since this would exceed the resolution of the X axis. Other codes can be combined; for example, YQ will print years with four tick marks labelled one through four quarters per year. The primary limitation here is that only 18 data points on the X-axis can be plotted with character-labelled values. Bar charts can have 36 points spread among up to four graphs. Contrast this to 100 points for Apple Plot, 300 for VisiPlot, and 3,800 for Apple II Business Graphics. You do not have to enter data in ascending order along the X-axis. Disordered data will be sorted when later retrieved from diskette.

Item 2 produces a labelled graph on the high-resolution screen. Line charts can have up to four sets of labelled, uniquely marked data sets. Titles must be in upper case. The markers for each set of data are in different colors. They can be viewed on a color display but can only be printed in black & white. (Color plots require the Hewlett-Packard Plotter.) Bar charts must have the datic or alphanumeric format. Data sets with eight or fewer data points and an alphanumeric data format can be displayed as a pie chart. Raw data can be entered for a pie chart, and when displayed, it will be normalized to individual percentages of the pie. I noted that the normalized percentages have more precision than the input data which is a common error in this type of procedure. For example, the numbers 25, 30, 35 and 40 produced percentages of 19.23, 23.08, 26.92, and 30.77, respectively.



The third item in the menu allows you to define how the data generated in item 1 will be handled. Up to four sets of Y-data can be labelled and plotted. You can mix line and bar charts provided the line data is alphanumeric or datic. Data can be plotted as individual values or accumulated across the plot. Options include stacking individual graphs (see figure), showing horizontal grid lines, and utilizing color. The chart title is limited to 26 characters, and legend names for the data sets are limited to 15 characters.

There is a fundamental problem in the data entry. The cursor quadrant of CTRL T,V,F,G is used to move the cursor up, down, left, and right respectively. The Right Arrow is used to jump to the next field. So far, so good. But the Left Arrow merely backspaces and duplicates the CTRL-F key. The Left Arrow key should cause a a jump back to the last field. This major oversight is an extremely annoying aspect of PFS GRAPH.

Items 4 and 5 provide for bookkeeping on a specially formatted data diskette. This diskette is copyable, but is used by PFS GRAPH in its own unique way in that the normal DOS catalog does not exist--only PFS GRAPH is able to read the catalog. File names may have up to 10 characters, and up to 45 charts can be saved per diskette. The specially formatted catalog has three columns of names and is convenient to use.

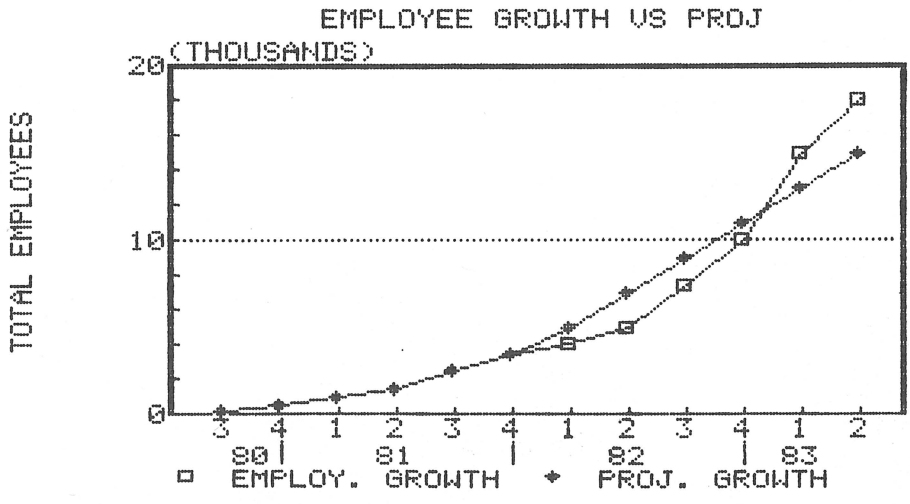
The last item in the main menu selects either a printer or a plotter. You can first print the tabular data, and the program will pause to ask if you want to proceed to the graph. This gives you a chance to abort or adjust the paper if necessary. Printers that are supported are the MX-70 and MX-80 with GRAFTRAX, Okidata 82A, Apple dot-matrix printers, IDS Prism (in black & white only), NEC 8023, and the C-Itoh Prowriter. There is no configuration program. PFS GRAPH requires the printer to be in slot 1 and the Hewlett-Packard plotter, if available, to be in slot 2. I tried to print a plot on an Apple //e with no printer plugged in, and, amazingly, the program did not hang--it simply displayed the image on the screen.

If you have a need to save the Hi-Res picture created as a 32-sector binary picture file, you will have to get tricky. As with Apple II Business Graphics, you must insert an Apple DOS 3.3 slave diskette, RESET, and reboot. Then you can save the Hi-Res picture as a 33-sector binary file. A user should not be forced into these kinds of machinations. Not only is there no explicit support to save a Hi-Res image, but the above emergency technique is not mentioned either. This is a grave oversight.

DOCUMENTATION & WARRANTY

The manual supplied is a spiral-bound, typeset booklet with about 50 pages. It is extremely well written--clear, concise, and well organized. It starts with trial examples which, if followed carefully, will allow a new user to quickly understand the workings of the program. Good use is made of pictures, and the design is professionally laid out. There are appendices containing error messages, a quick reference, and advice on copying data diskettes. There is a heavy paper quick-reference card which is perforated at the binding so that it can be torn out. There is a 2 1/3 page index. This documentation ranks with the best program documentation I have ever seen.

Two copy-protected diskettes are supplied along with a diskette of sample graphs. It used to be that you got one master diskette, and a backup of



Having Computer problems?

Paws for the solution.

BUSINESS

	Retail Price	Wildcat Price
CONTINENTAL		
CPA I Gen. Ledger	250.00	**187.46**
First Class Mail	74.95	**56.21**
Home Accountant	74.95	**56.21**
MICROLAB		
Invoice Factory	199.95	**149.96**
Payroll Manager	300.00	**225.00**
Wallstreeter	300.00	**225.00**
MICROSOFT		
Multiplan-Native Apple	275.00	**200.00**
SOFTWARE DIMENSIONS		
Accounting Plus II (G.L., A.R., A.P., Inv.)	1250.00	**875.00**
VISICORP		
Desktop Plan	250.00	**187.50**
Visicalc 3.3	250.00	**187.50**
Visischedule	300.00	**225.00**
Visitrend/Visiplot	300.00	**225.00**

WORD PROCESSING

Word Processing, cont.	Retail Price	Wildcat Price
ART-SCI		
Magic Pak	225.00	**168.75**
Magic Window II	149.95	**112.46**
HAYDEN		
Piewriter	149.95	**112.46**
Piewriter 80 col.	149.95	**112.46**
ON-LINE		
Screenwriter II	129.95	**97.46**
Screenwriter Pro	199.95	**149.96**
The Dictionary	99.95	**74.96**
SENSIBLE		
Sensible Speller	125.00	**93.75**
SILICON VALLEY		
The Word Handler	199.00	**150.00**

GAMES

	Retail Price	Wildcat Price
BRODERBUND		
Choplifter	34.95	**26.21**
Seafox	34.95	**26.21**
DATAMOST		
Aztec	39.95	**29.96**
Casino	39.95	**29.96**
County Fair	29.95	**22.46**
Pig Pen	29.95	**22.46**
Snack Attack	29.95	**22.46**
H.A.L. LABS		
Sheila	25.00	**20.00**
Supertaxman II	25.00	**20.00**
INFOCOM		
Starcross	39.96	**29.96**
Zork I, II or III	39.96	**29.96**
ON-LINE		
Cannonball Blitz	34.95	**26.21**
Frogger	34.95	**26.21**
Lunar Leeper	29.96	**22.46**
Time Zone	99.95	**75.00**
Ultima I	39.95	**29.96**
Ultima II	59.95	**44.96**
SIR-TECH		
Knight of Diamonds	34.95	**26.21**
Wizardry I	49.95	**37.46**
SYNERGISTIC		
Bolo	39.95	**29.96**
Crisis Mountain	34.95	**26.21**
Escape from Arcturus	34.95	**26.25**
Nightmare Gallery	34.95	**26.21**
Wilderness Campaign		**15.00**

EDUCATION

	Retail Price	Wildcat Price
EDU-WARE		
Algebra I, II or III	39.95	**29.96**
Compu-Read	29.95	**22.46**
Counting Bee	29.95	**22.46**
SAT Word Skills	49.00	**36.75**
KRELL		
Full Logo	179.95	**147.00**
LEARNING COMPANY		
Bumble Games	59.95	**44.96**
Bumble Plot	59.95	**44.96**
Gertrude's Secrets	74.95	**56.21**
Juggles Rainbow	44.95	**33.71**
SPINNAKER		
Facemaker	34.95	**26.21**
Snooper Troops #1	44.95	**33.71**
Story Machine	34.95	**26.21**
TERRAPIN		
Terrapin Logo	150.00	**120.00**
ZEITGEIST		
Invader Attack 49.50		**37.13**
Space Mouse 49.50		**37.13**

WILDCAT COMPUTING, INC.

TERMS & CONDITIONS

There is a $2.00 shipping fee on all software and a 2% fee on hardware and supplies with a $2. minimum. No overseas shipments. Texas residents add 5% on all products except software. Immediate shipment with money order, cashiers check or charge card. Allow 10 days for personal checks to clear. Prices and availability subject to change without notice. Send for free catalog with complete listing of product line.

MasterCard VISA

Wildcat Computing, Inc.

1160 Park Boulevard
Plano, Texas 75074
(214) 424-3582.

the master was available for $15.00. If you buy one of these older packages with only one master diskette, check with Software Publishing Corp. on how to get your second. If the original diskette(s) fail(s) within 90 days of purchase, it (they) will be replaced by Software Publishing Corp.

STRENGTHS AND WEAKNESSES

PFS GRAPH seems to be aimed at business users who want a professionally done and easy-to-use package. On the positive side: The documentation is nothing short of terrific. A sample diskette with over 30 sample graphs is supplied. There is good flexibility in the entering of datic information. Error trapping is excellent. Positive and negative values can be presented on both axes with autoscaling or manual override. X-axis data is sorted. The support for the Hewlett-Packard plotter allows you to produce professional-looking graphs in color. It is largely menu driven and extremely easy to use.

On the negative side: There is no direct facility for saving Hi-Res pictures as pure binary files. The use of the Right Arrow and the CTRL-C for entering data is distracting. The number of points allowed on the horizontal axis is extremely limited. Chart labels are in upper case only. The price for the package ($125.00) is, on the surface, rather steep for a program with its limitations. No extra documentation is supplied that explains the files on the sampler diskette; such documentation would be useful. There is no configuration program that allows for the printers or plotters to be in different slots.

CONCLUSION

My first impression of this package was that it is extremely slick and very well done. As I dug deeper, I found small but nagging problems, mentioned above, that need to be ironed out. The method of entering and correcting data is so unconventional that it is frustrating. The facility to save a file as a Hi-Res screen image is a feature that must be added. If more data points were available on the X-axis, and the other mentioned problems were fixed, PFS GRAPH would probably rate an A+ and would be a valuable and cost-effective tool for many business users. The bottom line is that if you are looking for the easiest possible plot program to plot limited data sets without much fuss or delay, PFS GRAPH is a reasonable choice.□

500% Faster Loading of Textfiles, Integer, Applesoft & Binary and Now Six Powerful Extra Commands in Standard DOS 3.3

30 out of 60 bought it on the spot when DAVID-DOS™ was demonstrated at the Original Apple Corps, UCLA.

Automatically supports an Integer or Applesoft Rom Card in any slot (without configuring).

Six New Commands

1. TLOAD Speed loads all Text Files.
2. TLIST Lists all Text Files to screen/printer.
3. DUMP Binary/Ascii to screen or printer.
4. DISA Disassembles Binary to screen/printer.
5. AL Prints program Address & Length.
6. HIDOS DOS moves itself to Language Card

Like Other DOS Commands

These six commands operate identical to existing DOS commands. Use A or A$ for address and L or L$ for length. Enter them on the Keyboard and use them in Basic programs with the familiar D$.

100 Sectors in 7 Seconds

TLOAD loads a Visacalc Template of a hundred sectors in 7 seconds and TLIST scrolls it to screen or printer. TLOAD speed loads Sequential and Random Text Files starting at $1000 or as specified by A. It loads the entire file or a smaller length specified by L.

List Any Textfile

TLIST lists Sequential and Random Text Files to screen and printer.

DUMP screen dumps memory with Ascii along the right side. Use A and L for specific dumps. Without them it starts at $00 and stops with return.

Disassemble Machine Code

DISA disassembles machine code to screen. Use A and L for specific routines.

Variable Speed Scrolling

TLIST, DUMP and DISA Features:

1. Print with PR#
2. Key operated variable speed control.
3. Instant pause with Space Bar.
4. Exit anytime with Return Key.

10K More of Memory

HIDOS command checks for a language card in slot O and moves DOS residing in memory to the card at $DD00. Himem is set at $BE00 adding 10K of free memory for programs. The Integer Card is still automatically supported in any slot. $300 to $3D0 is kept free.

Apple II and Applesoft are trademarks of Apple Computer inc. Visicalc is a trademark of Visicorp.

Two More New Commands

HIDOS has all previous commands and features operational and adds a 7th command FIND, Find searches 64K memory in 3 seconds for any Hex sequence up to 31 bytes long and prints the addresses to screen. Hidos has an optional 8th command DATE configured for Mountain Hardware clocks and is useable in basic programs.

Use with Most Software

DAVID-DOS is totally accurate and speed loads without over-writing. Great care was taken to keep DOS standard and compatible with most software. All DOS entry addresses have been preserved. Only two routines were moved to allow more room in command tables. DOS is the same length. Init areas were used for DAVID-DOS.

Install in Seconds

Catalog Free Space is also provided. DAVID-DOS installs in seconds on blank or full disks. Requires a 48K Apple II with DOS 3.3. Comes with instructions.

California residents add 6½% sales tax. **$39.95** Foreign add $2.00.

DAVID DATA™

To Order: Send Check To
12021 WILSHIRE BLVD., SUITE 212
LOS ANGELES, CA 90025 (213) 478-7865

VERSAPLOT

by Samuel Shultz
SPECTRASOFT
350 N. Lantana #775
Camarillo, CA 93010
805-987-6602

$99.50
Apple II Plus or //e

Rating: D

Reviewed by John Martellaro

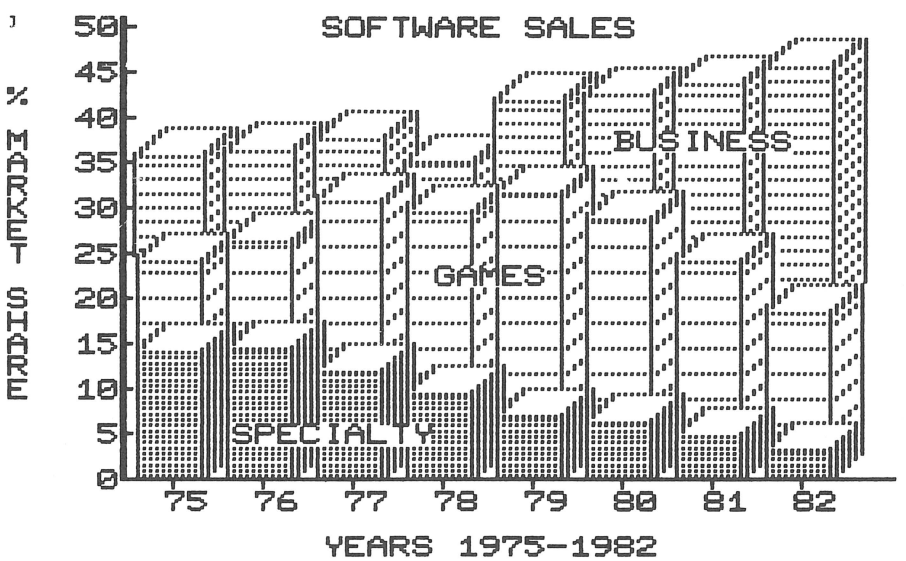
Versaplot, like all plot programs, is designed to transform data into several different kinds of charts. These can be line charts, scatter charts, bar charts, area charts, and pie charts. There are significant problems, however. Versaplot has many options and is capable of producing a wide variety of sophisticated-looking charts. However, it is not easy to use, and the documentation is the poorest of all the plot programs reviewed in this issue.

Normally, I leave the subject of documentation until later in the review. It is usually more appropriate to get right to the discussion of what the program does and how well it does it. This time, however, you should know before you read any farther that even the latest version of the Versaplot documentation is so confusing, wordy, and unpredictable that it renders the program almost unusable. While PFS GRAPH (also reviewed in this issue) may have its limitations and may be somewhat expensive, I will say that I was up and running with it in less than 15 minutes. I had tried every feature within an hour. Versaplot, on the other hand, took me two evenings to get to the point where something useful could be done. Attempting to read the "tutorial" was so frustrating that I was ready to forget the whole review. These may not be factual statements about the operation of the program, but they are factual statements about my experiences trying to learn how to use the package.

OPERATION

Versaplot's chief virtue is that it can display and save to disk Hi-Res images of a variety of good-looking plots, in perspective if you so choose. Otherwise, you must use your own software to produce dumps of the 34-sector binary files.

The program is geared more towards scientific applications by virtue of its design and features. For example, all data plotted is numeric. When numbers become too large to display, a factor in scientific notation is displayed next to the numbers. I tried plotting a graph of some arbitrary numbers versus yearly quarters. The highest number on the Y-axis was 7500, but it was displayed as 750 with a multiplier of 1E1 (scientific notation for 10). PFS GRAPH, being business oriented, puts a scale indicator at the top of the chart: "in thousands", and scales the numbers 1 to 7.5. However, because of auto-



A major drawback is that printing support of the graphs is supplied only if you have special graphics-dump interfaces such as the Grappler.

normalization, my nice, neat quarters of one through ten were set up at numbers like 2.7, 4.3, etc. This is obviously not as useful to the

businessman who wants to see something like the following:

```
|  |  |  |  |  |  |  |  |
1  2  3  4  1  2  3  4
      1981     1982
```

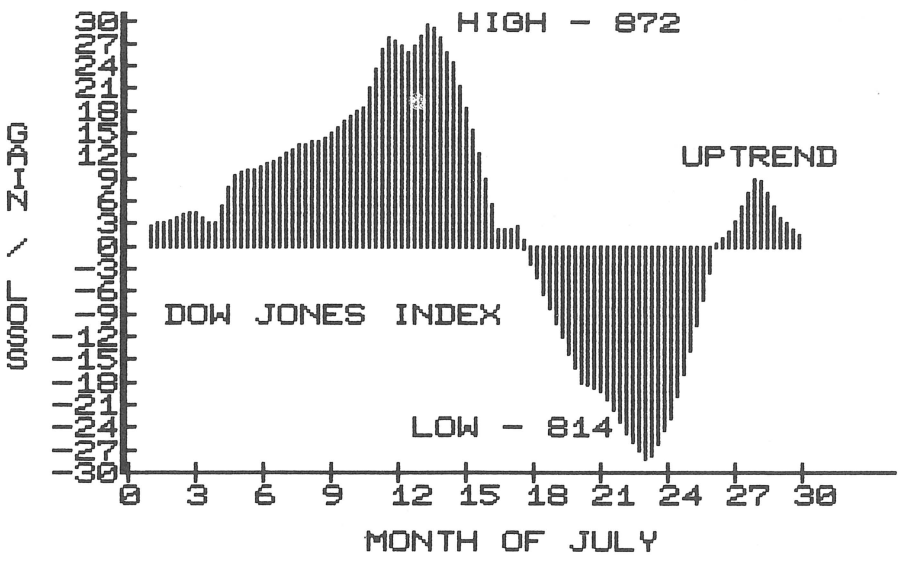
A consequence of the way Versaplot works is that you cannot have discretely labelled dates or alphanumeric descriptors (except for pie charts). A "Year Plot" function does delete the century portion of a number like 1982 and allows integer year numbers to be displayed.

While PFS GRAPH offers only line, bar, and pie charts, Versaplot includes scatter charts and area charts. Scatter charts are used when there is no clear cut connection between the X-values and the Y-values, and no lines are drawn to connect any of the points. Area charts are charts in which the area under a curve is shaded for certain types of emphasis. Further, the bar charts and pie charts in Versaplot can be drawn with a three-dimensional appearance. For scientific work, error bars whose size is a certain percentage of the Y-value can be plotted. The color of the lines in line charts may be chosen by the user, consistent with certain limitations imposed by the Apple II Hi-Res graphics.

The main menu of Versaplot is displayed as follows:

D(ISK	L(EXICOMM
E(DIT DATA	P(LOT GRAPH
C(REATE DATA	Q(UICK LOOK
G(RAPH DISPLAY	F(ORMAT GRAPH
A(XIS ASSIGNMENTS	M(ODIFY LABELS

The DISK command supervises the loading and saving of Hi-Res pictures or tabular graph data. It also allows access to certain DOS commands like LOCK, DELETE, UNLOCK, CATALOG, and so on. The EDIT DATA command invokes an editor that is considerably more refined than the method used by PFS GRAPH. However, the price paid for this is that the editor must be loaded as a new program. When it is loaded, the menu above is replaced by a similar edit menu. The editor is easy enough to use. I did notice strange behavior when I tried to enter more than 80 data points, and I presume this is the limit. Unlike PFS GRAPH, which does a data analysis after you enter data to make sure every X has a corresponding Y, Versaplot will just ignore data when it is unpaired. This is a better technique when you are stuck with raw data that sometimes is missing a Y value. The FORMAT GRAPH provides a full page of graph display options that can be toggled on and off. These are:



DIM PLOT	COLOR
BAR PLOT	OVERLAY
ERROR BARS	YEAR PLOT
LABEL GRAPH	ZERO LINE
SCATTER PLOT	VERT LINE
INVERSE PLOT	HORIZ LINE
NO TICK MARKS	POINT TRACE
FRAME THE PLOT	RIGHT OFFSET
KILL AXIS LINES	AREA UNDER CURVE
XY AXIS DIVISIONS	GRAPH W/O LABELS

These options provide the scientific user with a great deal of flexibility in the presentation of the graph. Selected options that are toggled on stay on even if another module, like the editor, is loaded. This is good.

What Versaplot has in the way of displaying pie charts in four different combinations of pie and background colors along with perspective, it lacks in the display of the actual percentages of the pie. Where PFS GRAPH errs on the side of unjustified precision in computing the pie sub-area percentages, Versaplot provides no numbers at all. The user is left with only visual estimation of the percentages. This is unacceptable since the program has to compute the percentages anyway. Sixteen pie segments are possible with the option to place the label anywhere compared to PFS GRAPH's eight segments and fixed-position labels.

There is nothing slow about the plotting of the charts; I never had to wait very long even when the program had to shade the area under a curve. Also, you may operate on the data to transform it in the manner of some statistical packages. You may define a function that consists of the basic arithmetic and scientific functions so long as they form a legitimate mathematical expression and apply this function to the data.

ALTERNATE DATA INPUT

By using the LEXICOMM function (which must be loaded from disk), you may load VisiCalc files (after transformation to DIF format) and Statisitics With Daisy files (*Peelings II*, V3N5, 1982). It is from this menu that you send the printer interface the necessary commands to print the Hi-Res image if it is like a Grappler or Apple Dumpling that have these commands. As mentioned above, if you do not have this kind of printer interface, the best you can do is save the Hi-Res screen and dump it yourself with one of the printer dump programs.

(See *Peelings II*, V3N8, 1982.)

DOCUMENTATION

The Versaplot documentation was recently released in a small three-ring binder printed with a daisy wheel printer. The physical improvement over the former dot-matrix printed, spiral-bound manual may be considerable, but the manner of writing in the manual leaves much to be desired. The major problem with the documentation is the tutorial method of endless requests to press certain keys. It looks something like this:

PRESS D R D RETURN RETURN RETURN
PRESS D R D Y

Not only does this make for tiresome reading, but sometimes the request is simply made as a precursor to exactly undoing something that was just demonstrated. You never know whether you are being instructed to perform an act that leads to something interesting or being a guinea pig for a demonstration that you would prefer to learn by being told about it.

The manual spends entirely too much time dragging the user through every minutiae of the program in the style of the above instead of providing a coherent explanation of the available functions. This is the reason it takes so long from the time the package is opened until useful work can be done. I am certainly not a "toss-the-manual-and-boot-the-damn-disk" type of user, but in my estimation, the style of the manual causes undue delay in comprehending and utilizing the product. This is the principal cause for the low rating. In contrast, the PFS GRAPH manual is a model of excellence in human interface, good organization, clarity in exposition, and good use of visual aids.

Two of the things that helped me make sense of it all are an alphabetical command reference with page-number references and a fairly good index.

SUMMARY

Versaplot is a program that is competently written and provides a great deal of flexibility and power for the primarily scientific user. Unfortunately, the accompanying documentation seems to be a leftover from the old days when one technically minded person felt that all he had to do was *explain* everything in roughly the order in which it occurred to him, and the user would be happy. The documentation must be completely redone before this package can be easily used. This combined with the fact that (1) pie charts fail to show percentages and (2) there is no direct support for driving the software of selected dot-matrix printers like the MX-80 with GRAFTRAX and the Apple Computer printers forces me to give a non-recommendation. This is despite the fact that the author has left few stones unturned in providing most features needed by a scientific user.□

SPECTRASOFT RESPONDS

I recently received your review of Versaplot that will appear in the upcoming issue of Peelings II *magazine, and would like to respond in your letters section to its low rating. To begin, your reviewer praises most of the program, and points out very few difficulties, some of which will be rebutted below. Why such a low grade?*

According to your reviewer, it is the documentation, not the program, that receives the low grade. Is not the program just as or more important than the documentation? The review implies that the program is not easy to use. That opinion is not shared whatsoever from most of our customers that use Versaplot and have submitted comments. They comment on its ease of use! Some of these are individuals who own one or two other plotting programs — including the program you compare to Versaplot in your review!

The reviewer's "example" of a "typical" tutorial was taken from the first section only 3 pages from the beginning of the first tutorial. His negative remark of the "undoing" of a command appears in the same discussion. It appears that your reviewer did not continue at all with the manual, and reviewed the program in the same manner. To PROVE that the review was incomplete and inaccurate, the reviewer states "I tried to enter more than 80 data points, and I presume this is the limit". He completely missed IN THE FIRST TUTORIAL — only four pages away from the "example" of the tutorial that is cited in the review — the section on "reconfiguration of memory" which allows the user to input up to 200 data points in a column! This discussion is cited in the table of contents, the index, the reference section, and is mentioned throughout the entire manual. How competent and thorough can this review be?

The reviewer states "(Versaplot) took me two evenings to get to the point where something useful could be done." By the end of the second tutorial (28 pages from the beginning of the tutorial section) a user will have used almost all of the graph plotting and formatting commands and options, setting and changing the axis scales and defaults, use of single and-dual drive system, loading of diskette data files, printer slot settings, system operation, reset key protection, changing memory configurations, DOS housekeeping commands, and more. How much more comprehensive can the first 28 pages be? After all, for the beginner, one should spell out everything. Why penalize one program because it contains many more useful functions than another program, and contains more material in order to learn its complexities? To

☐ APPLE ☐ EAGLE ☐ IBM, PC ☐ NORTHSTAR ☐ TRS-80 II 8" ☐ OSBORNE ☐ FRANKLIN ☐ STANDARD CP/M 8" ☐

☐ ACCOUNTS PAYABLE ☐ MAILING ☐ SPELLING ☐ COMMUNICATIONS ☐ REAL ESTATE ☐ TAXES ☐ STOCK MARKET ☐ INVENTORIES ☐ HEATH/ZENITH 89 8"

☐ XEROX 820 ☐ GAMES ☐ COMPILERS ☐ UTILITIES ☐ BUSINESS ☐ ACCOUNTING ☐ SPREAD SHEETS ☐ MEDICAL ☐ DENTAL ☐ PAYROLL ☐ GENERAL LEDGER

RENT SOFTWARE BEFORE YOU BUY!

from our

SOFTWARE RENTAL LIBRARY

You can now RENT the most popular software available for just 20-25%* of Manufacturers' Retail Price

- Eliminate the risk—rent first!
- 100% of rental fee applies toward purchase
- All purchases are 20% Off of Manufacturer's Suggested List
- Rentals are for 7-days (plus 3 days grace for return shipping)

SPECIAL INTRODUCTORY OFFER

There are now 2 different plans to choose from:

Join the **Game Group,** $25.00 per year and rent as many games as you like for only 20-25% of Mfrs. Sugg. Retail Price.* Minimum order, 3 game rentals	Join the **Business Group,** $50.00 per year and rent as many business application programs as you like for only 20-25% of Mfrs. Sugg. Retail Price.*

REMEMBER, THESE ARE NOT DEMOS, BUT ORIGINAL UNRESTRICTED SOFTWARE PROGRAMS

(complete with manuals in original manufacturers' packages)

To Immediately Order, or for more information:

UNITED COMPUTER CORP.
Software Rental Library
Culver City, California

Toll Free CALL 1-800 992-7777
In California CALL 1-800 992-8888
In L.A. County CALL 1-213 823-4400

Canadian Orders Welcome

MasterCard AMERICAN EXPRESS VISA

*Plus postage and handling.

