

\$3.50

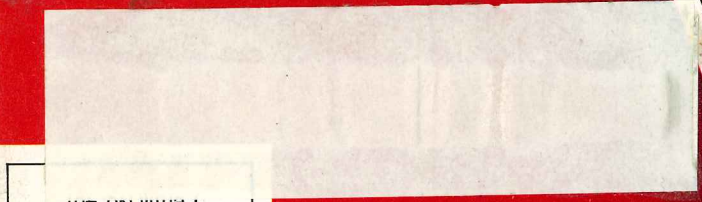
PROFILES

The Magazine for Kaypro Users
September 1984

Educational Computing

**Logo and PILOT
for the Kaypro**

SOFTWARE REPORT CARD	
Word Processing	A
Spreadsheet	B
Analysis	A
Data Base Management	
Recreational Computing	
Telecommunications	



BULK RATE
U.S. POSTAGE
PAID
Glasgow, KY
Permit No. 461



WHAT A CLOCKMAKER IN 18TH CENTURY ENGLAND TAUGHT US ABOUT MAKING QUALITY PERSONAL PRINTERS.

Each gear finely honed. Each pendulum carefully balanced. Each timepiece a combination of precision and function. He was a craftsman, building a quality product to stand the test of time.

Today, Okidata makes the most technologically advanced dot matrix printers the same way. With quality, performance, and a healthy respect for value.

Function with affordability. All printers print, but an Okidata does it with more performance and versatility than any other. There are seven models to choose from, priced at \$349 to \$2,595.

Affordability with flexibility. Okidata offers three print modes, too. The data processing mode lets you print up to 350 characters per second. That's five pages a minute. Another mode lets you print emphasized or enhanced text for more effective presentations, while the correspondence mode prints letter

quality at up to 85 characters per second, with clarity that rivals daisywheel. And an Okidata can print graphics and charts, which a daisywheel can't. This allows you to fully use the latest integrated software packages like Lotus 1-2-3™ and Symphony™.

Flexibility with compatibility. Each Okidata printer is fully compatible with all popular software packages and personal computers. Special interfaces are available for IBM and Apple, including the Apple Macintosh.

Compatibility with reliability. Here's where Okidata quality really shows. With a warranty claim rate of less than 1/2 of 1%. With printheads that last well beyond 200,000,000 characters and come with a full year guarantee. With service available nationwide through Xerox Service Centers.

Precision and performance. Quality

and value. That old English clockmaker would have been very proud of us.

Call 1-800-OKIDATA (609-235-2600 in New Jersey) for the name of the Authorized Okidata Dealer nearest you.



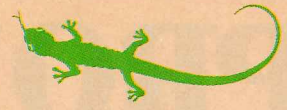
OKIDATA
an OKI AMERICA company
Technological Craftsmanship.

Lotus 1-2-3 and Symphony are trademarks of Lotus Development Corp.

LOGO

FOR THE KAYPRO

ANOTHER COLOR GRAPHICS FABLE



The story of Adam and Eve (and Lisa and Logo)

Late one evening a cobbler, his son, and Kaypro were all sitting before the hearth, the flickering fire gently illuminating their faces. This was the time when stories were told, so it surprised no one when the cobbler put down his burl pipe and began relating a tale which had been handed down in his family for many generations.

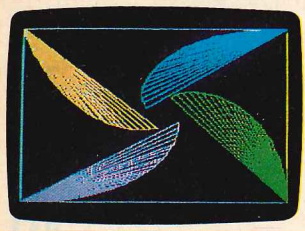
Way back at the dawn of civilization two young humans named Adam and Eve found themselves in a beautiful garden. The trees and bushes were laden with fruit of every kind, and it just so happened that the two were sitting under an apple tree when along came a Turtle.

"Hi, folks," said the Turtle.

"Hi, Turt," said Eve.

"I'm having a closeout special on apples," said the Turtle, trying not to look too anxious.

At that moment, along came Lisa (one of Adam's children from a former marriage).



"Sure, I'd love an apple," said Lisa, picking a shiny new one with a color monitor. "Look at these colors, and it has Logo, and a turtle. I can get way ahead of my classmates!"

"So it wasn't Eve who got the first apple?" asked Kaypro.

"No, it was Lisa," mused the Cobbler. "And the sin of it all is that there were no Kaypros which could run Logo. It was a lowly apple or nothing."

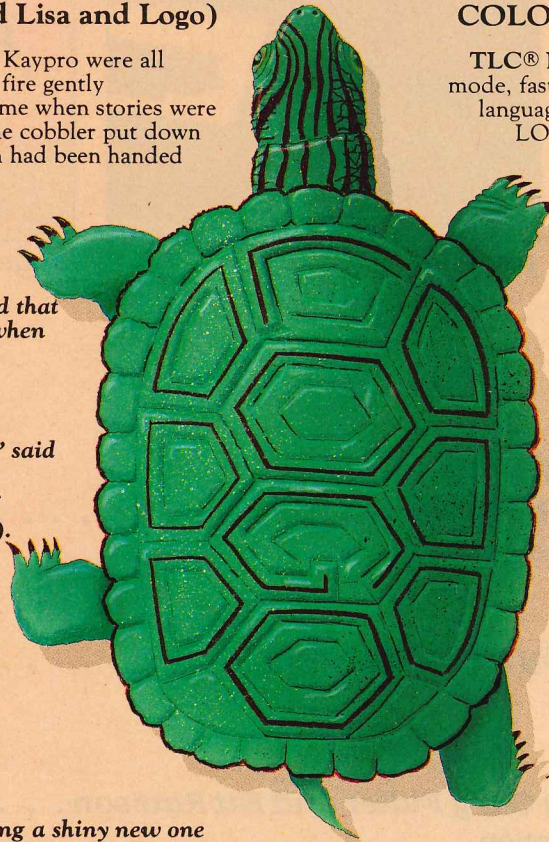
"Fortunately, that's no longer true," noted Kaypro. "MicroSphere now has Logo for its color graphics board. It's a super powerful version of the language so I can create many turtles with the ease that made the fruit's Logo so popular."

Up to this time, the Cobbler's son had been sitting quietly, but then in a flash, he scooped up Kaypro and headed for his room.

The Cobbler feigned surprise, but there was a twinkle in his eye. "Don't keep Kaypro all evening," he called after the boy.

You see, the Cobbler wanted to try out another new MicroSphere program. This program creates sophisticated bar charts in full color from Perfect Calc data. It even dumps the results to a standard dot matrix printer.

COLOR GRAPHICS BOARD FOR KAYPRO 2, 4, 2-84, 4-84 & 10. 256x192 Pixel resolution, 16 color, 32 sprites. Software includes three editors, drivers, screen dump to printer and disk, six-month subscription to Micro Cornucopia and generates standard composite color. RF modulator is required for color TV operation. Plug in installation **\$245.00**



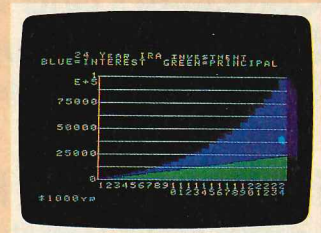
COLOR GRAPHICS BOARD SOFTWARE

TLC® LOGO featuring multiple turtles, multi-processing mode, fast, easy to use and easy to learn. This is the graphics language the schools like. There are many facets to TLC® LOGO including lisp commands, artificial intelligence algorithms, and vectors.

Standard version Kaypro 2-84, 4-84 and 10 using the internal screen only, 16,000 pixel resolution **\$99.95**

Deluxe version for all Kaypros with color graphics board installed, 49,152 pixel resolution, supports 16 colors and 32 sprites; color graphics board features, utilities and editors are supported. **\$129.95**

SPECIAL!!!! Color Board and Deluxe Version of LOGO **\$299.95**



INSTANT GRAPHER 2.0: allows bar charts, stacked bar charts and line graphs. Accepts up to 24x24 arrays or 180 points per plot. Reads numbers directly from Perfect Calc, CalcStar or other standard disk print files. Screen dump to printer program on color board disk also works. **\$50.00**

External Video Generator. Allows the connection of a STANDARD composite monitor. An inexpensive monitor works fine with either board. An absolute necessity for those who need a larger screen or bigger characters. Kaypro 2, 4 — **\$59.95** Kaypro 2-84, 4-84, and 10 — **\$89.95**

Electronic RAM disk drive. 256K, 512K or 1mb memory space. Includes printer buffer, dual centronics connectors and cabinet. Socketed without RAM chips. **\$199.00** Call for price of stuffed board due to fluctuating RAM prices.



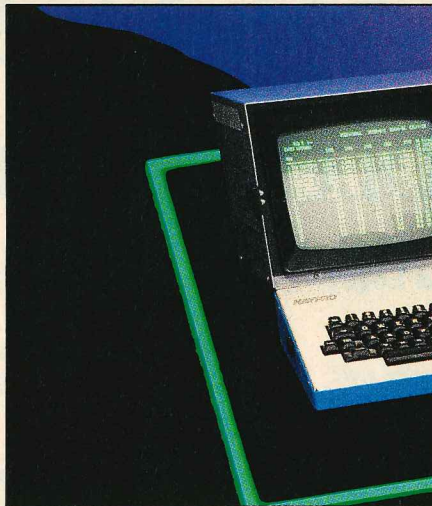
MicroSphere, Inc.
PO Box 1221
Bend, Oregon 97709
503-388-1194
9-5 Pacific Time

Dealer inquiries invited

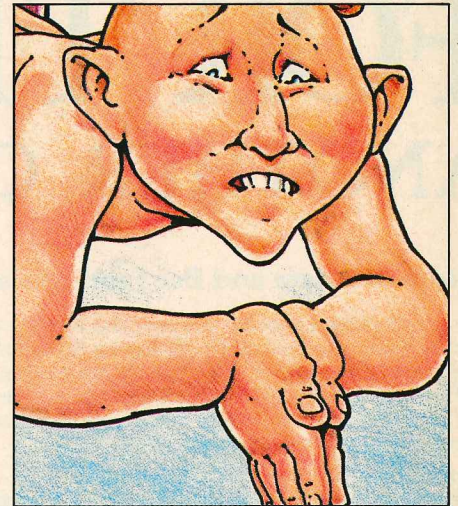
PROFILES



page 32



page 40



page 56

Features

Computers and Literacy:

Decline of Eloquence *by Jessica Horsting* 28
Some disturbing trends examined

It's Not Just For Kids *by Anne Wayman* 32
Looking at LOGO for the Kaypro

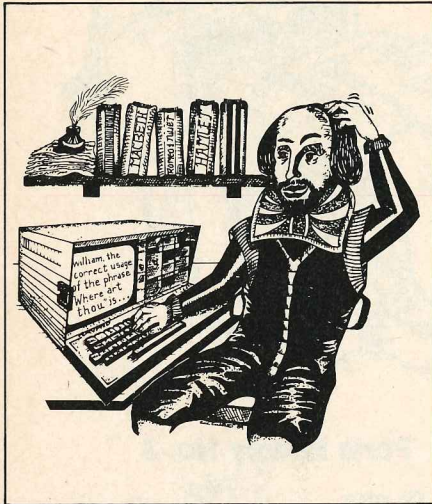
Inside The Octopus *by Gary Fidler and Kit Rawson* 40
Build a better software demonstration

Education with PILOT *by Terian Tyre* 48
A CAI language that novices will love

Take the Programming Plunge *by Cindy Jo Lane* 56
A non-threatening introduction to S-BASIC

The Word Plus Connection *by Michael Yard* 69
Customizing WordStar to run your spelling checker

Data Acquisition Made Easy *by Julie Knott and David Prochnow* . . . 70
The software bundle at work in the lab



*Literacy -
 Are computers a
 threat to language skills?*

page 28

Columns

Foreward	16
<i>by Tyler Sperry</i>	
Up and Running	20
<i>by David Gerrold</i>	
The Cottage Computerist	24
<i>by David Thompson</i>	

Departments

A Note About Subscriptions	6
Letters	8
Q & A	12
Book Reviews	78
Technical Forum	82
New Products	88
Users' Groups	94
Advertisers' Index	95

Cover photo Ron Powers

EDITOR & PUBLISHER
 Tyler Sperry

SENIOR EDITOR
 Terian Tyre

COPY EDITOR
 Susan Hyman

TECHNICAL EDITOR
 Tom Enright

SUBMISSIONS EDITOR
 Roxanna Li Wright

CONTRIBUTING EDITORS
 David Gerrold
 David Thompson

ART DIRECTOR
 Eric Mattei

ART ASSISTANT
 Joanne Ellis

ASSISTANT PUBLISHER
 Gwyn Price

CIRCULATION
 Colleen Grinnon

EDITORIAL OFFICES
 533 Stevens Avenue
 Solana Beach, CA 92075
 619-481-4353

ADVERTISING
 Nancy Donabedian
 249 S. Highway 101, Suite 321
 Solana Beach, CA 92075
 619-436-6112

PROFILES is published ten times a year by Kaypro Corporation, Solana Beach, CA.

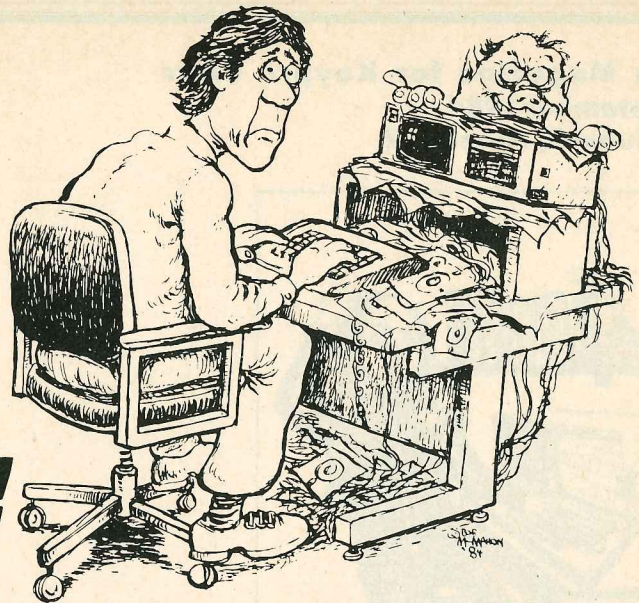
Registered owners of Kaypro computers, within the United States, are entitled to a six-issue complimentary subscription. Subscriptions within the United States are available for \$25.00 per year to people who are not registered Kaypro owners.

Subscription orders and change of address notifications should be mailed to *PROFILES* Circulation, P.O. Box N, Del Mar, CA 92014. Checks must be made payable to Kaypro Corporation. Address changes need to be sent at least eight weeks prior to moving.

Contents of this issue are copyright 1984 by Kaypro Corporation, all rights reserved. Reproduction in any form without express written consent of the publisher is prohibited.

BEWARE!!

There is evil lurking around your transportable!!

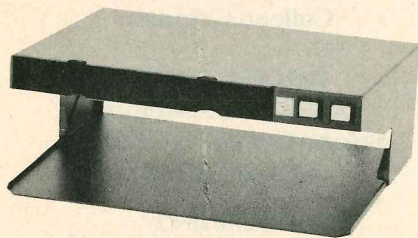


Porta-Enemy No. 1



D.M. aka Deskus Messus

His M.O. is to clutter your desk with diskettes and paper to the point where you can't find anything.

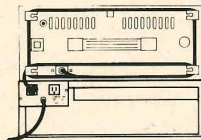
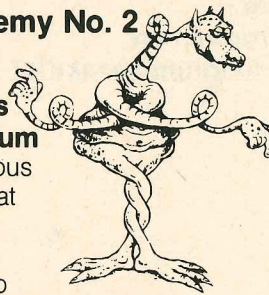


The **Porta-Micro Mate** also known as the P.M.M., can store up to 20 of your most commonly used disks and it also positions your transportable in a comfortable viewing position. The P.M.M. also has a perfect storage space for your keyboard.

Porta Enemy No. 2

S.C. aka Switchus Contortium

A dangerous M.O. in that everyday when you come in to turn on your transportable and peripherals, you must lean over in contortionistic fashion to find the switches for both units. S.C. could be very hazardous to your health.

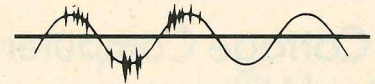


Two rear mounted power sockets are available so you can plug in both your computer and printer. There are two push button switches on the front that allow you to turn on either unit or both at the same time!

Porta Enemy No. 3

S.G. aka Surgus Glitchem

The most dangerous of the three, S.G. can do more damage at the flick of a switch, that's because a spike of electricity can be sent across the line when you turn the system on.



Last but not least, the P.M.M. comes complete with a UL approved surge protection circuit that will detect any power spike and defeat it before it gets to your system.

Available in two models the P.M.M. comes standard as a stationary unit or mounted on a swivel base for 180 degree positioning.



Porta-Micro Mate

Compatible with More Transportables

It Beats The Porta Enemies

Stationary Model **\$99.95**

Swivel Model **\$129.95**



362 So. LaBrea Avenue
Los Angeles, CA 90036
(213) 857-0371



DEALER INQUIRIES INVITED

NEW PRODUCTS FROM SOS



Printer Stands
80 col. **\$19.95**
132 col. **\$23.95**

Disk Cases
5 1/4" **\$3.95 ea.**
Holds 10 disks



Dust Covers
\$16.95

This is THE PASCAL COMPILER You've Been Hearing About



"It's almost certainly better than IBM's Pascal for the PC... Recommended."

Jerry Pournelle
Byte, May 1984

\$49.95

"If you don't have CP/M [for your Apple], Turbo Pascal is reason enough to buy it."

Cary Hara
Softalk Apple, May 1984

"If you have the slightest interest in Pascal . . . buy it."
Bruce Webster, Softalk IBM, March, 1984

And Now It's Even Better Than You've Heard!

- Windowing (IBM PC, XT, jr. or true compatibles)
- Color, Sound and Graphics Support (IBM PC, XT, jr. or true compatibles)
- Optional 8087 Support (*available at an additional charge*)
- Automatic Overlays
- A Full-Screen Editor that's even better than ever
- Full Heap Management—via dispose procedure
- Full Support of Operating System Facilities
- No license fees. You can sell the programs you write with Turbo Pascal without extra cost.

Yes. We still include Microcalc . . . the sample spreadsheet written with Turbo Pascal. You can study the source code to learn how a spreadsheet is written . . . it's right on the disk.* And, if you're running Turbo Pascal with the 8087 option, you'll never have seen a spreadsheet calculate this fast before!

*Except Commodore 64 CP/M.

Order Your Copy of TURBO PASCAL® VERSION 2.0 Today

For VISA and MasterCard orders call toll free:
In California:

1-800-255-8008
1-800-742-1133

(lines open 24 hrs, 7 days a week)

Dealer & Distributor Inquiries Welcome 408-438-8400

Choose One (please add \$5.00 for shipping and handling for U.S. orders. Shipped UPS)

- _____ Turbo Pascal 2.0 \$49.95 + \$5.00
- _____ Turbo Pascal with 8087 support \$89.95 + \$5.00
- _____ Update (1.0 to 2.0) Must be accompanied by the original master \$29.95 + \$5.00
- _____ Update (1.0 to 8087) Must be accompanied by the original master \$69.95 + \$5.00

Check _____ Money Order _____
VISA _____ MasterCard _____
Card #: _____
Exp. date: _____



Borland International
4113 Scotts Valley Drive
Scotts Valley, California 95066
TELEX: 172373

My system is: 8 bit _____ 16 bit _____

Operating System: CP/M 80 _____

CP/M 86 _____ MS DOS _____ PC DOS _____

Computer: _____

Disk Format: _____

Please be sure model number & format are correct.

Name: _____

Address: _____

City/State/Zip: _____

Telephone: _____

California residents add 6% sales tax. Outside U.S.A. add \$15.00 (if outside of U.S.A. payment must be by bank draft payable in the U.S. and in U.S. dollars.) Sorry, no C.O.D. or Purchase Orders.

A note about subscriptions

We're getting bigger

Beginning with this issue, *PROFILES* is increasing from six to ten issues a year: 8 monthly issues and 2 bimonthly issues.

How to subscribe

Subscriptions are available to everyone who purchases a Kaypro computer, or already owns one. The cost of a six-issue subscription is included in the price of your computer when bought in the United States.

For those in the United States, the situation is straight-forward: just send in your warranty card. Your subscription should begin within two months of sending in the card.

Your first issue

There is no way for us to know which copy of the magazine was packed with your computer. *Your subscription begins when you get your first issue in the mail, and has nothing to do with the complimentary issue packed with your machine.*

When things go wrong

If you've sent in your card and aren't receiving the magazine, please call or write to our Editorial Offices. (Our subscription number is 619-481-4353.) Remember to check the back of your machine for the serial number—we need that number to credit your account.

Address changes can also be handled at that number, but remember that calling into our offices will *not* register your warranty. You still have to send in your warranty card.

Renewals

If you are due to renew your subscription, please see the ad in this

issue on how to receive a special rate of \$21.00 per year. Our basic subscription rate is now \$25.00.

Back issues

Back issues are available for \$3.00 each, which includes postage and handling. *However, we only have the March/April, May/June, and July/August '84 issues in stock.* Send requests to our Editorial Offices, 533 Stevens, Solana Beach, CA 92075, Attn. Back Issues.

International subscriptions

Those who bought their Kaypros outside of the United States (or buyers who now live outside the U.S.) can get subscriptions through their local dealer. If you don't know who your closest dealer is, write to one of the distributors listed below or contact: Kaypro International, P.O. Box N, Del Mar, CA 92014.

CANADA

Computron
17507 107th Ave.
Edmonton, Alberta T5S 1E5
Canada

Computron
55 Torbay Rd. Unit 2
Markham, Ontario L3R 1G7
Canada

Western Cash Register, Inc.
338 W. Sixth Ave.
Vancouver, B.C. V5Y 1K9
Canada

EUROPE

Kaypro Europe B.V.
Stationstraat 7
NL-6361 BH Nuth
The Netherlands

Kaypro France
S.Q.R.L.

22 Ave. des Nations
ZAC Paris-Nord 2
95970 Roissy Charles de Gaulle
Cedex, France

Kaypro Germany
CAPIM Center
Rossmarkt 15
6000 Frankfurt Am Main
West Germany

AUSTRALIA

President Computer Group
100 George St.
Hornsby NSW 2077
Australia

Disclaimer

Reviews, editorial references, and advertisements should not be taken as an endorsement of any products not specifically manufactured by Kaypro Corporation. We are not liable for any damages arising out of purchase or use of any of these products.

In the case of reviews, opinions expressed are those of individual members of our staff, and do not represent any form of corporate certification. They also do not necessarily reflect intensive technical analysis as would be provided by a laboratory or professional testing firm. Other editorial copy is provided for the interest of our readership only, and may derive from telephone interviews, press materials, or casual exposure.

Responsibility for products advertised lies with the advertisers. We will not knowingly publish fraudulent materials. Should there be any consumer complaints arising from goods or services purchased from our advertisers, we would appreciate notification to that effect, to aid in our own screening process. □

PEOPLETALK ANNOUNCES:

■ FREE SOFTWARE HANDBOOK

DOZENS OF PROGRAMS TO MAKE YOUR
COMPUTER WORK ITS LITTLE CHIPS OFF!

- RESURRECT YOUR DEPARTED FILES AND DISKS FROM THE DEAD!
- CONTRACT AND EXPAND YOUR DISKS LIKE AN ACCORDION!
- SAVE THOUSANDS OF KEY-STROKES EVERY DAY!
- PUT BURGLAR BARS ON YOUR FILES TO KEEP OUT INTRUDERS!
- CUT YOUR DISK COSTS BY 40%!
- MAKE A VIDEO GAME OF LEARNING TO TYPE!
- DISCOVER INGENUOUS SOLUTIONS TO KEEP YOU FROM STRANGLING YOUR SYSTEM!

ALL
■ FOR ■
FREE!

Only \$17.95!

Features the
top 70 programs
in public domain —

- What they are
- When they're useful
- How to acquire them
- How they work

Also from PeopleTalk:

WORDSTAR AND FRIENDS FOR THE KAYPRO 2&4
PERFECT MANUAL FOR THE KAYPRO 2
PERFECT MANUAL FOR THE KAYPRO 4
PEOPLETALK GUIDE TO THE CHAMELEON

AND COMING SOON:

PEOPLETALK GUIDE TO THE KAYPRO 10

Subscribe to the **PEOPLETALK QUARTERLY!**

Tips, tricks, short-cuts, brainstorm! Plus a Helpline Column with **answers.**
\$20.00 per year.

SUPERCHARGE YOUR KAYPRO WITH **SMARTKEY!**

Only **\$89.95** to customize your computer!
Program your own keyboard to turn your
most-used commands into **ONE KEYSTROKE!**

SEE YOUR DEALER OR ORDER DIRECT:

PEOPLETALK ASSOCIATES INC.