☐ EDUCATIONAL ☐ ACCOUNTS RECEIVABLE ☐ WORD PROCESSORS ☐ DATA BASES ☐ LANGUAGES ☐ GRAPHICS ☐

review one program and compare it to another in exactly the same context renders a totally biased viewpoint.

No mention was made that the manual is 120 pages in length, and that the last two tutorials are advanced overviews of the complex interplay between all of the formatting modes. It's there if the user needs to reference the material.

No mention was made in the review of the number defined step command that allows one to render virtually infinite differences in the same charts (no other plotter has this feature) which was also introduced later in the manual. Essentially key aspects such as remembering the filenames, single key menu driven mnemonic commands, ability to stop, continue, or return to the menu during the plotting mode, inverse and colored backgrounds, moveable labels, and erasable labels were not mentioned.

No mention was made of the system file storage. Versaplot will store a data file with the parameters of the entire system after the graph has been formatted and plotted. This allows the user to build a library of self-executable files, that, upon reloading, will allow one to press six keys and plot the chart exactly as it appeared when the file was saved. Is this an "unusable program"? I can recall scores of clients that have given me the opposite impression of Versaplot.

Also, there was no mention of the copyable automatic graph presentation program that is included with Versaplot, nor was there mention of the package coming with a backup diskette. These are features your readers should be aware of, and should have been elaborated on when comparing features to other plotting programs.

The reviewer says that you cannot use alphanumeric labels on the axis, and in one sentence renders Versaplot unfit for the business person. What he fails to mention (and did not take time to read) is that numeric labels on the axis can be erased, and an infinite number of MOVEABLE labels can be placed anywhere on the chart, including on the axis. These labels also appear on the self-executable files that were mentioned above. These features are what make Versaplot superior and more versatile than many other plotting programs, and should be included in a review of the program.

Versaplot is currently being used by schools, hospitals, corporations, students, the U.S. Government, and many individuals who recognize it as one of the best and most complete plotters available for the Apple II computer.

I agree that the manual is somewhat tedious, though again, Versaplot's complexity demands a complex discussion. Past users of Versaplot have mentioned that the manual takes six to eight hours to make full use of the advanced features. However, once learned, owners of Versaplot tell us that it is one of the easiest to use, comprehensive, most versatile (to coin a phrase) and fastest plotters available.

In summary, I believe your review was incomplete and inaccurate.

Sincerely,

Samuel Shultz
SPECTRASOFT

THE REVIEWER RESPONDS

If publishers of complex software want to make their products easily usable, they should do a good job of explaining their features and operation. Versaplot was the most frustrating package I have reviewed in a year. Nevertheless, I went through the entire tutorial. For those purchasers of Versaplot who are less experienced on their Apple than I am, I have much sympathy. I stand by my review and claim that an examination of the instruction manuals that come with Apple Business Graphics and PFS GRAPH will bear out my point.

In 1983 it takes more than a brilliantly written and executed piece of software to win high praise and ratings. It must be supervised by orderly, organized, and well thought out documentation. The power must be leashed and unleashed by a superb human interface both in the execution and in the instructions. Versaplot has a lot of power. I apologize for missing some of the finer points of the power mentioned in Mr. Shultz's letter which sets the record straight on those matters he considers important.

Two sentences in Mr. Schultz's letter point out the differences in his and my feelings about microcomputer software. First, only the direct comparison of software performance will prevent bias. Evaluating the performance of a program based on the best performance by all is, in fact, the only fair way to do product comparisons. If every program were evaluated only on the standards set forth by each author, every program would be AAA. Second, complex software should be complex because it is required to do a simple job. The simple job should be simply and clearly documented. A good example is Lisa's software. To claim that complex software requires a complex discussion is not, I believe, a philosophy that is universally supported.

Incidentally, it should be pointed out that the purchase of a microcomputer software package by an agency of the U.S. Government does not constitute an endorsement by the U.S. Government.□

APPLE II BUSINESS GRAPHICS

by Business &
Professional Graphics
Cambridge, MA
distributed by Apple Computer
20525 Mariani Ave.
Cupertino, CA 95014
408-996-1010

$175.00

Apple II Plus or //e

Rating: A-

Reviewed by John Martellaro

INTRODUCTION

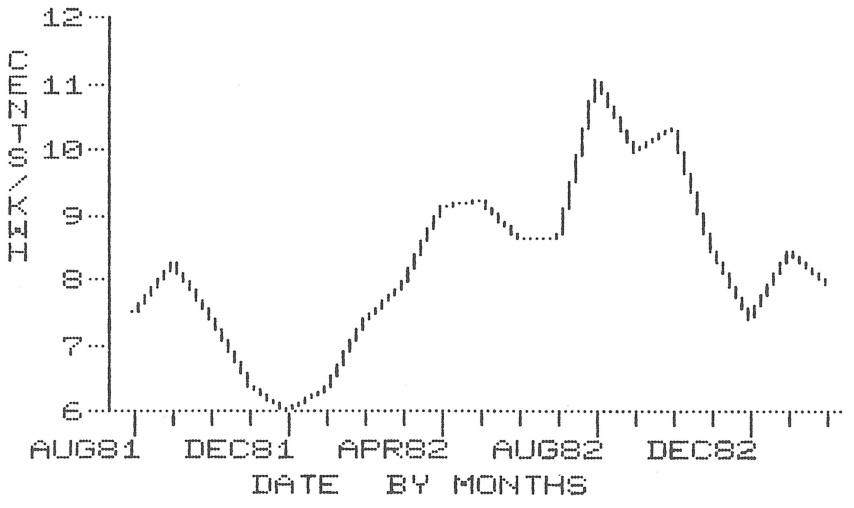
Apple II Business Graphics replaces Apple Plot (reviewed in *Peelings II,* V2N1, 1981). It considerably expands on the capabilities of Apple Plot, and it is now almost a complete plotting package. Those business and scientific users who are reasonably familiar with their Apple IIs will find most of what they need.

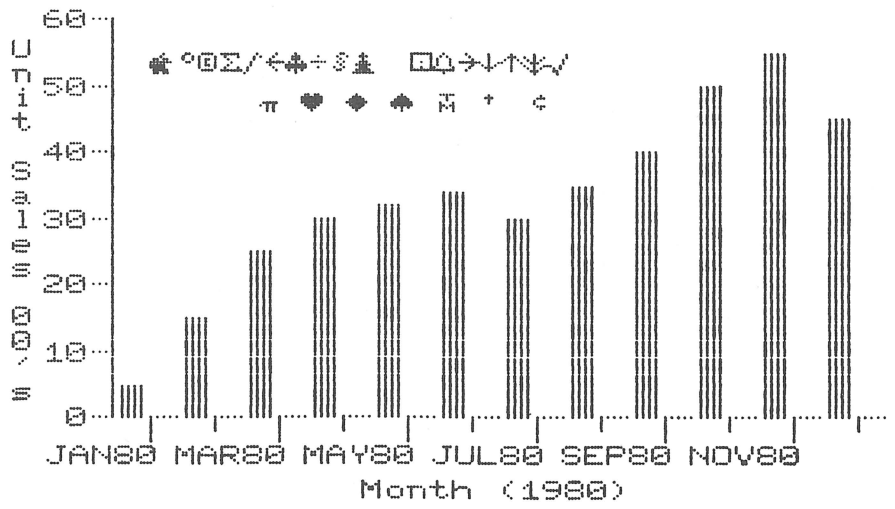
Apple II Business Graphics is much more powerful than PFS GRAPH, which is modest in its capabilities; and unlike Versaplot, the documentation of Apple II Business Graphics is excellent (PFS GRAPH and Versplot are also reviewed in this issue). On the whole, it has the best compromise between ease of use, power, and versatility of all the plotting packages that we have ever reviewed. There are a few problems, however, which shall be mentioned later.

CAPABILITIES AND OPERATION

This program is written in Pascal and is command driven. (You will need 64K of RAM.) There are essentially two modes: the Command mode and the editor. From the Command mode, you may select from about 90 commands that control the appearance of your graph. The basic methodology, like most plotter programs, is to generate data in a file, load it, and request that certain actions be performed on this data. Apple II Business Graphics will generate single, side-by-side, and vertically stacked bar charts. It will generate line graphs and pie charts. The X- and Y-axes may be numeric or alphabetic.

The editor of Apple II Business Graphics is easier to use and more coherent than PFS GRAPH because it uses the RETURN key in its natural way. A virtual memory technique, like that used by some word processors, extends the number of data points that can be handled to over 3,800 points. Alphanumeric labels do not have the provision for the dated format as with PFS GRAPH. Also, unlike PFS GRAPH, which autoscales numbers on the vertical axis into groups of 1,000 or 1,000,000, Apple II Business Graphics takes as much room as it needs on the left to represent very large numbers. So far as I could tell, there is no way to defeat this; the result is that large numbers eat up graph space. Items that are entered into the editor out of numerical sequence will not be





sorted. As a result, when drawing a line graph, the backtrace will produce a confused-looking graph.

Once data is entered, a command like DRAW BAR will produce the Hi-Res screen with the autoscaled axes and a bar chart. The command DRAW BAR 3 will produce bars one-third the normal width in preparation for overlaying up to three bar charts, either open or filled. The program automatically cycles through the available colors when drawing, in order to contrast the bars. If the alpha labels for each X-axis point are too long, they will be omitted as necessary. Titles may be placed in fixed default positions, or a floating title may be defined. A command such as SET HORIZONTAL FLOATING TITLE "title" will establish a box which can be moved with the I,J,K,M keys and which will eventually be replaced by the chosen title. Each time the box is moved, it moves twice as many pixels. This is easy programming but turns out to be enormously useful. You may place as many of these titles as you wish on the screen, and they may include the special graphics characters described below. Titles can be in lower case, but Y-axis titles do not read vertically (PFS GRAPH titles do read vertically). Instead the letters are horizontal and placed one above the other. As with Versaplot, pie charts do not show the percentage of each piece of the pie. I find this omission quite unbelievable. No shadowed or perspective charts are produced.

A running-sum graph is obtained by summing the data and then plotting it. PFS GRAPH has a special plot function that does this for you without modifying the data. I prefer the later technique. On the subject of modifying the data, Apple II Business Graphics has a fairly complete set of data transformation operations that are much easier to use than those of Versaplot, but not as wide in scope. Not only can you perform arithmetic transformations on the data but you can perform these operations *between files.* For example, ADD 5 will add 5 to every vertical value, but ADD <filename> will add the corresponding elements of a named file to the current data. The second file must have a similar format, however. In addition to arithmetic transformations, Apple II Business Graphics will try to fit various curves through a data set and give the user the polynomial coefficients and the closeness of fit. These curves are linear, logorithmic, parabolic, and sinusoidal. These curves can be drawn through bar graphs as well as line graphs and can be overlayed on previous graphs.

There are 26 special graphics characters that are assigned to the control keys. If you insert these into a title, they will show up on the graph (see the accompanying figures). All in all, except for a few irregularities mentioned above, I found the features and capabilities of Apple II Business Graphics to be far in advance of PFS GRAPH and the ease of use to be far in advance of Versaplot.

INTERFACING

Apple II Business Graphics saves its Hi-Res pictures onto a Pascal formatted diskette. Hence, you will need an additional utility to get these images off the data diskette and onto your own DOS 3.3 diskette for use with Hi-Res dump programs. Apple II Business Graphics supports only the following devices for a direct graphics dump: Apple Silentype printer, Qume Sprint 5/45, Hewlett-Packard 7225A/B, and Houston Instruments HIPLOT. We could not get our Qume to respond properly and have not figured out the problem. If you are using, for example, an Epson printer with Graphtrax, you will be out of luck unless you (1) have a 'PUFFIN' type of program mentioned above, (2) reboot on a standard DOS slave, and then (3) save the Hi-Res image. I find the failure to directly support the Epsons and Okidatas and the failure to provide a Puffin program most disappointing. Also, the program will not work with some 80-column cards as mentioned in the introduction to the manual. It definitely did hang when my Videx board was installed, and I was forced to switch over to a //e on whose 80-column card the program does indeed work. Further, the program will hang on loading unless your printer is both turned on and on-line. While on the subject of interfacing, it should be mentioned that there is only one good reason for a program like this to be command driven: that is the TAKE file mentioned below. I suspect that it might be less elegant but more useful to have some of the operations put under menu control. I feel that an occasional menu here and there would speed up operation and make the program seem more friendly.

On the positive side, Visicalc files converted to DIF format can be loaded as well as Apple PLot data files.

Overall, I would have to rate the interfacing aspect of the program poor because of the above mentioned limitations.

DOCUMENTATION

The documentation is excellent. It is over 230 pages in the new Apple-manual style with the fold-in rear-flap. It uses screen displays and occasional color to makes things clearer. There is a complete index and a two-color quick-reference card. As with the old Applesoft manual, each chapter has a header page with a partial table of contents. The manual is not quite as slickly produced as the PFS GRAPH manual, but it is clear and comprehensive. If you have trouble with a command, you can just type HELP (command).

OTHER FEATURES

Apple II Business Graphics has a feature called a TAKE file. A TAKE file is to Apple II Business Graphics commands as an EXEC file is to Apple DOS commands. Using the editor, you can save a file of commands that will be executed on command. This is especially useful for visual presentations. A DISTRIBUTE command allows the representation of the percentage of the data points that lie within an interval. A smoothed average is also possible.

CONCLUSION

This package would be an excellent overall plotting program if a few changes were made:

(1) Support the popular dot-matrix printers.

(2) Supply a utility to get Hi-Res images over to a DOS 3.3 diskette.

(3) Become more immune to foreign peripheral cards.

Because Apple II Business Graphics is a powerful and well-thought-out utility with excellent documentation, it deserves a high rating. The interfacing with the rest of the world seems to ignore typical users, but it is done, of course, to maintain uniformity and configuration control with Apple-supported products. This isn't a great justification, but it is at least understandable in some respects.

Those who know their Apple II well and have the required hardware should consider this package.□

Version 4.0

The Ultimate APPLE® Utility Program

COPY II PLUS

Now you can back up your protected software. Copy II Plus is the most sophisticated bit copy program available. It handles synchronized tracks, half tracks, nibble counting, bit insertion and other protection schemes. It also includes a comprehensive discussion of disk format and protection techniques, and instructions on how to back-up dozens of popular programs. A disk system and speed check assure your drives are running in top condition and a nibble editor will allow you to repair damaged diskettes, analyze protection schemes, etc.

The last DOS utility disk you will need. Fully menu driven, the Copy II Plus utilities include a catalog display with binary file addresses and lengths, a disk usage map, and the ability to verify and compare files for differences. It can copy, lock, unlock and delete files and DOS can be copied, or removed from a disk to free up space. You can change the greeting program on a DOS disk, or initialize a disk from scratch. The Copy II Plus sector editor will allow you to view and modify data in either hex or ASCII format.

For your convenience, Copy II Plus is not copy protected for backup.
Available at fine computer and software stores or direct from:

CENTRAL POINT Software, Inc.

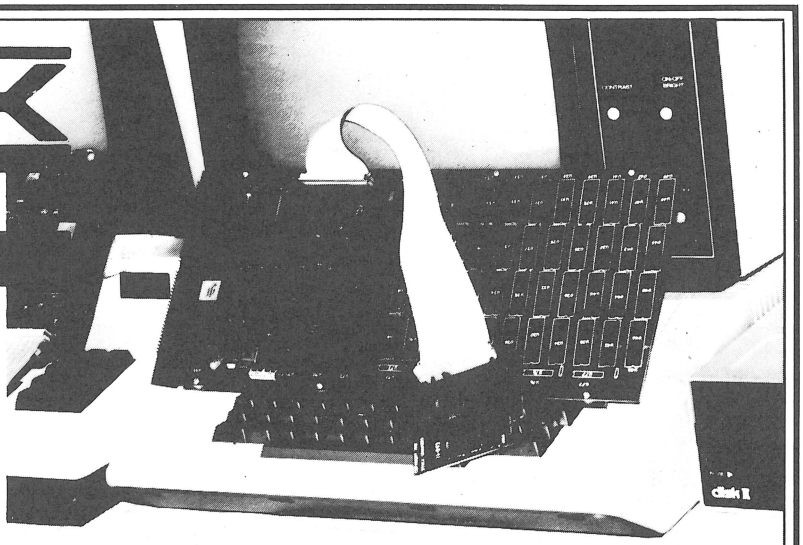
P.O. Box 19730-203
Portland, OR 97219
(503) 244-5782

$39.95

Attention current Copy II Plus owners: Return your original disk with $19.95 for an update to Version 4.0.

Attention IBM PC owners: Call us about backing up your protected software with Copy II PC!

DTACK



The 68000
DREAM MACHINE

NEW DOINGS AT DTACK
This ad is being written on 10 Feb '83. Keeping that in mind, we will tell you what has already happened and what is coming down the pike about the time you are reading this.

STATUS AS OF TODAY:
After a hiatus of about four months, Motorola has resumed production of the 12.5MHz 68000. In the past four weeks we have received about 150 of these devices, which permitted us to catch up with orders and upgrade 30 or 40 boards which had been delivered as, temporarily, 8MHz units. We actually have a surplus of L12s. Incidentally, most of our sales these days are 12.5MHz boards.

We mailed our newsletter #17 this past week, so we have over 300 pages of newsletter in print now. The more recent issues have been longer. For instance, #15 ran 32 pages and included the source code to a complete double precision floating point package, over 900 lines of code. A matrix inversion routine using the code was included. Issue #16 ran 30 pages and included a complete transcendental package using that double precision package, 845 lines of source code. In addition to the source code itself, we included 5 pages of explanations of how the transcendental functions work, what a Chebyshev approximation is and stuff like that.

For $77 an outfit in West Germany will sell you a chess program which requires a 60K DTACK board. This program is intended for serious tournament work. If you don't like games you can buy the Forth language for our DTACK board for $30 (add $15 more for assembly listings).

HARDWARE DOINGS:
We have designed a more complex Apple II interface card to allow transfers of blocks of memory between the 68000 and the 6502 at DMA rates. This allows, for instance, an 8K HIRES graphics page to be moved from the 68000 to the Apple II in less than 12 ms. That's less than the time for one screen update at 60Hz! Various sized blocks can be transferred and the transfer is bi-directional. The trickiest part was assuring that the transfer would **never** stomp on a disk read, or (horrors!) a disk **write.**

The prototype is fully functional and the layout has been farmed out to a consultant so that we can concentrate our efforts on the next project after that. By the time you read this, it should be possible to buy that special interface board for about $95 to $125.

The next project? Oh, yes. For those of you who don't need to run at 12.5MHz with no wait states, we are in the final design stages for our dynamic RAM version of the DTACK GROUNDED board. This board will have one wait state (DTACK is **not** grounded!) That board should be available about 30 days after the first appearance of this ad.

Some details: the board will have at least 508K DRAM, which is a smidgen (= 4K) less than half a megabyte. An expansion board will follow, permitting a megabyte of nice linearly addressable memory (the 68000 does **not** use memory segmentation). The Apple interface and the expansion connector will be **identical** to the present static RAM board.

Because of the wait state and a hardware/software refresh scheme, the effective clock rate will be equivalent to 10MHz without wait states. That's **twice** as fast as another, much more expensive 68000 machine which was recently announced!

A 68000 BASIC IS COMING!
Perhaps the best news of all is that Phase Zero Ltd., the outfit which sells the 68000 cross-assembler we have standardized on, is seriously working on a 68000 BASIC which will work with our DTACK board. Phase Zero is thoroughly familiar with Applesoft and intends that their 68000 BASIC be largely compatible with Applesoft.

SHOULD YOU BUY OUR BOARD?
We have received several letters criticizing our advertisements. Apparently we are supposed to say something like "everybody come buy a board right now". That isn't right, because our board is **not** for the mass marketplace at this time. It is (or they are) for the serious hacker, engineer or business type who wants to get a head start over the crowd by learning **early on** how the 68000 works and how best to apply it.Therefore, we describe our board as a development tool. We think that's accurate.

The guy who is writing this ad has written commercial assembly code for the Intel 4004 and 4040, for the Mos Technology 6502 and, for the past 20 months, for the 68000. If he was looking for a job, he could not find one programming the 4004/4040 today. He could not find a **good** job today programming the 6502. A word to the wise! Tempus is fugiting and the clock **don't** run backwards!

All is not lost. If you never programmed the Intel 4004, you probably don't know that the 6502 is much easier to program although it is also a much more complex part. Please accept our word that the 68000 is about four times easier to program in assembly language than the 6502 even though it is a much more complex part. Most people think that more **complex** equals more **difficult.** The reverse is true when it comes to programming microprocessors.

And we help you get going by providing 68000 source code on unlocked, easily copyable disks. Lots of it. Including the double precision floating point and transcendental package we mentioned earlier.

Perhaps you are a person who **should** buy our board?

DIGITAL ACOUSTICS
1415 E. McFadden, Ste. F
Santa Ana, CA 92705
(714) 835-4884

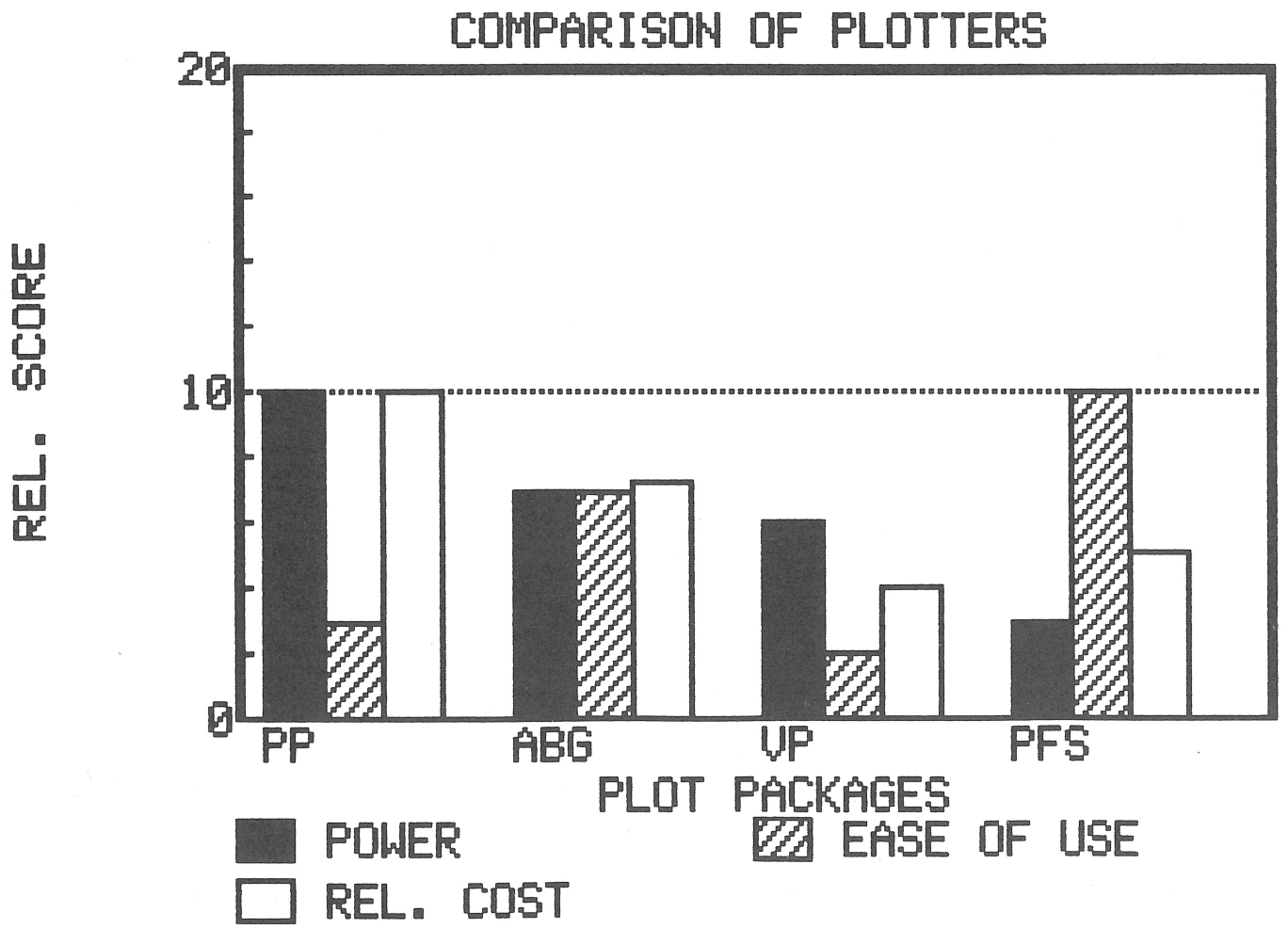
Apple, Applesoft and Apple II are trademarks of Apple Computer Company.

PLOTTER SUMMARY

Several plotter packages have been reviewed in the past by *Peelings II* culminating in a comparison chart in V3N5, 1982. The *Peelings* rating of these programs must, out of necessity, deteriorate in time because of advancing technology. The reduction is probably a whole letter grade.

Based on the reviews in this issue, it is safe to say that the ultimate plotting with respect to both power and ease of use package has not yet come to our attention. For scientific use, the most powerful program reviewed to date is clearly The Prime Plotter from PrimeSoft Corp., but the Scientific Plotter from Interactive Microware (V2N1, 1981) is still worth considering. If you want to write some specialized software, look at AmperGraph (V3N5, 1982) from Madwest Software because of its use of the "&". If you are a business user who has limited data sets, limited experience on the Apple II, and needs to produce simple charts quickly, you should experiment with PFS GRAPH from Software Publishing Corp. at your dealer. The two business oriented programs Visiplot from VisiCorp and Apple Business Graphics from Apple Computer, Inc. are similar to PFS GRAPH, more powerful but somewhat less easy to use. Versaplot from SpectraSoft is not recommended.

The accompanying bar chart shows our impression of the ease of use and power with relative cost added. In conclusion, if you a looking for the most powerful program for scientific or business use and are willing to spend several days learning the system, The Prime Plotter is your best choice. If Apple II Business Graphics supported the popular dot matrix printers, it would be the program of choice for most users.□



CUT TAXES • CONTROL EXPENSES • SAVE ON ACCOUNTING

Money Street™

CHECKBOOK FINANCIAL SYSTEM

For Apple® II, II+, IIe, III emulation, and Apple look-alikes - 48K DOS 3.3

WE'LL TRY TO DESCRIBE EVERYTHING MONEY STREET DOES ON ONE PAGE, BUT IT WON'T BE EASY!

It's as if someone said:
"Let's think of everything a checkbook program should do, and combine it into one fantastic program." Someone did and it's called Money Street.

Money Street can:

- Scan an electronic file of 2400 checks in 300 seconds.
- Sort checks (and deposits) into 100 business, personal, or tax categories.
- List a "history" of 2400 checkbook entries, showing the running balance each step of the way.
- Print monthly (and year-to-date) totals for 100 categories with the press of two keys.
- Locate a cancelled check in a file of 2400 in one minute!
- Roll over to new year in 3 minutes.

It's called Money Street. It can cut your taxes, watch your budget, or save accounting fees.

The idea is simple. As the computer balances your checkbook, it creates a valuable library of financial facts that can be sorted, listed,totaled, scanned, printed, or viewed.

For example, it can print totals of your tax deductions, credits, and income. You'll save hours of accounting time. You can get estimated amounts any time for tax planning. Or, if you run a small business, you can print year-to-date (and monthly) totals of sales, departmental expenses, or salaries. All categories are user-defined, so you can choose which items to track.

At home, Money Street can tally heating, telephone, or medical expenses. You get 100 user-defined categories plus sub-totals. Decide on the categories you want; then just type them in. Set-up time is usually less than twenty minutes; learning time is the same.

Besides this, Money Street does your checkbook and bank statement chores. It gets you in balance and keeps you there. The program prints seven separate audit reports, creates an easy-to-access cancelled check file, and gives you a detailed report of each reconciliation session.

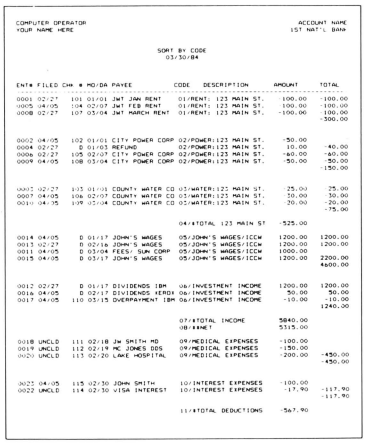
Money Street may be the only accounting program you need because one master program handles unlimited checking accounts. More than that, the program is tax deductible when used to collect tax data (See IRS Publication 17).

Additional Features.

- Split entries between codes.
- Fast machine language programming. Nine seconds from start-up to data entry.
- Handles unlimited checkbooks.
- Edit anything, any time.
- Credit card accounting.
- Cash accounting.
- Press Ctrl-Q for help screen.

15 Ready-to-print reports! Press four keys and the program will sort; then print any of 15 different reports. Just select from the Report Menu, and the program does the rest. Start-up to print time is usually 20 seconds. Reports include:

1. Monthly code totals
2. To-date code totals
3. Sort by amount
4. List code dictionary
5. Sort by payee
6. List deposits
7. List un'cld checks
8. List un'cld deposits
9. List all entries
10. Sort by date cleared
11. Print check registry
12. Print selected month
13. Print selected code
14. List code totals
15. List monthly totals



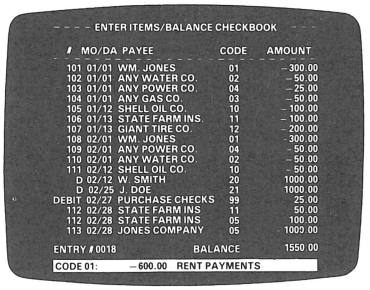
COMPUTER OPERATOR
YOUR NAME HERE

ACCOUNT NAME
1ST NAT'L BANK

SORT BY CODE
03/30/84

ENT#	FILED	CHK #	MO/DA	PAYEE	CODE	DESCRIPTION	AMOUNT	TOTAL
0001	02/27	101	01/01	JWT JAN RENT	01	RENT: 123 MAIN ST.	-100.00	-100.00
0005	04/05	104	02/07	JWT FEB RENT	01	RENT: 123 MAIN ST.	-100.00	-100.00
0008	02/27	107	03/04	JWT MARCH RENT	01	RENT: 123 MAIN ST.	-100.00	-100.00
								-300.00
0002	04/05	102	01/01	CITY POWER CORP	02	POWER:123 MAIN ST.	-50.00	
0004	02/27		D 01/03	REFUND	02	POWER:123 MAIN ST.	10.00	-40.00
0006	02/27	105	02/07	CITY POWER CORP	02	POWER:123 MAIN ST.	-60.00	-60.00
0009	04/05	108	03/04	CITY POWER CORP	02	POWER:123 MAIN ST.	-50.00	-50.00
								-150.00
0003	02/27	103	01/01	COUNTY WATER CO	03	WATER:123 MAIN ST.	-25.00	-25.00
0007	04/05	106	02/07	COUNTY WATER CO	03	WATER:123 MAIN ST.	-30.00	-30.00
0010	04/05	109	03/04	COUNTY WATER CO	03	WATER:123 MAIN ST.	-20.00	-20.00
								-75.00
					04	TOTAL 123 MAIN ST	-525.00	
0014	04/05		D 01/17	JOHN'S WAGES	05	JOHN'S WAGES/ICCM	1200.00	1200.00
0013	02/27		D 02/16	JOHN'S WAGES	05	JOHN'S WAGES/ICCM	1200.00	1200.00
0011	04/05		D 03/04	FEES/ SUN CORP.	05	JOHN'S WAGES/ICCM	1000.00	
0015	04/05		D 03/17	JOHN'S WAGES	05	JOHN'S WAGES/ICCM	1200.00	2200.00
								4600.00
0012	02/27		D 01/17	DIVIDENDS IBM	06	INVESTMENT INCOME	1200.00	1200.00
0016	04/05		D 02/17	DIVIDENDS XEROX	06	INVESTMENT INCOME	50.00	50.00
0017	04/05	110	03/15	OVERPAYMENT IBM	06	INVESTMENT INCOME	-10.00	-10.00
								1240.00
					07	TOTAL INCOME	5840.00	
					08	NET	5315.00	
0018	UNCLD	111	02/18	JW SMITH MD	09	MEDICAL EXPENSES	-100.00	
0019	UNCLD	112	02/19	MC JONES DDS	09	MEDICAL EXPENSES	-150.00	
0020	UNCLD	113	02/20	LAKE HOSPITAL	09	MEDICAL EXPENSES	-200.00	-450.00
								-450.00
0021	04/05	115	02/30	JOHN SMITH	10	INTEREST EXPENSES	-100.00	
0022	UNCLD	114	02/30	VISA INTEREST	10	INTEREST EXPENSES	-17.90	-117.90
								-117.90
					11	TOTAL DEDUCTIONS	-567.90	

How it works. On your computer screen, you create a facsimile of your checkbook. You see 17 items per screen and can scroll for more. As the computer balances your checking account, you give each check or deposit its own category code. You get 100 you name'em codes. Press Ctrl-O and see a code dictionary. To set up codes, just type them in. You can add, delete, or change codes any time without affecting data.



ENTER ITEMS/BALANCE CHECKBOOK

#	MO/DA	PAYEE	CODE	AMOUNT
101	01/01	WM. JONES	01	-300.00
102	01/01	ANY WATER CO.	02	-50.00
103	01/01	ANY POWER CO.	04	-25.00
104	01/01	ANY GAS CO.	03	-50.00
105	01/12	SHELL OIL CO.	10	-100.00
106	01/13	STATE FARM INS.	11	-100.00
107	01/13	GIANT TIRE CO.	12	-200.00
108	02/01	WM. JONES	01	-300.00
109	02/01	ANY POWER CO.	04	-50.00
110	02/01	ANY WATER CO.	02	-50.00
111	02/12	SHELL OIL CO.	10	-50.00
D	02/12	W. SMITH	20	1000.00
D	02/25	J. DOE	21	1000.00
DEBIT	02/27	PURCHASE CHECKS	99	25.00
112	02/28	STATE FARM INS.	11	50.00
112	02/28	STATE FARM INS.	05	100.00
113	02/28	JONES COMPANY	05	1000.00

ENTRY # 0018 BALANCE 1550.00

CODE 01: -600.00 RENT PAYMENTS

Money Street's most amazing feature is its "real time" data bank. It accumulates year-to-date totals for each of the 100 categories. You see these totals instantly. Just enter a check, and look at the bottom of the screen. The year-to-date total will flash into view with each new entry.

Pays for itself. Money Street keeps things simple and keeps them honest. It can pay for itself ten times over just by saving the cost of organizing and totaling data. As one customer put it: "Why pay my $100-an-hour CPA to count beans?"

Happy customers. For us, the best thing about Money Street is our happy customers. Every day we get letters like the one from Jerry Losse of New York who wrote: "I'm very pleased. Money Street does everything but go to the bank".

- Keller Watson of California wrote saying, "The speed of operation is fantastic, the double cursor is a help to tired old eyes, and the data bank totals are worth the price of the whole program."
- A.W. Matthews of Colorado wrote to say, "...it is truly a relief to purchase software that does as advertised."
- William Sampar of Fairfax Station, Virginia wrote: "Money Street is everything you claim it to be. I love it. I love its speed and ease of operation."
- Glenn Rodkin, president of Oklahoma City Apple Users Group wrote: "Tremendous! It's fast, reliable and covers all the contingencies a checkbook program should."
- Michael Salesin of West Bloomfield, Michigan wrote: "When next year's tax season rolls around, my accountant will send you love and kisses."
- Howard Serotta of Lansdale, Pennsylvania said: "I am totally pleased with Money Street. I like the sub-totals, the speed, and the many print options."
- Hisher Logic of San Luis Obispo, California wrote: "It's doing all my bookkeeping (six accounts)—what a time-saver."
- Gary Rominger of Sacramento, California wrote: "It works! I love it! Your claim of 30 minutes to learn it is fully justified."

If you own real estate, Money Street tracks rents, tallies repair costs, and helps establish "cost basis" for capital gain tax treatment. It's also ideal for trust accounting, retail stores, and home budgeting.

Money back no matter what. Why not give us a try? If you aren't delighted, we'll give you a full refund on any mail order purchase from us.

Includes tutorial, map, and reports. Money Street includes Program Map, complete documentation, on-screen demo, plus tutorial. For Apple® II, II+, IIe, III emulation, and Apple look-alikes. Requires 3.3 DOS, 48K. Money Street works with one drive, but two are preferred. It's also okay without a printer, but you'll miss a few reports. Master Charge, Visa, COD okay. Add $2.50 on all orders for postage and packing. To order or get additional information: call 24 hours and leave your name with our friendly answering machine.

The program is copy protected. We sell back-up disks for $10. We also offer a special utility disk that makes two back-up copies, makes quick copies of data disks, and allows fast sorts of selected months or code categories. Price is $25.

Computer Tax Service
P.O. Box 7915
Incline Village, NV 89450
(702) 832-1001

$99.95

Money Street is a Trade Mark of Bullseye Software. Apple is a registered trade mark of Apple Computers, Inc.

Dealer: Write or call for price list.

GRAPHICS PROCESSING SYSTEM

—Professional Version—

Author Unspecified
Stoneware Inc.
50 Belvedere Street
San Rafael, CA 94901

$179.00

Rating: A–

Reviewed by Edward Burlbaw

Graphics Processing System (GPS), Professional Version, is a drawing/graphics system. GPS is not advertised as a graphics plotting package, although it is possible to use it as such.

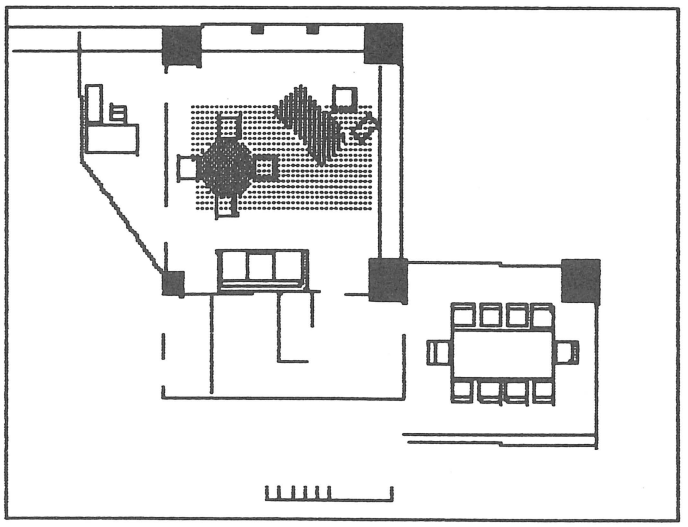
GPS can be used with several different input and output devices. The most widely available drawing tool is, of course, the game paddles/joystick. The graphics tablet and Symtek light pen are also supported. Hard copies of drawings can be made with the Silentype, Epson MX-80, and IDS 460 and 560 printers. The Hi-Res screen images may be saved to disk and later reproduced with other dump programs or cards which support a wider variety of printers. Line drawings can be reproduced using Houston Instruments Hiplot, HP 7470A, and Strobe 100 graphics plotters.

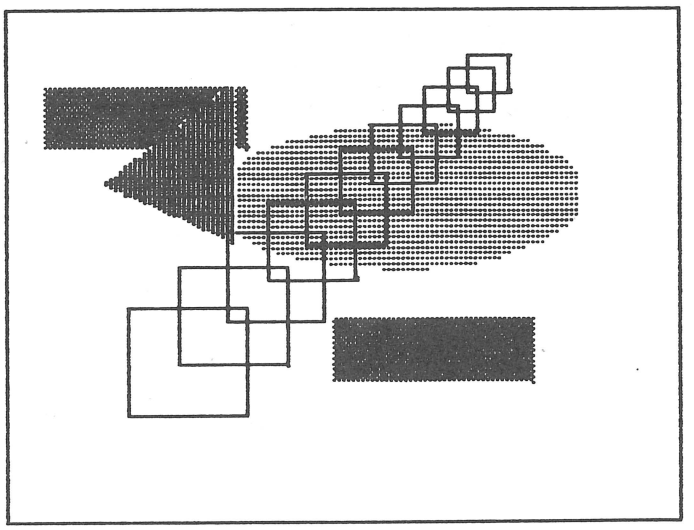
FEATURES

GPS is driven by multiple levels of menus. Each menu or submenu is displayed on the bottom part of the screen, and the features may be selected by moving the cursor over the selection. This works very well with a joystick, and I can imagine it would work even better with a light pen or graphics tablet. Each menu has Cancel or End Option for returning to the drawing screen. The main menu consists of the following:

DRAW	**ERASE**	**MODIFY**
DUPLICATE	**DISPLAY**	**GROUP**
INFORMATION		**CANCEL**

Choosing the DRAW menu displays options that allow you to create line drawings, either freehand or by drawing straight lines between selected points. The lines may be in any of the available colors (more on colors later). Parts of lines may be erased by selecting the beginning and end of the segment. The DUPLICATE menu contains options to duplicate the images on the screen to (or from) disk, to the printer, or onto the screen. Images may be saved to the disk in either GPS or standard Apple (binary) formats. An image may be composed of independent parts called Objects, or groups of objects called Groups, or an entire Hi-Res image, possibly even from another program. The entire image can be duplicated or only parts may be selected. DISPLAY permits one to display the entire picture or only objects or groups on the screen. Also contained with these options is one which enlarges the picture by a factor of 4x or 16x. Perhaps the most powerful group of options is the MODIFY group. This allows you to add to your drawing, change the color of the background and/or lines, and color-fill areas of the drawing. Colors may be selected from the six available Apple colors and mixed two at a time, if desired. You may also move objects or groups to different positions and change their rotation, size, and proportions. If you wish to reposition objects with respect to other objects, such as placing one object in front of instead of behind another, this can also be done. If you are using paddles or joystick, this can be done without touching the keyboard. The MODIFY options may only be used on objects created by the GPS. While it is possible to include Hi-Res pictures from other sources that have been saved as binary files, it is not possible to alter them in the same ways that one can alter the GPS created objects. The GROUP option is used to create new groups from existing objects or groups, either by rearrangement of objects or addition or deletion of objects from existing groups. Selecting





INFORMATION will allow you to check the amount of free memory remaining or do a catalog of the disk. The catalog will provide a list of every drawing on the disk, identified by type (i.e., group, object, or picture). If a 16K RAM card is available, it is possible to temporarily store a picture there as a "background". The background can be displayed on the screen and modified by drawing over it. This does not require the same amount of memory as it would if it were retained as an object.

That describes the essential features of GPS. It is quite easy to learn to use the many options, but it takes some practice to become skillful enough to do complex drawings. Mechanical drawing can easily be done with the joystick option. Freehand artistic expression would almost require a light pen or a graphics tablet.

A special-features disk is also included with the GPS package. This contains two character fonts and a grid-maker program. The grid-maker will create grids of any size as objects so that the screen will appear as graph paper for more accurate placement of objects. The grid can then be erased, just as any other object can, leaving a nicely aligned drawing. This greatly facilitates architectural or electronic type drawing which requires careful placement of objects. The fonts consist of separate files on the disk containing individual letters. One set contains normal text composed of lines. The other set, called Area Characters, are block-style letters that can be rotated, color filled, and generally treated as any other object on the screen. Either of these fonts must be accessed and placed in position one letter at a time. There is no "type" mode that would allow direct placement of the letters on the screen. The manual and advertisements show a bar graph, supposedly created using GPS, with labeled axes and a title. From my experience, it would have taken someone with considerable patience to construct such a plot with GPS.

Only those pictures which are saved using GPS format may be plotted on the supported plotters. These are only drawn as line drawings with no color filling. Filling could be accomplished if it were done by using multiple lines rather than the area-fill option.

DOCUMENTATION

The manual contains clear, concise instructions for use of each option. There is no tutorial, as such, to demonstrate all the features of GPS, but there is "local" tutoring. Each of the sections suggest activities to become familiar with the commands of that section. There is an appendix, glossary, reference guide, and quick-reference chart. One section addresses color compatibility with the Apple II.

A free backup is provided upon receipt of the user registration card. A diskette found to be defective within 90 days will be replaced free of charge. After 90 days there is no return policy.

SUMMARY

The power of GPS is impressive. Its many features facilitate creation of sophisticated Hi-Res screen images. I did find it difficult to construct pleasing freehand drawings using the joystick/game paddle option. A graphics tablet or light pen would almost be a necessity for such work. There are other graphics packages on the market that do allow more control using a joystick or game paddles, and these should be considered if you do not have a graphics tablet or light pen. The direct support of other printers is perhaps not so important any more with the advent of graphics-dump cards and utilities. Even so, the ability to include the control character sequence required by a particular card would be a welcome addition.□

TGS: THE GRAPHICS SOLUTION

by Herve Vanclef
Accent Software, Inc.
3750 Wright Place
Palo Alto, CA 94306
415-856-6505

$149.95

Rating: A

Reviewed by Tom Little and John Mitchener

The Graphics Solution is a program which allows a non-programmer to create and edit complex animated graphic sequences for later presentation. It comes on two disks with a comprehensive manual in a padded binder. The basic technique used in the graphics editor is a rather original one. Images are drawn on the Lo-Res screen and saved as "shapes". These shapes are later "dropped," intact, onto the Hi-Res screen through a 40 x 40 window. The window can then be moved to a different spot, and another shape may then be dropped onto the Hi-Res screen. A sequence of such action is saved to disk, constituting an animated presentation.

THE LO-RES MODE

TGS uses the Lo-Res graphics screen for detailed design of portions of the final presentation. The images produced here are called "shapes" but must not be confused with Applesoft shapes. A cursor is moved around the Lo-Res screen with the A/W/D/X quadrant of keys. The Space Bar is used to cycle through the three plotting modes: Plot (pen white), Erase (pen black), and Retain (pen up). Because of the interesting nature of the Hi-Res colors, the Lo-Res mode does not allow arbitrary coloration of the points since this could not be preserved on the Hi-Res screen. Instead, the color set can be selected, and individual points can be complemented. This concept is meaningful to students of Apple Hi-Res graphics, but is also explained in the manual for the uninitiated.

One of the original capabilities offered by TGS is the elongation or compression of the image in either the horizontal or the vertical direction. Basically, this works by slicing the image at the cursor position, then separating the pieces and interpolating (for elongation), or erasing and overlapping (for compression). This works best, naturally, for images composed largely of simple horizontal or vertical lines.

At all times with TGS, the bottom lines of the screen indicate the current mode, status, and options. The keyboard is used exclusively for all actions.

HI-RES MODE

This mode displays a window on the Hi-Res screen. This window is the same size as the Lo-Res screen, i.e., 40 x 40. The window can be moved right or left seven pixels at a time, or up and down by either seven pixels or one pixel. Motion is accomplished with the same quadrant of keys as in the Lo-Res mode. A copy of the Lo-Res screen can be dumped at any time into the window, either becoming superimposed upon or erasing what's already there. It is also possible to go the other way, dumping a section of the Hi-Res screen onto the Lo-Res screen for detailed editing.

At any time, the contents of the window can be filed away as a "shape" which may later be drawn anywhere on the screen. Note that the shapes are not created in Lo-Res mode: *any* section of the Hi-Res screen (so long as it's 40 x 40) can be filed in the shape table and copied. The Arrow keys cycle through the shapes in the table, and you select which one to plot by number. It's advisable to either have a list of the shapes you've made or a good memory.

"Frames" are added to the "film", or animated sequence, by a simple CTRL-Z. In the final presentation, the current shape will be displayed at the current window position for an amount of time set by the user. It is very handy that if you move the window just a little, the next frame will erase the previous shape (which is still inside the window, unless it is very large), thus giving true animation without the plot-erase drudgery.

"Shift-animation" is also available. A shape may be plotted shifted one pixel right or left. This gives greater precision of motion than would be possible with the window limited to moving seven pixels at a time.

The film sequence and shape table can both be easily edited since both

Insert and Delete commands are available and you can readily move backwards or forwards through either the shape table or the film.

OTHER MODES

Show mode runs the film which has been composed in the Hi-Res mode. The presentation can be interrupted, single-stepped, or single-stepped backwards.

The Speed mode allows you to edit the time each frame is displayed on the screen. This is a very nice way to control the pace of the film.

The text mode is a Hi-Res character generator, allowing text to be added to the Hi-Res screen as part of the film.

The Line mode is used for drawing lines on the Hi-Res screen by just defining the end points, rather than tediously setting each point in the Lo-Res mode. Similarly, Circle mode draws circles of any size at any point on the Hi-Res screen.

MACROS

Throughout TGS, there exists the capability to define and use a single macro. You enter Macro Definition mode with a CTRL-R. After this, every keystroke is recorded internally. The next CTRL-R exists Macro mode. Subsequently, typing R executes all the keystrokes which were recorded during the macro definition. This means that long sequences of actions which are often repeated can be executed at the touch of a single key. This is excellent for animation since the sequence of moving the window, plotting the shape as a new frame, and moving the window again must be repeated many times.

It would be convenient if two or more macros could be defined and retained. TGS allows only one at a time, however.

THE FINAL PRODUCT

When you're all done, the easiest way to show off your creation is to run TGS in the Show mode. However, for those who want to incorporate the film into a larger context (another program, for example), instructions are supplied on how to use the "PROJECTOR" (the TGS machine language program which displays the film) from another program.

This is a very good product. It is easy to use and the animation is fast and smooth (the bottom line on any graphics system). TGS is not a complete set of graphics utilities, rather it emphasizes the production of animated sequences (films). It may be used to edit and enhance business graphics produced by business plotting packages, to include animation of the charts for eye-catching effects.

A minor disappointment was the manual's promise of "hidden line animation", in which objects can pass behind one another. Actually, doing hidden line animation with TGS consists of plotting both shapes, then editing out — point by point — the lines you want to hide.

DOCUMENTATION

The manual is well written, consisting largely of a tutorial leading you through the modes and features of the system. The reference sections at the back of the manual are complete and well organized. Everything necessary is in the manual and is where you expect it to be. The "reference card" is just a diagram illustrating how to go from one mode to another and does not contain a complete list of commands (a complete list of commands is included in the back of the manual, however).

EVALUATION

TGS is beautifully carried out. It does what it does very well, and is effectively documented. Who needs TGS? It is most suited for someone who needs to use animated sequences for teaching, business statistics presentations, TV productions, or sales tools. TGS is not a program for developing arcade games. The price of TGS may be considered high by the hobbyist, but is reasonable for the business user who could pay many times the price of the package for equivalent material produced by another means.□

We Are Not
PIRATES
But We Can Show You How
To
UNLOCK LOCKED-UP
SOFTWARE
with our complete program listings
and step-by-step instructions
YOU CAN, TOO!

IN-DEPTH COVERAGE
of
Special Interest Subjects
• GRAPHICS • DATA BASES
• UTILITIES • GAMES
For Hobbyists and Advanced Computists
Published Quarterly

hardcore
HARD FACTS
on
APPLE SOFTWARE
An Unprecedented and Controversial disclosure of closely-held
COMPUTER SECRETS
How to: Back-Up Disks
Customize
Commercial Programs
Undo Copy-Protection & More!
Published 8 times yearly

Make checks and money orders payable to:
CORE/HARDCORE Computist
P.O. Box 44549G Tacoma, WA 98444

Subscription Rate:
Annual $20.00 for 8 issues of HARDCORE Computist and 4 issues of CORE
Canada: $29.00 Mexico: $32.00
Overseas, foreign countries: $42.00
Sample issues: $5.00 each, in U.S.A. $8.00 outside U.S.A.

Name:
Address:
City: State:
Country: Zip:
Payment must accompany order.
U.S. funds only. No credit cards.

ACCU-SHAPES

by Jason Marks
Accent Software
3750 Wright Place
Palo Alto, CA 94306
415-856-6505

$49.95

ROM Applesoft

Rating: A+

Reviewed by Tom Little

SHAPE BUILDERS

ACCU-SHAPES is an Applesoft Shape Builder, a utility to facilitate the creation of shapes and shape tables, used by the Applesoft DRAW and XDRAW commands for graphics and animation.

Applesoft stores shapes as a sequence of moves rather than as a set of points. For this reason, all the Shape Builder programs that came out when the Apple was still fairly new used the easiest method imagineable for shape creation: the user drew the shape on the screen with a cursor, and the program recorded the moves and translated them into an Applesoft shape.

ACCU-SHAPES has a unique and superior approach. You first draw the shape on the screen, then retrace the moves to store in the shape definition. This means that you can work on aesthetics first and efficiency later. In addition, ACCU-SHAPES can run the Trace mode semiautomatically, so you don't have to trace over single lines one point at a time.

MAKING A SHAPE

The shape is designed and traced on the Lo-Res screen, making it easy to see what you're doing. ACCU-SHAPES works very much like Accent's TGS: THE GRAPHICS SOLUTION, (see review in this issue). The cursor is moved about the screen with a quadrant of keys. Pixels can be set as either Plot (yellow is used) or No-Plot (blue). These determine the Plot/No-Plot modes in the shape definition during a subsequent trace. Also included are the commands to expand or compress shapes horizontally or vertically (see the TGS review).

Once a shape has been designed, Trace mode is entered and the program attempts to compile the image on the Lo-Res screen into an Applesoft shape by following the lines of blue and yellow pixels, starting at the cursor and pausing any time there is an ambiguity about the direction to take. As it traces the shape, it changes yellow to orange and blue to green, making it clear how much of the shape remains to be compiled. When it meets a "fork in the road", the user indicates the direction to take from the keyboard. The user can also single step the trace, effectively putting the program under manual control.

The Trace can be terminated at any time, with no damage done. This is good for those times when you realize you've traced the shape incorrectly.

VIEWING THE SHAPE

The HGR mode allows you to see the shape you've just created on the Hi-Res screen. All the expected options for color, rotation, and scale are provided, and it is possible to move the shape to any place on the screen with the familiar quadrant of cursor-movement keys. You can also do either regular DRAW or XDRAW, which is useful for visualizing your shape in real-life applications.

When you are satisfied with the way your shape is behaving, you can enter the Table-Options mode where you can edit the entire shape table. Shapes can be inserted or deleted from the table at arbitrary positions, which adds flexibility. Shape tables can be saved to disk and loaded back into memory. The program displays all the shapes in the table, 15 at a time.

DOCUMENTATION

ACCU-SHAPES' documentation is a 22 page booklet that consists largely of a tutorial. Like the TGS documentation, it is thorough, complete, and easy to use. Using the shape tables from an Applesoft program is explained well.

The program comes with the Apple character set as a shape table. This is useful from a practical point of view and provides a good data base to experiment with when learning the program.

CONCLUSION

ACCU-SHAPES is a creative approach to shape building and worth the price if you'll be using Applesoft shapes a lot. Applesoft shapes, though not as flashy as animation techniques offered by some modern graphics utilities, are still easy to use and incorporate into a variety of applications.□

DELTA DRAWING

Author Unspecified
Spinnaker Software Corp.
215 First Street
Cambridge, MA 02142

$49.95

MicroMotion FORTH-79

Rating: AA

Reviewed by Sandy Abernathy

INTRODUCTION

Delta Drawing, version 2.0, is a software package for the beginning computer user (parent, teacher, child) who wants to explore a graphic environment. The suggested age range is four through fourteen. Although the program itself is written in FORTH, what the user sees bears a remarkable resemblance to the graphics portion of LOGO. Delta Drawing does not have all the capabilities of the LOGO language, but it does have one major advantage — extreme user friendliness. The young child, as well as the adult, can use the software successfully after only a few minutes.

Spinnaker has packaged the disk, manual, and laminated cards in a sturdy, hard, book-shaped plastic container that is easy to hold and store. The software may be used with a color or monochrome monitor as well as a printer. However, only two interface cards can produce hard copy. With a CENTRONICS-type parallel printer card, "programs" can be printed, while with a GRAPPLER printer interface card, the picture can be printed as well.

DOCUMENTATION

The manual is written for the parent and teacher. It includes a table of contents, an introduction, a tutorial, a reference guide, and a glossary. It is easy to understand but is printed using compact text. I found this kind of text a little difficult to read at first.

In addition to the manual, eight laminated cards with instructions printed on both sides are included. One card contains loading procedures and a summary of all commands, four are a quick overview of basic commands, two others show examples of pictures or designs, and one has directions for initializing a data disk. The cards do not use all available commands, so the manual must be referred to for the more advanced commands. Although cards appear to be made with children in mind, the print is too small and compact for children in primary grades to read easily. This may be viewed as a disadvantage by some. However, Delta Drawing *invites* exploration. If I used it with young children, I would introduce them to the commands and the design structure, make a big chart with the commands on it, and let them create. Looking at examples of finished pictures and programs might tempt some children to merely copy.