P. O. Box 863652
Plano, TX 75086
214/423-4634

Letters

Pen pal wanted

I am thirteen years old and I have a Kaypro 4 computer. My dad bought it for his business about one year ago. I have been programming it in BASIC and I have a lot of programs written in BASIC. I have also been extensively working with the software that came with the Kaypro for my dad. I was wondering if you or anyone out there knew of anyone my age who has a Kaypro and would be willing to exchange notes on any of the software or exchange programs. If you do know of someone, could you please have him write to me at my address.

Matt Weisberg
29140 Apple Blossom Lane
Farmington Hills, Michigan
48018

We've printed your address so that other programmers your age can correspond. You might also check out the nearest Kaypro user group.

Which brings up an interesting point: due to a change in corporate policy (and a lack of space in PROFILES), we have discontinued listing user group addresses in the back of the magazine. To locate your nearest KUG, we suggest you check with either your local Kaypro dealer or Kaypro Corporation's KUG Manager:

Richard Conde
533 Stevens Ave.
Solana Beach, CA 92075

New software for old machines

I have one of the earlier Kaypro 2s, and I wanted to find out if it was possible to obtain any of the subsequent software additions. I received Perfect Software with mine, but, if the MicroPro software and dBase II were available for an additional fee, I would be very interested.

I cannot go through my original dealer, as it went out of business. I'm a member of the Santa Cruz Kaypro Users Group, but I have heard nothing about the availability of the software additions to old Kaypro users from either the store or the group.

In closing, I can do nothing but praise my original Kaypro 2. It has suffered through thousands of pages of fiction and non-fiction, been carried innumerable places, and demonstrated to endless "new friends." I believe at least ten people bought the computer as a result of my demonstrating its capabilities.

John J. Hogle
Watsonville, California

This question, in a slightly different form, was raised in last issue's Up and Running column. (Thank you, David.) Since then we have learned that the dBASE II package is available to owners of earlier Kaypros from (surprise!) your nearest Kaypro dealer. Suggested list is \$450.

Sadly, I am unaware of any plans for a similar deal on the

MicroPro package. —TS

Providing Perfect help

Your May/June 1984 issue of Profiles is the best yet. The two articles of most value to me were "A Clash of Styles" and "Three on Perfect Writer."

The documentation on Perfect Writer was poor to say the least and prevented me from utilizing it at all. After reading the article on the three books about Perfect Writer, I bought *Perfect Writer Made Perfectly Clear*. Within 30 minutes I was able to use Perfect Writer to write a letter without making a mistake. It sure felt good.

As a Kaypro 4 owner, I am in desperate need of clear and lucid description of available software, such as described in your article comparing *Grammatik* and *Punctuation and Style*. I plan to buy both in the near future.

In a nutshell, more reviews on software and documentation would be gladly appreciated. I also suggest you go to a monthly format.

Henry N. Widmer
Gooding, Idaho

You weren't alone in your suggestions. More software reviews are on the way, and this issue marks the beginning of our new publication schedule of ten issues a year: eight monthly issues and two bimonthly issues (December/January and

July/August).

Footnotes revisited

Mr. Andrew Mack need not chuck his Perfect Writer disks and manuals. There is another solution to that beastly error message, "footnote wrap not handled properly." I recommend BIGFOOT 1.1 (CP/M version) by Michael Covington as marketed by Athens Microcomputer Center, 2173 West Broad St., Athens, GA 30606 (\$24.95). BIGFOOT reformats a Perfect Writer document so that all endnotes are gathered into a numbered compilation either at the end of a document or as a separate document. Endnotes may be of unlimited length.

The current BIGFOOT 1.1 format conforms to the University of Chicago Press *Manual of Style* as summarized in Kate L. Turabian's, *A Manual for Term Papers, Theses and Dissertations, 4th Edition*, the principal academic standard in the United States. With a little judicious editing, BIGFOOT is adjustable to almost any footnote style in current use. The only caveat: the program works only for endnotes because to create a program for footnotes at the bottom of each page requires a complete rewrite of Perfect Writer, an expensive proposition.

Frederick H. Campbell
Colorado Springs, Colorado

Turbo vs. S-BASIC

We tested the Turbo Pascal (version 2.0) from Borland International, and we would like to report some preliminary results. These results mainly concern comparisons to S-BASIC, which was a major topic in the July/August 1984 issue of *PROFILES*.

Our test was conducted with

an ordinary program designed to compute internal rates of return for bonds. Thus there were many iterative subroutines involved. The program was written in both S-BASIC and Turbo Pascal. The source codes and their logic were written to be very similar. It is difficult to say which source code was easier to write. However, the most crucial differences were quantifiable.

Both source codes occupied 4K, but the object code for S-BASIC required 16K, whereas for Turbo it was only 10K, that is, 38% less space. Compilation time significantly favored Turbo also. For S-BASIC, compilation to disk took 93 seconds, whereas the same operation took only 20 seconds for Turbo Pascal (78% less time). One must keep in mind that Turbo Pascal can also compile memory-to-memory for test runs prior to disk compilation, and this only took 4 seconds!

In terms of execution speed of the object code with our Kaypro 4, the S-BASIC version took 64 seconds, whereas the Turbo version was clocked at 5 seconds (92% reduction in time). Where time is of the essence, the distinction is quite clear-cut.

In closing we also point out that the Turbo Pascal program can be easily implemented on the MS-DOS machines since Turbo Pascal is offered for them as well. This is not the case for S-BASIC, and many seem to have overlooked this important consideration.

Systems Research, G.S. GROUP
Berkeley, California

External video update

In reference to your article in the July/August issue, titled "Add External Video to Your Kaypro":

FREE PROGRAM INFORMATION AND DISCOUNTS FOR KAYPRO™ OWNERS

P&B Computer Services, Inc., of Bellevue, Washington, specializes in software for the KAYPRO family of computers. In addition to a variety of existing programs, we are developing several exciting new packages. All programs are moderately priced; and they are both easy to operate and menu driven — the user is always our first concern!

All of our mailing list participants are given a 20% discount on newly introduced products when they are announced; and they will receive a 10% discount on any of our existing software packages.

YES! Put me on the P&B mailing list and send me information about the following programs and any new releases in the future:

Menu Manager™
for the Kaypro 10 _____

Menu Manager™
for the Robie _____

Loan Analysis Program _____

Home Management
Program _____

Nutritional Analysis
Program _____

I have the following type
KAYPRO: _____

Robie _____

Kaypro 10
(new w/dbasell) _____

Kaypro 10 (old w/Perfect) _____

Kaypro 4 (new w/dbasell) _____

Kaypro 4 (old w/Perfect) _____

Kaypro 2
(new w/out Perfect) _____

Kaypro 2 (old w/Perfect) _____

Name: _____

Address: _____

City: _____

State: _____ Zip _____

Telephone: () _____

Mail this request to:

P&B Computer Services, Inc.
13701 N.E. Bel-Red Road
Bellevue, WA 98005
(206) 641-7390



BEST BUY!

\$1.74
Single Sided
Double Density

Soft sector 5 1/4" flexible diskettes

\$2.24
Double Sided
Double Density

*Complete with hub reinforcing rings, Tyvek sleeves, color coded user labels, and write protect tabs.

Quality you expect at a price you don't.

Proven quality at a great price. BECK offers you a full satisfaction money-back guarantee - you can't lose! If you like the quality of 3M, Dysan, Verbatim, et al, you'll like BECK.

- Satisfaction, Money-Back Guarantee
- 100% Certified, 100% Error-Free
- Full 7-Year Warranty
- Tested and Retested 21 Times to 42 Rigid Specifications
- Meets or Exceeds ANSI Standards

For IBM, Apple, TRS, and 97% of popular computers.

Order Toll Free 1-800-232-5634.
Available in 25-Pack only plus freight.
Bulk product inquiries welcome.

COD's CASH ONLY
Corp. Accts Welcome



**Order Now Toll Free
Door to Door in 48 hrs.**

1-800-BECKMFG

(In New Hampshire call 924-3821)

LETTERS

I am an owner of an earlier model of the Kaypro II with the 7400 chip in place of the 7406 chip (mentioned in the article). Is there any way I can modify your circuit to adapt it to my Kaypro?

Joseph Sidor
Department of Physics
Allegheny College
Meadville, Pennsylvania

Author Jim Nickerson replies:

The earlier Kaypro you have with the 7400 instead of the 7406 has some other differences as well. While it is possible to extract external video in much the same manner by changing the pins on the wire wrap socket to get the right signals to the right pins, the video signal itself has different properties. The video is generated without the aid of a video controller chip, using TTL instead. In particular, the active portion of the horizontal trace is much smaller, and combining the video would result in a picture on the external monitor much smaller than the entire screen. To remedy this, there will have to be additional circuitry to change the horizontal pulse characteristics. I suggest that you try one of the video boards advertised in PROFILES which already accomplish this.

Home work

I read with interest your article (*Ms. Perceptions* in May/June 1984 issue) about technological improvements and the end result for low income clerical jobs.

While I do agree with your caution regarding assumed improvements for clerical working conditions, I think that all this caution will do no good if measures are not taken now by work-

ers to organize into their own bargaining groups. To affiliate with any established union which says that no work-at-home options should be allowed, because the management will have the upper hand, also seems to me a further control of a worker's freedom of choice. I think that women and men who seek clerical positions involving the use of monitoring and telecommunication devices *must* see to it that they are represented by a network of clerical workers from the start.

Marianne Richards
Burlington, Vermont

The quick solution to Budd Blume's slide-film script writing problem in the July/August issue is—SURPRISE—none other than Perfect Writer. Unlike WordStar, Perfect Writer can edit two different files on screen at the same time. The split is horizontal, not vertical, but the program allows the writer to wander back and forth freely between the audio and video text files. It even keeps track of the numbering for the scene titles with the section heading commands.

Printing the text is easy, although it requires two passes through the printer for each file. I used style commands at the beginning of each file to give the audio text a right margin wide enough to print the video text in.

The only use I have found for WordStar is to use the manual to prop up the Kaypro while I write letters, technical training material and trashy novels with Perfect Writer.

Stephanie Goble
Glendale, Arizona

Answer: Smith-Corona

Question: What company offers a new daisy wheel printer, three dot matrix printers and a combination printer-typewriter, with suggested retail pricing of \$395 to \$795?

Question: What printer company offers print quality that challenges printers costing hundreds of dollars more?

Question: What printer company offers dual interfaces for all five of its printer models?

Question: What printer company offers removable and adjustable tractor feeds as standard equipment on all of its dot matrix models?

Question: What printer company has a toll-free telephone number to call if you ever have a problem? And an extensive service system, too?

D-300 (TM) dot matrix printer.



L-1000 (TM)
daisy wheel printer.

Ultrasonic III Messenger (TM)
portable typewriter with optional Messenger Module.

D-100 (TM)
dot matrix printer.

D-200 (TM) dot matrix printer.

- Please send me more information about Smith-Corona printers; I am interested in in-home use.
- Please send me more information about Smith-Corona printers for office use.

Name _____

Company Name _____

Business Address _____

City _____ State _____ Zip _____

Type of Business _____

Send to: Jerry Diener, V.P. Sales, Smith-Corona
65 Locust Avenue
New Canaan, Connecticut 06840

SMITH-CORONA®

Q & A

We welcome and read all your letters. Some of the letters are of general interest and are printed in the Letters column; others are pleas for technical help. Those questions that lend themselves to simple, concise answers are dealt with here, while the more advanced topics develop into articles or discussions in the Technical Forum.

Due to the volume of mail we receive, we simply can't respond personally to every request for assistance. For questions requiring an immediate reply, you can do what we often do: call Kaypro Technical Support at (619) 481-3920.

CP/M confusion

When I bought my Kaypro a disk was included containing CP/M files such as SYSGEN, COPY, ED, etc. In recent advertisements I notice companies showing new utilities which are designed to replace or improve the original ones. For example, ZCPR is a public domain Console Command Processor to replace CP/M; .EX is a public domain program to replace both SUBMIT and XSUB.

My questions are these:

1. What files are necessary to run the original CP/M?
2. Do you have a brief description of how each original file is used?
3. When a new utility replaces the old one, is the old one erased from the disk?

Michael P. Carlo
Larchmont, New York

No files are NECESSARY to run CP/M. CP/M itself exists on the system tracks of a diskette and in ROM. What you refer to as the CP/M files are utility programs. They make using the computer easier. Many of the utilities supplied by Kaypro are not standard CP/M utilities. They have been written especially for the Kaypro.

The "standard" CP/M utilities are covered in the Digital Research manuals and a rich variety of third party books. Special Kaypro programs like COPY, CONFIG, and MFDISK are covered in your User's Guide and in help text included in the programs themselves.

ZCPR is a series of programs that change the invisible portions of CP/M, mainly the CCP, and replace most of the utility files. The invisible portion of ZCPR may not be compatible with all CP/M programs. You have to take your chances on that part. The ZCPR utilities can be used on a standard CP/M system without the rest of the ZCPR modifications. Not all of them are useful to everyone, but many of them are excellent.

Please note that not all the ZCPR utilities will operate properly without the rest of the modifications.

The best source of information would be a local Users' Group. Someone there is bound

to have used ZCPR, and the group itself can probably get you copies of it for only the price of a diskette. Another source is Bulletin Boards, the electronic kind.

When adding new files to a disk, the new file replaces the old one only if it has the exact same filename and extension.

We suggest you collect those new utilities that interest you on a separate disk, make and use working copies and experiment. Some people swear by ZCPR, others at it. You may find you want to create your own systems disk from a variety of programs. But be sure to keep your original master CP/M and probably one copy so you can get back to square one if you want.

KP4+88 programs

I own a Kaypro 4+88, purchased with WordStar for word-processing. Can you advise if PFS Rite or Volks Riter Delux is available to run on the Kaypro 4+88?

I also own a Z89-FA computer which originally came with "Wordsworth" word-processing software. Is it possible for you or one of your readers to advise how I can upgrade this computer and obtain word-processing software?

James O. Ebbeson
Sturgeon Bay, Wisconsin

The subject of software for the 4+88 is a confusing one for

many people. Software that tries to use IBM's memory mapped video for output will not run on the Kaypro 4+88 computer. Neither will anything that depends on calls into the IBM ROM. It is almost impossible to predict what software will or will not run. Both the programs you mention are intended for the IBM PC. I would want to see them running on a Kaypro 4+88 before paying any money.

Most of this stems from two factors:

1. The Kaypro runs MS-DOS not PC-DOS. They are not the same, no matter what the salesman says.

2. IBM encourages the production of software that uses machine specific instructions. The more software that will run only on their computer, the better they like it.

Unfortunately, the user takes it on the chin in this whole deal. This applies to all of the IBM work-alikes, not just ours.

I'm not in any position to make comments on software for Zenith computers. You should contact a Zenith dealer or Heath Kit store concerning anything for your Z89-FA.

RAMDISK

I recently purchased an '84 model Kaypro 4+88. I am quite happy with the machine but have a few questions.

1. On the 8088 board, how do I use the ramdisk?

2. An Apple owner (an Electrical Engineering Major) told me that I could upgrade the internal modem to 1200 baud. Is this possible?

Robert Van Deren
Dillon, Montana

Some Kaypro 4+88s got out of the plant without all the proper documentation. It sounds like you might have gotten one of these.

One of the diskettes that came with your computer should be labeled MS-DOS ADAPTER DISK. That disk should have a file called RAMDISK.COM. The easiest way to activate the ramdrive is to type the command line RAMDISK C, followed by pressing RETURN. That will activate the RAM on the 8088 board as drive C.

If you type RAMDISK, with no options, the program will lead you through a series of questions including which drive you want the ramdisk to be. All of the questions can be answered with a carriage return, to accept

the default values. The only default value that really matters is which drive the ramdisk will be. The default value is drive M:. Any other legal drive designation is acceptable, including drive A:.

As to your second question, NO! It is not feasible to speed up the modem that comes with your Kaypro. It is possible to add a different internal modem from third party sources. A different internal modem would be on its own circuit board mounted inside the Kaypro case. You can also use an external modem with any model of Kaypro.

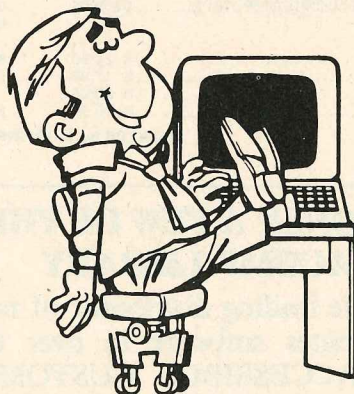
High bits and Filer

According to the article, "Getting
(continued on page 75)

NEW from Chuck Atkinson!

introducing ...

QUICK CHECK PLUS®!



... the greatest
accounting program
on earth for
PROFESSIONS &
BUSINESSES!

QUICK CHECK PLUS® ...

- provides many check printing options
- records deposits and classifies income by code in one operation
- shows individual payroll records at the touch of a button
- loads and runs in a flash
- easier than ever to use

Only \$195!

"I'm tickled at the order **QUICK CHECK** brings to my tangled attempts at bookkeeping. I am a thoroughly satisfied customer."

L. W. Minor, Wellfleet, Massachusetts.

Buy **QUICK CHECK PLUS®** at fine software and computer stores. If not yet available in your neighborhood, write for the name of your nearest dealer.

CHUCK ATKINSON PROGRAMS

Rt. 5, Box 277-C • Benbrook, TX 76126

**PROGRAM
SELECTION
FOR
KAYPRO
MORROW
OSBORNE**

DYNACOMP

*The Leading Distributor Of
Microcomputer Software*

PRESENTS

APPLE™
ATARI™
CANON AS-100™
COMPUSTAR™
HEATH/
ZENITH Z-100™
IBM PC™
KAYPRO II™
MORROW
DESIGN™
NEC™
NORTHSTAR™
OSBORNE™
PET/CBM™
SUPERBRAIN™
TRS-80™
CP/M DISKS
DISKETTES

PERSONAL FINANCE			
PERSONAL FINANCE SYSTEM.....	\$ 42.95		
PERSONAL FINANCE MASTER.....	\$ 52.95		
PERSONAL BALANCE SHEET.....	\$ 32.95		
HANDICAPPER.....	\$ 36.95		
TAX OPTIMIZER.....	\$ 62.95		
BUSINESS			
PORTFOLIO MANAGEMENT.....	\$ 72.95		
MICRO STOCK PROGRAM.....	\$ 62.95		
MICRO CHART PROGRAM.....	\$ 62.95		
MICRO BOND PROGRAM.....	\$ 62.95		
OPTIONS ANALYSIS.....	\$102.95		
BUYSEL.....	\$152.95		
BOOK KEEP.....	\$ 72.95		
FINANCIAL MANAGEMENT SYSTEM.....	\$152.95		
CUSTOMER PROFILE.....	\$ 62.95		
DATEBOOK.....	\$ 22.95		
SOME COMMON FINANCIAL PROGRAMS.....	\$ 12.95		
MINI-LEDGER.....	\$149.95		
ADVENTURE			
GUMBALL RALLY.....	\$ 24.95		
CRANSTON MANOR.....	\$ 22.95		
UNCLE HARRY'S WILL.....	\$ 27.95		
THE ORIGINAL ADVENTURE.....	\$ 12.95		
CARD GAMES			
BRIDGEMASTER.....	\$ 32.95		
POKER PARTY.....	\$ 26.95		
GO FISH.....	\$ 21.95		
BLACKJACK COACH.....	\$ 36.95		
M-MASTER.....	\$ 22.95		
DUPLICATE BRIDGE SCORER.....	\$ 32.95		
STATISTICS			
REGRESSION I.....	\$ 26.95		
REGRESSION II.....	\$ 26.95		
MULTILINEAR REGRESSION.....	\$ 31.95		
STATEST.....	\$ 36.95		
ANALYSIS OF VARIANCE.....	\$ 46.95		
STATISTICAL SUBROUTINES.....	\$102.95		
DATA SMOOTHER.....	\$ 26.95		
SOME COMMON STATISTICS PROGRAMS.....	\$ 12.95		
STATISTICAL LANGUAGE FOR MICROCOMPUTERS.....	\$249.95		
BOARD GAMES			
STAR CON.....	\$ 22.95		
SPARE LANES.....	\$ 17.95		
BACKGAMMON.....	\$ 26.95		
CHESS MASTER.....	\$ 26.95		
DATABASE MANAGEMENT			
DATA RETRIEVAL SYSTEM.....	\$ 32.95		
DYNABASE DATABASE.....	\$ 52.95		
ENGINEERING			
FOURIER ANALYZER.....	\$ 26.95		
TRANSFORM FUNCTION ANALYZER.....	\$ 32.95		
HARMONIC ANALYZER.....	\$ 36.95		
DIGITAL FILTER.....	\$ 56.95		
LADDER NETWORK.....	\$ 32.95		
LOGIC DESIGNER.....	\$ 37.95		
WIRE MAP.....	\$ 42.95		
ENGINEERING COLLECTION #1.....	\$ 42.95		
BEAM DEFLECTION.....	\$ 42.95		
ROOTS.....	\$ 22.95		
HEAT LOSS.....	\$ 32.95		
PRESSURE LOSS.....	\$ 32.95		
BASIC SCIENTIFIC SUBROUTINES			
VOLUME I.....(set)	\$ 61.95		
VOLUME II.....(set)	\$153.95		
VOLUME III, Chapter 2.....(set)	\$ 27.95		
LINEAR PROGRAMMER.....	\$ 36.95		
DIFFERENTIAL EQUATIONS.....	\$ 22.95		
STATE VARIABLES.....	\$ 22.95		
DYNAFORTH.....	\$ 77.95		
SOME COMMON MATH PROGRAMS.....	\$ 12.95		
ANALOG.....	\$102.95		
TIDY-80.....	\$ 42.95		
EDUCATION			
TEACHER'S AIDE.....	\$ 20.95		
CRYPTO.....	\$ 20.95		
MASTER DRILL.....	\$ 21.95		
ELIZA III.....	\$ 22.95		
GENERAL GAMES			
MANAGEMENT SIMULATOR.....	\$ 32.95		
IRONCLADS.....	\$ 32.95		
VALDEZ.....	\$ 26.95		
SPACE EVACUATION.....	\$ 22.95		
STARBASE 3.2.....	\$ 20.95		
MONARCH.....	\$ 21.95		
FLIGHT SIMULATOR.....	\$ 26.95		
GAMES PACK I.....	\$ 21.95		
GAMES PACK II.....	\$ 21.95		
MOON PROBE.....	\$ 19.95		
MISCELLANEOUS			
CONTROL DATA SSDD 5 1/4" DISKETTES			
WITH HUB RING, & STORAGE BOX.....	\$ 26.95/10		
COMPUTER WORK STATION.....	\$69.95+Freight		

ADD \$3.00 for SHIPPING & HANDLING

THESE ARE ONLY A FEW OF THE HUNDREDS OF PROGRAMS IN THE DYNACOMP LIBRARY

Besides being the leading distributor of microcomputer software, DYNACOMP currently distributes software in over 60 countries. DYNACOMP provides FRIENDLY, ACCESSIBLE CUSTOMER SERVICE through our highly qualified and knowledgeable staff. WE'RE AS NEAR AS YOUR TELEPHONE.

DYNACOMP'S prices are highly competitive and we promise prompt processing of every order!

WRITE FOR A FREE, DETAILED CATALOG

<i>Daytime</i>	<i>24 Hour</i>	<i>Office Hotline:</i>
<i>Toll Free Order Phones:</i>	<i>Message and Order Phone:</i>	<i>9-5 E.S.T.</i>
<i>(800) 828-6772 (800) 828-6773</i>	<i>(716) 442-8731</i>	<i>(716) 442-8960</i>

DYNACOMP, INC.

1427 Monroe Avenue • Rochester, NY 14618

Powerful CP/M[®] Software.

For Apple, Osborne, Kaypro, Rainbow, NEC, Epson, Heath, Xerox and others.

Back to School Special!

Now only **\$29⁹⁵** each!

EXTRA MANUALS NOW AVAILABLE, ONLY \$14.95 EACH!

NEVADA COBOL[™]

When we introduced Nevada COBOL in 1979, it was loaded with innovations. Today's, Edition 2.1 is even better!

- Extremely Compact. You can compile and execute up to 2500 statements in 32K RAM, 4000 statements in 48K, etc.
- It's based upon the ANSI-74 standards with level 2 features such as compound conditionals and full CALL CANCEL.
- You get a diskette, 165-page manual with lots of examples and 16 complete COBOL source code programs.