PROGRAM

The program uses a minimum of keystrokes, and command keys are chosen logically. For instance, D signals draw, R signals a right turn, L signals a left turn, and so on. No problems were found in "programs" written in the manual or on the cards, and error trapping within the program is adequate.

Delta Drawing has several very nice features. One is ease of use. Most commands are executed by pressing a single key. Pressing D produces a line about a centimeter long, pressing R or L turns the delta right or left 30 degrees, and pressing M moves the delta without leaving a line. Half R, L, D, and M moves are possible by holding the CTRL key down and pressing the appropriate letter key. The REPT key may be used with the commands, also. CTRL D CTRL R, repeated 24 times, produces a fairly accurate circle.

A second feature is the ability to toggle back and forth between the graphics screen and text screen. The user can draw a design and then press T to see what the "program" looks like. Conversely, the user can write a "program" and press G to see what the design looks like. The ability to move back and forth during the creation of a design should encourage planning and analytical skills.

A third feature that also encourages thinking and planning skills is Delta Drawing's ability to store nine "programs" per design. Each "sub program" can be used in another "sub program" to produce a final design. For instance, in drawing a circle design, Program 1 may consist of a half line with half turn of 15 degrees, Program 2 will repeat Program 1 twenty-four times and turn the delta

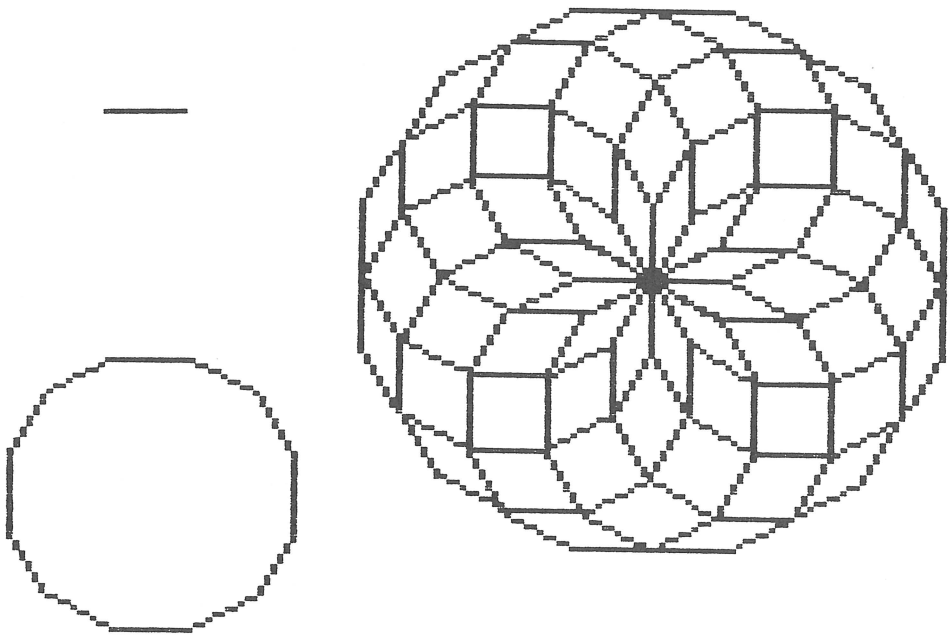
one turn at the end, and Program 3 will repeat Program 2 twelve times. Here is what the "program" looks like:

```
1<...      ↑ D..      ↑ R.....>1
2<...     24 <1>..      R.....>2
3<...      12<2>.....       >3
```

With prior planning, intricate designs may be produced with relatively few keystrokes.

An additional feature, which may be intriguing to some users, is the choice between Wrap or Bounce mode. If the program is in Wrap mode, the delta will move out of the screen window and appear at the opposite side when it is commanded to move beyond the boundary. In Bounce mode, however, the delta will strike the boundary line and bounce back the specified distance.

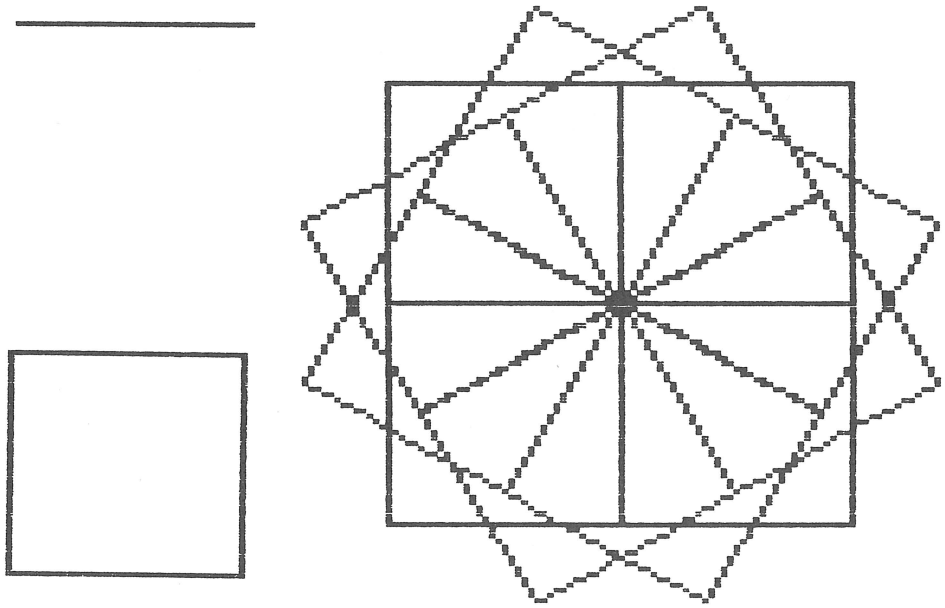
If a color monitor is used, colors can be specified and shapes and backgrounds can be filled in with color.



SUMMARY

If you are already programming in LOGO, then this package is probably not for you since it does not have all the LOGO features. However, if you are a parent or teacher with young (and older) children and you want very easy-to-use LOGO-like software, you should seriously consider this package. As with LOGO programs, Delta Drawing is open-ended, allowing the user to creatively explore the world of design and drawing. However, with Delta Drawing, the user does not have to learn a programming language.

If nothing else, Delta Drawing is fun to use and the amount of thinking is dependent on the curiosity of the user. This program may lead the user to want to learn the LOGO language or another programming language.□

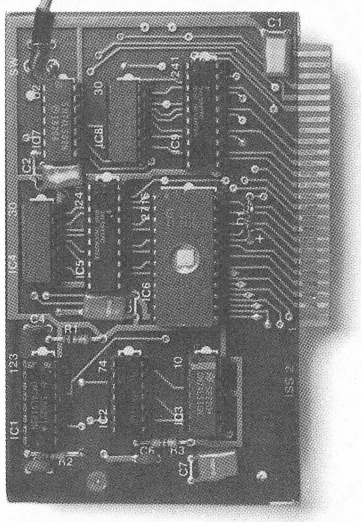


NEW FOR APPLE II

WILDCARD™

MAKES BACK-UP COPIES OF PROTECTED SOFTWARE QUICKLY, EASILY, WITH JUST A PUSH OF A BUTTON.

New software locking schemes have rendered even the latest generation of copy programs virtually unusable. Locksmith™, Nibbles Away™ and other "Nibble copiers" require complicated parameter settings, much patience and great effort to use. More often than not, the results are disappointing. WILDCARD is different. Rather than copying disks track by track, WILDCARD ignores the disk and any copy protection encrypted on it. Instead, WILDCARD takes a snapshot of memory in your Apple® II. Now you can make back-up copies of protected software with the push of a button.



Features

- □ Hardware copying device... push button operation.
- □ Copies 48K memory resident software, most 64K software.
- □ No programming experience or parameters necessary.
- □ Backs up DOS 3.2 and DOS 3.3 disks.
- □ Creates DOS 3.3 unprotected and autobooting disks.
- □ WILDCARD lives in any slot. Undetectable by software.
- □ Produces autobooting disk in 2 minutes.
- □ Copies are DOS 3.3 compatible.
- □ Copies become accessible for alterations.
- □ Simple, easy-to-use software included.

WILDCARD *Utility Disk 1* also available, featuring:

- □ Automatic program compression and BRUN file maker.
- □ Multiple programs can be placed on the same disk.
- □ Recreates basic files to load and save.
- □ Files can be placed on a hard disk.....and more.

Software is not copy protected. System requirements: Apple II Plus with 64K and DOS 3.3 or Apple *II*e. Franklin Ace also supported.
*Wildcard does not operate with CP/M® or other microprocessor based software.

Order direct from East Side Software Co., 344 E. 63 St., Suite 14-A, New York City 10021, 212/355-2860. Please include $3.00 for handling. Mail and phone orders may be charged to MasterCard and VISA. N.Y. State residents add sales tax. Dealer inquiries welcome.

WILDCARD	**$129.95**
WILDCARD *Utility Disk 1*	**$30.00**

IMPORTANT NOTICE: The WILDCARD is offered for the purpose of enabling you to make archival copies only. Under the Copyright Law you, as the owner of a copy of a computer program, are entitled to make a new copy for archival purposes only and the WILDCARD will enable you to do so. The WILDCARD is offered for no other purpose and you are not permitted to utilize it for any other use, other than that specified.

Apple II is a registered trademark of Apple Computer, Inc. CP/M is a registered trademark of Digital Research, Inc. Locksmith—trademark of Omega Microware, Inc. Nibbles Away—trademark of Computer: applications.

PAPER GRAPHICS

by Robert Rennard
Penguin Software
830 4th Avenue
Geneva, IL 60134
312-232-1984

$34.95 (Apple II DOS and Pascal versions)
$44.95 (Apple /// version)

Rating: A+

This product was formerly ADVANCED GRAFPAK, distributed by Smartware.

Reviewed by Michael Weasner

INTRODUCTION

Paper Graphics is another graphics-dump program for the Apple II (or /// in Emulation mode; a separate Apple /// version is available). It has all the features you would expect in such a program plus some extra ones that improve its utility. It is unlocked and has standard DOS 3.3, so you can make any modifications you might need, either to the DOS or the programs, most of which are Applesoft BASIC. The print drivers can be incorporated into your own programs using some simple instructions provided in the manual. Only the Apple II version is reviewed here.

FEATURES

Paper Graphics is menu driven and has four options:

ZOOM HI-RES PRINTING
QUICK HI-RES PRINTING
RUN GRAPHICS COMPOSER
CONFIGURE / RECONFIGURE

The 5 1/2 x 8 1/2-inch manual has 31 pages of very complete information on using each option. There is also valuable information on using the drivers in your own programs. Rather than list all the printers and interface cards that Paper Graphics can be used with, I'll just say that there probably isn't a printer (dot matrix, thermal, ink jet, or letter quality) or card that it can't be used with. If your combination isn't available on the Configure option, then there are tips in the manual that can be used as a starting point. If these tips don't help, you can call or write Penguin for their consultation.

The manual has a complete table of contents that will direct you to any subject needed. The program is user friendly enough so that after a couple of runs using the manual as guidance, you will probably never need to refer to it again.

With Paper Graphics you can:

- Load/Save pictures to/from either Hi-Res page in Normal or Compressed mode (to save disk space)
- Move picture around on the screen
- Specify area to be printed (zoom feature)
- Add text to the picture
- Frame the picture with a colored border
- Print upright, rotated, flipped, mirrored, normal, or inverse
- Specify print densities for darker printouts
- Specify magnifications
- Print page 1 and page 2 in a portrait or panorama effect
- Set up an auto-print sequence that loads files and prints

There is also a utility provided that will save a Hi-Res picture created by some protected software packages. As long as you can break out of the protected program by pressing RESET or some other way, you can then boot the Paper Graphics disk, exit, and run the utility. The utility can be FIDded to another slave disk for your convenience. Being able to break out of a program does not guarantee that you will be able to save the picture, however.

Once the program has been configured for your printer and card, you can proceed to load, modify, save, and print a picture. It should be noted that the compression technique used is different from others that I have seen and may not work with compressed files created by other programs. When the Zoom option is first run, you can select some initialization parameters for the printout. For dot-matrix printers you can select one of up to four print densities (the darkest one gives the blackest pictures I have ever seen from my Epson MX-80); for letter-quality printers you select the horizontal and vertical separation desired and the character to be used.

Next the paper width is specified. You are then presented with a menu of View, Load, Print, Initialize, and Quit options. The Load option is multi-drive and multi-page. A catalog of all files or just graphics (32 to 34 sectors) files can be selected. With the View option you can select which page to view. When ready to

print, you first preview page 1 where you can modify the picture by exchanging the blacks and whites, swapping the right and left sides of the picture, flipping the picture upside down, rotating the picture 180 degrees, or copy one page to the other. With these options you have total control over the picture orientation, including mirroring for printing the picture as viewed from behind the screen.

You then select full or partial screen, whether to print each page or not, and print orientation (upright or rotated 90 degrees). If you select partial screen, you go into the Crop mode where you indicate the diagonal corners of the desired area. The I, J, K, and M keys are used to control the cursor and movement can be either by one or five dots. Next you select the horizontal and vertical scale factors to control the aspect ratio of the printed picture. Finally you select where on the paper you want the picture printed. Options are Left- or Right-Justify, Center, or Place Manually (in inches). During printing you can pause and restart or terminate.

If you quit the Zoom Hi-Res program immediately after using it to print a picture, you can capture the cropping margins, indentation, scale factors, and orientation used along with the printer and I/O card drivers in a file named PAPER GRAPHICS.QUICK. This file is used by the Quick Print option. The Quick Print option allows printing of either or both screens using these captured parameters. The Quick Print option also allows you to select any files from one disk to be printed in any order that you desire with a selected number of lines between pictures without further user interaction. PAPER GRAPHICS.QUICK also can be attached to user written programs using the provided instructions.

The GRAPHICS COMPOSER is a powerful and versatile graphics program. With it you can load/save normal or compressed pictures, move the picture around on the screen, frame (border) a picture in any color of almost any border thickness, erase/fill windows on the screen, and add upper- or lower-case letters to the picture. There are two fonts supplied in the program: standard characters, as on the Apple keyboard, and an alternate set with Greek and math symbols. Both use the ESCape key to toggle between upper and lower case. The Videx Enhancer II can also be used to shift characters. Text can be entered in any of four orientations: left to right (normal), right to left (upside down), up or down the page. Techniques for using other fonts or using Paper Graphics fonts in your programs are provided in the manual.

SUMMARY

Paper Graphics is the most complete of the graphics-dump programs reviewed to date (see the Graphics-Dump Chart, this issue, for information on other programs). On first use I had planned to rate it "AA", but after several sessions with it I discovered some problems that detract somewhat from its flexibility and ease of use. For example, there is no "cursor" to aid in placing text on the screen, making it difficult to start text anywhere but on a margin. When specifying borders for framing or cropping, there is no marker left behind to indicate where the first corner was placed to aid in placing the opposite corner. You do get a text display of the locations and a chance to restart (but not edit, as is possible with ZOOM GRAFIX).

In the print options there are some problems with the scale factors. I could not always specify one of the scales, even though there was room to allow a magnification greater than one. If the auto-load and print feature is used, the print routine defaults to internal parameters, not the parameters I had "captured" to use in the Quick Print option. Consequently the pictures print as centered negatives at a 1x1 magnification. The use of single keypress entries is not consistent; at times you only need press the one key but at other places you will have to add a RETURN. The RESET key is not trapped out but all other incorrect inputs are. This is not really a problem, in fact I prefer having the capability to break out of a program without having to power down. If the RESET key is accidently pressed, you can restart by merely typing RUN.

Paper Graphics is an "A+" pro-

ADALAB™ Automates Lab Instruments

- Interactive Microware's general-purpose ADALAB™ data acquisition and control system interfaces with virtually any lab instrument using a recorder or meter, including GC and HPLC systems, spectrophotometers, pH meters, process control apparatus, thermocouples, etc.
- Lab Data Manager™ software facilitates single or multi-channel acquisition, storage, display and chart recorder style output of lab instrument data. IMI QUICKI/O software operates within easy-to-use BASIC!
- Thousands of scientists currently use IMI software and/or ADALAB products worldwide!

*Price includes 48K APPLE† II+ CPU, disk drive with controller, 12" monitor, dot matrix printer with interface, IMI ADALAB™ interface card. †Trademark of Apple Computer, Inc.

Attention APPLE Owners

IMI's ADALAB INTERFACE CARD IS AVAILABLE SEPARATELY FOR ONLY $495

(Includes 12-bit A/D, 12-bit D/A, 8 digital sense inputs, 8 digital control outputs, 32-bit real-time clock, two 16-bit timers plus QUICKI/O data acquisition software.)

imi

INTERACTIVE MICROWARE, INC.
P.O. Box 771, Dept. 5
State College, PA 16801 (814) 238-8294

Skyline Computing Co.

28% TO 33% OFF ALL SOFTWARE
20% OFF ALL BOOKS
PLUS — FREE SOFTWARE

GAMES

	YOUR COST	RETAIL
AE	25.16	34.95
Ali Baba & 40 Thieves	23.72	32.95
Apple Panic	21.56	29.95
Arcade Machine	39.56	54.95
Aztec	28.76	39.95
Bandits	25.16	34.95
Bolo	25.16	34.95
Cannonball Blitz	25.16	34.95
Canyon Climber	21.56	29.95
Castle Wolfstein	21.56	29.95
Chess (Odesta)	50.36	69.95
Choplifter	25.16	34.95
Cosmic Balance	28.76	39.95
Crisis Mountain	25.16	34.95
Crossfire	21.56	29.95
Cyborg	23.72	32.95
Cytron Masters	28.76	39.95
Dark Crystal	28.76	39.95
David's Midnite Magic	25.16	34.95
Deadline	35.96	49.95
Epidemic	25.16	34.95
Flight Simulator	24.12	33.50
Frogger	25.16	34.95
Gorgon	28.76	39.95
Jawbreaker (new)	21.56	29.95
Knight of Diamonds	25.16	34.95
Laffpak	25.16	34.95
Legacy of Llylgamyn	28.76	39.95
Marauder	25.16	34.95
Mask of the Sun	28.76	39.95
Microbe	32.36	44.95
Millionaire	57.56	79.95
Miner 2049er	28.76	39.95
Missing Ring	21.56	29.95
Mouskattack	25.16	34.95
Night Flight (Sierra)	21.56	29.95
Pie Man	14.36	19.95
Pinball (SubLogic)	21.56	29.95
Pinball Construction Set	28.76	39.95
Pool 1.5	25.16	34.95
Raster Blaster	21.56	29.95
Rendezvous	28.76	39.95
Repton	28.76	39.95
Robot War	28.76	39.95
Seafox	21.56	29.95
Serpentine	25.16	34.95
Serpent's Star	28.76	39.95
Sherwood Forest	25.16	34.95
Snack Attack	21.56	29.95
Sneakers	21.56	29.95
Snooper Troops 1 or 2	32.36	44.95
Spy's Demise	14.36	19.95
Star Blazer	23.00	31.95
Starcross	28.76	39.95
Story Machine	25.16	34.95
Suspend (Infocom)	35.96	49.95
Swashbuckler	25.16	34.95
Threshold	28.76	39.95
Thunderbombs (Penguin)	14.36	19.95
Time Zone	71.96	99.95
Transylvania	14.36	19.95
Tubeway	25.16	34.95
Ultima	28.76	39.95
Ultima II	43.16	59.95
Ulysses/Golden Fleece	25.16	34.95
Way Out (in 3D)	28.76	39.95
Wizard & Princess	23.72	32.95
Wizardry	35.96	49.95
Zaxxon	28.76	39.95
Zork I, II, or III	28.76	39.95

BUSINESS/WORD PROCESSORS

	YOUR COST	RETAIL
1st Class Mail	53.95	74.95
Applewriter II Pre-Boot	13.68	19.00
Bank Street Writer	43.16	59.95
DB Master	159.88	229.00
DB Master Util. 1 or 2	71.28	99.00
dBase II	469.00	700.00
The Dictionary	71.96	99.95
EasyWriter Pro	126.00	175.00
Executive Secretary	179.00	250.00
Financial Plan. Lang	476.00	700.00
General Manager II	165.56	229.95
List Handler	64.76	89.95
Magic Window	71.96	99.95
Magic Window II	107.96	149.95
MultiPlan (CPM or DOS)	192.50	275.00
Pie Writer	107.96	149.95
PFS:File (II+ or IIe)	98.00	140.00
PFS:Report (II+ or IIe)	89.00	125.00
PFS:Graph (II+ or IIe)	98.00	140.00
Quick Code	209.45	295.00
Real Estate Analyz. II	139.90	195.00
Screenwriter II	93.56	129.95
Sensible Speller	89.00	125.00
Super-Text Pro	71.29	99.00
VersaForm	276.00	389.00
VisiCalc (3.3 or IIe)	179.00	250.00
VisiCalc Pre-Boot	35.28	49.00
VisiDex	179.00	250.00
VisiFile	179.00	250.00
VisiLink	179.00	250.00
VisiPlot	144.00	200.00
VisiSchedule	216.00	300.00
VisiTrend/VisiPlot	216.00	300.00
Word Handler	143.28	199.00

UTILITY/HOME/EDUCATION

	YOUR COST	RETAIL
Algebra 1, 2, 3, or 4	28.76	39.95
ASCII Express:Pro	93.56	129.95
Apple Mechanic	21.24	29.95
Bag of Tricks	28.76	39.95
Complete Graphics Sys.	50.36	69.95
Data Capture 4.0	46.80	65.00
Delta Drawing	43.16	59.95
DOS Boss	17.28	24.00
Face Maker	25.16	34.90
Flex Text	21.56	29.50
GraForth II	54.00	75.00
Graphics Magician	43.16	59.95
Hayes Terminal Program	71.28	99.00
Home Accountant	53.96	74.95
Know Your Apple IIe	17.96	24.95
LISA 2.5	57.56	79.95
Master Type	28.76	39.95
Merlin	46.76	64.95
Pronto DOS	21.24	29.95
Rhymes & Riddles	21.56	29.95
S.A.M. (with board)	89.96	124.95
Super Disk Copy III	25.16	34.95
TASC Compiler	126.00	175.00
Typing Tutor II	17.96	24.95
Utility City	21.24	29.50
Zoom Graphics	35.96	49.95

BOOKS

32 Basic Programs/Apple	15.96	19.95
6502 Assemb. Lang. Prog.	13.59	16.99
Apple II User's Guide	13.56	16.95
Apple Graphics & Arcade	15.96	19.95
Apple Pascal	15.16	18.95
Beneath Apple DOS	15.96	19.95
Book/Apple Software/83	15.96	19.95
CP/M User's Guide	12.76	15.95
How to Get Started-CP/M	11.16	13.95
Kids and the Apple	15.96	19.95
Logo for the Apple	11.96	14.95
Power/VisiCalc I & II	11.96	14.95
Survival Kit/Apple Games	7.96	9.95
WordStar Made Easy	9.56	11.95

FREE SOFTWARE

Plus — For each $100.00 in your order, you receive a free diskette. Choose from the disks offered below:

EAMON ADVENTURE SERIES
E01 Master Disk/Beginners Cave, E02 Minotaur Lair, E03 Mind Cave, E04 Zyphur River Venture, E05, Doom Castle, E06 Death Star, E07 Devil's Tomb, E08 Abductor's Quarters, E09 Clone Master, E10 Magic Kingdom, E11 Molinar Tomb, E12 Trezore Quest, E13 Treasure Island, E14 Furioso, E15 Heroes Castle, E16 Modamen Caves, E17 Merlin's Castle, E18 Hogarth Castle, E19 Death Trap, E20 Black Death, E21 Marron Quest, E22 Senators Chambers, E23 Ngurct Temple, E24 Blacks Mountain, E25 Nuclear Nightmare, E26 Moleman Assault, E27 Moleman Revenge, E28 London Tower, E29 Lost Island, E30 Underground City, E31 Gauntlet, E60 Castle of Count Fuey, E61 Search for the Key, E62 The Rescue Mission, EU1 Eamon Utilities I, EU2 Eamon Utilities II, and EDD Eamon Dungeon Designer Version 5.0

PLEASE NOTE: You must have disk E01 in order to use any of the other disks. E60, E61, and E62 are Tournament Adventures. EDD allows you to create your own Eamon adventures without a knowledge of programming.

The Eamon adventure series is quite good and is comparable to the better known (and more expensive) adventure games. The number has grown quite large because the series was designed as a system, with programs to help others contribute their own versions. One reviewer noted that basing the games' success on encounters with friendly or unfriendly creatures, rather than on riddles, "makes Eamon more exciting than many adventure games." Anyway, the price is right — one free with each $100 in orders. If you find you don't like the material on a disk, you can always erase it and use it as a blank disk.

FIRE ORGAN
As an alternative to the Eamon disks, you can request F01 Fire Organ. Fire Organ is a demo disk for the graphic language Ceemac and contains some of the best graphics ever seen on an Apple. Many dealers use Fire Organ to demonstrate the Apple's graphic capabilities. Highly recommended.

NOT READY FOR PRIME TIME DISKS
Or choose from these variety disks — Games (GA1, GA2, or GA3), Art & Graphics (AG1, AG2, or AG3), Utilities (UT1, UT2, or UT3), or Business & Finance (BF1). Each disk contains 7 to 15 short programs — all listable.

BLANK DISKS
If none of this strikes your fancy, we can simply include a blank disk per $100 order.

TO ORDER

TERMS:

Certified check, money order, personal check (allow 1-2 weeks delay), or Visa/MasterCard (add 3%). Credit card orders require card no. and expiration date. For shipping — add $3.00 for the first item and $.50 for each additional item. Free software needs no shipping fee. Foreign orders add 10% for shipping and handling. Connecticut residents should include 7½% sales tax. Prices subject to change.

CALL OR WRITE FOR OUR FREE CATALOG LISTING OVER 1,000 PROGRAMS.

ORDER TOLL FREE ANYTIME

1-800-243-2933
orders only: Mon. - Fri. 10 - 7, Sat. 10 - 4

1-800-428-7825 ext. 31
orders: all other hours except California

1-800-428-7824 ext. 31
orders: all other hours California residents

1-203-795-4894
information, price quotes, and Connecticut orders

SKYLINE COMPUTING CO.
518 BOSTON POST RD. • ORANGE, CT. 06477

APPLE IS A TRADEMARK OF APPLE COMPUTER, INC.

HBJ

score high on the SAT™

Available for:
- 48K Apple® II
- Apple® II Plus and Apple IIe
- TRS-80 Model III

Computer SAT

A complete program for Scoring High on the Scholastic Aptitude Test

Combines Computer Software, Review Textbook and User's Manual Into the Most Comprehensive SAT Study Program Available.

- Makes studying for the SAT **easy and enjoyable**.
- Builds test-taking skills quickly in planned systematic program.
- Simple and easy to use **even for those with no computer experience**..

Special Features

- **1000 Electronic Vocabulary-Building Flash Cards**
- **540 Specially-Designed Computerized Drill Items**

Complete Textbook

"How to Prepare for the SAT" 470 pages.

- **Four Full-Length Exams**— enter answers in computer for instant scoring and diagnosis.
- Complete review of verbal and math categories found in exams.
- Strategies for answering **every kind of question.**

User's Manual

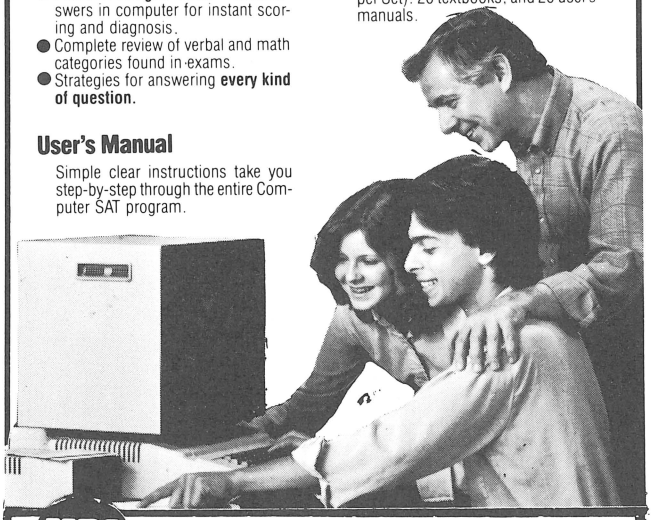
Simple clear instructions take you step-by-step through the entire Computer SAT program.

Computer Software

- Scores and times your performance.
- Calculates College Board equivalent score.
- Diagnoses your strengths and weaknesses in 15 key areas of study.
- Prescribes specific drill and review on computer and in the textbook to improve your score.
- Strengthens and builds your vocabulary and math comprehension.

Educator's Edition Available

Conduct group sessions with this unique package of software and textbooks with detailed instructor's guide. 4 Sets of Software (4 Disks per Set). 20 textbooks, and 20 user's manuals.



HBJ **Harcourt Brace Jovanovich, Inc.** L-5-83
Dept. Computer SAT; 1250 6th Avenue, San Diego, CA 92101

YES, please send me _____ Computer SAT® @ **$79.95** each.
Quantity
for my ☐ 48K Apple® II and Apple® II Plus or Apple IIe. ☐ TRS-80 Model III
Please add $2.00 for handling (UPS delivery guaranteed). Please add applicable state and local sales tax. (Institutions must send purchase order to be billed.) Offer restricted to Continental USA and Canada.

Method of Payment: ☐ Check ☐ Money Order
Charge My: ☐ Visa ☐ MasterCard ☐ American Express

FOR CREDIT CARD ORDERS CALL TOLL-FREE 800-543-1918
(In California call collect (619) 699-6335)

Acct #_____ Exp. _____

Signature_____

Name_____

Address_____

City_____ State_____ Zip_____

Please send more information: ☐ The IBM COMPUTER SAT®
☐ The Computer GRE ☐ The Educator's Edition Package @ $395.00 ea.

gram that will more than satisfy any user's need in a graphics-dump program. It is compatible with most hardware and has features not yet offered in other dump programs. It will be a worthwhile addition to any user's library. With the improvements suggested above, Paper Graphics will become the only AA graphics-dump program available.☐

BOB RENNARD RESPONDS

The annotate mode has a cursor that is used to place the center of the first character in the first line of the Hi-Res text. Subsequent lines begin at the left margin. There is a technique hint in the composer section of the manual to show how to get successive lines of registered text. The program was intended to be used as a graph labeler, not a Hi-Res typewriter.

The first scale factor will default to one (1X) if no larger scale factor will fit the paper without tighter cropping. This is different from the Zoom Grafix approach which adjusts cropping margins. An uncropped horizontal picture is 280 pixels wide and at the 60 dot/inch density, the MX-80 is 480 pixels wide, therefore, 1X across is all that will fit. In 120 dot/inch density, the MX-80 is 960 pixels wide, so scale factors as large as 3X are permitted by Paper Graphics. An uncropped rotated picture is 192 pixels wide and will fit 2X at 60 dots/inch on the Mx-80. Mike may be used to a graphic dump that only provides 120 dot/inch graphics and he expected a larger range of scale factors.

The auto-load and print feature in the Quick Print option does not revert to default parameters. It used those that you last used while using the Zoom Print option program before capturing the Paper Graphics.Quick file. The pictures print with the same indentation, scale factors, orientation, and cropping as you specified. You have to recapture each time you wish to change these parameters.

We accepted Mike's comments constructively. First, we are going to use a fully framed zoom window that is controlled by the keyboard interactively. This will give the user a full idea of what he is going to print. We feel the technique used now is better than the number guessing approach used by others, and this change will further enhance it.

Second, the Hi-Res labeler will revert to the cursor each time RETURN is pressed to give a fully floating labeling capability.

Third, we are going to employ picture pack/unpack routines that are in use by another software company for wider compatibility.

Fourth, we are removing the use of INPUT as much as possible to further expedite operation. Right now, a user can produce a 1X upright, centered picture by pressing the SPACE bar several times after he has selected which screen or screens to print.

Last, we are including instructions on how to use Paper Graphics from within RTR Software's Dow Jones Market Analyzer, and with screens generated by other software packages.☐

REVIEWS REVISITED

GIBSON LIGHT PEN (LPS II)

Gibson Laboratories, Inc.
23192 Verdugo Drive
Laguna Hills, CA 92653
714-770-5000

$349.00

Rating: Pending

Reviewed by Michael L. Weasner

In the September/October 1982 issue of *Peelings II* we published a preliminary review of the Light Pen System or LPS II for the Apple II. The product name has been changed to better correspond with user community identification; it is now known as the Gibson Light Pen. The earlier review was based on preliminary software from Gibson Labs and we all anxiously awaited the arrival of the "final software" so that a final, comprehensive evaluation could be published and so that all users could enjoy and use the final software. In the review we stated that the final software would be released by November 1982, but November came and went, as did 1982, and January and February and March... Well, the wait is just about over and as Steve Gibson, President of Gibson Laboratories kept telling me during the intervening months, "the wait will have been worth it; the final software will be a blow-away." All those months were spent developing the specifications for the final software and rewriting the Light Pen operating system (the PENTRAK driver).

At last it all came together in April and MULTIDRAW, was first publicly demonstrated at the Anaheim Applefest. Wherever Gibson Labs shows the light pen a crowd always appears. At Applefest they had to compete with Lisa and my rough count based on fighting the throng indicated that the light pen attracted bigger crowds than Apple Computer's new Lisa demonstration. John Martellaro and this reviewer had the opportunity to view what we feel is a new generation of Apple II software. *(I agree — JM)* The new software is so advanced, so powerful, and full of potential not yet tapped that the future looks very bright for all Apple II owners.

This short column is not intended to be a review of the new software because we haven't had the opportunity to actually use it yet. But I will try to briefly describe MULTIDRAW. I have been fortunate to have attended several demonstrations of Apple Computer's Lisa and even more fortunate to have had some actual "hands-on" experience with her. That experience was overwhelming but Lisa is not the topic here. For those that have seen LisaDraw in operation, you have also seen MULTIDRAW. I don't mean to say that LisaDraw is MULTIDRAW but the operation and capabilities of both are very similar. In fact, in some areas MULTIDRAW is better than LisaDraw. If you haven't seen LisaDraw or even a Lisa picture then run down to your local computer store and ask to see some information on Lisa, probably in a magazine; you owe it to yourself to see the face of the future in computer technology. I'll wait for you...

Now that you are back — impressed, weren't you? MULTIDRAW has three windows which perform separate functions or you can expand the screen to include the full Hi-Res picture normally seen on the Apple II. You can perform all the light pen operations discussed in the earlier review (sketch, draw lines, rectangles, or circles, zoom, etc) but you can perform them on two of the windows and can save one of the windows in what is known as a card deck onto disk. This card deck becomes a library of shapes and designs that can be loaded and used in any Hi-Res picture you are creating. The third window is a menu of operations that you point the pen at to activate and is similar to using Lisa's mouse controller to select some function from a menu. Hi-Res images can be moved around on the screen or stretched. Lines, rectangles, or circles can be drawn in a "rubberbanding" mode, that is, after specifying the end point of the line (or one corner of the rectangle or center of the circle) you will see the line (rectangle or circle)

drawn and move as you move the pen around. Speed is incredible and since MULTIDRAW is totally monochrome, horizontal resolution is doubled.

Having seen MULTIDRAW (and I've only described one small portion of its capabilities) I can say with the utmost confidence that the Apple II or //e will never be the same again. It will now perform Computer Aided Design (CAD) and superb graphics of any type, all very simply. Through the power of PENTRAK and the user interface of the light pen with MULTIDRAW, Gibson Laboratories has come up with capabilities undreamed of by Apple II users or in fact, any microcomputer designer or user.

OK, so when are current Gibson Light Pen owners going to get the final software and when is *Peelings* going to review it? I can't say. Very soon, most likely. When *Peelings* receives the final package it will be reviewed immediately. Until then, readers and Light Pen owners, please be patient. Once the final software is available the Apple II will have grown up and have abilities previously available only in the big boys. I think you'll agree that the wait will have been worth it.□

PRINTOGRAPHER UPDATE

by Stephen Billard
Southwestern Data Systems
P.O. Box 582
Santee, CA 92071
619-562-3221

$49.95

Rating: A+

Reviewed by Michael L. Weasner

In *Peelings II* V3N8 1982, the Printographer graphics-dump program was reviewed and rated A-. Overall it was a very good and useful dump program that had only one major drawback: it was necessary to experiment with a sample graph in order to center or right-justify your hard copy of the graphics screen. This shortcoming has now been rectified. This revised version is easier to use, and although no new documentation was provided, Printographer supposedly can now interface to Southwestern Data Systems' Correspondent word processor to allow the inclusion of graphics in your word processor documents (similar to Graphtrix, Apple Writer, and Editrix — reviewed in *Peelings II* V3N5). This additional feature has not yet been reviewed.

This new version of Printographer, with its improvements, has become one of the top two rated graphics-dump packages. The *Peelings'* dump program comparison chart has been updated to reflect the new version. Note that only those packages rated better than B are depicted; see the original chart or reviews for information on those not shown.□

GRAPHICS DUMP CHART

Title	Image Printer —Epson	Zoom Grafix	Printographer	Paper Graphics
Issue Reviewed	V3N5	V3N5	V3N8	Current
Language	FP	FP	FP and Machine Language	FP and Machine Language
Hardware Requirements	48K, 1 or 2 drives	48K, 1 drive	48K, 1 or 2 drives	48K, 1 or 2 drives
DOS	3.3	3.3	3.3	3.3
Locked	Yes	Yes	Yes, but can make 3 copies. User routines unlocked.	No

GRAPHICS DUMP CHART (CONTINUED)

Title	Image Printer —Epson	Zoom Grafix	Printographer	Paper Graphics
Magnifications Available	0.5, 1, 2, 3	Various — limited by paper size	1 to 99 — limited by printer	1 to 9
Rotation/Orientation	No/Sideways	Yes/Both	Yes/Both	Yes/Both
Page Selection (1 or 2)	Yes	Yes	N/A	Yes
Cropping	Yes	Yes	Yes	Yes
Normal/Inverse	Yes	Yes	Yes	Yes
Preprint Viewing	Yes	Yes	Yes	Yes
Justification	Left, Right, or Center	Left, Right, or Center by setting tabs suggested by computer	Left, Right, or Center plus tab setting	Left, Right, or Center plus inches
Printers Supported	All Epsons (MX-80 w/ Graftrax), other versions available	All Epsons (MX-80 w/ Graftrax), IDSs, Anadexes, plus many more	All Epsons (MX-80 w/ Graftrax), IDSs, NECs, plus many more	All Epsons (MX-80 w/ Graftrax), plus just about every other printer
Ease of Use	Easy	Easy	Easy	Generally Easy
Titling	No	No	No	No, but can add text
Other Features Worth Noting	Compression of picture	Total control of printer configuration	Easy cropping. Save cropped picture. User routines.	Total picture control
Cost	$40.00	$39.95	$49.95	$34.95
Rating	A–	A+	A+	A+

Other reviews (*See Peelings II*, V3N8):

Graphtrix (V3N5)	**B**
Enhanced Graphics for MX-80 (V2N6)	**B**
EZEpson (V3N5)	**D**
AmperDump (V3N5)	**B**

HUNTINGTON COMPUTING

All CMS at a discount
All Compucovers at a discount
All Hartley at a discount
All Leraning Co. at a discount
All Math City at a discount
All Sensible at a discount

#3257	Alpha Plot	**$34.69**
#3054	Apple Barrel II	**$17.69**
#8982	Apple Key Chain	**$5.00**
#8980	Apple Lapel Pin	**$3.00**
#3259	Apple Mechanic	**$24.99**
#1600	Apple Necklace	**$10.00**
#1963	Apple Panic	**$25.39**
#1668	Apple Spice	**$26.89**
#3901	Apple Writer Extended	**$29.69**
#154	Arcade Adapter	**$35.59**
#1967	Arcade Machine	**$49.99**
#1220	Atlantis	**$33.99**
#2005	Bag of Tricks	**$33.89**
#1960	Bank Street Writer	**$50.89**
#3251	Beagle Bag	**$24.99**
#1068	Beer Run	**$19.99**
#2010	Beneath Apple Dos book	**$16.89**
#2003	Beneath Apple Manor	**$25.39**
#1223	Bolo	**$29.69**
#921	Bomb Alley	**$50.89**
#9601	Bug Byter	**$40.29**
#7960	Business Pac 100	**$89.99**
#1458	Carverns of Freitag	**$25.39**
#8360	Ceemac	**$63.69**
#8999	Child's Play	**$19.99**
#9860	Chinese Lessons	**$26.29**
#707	City Dies at Night, A	**$25.39**
#9423	Comparative Shopping	**$26.29**
#7980	Compu Poem	**$15.95**
#1917	Comput-Math Algebra	**$33.89**
#9014	Computer Almanac ..... SALE	**$17.99**
#1763	Crimewave	**$14.99**
#1222	Crisis Mountain	**$29.69**
#7140	Cross Clues (SRA)	**$29.69**
#6380	Crossword Magic	**$39.99**
#1720	D.A.R.K.	**$29.69**
#1607	DB Master	**$179.00**
#1108	Dark Crystal	**$33.89**
#7234	Delta Drawing	**$50.89**
#1126	Dictionary, The	**$79.99**
#7155	Diet Planning	**$21.19**
#4000	Disk Storage box (90 disks)	**$19.99**
#6509	Dolch Vocabulary	**$33.89**
#3250	Doss Boss	**$20.39**
#6753	Dracula (educational)	**$29.69**
#9015	ESP	**$14.99**
#3652	Electric Duet	**$25.39**
#2026	Electricity	**$10.19**
#7233	Face Maker	**$29.69**
#6021	Family Roots	**$169.00**
#131	Fiberbilt Case for Apple	**$59.00**
#3252	Flex Text	**$25.39**
#68	Flip Sort disk holder	**$24.00**
#3260	Frame-Up	**$24.99**
#1106	French Mystery House	**$21.19**
#1131	Frogger	**$29.69**
#9017	GGA Lower Case Chip	**$14.99**
#992	Galactic Adventure	**$50.89**
#9600	Game Show	**$34.29**
#9008	Generic Games	**$9.99**
#33	Gibson Light Pen	**$296.59**

Softlights

By Barbara Huntington

Aha! Fred has to go to a school meeting, the ad is due, and I get to write Softlights! We just returned from the Computer Faire in San Francisco where our 3½ year old daughter, Melody, again saw her heartthrob, Rainbow (the mime from Silicon Valley Systems). She fell in love with him at the San Francisco Applefest and keeps his autographed picture on the wall of her room. In honor of Rainbow who is so gentle and kind to Melody, we re offering the **Word Handler** wordprocessor (#6320) for **$159** ($40 off list).

While I was writing, Dave Carmen, who is the TV weatherman for the Central Valley of California walked in. In keeping with the new trend to lower software prices, and to help me come up with something special for my first Softlights column, he authorized a special sale on his **Computer Almanac** for **$17.99.** This is our program that shows sunrise, sunset, weather forecasts, loan amortization, biorhythms, birthstones, anniversary gifts, and more.

Speaking of gemstones, we have genuine tiger s eye apple necklaces for $10. I fell in love with these at Applefest and conned Fred into carrying them. They re great for female computer freaks as well as computer widows who want an Apple, too (II?)

I m really the computer novice compared with Fred, but I have played with Visicalc to do financial statements at which I am equally a novice. That s why I m eager to see the new CDEX **Training for Visicalc** (#2600) which we will sell for **$50.69.** (The first ones zoomed in and out of here so fast I didn t get to look at them.) We also will be carrying all the learning aids for dBase II. By the way, we now have **dBase II** itself for only **$479.**

#1213	Global P.L.E.	**$55.19**
#3653	Graforth II	**$63.69**
#1759	Graphics Magician	**$53.89**
#7500	Grocery List	**$21.19**
#1705	Ham Package I	**$16.89**
#3514	Handicapped Typewriter ver. 2.0	**$84.99**
#1165	How to Program Applesoft (Hayden)	**$42.39**
#6802	Int. Micro Graphpak	**$101.99**
#9543	Integer Fix	**$19.99**
#7975	Investment Decisions	**$84.99**
#0000	Invoice Factory	**$99.99**
#6100	J&S Gradebook	**$29.29**
#87	Joystick, Kraft	**$55.19**
#6280	Kennedy Flight Planner	**$43.89**
#2151	Krell MIT LOGO	**$76.39**
#8774	Learning to Understand Card Catalog	**$13.99**
#3350	Letter Perfect (special)	**$99.89**
#6022	Lineages	**$89.00**
#8261	Lovers and Strangers	**$25.39**
#1135	Lunar Leep (special)	**$19.99**
#2700	MCE Buying Wisely	**$38.19**
#1866	MECC Historic Simulations	**$38.19**
#6001	MX-100 Ribbon	**$9.99**
#6000	MX-80 Ribbon	**$4.99**
#6001	MX-80 Ribbon	**$4.99**
#3391	Mastertype	**$33.89**
#9380	Menu Generator	**$29.99**
#2150	Micro Deutsch	**$152.89**
#7550	Microaccountant	**$42.39**
#1206	Microbe	**$38.89**
#1640	Micro Cookbook	**$33.89**
#1866	Miner 2049	**$33.99**
#6450	Mother Goose Rhymes	**$22.39**
#2108	Multiplan	**$199.00**
#2662	Munch-a-bug	**$42.39**
#9411	Nutrition	**$26.29**
#8984	Pacman Ghost Pin	**$2.50**
#1760	Pie Man	**$14.99**
#1164	Pie Writer 80 col.	**$127.39**
#3401	Pinball Construction Set	**$33.89**
#6710	Population	**$21.09**
#7650	Pornopoly	**$25.39**
#9061	Prism	**$16.89**
#3249	Pronto Doss	**$24.99**
#923	RDF 1985	**$33.89**
#8440	Rana Drive	**$289.00**
#9500	Recipe Handler	**$35.09**
#1068	Repton	**$33.89**
#1504	Rescue at Rigel (special)	**$17.99**
#1421	Roadblock	**$25.39**
#1475	Robot War	**$33.99**
#300	S.C. Macroassembler	**$68.00**
#1150	Sargon II	**$29.69**
#1105	Screen Writer II	**$99.99**
#1667	Sea Dragon	**$29.69**
#1974	Sea Fox	**$25.39**
#2908	Sensible Speller	**$106.19**
#7006	Sentence Diagramming	**$21.19**
#1971	Serpentine	**$29.69**
#2184	Sherwood Forest	**$29.69**
#9019	Shift Key Mod	**$9.99**
#1064	Sneakers	**$25.39**
#7230	Snooper Troops #1	**$38.19**
#7231	Snooper Troops #2	**$38.19**
#1121	Soft Porn Adventure	**$25.39**
#1780	Space Cadette	**$29.69**
#6452	Spanish Hangman	**$26.99**
#3654	Spider Raid	**$25.39**

HUNTINGTON COMPUTING
Post Office Box 1297
Corcoran, California 93212

Foreign Orders 209-992-4481
In California 800-692-4146

Apple* is a registered trademark of Apple Computer, Inc.
Pet* is a registered trademark of Commodore.
TRS-80* is a registered trademark of Tandy Corp.
Atari* is a registered trademark of Atari, Inc.

Outside Calif. 800-344-5106

We take **MasterCard, American Express or VISA** (Include card # and expiration date). California residents add 6% tax. Include $2.00 for postage. Foreign and hardware extra. Foreign (excluding Canada): remit U.S. currency, checks on U.S. banks, use listed charge cards, or make direct wire transfers through Security Pacific Bank, Corcoran, for a $6.00 charge. All overseas orders shipped by air. Send for free catalog. Prices subject to change without notice.

SUPER FILE CABINET

By Edward J. Shea
Abacus Computing
75 Hewitt St
Rochester, NY 14612
No phone number given

$69.95

Unlocked

Rating: B+

Reviewed by Robert Greenwald

INTRODUCTION

Apple "old-timers", i.e., those of us who acquired our computers before 1980, remember fondly the five volumes of "Contributed Software" which were distributed for just the price of the blank diskette; newcomers to "Appledom" look blank when asked if they were given these programs. Volume III contained the widely touted program named FILE CABINET, a rudimentary data base manager which opened up the world of computerized recordkeeping to thousands of newcomers. SUPER FILE CABINET is a revised and augmented version of the original, released under proprietary copyright, which corrects many of the defects of its predecessor, although still leaving room for further improvement.

SUPER FILE CABINET is based on sequential rather than random access text files (see your DOS manual for a full explanation of the difference). This means that the entire data base is resident in memory at once, making searches and sorts extremely rapid (at computer speed, rather than with the limitations imposed by recurrent disk access). The trade-off for this, of course, is that the total amount of information which may be contained in a single file is limited by the RAM of your machine. (The program assumes a 48K machine, but no instructions are provided for enabling an extra 16K RAM card if you have one; this is an obvious way to enlarge file size.)

THE PROGRAMS

The SUPER FILE CABINET master disk is unlocked and can easily be copied to make a backup master plus working copies; the author requests that it not be distributed illegally. When SUPER FILE CABINET is first run, the user EXECs a text file which customizes the program for either serial or parallel printer, and this need be done only once. There are four main programs in the system, one for manipulating data, one for creating a data base and changing its structure, one for generating reports, and one for combining multiple small data bases into a large, read-only data base in order to overcome the size limitation of a RAM-based program. Using the latter program, one can create six different data bases of 100 customers each and then generate report formats which will search all 600 records. Unlocked Applesoft programming allows the user to write his own modifications and thereby overcome some of the program's deficiencies. The system will work with one drive or two, but as with all data base managers, two drives are almost mandatory.

CREATING AND ENTERING A DATA BASE

To create a new data base, one must first turn to the program entitled DATA BASE ADMINISTRATION rather than to SUPER FILE CABINET itself; this is mentioned in the documentation, albeit not prominently, reinforcing the author's admonition that the entire booklet be read through before starting to use the system. Using DATA BASE ADMINISTRATION, one specifies the name of each "header", i.e., the name for each field ("header" is an archaic term held over from the original program); there is no limitation to length of header name or number of headers per record. After they are entered, however, they cannot be edited before they are saved. If you make a mistake in sequence or spelling, you must either use a separate editing mode or start over. You may subsequently add new headers, delete old ones, or change names (e.g., correct an error). Many data base programs lack this ability to revise record structure after initial file construction.

DATA BASE ADMINISTRATION also allows one to specify constraints on the type of data which may be entered into each field. Curiously, these are called EDITs, and a separate menu controls the construction, testing, and saving of theseEDITs. Thus, if a field is named BALANCE, one can specify that data entered into this field MUST be in dollar format and/or lie between

specified limits. One can specify edits to be phone numbers, numeric values, dollar values, dates in either of two formats, or size; in addition, defaults can be established. All this is done to constrain data input into specified limits, a good theoretical way to ensure that accurate data is entered.

In practice, however, the EDITs can be a big problem. They are absolutely, totally INFLEXIBLE, and there is no way to override their power. Thus if you are entering addresses and have specified that the field called ZIP must contain a numeric value with five digits, and you come to a record with no data for that field, the computer will beep at you relentlessly as you try to hit RETURN, enter N/A, or press control-everything. Worse yet, the system does not prompt you to tell you what it expects. I set up a test data base for entry of bank account information and I forgot what specifications I had entered for BALANCE; I sat for 10 minutes trying different entries before stumbling onto my original stipulation. If an EDIT has been defined, you cannot enter a blank field or just hit RETURN. EDITs must be used with great caution, if at all.

Data entry is straightforward using the SUPER FILE CABINET main program, but customized screen formatting is not available; the field names are printed sequentially down the left side of the screen, and entry takes place starting at HTAB position 16, even if a field name is longer than 16 characters, e.g., "Balance of account:"; the cursor overwrites the field name and data entry wraps around to the next line with no attempt at word breaks. Data entered with a comma, such as "TOWN, STATE", yields the infamous "EXTRA IGNORED" for which Applesoft has been widely criticized; in view of the widespread availability of INPUT ANYTHING routines, this is unacceptable in today's world. There is no chance to edit data after it has been entered; if you've made a typing error, your only recourse is to enter the fallacious record and use the change module to revise it later on. Repeat data entry is accomplished with the "/" key which re-enters the same data as that used in the previous record.

SUPER FILE CABINET does not save data automatically, but you are reminded to do so at several points, making it unlikely that you will shut off your machine without updating the disk file. Live-screen editing, computed fields, and incremented fields are not supported. Utilities are supplied for copying a data base, calculating the space available for additional records, and switching to another data base.

RETRIEVING RECORDS

When changing, listing, or otherwise retrieving records, the SUPER FILE CABINET search syntax allows the user to specify five OPERATORs: EQ (equals), GT (greater than), LT (less than), NE (not equal to), or CN (contains). Thus one can search within specified limits (combining GT and LT). A maximum of two conditions can be specified for each search, but multi-level searches are not supported, nor can you search simultaneously for more than two entries in a given field. Sorting is rapid and straightforward, but the sorted file is not saved to disk until you so specify, and then it overwrites the previous version. Records can also be retrieved by record number. Since the entire data base is in RAM, retrieval is rapid. Global change of multiple records (or global deletion) is supported by SUPER FILE CABINET.

The main menu has an option called LIST which retrieves all records to CRT or to printer (not both). The only option is a so-called "Sparse List", a list in which empty data fields are ignored. To retrieve only selected records, one must save the data base to disk and then run the program called SFC REPORT GENERATOR.

The Achille's heel of most data base managers is lack of flexibility in report formatting, an area where SUPER FILE CABINET does fairly well. Each report format created by the user is saved under its own name and can be invoked by menu selection; alternatively, a new format can be created. The user may specify what header will appear in what TAB position on the paper and whether or not that field is to be totalled; if totals are requested, the printing position for the total can also be specified. You may prepare a report using only selected headers, but you must specify how many you will want in advance. When the report is run, the search criteria mentioned above can be invoked.

There is no way to send control characters to the printer to get boldface, etc. However, you may specify the number of lines to be skipped between records (a requirement for printing mailing labels), whether or not titles are to be printed, lines per page (believe it or not, many expensive data base programs do not count lines), breakpoints, and the number of copies desired. Titles can be given to the report, changed for another version, and rerun, as long as no commas are involved (e.g., "Report for March, 1983" gets you an EXTRA IGNORED message). Breakpoints are divisions in the program to allow subheadings and take some experimentation before they can be used satisfactorily. As data base reporters go, SUPER FILE CABINET has more flexibility than most.

DOCUMENTATION

SUPER FILE CABINET comes with a nicely printed 38-page manual, well organized into sections with boldface headings, indentations, and other devices for ease of use. There is no index, but the table of contents is nicely detailed. Everything is explained clearly, and there are numerous examples where the appearance of the screen is reproduced in the manual, a very useful documentation device which should be utilized more often. The program is not generous, however, in on-

screen prompts, and a sample data base with a tutorial would also be helpful to the novice user.

MISCELLANEOUS

Error trapping is nonexistent; hitting RESET is "the kiss of death" and dumps you out into BASIC, possibly before you have saved your data base. SUPER FILE CABINET does not support lower-case entry, a modem, or an 80-column board. There is no phone number in the manual, implying that it might be difficult to get help from the author if you're stuck.

SUMMARY

SUPER FILE CABINET is a big step forward from its predecessor, but there is still room for much improvement. If you need multi-level sort, large data bases, formatted screens with the chance to edit data during entry, or inputs containing "illegal" characters like a comma, then you will either have to modify SUPER FILE CABINET yourself by adding appropriate BASIC code or seek a random-access program. However, if your data base is small enough to fit into RAM, and you want speed of retrieval combined with the flexibility to format your reports exactly the way you like them, then SUPER FILE CABINET will be quite useful. As a sequential-file data base manager, it appears to be one of the more sophisticated products around.□

ABACUS COMPUTING RESPONDS

Relative to your review of the SUPER FILE CABINET program, the following items are pertinent:

1. 16K RAM Cards will be supported in the next release, as well as a fix for overriding edits and the ability to enter null fields when edits have been defined.

2. Your article makes no mention of price compared to other file managers, and retail cost is $69.95 and not $75.00. Given the fact that SFC does not force you to buy add on packages, and is relatively inexpensive to start with, I think that some mention of functionality versus cost should be made.

3. During data entry, you can backspace to the previous field and re-enter it by hitting cntrl/B (page 13 of doc.). If you use this feature you can change erroneous data without leaving data entry mode — try it.

4. You can list selected records by using the search function and specifying the selection criteria.

5. SFC supports multi-level sorts up to 2 levels.

6. Many of your comments about the need for extended functions are not totally valid. The design goal of SFC was to provide as much functionality as possible without sacrificing ease of use. The use of forms instead of prompting is fine for an experienced user, but most of our customers like the simple human interface used by SFC, since it requires less technical expertise on their part. SFC was designed to make data base management simple and easy to use, and as such, exotic options were eliminated in areas that it might make the program less satisfactory for the casual user. Many of our customers were former users of DB MASTER who were overwhelmed by the complexity of use.

7. Your comment about EDITs being TOTALLY INFLEXIBLE seems a bit overstated. Many users have commented that they find this feature invaluable and use them consistently, although the need for edit overrides and ability to enter null data into edit fields has been brought to our attention and will be included in the next release.