Also available: COBOL Application Packages, Book 1 \$9.95

NEVADA PASCAL[™]

This newest addition to the 8-bit Nevada product line has many advanced features:

- 14-digit precision, BCD Math, no round-off errors with decimal arithmetic for business and floating point + 63 - 64 for scientific.
- A very nice TRACE style debugging.
- Arrays up to 8 dimensions and 64K strings.
- External procedures and functions with dynamic auto-loading.
- One-step compile, no assembly or link required.
- No limits on size of procedure; nesting levels, recursion.
- Requires 60K RAM and one disk drive with at least 90K storage.
- You get a 184-page manual and diskette rev. 4.1.

NEVADA FORTRAN[™]

FORTRAN IV based upon ANSI-66 standards with some 1977 level features.

- IF . . THEN . . ELSE constructs.
- A very nice TRACE style debugging.
- 150 English language error messages.
- You get a diskette, including an 8080 assembler and Nevada FORTRAN rev 3.2, 214-page manual and five sample programs. Requires 48K RAM.

NEVADA BASIC[™]

This interpreter has a built-in full-screen editor.

- Single- and Multi-line functions.
- BCD Math—no round-off errors.
- Full Matrix operations.
- Requires 48K RAM.
- You get 220-page manual and diskette rev. 2.5.

NEVADA EDIT[™]

- A full-screen video display text editor rev. 3.1 designed specifically to create COBOL, PASCAL and FORTRAN programs.
- See the review in May 1983 Microcomputing.

NEVADA PILOT[™]

- See review in January 1983 MICROCOMPUTING.
- You get a diskette rev. 6.1, 131-page manual and ten useful sample programs.



This is a limited time offer, so order yours today!

ELLIS COMPUTING, INC

3917 Noriega Street
San Francisco, CA 94122

Phone (415) 753-0186

The CP/M Operating System, an 8080, 8085 or Z-80 microprocessor, and 32K RAM are required, unless stated otherwise above.

Diskette format:

- 8" SSSD (Standard CP/M IBM 3740)

5 1/4" Diskette for:

- Apple CP/M
- DEC VT 180
- DEC Rainbow
- Epson QX-10
- Heath Hard Sector (Z-89)
- Heath Soft Sector (Z-90, Z-100)
- IBM-PC (Requires Z-80, CP/M-80 card)
- Kaypro Double Density (NCR)
- Micropolis Mod II
- NEC PC 8001

- North Star Double Density
- North Star Single Density
- Osborne Single Density
- Sanyo 1000, 1050
- Superbrain DD DOS 3.X (512 byte sec)
- Televideo
- TRS-80 Model I Base 0 mapper
- Xerox 820 Single Density

Satisfaction is guaranteed—or your money back. If for any reason you're not completely satisfied, just return the package—in good condition—within 15 days and we'll refund your money.

Please send me: Software Packages

- COBOL FORTRAN EDIT PASCAL BASIC PILOT

Send my order for _____ packages @ \$29.95 each Total _____

COBOL Applications Package @ \$9.95 each Total _____

Please send extra manuals:

- COBOL FORTRAN EDIT PASCAL BASIC PILOT

_____ EXTRA manuals @ \$14.95 each Total _____

California deliveries add 6% or 6.5% sales tax _____

Shipping and Handling Fees: Add \$4.00 for the first package or manual and \$2.00 each additional. **Overseas:** Add \$15.00 for first package or manual and \$5.00 each additional.

Checks must be in U.S. Dollars and drawn on a U.S. Bank.

- Check enclosed COD if COD add \$4.00

MasterCard VISA **TOTAL** _____

Card # _____ Exp. _____

Signature _____

Ship to: Name _____

Street _____

City/St/Zip _____

CP/M is a registered trademark of Digital Research, Inc. Microsoft is a registered trademark of Microsoft Corp. TRS-80 is a registered trademark of Tandy Corp. Apple II is a trademark of Apple Computer, Inc. Osborne is a registered trademark of Osborne Computer Corp. Xerox 820 is a trademark of Xerox Corp. Kaypro is a trademark of Non-linear Sys. Heath/Zenith is a trademark of Heath Corp. IBM is a registered trademark of International Business Machines, Corp. Nevada BASIC, Nevada COBOL, Nevada FORTRAN, Nevada PILOT, Nevada EDIT, Nevada PASCAL, and Ellis Computing are trademarks of Ellis Computing, Inc. © 1984 Ellis Computing, Inc.

OFFER EXPIRES 9-30-84

Foreword

by Tyler Sperry

One of the few meetings I attended at the recent National Computer Conference dealt with the media's perception of personal computers. Three members of the press gave talks that covered some of the misconceptions and follies of the microcomputer industry. From my vantage point (the rear of the hall) the general tenor of the presentations was what I expected: computers were judged as neat toys but useless in the home and school, and their popularity was due largely to marketing hype.

Some Monday mornings I find myself agreeing with that view.

On this particular Monday though, amid the generally predictable cautions, I heard a story terrifying enough to wake me from my convention doze. And since the incident deals with this issue's theme—computers and education—I thought you might find it interesting.

The story, related with the proper dramatic embellishment by the journalist who was actually there, is simply the account of a conversation between three elementary school teachers. Two of the teachers were facing the imminent arrival of microcomputers in their classrooms, and they were not at all happy with the prospect. After listening to the pair moan and agonize over their plight, the third teacher (who had already faced and conquered the problem of computers

in the classroom) gave them *The Secret of the micro universe*. "Look," she said, "It's really very simple. Just type the following at the keyboard: 'P', 'R', 'I', 'N', 'T', space, '2', '+', '2' and then press the RETURN button. The computer will display '4', and the kids will think you're great!"

For those of us with a passing knowledge of BASIC, this is an amusing anecdote . . . until you realize that the other two teachers slavishly copied down the sequence of keystrokes before departing. I myself left the hall at NCC shaking my head, and wondering at the "education" the poor kids were getting.

So, what is the answer? Compulsory training in BASIC programming for both students and teachers? I think not. The real point of that story—at least for anyone who has used the software bundled with their Kaypro—is that the teachers perceived the computer as a high-tech object to program, *not as a tool*. In contrast, most Kaypro owners see their computer as a machine for word processing and handling data bases, not as a BASIC toy.

This antiquated notion of computers as terminals for BASIC programming is handicapping students. The addition of only a marginal amount of imagination would allow more creative use of personal computers. In elementary schools, shifting the empha-

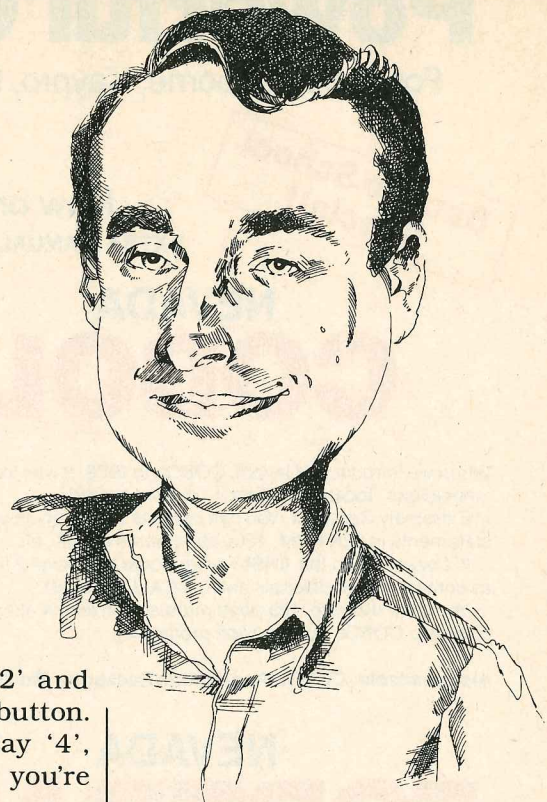


ILLUSTRATION BY JOYCE KITCHELL

sis from BASIC to Logo would offer greater benefits in the learning of mathematics and logic. In high schools, there even greater opportunities. Consider, for example, the shift in perspective of students studying business with the aid of spreadsheets.

To date, this doesn't appear to be happening. Schools seem more inclined to budget what little money they have for hardware rather than for software. America's schools are far from a hot market for software developers, even if you solve the problem of software piracy. When you add to this sad picture the rapid changes in commercial software (at least BASIC hasn't changed much in last few years), the general lack of good educational software, and the typical problems of your local school district, the outlook for personal computers in the school system gets bleak indeed. Mondays and most other days, I fear computers will never reach their full potential as learning tools.

Yet, for all that gloom above, I



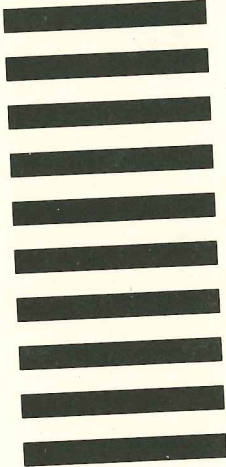
NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

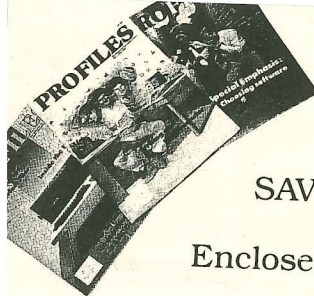
BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 52 DEL MAR, CA USA

POSTAGE WILL BE PAID BY ADDRESSEE

PROFILES

PROFILES MAGAZINE - SUBSCRIPTIONS
P.O. BOX 2889
DEL MAR, CA 92014





DON'T WAIT RENEW TODAY!

SAVE 40% with our special renewal rate -
just \$21.00 for 1 year (10 issues).
Enclose payment and receive 1 extra issue FREE!
(Please place mailing label below)

Account # _____

Name _____

Address _____

City _____

State _____ Zip Code _____

Offer good only in the U.S.

YES, I WANT TO
RENEW
 Enclosed is my
payment of \$21.00.
I understand that I
will receive 11 issues
for the price of 10.
 Please bill me
for 10 issues.

MAKE CHECK OR MONEY ORDER PAYABLE TO: KAYPRO CORP.

PFS84

SOURCE CODE INCLUDED...

am optimistic about the impact of personal computers as learning tools. In contrast to the relatively few success stories in education, there are many in the commercial software realm. For example, virtually every brand of computer has several typing instruction programs available for it. By way of contrast, how popular was the typing class in your high school? From the number of packages sold, a lot of people are learning to touch type. Including even some folks who never took a typing class in high school.

Once you shift your focus from the educational system to situations where people are learning skills with the aid of a computer, the forecast looks a lot brighter. Let me illustrate with a (small) horror story from my own past.

Through out my formal schooling, from elementary school to college, my spelling was **terrible**. Despite the best efforts of my teachers and schools, I managed to run the gauntlet of traditional education with only minor improvement. I might still have embarrassing problems in the spelling department today, except that I have been writing with a Kaypro for over two years now.

You see, for the last two years I have had a little program helping me write. No, I'm not talking WordStar (although it has indeed been helpful); I'm talking about *The Word Plus*, written by Wayne Holder. For the last two years I have been attempting to confuse and obfuscate my meaning with misspelled words, and for all of those last two years Wayne's program has patiently stood by and corrected me on those words I chronically misspelled. Again and again I would write 'recieve', and The Word
(continued on page 86)

Praxis Products, Incorporated
Main Office
1800 West Technology Boulevard
Sunnyvale, California 94089
Telephone 408/900-1000

INVOICE NO. 1001
CUSTOMER NO. AMD1

BILL TO: **MOVE OVER!**
Automation Electronic Dept
Main Office
440 Palomar Avenue
Sunnyvale, Ca 94085

SHIP TO:
Automation Electronic Dept
Building 25 - Fifth Floor
455 Palomar Avenue
Sunnyvale, Ca 94085

SHORTEN PO # FROM 10/18/83 TO 10/18/83

MOVE SHITES IF ADDRESS OVER

ADD ADDITIONAL OFFICE CODE

DATE	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
10/18/83	2	SCA	23.95	47.90
	1	AZEM	286.59	286.59
	11	ODMS	50.00	550.00
	3	WTER	29.95	89.85
	2	MISC	51.00	102.00
	1	SVR	50.00	50.00
	1	DISC	-100.00	-100.00
Subtotal				1026.84
Tax				21.91
Total				1048.75

USE NEW 5 DIGIT PART #

ADD SECOND LINE DESCRIPTION

SEE ME ABOUT THESE CHANGES

L.W.R.

sbt

dBASE
Accounting Software Library

for a change!

Because the dBase® Source Code is included with all SBT Accounting Software, you can add a special part number system or change a report format at will—the possibilities are endless. You get control and flexibility that's crucial to a well run business. What's more, every SBT Accounting Program can change and grow with your needs. You can make the changes yourself, or SBT will do it for you quickly and inexpensively.

Completely Integrated

Start with the modules you need now, and add the others later. Best of all, SBT Software works on all computers that can run dBase.

.dOrder	Sales Order Processing	\$195
.dInvoice	Billing/Inventory	\$195
.dStatement	Accounts Receivable	\$ 95
.dPurchase	Purchase Order Processing	\$195
.dPayable	Accounts Payable	\$295
.dPayroll	Payroll/Labor Accounting	\$395
.dLedger	General Ledger/Finance	\$395
.dAssets	Asset/Depreciation	\$195
.dProject	Project/Job Accounting	\$345

Demonstration disks available.

Call SBT at 408-980-8880 for more information.



1140 Mountain View-Alviso Rd.
Sunnyvale, California 94089

Now Available
for dBase III™

*dBase II is a registered trademark of Ashton-Tate

ALL **KAYPROS** ARE NOT CREATED EQUAL

KAYPRO 400/800KB UPGRADE KIT-

The KAYPRO II uses the Tandon 100-1 single sided double density diskette drives (40 tracks 48 TPI). Each diskette is capable of storing 200KB per drive. The Legacy 800KB upgrade kit expands the storage capability of the KAYPRO II to 800KB per drive utilizing the TEAC 55F-double sided quad density diskette drives (80 tracks 96 TPI). The kit may be purchased with or without the drives. Once installed, the KAYPLUS 800 will store four times the amount of data as the standard KAYPRO II. Data integrity is maintained, as the KAYPLUS 800 will still read and write the standard KAYPRO II format (as well as the KAYPLUS 400 format). The kit comes complete with an enhanced format program that asks if you wish to format the disk as (S)ingle or (D)ouble sided as well as prompting the user to determine if the format is for 40 or 80 tracks. Installation of the kit requires a simple EPROM change, the addition of a 14 pin socket (with appropriate integrated circuit), cutting of two circuit traces, the attachment of 6 wires and the replacement of the diskette drives. The use of this enhancement is predicated on replacement of the standard drives with only the TEAC drives. No TEAC compatible drives will suffice. A speed increase of 12-18% could be expected with the installation of this kit, as the track access time is greatly enhanced over the standard drives. Also, the read/write heads of the TEAC drives only come into contact with the surface of the diskette when transfer of data occurs, at all other times, the heads lift off the surface of the diskette.

*118.

CPU HOP UP KIT-The KAYPRO II utilizes the Zilog Z80 microprocessor. The internal calculation speed of this processor is 2.5 MHz (megahertz). In that the entire KAYPRO computer system is designed around the Z80 CPU (and associated chip set), to upgrade the computer to execute at a faster rate would require a major overhaul of the mainboard and the replacement of numerous components. Legacy offers an alternative of the 2.5 MHz clock speed. The CPU hop up kit doubles the calculation speed of the Z80 to 5 MHz with the use of the Zilog Z80B micro processor. All calculations performed will be done at a 5 MHz rate and any I/O performed will be done at the normal (KAYPRO designed) rate of 2.5 MHz (during which time, the CPU is put to sleep in a wait state). The effective increase is about 40%. Installation is completed within minutes. One simply removes the old Z80 CPU and one supportive chip, plug in our hop up kit and place one of the chips removed back onto the Legacy board.

*Also available for new 184 board runs at 4/8 MHZ.

*118.

REAL TIME CLOCK-This kit is most unique for those applications that require the data and/or time stamping of data on the KAYPRO computer systems. The Legacy real-time clock allows for setting and/or getting the date and time to the second. A nicad battery is used for power backup (to insure failsafe operation) and is charged while you use your KAYPRO. The kit is installed by simply removing the Z80 PIO (parallel I/O chip), plugging in the real-time clock board and replacing the PIO chip back onto the Legacy piggy back board. Included in this kit are two different COM files (complete with commented ASM source files) to set or get the date and time as well as MBASIC and assembly routines so you can access the clock with your own software.

*118.

8088 16 BIT CO-PROCESSOR-The co-processor uses the Intel 8088 micro-processor with up to 256K of RAM thereby allowing IBM compatibility to nearly any Z80 CP/M micro-computer system. The product gets its name from the co-processor relationship between the 8088 and the host computer. The processor communicates in an interrupt driven mode. This method does not take up much of either processors time in the back and forth communication cycle. The co-processor runs faster than the IBM-PC because its clock speed is faster (not being restricted by the PC bus transfer rate). The communication of the computers is done through a specialized port provided on a daughter board included with the kit. Power requirements are small at about 750 milliamps of + volts. The product is delivered with both MS-DOS and CP/M 86 operating systems, equipped with 128k RAM and is field upgradable to 256k as an optional feature. When the computer system is being used as an 8 bit Z80 based machine the memory of the 8088 co-processor board may be used as a semiconductor disk (RAM disk). Programs can be run, compiled and copied to or from the RAM disk using PIP.

*600.

EXTERNAL DRIVES C&D-This product allows the addition of two more drives to the KAYPRO computer system. These additional drives (designated C&D) must be of the same recording type and density as the existing drives (A&B). KAYPRO II computers require SSDD (single sided, double density) drives. KAYPRO 4 units use DSDD (double sided, double density). The Legacy KAYPLUS 400/800 upgrades allow 4 half height drives mounted internal to the chassis. This kit consists of a single printed circuit board (drive multiplexer), BIOS EPROM, cables and illustrated instructions.

*118.

MULTI-FONTS VIDEO GRAPHICS BOARD-

The standard KAYPRO II/4 computer system does not have any graphic attributes. This field installable hardware peripheral utilizes the standard KII/4 CRT screen and is designed around the powerful NEC 7220 graphic display controller. The graphics option comes complete with firmware for drawing line vectors, arcs, circles, rectangles and point markers as well as downline loadable character sets. Other standard features include routines for filling rectangles with a pattern, blanking the display either dark or light and complementing all or portions of the display. The multi-fonts board also has panning (ability to pinpoint any section of the screen) and zooming (1 to 16 times the normal size).

*612.

DIAGNOSTIC DISKETTE-An array of programs to assist in the diagnosis of hardware related problems. Programs are provided for the complete testing of Memory, Serial port & related components, Parallel port output, Disk drive read operation. Additional programs are provided for assisting in the alignment of diskette drives as well as screen adjustment.

*41.

EXTERNAL VIDEO MONITOR ADAPTER-

Our video monitor adapter allows the attachment of from 1 to 16 external monitors (attached in series) to a KAYPRO computer system. The kits installation requires the insertion of a composite video jack through the cooling vents in the rear of the cabinet. The video adapter comes complete with a horizontal sync alignment potentiometer (in case the monitor does not have a horizontal adjustment mechanism).

*118.

EPROM UPGRADE-Upgrades of both EPROMs (programmable read only memory) as well as the Character generation PROM have been greatly enhanced. This upgrade removes most of the BIOS errors thereby reducing the possibilities of BDOS errors. The character generation ROM has a new character set with enhanced character definition.

*41.

MULTI-FONTS VIDEO GRAPHICS BOARD This field installable hardware peripheral utilizes the standard KAYPRO CRT screen and is designed around the powerful NEC 7220 graphic display controller (Resolution of 512 x 256 bit mapped graphics). The graphics option comes complete with firmware for drawing line vectors, arcs, circles, rectangles and point markers as well as downline loadable character sets. Other standard features include routines for filling rectangles with a pattern, blanking the display either dark or light and complementing all or portions of the display. The multi-fonts board also has panning (ability to pinpoint any section of the screen) and zooming (1 to 16 times the normal size).

*612.

SURGE PROTECTORS

SS120/2 - Duplex receptacle model with standard three prong plug. Simply plug this Panamax surge suppressor into a standard 120 volt wall outlet and plug the equipment you want protected into it.

*89.

SS120/4LCS - Four receptacle model, with convenient, illuminated, master ON/OFF switch and 6 ft. line cord with standard three prong plug. This model provides you with the opportunity to protect multiple, separate computers and peripherals, with just one unit.

*107.

SS120/16LCS - Six receptacle model, with convenient, illuminated, master ON/OFF switch, and 6 ft. line cord with standard three prong plug. Simply plug this Panamax surge suppressor into a standard 120 volt outlet and plug the equipment to be protected into it. This model provides you with the opportunity to protect word processing centers and entire computer systems, all with just this one unit.

*119.

TALISMAN - is a terminal translation program that enables your computer to function the same as any terminal. Fundamentally, Talisman performs two different functions. First, it lets you re-map your keyboard into any configuration. Therefore, a single keystroke can produce the effect of several keystrokes pressed in sequence (from two keystrokes to 256). You can pre-program special keyboard overlays and save them on disk, using the keyboard overlay editor; or you can perform such programming "ON THE FLY" while you're actually running an application (word processor, spreadsheet, etc.) without disturbing the work in progress. Next, Talisman allows the screen mapping of virtually any terminal for emulation purposes. For example, you may wish to select one of the over 55 different terminals already pre-defined or you may wish to utilize the built-in terminal identifier to create your own terminal definitions. Emulation is still active during the MSDOS/CP/M86 simulation modes if you have an 8088 installed in your system.

*125.

PRINTER BUFFER The Buffer is an internal auxiliary device designed to work with almost any KAYPRO Computer and Centronics-compatible parallel printer.

Most computers are able to send data to the printer at very high speeds—usually much faster than it can be printed. The Buffer receives print data sent at a high speed; holds it if necessary; then sends it to the printer at the printer's correct speed. Once a document to be printed has been sent to the Buffer, you and your computer are free to go back to work.

Besides saving valuable computer time, the Buffer has advanced features which allow you to continue sending new files to the Buffer while copies of another document are being printed.

The Buffer is easy to install, simple to operate, and offers a wide range of flexibility through the use of its advanced features.

*249.

The **PROGRAMMER/4+** is an affordable computer-controlled EPROM programmer easy for anyone to use. Using an ordinary modem cable, it plugs onto the RS-232 (serial) port of the Kaypro (or other CP/M systems).

Menu-driven software makes it simple to read and program EPROMs to and from memory or disk. An EPROM's contents can be saved to disk and that disk file modified for programming custom EPROMs. Data can be displayed on the screen in hex and ASCII. EPROMs may be tested for erasure.

A direct interface menu is included for more experienced users. Fully commented source code is also on the disk. The detailed owner's manual includes complete schematics.

The Programmer/4+ reads and programs the five most common types of EPROMs: 2716 (2K), 2732 (4K), 2732A, 2764 (8K), and 27128 (16K). **\$199.**

SCREEN SAVER—Many people leave their computers on all day or all night. Although your Kaypro will never get tired, displaying a page of text, spreadsheet, etc. for long periods of time it accelerates screen damage. The characters you see on the screen are formed by streams of electrons striking the phosphor coating on the inside of the picture tube, causing individual dots to glow. Bombarding the same dots for long periods of time will eventually wear out the phosphor at those points, giving you a burned-out striped-looking screen such as you might see on an old TV set. This easy to install (no soldering) upgrade automatically dims your Kaypro's screen after three minutes without keyboard input. Touching any key immediately restores the display. An adjustment on the screen saver allows you to choose the degree of dimness. **\$118.**

BUILT-IN 0-300/1200 BAUD MODEM—This kit provides modulator, demodulator, filters, phone line connection, and TTL level interface to the KAYPRO computer system. It measures 4" by 5" and is easily incorporated into the computer system by mounting beneath the main board. The modem connects directly to the power supply of the KAYPRO thereby eliminating the need for any external power source. The connection to the public telephone network is via a standard RJ11 phone jack. The LEGACY modem is Hayes smart-modem compatible (Bell 103/212A). Auto-dial, auto-answer with automatic line speed detection (0-300/1200 baud) are all standard features. **\$429.**

8 INCH DRIVE ADAPTOR—For those users who desire the ability of down-line loading software from a standard 8 inch IBM formatted diskette. This unit attaches to the drive multiplexer and enables the attachment of a single 8 inch floppy diskette drive to a KAYPRO II/4 as drive C. Once enabled (software controlled) the user may PIP (or transfer using virtually any CP/M software) data between the 8 inch drive "C" and the normal 5 1/4 drives "A or B" **\$240.**

About Legacy's Upgrade Kits

The LEGACY upgrade kits are not really kits in the proper sense of the word, (you don't get a bag of chips & resistors with some hand scribbled notes on how to build the unit). All of these field installable products are fully tested, professionally manufactured, printed circuit modules designed with exacting precision in accordance with the computer manufacturers' specifications. None of the kits require any drilling or modification to the exterior of the computer, as each product is housed within the computer's cabinet. None of the kits (or any kits in the combination) require the replacement of the standard power supply. Each kit is provided with a complete structured set of illustrated instructions detailing every procedure to be performed.

	KAYPRO II	KAYPRO 4	KAYPRO 10	2/84 BOARD	4/84 BOARD	10/84 BOARD	ROBIE	Future Technology
400KB UPGRADE KIT	•	•		•				
800KB UPGRADE KIT	•	•		•	•			
CPU HOP UP KIT (5MHZ)	•	•						
CPU HOP UP KIT (8MHZ)				•	•	•	•	
REAL-TIME CLOCK	•	•	•	•				
MULTI-FONTS GRAPHICS	•	•	•	•	•	•		
EXTERNAL VIDEO ADAPTOR	•	•	•	•	•	•	•	
SCREEN SAVER	•	•						
DRIVES C&D OPTION	•	•						
8088 CO-PROCESSOR	•	•	•	•	•	•		
1200 BAUD INTERNAL MODEM	•	•	•	•	•	•	•	
EPROM PROGRAMMER	•	•	•	•	•	•	•	
8" DRIVE ADAPTOR	•	•						
FANCY FONT TYPE SETTING	•	•	•	•	•	•	•	
DIAGNOSTIC DISKETTE	•	•	•	•	•	•		
EPROM UPGRADE KIT	•	•						
PADDED CARRYING CASE	•	•	•	•	•	•		
CANVAS DUST COVER	•	•	•	•	•	•		

FANCY FONT Say good-bye to "correspondence quality" and hello to *Fancy Font's* high-resolution, proportionally spaced, letter quality. The range of available fonts and the flexibility of modifying or creating new characters and fonts far exceeds that of the daisy wheel printers (no need to change daisy wheels or type balls!). All this on low cost printers such as Epson MX-80, RX-80 or FX-80.

Fancy Font extends the capability and usefulness of your dot matrix printer. You are no longer limited to a fixed set of characters. Instead you can use over 3000 characters in the *Fancy Font* package and furthermore, can create any characters you like. With *Fancy Font*, you can use your favorite editor or word processing package to create a file to be printed. Include as few or

as many formatting directives as you desire. Then use our printing program to print your file.

KAYPRO PADDED CARRYING CASE—This product is a fully padded carrying case and comes in two models (with or without a shoulder strap). Its construction is of high grade canvas (backpack type) material and has a zipper pocket for transporting paper, cable and manuals **\$55.**

LEGACY ORDER FORM

NAME _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP _____
 PHONE () _____

KAYPRO II KAYPRO 4 KAYPRO 10 2/84 BOARD
 4/84 BOARD 10/84 BOARD ROBIE

CHECK MONEY ORDER COD Card Number _____ Exp _____
 VISA MASTERCARD AMEX

California Residents Add Sales Tax
 Shipping and Handling Charge \$4.50

Signature _____

QUANTITY	DESCRIPTION
_____	_____
_____	_____
_____	_____

LEGACY
 Computer Systems

SENT TO: Legacy Computer Systems
 26356 Carmel Rancho Lane,
 Carmel, CA 93923
 (408) 625-6562

DEALER INQUIRIES ARE INVITED

Up and Running

by David Gerrold

I do hope this isn't turning into a running gag

I reported last issue that Centech floppy disks in colored jackets (specifically red, orange and green) will not run on Kaypros equipped with Toshiba drives because the jacket is transparent to the light beam that the drive uses to detect the presence of a disk. Several of my engineering-type friends think that the drive's LED is obviously badly placed. It should read through the disk itself, not just the jacket. I—in my blissful ignorance—suspected that the problem was just with the brand.

So when the July issue of *BYTE* had a full-page four-color ad announcing the debut of "kaleidiskettes" from the Allenbach company, I allowed myself a small hopeful expectation. I've been using Allenbach disks for almost five years. In the good old days when I was driving a single-sided North Star, I had several *hundred* disks on my shelves. Just to archive a novel took six or seven disks—and an equal number for a backup copy. In all of that time, with all of those disks, I *never* had an Allenbach disk fail me. Never. The computer might have slipped a bit every bil-

lion cycles or so, and Lord knows I made more than my fair share of dumb mistakes; but those smooth little disks demonstrated a level of integrity heretofore reserved for saints.

So . . . of course, I had high hopes for the Allenbach kaleidiskettes.

So . . . of course, I had high hopes for the Allenbach kaleidiskettes.

I called the company and talked to a technical representative. He told me that the kaleidiskettes have a jacket two mils thicker than those of the *other* company, so he expected them to work in the Kaypro with the Toshiba drive. In fact, he'd send me a box so I could test them out myself

Red. Orange. Green. Yellow. Light blue. Dark blue.

All very pretty.

And not a single one of them would format—not until I put a write protect tab on the lower-right corner of the jacket.

The Allenbach disks don't meet ANSI standards for light transmission either. **Sigh** If you're in the business of selling and distributing software, you can't take the chance of using colored disks. Not everybody who has Toshiba drives in their Kaypro is going to know that they



need to apply a metal-foil sticker to the lower-right corner before they can use the disk.

A company named Sentinel also distributes disks in colored jackets. I haven't tested any of them yet, so I can't say if they hang up the drive too—but I was told *very very off-the-record* that these disks are the Allenbach disks under another name. Or perhaps the Allenbach disks are the Sentinel disks under another name. Let me repeat that I was told this very very off-the-record and could not find anybody to confirm it; but the Sentinel disks come only in the exact same colors as the Allenbach disks, so . . . maybe it's true.

But as I said before, I do hope this isn't turning into a running gag.

WordStar bug report

When I picked up my K-10, last March, it came with the 1983 distribution of software, including WordStar, version 3.30.

There are things I don't like about WordStar (so what else is new? Jerry Pournelle calls it

everybody's second favorite editor), but one of its more attractive features is that it can be configured to take full advantage of the capabilities of most of the popular printers. I have a NEC Spinwriter, model 5520, a sturdy old thing that has survived innumerable drafts of my last six novels; we're talking several million words here. The beast is six years old and I have yet to use its repair kit for anything more than a good chuckle. (The NEC Spinwriter repair kit—it comes labelled as such—is a screwdriver.)

There are some advantages to configuring WordStar to your specific printer. First, if your machine is capable of bidirectional printing, it will print slightly faster. And second, if your machine is capable of proportional spacing, WordStar can send it the appropriate control codes. (See below.) Proportionally spaced text tends to be more attractive and more readable. (Standard printers use one space for each letter printed. Proportional spacing allocates thin spaces for thin letters and fat spaces for fat letters. Printed text is proportionally spaced. Most typed text is not.) I'm one of those compulsive types who likes to use all the capabilities of his machine, and the goal of seeing the old NEC printhead buzzing back and forth, back and forth, leaving behind a column of perfectly justified proportionally spaced text has always been one of my personal benchmarks for a word processing system.

Using the WINSTALL program, I was able to quickly configure WordStar for my printer. Unfortunately . . . when printing out the PRINT.TST file, which demonstrates all of WordStar's various features, I discovered an undocumented feature. (There are no such things as bugs. There

are only undocumented features.) This "undocumented feature" was a lack of line feeds to the printer. The entire file printed out back and forth, back and forth, back and forth, on the top line of the page. The paper never rolled up. Back and forth, back and forth—until the paper had a thick black stripe deeply embossed across the top.

Not the easiest way to read a file—but certainly a great paper-saver.

MicroPro's technical people told me it was obviously the fault of my Spinwriter. NEC's technical people told me that the program was at fault. My dealer told me to check my baud rates, my cable, and my dip switches. Kaypro's technical people had never heard of this problem before and suggested that I check with MicroPro After three days of this, I reconfigured WordStar for "standard printer" and postponed the attack on the problem until I got some new ideas.

It never occurred to me that there might be a bug in the program.

When I started writing this column, Tyler Sperry (ye kindly editor) made available to me the 1984 version of the bundled software so I could write about dBase II and CalcStar and DataStar. Also included in that distribution was WordStar, version 3.30. Because the version numbers were the same, I assumed the programs were identical

But just a couple weeks ago, on impulse, I loaded the 1984 version of WordStar 3.30, configured it for the Spinwriter, and lo-and-behold, it printed out the PRINT.TST file exactly as it was supposed to! Line feeds and everything.

I don't know if this applies to any other printers, but if you have an NEC Spinwriter (5500 series)

and an early release of WordStar 3.30 and you have not been able to get the program to configure properly, you might want to check with your dealer (or with Kaypro.) Once in a while, it's nice to find out it wasn't your fault after all.

And proportional spacing

Still on the subject of WordStar:

Once upon a time, the people at MicroPro planned to have WordStar capable of proportional printing, but they were never able to resolve the internal logic in a way that produced consistently satisfying results; so WordStar's documentation ignores this capability of the program. It's there. You just won't know about it unless somebody tells you. In this case, the somebody is (the somebodies are?) Writing Consultants at Suite 232, 11 Creek Bend Drive, Fairport, New York, 14450. They sell a fat little document called *Proportional Spacing on WordStar* for \$25, which tells you how to use WordStar to produce proportionally spaced text on your printer. Assuming, of course, that your printer is a daisywheel or thimble printer, capable of proportional spacing. They also sell a configuration program on disk for \$75. (Prices include shipping.) This was what started my whole printer-configuration problem in the first place. I wanted to use this capability.

For the most part, it works.

Except for where it doesn't. The NEC Spinwriter divides a letter space into 16 micro-spaces. The WordStar algorithm only knows 6 different letter-widths. The division of one into the other leaves a fat remainder on the right side of the decimal point and produces occasional uneven spacing. This is most evident with lines of all capital letters.

(continued)

PRINTERIZETM YOUR WORDSTAR[®]

Why?

- * So you have easy access to all your printer's capabilities from inside of WordStar.
- * No need to run a BASIC program to set-up your printer.
- * Helps you save your sanity from trying to figure out how to patch WordStar yourself or from magazine articles.

Printerizers go far beyond those magazine patches, using an installer that is VERY easy to run. They add from 0 to 5K to WS.COM, depending on the printer selected. The specifics of what will be gained vary from printer to printer, but they all have the same goal in common:

"Give the user easy access to every useful capability of his printer."

Some Printerizations (notably Epson, Gemini, Delta, Radix, and Panasonic) require HexPrintR to access some of the printer's less frequently used options. Call or write (specifying your printer) for details.

HexPrintR[™] changes the WordStar printer control character ^R into a "Hex-Printer" function. For example:

^R 10, 15, 20 ^R

in a file printed by WordStar with HexPrintR installed into it would send the same thing to the printer as the BASIC program statement:

LPRINT CHR\$(10); CHR\$(15); CHR\$(20);

(Not recommended for daisy wheel printers)

PRINTERIZERS ARE AVAILABLE FOR:

- Epson RX/FX printer
- Epson w/Grafrax 80
- MX80-III/MX100-III / Any w/Grafrax Plus
- MX100 w/o Grafrax
- MX80 w/o Grafrax
- Gemini, Delta, or Radix
- Panasonic 1090
- IDS Prism / Microprism
- Okidata 82A / 83A
- Okidata 84, 92, 93, or 2410
- Brother HR-1 or Comrex CR-1
- C. Itoh Prowriter 8510 or 1550
- NEC PC-8023A
- Other DMP-85 printer
- Panasonic 1091, 1092 or 1093

In the following diskette formats:

- Kaypro
- Osborne
- Printerizer only: \$35.00
- HexPrintR only: \$39.00
- Both purchased together: \$55.00

Dealer inquiries invited.

ORDERING INFORMATION:

Prices include U.S. or Canadian First Class mail delivery. California residents add 6% sales tax. Overseas orders pay in US funds adding \$4 shipping. Payment may be by money order, check, Visa or Mastercard. UPS COD add \$4, 2nd day UPS COD add \$6. Please include phone number with order. Both Printerizers and HexPrintR work with versions 2.26, 3.0 and 3.3 of WordStar under CP/M and CP/M Plus.

Trademarks: HexPrintR and Printerizer, C I Software; Prowriter, C. Itoh Electronics; WordStar, MicroPro Corporation; Graphtrax, Epson America.



1380 Garnet Ave. E149, San Diego, CA 92109 619/483-6384

GERROLD
(continued)

The authors of the book (who are not identified on the cover, or even on the title page) acknowledge this problem and include notes on how to work around it. It feels a little kludgy, but it does work and if you have a need for text that looks like print, this is something you ought to investigate; but results will vary from printer to printer.

I should also note that in playing around with this, I discovered another (much easier) way to create the feeling of printed text: simply use the dot command .CW 11 to change the pitch of your printer to 11 characters per inch, halfway between pica and elite. On the NEC Spinwriter, this looks even better than proportional spacing, depending on the thimble. Ultimately, it's all a matter of personal preference.

But I am curious what kind of results other people are getting on their printers

It seemed like a good idea at the time

And finally, there's Mac Inker

It rhymes with stinker.

It comes from a company called Computer Friends, 6415 SW Canyon Ct., Suite 10, Portland, OR, 97225. This is a device that *supposedly* will allow you to re-ink your fabric ribbons and use them over and over again and save hundreds of dollars on printer ribbons.

But:

A) It's messy. To the company's credit, they warn you that it will probably be messy.

B) You will do it wrong. You will over-ink the first dozen ribbons you attempt to re-ink. Again, to the company's credit, they tell you that you will probably do it wrong and over-ink your first dozen ribbons.

C) It's even messier than you expect, even with the company's

warning.

D) The company is very sensitive to bad reviews. They write letters to the magazines in which bad reviews appear, pointing out that the user/reviewer was obviously using the product wrong.

E) All of the above would be forgivable, except . . . I never did get the results I bought the product for.

The Mac Inker works exactly as described. It is easy to set up, simple to use, a little bit messy (but we know about that), and you can re-ink all of your fabric ribbons.

Maybe.

I've been saving my old used printer ribbons for six years, in the vain hope that I might someday find a way to recycle them, so we are talking about several *hundred* ribbons here. The Mac Inker looked to be the answer, and I admit to high expectations. I like to think I'm a patient man. I mean, I really wasn't upset when every third ribbon jammed on the Mac Inker. I figured it was my fault and looked to see what I was doing wrong. The ribbons that were jamming were the cheap ones. The ribbons that were working were the ones with NEC on their cases.

Okay, fine so far. I discarded the cheap ribbons and concentrated on the NEC cartridges. I inked several dozen of them over a period of several days, made plenty of mistakes, learned how to not over-ink a ribbon, and kept working. Even at best, the results were spotty. Some of the ribbons were not inked all the way through. Others had too much ink on one part of the ribbon and not enough on another. Again, I assumed it was my fault. After all, the company had warned me that I was going to do it wrong at the beginning. So, I kept working.

I finally ended up with a half-dozen ribbons (out of sixty or seventy tries) that seemed properly re-inked. I put them in plastic sandwich bags so they wouldn't dry out or smudge ink on anything else and put them in my desk drawer. A month or two later, I decided to change my printer ribbon—things were looking a little pale—so I pulled one of the re-inked ribbons from the edrawer. It printed half a page and jammed. So did the second ribbon. So did the third. The fourth. And the fifth . . .

All six of the ribbons I had inked and stored had gummed up and jammed.

Now, it may be my fault. Maybe I did it wrong. But I went at this patiently and in good faith, and never did get the results I paid for. I have this thought that maybe I shouldn't have stored the ribbons in plastic bags, or maybe I should have bought fresh ribbons from the company and inked those, or maybe I should buy some new ink and rollers and try again; maybe I still haven't learned how to use it right.

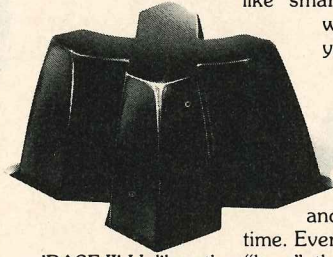
But I also have this other thought . . . that I've invested too much time and money into it already and it's been more trouble than it's been worth.

If anyone has had a different experience with Mac Inker, please let me know. I still think it's a good idea; but my experience with the product was disappointing and I wouldn't recommend it to anyone I wanted to keep as a friend. Sorry.

And the micro-revolution lurches on . . .

Out "keys" the competition!

Thinking about buying a "key" program? (You know, the names all start with words like "smart", "magic", "pro", etc.) Looking for a faster, easier way to calc? Process words or databases? Yes? Then you owe it to yourself (and your computer) to check out XtraKey. Quite frankly, we think it's the best. At any price! (And wait 'till you see our price.)



Just like those other "keys", XtraKey lets you redefine your regular keyboard keys to be anything you want. A word, a paragraph, a series of commands . . . whatever you hate to type over and over again! Change or make up new definitions any-

time. Even while running a favorite program like WordStar or dBASE II! Unlike other "keys", there's no limit on definition length.* Plus our advanced XShift feature lets individual keys have up to 16 meanings.

XtraKey can also talk to your printer or video display. Change from pica to elite while working on a spreadsheet. Address an envelope while in a document. Or call up your own custom help or menu screens (almost like having windows!)

There's more! Built-in screen dump**, keypad redefinition**, clear screen, printer on/off, definition chaining, program chaining, input pause and batch processing. All in one, neat little package that uses less memory AND disk space than the leading program.

Now, for \$39.95, aren't you ready for real key power?

* to available CP/M TPA ** XtraKey Custom versions for Kaypro (all models) & Gnat 10 only

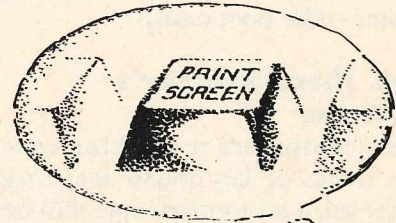
XtraKey

XtraKey will run on CP/M 2.2 based computers. To order, send check or money order for \$39.95 (\$49.95 for XtraKey Custom for Kaypro or Gnat 10) plus \$3.00 shipping (U.S. & Canada). California residents MUST also add 6% sales tax. Specify make and model of computer and disk format. VISA and MasterCard accepted.

CP/M, dBASE II, WordStar and Kaypro are trademarks of Digital Research, Ashton-Tate, Micropro and Kaypro respectively.


Xpert Software • 8865 Polland Avenue • San Diego, CA 92123 • (619) 268-0112

STROKE OF GENIUS

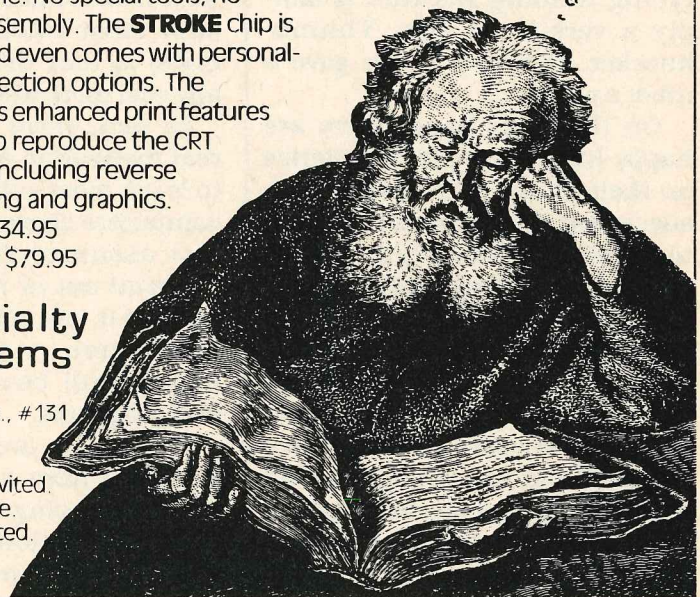


What you see is what you get with the amazing new **STROKE**. With a single keystroke, a copy of your CRT screen can be printed on any popular matrix or word processing printer at anytime. No special tools, no soldering, no assembly. The **STROKE** chip is easy to install and even comes with personalization and protection options. The **STROKE+** offers enhanced print features that allow you to reproduce the CRT screen exactly, including reverse video, underlining and graphics.

STROKE from \$34.95
STROKE+ from \$79.95

 Specialty Systems

12610 Central Ave., #131
 Chino, CA 91710
 (714) 947-1627
 Dealer Inquiries Invited.
 Discounts Available.
 M/C & VISA Accepted.



The Cottage Computerist

by David Thompson

Do you remember typing class? You know, old Mrs. Thumbknocker and her ruler, watching hawk-like for some poor fool to glance down at his keyboard.

"Heads up, you fools," she'd screech, "you'll never learn to type with your noses!"

So it wasn't very long before you were wishing for something easier—like boot camp.

Mrs. Thumbknocker's software

Well, computers are taking over the tasks of keyboard training (after all, a lot more people will be using computers than typewriters). Unfortunately, much of the typing training software is simply a version of Mrs. Thumbknocker. (However, if you gave a robot a ruler . . .)

On the other hand, there are happy little tykes playing games on their fruity little systems. To succeed at these games they have to be able to touch-type simple words (if they look down at their hands, they lose precious time). Of course, as they master the keyboard, those simple words get more difficult until the little devils are out-typing me (and they love it). What would happen if all the schools got arcade games with standard typewriter keyboards and exciting games that

required touch typing for success?

Folks aren't getting educated for education's sake. They are getting the knowledge and skills in order to do something. Why else would law students spend years pawing through dusty old books of dusty old court decisions and then take an incredibly difficult exam? Of course, they do it so they can expound at length about trivia before a room full of uncomprehending people. (The absurd fees are simply a technicality.) No doubt, if I'd gone through the same ritual, I'd act the same way.

If there is enough motivation, people will go through just about anything to learn. The problem with most educational packages (and most educational institutions) is that they don't provide any real motivation.

In fact, there never was any real motivation for the poor kids to learn most subjects, but when computers showed up, educators just assumed that taking the material out of a dull book and putting it into software would be motivation enough. Unfortunately, dull books turned into dull programs.

If students are going to learn anything from a computer they are either going to have to bring their motivation with them, or you, the programmer are going to



have to include some.

Creating motivation

You can usually generate a contest between the student and the computer or between two or more students. If the program can also measure the progress the student is making, so much the better.

Don't be afraid to go into an Apple or Commodore group meeting and ask what kinds of programs the members have for typing training, history instruction, or whatever. Many of these packages have ideas that can be applied to new programs for newer systems. However, before we get lost in this small (but very obvious) segment of computerized education, let's take a look at what computers are best at teaching.

Computers on computers

If a friend were to walk up to you and ask what your computer has done for you, you'd probably say that it made your writing and editing chores much easier, kept your books, entertained your kids, and baffled your spouse (at

least temporarily). During the ensuing conversation, your friend would probably mention how much you know about computers.

You'd probably dismiss the comment, but in reality, you really do know about computers—a whole bunch, in fact. You see, the biggest thing your computer has done for you is that it has taught you about computers.

Plus, there are many other things that people pick up while they are learning about computers: languages, reading, writing, geometry, arithmetic, reasoning, precision, electronics, accounting, typing . . . all while playing around with a strange little box that has 40-legged heart.

In fact, computer languages such as Pascal, BASIC, COBOL, and Fortran may teach more English vocabulary to more people in more non-English countries than all the English classes in history. (And, of course, they are very motivated students.)

People everywhere are probing these strange little boxes: trying to make them speak, calculate the mortgage, write letters, or drive the printer. They spend hours upon hours fiddling, reading, designing, soldering, programming, reprogramming, trying to shape their box into something they can use. (All the while, they are learning and learning and learning.)

What's in it for you?

There are a lot of people like yourself who are learning about computers (Why else are you reading *PROFILES*?) If you can help other people make the climb to computer literacy, then these people will beat a path to your door.

There are numerous ways to help people: books, software, magazine articles, symposiums,

college lectures, computer camps, tutoring Some of these can be quite profitable financially, others quite profitable in terms of good vibes (publishing *Micro Cornucopia* generates a particularly neat collection of vibes.)

The rest of this article lightly covers two of the above possibilities: books and software. However, many of the things I discuss here apply directly to the other fields.

Be especially aware of what you can do with a Kaypro. You have access to many languages including Logo and Pascal, both designed as teaching languages. You can add: B&W and color graphics, plus big-screen monitors so your Kaypro can feel at home in many types of group teaching environments. But, let's get on to the books.

get the information at a library).

Be selective about the companies you contact. Look closely at their product. Are they easy to read? Did the publisher do a good job proofing, typesetting, laying out, and illustrating the book, or does a fancy cover hide a hard-to-read text? Look especially for the publisher's use of headlines and white space to help the reader's eye move easily from idea to idea. Is the paper clean and crisp looking or is it the crude variety used in dime novels? Also, make sure there is an index (if appropriate).