Sincerely,
Ed Shea
Abacus Computing

WHAT ARE YOU WAITING FOR???

Are you tired of waiting for DOS to load and save files? Are you tired of waiting for DOS to finish so you can type again? Are you tired of waiting for your printer? When you buy Diversi-DOS™, you won't have to wait any more! Here's why:

1. DOS speed-up: Apple DOS 3.3 takes 18 disk revolutions to read a single track, whereas Diversi-DOS reads or writes a track in just 2 revolutions. This speeds up file processing tremendously (see table).

2. Keyboard Buffer: Diversi-DOS allows you to type at any time, as fast as you can, without missing a single character.

	APPLE DOS	DIVERSI-DOS
SAVE ‡	27.1 sec.	5.9 sec.
LOAD ‡	19.2 sec.	4.5 sec.
BSAVE*	13.6 sec.	4.1 sec.
BLOAD*	9.5 sec.	2.6 sec.
READ**	42.2 sec.	12.4 sec.
WRITE**	44.6 sec.	14.9 sec.
APPEND**	21.3 sec.	2.3 sec.

* Hi-res screen ‡ 80-sector BASIC program
** 52-sector text file

3. Print Buffer: Diversi-DOS can use a RAM card (16K-128K) to temporarily save characters before they are printed. Thus, your computer won't have to wait for your printer to finish.

4. DDMOVER: Diversi-DOS can now be moved to a RAM card for increased memory with BASIC programs.

Diversi-DOS, the QUADRUPLE utility, requires a 48K Apple II or II+ with DOS 3.3. A simple, menu-driven installation program is included on the un-protected disk. So what are your waiting for?

Send $30 to:

Diversified Software Research, Inc.
5848 Crampton Ct.
Rockford, IL 61111
(815) 877-1343

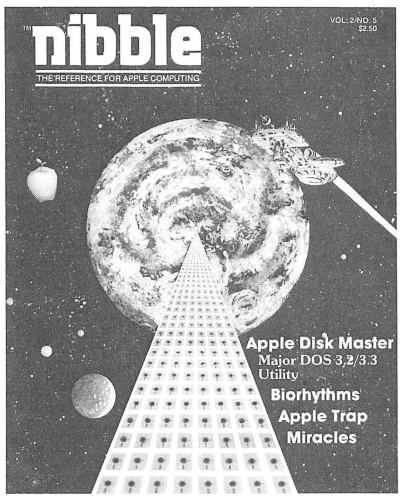
Visa/Mastercard accepted

Apple is a registered TM of Apple Computer, Inc.

dsr

Coming Soon: Diversi-Writer™

"NIBBLE® IS TERRIFIC" (For Your Apple)



NIBBLE IS: *The Reference for Apple computing!*

NIBBLE IS: One of the Fastest Growing Magazines in the Personal Computing Field.

NIBBLE IS: Providing Comprehensive, Useful and Instructive Programs for the Home, Small Business, and Entertainment.

NIBBLE IS: A Reference to Graphics, Games, Systems Programming Tips, Product News and Reviews, Hardware Construction Projects, and a host of other features.

NIBBLE IS: A magazine suitable for both the Beginner and the Advanced Programmer.

Each issue of NIBBLE features significant new Programs of Commercial Quality. Here's what some of our Readers say:

- *"Certainly the best magazine on the Apple II"*
- *"Programs remarkably easy to enter"*
- *"Stimulating and Informative; So much so that this is the first computer magazine I've subscribed to!"*
- *"Impressed with the quality and content."*
- *"NIBBLE IS TERRIFIC!"*

In coming issues, look for:

☐ Stocks and Commodities Charting ☐ Assembly Language Programming Column
☐ Pascal Programming Column ☐ Data Base Programs for Home and Business
☐ Personal Investment Analysis ☐ Electronic Secretary for Time Management
☐ The GIZMO Business Simulation Game

And many many more!

NIBBLE is focused completely on the Apple Computer systems.

Buy NIBBLE through your local Apple Dealer or subscribe now with the coupon below.

Try a NIBBLE!

nibble

We accept Master Charge & Visa

Box 325, Lincoln, MA. 01773 (617) 259-9710

I'll try nibble!
Enclosed is my $19.95 (for 8 issues)
(Outside U.S., see special note on this page.)

☐ **check** ☐ **money order**

Your subscription will begin with the next issue published after receipt of your check/money order.

Card # _____ Expires _____

Signature _____

Name _____

Address _____

City _____

State _____ Zip _____

NOTE:

- Domestic U.S. First Class subscription rate is $36.50
- Canada Air Mail subscription rate is $42.50
- Outside the U.S. and Canada Air mail subscription rate is $47.50

All payments must be in U.S. funds drawn on a U.S. bank.

©1980 by MICRO-SPARC., INC. Lincoln, Mass. 01773. All rights reserved.
*Apple is a registered trademark of Apple Computer Company.

NOTEBOOK

Version not indicated.
by Dr. Nicholas A. Romano
NIKROM Technical Products, Inc.
25 Prospect Street
Leominster, MA 01453
1-800-835-2246

$55.00

Apple //e compatibility not known.

Rating: B+ (if operated with two disks)
D (if operated with one disk)

Reviewed by Alan Shalette

INTRODUCTION

NOTEBOOK is a file management system designed to help users manage information typically kept on index cards or in notebooks. Other offerings of this type, previously reviewed in *Peelings II,* include: CardFile (V4N2, rated C–); DataFax (V3N5, rated AA); Time Manager (V3N8, rated A–); and, VisiDex (V3N8, rated A+).

The system should work especially well with files destined to be printed on continuous-form index cards, Rolodex cards, or mailing labels.

HARDWARE AND SOFTWARE REQUIREMENTS

NOTEBOOK should work with any Apple II or Apple II plus with at least 48K of RAM. One disk drive is required, but two are preferred — as will be discussed later.

Its print routines should work with most popular printers, but it will not accept special control strings. I was able to successfully use Epson/parallel-interface and NEC/serial-interface printers.

OPERATION

NOTEBOOK's records may be from 1 to 14 lines long, each containing up to 39 alphanumeric characters. Records are divided into two sections each: titles and text. Titles are used as index or record-access keys and are included as part of displayed or printed output along with their corresponding records' text fields.

If you have just one disk drive available, your data files will be kept on space provided on the program diskette. If you use two drives, your data files may be kept on separate data diskettes. In either case, you would want to keep only one file on a given disk since (1) data space is formatted for only one record layout and (2) files are not labeled, and you might not want to mix records of even the same format. No indication is given of either data diskette or program diskette record-holding capacities.

Each of NOTEBOOK's main functions, accessed from its main menu, are discussed below.

PRINTER SLOT

In this option, you specify the type of interface card to which your printer is attached (i.e., parallel or serial) and the slot in which it is located.

DATA DISK

As mentioned earlier, you have two options for storing your data files: on the program diskette if you use one or two drives; or on a separate data disk if you use two drives. You tell the system which drive to use in this option. This option is always used when you boot the system and you may also use it at any time thereafter to switch between files kept on different drives if you are using two.

INIT

Each data diskette must be INITed with DOS 3.3 before you can use it to store a new NOTEBOOK file. The NOTEBOOK INIT option must then be used to allow the system to format the disk to accept NOTEBOOK records — this holds even for the blank space available on the program diskette. It is also in this option that you specify the number of lines to be contained in each record. If you chose 10 lines per record, which corresponds to a standard Rolodex card (2 1/8 x 4 inches), the screen format will show where Rolodex's insert holes are located. This will allow you to use the bottom line and avoid having printed output cut off by the Rolodex cards' holes.

Care must be used in determining the number of lines your records are to contain since it will be impossible to change record sizes once data have been entered.

INSERT

You use this command to enter new records. First, you are prompted for the new record's title. Since each title must be unique, the system searches the data file to determine

EVERYONE NEEDS A . . .

UNINTERRUPTABLE POWER SOURCE

ADVANCED DESIGN
NEW RELIABILITY
GUARDIAN PROTECTS
ELECTRONIC SAFETY
LIFESAVER FOR DATA

$595

SAVE YOUR DATA FROM POWER OUTAGES!

BACKUP FOR YOUR COMPUTER, MONITOR, PRINTER AND 5¼" FLOPPY AND HARD DISC DRIVE

• Automatically stops annoying problems from power line interruptions and brown outs • You need standby power to save data • Maintenance free backup power available in 115 volt or 220 volt • 50 or 60 HZ • 150 watts • Complete versatility — operate your system from a 12 volt source, i.e., automobile cigarette lighter, boat or airplane • Rugged self contained gel cell battery • No voiding warranty — no cutting wires • Automatic audio alarm warning tone during commercial power failure or interrupt • UL listed • FCC approved • Transient voltage suppressor gives added insurance from line voltage spikes, utilizing Zener Ray™ • Green/red LED power status indicator • Green — normal AC line power • Slow blinking red — at least 6 minutes of remaining standby power • Fast blinking red — approximately 2 minutes of remaining battery power • Solid state technology unexcelled by any UPS power unit in its class.

RH ELECTRONICS, INC.

COPYRIGHT © 1981 - PATENTS PENDING

566 IRELAN, BUELLTON, CA 93427

(805) 688-2047

SEE YOUR RH ELECTRONICS PRODUCTS DEALER

FOR YOUR APPLE II*:

SUPER FAN II™	$ 74.95
SUPER FAN II™/ZENER RAY™	$109.00
SUPER RAM II™	$125.00
RH 12 VOLT TRANSVERTER	$149.00

FOR MICRO COMPUTERS:

GUARDIAN ANGEL™	$595.00

whether there is another record with the same title. If so, you are prompted to change the new title.

When the title is O.K., you then enter text until you have entered as many lines as was specified for the file you are using. Each line can be up to 39 characters long and must be terminated by hitting the RETURN key. Longer lines will be truncated, and data lost.

No special editing commands are provided. While use of the Arrow keys is allowed, you may not use the Apple's ESC I,J,K,M edit features to move around the input screen.

When all lines have been entered, you are given the option to go back and change the text. Otherwise, you can go on to enter the next new record. Titles, once accepted, can only be DELETEd as described below — they may not be changed or EDITed.

When you are done INSERTing new records, hitting CTRL-E will return you to the main menu. Further, if at any time you wish to print the record you are working on, hitting CTRL-P will send the current record to your printer.

SEARCH

This option allows you to display one or more records which satisfy your search criterion. The criterion consists of one or more characters you enter corresponding to the title of the record you want to find. If you enter fewer characters than are contained in the title, NOTEBOOK will look for all titles containing the one(s) you enter as their leading character(s). For example, entering "S" will produce all records starting with an S. If you enter no characters and just hit RETURN, the system will display all records in the file. Records will be displayed sorted in their titles' alphanumeric order.

The system will leaf through the file showing all SEARCH matches consecutively unless you use the SPACE bar to tell it to show just one at a time. Hitting any other key will cause it to go back to continuous display.

The CTRL functions mentioned earlier also work in this option.

EDIT

Want to change a record after it has been INSERTed? Use the EDIT command from the main menu. To call up a record in this mode, you must tell the system exactly which title you are looking for, and then you must verify the results of your changes before the file is updated.

DELETE

To DELETE a record in this option you must enter its exact title. When NOTEBOOK displays the corresponding record, you must verify the deletion and then either continue deleting or return to the main menu using CTRL-E.

CATALOG

This option produces a listing of all titles contained in your file. It may be displayed or printed. As in the SEARCH option, you may list all titles or tell the system where to start, and it will continue on from there, listing all the following titles in the file in alphanumeric order.

PRINT

When a new record is entered, the system appends an asterisk ("*") to its title. When the record is PRINTed, its asterisk is removed. This feature allows you to print only those records which were not previously PRINTed — e.g., if you wanted to list all recently updated records. Asterisks are not removed by the quick-print (CTRL-P) feature described earlier.

Thus, when you select the PRINT option, you are first asked whether you want to print the entire file (by entering "E") or just those records which represent updates since the last time the file was printed (by entering "U").

Next, NOTEBOOK asks you if you would like it to print a short series of alignment patterns to help you set up your forms. Then, it goes on to search its files and produce your listing.

If you entered an "E" earlier, you will be given the option to selectively list only those records whose titles begin with the characters you specify, as in the SEARCH option described earlier.

Therefore, if you have only one drive, you can never have more than one data file available. To create a new file, you will need to re-INIT the data space on the program diskette, thereby erasing all data contained therein.

HELP

Selecting this option from the main menu will produce a series of displays explaining the system's functions.

EXIT

Causes NOTEBOOK to close the current file and boot a disk loaded in Drive 1.

DOCUMENTATION

The NOTEBOOK manual is contained in a small, center-stapled booklet containing 17 pages. The text is typewritten and legible. Except for an unusual number of spelling and grammatical errors, it does a nice job explaining how the system works. Thoughtfully, it also gives a short list of supply houses from which continuous-form index and Rolodex card stock may be obtained to be used with the system.

PERFORMANCE

Overall, NOTEBOOK is a solid performer which lacks polish in several areas.

First, in record creation and editing, it would benefit from more extensive text editing functions than those provided by the basic Apple keyboard.

Second, record entry would be facilitated (1) if the fairly long pause (five to eight seconds) required for it to do a title validity check in INSERT mode were eliminated, or if this check were made after record entry was complete, and (2) if it didn't pause to (apparently) write the partial contents of new/edited records to disk as text lines are entered.

Third, the ability to do keyword

searches on title or text fields would be a major improvement.

Finally, it seems misleading and abusive to say that only one disk drive is required to operate the system since, as noted earlier, operation with just one drive limits users to only one data file — with no backup capability. Either an unfair tradeoff has been struck between user needs and those of the author and publisher to protect against potential wrongful copying of their system or the system is so poorly designed as to exclude data backup.

Either the publisher should indicate NOTEBOOK requires two drives or one-drive owners should be provided with (1) a single-drive copy capability within NOTEBOOK or (2) an ability to use a standard copy routine (e.g., the DOS System Master's FID program) to copy data files from the program diskette. Alternately, if the entire program were put in memory at one time, data diskettes could be mounted in Drive 1.

CONCLUSIONS

All in all, this is a very capable system which delivers what it promises at a very reasonable price.

Compared to CardFile, NOTEBOOK has significantly better printing capabilities; is easier to operate; sorts records, whereas CardFile cannot; can prepare its own records, whereas CardFile requires use of an independent word processor; runs under DOS, whereas CardFile requires CP/M; and it's $34.00 cheaper than CardFile too.

On the other hand, NOTEBOOK is not in the league of DataFax and VisiDex (my favorite after having used both, although John Mitchener ranked DataFax higher than I rated VisiDex). These other two packages have more generalized and powerful record management functions such as larger record sizes, text editing, keyword searching, date and time stamping, and data entry templates — at significantly higher prices than NOTEBOOK's. Time Manager seems to be in a class by itself.

NOTEBOOK seems a fine, reasonably priced package to use if you are looking for a simple package to maintain index or Rolodex card files — provided you use two disk drives. It may be surpassed by specialized mailing-label management systems, however.□

Readable Apple® Books

Microbook: Database Management for the Apple II®
Ted Lewis

At last, here is an affordable way for you to have a database management system on your Apple II. Written in Pascal, this program can be used for almost any application involving the storage and retrieval of information. The entire source listing is included if you want to type the programs, or you can buy the diskette with the programs on it.

Book: ISBN 0-88056-072-X
320 pages $19.95

Book & Diskette:
ISBN 0-88056-156-4
$34.95

32 BASIC Programs for the Apple® Computer
Tom Rugg and Phil Feldman

Chock full of programs with practical applications, educational uses, games and graphics. Each chapter fully documents a different program which is ready to run on your Apple computer. You can type the programs in yourself, or buy a diskette for the Apple II, Apple DOS 3.3 with the programs on it.

Book: ISBN 0-918398-34-7
304 pages $19.95

Book & Diskette:
ISBN 0-88056-151-3
$29.95

Basic BASIC-English Dictionary
Larry Noonan

This unique dictionary gives you an alphabetical listing of all commonly used BASIC commands, statements, operators, and special keys, then translates them for use on the Apple, PET, and TRS-80 computers. Translating from one BASIC to another is a breeze, as examples and explanations abound.

ISBN 0-918398-54-1
150 pages $10.95

dilithium Press
P.O. Box E
Beaverton, OR 97075
(800) 547-1842
(503) 646-2713

✓ Use our toll free number for VISA or M/C orders or to learn the store nearest you that carries our books.

☐ **Please send me the book(s) I have indicated. I understand I may return for a full refund if I am not satisfied.**

__ **Microbook—book $19.95**
__ **Microbook—book & diskette $34.95**
__ **Basic BASIC-English Dictionary $10.95**
__ **32 BASIC Programs for the Apple Computer—book $19.95**
__ **32 BASIC Programs for the Apple Computer—book & diskette $29.95**

☐ **Enclosed please find my check which includes $1 to cover handling. $_____**

Name _____
Address _____
City, State, Zip _____

☐ **Please send me your FREE catalog BRAINFOOD**

Mail to: dilithium Press, P.O. Box E, Beaverton, OR 97075

ES-CAPE

by Bill Linn
S-C Software
2331 Gus Thomasson,
Suite 125
Dallas, TX 75228
214-324-2050

$60.00

Apple II Plus or //e
Unlocked

Rating: B+

Reviewed by John Martellaro

ES-CAPE is a resident machine language utility that provides on-call assistance in writing and editing Applesoft programs. The advantage of this is that the usual editing features supplied on the Apple II are barely sufficient for extended debugging and program development. Since Applesoft files are not text files, they cannot be edited directly with a word processor. (The conversion between type A and type T files is bothersome for interactive debugging and running of programs.) On the other hand, a resident extension to the operating system makes the editing, running, and re-editing of programs far more convenient.

Perhaps the best known resident Applesoft editor is the Global Program Line Editor written by Neil Konzen. (It is available from the Apple Puget Sound Program Library Exchange to members for $38.50.) In fact, it is probably one of the all-time most popular Apple II programs. Any program that does what Global Program Line Editor does must be compared to Global Program Line Editor, out of tradition and necessity, and I shall do so in the rest of this review.

The major headache in editing Applesoft programs on the Apple II is that when you wish to insert or delete characters in a given line, you must trace over the entire line before hitting RETURN. ES-CAPE solves this most rudimentary problem. Like Global Program Line Editor, ES-CAPE allows the insertion and bumping of characters at the cursor after a CTRL-I. Characters are gobbled at the cursor with a CTRL-D. Like Global Program Line Editor, you need not trace over the line with the Right Arrow to terminate entry. Once the line looks like you want it, a RETURN will enter the line.

The upper part of the screen is reserved for the listing of the program. The bottom part of the split screen is used for displaying and editing a given line.

Perhaps the best way to describe the features is to simply list the commands.

ES-CAPE COMMANDS

CTRL-A
Displays the help menu

CTRL-B
Cursor to beginning of line

CTRL-C
Clears the upper window

CTRL-D
Gobbles at the cursor

CTRL-F
<char > Moves cursor to first <char > in the line

CTRL-I
Insert mode (terminates at next CTRL char)

CTRL-K
Toggles keyclick

CTRL-N
Skips to next line

CTRL-R
During editing, restores line to original state. After editing, recalls previous line

CTRL-S
Shifts between upper and lower case

CTRL-T
<char > Deletes from cursor to <char >

CTRL-V
Allows next character to be entered verbatim (CTRL char)

CTRL-X
Clears lower window

CTRL-Z
Edits next line without scrolling

A
Auto line numbering

C
Change: C/string1/string2/(A) (linenum)
Without the "A" for all, each changed is queried

E
linenum Edit a line number

F
Used with a catalog to display a lettered list of files

L
List: L(linenum1)(,linenum2)

R
Repeats last list command

S

Search: S/string(A) (linenum). ;CTRL-W is a wildcard

V

Displays non-array variables

X

RUNs the resident Applesoft Program.

. (Dot)

File management — provides a menu for loading, saving, locking, etc.

All of the functions above worked without confusion or difficulty. Of note here is the "Repeat-the-last-list" command, the "Display-all-variables" command, and the wildcard search. One recommended debugging technique is to insert STOPS at critical points in your program so that when it halts, you can simply display all the variables with the V command. I like this feature.

EVALUATION

I found ES-CAPE easy to learn and use. Unlike Global Program Line Editor, there is no distinction made between editing a line and entering a line. This is the most crucial distinction between the two programs. Another important difference between the two programs is that Global Program Line Editor works with the following 80-column cards: Smarterm, Superterm, Videoterm, Vision 80, and the Wizard 80. ES-CAPE works on the //e as does the 40-column version of Global Program Line Editor. The one deciding factor that kept me from using ES-CAPE consistently is that with the split screen and 40 columns, I could not see enough of the program vertically at one time to make changes that require one to see a related section of code. Only 16 lines of the program are visible. If they are longer than 40 columns, and most are, then the line is truncated, often in the middle of a variable or keyword. This makes perception of the program logic more difficult than twenty-four 80-column lines in the 80-column version of Global Program Line Editor. Both programs have definable keyboard macros. Two things that Global Program Line Editor provides that ES-CAPE does not are a type-ahead buffer and the ability to append two Applesoft programs. Global Program Line Editor is 4096 bytes and ES-CAPE uses 5890. Both programs hide above the DOS buffers, can be removed completely, and can reside in the upper 16K of RAM (language card on a II Plus).

Both programs provide very similar editing features and definable macros. The macros supplied with Global Program Line Editor are more useful and the macro capability is much greater. ES-CAPE provides room for 256 bytes of macros invoked by ESC <char>. Global Program Line Editor provides for 1152 bytes, xnd Macros can be of the form ESC <char> or ESC CTRL <char>. Further, the macros can be nested. By way of contrast, ES-CAPE provides an invokable help menu, editing during input, semi-split-screen editing, better control over listing, auto line numbering, a key clicker, and wildcard searches, while Global Program Line Editor does not. Global Program Line Editor provides 80-column support, more powerful macros, appending, and a type-ahead buffer, while ES-CAPE does not. Neither program has built-in line renumbering. Based on performance to price, Global Program Line Editor would get an AA. If ES-CAPE were copy protected, it would get a C+ based on the price-to-performance ratio. However, because it is unlocked, the rating is set at B+.

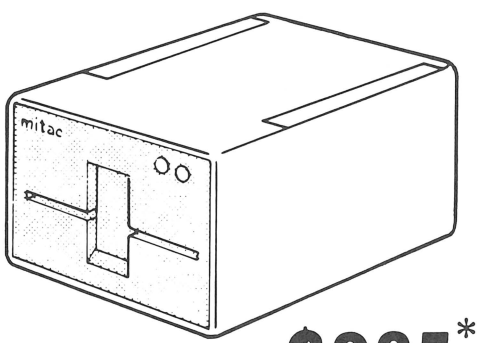
DOCUMENTATION

ES-CAPE provides a 21-page booklet that is complete, clear and well written. A quick-reference card is supplied.

SUMMARY

ES-CAPE, when it boots, comes up with a promotional logo and then a menu offering the options of standard or language card version. The astute user will quickly learn to change the HELLO program to simply RUN the appropriate version of ES-CAPE. Global Program Line Editor gets straight to the point and provides a configuration program that will bring up the desired version without delay. Other than the above irritation, the biggest complaint I have about ES-CAPE is the price. Sixty dollars seems a bit high compared to Global Program Line Editor and neither one is copy protected. After doing some extensive Applesoft editing with ES-CAPE, I am not yet converted.□

APPLE
Compatible Disk



$285*
Plus Shipping

143 K Bytes, Single Slided Standard Apple Specifications

Modern Information Methods
P.O. Box 3102
Fullerton, Ca 92631

* Calif. Residents Add 6% Payable By Check Or COD

Announcing—

APPLE™

The Best of SoftSide!

For the past four years, **SoftSide** Magazine has been bringing Apple® owners the best in BASIC software.

But now you can do even better...**The Best of SoftSide**.

From all our back issues, we've selected the most useful...the most entertaining...the most fun programs **SoftSide** has ever published. For example:

Try the world of *Quest*. See if you can successfully guide your man through a labyrinthine dungeon and snatch valuables from the evil clutches of fearsome monsters.

Try to beat your computer at *FLIP-IT*, **SoftSide**'s highly popular version of Reversi.

While away the hours with **SoftSide**'s beautiful implementation of *Solitaire* that won't let you cheat.

PLUS...for the practical minded:

***Database* — The Best of SoftSide** offers the latest, fully updated version of the *Developing Database* Program, which now takes advantage of the virtually unlimited storage of random-access files.

***Microtext* — SoftSide**'s BASIC text editor. Use it to simplify the process of composing letters and other documents, putting them down on paper, then storing them on diskette or cassette.

The Best of SoftSide is available now for your Apple® computer. It contains over 190 pages of BASIC code for Adventures, Simulations, Practical Applications, and much more.

And, to make entering these programs into your computer a breeze, **The Best of SoftSide** comes spiral bound to lie flat. Plus, each version includes **SoftSide**'s own Strategic Weapon Against Typos (*S.W.A.T.*).

Order Your Copy of The Best Of SoftSide...Today!

To order your copy of **The Best of SoftSide**, fill out the coupon below and mail it along with $19.95 to **SoftSide**, 6 South Street, Milford, New Hampshire 03055.

But hurry! The first printing of **The Best of SoftSide** is just off the press, and orders will be processed on a "first come-first served" basis!

Please send me a copy of **The Best of *SoftSide!***

Name _____

Address _____ State____ Zip____

City _____

☐ Payment Enclosed ($19.95) ☐ MasterCard ☐ VISA

MC# and Interbank#/VISA# _____

Exp. Date_____ Signature _____

Each Version Contains Over 190 Pages Of Programs.

SPITFIRE SIMULATOR

by Ted Kurtz
Mind Systems Corporation
P.O. Box 506
Northampton, MA 01061
413-586-6463

$40.00

Rating: A

Reviewed by Michael L. Weasner

INTRODUCTION

In the realm of Apple II flight simulators, only two stand out as worthy of use as "real" simulators: A2-FS1 (SubLogic Communications Corp.), reviewed in *Peelings II*, V1N2, and AirSim-1 (Mind Systems Corp.), *Peelings II*, V3N4. Both reviews were updated in V3N8, which also included a Flight Simulator Standards Chart. Now Mind Systems has introduced Spitfire Simulator, and in some respects it stands above the other two. At the end of this section is an updated chart showing all three simulators and their scores/ratings (see V3N8 for a discussion of the standards).

In Spitfire Simulator you fly a high performance (for World War II type aircraft) Supermarine Spitfire Mk 1. Your mission is to shoot down as many of the enemy aircraft as you can and still have sufficient fuel to return and land at your base. Your first impression of this may be that it is a game (mine was); however, it is much more than that. In order to locate (without cheating), pursue, and shoot down the enemy, it was necessary for me to recall techniques I used as an Air-to-Air Instructor Pilot for the Air Force. It also provided me with some excitement that I've not experienced since before I began "flying a desk"; only the game HADRON (reviewed in V3N5) comes close to providing these kinds of thrills, but in Spitfire Simulator you are "flying" a realistic aircraft, shooting down realistic targets. If you have flown AirSim-1, you will immediately feel comfortable in your Spitfire's cockpit. The instruments and flight controls operate exactly as in AirSim-1, with some extra capabilities. Only the "feel" of the aircraft is different because your Spitfire is a higher performance aircraft.

FLIGHT MANUAL

The documentation is twenty-seven 5 ½ X 8 ½-inch pages of program explanation, some techniques, and some simple flying instructions. Overall the manual is excellent; in fact the only point I will quibble about is the use of "flair" instead of "flare" throughout the manual. The writer needs to stop using a certain felt-tip pen when writing an aviation oriented manual. *(ed. note. The manual is also available in Spanish.)*

BASIC FLYING

Spitfire Simulator can be used as a beginning flight simulator since you have the option of when to go into the Air-to-Air mode. While the airspeed is considerably faster than seen in AirSim-1 or A2-FS1, this will not cause too much difficulty, even on landing. The Left and Right Arrow keys control the throttle, and the "/" toggles full-open/closed throttle for faster response. A joystick (or paddles) is used to control the ailerons and elevator. A mode is provided to change the sensitivity of either or both controls. There is even an option to couple the ailerons and rudder for better control.