Some publishers have a reputation for putting absolutely minimal effort and money into a book, hoping that the writer's skill and the customer's need for information will sell the product. Other publishers spend little or no money on promotion and these too are ones to watch out for. Your

The biggest thing your computer has done is teach you about computers.

Writing books

Book companies are falling all over themselves trying to find good, knowledgeable (or semi-knowledgeable) writers who can whip out a couple of computer instruction books a year. Go to the computer section in your local bookstore (even here in Bend we have computer sections in all three of our bookstores) and jot down the names of the publishers whose books look interesting.

If you go into the bookstore during a quiet time (mid-week mornings are usually best) the store owner might help you find addresses and phone numbers for your publishers (or you could

bookstore owner or local author's group should provide a wealth of details in this area. In fact, both should be able to direct you to information on the whole book publishing process (including the very important field of contracts).

Software

Many companies are already publishing educational software, both the old fashioned kind ($2 + 2 = ? \dots$), and some zingy new things that teach WordStar in an hour, or spreadsheets in two. ATI (American Training International) is one of the leaders in this kind of software and it advertises in many major magazines.

(continued)

If you are aiming at the classical school environment, you should try nosing around your local schools. Many younger teachers are quickly becoming computer literate and they are often excellent resources both for new program ideas and for suggestions about which software distributors to contact and which to avoid.

Of course, educational software (especially the kind that teaches people about computers) is much bigger than the classroom and there are a lot of opportunities within the Kaypro world.

There are many Kaypro owners out there who are fighting their way through the Perfect and MicroPro manuals, command by command. They are trying to learn SBASIC (and many are giving up). They are playing with

MBASIC, trying little things to build up their confidence before the big plunge. (Is another great checkbook program waiting to be born?)

Many folks are considering Turbo Pascal but they aren't sure they can handle a new language without assistance. (*PROFILES* and *Micro Cornucopia* can help, but people also need disks of well-written examples and library routines with concise documentation.)

If you fought your way through a difficult task, no doubt others are trying to do the same thing. If you can make the educational process easier for them, they'll beat a path to your door (I hope you like beaten paths).

So, when you think of education, don't get locked into Thumbknocker's methods. If you can

help people get where they want to go, and make it a little fun besides, how can you beat it? □

Farmer Brown isn't the only one who can't catch a pig!



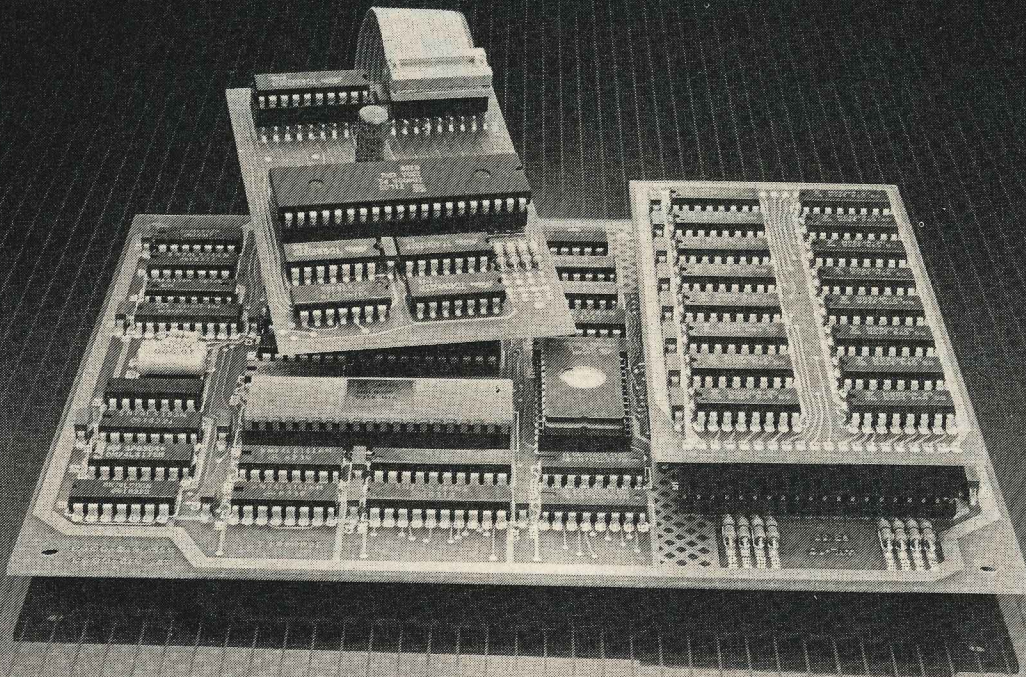
Winchester and Floppy disks can't either... the PIGGY-BANK is just too fast for them all. Just install the PIGGY-BANK, load the software, and hang-on for a high-speed run for your money! As a semi-disk (ramdisk) the PIGGY-BANK runs 20 times faster, so you can load programs like Wordstar or Perfectwriter in less than one second. Formatting or saving files are done in a blink of the

eye! Or try the ultimate adventure—run CP/M+ (3.0) and use the PIGGY-BANK as bank-switched memory. The 384K bytes, silent operation, and reduced wear and tear on diskettes and drives means saving time and money. You can catch up with the PIG at your Kaypro® dealer or contact us directly.



E-SYSTEMS, BERKELEY 2308 FOURTH STREET, BERKELEY, CA. 94710 (415) 486-0686

MS-DOS, CP/M-86 and RAM Drive For Your CP/M Computer



Now you can dramatically expand the software capabilities of your CP/M computer with CO-POWER-88 from SWP Microcomputer Products.

Introducing CO-POWER-88, the powerful 16-bit, 8088 co-processor that upgrades your Z-80, CP/M computer to run both MS-DOS and CP/M-86. What's more, MS-DOS on the CO-POWER-88 is format and data compatible with the IBM-PC.

Available in 2 RAM sizes, 128k and 256k, the CO-POWER-88 runs at a quick 5.33 MHz. It gets its power from your computer's power supply and uses a maximum of just 750 mils at +5 volts.

Installation is simple.

When you order your CO-POWER-88, you'll receive two circuit boards: the Z-80 adapter board and the main processor board. You'll also receive a complete owner's manual and easy-to-follow installation instructions.

When your package arrives at your door, the world of 16-bit processing is just minutes away.

CO-POWER-88 does not replace your Z-80, so you can still run CP/M.

Imagine the versatility, compatibility and power that CO-POWER-88 gives you, allowing for both CP/M and MS-DOS, IBM-PC compatibility processing.

SWP

MICROCOMPUTER PRODUCTS, INC.

2500 E. Randol Mill Rd. • Suite 125 • Arlington, TX 76011

And, as an added feature, CO-POWER-88's RAM can be used as a high-speed simulated disk drive when processing under CP/M.

How IBM-PC compatible is the CO-POWER-88?

Most MS-DOS, IBM-PC software will run under the CO-POWER-88. To inquire about a specific program, call or write us.

Contact your local SWP dealer, or order direct by mail.

If you own a Kaypro, Morrow, Zorba, Actrix, Osborne, Bigboard, Xerox 820-II, or SWP ATR8000, then CO-POWER-88 is for you! Contact your local SWP dealer, or use the convenient mail order coupon below. Better yet, for fastest delivery, use your credit card and shop by phone.

Credit Card Orders Save Time!
Call 817-469-1181 or 817-861-0421 And Order Now

Or Mail Coupon to: SWP, Dept. _____, 2500 E. Randol Mill Rd., Suite 125, Arlington, TX 76011

Please ship the following:

128k CO-POWER-88 with MS-DOS @ \$400.00 + \$10.00 shipping.

256k CO-POWER-88 with MS-DOS @ \$500.00 + \$10.00 shipping.

CP/M-86 (16-Bit Disk Operating System) @ \$60.00 + \$5.00 shipping.

Configurations: (check one) 5 1/4" drive _____ or 8" drive _____

Brand of Computer _____

I want to learn more about the CO-POWER-88. Enclosed is \$1.00, (no checks please) for more literature, including a comprehensive listing of MS-DOS and CP/M-86 software that runs on the CO-POWER-88.

Method of payment:

Personal Check enclosed (must clear bank before shipping)

Certified Check or Money Order enclosed.

Charge the following credit card:

Master Card Visa

Credit Card # _____

Master Card Bank # _____ Exp. Date _____

Subtotal: _____ + Shipping _____ + Sales Tax (Texas Residents add 5%) _____

= Total Enclosed: _____

Name _____

Address _____

City _____ State _____ Zip _____

Phone (h) (____) _____ (w) (____) _____

Signature _____

© 1984, SWP Microcomputer Products, Inc.

Trademarks: CO-POWER-88 and ATR8000, SWP Microcomputer Products, Inc., IBM-PC, International Business Machines; Z-80, Zilog; MS-DOS, Microsoft, Inc.; CP/M and CP/M-86, Digital Research, Inc.; Kaypro, Kaypro Corp.

Computers and Literacy: The Decay of Eloquence

Some disturbing trends are becoming evident

by Jessica Horsting

Before you read any further, look up and read the title carefully. This is not yet another commentary cautioning you against the dangers of computerphobia at the dawn of the Information Age. That's a problem of computer literacy. After all, in buying your Kaypro, you've mastered your computerphobia, and in learning to use it, you have achieved at least a degree of computer literacy. Feel better?

What we're addressing here instead is the impact of computers on public literacy: what the coming interpolation (a telling word—we'll get back to it) of technology and language may mean to you and the word as we know, or knew it.

On literacy

At the most basic level, literacy is the ability to read and write. This definition implies no standard, though. Chimpanzees can be considered literate: they can recognize, interpret and reproduce symbols. By adding a specific level of fluency and understanding of symbols to the definition—say, the ability to form, express and communicate thoughts and feelings—then we have defined not only literacy but language as well.

This may seem a little obvious, but it's important to fix the parameters: literacy is inextricably involved with and defined by language. Literacy is skill with language; a skill rapidly being lost by the American public. The current generation of high school graduates are leaving school testably, alarmingly less literate than the previous generation.

The hope among educators is that computers will reverse this trend. But the trade-off may be the loss of traditional forms of language and literature. The widespread use of computers has created the phenomenon of "electronic mediation" of the written

(keyboarded?) word which may eventually redefine what it means to be literate.

Non-traditional methods

As early as 1972, computer expert Ted Nelson—in his kinetic pastiche on the coming age, *Computer Lib*—offered a learning alternative that skewed off from traditional methods. He proposed a "hypertext" system which he believed would correspond more accurately to the way the human mind learns. Rather than present material in a progressive, linear fashion, the "hypertext" program would avail the student of immediate cross-referencing, related material and commentary on demand.

In a similar approach, IBM PCs have been enlisted in a educational program designed by Dr. John Martin of Tallahassee. His experimental "Writing to Read" program conducted at over a hundred elementary schools has produced results that have exceeded expectations—and alarmed traditional educators.

The computers combine graphics and voice prompts to teach the youngsters to recognize words by traditional rote and repetition. But the learning program emphasizes phonetics, as an attempt to relate directly to a child's vocabulary (which always exceeds recognizable, reproducible written symbols.) The program displays both correct and phonetic spellings and a graphic to encourage understanding of the whole word, while de-emphasizing the alphabet and correct spelling. The thinking is that if the child can speak, he can write the sounds; if he can write, he'll learn to read.

The advantage has been that children learn to compose and express themselves with words much more rapidly than before. The disadvantage has been that the system requires extensive follow-up

by instructors, along with text reading to learn correct spellings and grammatic construction. Martin comments, "This premature insistence that you have to be able to spell the best words in your vocabulary is one of the great inhibitors of adults. You should just write it the way it sounds until you see it in a book."

Martin's program relates to Nelson's "hypertext" in that it is non-linear teaching. Rather than progressing from drawn letter to alphabet to simple words to sentences, it allows students to, in effect, learn from the middle—the way they've learned language at home. It is a method unmanageable by any means other than computer.

Malleable text

So, what's the problem? Sounds OK, right? Well, aside from immediate observation—that the program reinforces the dichotomy of a "right" way and an "easy" way to spell—the striking fact is that it teaches that *symbols are alterable*. It teaches that written symbols can be reconfigured without violating the meaning. The key here, the thing that is causing battle lines to be drawn, is that language exists only by consensus: if you start changing the rules, soon nobody is going to know how to play the game.

(Anyone that has, for instance, changed the screen indication of "Warm boot" on their Kaypro to "Wormroot" or "Wombat" has created a neologism for the status of the CP/M as designated by Kaypro. In your lexicon "Wombat" no longer represents a warm-blooded, fur-covered marsupial; it defines a status of the machine. *You* may know that, but there is no general consensus for the new meaning. In effect, you are the only one literate in your language.)

By allowing one to change the meaning of language symbols, by reconfiguring the symbols themselves, computers are changing the rules. Words are now "processed"; information is "accessed"; texts are not read, they are "viewed." The computer "consciousness" of succeeding generations may signal an upheaval in language and the written word as significant as that heralded by Guttenberg's printed Bible.

At stake are the traditional forms of language—the spoken word, the written text—the measure by

which literacy is judged.

One view of the future

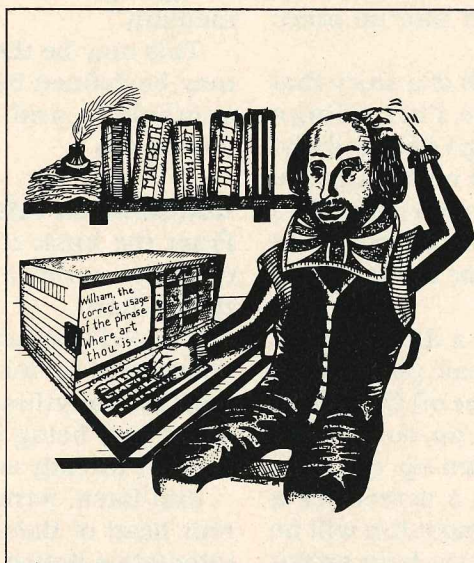
Straddling the line between tradition and technology is Professor Richard Lanham, Executive Director of the UCLA Writing Program. Lanham was trained as a classic Renaissance scholar and humanist. When interviewed by Linda Strawn (for KPFK's *Future Watch*,) he expressed his concern over "a crisis in public literacy of epidemic proportions." His response is an innovative university curriculum that teaches composition and language through a number of techniques. The program, outlined in his book *Literacy and the Survival of Humanism*, involves extensive computer instruction, computer pre-editing of student compositions, video and classroom presentations.

"I've changed my professional life in order to create an office that can cope with it. The trend that the current generation is less literate in that testable range than the previous generation is disastrous. No point in playing let's pretend."

Lanham cited a number of causes for the drop: gross national consumption of hundreds of hours of television, the poor quality of education, the increasingly bilingual nature of American society and the resulting communication problems.

In addition to the traditional criticisms however, Lanham offered a surprising view on the impact of computers on literacy, arguing that in the long run they may improve the standard rather than cause its decay. He suggests, indeed, that computers may redefine the act of reading: "I have heard the arguments that the computer is going to render the (printed) book obsolete, that it will refine words out of existence, that we are all going to communicate in symbols—that's balderdash, I think.

"What I think they will do is make people more self-conscious about words. This is not to say it's not going to bring enormous changes. For instance, think about displaying words on a CRT screen rather than a printed book—this is an *enormous* change. It means those words can be changed by the reader. Immediately, you do not have a canonical text upon which the reader comments, you have a text with which he is actively engaged and can change.



"It changes the whole nature of that experience, it changes what reading means. The reader becomes active in a way he had never been before. That's going to mean that people will think about language in a different way. I don't think it's anything to regret—I think it's tremendously exciting."

Lanham elaborated on what the new experience of reading may mean. If you are a reader or a writer, you may find it more chilling than exciting.

"If I'm reading the first paragraph of *Bleak House*, I'm going to read it the way Dickens wanted it. I'll come to terms with that text and no other, because it is fixed in print.

"If I'm reading the first paragraph of a story that has been kicking around a data base, I'm reading a story that has been read, and perhaps changed and altered and edited and commented on by a dozen people. It becomes then something much more like a recital by a bard in an oral culture—something that has been literally changed every time someone has read it.

"(If) anytime I'm sitting down at a display I can change, I can improve Dickens, I can play games with Dickens . . . then (the experience of) Dickens is going to be different. If I have grown up, as this new generation of students will have grown up, thinking that when you read something on a screen it's a license to play around with it—the most fun will be that you *can* play around with it. If you have grown up thinking that's what reading is about, then picking up a book like *Bleak House* will (seem like) a terrible constraint. You can't change it. It will be a one-sided operation that the reader is not used to."

Electronic mediation

This "playful" reading represents interpolation (I said we'd get back to it) in the extreme, which means not just interjection but alteration. It is almost unconscionable that anyone would sanction the violability of a literary text, whether on a CRT or any other medium. It is like advocating a U-paint Picasso, or a Write-Yer-Own Shakespeare—it destroys the foundations of authorship and creative personal vision.

Though Lanham is not suggesting this is viable, the implication is that the nature of the medium makes "interactive literature" not only possible, but likely. This changes the terms of literacy—communication through the written word becomes interpolative, progressing from the tiny insurrection of changeable symbols to the greater transgression of violable text. Lanham acknowledges that we are in the midst of a radical transformation and while he doesn't think the traditional codex book will become

extinct, he projects that literature will evolve to accommodate "electronic mediation" of the written word.

"I don't think the ordinary book is going to be threatened. I think it's going to undergo a stylistic transformation. People are going to write in a different kind of way. What I suppose is the legitimate successor of the codex book will be something like a laser optical video disk. That would be a highly interactive medium. From the work that I've seen . . . it's going to be an extraordinarily interesting medium."

This may be the new literature. The new literacy may be defined by one's familiarity with language, symbology and presentation as mediated by computers.

Computer novels

From the husk of the traditional text flowers the computer novel: a case of the message adapting to the medium.

Labeled interactive fiction, the computer novel is an attempt to link those who write with those who don't read anything that's not on a monitor. The idea is not just being considered by book publishers—they are already acting upon it.

Jim Baen, former editor for Ace Books and current head of Baen Books, sees grand horizons for interactive fiction. Quoted in *InfoWorld Magazine*, he said "We will be seeing remarkable developments in interactive fiction. It won't be all textual. It'll be more like an illustrated magazine that died and went to heaven."

Baen is developing computer versions of the works of noted science fiction authors Robert Heinlein, Jerry Pournelle, Gordon Dickson and others. Another company, Trillium Corporation, has introduced five titles, two based on works by Arthur C. Clark and Ray Bradbury. They are also releasing "Shadowland": a game upon which a later novel will be based. (To be penned by Alan Dean Foster—the man who has brought you novelizations of almost everything.)

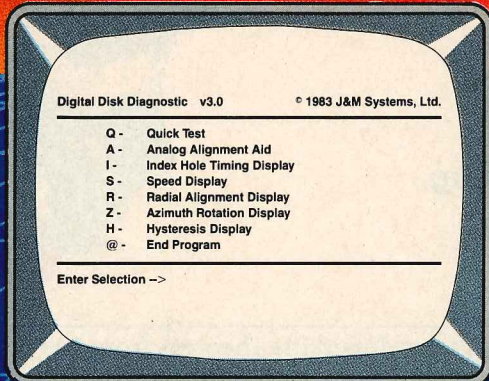
The nomenclature evolving around what are essentially games is intriguing. Games are now called "computer novels." They are referred to as being published, rather than offered or designed or issued. Baen projects that the good ones will induce the "slightly trance-like state in which we read a good book."

Trillium's parent company, Spinnaker Software, is also designing a line called Windham Classics, games based on classic historical works.

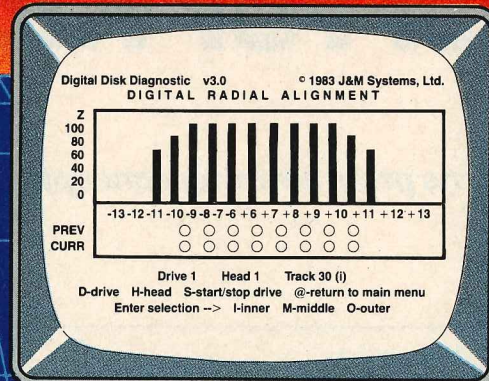
(continued on page 87)

DISK DRIVE ANALYSIS PROGRAM

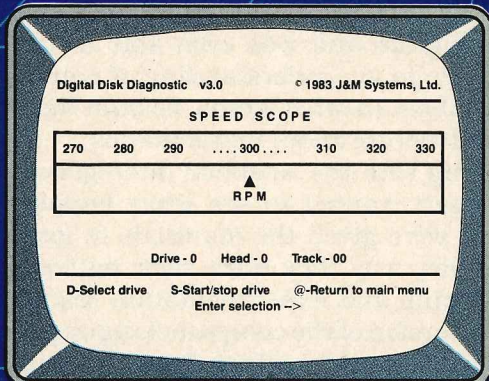
... A UNIQUE APPROACH TO DISK RELIABILITY!



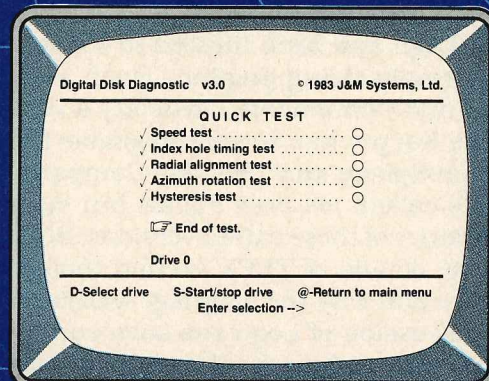
Select any one of seven tests to perform preventive maintenance or to isolate problems. Simple, single-letter commands make DDA easy to use! Use DDA to align the head, adjust the index hole detector, or adjust the speed.



Use the DDA Radial Alignment Test to check the head alignment of your drives. No need for an oscilloscope or other expensive test equipment!



Check the motor speed of your drives. Or, you can even use the Speed Test to adjust the drive speed. No need for any test equipment!



Use the Quick Test to quickly and automatically test five of the most important performance parameters of your drive. Monitor your drives for long term drift. Isolate problems quickly and automatically!

PROTECT YOUR DATA.

Now you can make sure your data is being recorded properly by the use of the revolutionary *Disk Drive Analysis Program*.

The Disk Drive Analysis Program from J & M Systems, tests your disk's performance and calibration without any additional equipment! It measures your disk's performance and displays it on your screen.

This is the most comprehensive disk diagnostic program available for your Kaypro microcomputer. You can even adjust drive alignment while watching the display!

Spot problems *before* they endanger your data! If you own a disk drive, you *need* the *Disk Drive Analysis Program*!

Kaypro

1 - Kaypro-II	\$79
2 - Kaypro-II/IV (Tests Both)	\$99
3 - Kaypro 10	\$99

DDA also available for other models

J & M SYSTEMS IS THE DRIVING FORCE!

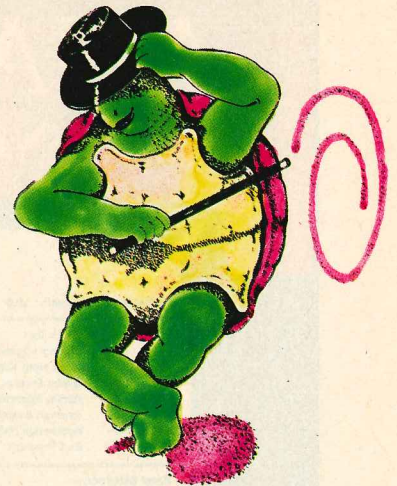


J & M SYSTEMS, LTD.

137 UTAH NE • ALBUQUERQUE, N.M. 87108 • 505/265-1501

It's Not Just For Kids

Logo turns programming concepts into turtle play.



by Anne Wayman

The computer language Logo has been hailed as a revolutionary educational tool because it allows children to program computers, rather than using computers to drill (or program) children. Unfortunately, most of the attention devoted to Logo has been limited to those microcomputers emphasizing graphics (such as models from Apple and Commodore.) Recently a version of Logo for the Kaypro has become available from the folks at MicroSphere and The Lisp Company. TLC-Logo, as it's called, not only equals but surpasses the performance of these earlier versions. Before getting into the details of TLC's version though, let's look at where and why the language was developed.

In any discussion of Logo you soon run into the name and accomplishments of an educational theorist named Seymour Papert. He and others at MIT developed Logo while investigating how children learn. Papert was especially interested in the relationship between learning tools and the learning process, and how new tools could facilitate this process.

The famed educator Jean Piaget observed that children learn their native language and many other skills, such as opening and closing doors without being formally taught.