On takeoff the aircraft "skips" a little just before rotation, but this is to be expected for such an aircraft. Once airborne, you can practice flying skills or do aerobatics. One of the comments in the AirSim-1 review was concerning the lack of a ground indicator (such as the grid used in A2-FS1), which detracted from aerobatics since you had no "sense" of the ground. Well, a grid has been added in the non-combat mode of Spitfire Simulator. The grid provides an excellent indicator of the ground and is most useful when doing loops or rolls. Once I got into a spin, and talk about realistic; watching the ground go 'round and 'round surely reminded me of doing spins in real aircraft. By the way, I couldn't recover: seems I overstressed the aircraft. Nice crash sound; visual was unimpressive, though. Another comment in the AirSim-1 review was in regard to the requirement to hold the SHIFT down while selecting "+" or "@", even though the ";" or "P" characters were not used. This has been corrected in Spitfire Simulator. An operative fuel gauge has been added, contradicting Mind Systems' philosophy expressed in the AirSim-1 manual that computer airplanes do not need fuel gauges.

READER REQUEST CARD

I would like to see the following evaluated in PEELINGS II

Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

SOFTWARE

1. Assemblers/Compilers
2. Business & Finance
3. Code Generators
4. Communications
5. Data Base Programs
6. Graphics Packages
7. Word Processors
8. Educational
9. Utilities
10. Simulations
11. Scientific
12. Languages
13. Personal
14. Plotters
15. Games
16. Other: _____

Program Name _____ Classification No. (From List Above) _____

Publisher _____

Address _____

Program Name _____ Classification _____

Publisher _____

Address _____

HARDWARE Product Name _____

Manufacturer _____

Address _____

Description _____

Apple is a registered trademark of Apple Computer, Inc.

Please ☐ Enter ☐ Renew my subscription to PEELINGS II

Name/Company

Address Apt. #

City State/Province/Country Zip Code

United States

☐ One Year $21 (9 issues) ☐ Two Years $38

Canada; Mexico; APO; FPO

☐ One Year $36 (9 issues) ☐ Two Years $68

Foreign Rates (Remit in U.S. funds drawn on U.S. bank)

☐ **South America; Europe** (air mail) ☐ One Year $48 ☐ Two Years $92

☐ **All Other Countries** (air mail) ☐ One Year $57 ☐ Two Years $110

☐ Check or Money Order Enclosed ☐ Bill Me (U.S.A. Only)

☐ Charge VISA ☐ Charge MasterCard

Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

SUBSCRIPTION CARD

Apple is a registered trademark of Apple Computer, Inc.

Card Number Expires

Signature

To expedite MasterCard and VISA orders dial toll free 1-800-345-8112 (1-800-662-2444 in PA)

Please ☐ Enter ☐ Renew my subscription to PEELINGS II

Name/Company

Address Apt. #

City State/Province/Country Zip Code

United States

☐ One Year $21 (9 issues) ☐ Two Years $38

Canada; Mexico; APO; FPO

☐ One Year $36 (9 issues) ☐ Two Years $68

Foreign Rates (Remit in U.S. funds drawn on U.S. bank)

☐ **South America; Europe** (air mail) ☐ One Year $48 ☐ Two Years $92

☐ **All Other Countries** (air mail) ☐ One Year $57 ☐ Two Years $110

☐ Check or Money Order Enclosed ☐ Bill Me (U.S.A. Only)

☐ Charge VISA ☐ Charge MasterCard

Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

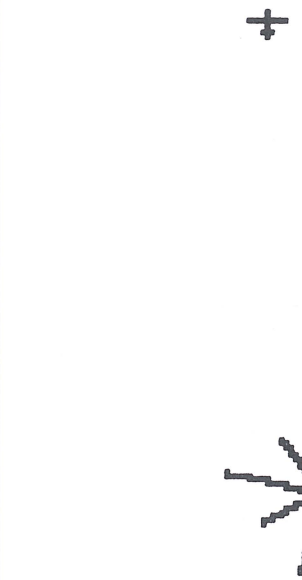
SUBSCRIPTION CARD

Apple is a registered trademark of Apple Computer, Inc.

Card Number Expires

Signature

To expedite MasterCard and VISA orders dial toll free 1-800-345-8112 (1-800-662-2444 in PA)



You must then determine where in the "world" the target is located, what direction it is flying, and at what speed. Watching the coordinates change will provide you with direction and some indication of speed. You must then either fly to intercept (difficult for beginners but you can use the radar display to help) or transport your Spitfire to coordinates near the enemy. You will be required to fly to the proper heading for attack. When you first visually sight the enemy, he may be far away, especially if you have flown the intercept, and so will be just a dot on the windscreen (like in A2-FS1). However, as you approach the enemy you will begin to see the dot take shape as a recognizable aircraft or blimp or whatever the target is. As you fly yourself into firing position, you will see the target's perspective and size change just as you would expect. In fact, I found this aspect the most realistic of any of the flight simulators or games I have seen on any microcomputer.

SPITFI

by Ted Kurtz
Mind Systems Corporation
P.O. Box 506
Northampton, MA 01061
413-586-6463

$40.00

Rating: A

Reviewed by Michael L. Weasner

INTRODUCTION

In the realm of Apple II flight simulators, only two stand out as worthy of use as "real" simulators: A2-FS1 (SubLogic Communications Corp.), reviewed in *Peelings II*, V1N2, and AirSim-1 (Mind Systems Corp.), *Peelings II*, V3N4. Both reviews were updated in V3N8, which also included a Flight Simulator Standards Chart. Now Mind Systems has introduced Spitfire Simulator, and in some respects it stands above the other two. At the end of this section is an updated chart showing all three simulators and their scores/ratings (see V3N8 for a discussion of the standards).

In Spitfire Simulator you fly a high performance (for World War II type aircraft) Supermarine Spitfire Mk 1. Your mission is to shoot down as many of the enemy aircraft as you can and still have sufficient fuel to return and land at your base. Your first impression of this may be that it is a game (mine was); however, it is

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 385 LAS CRUCES, N.M.

POSTAGE WILL BE PAID BY ADDRESSEE

Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

2260 Oleander
Las Cruces, New Mexico 88001

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 225 HOLMES, PA

POSTAGE WILL BE PAID BY ADDRESSEE

Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

P.O. Box 625
Holmes, PA 19043

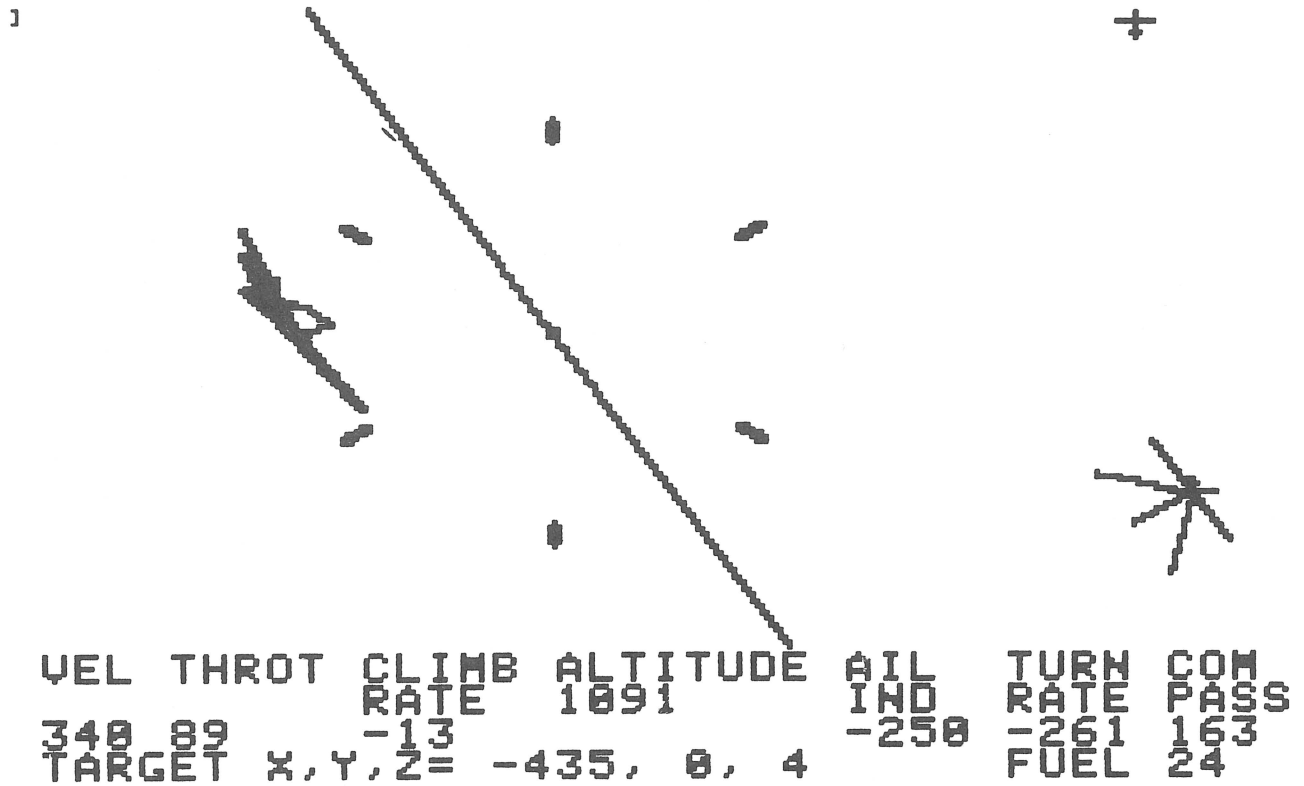
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 225 HOLMES, PA

POSTAGE WILL BE PAID BY ADDRESSEE

Peelings II™
THE MAGAZINE OF APPLE SOFTWARE AND HARDWARE EVALUATION

P.O. Box 625
Holmes, PA 19043



Since the purpose of this simulator is aerial warfare, there is no "scenery" other than the grid with your home base and a practice landing field. If you own AirSim-1 you can access its scenery from Spitfire Simulator instead of the enemy aircraft displays. If you don't have AirSim-1, I would not recommend buying it just for the scenery. For most people the grid display will be more useful.

Flying the Spitfire will demand some concentration and skill in avoiding overcontrol. As with AirSim-1, there is a relatively long delay from a control input to a visual response. This can result in some violent maneuvers and perhaps loss of control. Once you master the skills necessary (just as for any aircraft), your control will smooth out. The delay in response coupled with a screen update only once per second (roughly) will continue to be a problem, though. Just as with AirSim-1, Spitfire Simulator can do some very good aerobatics if properly flown. There is no instrument flying option, but an artificial horizon and compass are provided. The compass will prove useful in pursuing enemy aircraft.

Landing your Spitfire is somewhat different than landing in AirSim-1. Speeds are higher but flaps are available (landing gear is lowered simultaneously, but no indication is provided if you land gear-up/no-flap). There is no scoring in the practice mode. Good (survivable) landings will take some practice, but then that is why you fly a simulator first.

AIR-TO-AIR

When you decide you want to start pursuing targets, you can press CTRL-B to have the computer randomly select your target. If you prefer you can enter a number (2 to 9) and call up a specific target. In either case the scenery will disappear leaving only the horizon line, the disk will run briefly, and then the X, Y, and Z (altitude) coordinates of the target will appear on the instrument panel. You must then determine where in the "world" the target is located, what direction it is flying, and at what speed. Watching the coordinates change will provide you with direction and some indication of speed. You must then either fly to intercept (difficult for beginners but you can use the radar display to help) or transport your Spitfire to coordinates near the enemy. You will be required to fly to the proper heading for attack. When you first visually sight the enemy, he may be far away, especially if you have flown the intercept, and so will be just a dot on the windscreen (like in A2-FS1). However, as you approach the enemy you will begin to see the dot take shape as a recognizable aircraft or blimp or whatever the target is. As you fly yourself into firing position, you will see the target's perspective and size change just as you would expect. In fact, I found this aspect the most realistic of any of the flight simulators or games I have seen on any microcomputer.

Pressing the "G" key turns on the gunsight, and pressing either joystick button fires the gun. You will hear the guns fire and see tracers from your wing guns. If you are on target and at the correct range, the enemy aircraft will explode. You will receive a score for each enemy plane downed plus, if you land successfully, you will receive further benefits. Tracking the enemy aircraft might seem simple: the enemy flies straight and level without changing speed (he doesn't see you), but in fact the responsiveness of the Spitfire will make the task very challenging. Mind Systems has given you a way to cheat: pressing the "L" key will immediately level the wings. If you don't relish the idea of shooting down your fellow human beings then I suggest you try flying barrel rolls around the other aircraft — it is possible, it is fun, and it is very realistic.

SUMMARY

Spitfire Simulator did slightly better than AirSim-1 on the simulator standards but is still a long way from being the perfect Apple II flight simulator. However, I am invoking a reviewer's prerogative to give Spitfire Simulator a higher rating than its score indicates. I do this because Spitfire Simulator has changing perspective of the targets and a realistic approach to Air-to-Air gunnery. Even though the enemy aircraft are only line drawings that you can see through, it is still the best attempt at giving the Apple fighter pilot a taste of real aerial warfare. When something better comes along, I will consider changing the A rating, but for now the Spitfire Simulator is the best dogfight simulator on the market. Now, Mind Systems, how about target maneuvering and color?

As a general visual-flight simulator, Spitfire Simulator is also the best since the grid is provided and the aircraft flies most like a real aircraft. Overall it is an enjoyable simulator and a worthwhile training aid.□

NOTE TO VIDEX ENHANCER II OWNERS: You must disable Enhancer II features before booting the Spitfire Simulator disk, otherwise the program will not function properly. This can be done by BRUNning the MACRO.- GAMES file on the Enhancer II Utility disk or, if you have a later version, you can just press the Spacebar during the boot process.

THE SENSIBLE SPELLER *IMPROVED!*

The #1 Apple spelling verification program has been made even better! We've taken all of the features you liked from the original and have added the features you requested to create *the new SENSIBLE SPELLER!*

MORE FEATURES!

We've added the features you asked for!* You can now *immediately* correct misspelled words by replacing them with the proper spelling. The SENSIBLE SPELLER even suggests the correct spelling for your misspelled words!

We've also given you more options for searching the dictionary, including multiple-character and single-character substitutions.

THE CHOICE OF THREE OUT OF FOUR APPLE OWNERS!

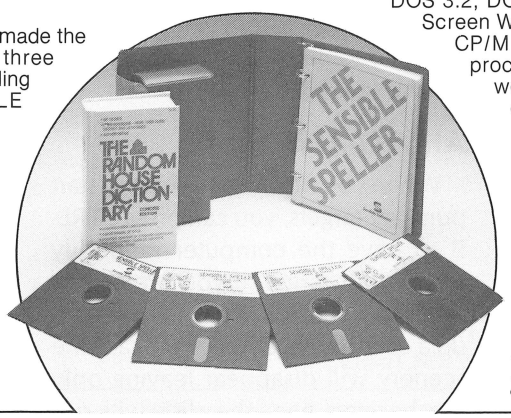
We still give you all the features that made the SENSIBLE SPELLER the choice of three out of four Apple owners buying a spelling checker.** In fact, the SENSIBLE SPELLER was the only spelling verification program to ever appear on Softalk's Top 30 list.

The SENSIBLE SPELLER still includes the largest dictionary available for the Apple computer — over 80,000 words are supplied with unlimited room to add your own special words! This is a brand-name dictionary, containing *real words* from the official Random House Dictionary — not a list of words typed in by some programmer or made up from tables of prefixes and suffixes! We even throw in a hardback copy of the dictionary to give you definitions and pronunciations!

The SENSIBLE SPELLER is fast, a ten-page document can be checked in just a minute or two. It is also extensively menu driven to make it friendly and easy to use. And because each misspelled word is shown to you in the middle of a small excerpt from your document, you won't waste time trying to remember how you used the word.

MORE WORD PROCESSORS!

Each SENSIBLE SPELLER package contains multiple versions for compatibility with almost all Apple word processors including: DOS 3.2, DOS 3.3 (Apple Writer, Magic Window, Screen Writer, etc.), SuperText, Word Handler, CP/M (Wordstar, etc.), and Pascal word processors. And, the SENSIBLE SPELLER works on all Apple //e, II+, and Apple-compatible computers with one or two disk drives.



Don't be spellbound—get the professional solution! $125.00

Sensible Software, Inc.

6619 Perham Drive
West Bloomfield, MI 48033 (313) 399-8877

Please add $1.25 for shipping.
Visa / Mastercard / Check / COD welcome!

*New features not available in Apple CP/M, Pascal, and WordHandler versions.

**"...Speller from Sensible Software glommed on to more than three-quarters of the market for proofreading programs..."—Softalk Magazine, August 1982

APPLE is a trademark of APPLE COMPUTER, INC.
SCREENWRITER-SIERRA ON-LINE, INC. SUPERTEXT-MUSE SOFTWARE WORDHANDLER-SILICON VALLEY SYSTEMS, INC. WORDSTAR-MICROPRO INTERNATIONAL, INC.

IFR SIMULATOR

Author unspecified
Programmers Software
2110 N. 2nd Street
Cabot, AR 72023
501-843-2988

$50.00

Rating: B

Reviewed by Michael L. Weasner

INTRODUCTION

In *Peelings,* V3N9, we discussed the Space-Time Associates Air Navigation Trainer. IFR Simulator reviewed here is similar to Air Navigation Trainer in many respects even though it is called a "simulator". In V3N8, we described the attributes a microcomputer simulator should have, but since IFR Simulator is more of a navigation trainer (as is Air Navigation Trainer), those standards are not appropriate.

With IFR Simulator you will "fly" IFR (Instrument Flight Rules) approaches to the airport of your choice. The instrument panel has all the expected flight instrumentation and so can be an aid to other instrument flight training (holding, intercepting radials, etc.). There are ILS (Instrument Landing System) and NDB (Non-Directional Beacon) approaches as well as VOR (VHF Omni Range) navigation exercises at several airports around the world.

DOCUMENTATION

While the 23 page manual is not an instrument flying tutorial, it does provide sufficient information to use the program as a training aid. However, several things detract from the manual. Many different typefaces were used, giving the impression the manual is a compilation of several different versions. Extraneous pictures (even ships) are placed randomly throughout. The screen photographs did not reproduce well and appear to be improperly exposed. The instructions for using the SEED program to create your own programs references incorrect line-numbers and makes using the SEED program difficult (the program is REMarked, fortunately). The main programs are all Applesoft and modifiable (the disk is unprotected), but the manual does not bring this out nor suggest ways to modify the programs other than with the SEED program. One program on the disk, PIX, is undocumented and its use is unclear.

One interesting point: at the end of the manual is a disclaimer that says that IFR Simulator is not "state of the art." Well, it sure does come close since the graphics are flicker-free and yet use Applesoft (with some binary routines). The visual display of the ground, even though used minimally and is non-banking, is of very high quality. I look forward to seeing a full-blown (full-screen) VFR simulator using the same routines. It would be truly impressive.

MAIN MENU

When the program disk is booted, you will get a menu of items from which to select. Most of the options are instrument approach or navigational exercises (there are 15 different exercises). There is an option to practice visual flying, run any program, or save/load a picture. The last option is used to save or view an X,Y-plot of your flight. In the visual flying display the instruments cover most of the screen, with a timer at the bottom. The top one-third of the screen is the visual display that is only visible for the practice option and at the end of some of the approaches for aid in landing. The view has limited nose up/down motion, no bank, but can present a full 360 degrees around the horizon. This display is impressive. A color monitor is not required but is nice for the visual display; some readjusting of the color may be required to make the sky blue. Changes in needle positions seem easier to detect when using color.

FLYING

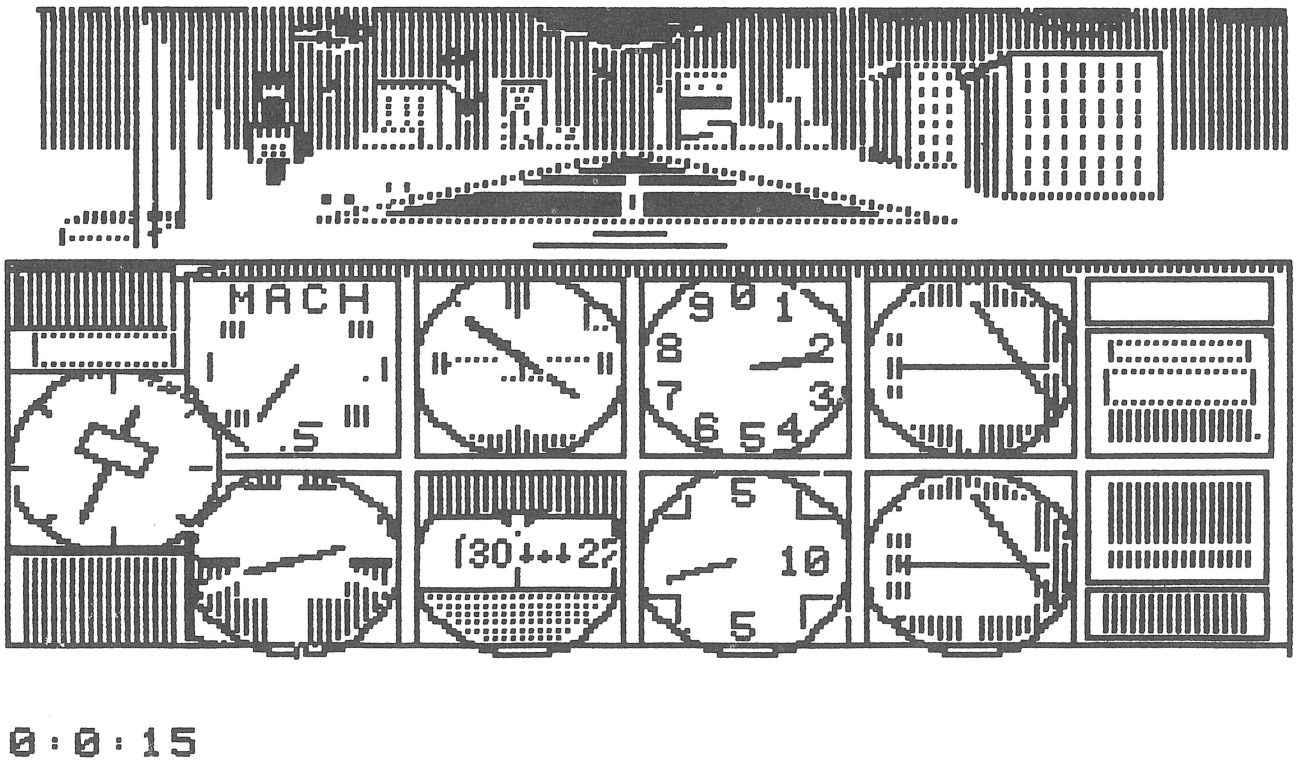
Once an exercise is selected, you will be given your "clearance" for the approach. This is your instructions on radials and headings to fly, and what localizer to what runway you are to use. Once you have "copied" this clearance, you press any key to start flying. You start out airborne with the throttle at mid-position and the airspeed at some middle value (0.5 Mach seems high but is relative). Using paddles or joystick, you will control your aircraft just as a real plane. I found the controls to be very sensitive, and it took awhile to get used to the feel of the aircraft. Once that was mastered, flying the aircraft "on instruments" was very realistic. The only difficulty was in determining the throttle position. There is no throttle position or engine RPM displayed on the screen, and since the throttle is changed plus or minus 3% for each press of the P (power) or L key, it was easy to forget just how much power had been added or subtracted. This complicates the instrument cross-check at critical

times (on the glide path). Wind is randomly variable and no information is displayed (none required); but since you get no weather briefing, you must determine crab from the resultant deviations on the instruments. This is not unlike the real world, but having a random wind with no way to disable it other than modifying the programs is not appropriate in a training situation. At the conclusion of your flight you will be shown the X,Y-plot of your flight path. This is an excellent training aid and can be saved for later viewing or dumping to your printer (dump program not supplied). You can also view the plot during a flight, but you will lose the compass display for awhile. I found that even in stabilized flight the compass heading changed up to 90 degrees from the original heading when the X,Y-plot was viewed. This can require considerable heading changes.

No distance information is provided since there is no DME (Distance Measuring Equipment) installed. This is not critical for such a trainer because you cannot vary your position at the start of the exercise (there is no GOTO X,Y coordinates). Altitude is displayed and must be controlled. Once you have intercepted the ILS glide path, you must use nose position and throttle to maintain the glide path to touchdown. All navigational courses are preset and cannot be changed. You must fly to intercept the displayed course (i.e., fly to center the needle) and then maintain course as instructed in your clearance. There are some screen-formatting errors noted on some of the text screens and error trapping is minimal; fortunately, few mistakes are fatal and only pressing RESET will cause break out of an exercise. There is no pause option to allow study or verbal instruction. Such a feature is almost mandatory in a flight trainer.

SUMMARY

IFR Simulator has many good points to recommend it for anyone trying to brush up or learn instrument flying skills. The approaches are exactly like those published by the Government. Your local airport probably has copies of out-of-date approaches you can get free. The techniques required for good instrument flying are directly applicable to a trainer or the real aircraft. The problems with IFR Simulator noted above are not serious enough to detract from its use; and if both are affordable, I recommend IFR Simulator be used in conjunction with Air Navigation Trainer in any flight training program. On the other hand, if only one is within your budget, then Air Navigation Trainer would be the better choice for basic navigational instruction.□



NIBBLE EXPRESS III
YOUR APPLE* WILL LOVE IT!

TABLE OF CONTENTS

Turtle Graphics 8
Applesoft Line Cruncher 14
TRAC Income System 19
MAMA 25
Amper Free Space Catalog 26
Machine Language Editor 27
Apple CALENDAR 36
Peaceful Coexistence 43
Apple Slugger 43
Reverse Key 45
Amper Find 45
Bond Manager 47
DOS 3 + 2 53
Amper Speed 57
Apple Darts 61
MicroCalc 63
Variable Cruncher 72
Life 77
Apple Flash 80
Checker 81
GO- Greeting Program 83
Quick Sort 86
Applesoft Line Editor 90
Othello 96
SPRINT 99
Disk Dump 102
Hi-Res Colors 103
Apple Record Command System 104
Apple Art Gallery 114
Game I/O Expmt 119
Super Keypad 123
Disk Commander 125
Compare Applesoft 132
Amp-L-Soft 136
Electronic Message Center 152
The Shape 155
Disk Map 159
Apple Bowl Football 161
Apple Scroller 167
Lower Case Letters 168
Recipe Box 170
Disk Doctor 178
Quasar II 182
DOS Command Entry 189
MLE Driver 189

NOW AVAILABLE!

NIBBLE EXPRESS is an Anthology of the Major Articles and Programs appearing in Volume 3 of NIBBLE Magazine . . . nearly $400 worth of Programs for your Apple II, ACE, or other Applesoft-compatible computer!

NIBBLE EXPRESS III contains *up-to-date enhancements, KeyPerfect Tables,* and the *Best of NIBBLE!*

Even if you have all 8 issues of NIBBLE in 1982, you'll want the Express to have updated program listings in one convenient package! It's a MUST for your Library!

NIBBLE EXPRESS III is a bargain at $17.95 plus $1.75 Postage/Handling ($2.50 outside the U.S.).

YOUR APPLE WILL LOVE IT!
(And so will you!)

NIBBLE
P.O. Box 325
Lincoln, MA 01773

Yes! I want to reserve NIBBLE EXPRESS Vol. III for my Library! Here's my ☐ Check ☐ Money Order for $17.95 plus $1.75 postage/handling. (Outside U.S. add $2.75 for postage/handling).

☐ Also send me NIBBLE EXPRESS Vol. I at $12.95 Plus postage/handling (see above).

☐ Send me NIBBLE EXPRESS VOL. II at $14.95 plus postage/handling (see above).

Master Card & Visa Accepted

Card # _____ Expires: _____

Signature: _____

Telephone: _____

Please Print Clearly

Name: _____

Address: _____

City _____ State _____ Zip _____

Your check or money order must accompany your order to qualify.
Outside U.S.: Checks must be drawn on a U.S. Bank.

*Apple is a registered trademark of Apple Computer Inc.
*ACE is a trademark of Franklin Computer Co.