Papert wondered why children learned some things early and spontaneously while other learning is delayed or never happens at all. He rejected the notion that an older child is intellectually more capable than a younger child and therefore better prepared to learn arithmetic and math. Instead, he said, the availability of materials to build intellectual structures is the key: we grow up with plenty of material to learn to talk, draw, identify patterns, and of course, open doors. Generally, however, our society lacks an abundance of material that would lead us to a similar understanding of mathematics.

Papert developed his theories from his own experience. Unlike most of us, he grew up playing with the gearboxes and differentials of many automobiles. He developed an intuitive sense of how gears worked, and even discovered on his own some of the physical laws governing their movement. As a result, he thought of the multiplication tables in terms of gears and was even able to transfer his experience to an understanding of equations with two variables. In other words, he built his own intellectual structure about mathematics.

Working with the Artificial Intelligence group at MIT, Papert wanted to see what happened when children were given the materials to learn mathematics the way they learn their native language. His thinking and experimentation resulted in the original version of the computer language Logo, and "turtles". The turtle, which Papert calls an "object to think with," is the key to Logo's educational advantages over other, more traditional, computer languages. (Papert's theories are detailed in his book, *Mindstorms*, published by Basic Books Inc.)

The results of the MIT experiments confirmed Papert's notions on learning. Children, when given (with little direction) objects that allowed them to work with various mathematical principles, developed the intuitive understanding he expected. Sometimes the children used keyboards with a turtle displayed on a screen; at other times they directed a physical turtle programmed much like a robot. At the time, both approaches required large computers.

Logo and micros

As the memory and graphics capability of personal computers grew, versions of Logo that could be used in schools and homes proliferated. Because Logo requires graphics capability to display the turtle and the turtle's actions, it became widely available on computers such as the Apple II and (later) the



IBM PC. MicroSphere has developed a \$240 color graphics board which can be added to any Kaypro (best done by a tech or someone who knows one chip from another). This gives your Kaypro an external monitor connection, increasing its graphic capability considerably and adding the potential of 16 colors, provided you have a color monitor.

When coupled with TLC-Logo (also offered by MicroSphere for \$129.95) and an external monitor, Kaypro users now have an excellent Logo at their disposal. (Although color is not strictly necessary—the turtle will perform quite nicely in black and white—it certainly expands your perception about what's happening. Besides, it's fun to have your Kaypro suddenly display a color looking suspiciously like IBM Blue!)

*Central to Logo is the turtle,
which Papert calls an
"object to think with."*

Once the color graphics board and monitor are running, TLC-Logo is loaded in the usual fashion. At the A prompt you simply type **LOGO** and press return. After a bit of disk whirring a shape appears at the center of your external monitor's screen.

Behold! A turtle!

This roughly spherical shape is the Logo turtle. It sits waiting on the external monitor for your instructions. On your Kaypro screen, you are presented with a question mark at the upper left corner, and the blinking cursor. Commands you enter are displayed on the Kaypro's CRT while the turtle moves into action on the monitor screen.

That simple shape on the external monitor is deceiving. A quick glance at the "Roadmap" in the

TLC-Logo Owners Manual reveals that you've entered a world quite different from the typical application program or computer language.

One way of looking at TLC-Logo is to think of the program itself as a computer within your Kaypro. This is a computer you build yourself using objects like the turtle, colors and words instead of nuts, bolts, and integrated circuits.

The Roadmap suggests you first acquaint yourself with TLC-Logo as an arithmetic calculator. Although watching the program add $4 + 11$ or even using larger numbers (complete with exponents) is not as interesting as sketching with a turtle, it lays a foundation for what is to come.

Next the Roadmap introduces TLC-Logo as a sketch pad. Starting with simple commands like **F** for forward, **B** for back, **L** for left and **R** for right, you direct the turtle to draw all manner of shapes and objects.

The command structure is delightful. By and large it's also obvious, made up of mnemonics that make sense. For example, when you want to repeat a procedure three times you simply type **REPEAT 3**; if you don't like the results of your commands, you can clear the screen with **CS**. Colors are called by name.

Computing with objects

This sort of obvious command structure is vital to Logo. It lets the user (children of any age can play) concentrate on experimentation with the turtle rather than worrying about obscure words and syntax. It also begins to introduce some amazing ideas. One of the most important, and surprising, is the notion that computation can be done with objects as well as numbers. As you, or a child, develop skill and a sense of what's happening, you can actually "teach" your computer to recognize objects.

Part of the excitement about Logo is that the user begins to identify with the turtle, and solve prob-

THE KAYPRO STORE...



Shirts, buttons, pens, jackets, and many more items are now available to you through your local Kaypro Dealer. Stop by and ask to see the current collection of Kaypro collectibles!

NOW, BAR CODE TECHNOLOGY CAN BE YOURS EASILY AND INEXPENSIVELY WITH LABELMATE.

Department of Defense contractor? Meet DOD **LOGMARS** bar code specifications simply and economically with LabelMate I from Symbology Systems, Inc.

Labelmate I is a state-of-the-art software package and decoder module programmed to produce bar code labels in compliance with DOD **LOGMARS** specifications. LabelMate I utilizes a Kaypro II microcomputer with an Epson printer.

- Requires no computer knowledge to operate
- Installation requires no tools or wiring
- Merely plugs into your Kaypro II and is ready to produce labels immediately
- Output can be verified with handy scanner wand

If you are a DOD contractor, you need LabelMate.



Inquire at your Kaypro dealer, or contact:

SYMBOLIZED SYSTEMS, INC.



3231 W. MacARTHUR BLVD.
SANTA ANA, CA 92704

Or Call Toll-Free:
800-854-3278
800-432-3191 (In California)

DEALER INQUIRIES INVITED

LOGO

lems in a familiar way. For instance, if the goal is to draw a square, a child might begin to think "if I take 2 steps forward, make a 90 degree right turn, take 2 steps forward . . . I would walk a square." (Older children and adults will probably thinking in terms of using a pen or pencil to draw a square, which works just as well.)

This is precisely the way you communicate with the turtle. Of course, young children don't know about 90 degree angles, but the turtle has a pointer inside it, much like a single clock hand. They soon discover that typing R or L causes the pointer to move, in 45 degree increments, to the right or left.

*All at once we have a way
to learn mathematical
concepts the way we learned
our native language, or
how to hit a baseball.*

The turtle moves forward in the direction of its pointer. So you can achieve a 90 degree turn by typing R twice, or by typing R 90. If you didn't know you needed to make 2 right turns, you might try 1 or 3, each time getting a result that doesn't look like part of a square. With practice you would begin to intuit that it takes a series of 90 degree turns to make a square.

All at once we have a way to learn mathematical concepts the way we learned our native language, or how to hit a baseball— gently, by trial and error, rather than by memorizing a series of rules for which we may or may not see application.

After you tire of using your 'turtle, or turtles, for you may hatch a whole screenful, the Roadmap leads you to the part of the manual which shows you how to turn the arithmetic calculator into a computer by including conditions and truth values. Until you reach this point, you've done all decision making.

Decisions by computer

As you work through this section you will discover you can teach TLC-Logo to begin to make some of the decisions on its own. Key to this concept are the two values, true and false, which Logo can determine if you give it conditions.

Truth values and conditions are fairly straightforward and familiar to adults, even if the names are new. But explaining concepts of equality and difference to young children is almost impossible without using objects. Logo provides an environment

The Software Toolworks® presents: THE FUTURE

Languages, games, productivity software, computer cookbooks and more are formatted for IBM PC, PCjr, most CP/M systems and Heath/Zenith HDOS. They range in price from \$19.95 to \$59.95. For a free 41 product catalog contact The Software Toolworks, 15233 Ventura Blvd., Sherman Oaks, CA 91403, (815) 986-4885.

CP/M is a registered trademark of Digital Research.

At Last! An accounting program written for business, not accountants.

If this sounds like what you've been looking for, you should try MINI-LEDGER, our single-entry program for people who want results, not complications.

- 99 user-definable payment and income codes
- Provides almost all the information needed for taxes and financial statements
- Virtually instant analysis of your cash-flow for any period from 1 to 12 months
- You don't have to be an accountant to use it

Requires: CP/M™, CP/M-86, MS-DOS, PC-DOS-2.0

Formats: Most disk formats available

Cost: \$150 complete program
\$ 30 manual-only with demo disk
California Customers add 6.5% sales tax

To Order: Call or Write
Paradigm Consultants
39243 Liberty Street, Suite L
Fremont, CA 94538
(415) 796-0543
Outside California Call **(800) 821-8407**



CP/M IS A Registered Trademark of Digital Research Corporation

LOGO

where such learning can be as natural as learning how to talk because you manipulate with objects you create.

The Logo environment also supplies an immediate sense of purpose because you're designing something; the application is obvious and current, unlike simply memorizing equations.

Of course someone has to be around to answer questions about Logo in the same way children ask questions about words. In the classroom, the teacher initially offers this support. As children experiment with the turtle, however, they begin to answer each others questions, leaving the teacher free to offer direction. When Logo is used at home it often becomes a shared learning experience, with youngsters leading the way.

The Roadmap next points to a section of the manual which deals with the creation of names and objects and shows how to apply truth values and conditions to them. Now we're exploring logic and learning to do computation with things instead of numbers. We are also, almost in spite of ourselves, getting real experience with a computer language,

and beginning to think about the way we humans think.

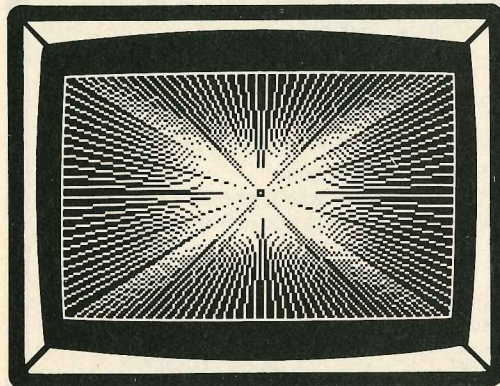
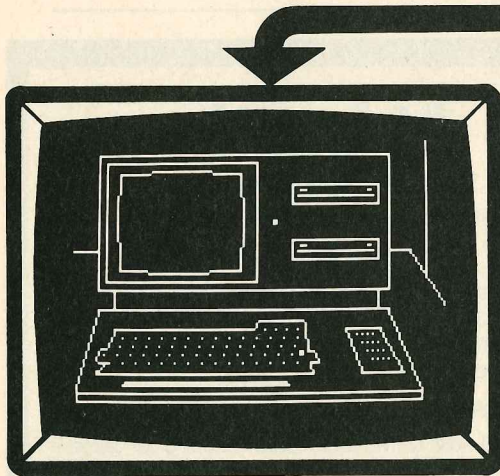
The Roadmap recommends that function definitions be explored next. It is here we learn how to set up lists that add instructions to the Logo computer. Logo is a list processing language. It is perhaps easiest to think of these lists as mini-programs. Using our example of creating a square, our list might look like this:

```
TO SQUARE
FRRFRRFRRFRR
END
```

Or, using repeat, it could look like this:

```
TO SQUARE
REPEAT 4 [ FRR ]
END
```

The word **TO** tells TLC-Logo you're going to create a list; the string of **F**s and **R**s and the line starting with the word **REPEAT** are lists. Either of



Is your Kaypro capable of graphics? How about you?

USE YOUR GRAPHICS!

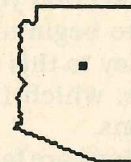
Until now, you had to be a programmer to use the Kaypro's graphics capabilities. With KAYDRAW you don't need to write a single line of code. You can create your own graphics designs right on your Kaypro screen.

NO COMPLICATED COMMANDS TO LEARN:

- Move the cursor with the cursor arrows
- Draw lines by moving the cursor to each end-point.
- Draw circles by selecting the center and any point on the circle.
- Control any of over 15,000 "pixels" (picture elements).
- Easy change routine for erasing or re-drawing.
- The "menu" of commands is displayed at the bottom of the screen.
- On-screen "Help" displays describe each operation.
- Save your screen design to a disk file.
- Retrieve your saved screen to change it or continue work.
- Saved screens may be displayed without using KAYDRAW. (You can "TYPE" a screen from CP/M!)
- An M-Basic routine is included, so that you may display a KAYDRAW screen from your own program.

YOUR SCREEN DESIGNS MAY BE PRINTED ON:
OKIDATA 92/93 □ EPSON MX80 (with GRAFTRAX)

KAYDRAW
for Kaypro 2, 4, or 10*
\$4500
(Arizona Residents add 5% sales tax)



**CANYON
STATE
SYSTEMS/
SOFTWARE**

CANYON STATE SYSTEMS AND SOFTWARE • POST OFFICE BOX 86 • SEDONA, ARIZONA 86336
(DEALER INQUIRIES WELCOME)

*NOTE: Older Kaypro II and 4's are not equipped with graphics. Check your manual.

TRADEMARKS: Kaypro, Kaypro Corp; CP/M, Digital Research Inc.; Okidata, Okidata Corp.; Epson, Epson America, Inc.; M-Basic, Microsoft, Inc.

these "programs" has created a function known as square. The next time you want a square you simply type: **SQUARE**. As functions are created they may be used in lists, so you could now create a function called window thusly:

```
TO WINDOW
  REPEAT 4 [SQUARE]
END
```

This type of programming can be repeated to the limits of your Kaypro's memory and disk space, for these lists-within-lists can be saved, and combined in infinite fashion.

Finally, the Roadmap sends you to a chapter called "Putting It All Together" which includes sample programs. This completes an initial survey of TLC-Logo, but the program is capable of much more. Each topic introduced in the Roadmap has a corresponding advanced section; there are also chapters on strings, vectors and lists. The documentation includes a reference manual as well.

Beyond the manual

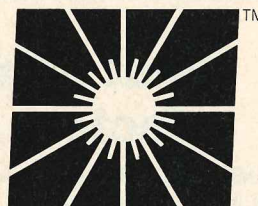
No discussion of TLC-Logo is complete (I'm not sure it's possible to complete a discussion of Logo.) without mentioning the book, *Thinking about TLC-Logo* by John R. Allen, Ruth E. Davis and John F. Johnson, published by Holt, Rinehart and Winston. In fact, the TLC-Logo user's manual recommends it, which is not surprising since the authors make up The Lisp Company which developed this version of Logo in the first place. Although the manual takes a relatively light tone, its job is to acquaint you with the program, and it accomplishes that quite well. But Logo has seemingly unending implications.

(Another recommended source is Turtle Geometry, by Harold Abelson and Andrea diSessa. While it doesn't cover Logo so much as the relationship between turtles and mathematics, the book does take turtles beyond the bounds of "traditional" Logo texts into the exciting realms of vector analysis, topology and relativity. Who said turtles were for kids?—TS)

(continued on page 38)

Unleash the Awesome Powers of dBase II*

LASERMERGE



\$9500

BURN THROUGH DATABASE MAIL MERGING AND REPORTING PROBLEMS!

Until now, if you used dBase II and wanted to generate letters or other documents, you had to make do with that "other" mail merge program. Or sweat it out by writing a long and tedious dBase program. Or by buying an outrageously expensive report generator.

LASERMERGE™ was designed by a frustrated dBase applications programmer who could no longer stand the pain of primitive or overpriced software. In his search for elegance he created a totally new generation of "merge ware." Simple, yet incredibly powerful. So elegant, we can make this claim: IF YOU CAN WRITE A LETTER, YOU CAN USE LASERMERGE™. So powerful, you won't bother with anything else!

- Powerful "SELECT" feature lets you specify automatic alternates for empty fields, or lets you say something like "Dear subscriber," instead of a nonsensical "Dear ," if even the alternate fields are empty!
- Powerful "NAME EXTRACTION" feature lets you put an entire name in one dBase field instead of two or three. Lets you increase dBase storage capacity!
- Full IF/THEN/ELSE conditional text selection; even lets you specify alternate files.
- Built in text formatter produces justified output copy.
- Full format control lets you do column justified forms, with full decimal point control.
- Merge-time prompting and input of data from your terminal.
- Output may be directed to a file instead of a printer.
- Menu driven options entry saves your merge option selections.
- Direct access to and from dBase and your word processor.
- Fully Wordstar*, Perfect Writer* compatible.
- Full printer function controls.
- Available for almost all CP/M* systems. Specify format.

To order or for a free brochure call our 24-Hour toll free number:

1-800-443-0100 ext. 794

Visa or MasterCard accepted

LASERWORKS 
Software™

12150 S.W. First
Beaverton, Oregon 97005
Telex: 296567 LPR BEAV

*trademarks of Ashton-Tate, Perfect Software, Micropro Int'l, Digital Research.

PUT IT ALL TOGETHER

This computer stand is also a printer stand. You can use half the desk space. Designed to be effective and attractive. Built of smoked acrylic to match your machine.



Custom Stands for other computers also available.

\$95.95/with slot \$103.95
Add \$6.00 for shipping and handling
w 20" h 16" d 14"

Send Checks or Money Orders to:
Phone Orders: Master Card or Visa
D & LN Company
1780 Golden Gate Dr.
Pocatello, ID 83201
(208) 238-0785

What do various loan factors cost you?

EASY AMORTIZATION is a loan schedule and analysis program for the Kaypro® computer.

ONLY \$29.95

You will be satisfied with the quality of this program or return it within 15 days for a **full refund**.

EASY AMORTIZATION does one thing and does it well. It possesses that unique combination of a completely professional coverage of its application and ease of operation.

SOME OF ITS FEATURES:

- USE SIMPLE INTEREST OR RULE OF 78's INTEREST.
 - Rule of 78's Annual Percentage Rate is Computed.
- BASE INTEREST ON MONTHS OR DAYS.
- ANY PAYMENT SCHEDULE; MONTHLY, QUARTERLY, etc.
- SPECIFY FISCAL YEAR WITH ANNUAL TOTALS.
- COLLECTION FEE MAY BE INCLUDED.
- BALLOON PAYMENT:
 - At a specified date, payment number, or remaining balance.
- EASY TO VERIFY AND CORRECT ENTRIES BEFORE PRINTING.
- DO A "WHAT IF" ANALYSIS ON LOAN FACTORS.

The output is well-presented and segmented by payment number, date, payment amount, interest, principal and balance. Other uses; annuities, interest bearing accounts, etc. A complete reference manual is included.

FOR IMMEDIATE SHIPMENT:

SEND \$29.95 PAYABLE
TO THE R.E.M. Co.

(Nevada residents add
5 1/2% sales tax)

THE R.E.M. CO.

2205 DRISCOLL DR.
P.O. BOX 12010
RENO, NV 89510

(702) 323-5331

Kaypro® is a registered trademark of Non-Linear Systems Inc.

LOGO

The book *Thinking About TLC-Logo* is full of interesting drawings, silly puns, sample programs and is essential if you truly want to explore the possibilities of Logo—any Logo. It also makes a good case, as does the manual, about why TLC-Logo is a particularly good and flexible version of the language.

Turtles and computer literacy

Logo is often thought of as only "Turtle Geometry" or "BASIC for Kids." But TLC-Logo can take you beyond programming into the philosophic world of thinking about thinking. It can introduce you to mathematical concepts you missed, and it provides a whole new way of thinking about computers. These concepts, and more, are explored in *Thinking About TLC-Logo*.

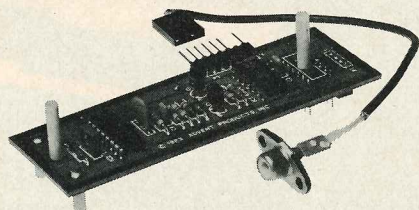
With the scramble for computer literacy, TLC-Logo deserves a thoughtful look by educators, parents and those concerned with our children's learning. It's too easy to insist that children learn BASIC or word processing and call that computer literacy. There's nothing wrong with BASIC or word processing, but with the microcomputer we have the opportunity to explore a larger universe.

As Seymour Papert points out, computers can be seen as "instruments of explanation" about how learning, and eventually thinking, takes place. With vision, however, computers can also be seen as "instruments of change that might alter, and possibly improve, the way people learn and think."

The computer age has just begun, and we need as many ways of viewing computers as possible. The more we explore, the more resources we'll have. TLC-Logo provides an excellent alternative way of dealing with computers, language, learning and thinking. □

I used the 'Deluxe' version of TLC-Logo, which allows up to 32 sprites or objects. MicroSphere also sells a 'Standard' version that uses the graphic capabilities of the newer Kaypros and uses only the computer's screen for \$99.95. They are currently offering an introductory special consisting of the color graphics board and the 'Deluxe' version for \$299.95.

MAXIMIZE YOUR KAYPRO®-FORMANCE



EXTERNAL MONITOR ADAPTOR Kaypro 2 & 4

The External Monitor Adaptor (EMA) provides the ability for the Kaypro 2 or 4 to drive an external video monitor or projection TV. Simple plug-in installation requires no soldering or wiring. Complete illustrated instructions are included. **EMA for Kaypro 2 & 4 \$69.95**

EXTERNAL MONITOR & ADAPTOR Kaypro 2'84, 4'84, 10, & Robie

The Kaypro 2'84, 4'84, 10 and Robie produce video which is not compatible with standard composite video monitors. However, with our External Monitor Adaptor (EMA) and specially modified monitor, you can still enjoy all the benefits of a larger CRT.

Monitor: This specially modified monitor is a 12" Comrex CR-5600. It features a high resolution 80 character by 25 line display. Available in either GREEN or AMBER. Please specify color when ordering.

EMA: Like the EMA for the Kaypro 2 & 4, this EMA features simple plug-in installation. No soldering is required. Complete illustrated instructions are included. Please specify Kaypro model when ordering.

EMA Kaypro 2'84, 4'84 & Robie . . . \$ 99.95
EMA Kaypro 10 \$109.95
Monitor, Green or Amber \$159.95



12ft KEYBOARD CABLE for all Kaypro Computers

This 12ft Keyboard Cable is manufactured to replace the original 6ft cable. Not just a telephone cord, it is designed to meet the exact requirements of the Kaypro. Guaranteed to work.

12ft Keyboard Cable \$12.95

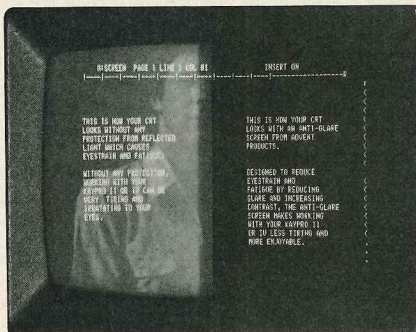
UNIFORM

for all models except the Robie

Allows your Kaypro to read and write up to 55 different computer formats (depending on Kaypro model) including CP/M-80, CP/M-86, MS-DOS, PC-DOS, CDOS, LDOS, and TRSDOS. Please specify Kaypro model when ordering.

Uniform \$69.95

Kaypro is a registered trademark of Kaypro Corporation. MS-DOS is a registered trademark of MicroSoft. PC-DOS is a registered trademark of IBM Corp. TRSDOS is a registered trademark of Tandy Corp. CP/M is a registered trademark of Digital Research.



Unretouched photo.

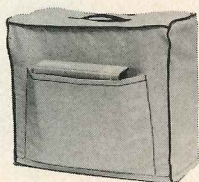
ANTI-GLARE SCREEN for all Kaypro Computers

Reduces eyestrain by increasing contrast and reducing glare. It makes working with your Kaypro less tiring and more enjoyable. Contoured to fit exactly, it offers an undistorted view of the entire CRT. Attaches directly to the CRT and requires no disassembly. Please specify SMOKE or GREEN when ordering.

Anti-Glare Screen \$24.95

KAYPRO COVERS

for all models except the Robie



Beautiful yet rugged, these covers help protect your investment. They are made from durable weather resistant Sunbrella. Includes two pockets for carrying your manuals, diskettes, etc. Please specify Black or Navy when ordering.

Kaypro Cover \$34.95

PRINTER CABLES

These high quality RS-232 and Centronics cables are designed to work with your particular printer and the Kaypro computer. No additional jumpers or other modifications are required. Simply plug it in and start printing. Available in two lengths for your added convenience. Each cable is fully tested and guaranteed. Available for all Kaypro computers. Please specify make and model of printer when ordering.

Available for:

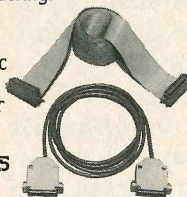
Gemini	Comrex
Epson	Panasonic
Brother	Okidata
Silver Reed	Prowriter

RS-232 Serial

6ft-\$17.95 12ft-\$22.95

Centronics Parallel

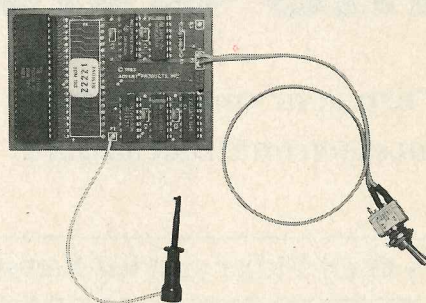
6ft-\$24.95 10ft-\$28.95



UNIVERSAL MODEM CABLES

These high quality RS-232 cables are configured for most modems used with the Kaypro computer.

2ft - \$19.95 4ft - \$22.95



5 MHz TURBOBOARD for the Kaypro 2 & 4

The TurboBoard allows your Kaypro 2 or 4 to compute at twice the standard speed. Word processors, spreadsheet programs, etc. will run much faster. The speed (2.5MHz or 5MHz) is switch selectable and can be changed at any time without affecting the operation of the computer. Installation requires only minimal technical ability and no soldering is required. Complete illustrated instructions are included.

TurboBoard \$99.95

PRINTER CARRYING CASES



Make your printer as portable as your computer. Each case has an inside and outside pocket to carry paper and other accessories. Carrying straps loop under the printer providing full support. Makes carrying your printer both easier and safer. Made from durable Sunbrella. Available in Black or Navy. Please specify printer make and model and color desired when ordering.

Available for:

Silver Reed 550	Comrex CR15
Okidata 92 & 93	Prowriter 8510A
Epson FX-80, MX-80,	Brother HR15
RX-80, RX-100,	
MX-100	

Printer Carrying Case \$42.95

DEALER INQUIRIES WELCOME.

Call Today

National	1-800-821-8778
California	1-800-521-7182

All items are warranted for 90 days. Money cheerfully refunded if not completely satisfied. VISA and MasterCard are welcome. Please add \$1.50 for COD. UPS surface freight paid on all orders. California residents please add 6% sales tax.



**advent
products, inc.**

3154 F E. LaPalma Avenue
Anaheim, CA 92806
(714) 666-0130

Inside the Octopus

*Turn your computer into
an electronic blackboard.*

by Gary Fidler and Kit Rawson

When we first began to make software demonstrations at meetings of our Kaypro Users Group in Anchorage, Alaska, a major hurdle surfaced immediately. We discovered that it is very hard to use only a blackboard to effectively describe the functions of Perfect Calc, Perfect Filer, etc. What we needed was a way for a lecturer to run a program on one Kaypro while the audience could view the operation of the program on other machines.

To meet this need we developed the "Octopus"—a multitentacled assemblage of computer cables which enabled demonstrations to be viewed on up to five other Kaypros. In this article we will describe the Octopus and give instructions for the construction and use of this simple, inexpensive device. The Octopus can greatly enhance users' group meetings and other educational activities.

The Octopus requires both hardware and software components. The hardware in this case is several lengths of normal telephone wire and some RS-232 plugs. The software is a program originally written for telecommunications. Combined, they offer a great tool for software demonstrations.

The cables and connectors

In the following description the *demo* machine is the computer used by the lecturer to demonstrate a program, while the *viewing* machines are the computers connected to the demo via the Octopus.

The hardware is made up of 102 feet of four-strand, solid core, ordinary telephone wire, plus six RS-232 male connectors. The wire should be cut into five 20 foot sections and one 2 foot section. One end of the pieces should be stripped 1/8th inch for soldering to the RS-232 connectors; the other end of each piece should be bared a full inch. During demonstrations the 2 foot piece is connected to the demo

(continued on page 42)





Photo by Ron Powers

machine and the longer ones fan out to the viewing machines. This configuration works well with all six machines around one large table in a conference room. Uniform length for the wires is not required.

The demo machine is wired one way, while all the viewing machines are wired slightly differently. Let us assume your telephone wire is composed of red, yellow, green, and black color strands.

The connectors are wired as shown in Figure 1 (although RS-232 connectors have 25 pins, only those pins indicated are used in the Octopus).

the screen of the demo machine are also sent out the serial port and displayed on the viewing machines.

TERM is run on the viewing machines. This program causes them to act like "dumb" terminals, which can transmit and receive characters, but not access their disk drives or memory. Thus, the demonstration takes place completely on the demo machine; the others are merely passive observers.

Making the Octopus work

The procedure for setting up demonstrations is as

RS-232 CONNECTORS

DEMO		VIEWING	
pin#	color	color	pin#
1	red	red	1
2	yellow	yellow	2
3	green	green	3
5-8-20	---	6	6-8-20
wired	! 7	black	! wired
together	! -- 8	8	! together
	--- 20	20	(1 inch loops)

Figure 1

Once the wires have been soldered to the RS-232 connectors, the five viewing wires are twisted together at the ends farthest away from the RS-232 connectors (red to red, yellow to yellow, green to green, and black to black).

Pin 2 of the demo machine sends out the data signal and pin 3 of the viewing machines receives it. Thus to connect the demo to the viewing machines, the wires on pins 2 and 3 must be crossed at the demo machine's connector. Connect the demo machine wire (end farthest from the RS-232 plug) to the twisted viewing machine wires by connecting red to red, black to black, yellow to green, and green to yellow.

The programs

The necessary software is the public domain program BYE (configured for the Kaypro) and one of the bundled programs TERM. BYE.COM can usually be obtained through users' groups or BBSs. Our version of BYE was configured for the Hayes Smartmodem. BYE configured for other modems may require the cables and connectors to be wired differently. So this description applies only to owners of the Hayes Smartmodem.

BYE is run on the demo machine. This program causes it to act like the host computer in an RCP/M system. Thus, any characters that are displayed on

follows:

1. Turn on all the machines and boot.
2. Connect the viewing machines to the cable.
3. Run BAUD on viewing machines (option G for 9600 baud).
4. Run TERM on viewing machines.
5. Run BAUD on demo machine (9600 baud).
6. Run BYE on the demo machine.
7. Connect the demo end of the cable to the demo machine.

The demo end of the cable is wired so that it emulates the carrier detect signal produced by the modem, and BYE reacts as if it has received a call. After logging on, your demonstration may proceed.

To demonstrate a program the lecturer simply runs it on the demo computer. The others are able to see the program in operation as if it were running on their own computer. It is amazing how much information about the essence of a word processor, a spreadsheet, or a language interpreter can be communicated to beginners in this way.

Two little hitches

There are two inconveniences with the Octopus setup. First of all, the version of BYE we used is configured to disconnect the caller after a certain period of inactivity. This feature makes sense for an

RCP/M, but the sudden termination of a demonstration can have a devastating effect on the lecturer's train of thought. To prevent this from occurring, a viewing individual should be assigned to occasionally enter a character during periods of keyboard inactivity by the lecturer.

The second factor is that **BYE** is continually running in the demo machine, taking up memory. Some preparation is required to make sure your particular demonstration will work with **BYE** running simultaneously. The most serious limitation we have noticed from this condition is that it is not possible to demonstrate Perfect Writer/Calc with files larger than about 10K.

Any kind of computer can be used as a viewing machine. Since it is unlikely however, that the special screen control characters will match those of the Kaypro, some demonstrations may not work properly with non-Kaypro viewers. For demonstrations with several kinds of computers hooked together, try **M/S/C-BASIC**; stay away from the Perfect series and **WordStar**.

Demonstrating telecommunications

The Octopus works well for demonstrating word processing, spreadsheets and the like. But when one of our members wanted to give a presentation on the use of the Kaypro with a host "Information Service," we were faced with a problem.

The problem arises because a modem, connected to the Kaypro's serial port, is necessary for communication with the host computer service, but the serial port is also used by the Octopus. After some brainstorming, we came up with two alternatives. Using a Kaypro 10 with its two serial ports, we could produce a "real" time demonstration. Alternately, using a 2 or 4 with only one serial port, we would be limited to producing a "pseudo" or after-the-fact demonstration.

The real time demonstration

This approach uses both serial ports on the K-10. (Note: this should also work on the Kaypro 4/84.) The modem is connected to the J3 modem port with

DO YOU WANT MORE THAN JUST RAW DATA FROM YOUR DBMS ?

Announcing DATAMATRIX, the fully integrated Data Base Management System designed for Businessmen, Scientists and Engineers.

Some of the advanced capabilities that separate it from the rest of the pack are:

- *An array of business, statistical and scientific applications that can either work alone or interface with your data*
- *The flexibility to allow variable length records within a file*
- *Repetition of field within a record. (For example, some people may have more than one address or telephone number.)*
- *Full word processing capabilities including left and right justification and a spelling checker.*
- *Password protection and data encryption for important or sensitive items.*
- *Ease of use. The DATAMATRIX DBMS is fully menu-driven, or if you don't like menu-driven software, the menu can be turned on or off at anytime.*

THE DATAMATRIX DBMS. \$95.00 FROM NEW WORLD SOFTWARE

For more information on DATAMATRIX and what it can do for you

Call 1-800-821-7700, Ext. 124

a straight through cable. The viewing machines are connected to the K-10 via its J4 serial printer port (cabling is discussed below). To drive this assemblage of wires, bits, and electrons, we developed an MBASIC program (see listing).

This program does three things:

1. It takes anything received from the modem port (J3), displays it on the demo machine, and sends it out via the serial printer port (J4) to the viewing machines.

2. It takes anything received from the demo's keyboard and sends it out through both the modem port (J3) and the serial printer port (J4).

3. It takes anything received from the viewing machines (serial printer port), sends it out the modem port and displays it on the computer.

The real time demonstration is the more impressive . . .

MBASIC was used because of its **INKEY\$** function. This allows the program to repeatedly test the keyboard for input without waiting for a character to be entered. Thus both serial ports and the keyboard can be continually monitored. Because of the slowness of interpretive MBASIC, the demonstration was limited to a communication speed of 300 baud.

A few problems were encountered in implementing this alternative. The modem port (J3) and the serial printer port (J4) on the K-10 are not identical. The modem port is DTE (data is sent on line 2, received on line 3). The printer port is DCE (data sent on 3, received on 2). This caused difficulty in connecting the viewing machines, because the Octopus was built to support DTE on both ends.

One solution is to resolder and eliminate the roll over or null modem built into the cable. An easier solution is to insert another null modem, simply a short cable with pins 2 and 3 crossed, into the system. This should be connected between the K-10's printer port and the demo end of the Octopus fan cable.

One of the information services we wished to demonstrate was full-duplex (host echoes back) and the other was half-duplex (host does not echo back). The program listed here is configured for the full-duplex system. To modify the program for a half-duplex system, simply remove the **REM** from lines 270, 310, 320, 470, 500, 510.

An after-the-fact demonstration

This approach requires the interaction with the information service to be done in advance. With **MODEM7** (a public domain communications program) or **PLINK**, the interactions would be captured and saved as a disk file. The demonstration is then accomplished using the Octopus in the normal manner discussed above. If the session is short, then the interaction file can be viewed using **Perfect Writer** or **WordStar**. If the session is too long (a file longer than about 10K), then divide the interaction file up into subsections that can be accommodated in memory while a word processor and the **BYE** program are both running. Another alternative is to use a screen-at-a-time utility such as **SHOW** or **READ**. (The first method is the better approach, because someone is always going to ask about something that just scrolled off the screen. Also, with enough lead time, the lecturer can go into the text file and add supplemental remarks.)

The tradeoffs

No doubt, the real time demonstration using the Kaypro 10 is the more impressive of the two approaches. However, the after-the-fact presentation is a better method for instructing a group of novice users.

In real time you are limited to slow communication (300 bits/second) versus the 9600 bps in the other mode.

People are going to miss things and the lecturer is going to want to back up. In **Perfect** or **WordStar** this is easy; in real time, it's expensive because host information services charge a high rate for connect time.

In pseudo mode, the lecturer can prepare a well-designed presentation stressing certain aspects of his or her choosing. It is possible to insert comments and explanations and at the end of the demonstration. Those individuals interested can make copies of the interaction file for reference.

In summary, the Octopus takes advantage of the fact that Kaypro is a transportable machine which user group members can easily bring to meetings. We had fun building the system and making it work; we increased the understandability of lectures and added a touch of class to our presentations. With the investment of a few dollars and a little time, other groups should be able to do the same. □

MBASIC Listing for Octopus

Mbasic listing ...

```
010 REM comment
020 REM
030 REM name      kp10io.bas  (mbasic
040 REM author    Gary Fidler
050 REM title     Kaypro 10 double serial port IO driver
060 REM purpose   this program was designed to allow the Kaypro 10
070 REM           to drive a modem thru 1 of its serial ports, while
080 REM           sending out this interaction to its other serial
090 REM           port thus allowing the octopus fan cable to pass the
100 REM           demo on to other micros
110 REM end
120 PORT1%      = 4
130 PORT1STATUS% = 6
140 PORT2%      = 12
150 PORT2STATUS% = 14
160 RECMASK%    = 1
170 SNDMASK%    = 4
180 CNTLE%      = 5
185 PRINT CHR$(26)
190 PRINT "KP10IO INITIATED ... GO"
200 REM
210 REM start of infinite loop cntl-E to exit
220 REM
230 REM query kb output to port 1/2 & crt
240 A$ = INKEY$
250 IF( LEN(A$)=0 ) THEN GOTO 350
260 IF( ASC(A$)=CNTLE% ) THEN GOTO 560
270 REM PRINT A$;
280 IOBYTE% = ASC( A$ )
290 IF( INP(PORT1STATUS%) AND SNDMASK%) = 0 THEN GOTO 290
300 OUT PORT1%, IOBYTE%
310 REM IF( INP(PORT2STATUS%) AND SNDMASK%) = 0 THEN GOTO 310
320 REM OUT PORT2%, IOBYTE%
330 REM end
340 REM
350 REM query modem output to port 2 & crt
360 IF( (INP( PORT1STATUS%) AND RECMASK%) = 0 ) THEN GOTO 440
370 IOBYTE% = INP( PORT1% )
380 IF IOBYTE%>127 THEN IOBYTE%=IOBYTE%-128
390 PRINT CHR$( IOBYTE% );
400 IF( INP(PORT2STATUS%) AND SNDMASK%) = 0 THEN GOTO 400
410 OUT PORT2%, IOBYTE%
420 REM end
430 REM
440 REM query port2 output to modem & crt & other viewers
450 IF( (INP( PORT2STATUS% ) AND RECMASK%) = 0 ) THEN GOTO 210
460 IOBYTE% = INP( PORT2% )
470 REM PRINT CHR$( IOBYTE% );
480 IF( INP(PORT1STATUS%) AND SNDMASK% ) = 0 THEN GOTO 480
490 OUT PORT1%, IOBYTE%
500 REM IF( INP(PORT2STATUS%) AND SNDMASK% ) = 0 THEN GOTO 431

510 REM OUT PORT2%, IOBYTE%
520 REM end
530 REM
540 GOTO 210
550 REM
560 PRINT "KP10 IO"
570 PRINT "terminating"
580 STOP
```

Kaypro users, Subscribe now.

If you own a Kaypro, six issues of *PROFILES* won't cost you a penny.

If you've purchased a Kaypro computer, the cost of a six-issue *PROFILES* subscription was included in the purchase price. If you sent in your warranty card, you should be on the mailing list. If you haven't received an issue in the mail, please fill out the form below and send it in. We must have accurate serial numbers and zip codes for subscriptions to go through, so be thorough. Please allow 10-12 weeks for delivery. Note: the free subscription begins with the first issue you receive in the mail and has no relationship to the complimentary issue packed in your machine.

If you don't have the luck to own a Kaypro, you can still subscribe (use the lower form). Or you can pick up a copy at any authorized Kaypro dealer. Call 800-447-4700 for the dealer nearest you.

Yes, I own a Kaypro.

I'd really like to receive six issues of *PROFILES*, free of charge.

Name: _____
(LAST) (FIRST) (M.I.)

Address: _____

City: _____ State: _____ Zip: _____

Kaypro model: _____ Date purchased: _____

Serial number: _____
(NO FREE SUBSCRIPTIONS WITHOUT SERIAL NUMBER)

*OWNERS OUTSIDE OF U.S.A. SHOULD CONSULT THEIR KAYPRO DEALERS, OR WRITE TO: KAYPRO INTERNATIONAL, P.O. BOX N, DEL MAR, CA 92014.

No, I don't own a Kaypro.

I'd like to receive ten issues of *PROFILES*, and I've enclosed a \$25.00 check or money order made payable to Kaypro Corporation.
(No cash, please)

Name: _____
(LAST) (FIRST) (M.I.)

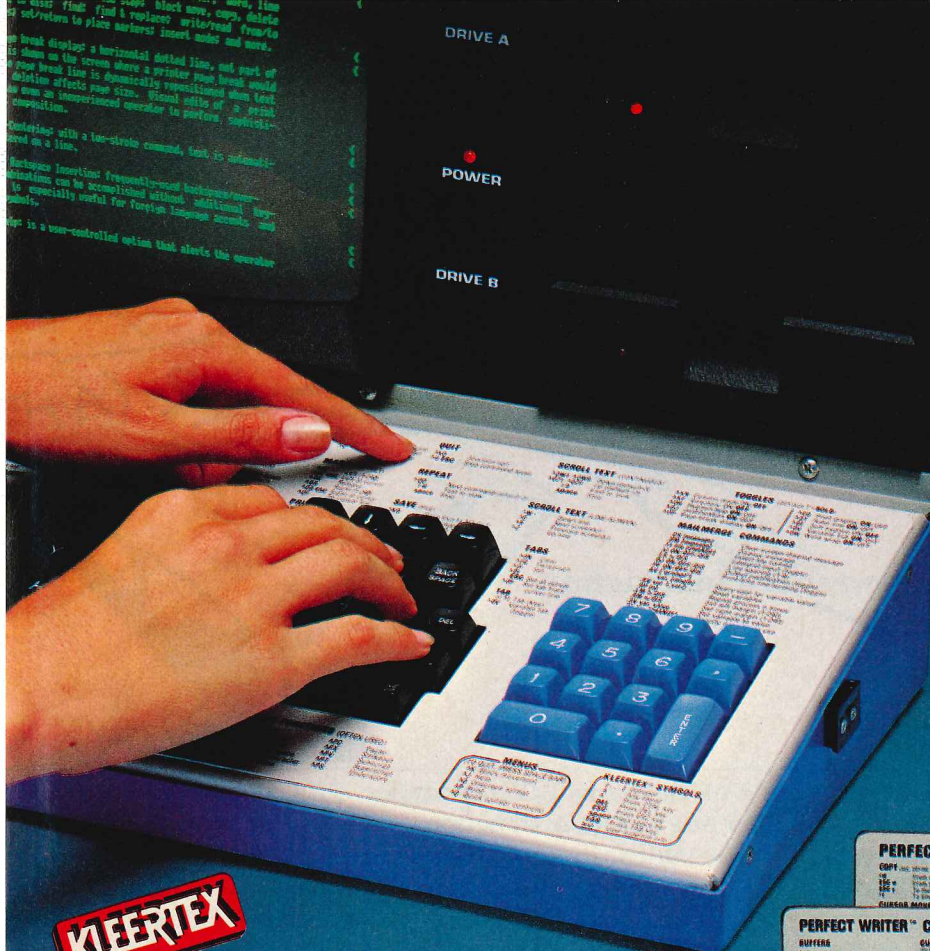
Address: _____ City: _____

State: _____ Zip: _____

*SUBSCRIBERS OUTSIDE OF U.S.A. SHOULD WRITE TO: KAYPRO INTERNATIONAL, P.O. BOX N, DEL MAR, CA 92014.

Send to: *PROFILES* Subscriptions, P.O. Box 2889, Del Mar, CA 92014.
Please allow 10-12 weeks for delivery.

The Right Commands At Your Fingertips



... For Your Kaypro®!
 and 20 other name computers!
 MOST TEMPLATES **\$19.95** EACH
 (See graph below)

Designed by Training Specialists to help put your program to work, right away!

- Complete commands required to learn and operate your program
- Alphabetized commands to find what you need quickly and easily
- Organized with key-by-key examples for simplicity

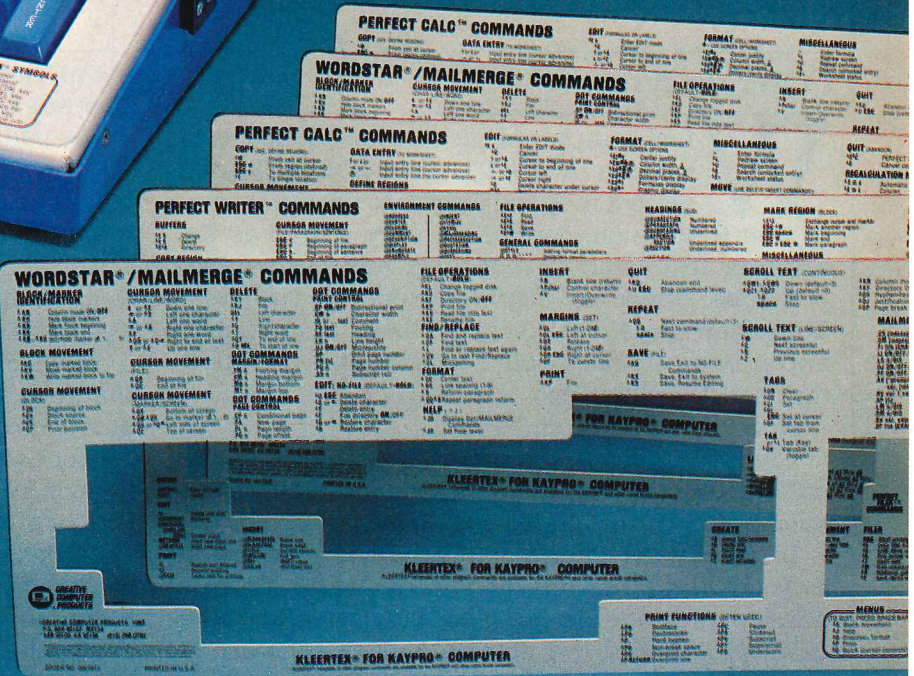
This Time-Saving Aid is Ideal for Training, Invaluable for Beginners, and a welcome convenience for the Comprehensive User. Made of sturdy, non-scratchable, non-glare, color-coordinated plastic.

The right commands... ..the right price!
 Availability and Price Codes:
 ▲ \$ 8.95 Do-It-Yourself Blanks
 ● \$19.95 Single Program Templates
 ○ \$32.95 Double Program or Extensive Program Templates.

Call About Custom Templates or Quantity Discounts
 All templates, except those for Kaypro and Osborne, are reversible. The reverse side contains additional commands or Do-It-Yourself blank lines.

	IBM® STYLE A*	IBM® STYLE B**	KAYPRO®	APPLE® II+	APPLE® IIe	OSBORNE®
WORDSTAR®/MAILMERGE®	●	○	●	○	○	○
BASE THE MULTICALC®	○	○	○	○	○	○
EASY™	○	○	○	○	○	○
APPLICATOR™	○	○	○	○	○	○
QUICK FILE™	○	○	○	○	○	○
PIE™ FILE™	○	○	○	○	○	○
APPLEWRITER™ II	○	○	○	○	○	○
APPLEWRITER™ II	○	○	○	○	○	○
APPLEWRITER™ II, QUICK FILE™	○	○	○	○	○	○
WORKBOOKS™	○	○	○	○	○	○
PERFECT WRITER™	○	○	○	○	○	○
MULTIMATH™	○	○	○	○	○	○
PERSONAL™	○	○	○	○	○	○
OP-IT™ DO-IT-YOURSELF™	○	○	○	○	○	○
PEARL™	○	○	○	○	○	○
ISICALC™	○	○	○	○	○	○
DD2 2-10	○	○	○	○	○	○
DD2 2-3	○	○	○	○	○	○

*IBM STYLE A Fits: IBM-PC/XT, COMPAQ and LEADING EDGE.
 **IBM STYLE B Fits: COLUMBIA, OLIVETTI, CORONA, TAVA, IVY, PRONTO, SILICON VALLEY MICRO, NORTH STAR DIMENSION, LOGICAL LX-T, IMP and SPERRY-PC.