FLIGHT SIMULATOR COMPARISON CHART

FEATURE	Possible Points	A2-FS1 *(Jul/Aug 80)*	Airsim-1 *(April 82)*	Spitfire Simulator
HARDWARE				
64K RAM	10	0	0	0
Joystick	10	5	10	10
VISUAL DISPLAY				
Flicker Free	15	5	5	5
Correct Perspective	10	10	5	10
Solid Shapes	5	0	0	0
Color	20	0	0	0
INSTRUMENTS				
Neutral Flight Controls Indication	5	5	3	3
Attitude Indication	10	0	10	10
Airspeed & Altitude Indicators	10	10	10	10
Distance Indication	10	10	0	0
Compass with or without an HSI	10	10	10	10
Throttle Position	5	5	5	5
Fuel Gauge	5	5	0	5
Stall Warning	5	5	5	5
Radio Navigation Aids	5	0	5	0
FLIGHT CONTROL				
Roll/Pitch	10	10	10	10
Response	10	10	2	2
Variable Response	20	0	0	10
Aerobatic Flight	10	5	8	10
X-Y COORDINATE CONTROL				
Goto a Coordinate	5	0	5	5
X-Y Plot of Mission	5	0	0	0
X-Y Plot on Printer	5	0	0	0
MISCELLANEOUS				
Crash	15	5	5	5
Flaps	5	0	0	5
Retractable Gear	5	1	0	2
Brakes	5	5	5	5
Variable Wind	5	0	0	0
Ground Effect	5	0	0	1
Multiple Airfields	10	1	10	5
Radar	5	2	2	2
Scoring	20	1	10	10
Manual	15	15	15	15
GAME MODE				
Dogfights	5	2	N/A	5
Enemy Aircraft	5	0	N/A	5
Total Points	300	127	140	171
Peelings Rating		B	B	A

OMNISCAN LASER VIDEODISC INTERFACE

Anthro-Digital, Inc.
103 Barlett Avenue
Pittsfield, MA 01201
413-448-8278

$250.00

Reviewed by Michael L. Weasner

INTRODUCTION

The Omniscan Laser VideoDisc interface card is used to control a Pioneer VP-1000, Sylvania VP7200, or Magnavox VC8010GY Videodisc player with an Apple II computer. It can duplicate all the functions of the disc-player control panel from the Apple keyboard or under program control. This review will highlight its features plus some uses of the system. The interface is built by Instrument Interfaces (8328 CTH K, Cross Plains, WI, 53528, 608-798-2951) and marketed by Anthro-Digital.

WHAT IS A LASERDISC?

Today there are two types of videodisc formats: CED (capacitance electronic disc) and optical. Both discs are about the same size as a standard 33 1/3 rpm audio record, but the format and hence the equipment necessary to play them are totally different. CED uses a needle which tracks a groove just like an audio record to generate the video image and sound for playback through a standard TV or monitor. Since the needle must follow the spiral groove, there is no capability for freeze frame, reverse motion, or search for a particular frame. Hence the CED format is not usable in an interactive way by the user; you insert a movie disc and play it. On the other hand, optical discs use a low-power laser beam to "read" the disk much like the head on your Apple disk drive. There are 54,000 concentric tracks on an optical disc, each of which can be an individual still frame. As the disc rotates, the laser can either read a track then move to the next track or it can be held on a single track to present a single frame on the screen. The length of time a single frame is shown determines the speed of the display: from freeze frame to stop-motion (at selectable speeds) to slow motion to normal viewing speed — all in forward or reverse motion. Depending on the actual laserdisc format (there are two), you can have frame or chapter search, or any of the various speeds of display. One other useful feature of laserdiscs is that two soundtracks are available. This can either be used for stereo movies or to present different information on each track, such as English on one track and another language on the other.

EVALUATION

The Omniscan system comes with the interface card, 2 cables, a disk, and a short manual (seven 5 1/2 x 6 1/2-inch pages) with installation instructions and some minimal programming information.

Installation requires no modifications to either the Apple or the disc player and is fairly straightforward. There are two points that need clarifying in the manual: the remote control cable is not supplied and no mention is made of which way the card is to be inserted into the slot. The remote cable is included with the RU-1000 remote control unit for the Pioneer VP-1000 player (the one used for this review); however, a similar cable can be purchased at any electronics store since the remote unit is not required for the interface to function. The card can be inserted into a slot wrong since it is a square 3 x 3-inch card with the jacks all on one end. The manual says to route the cables out of a hole in the rear of the Apple, so slot four is best for installation. But if you install it with the jacks to the rear, the component side will be reversed from all other peripheral cards. This seemed incorrect, so the card was installed with the component side the same as all the other cards, which placed the jacks to the front of the Apple (this is the correct way to install it). The supplied cables connect the Apple's Video-Out signal and the laserdisc player's Video-Out signal to the card. Your monitor is then connected to the video out from the card. The last connection is the remote control cable from the card to the player. Instructions are provided to use the interface with an RF

modulator. For this review a color monitor was used. Many combinations of display are possible. Most applications will use a single monitor for display of the videodisc output as well as for the computer output. You can, however, have separate displays for both outputs.

The manual says to use the disk programs as a starting point for writing your own applications software. When the disk is booted, you will first be presented with a configuration option. Slot 4 is the default but any slot except 0 can be used. Next a menu of five options is presented: Demo, BASIC Programming Instructions, Assembly Programming Instructions, Keyboard Immediate Mode, and Exit. The obvious first choice is the demo. You are prompted to insert a videodisc with the chapter/frame numbers encoded. Most movie discs do not have this information encoded, so you must use some type of instructional or other interactive disc. I used a Thunderbirds/Blue Angels show disc. The demo program then takes control of the Apple and the disc player. The screen "flips" between showing the disc at various speeds and presenting text from the program. Searches are performed and then displayed. All modes of the control are demonstrated. It was rather nice seeing scenes on my computer monitor and then text displays telling me what was happening. The potential of the total system quickly becomes evident.

The next thing to try was the Keyboard Immediate mode. Here the instructions provided were not adequate. The manual says you must do a JSR $300. What it really meant to say was: do a 300G if in the monitor or a CALL 768 if in BASIC. Doing either places the interface in Keyboard Immediate mode for control. Illegal inputs are not accepted. The manual has a table showing what keys perform what functions: "P" plays the disc, "X" toggles (or flips) the displayed screen from computer to player, and so on. All functions of the player except Power Off are available from either keyboard or program control. A separate card with the same table is also provided.

Next the tutorials for programming were looked at. These are simply instructions on what steps must be taken in your program (BASIC or assembly) to control the player. The steps are easy but since no hard copy of the instructions is provided, you will have to write them down. This information should have been included in the manual. Just to show how simple the programming is, here is a short sample program I wrote which simulates the Keyboard Immediate mode:

```
10 REM   LASER DISC SAMPLE
         PROGRAM
20 D$ = CHR$ (4)
30  POKE 10,76: POKE 11,9: POKE
         12,3
40 PRINT D$"BLOAD VIDEO.CODE":
         REM MACHINE CODE
         AT $300 50 HOME
60 PRINT "SAMPLE PROGRAM FOR
         VIDEODISC"
65 PRINT "          INTERFACE"
70 VTAB 12: PRINT "INPUT AN
         OPTION: ";:GET CODE$:
         PRINT CODE$
75  A=USR ( ASC (CODE$))
80  GOTO 70
```

The POKEs perform some preliminary setups, then the machine code from the disk is BLOADed. The disk is unlocked so you can FID the necessary file to your applications disk. Line 70 gets the input from the user, and line 75 sends the proper code to the interface card to perform the requested function. Simple. But then, this is a simple program. For more complicated programs which have greater control over the interface between the user and the player, it will be necessary to plan out all functions in detail to prevent some unwanted display from appearing. For example, you want the user to make a decision based on some information (either presented from disc or computer), and then you want the player to search for an appropriate frame to display. You first display the information, say a scene from a movie, then you flip the screen to text and pause the movie. Now you ask for a decision and the user types in the response. Based on the response, you have the player search for an appropriate preprogrammed frame number and display it. But on commercial models of disc players, the search can take up to 20 seconds to search from frame 1 to 54,000 (industrial models are much faster), so you must account for the delay before switching to the disc display. This means you will have to write the program to allow for all possible responses and the delays involved in acting on those responses. This can get complicated but is not impossible.

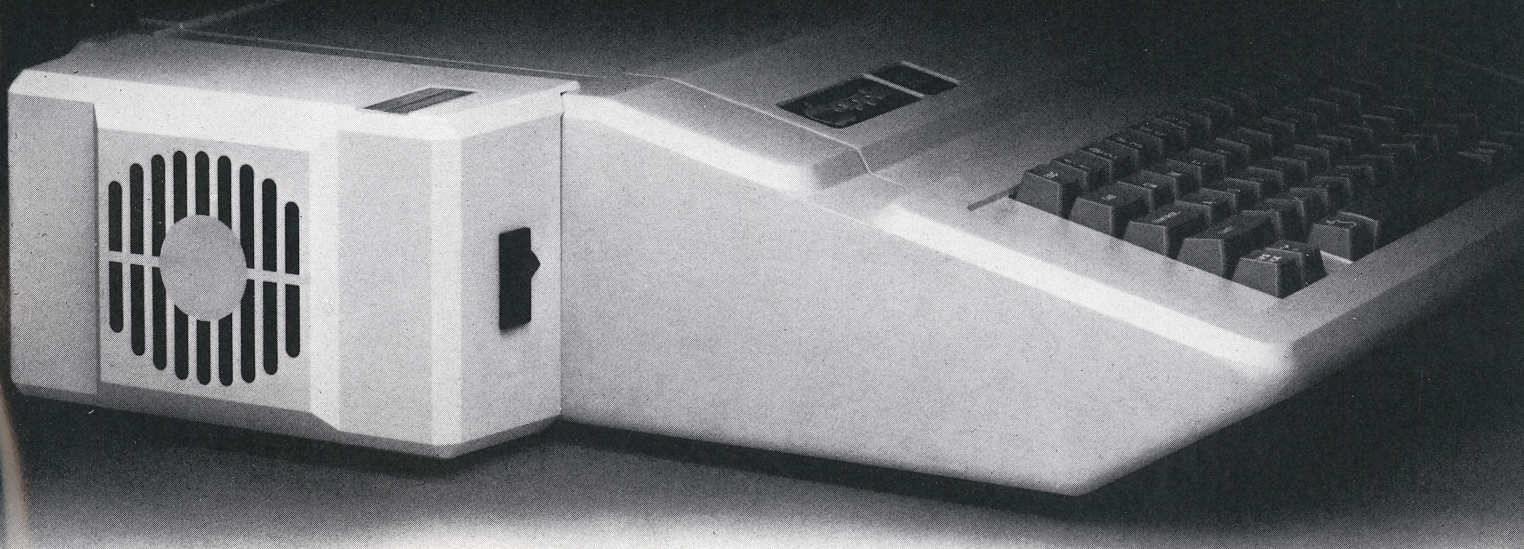
The Omniscan does what it is designed to do and does it very well. The software provided, while minimal, does provide sufficient information to get you started on writing your own programs. One could wish for a more thorough manual. The only deterrent to using this interface is the cost. At $250 it seems overpriced. The interface card is simple; only 14 components (four of which are small ICs) plus four jacks. If you have just purchased a VP-1000 or similar player, you have already spent nearly $700, and the additional cost of this interface may be more than your budget can stand. But for some users the potential uses of the total system may outweigh the high cost.

An IR (infrared) controller option is now available for $30. This eliminates the long cable running from the computer to the disc player and functions exactly like the hand-held remote. An additional software package is also available; for $25 you can use Pascal or Super Pilot (both on the same disk) to control the disc player. Neither of these optional items was evaluated.

It should be noted that the Omniscan Videodisc Interface is designed to be used with the low-end (price-wise), commercially available

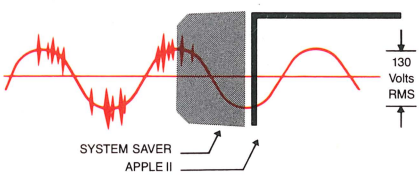
System Saver™

The most important peripheral for your Apple® II and IIe.®



For Line Surge Suppression

The SYSTEM SAVER provides essential protection to hardware and data from dangerous power surges and spikes.

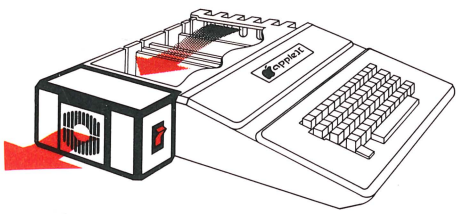


By connecting the Apple II power input through the SYSTEM SAVER, power is controlled in two ways: 1) Dangerous voltage spikes are clipped off at a safe 130 Volts RMS/175 Volts dc level. 2) High frequency noise is smoothed out before reaching the Apple II. A PI type filter attenuates common mode noise signals by a minimum of 30 dB from 600 khz to 20 mhz, with a maximum attenuation of 50 dB.

For Cooling

As soon as you add 80 columns or more memory to your Apple II you need SYSTEM SAVER.

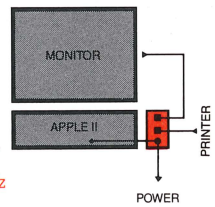
Today's advanced peripheral cards generate more heat. In addition, the cards block any natural air flow through the Apple II creating high temperature conditions that substantially reduce the life of the cards and the computer itself.



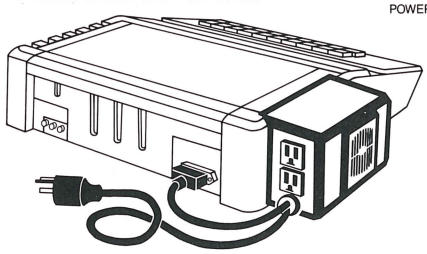
SYSTEM SAVER provides correct cooling. An efficient, quiet fan draws fresh air across the mother board, over the power supply and out the side ventilation slots.

For Operating Efficiency

SYSTEM SAVER contains two switched power outlets. As shown in the diagram, the SYSTEM SAVER efficiently organizes your system so that one convenient, front mounted power switch controls SYSTEM SAVER, Apple II, monitor and printer.



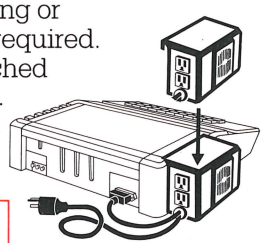
Available in 220/240 Volt. 50 Hz



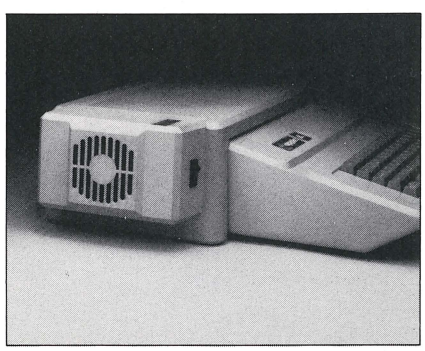
The heavy duty switch has a pilot light to alert when system is on.You'll never use the Apple power switch again!

Easy Installation

Just clips on.
No mounting or hardware required.
Color matched to Apple II.



Compatible with Apple Stand



$89.95 at your local dealer or order direct by phone or mail.
For phone or mail orders include $2.50 for handling. New York State residents add sales tax. VISA and MASTERCARD accepted. Dealer inquiries invited.

Kensington Microware Ltd.
919 Third Avenue, New York NY 10022
(212) 486-7707 Telex: 236200 KEN UR

KENSINGTON MICROWARE

laserdisc players. Whether this is true of other interfaces is unknown. *Peelings* hopes to review similar products in the near future.

WHAT USES?

The power of a computer-controlled laserdisc player is starting to be utilized in many areas from advertising to education, or anywhere mass storage and retrieval of data, visual or otherwise, is required. For example, Matrix Learning Systems (11728 Avon Way, Ste 4, Los Angeles, CA 90066, 213-391-0243) provides complete systems — hard ware, software, and laserdiscs — to train people in any area the user requires (they use an Apple II computer but with a different interface). A well-thought-out and complete system places the user in the unique position of being able to make decisions in real-time while remaining in a learning environment. Both visual and audio senses are stimulated, thus presenting more life-like situations.

Video Vision Associates Limited (7 Waverly Place, Madison, NJ 07940, 201-377-0302) has a line of Space Discs presenting massive amounts of visual information from Voyager encounters to manned spaceflight. Single frames and movies are available on discs and can be controlled with or without a computer. But using a computer interface can make access to the information quicker and more useful. Individual discs cost $320. Contact Video Vision Associates for more information.

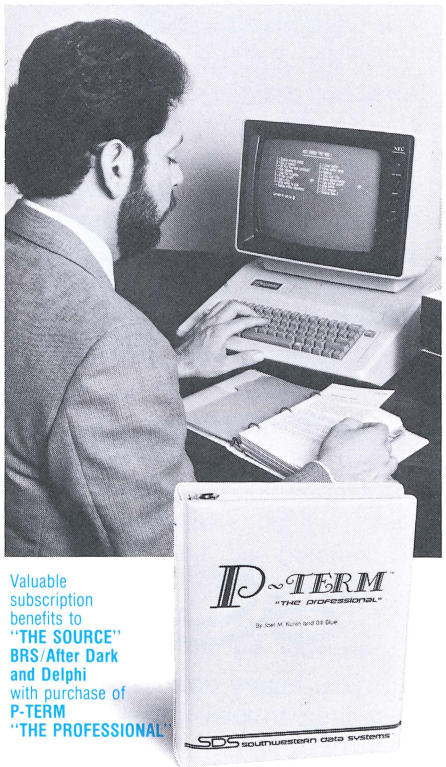
In home use you may find it appealing to "create" your own adventure games. Using computer control you can present different scenarios from those intended in the original disc. Note that the disc format must be appropriate for searching on frames if that is your purpose. You can restructure the flow of the movie, present different information as text on the screen, and allow the user to respond to what is happening and even control the flow of the movie.

The possibilities are endless and limited only by your imagination and somewhat by your budget. If you need to have special LaserDiscs made, the price is not cheap (this information is included with the Omniscan). The laserdisc has opened up new ways of retrieving and presenting information. Coupling the laserdisc and the computer produces a powerful new system. But the power of the complete system is greater than the sum of the parts. Truly this is the wave of the future, and the Omniscan Laser VideoDisc Interface from Anthro-Digital brings it to the Apple II user today.□

· APPLE ·

Communication Software

P-TERM "THE PROFESSIONAL"



Valuable subscription benefits to "THE SOURCE" BRS/After Dark and Delphi with purchase of P-TERM "THE PROFESSIONAL"

The most valued Communication Software published for the Pascal Apple //* and Apple ///.

P-TERM "THE PROFESSIONAL" is the answer to your communications needs for your Apple // with Apple Pascal 1.1. An Apple /// version is available, too. And with your purchase, you'll receive subscription benefits to the information services of "The SOURCE," BRS/After Dark and Delphi.

Transfer any size or type of Pascal files with the error-free protocol mode, transfer any size text files, or use the password-protected Auto-Answer mode for unattended operation.

The features are many:

- Compatible with most popular modems and Apple Pascal compatible interfaces.
- Supports baud rates of up to 2400.
- Data Buffer has capacity of 18K bytes with Apple //, 32K with Apple ///.
- Powerful Macros put your Apple on automatic pilot for fast log-ons.
- Emulates many popular terminals.

You can use P-TERM "THE PROFESSIONAL" the first day you buy it. You can display Command menus at any time. And, as your communications needs grow, P-TERM "THE PROFESSIONAL" grows with you.

For Apple Pascal communications, call on the pro, P-TERM "THE PROFESSIONAL."

Suggested Price: **$129.95**
CA res. add 6% Sales Tax
plus $2.50 shipping

*Also Apple //+ and //e compatible

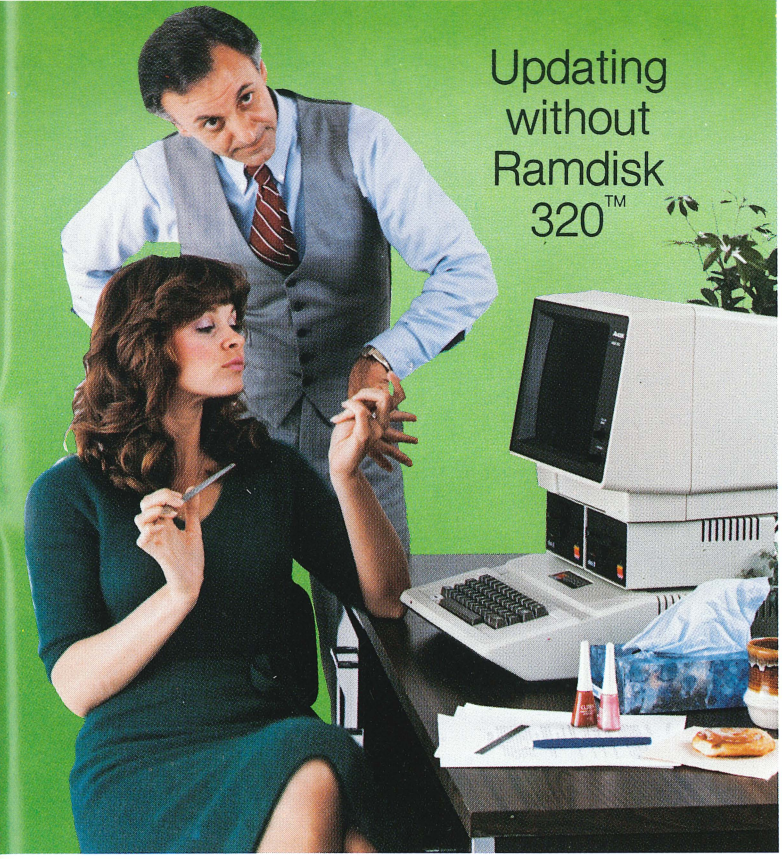
For more information call or write:

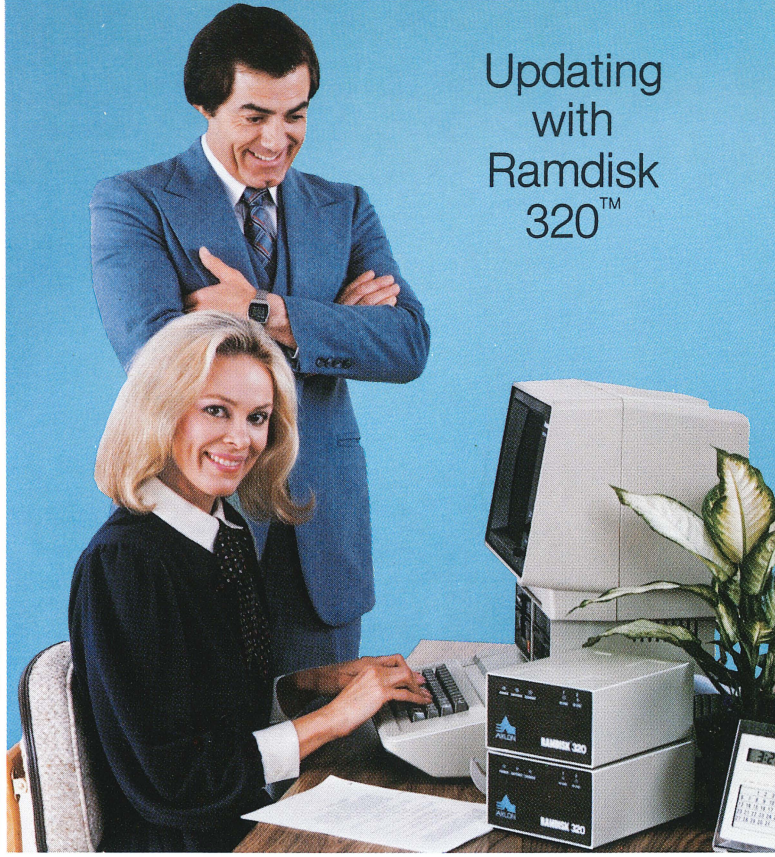
southwestern data systems™

THE LEADERS IN INNOVATIVE COMMUNICATION SOFTWARE

10761 Woodside Avenue, Suite E, Santee, CA 92071, (619) 562-3670

BRS/After Dark is a trademark of BRS.
Delphi is a trademark of General Videotex Corporation.
Apple, Apple //, Apple //+ and Apple /// are trademarks of Apple Computer, Inc.
"THE SOURCE" is a service mark of Source Telecomputing Corporation.





2 minutes ..... 12 seconds

.....15 seconds

Can you really afford to waste that much time everyday?

If valuable time is lost everyday while you wait for your computer to retrieve information, then Apple owners rejoice! With Ramdisk 320™ *you can add real productivity to your Apple by moving data 800% faster.* With Ramdisk 320™, our dBASE II™ search and sort time was reduced from an exasperating 2 minutes 12 seconds to a remarkable 15 seconds. Just imagine the savings in time everyday and the added value to your Apple; *Ramdisk 320™ really pays for itself.*

Ramdisk 320™'s powerful 320K byte, self-powered memory draws no current from your Apple and features battery backup as well.

Ramdisk 320™'s solid state memory and error-free **throughput** is designed to increase productivity and reduce wear and tear on your floppy drives. Ramdisk 320™ is fully compatible with Apple DOS 3.3, SOS, CP/M™, Apple Pascal 1.1 and 4.0 at no extra expense.

In addition to the basic Ramdisk 320™ module, you are provided with a plug-in, slot-independent interface card, specially designed operating programs plus software for diagnostics and fast-load copy routines.

Word processing, Accounting, Data Base Management, Software Development, Educational and Scientific Data Processing tasks are accomplished more efficiently. *Add Ramdisk 320™ to your Apple and take a big bite out of lost productivity!!*

Suggested Retail Price
$999.95

Interested Distributors, Dealers and OEM's call (408) 945-0500 for information on National sales, support and pricing program. Or write Axlon Inc., 70 Daggett Drive, San Jose, CA 95134.

For consumer information on ordering Ramdisk 320™ call: 800-227-6703 (In California call: 800-632-7979).

dBASE II is a trademark of Aston-Tate
Apple is a trademark of Apple Computer, Inc.
CP/M is a trademark of Digital Research

AXLON®

70 DAGGETT DRIVE • SAN JOSE, CALIFORNIA 95134
(408) 945-0500

NORTHEAST AREA
- MICRO COMPUTER ELECTRONICS DISTRIBUTOR Reading, PA (215) 929-9484
- SOFTWARE DISTRIBUTION SERVICES, INC. Buffalo, NY (800) 828-7250 In NY (800) 462-8488
- PMI Fairfield, NJ (201) 227-8411
- CPI Syracuse, NY (315) 476-6664

MID ATLANTIC AREA
- AMERICAN PERIPHERAL SYSTEMS McLean, VA (703) 893-9700
- MICRO BROKERS Arlington, VA (703) 845-7050
- B.A. PARGH CO. Nashville, TN (800) 251-5959 In TN (800) 342-5831

SOUTH EASTERN AREA
- MAKOMP INC. Miami, FL (800) 124-3272 In FL (800) 120-2878
- RTS DISTRIBUTORS, LTD. Atlanta, GA (800) 241-8707

CENTRAL AREA
- BARNHILL ASSOCIATES Denver, CO (800) 525-9719
- BOYD DISTRIBUTING Denver, CO (800) 332-2483

NORTHWEST AREA
- NATIONAL MICRO DISTRIBUTOR Beaverton OR (800) 547-8050

MOUNTAIN AREA
- RYAN DISTRIBUTING, CO. Salt Lake City, UT (800) 453-8084 In UT (800) 662-8682

NO CALIFORNIA AREA
- BYTE INDUSTRIES, INC. Hayward, CA (800) 227-2070 In CA (800) 972-5996
- SKU Berkeley, CA (800) 272-9133

SO CALIFORNIA AREA
- MICRO D Fountain Valley, CA (800) 432-3129 In CA (800) 854-6801

FOR NEAREST SALES OUTLET
CALL DISTRIBUTOR IN YOUR AREA OR CALL 800-227-6703 (IN CA CALL 800-632-7979)

SCREENWRITER II
THE NO. 1 WORD PROCESSOR

DON'T ASK US WHY
ASK OUR USERS

"I am impressed! Support of your product is excellent and refreshing and, I might add, better than anything I have come in contact with."

LeRoy O. King, Jr., Texas

"I have used other word processing packages like Wordstar and Scripsit and you have them all beat."

Charles R. Jones, Minnesota

"The documentation is excellent... I am very much impressed with the service and attention shown to customers."

D. M. Vibbert, Iowa

"... a terrific word processing program with a great many capabilities and a lot of sophistication... a very capable word processor... so many features and functions that one may well want to use it for much more than word processing."

Interface Age March '83

"An impressive word processing program... the manual is a pleasure to use... first rate... even outclasses the much-vaunted Wordstar..."

Windfall December '82

"Any imaginable type of formatting can be accomplished... to sum it up... you might never need another word processor."

Incider January '83

We can tell you that Screenwriter II is the best-selling word processor for the Apple computer*, but only our customers can tell you it's the best. We pack it with all of the features you demand from a word-processor. Then we back it up with the finest product support in the industry. That's why people who use Screenwriter II everyday bandy about words like "unbelievable," "impressive," "excellent" and "the best." They said it; we believe it. So will you.

Screenwriter II is available for the Apple II/II+ and Apple IIe.

For more information please contact Sierra On-Line at (209) 683-6858 or write. Sierra On-Line Building, Coarsegold, CA 93614.

ALSO AVAILABLE

SCREENWRITER PROFESSIONAL — Screenwriter II packaged with the best-selling spelling verification system. The Dictionary — The professional combination

*As reported in Softalk magazine.

Sierra ON-LINE INC