15 DAY MONEY-BACK GUARANTEE
Call Toll Free
1-800-231-5413
 California 1-800-523-5441

DEALER INQUIRIES INVITED



CREATIVE COMPUTER PRODUCTS
 P.O. Box 85152-MB134
 San Diego, CA 92138
 (619) 268-0793

We accept VISA, MC, AMEX or checks. \$1.95 Shipping Fee

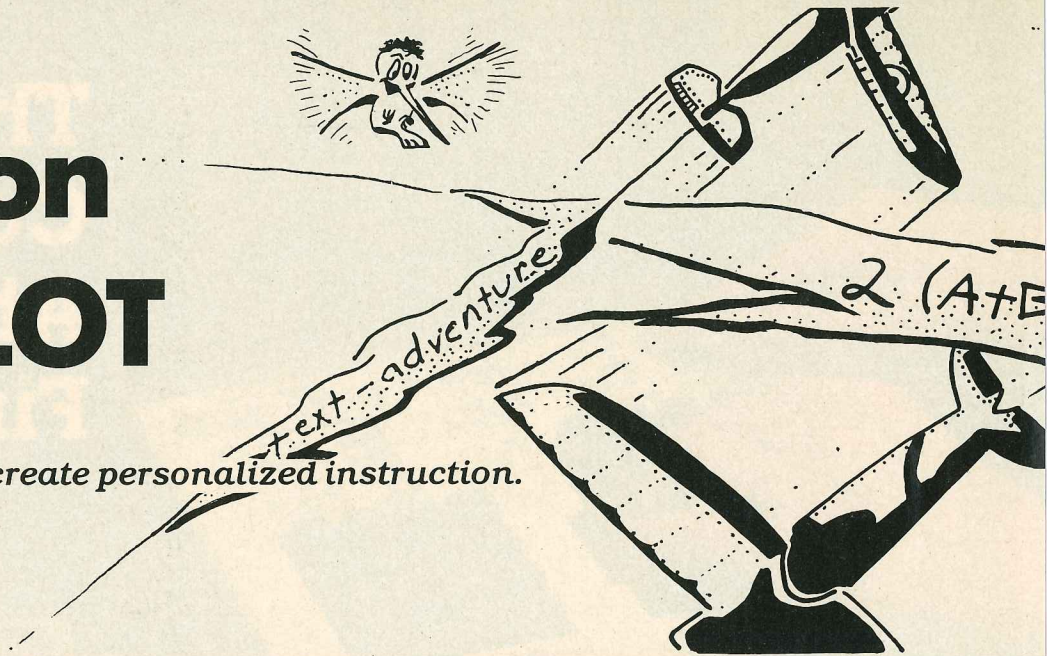
WESTERN CANADA:
 LD COMPUTERS
 12831 HORSESHOE PL
 RICHMOND, B.C. V7A 4X5

EASTERN CANADA:
 TRILLIUM COMPUTER RESOURCES
 423 GRANGEWOOD DR.
 WATERLOO, ONTARIO N2K 2H1

Apple/Quickfile-Apple Computer, Inc. IBM-International Business Machines, Osborne-Osborne Computer Corp. Kaypro-Non Linear Systems. Wordstar-Mailmerge-MicroPro Int'l. Visicalc-Visicorp. Supercalc/Supercalc2-Sorcim. Easywriter II-Information Unlimited Software, dBase II- Ashton Tate, Multiplan-Microsoft, 1-2-3-Lotus Dev. Corp. Perfect Writer/Perfect Filter/Perfect Calc-Perfect Software, Personal Pearl-Pearlsoft, Piewriter-Hayden Software, Multi-mate-Softword Co. ©CREATIVE COMPUTER PRODUCTS 1983

Education with PILOT

Use this CAI language to create personalized instruction.



by Terian Tyre.

When computers became the hot property early in the 1970's, the public attributed almost magical powers to the machines. In that first blush, computers were touted as the solution to business, economic, and even social problems. Above all, they were hailed as the Great Education Equalizer. Every problem in our public and private schools would vanish with the introduction of computers.

Now we know better.

Computers are in the schools and homes by the millions. Yet the available educational software has been pretty thin, considering all the hype.

Ironically, the variety of this hardware explosion has contributed to the scarcity of software. There is always unavoidable lag time between hardware development and the development of software to run on it.

The CP/M-based educational software shelf is not completely devoid of offerings, they're just not as plentiful as accounting modules. Most available packages are of a "do-it-yourself" approach. PILOT, a pioneer language for CAI, fits into this niche.

CAI means Computer Aided Instruction, a fancy term for learning through the use of computers—learning anything. It offers the person who's not familiar with computers a way to interact with them and reap their educational benefits.

PILOT is a language for CAI that is made specifically for microcomputers. The name PILOT is the acronym for Programmed Inquiry, Learning, Or Teaching—and that sums up its functions pretty well. PILOT is a simple language which allows novices to create instructional programs. While

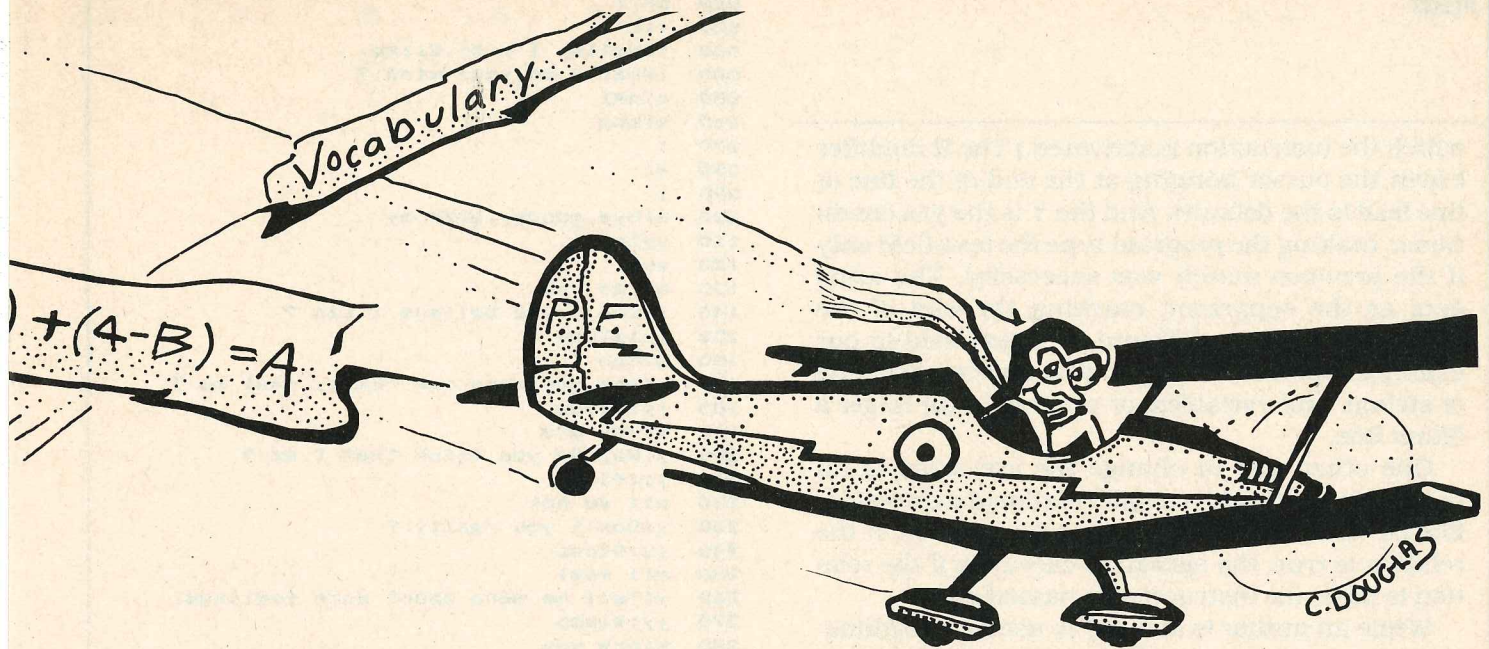
not as flashy as LOGO's turtles, PILOT is a most effective tool for instruction.

For educators and motivated parents, its uses are obvious. One can tailor the material to the individual or population using it. This allows lessons which are brief but tough for speedy students and easier lessons for slower-paced learners. You can even design material that attempts to reach all levels of users within one program.

What else can you do with PILOT? Anything that uses a question and answer format. This is not nearly as restrictive as one might think. It's possible, for example, to write text-adventures in PILOT. (Either as pure fun or as a medium for learning.) You can create word and mathematical games, spelling bees, or vocabulary quizzes. One graduate student is using a form of PILOT to perform experiments in cognitive psychology. Another person, a doctor, has used it to create learning modules on breast cancer and other intimidating ailments for his private medical practice. Besides alleviating fear and anxiety, it enables his patients to enlighten themselves before ever being shown into the office. As shown in the sample program (Listing 1), you can even analyze your psychological state (although I wouldn't bet my sanity on its accuracy).

In a nutshell

PILOT programs can be written with any CP/M compatible text editor. In a typical program, the *author* creates questions to be asked with a Type command. Naturally, the acceptable answers for each question must also be specified, done with a Match command. If desired, modifiers and conditioners can be included, as well as subroutines, which are enabled upon receipt of incorrect or



smart alec answers (there's at least one joker in every crowd). The user of a PILOT program, called a *student*, sees only the questions. After typing an answer, a student normally will get some kind of response—"that's right, kiddo!" or maybe "Wrong. Think about the question and try again."

A common goal of PILOT and CAI is that total novices can use them. An author needs only minimal computer skills and knowledge of the PILOT language to write a program. A student needs merely to be able to read the questions and type answers to use the program. The purpose is education; computers are only the medium.

History lesson

PILOT was born in a hospital. In the early 1970's, some San Francisco Medical Center staff members working under a government grant put together a very simple CAI language. They reviewed much of the available CAI material and defined eight distinct tasks as the major commands. These included such operations as asking questions, performing computations, comparing relational expressions, etc.

They structured their computer language so that each command was triggered by a single letter (op-code), and so that its execution could be made dependent on prior conditions. Any procedures beyond these operations were accomplished by transferring into another, more sophisticated, language. This original version is now known as Core PILOT or PILOT 73 and belongs to the public domain.

As the power and speed of computers improved, the original version became too limited and inefficient. Several separate groups added extensions to the language, thus creating several dialects. These

second generation versions were widely distributed and their use proved PILOT as extremely well-suited for CAI on micros.

The next stage in the development of the language is an attempt at standardization. Western Washington University has undertaken this task, believing this will make converting PILOT to new machines much more likely. For this purpose, all of the integral features of the extended versions and dialects have been gathered under one umbrella, called COMMON PILOT.

This type of generic program is termed "vanilla" because it's designed to run on CP/M systems in general, not specific machines. This means some of the minor features may or may not work, depending on your computer.

The components

The foundation of PILOT's language consists of thirteen simple commands, called instructions. An instruction comprises one line of a maximum eighty characters. Each instruction has its own op-code, a symbol which tells the program what to do. These are placed at the beginning of a line.

Instructions can be modified or made conditional. This is done by placing single letter codes which correspond to the desired effect immediately after the op-code. Using a modifier will change a specific detail in the way an instruction performs. Adding a conditioner causes the instruction to be skipped if the condition is not met.

For example, **THY: Correct** is described as op-code, modifier, conditioner, then text-field. The **T** is a type command causing the text-field to be displayed on the CRT *if* the rest of the instruction is met. (The boldfaced first letter refers to the code by

(continued on page 50)

which the instruction is activated.) The H modifier leaves the cursor hanging at the end of the line (a line feed is the default). And the Y is the yes conditioner, making the program type the text-field only if the previous match was successful. The colon acts as the separator, marking the end of the instruction. This is followed by a text-field in our example, but it can be filled with any combination of strings and variables, or nothing at all to get a blank line.

One other way to change the execution of an instruction is to add a single relational expression, like $(X=1)$ or $(A + B > C)$, after the op-code. If the relation is true, the operation executes; if the relation is false, the instruction is passed over.

While an author is allowed to use any combination of modifiers, conditioners, and relational expressions with an op-code, their arrangement must adhere to a set format. In COMMON PILOT for CP/M the order is as follows: op-code, modifiers, conditioners, relational expressions, separator. Instructions execute from left to right, one after the other, unless told to do otherwise.

Commands classified

Organized according to function, COMMON PILOT's thirteen instructions can be divided into four groups. One group *transfers* data between the computer and peripherals. These are the instructions Type (presents questions), Accept (read answers), File Input (read a file), File Output (write to a file), and Graphics or Video (display graphics on screen). File Input/Output are rarely used.

Another group of instructions *controls* the sequence of the program: Jump, Use, and End. Jump causes the program to go to a command other than the next one. Use switches control to a subroutine; End concludes a subroutine and returns to the original sequence, or terminates the program.

Match is a separate command which *processes* student answers by comparing them to an author-generated list of acceptable replies.

The last group of commands *perform computations*. These include Compute (does a computation), Execute Indirect (carries out a pre-set instruction), and Dimension (allots array space in memory). These instructions are used to assign values to variables in addition to their calculatory duties.

Equally important as any of the commands is the label feature. Labels are unique in that they can be applied to any instruction. Basically what

(continued on page 52)

```

000 ELIZA.PLT
010 pr:l
020 v:c
030 t:Hello. I'm Dr.Eliza.
040 :What's on your mind ?
050 c:n=1
060 #loop
070 :
080 a:
090 :
100 m:bye,goodby,good by
110 vy:c
120 ey:
130 m:can you
140 y:Don't you believe I can ?
150 jy:#loop
160 m:can i
170 y:Are you sure you really want to ?
180 jy:#loop
190 m:you are
200 y:Why do you think that I am ?
210 jy:#loop
220 m:i do not
230 y:Don't you really ?
240 jy:#loop
250 m:i feel
260 y:Tell me more about such feelings.
270 jy:#loop
280 m:are you
290 y:Does it really matter ?
300 jy:#loop
310 m:i cannot
320 y:What makes you think you can't ?
330 jy:#loop
340 m:i am
350 y:Is that why you are here ?
360 jy:#loop
370 m:you ,
380 y:We are discussing you -- not me.
390 jy:#loop
400 m:i want
410 y:Is that what you really want ?
420 jy:#loop
430 m:who,what,when,where,why,how
440 y:What prompts you to ask ?
450 jy:#loop
460 m:cause
470 y:Is that the entire reason ?
480 jy:#loop
490 m:sorry
500 y>Please don't apologize.
510 jy:#loop
520 m:hello,hi
530 y:Hello...please state your problem.
540 jy:#loop
550 m:maybe
560 y:You don't seem quite sure.
570 jy:#loop
580 m:always
590 y:Do you have a specific example ?
600 jy:#loop
610 m:think
620 y:Do you actually think so ?
630 jy:#loop
640 m:alike
650 y:In what way ?
660 jy:#loop
670 m:yes
680 y:You seem quite certain.
690 jy:#loop
700 t(n-2):I see.
710 jr:#next
720 t(n-1):I don't understand you fully.
730 jr:#next
740 t:That is most interesting.
750 #next
760 c:n=n+1
770 c(n-3):n=1
780 j:#loop

```

000 the program's name
 010 **problem 1** means the first section
 020 **video** will clear screen and home the cursor
 030 type the text after the colon
 040 a colon followed by text is a type continuation
 050 compute the value of 1 to n (used later)
 060 ***loop** is a label; it provides a destination for almost all of the jumps in this program
 070 single colon produces a blank line (breathing space)
 080 accept answers space
 090 another single colon sets off answer space
 100 **match** any part of the answers with the following words
 110 if **yes** to match, **video** will clear screen and home (upper left corner) the cursor
 120 if **yes**, then program will end
 (The last two instructions provide an easy way to exit.)
 130 **match** the following words to the answers in **accept**
 140 if **yes**, the text-field will be displayed
 150 **jump**, if the match is **yes**, to the *first* label ***loop**
 (as becomes obvious this one instruction is key to the entire program)


The rest of the instructions follow the same format as lines 130 through 150, until you get down to the bottom, lines 700-780.

700 type the text if the answer is less than 0, which translates to a contraction in english grammar
 710 **jump** to the label ***next** if the last relational expression (n-2) was true, i.e. a negative
 720 type the text-field if the answer is 0, i.e. a contraction
 730 **jump** to the label ***next** if the last relational expression (n-1) was true, i.e. zero
 740 type the following text (this comment is a catch-all, displayed when answers don't match anything in previous match instructions)
 750 this is label ***next** that lines 710 & 730 name as their destination
 760 this **compute** command assigns the value of 2 to n
 770 this **compute** will perform only if the relational expression (n-3) is true, i.e. not zero; as 2-3 is -1, then n is assigned the value of 1
 780 this last command returns the student to the beginning, by jumping to the original ***loop** label, where answers are **accepted**, and the program **ends** if "bye" appears

Listing 2

Authored by Paul Whalley.

In operation, ELIZA.PLT asks about the problem on your mind and looks for key words in your answers. Depending on what it finds, it jumps to a brief response. The student then continues entering single sentence thoughts. Answering "bye" to any prompt terminates the program and returns one to CP/M.





DATASAV[®]
Reliable Microcomputer Power

PROTECTION - saves data during power failures.
 - saves hardware from overvoltage transients.

PORTABILITY - allows mobile or extended holdup time using auxiliary 12 volt battery.


FEATURES - internal battery provides 5 min. + operating time — AC line conditioning — audible and visual alarms, interrupt signal — no installation required.

200 Watt — \$695
 90 Watt — \$395

Instant Power Order Line
805-541-4161  

Special applications, OEM/Dealers call (805) 541-4160

CUESTA SYSTEMS, INC.
 3440 Roberto Court
 San Luis Obispo, CA 93401



you're doing is giving an instruction a name. Labels are particularly useful because they can become destinations for branching. A **Jump** instruction is used to transfer control to a label, thus changing a program's sequence of execution. Labels always begin with an asterisk, followed by a maximum six character name.

The goal is to have teachers writing interactive instruction within a day or two . . .

Jump back, Jack

Like its cousin **GOTO** in **BASIC**, the **Jump** instruction is a real live wire. Liberal use of it can cause your student to bounce forwards and backwards in your program indefinitely depending on what you name as a destination (see Listing 1).

There are four destination types available. You can **Jump** to any label, the *last* **Accept** (answers) which was executed (**@A**), the *next* **Match** (**@M**), or the *next* **Problem** instruction (**@P**). This provides control and great flexibility in program design.

A few more things

PILOT uses a special code for marking the beginning of a problem (**PR:**). A problem can be most simply defined as a question that must be answered. The material to be studied is separated into the smallest sections possible by inserting the **PR:** code between them. Use this command to break up your program into sensible parts.

The options used with this instruction are few but powerful. They include converting all student input to upper case (**U**), lower case (**L**), and removing all the spaces (**S**). The option code **G** allows a student to use a **GOTO** command during the program and the **E** option lets a student use the escape command.

These options help to match answers more readily, allow students a certain flexibility within a program, and make the whole process more forgiving for the student.

The last command helps authors remember the logic of their program. This is the **Remark** instruction, used to include comments, and never seen by the student. Remarks, as in other languages, are ignored by the program during its execution.

Sensible format

The few rules that exist for programming in this language follow ordinary common sense. Begin by naming your program and describing it briefly with a **Remark**. Then set up the values, numeric or alphanumeric, for the different variables with the **Dimension** or **Compute** instruction. After all, there must be something prearranged to compute or to substitute for variables, or else the program won't have anything to which to refer. Applying these two commands creatively makes possible a number of special effects, like personalized lessons and exact cursor positioning.

Next the **PRoblem** or first section of the program is entered and its options outlined. If no new options are set, the previous ones will be used (to save typing).

Finally, the instructions begin. This often starts with a **Type** command, followed by a **Match** list and an **Answer** line. From here on, it can stay simple with only questions and answers in sequence, or it can get complex with subroutines and jumps from label to label.

Commands and text can be written in either upper or lower case **ASCII**. Numbering the lines is recommended as is liberal use of the **Remark** command.

Conditioners are the key

The whole scheme would unravel quickly without the abilities of the conditioners. These are the shortcuts of the language. Combining them with **Type**, **Jump** and other instructions gets a student quickly to the next step in their learning. Conditioners also fall into four types.

Most illustrative of these players are the **Yes** and **No** conditioners. They test the results of the last **Match** command. The **Y** conditioner causes the instruction to which it's attached be executed only if there is a successful match to the answer list; the **N** conditioner works only when the match fails.

The **C** conditioner causes the instruction to which it is appended to execute only if the last relational expression was true; if it wasn't, the instruction is skipped.

The digit conditioner makes an instructions' activation depend upon the number of answers already entered. When the answer count matches the number of the digit conditioner, the instruction executes. There is also an **Error** conditioner, which will cause an instruction to execute only when an error is detected. These two conditioners are most helpful in anticipating wrong answers and direct-

FLOWCHARTER

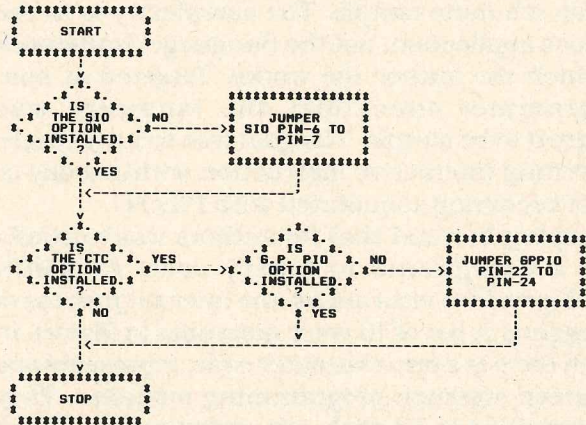
★ ENGINEERS
★ TEACHERS
★ EXECUTIVES
★ SYSTEMS ANALYSTS

★ DRAFTSMEN
★ OFFICE MANAGERS
★ BANKERS
★ SERVICE PEOPLE

★ TECHNICAL WRITERS
★ CONSULTANTS
★ PROGRAMMERS
★ YOU

/* Flowchart showing which Big-Board I pins to
jumper depending on the installed I/O options */

```
T      START;
D      IS SIO OPTION INSTALLED ?;
IF     NO GOTO C; ELSE YES;
ZA:   D      IS CTC OPTION INSTALLED ?;
IF     YES GOTO D; ELSE NO;
ZB:   T      STOP;
ZC:   P      SKIP 1C;
      JUMPER SIO PIN-6 TO PIN-7;
ZD:   D      GOTO A XB ET;
      IS G.P. PIO OPTION INSTALLED ?;
IF     NO GOTO E;
IF     YES GOTO B XB ET;
ZE:   P      SKIP 2C;
      JUMPER GPPIO PIN-22 TO PIN-24;
      GOTO B XB ET;
END;
```



Two years in the making! Doing what they thought couldn't be done on a micro! EasyFlow is a high-level language for producing neat, accurate flowcharts. You describe the flowchart using a simple command language; EasyFlow then produces a complete flowchart.

Not just for programmers! EasyFlow is for everyone needing flow type charts: engineers, executives, systems analysts, draftsmen, office managers, bankers, service people, technical writers, you name it - anyone who needs to be able to explain things in clear and understandable manner.

People have been using flow charts for a long time, for both programming and other uses. The problem is producing them: if you do them quickly by hand, they look awful; if you take your time they look better, but they take forever and are impossible to update or revise without starting over. Really good looking flowcharts require a typesetter, a draftsman and a lot of patience. With EasyFlow you can produce excellent flowcharts quickly, and then modify, correct and update them with very little effort.

EasyFlow is a lot like a high-level language; it accepts source statements, processes them and outputs an object file, but the object file is a flowchart instead of a program. To produce a flowchart you create a source file (using ED or whatever) that describes the flowchart. EasyFlow reads the source file, builds the flowchart in memory and then outputs it. The flowchart is normally output to disk, but it can be redirected to the console, punch or printer.

The EasyFlow command language has facilities for describing what shapes are to go where, what text is to go inside the shapes (centered in the shape automatically by EasyFlow), and the lines that are to connect the shapes. Input to EasyFlow is free-format in much the same manner as C programs, and each statement is terminated with a semicolon. Comments are indicated by "/*" and "*/"; comments can be nested, allowing you to "comment out" an entire section of source, even if it contains other comments.

The example above shows both the source text describing a simple flowchart and the actual flowchart produced. This particular flowchart explains how to setup the interrupt daisy chain jumpers on a Big-Board-I, for all possible combination of installed options. This is explained in the BB-I documentation, but the flowchart makes it a lot more clear.

EasyFlow works with just about any printer; some are better than others for producing flowcharts, but even a teletype can produce useful flowcharts. A "full sized" flowchart is five shapes wide, eleven shapes high, and requires a printer capable of printing at least 132 columns wide. Printers capable of 80 columns can print flowcharts three shapes wide. A "full sized" flowchart printed at ten characters per inch and eight lines per inch is thirteen inches wide and twenty inches high; reducing such a flowchart by 50% yields a standard-page sized chart. The example chart shown here was a full-sized chart that was reduced. Special printer programs are available for printers such as the MX80, MX100 and u92 which allow flowcharts to be produced on standard 8.5" x 11" paper directly.

EasyFlow comes equipped with twenty standard flowcharting shapes. User defined shapes can be easily added to cover just about any application, - it is as simple as editing the EasyFlow configuration file which defines the shapes.

In addition to user definable shapes, EasyFlow allows user selected line drawing characters. The characters for "horizontal line", "vertical line", "upper left corner" and so on are user selectable. You can make you own choice and even take advantage of printers that have special line drawing characters available.

EasyFlow is written in Z80 assembly language and is fast and efficient. A rather large flowchart typically takes about ten seconds of computing time; the example chart shown here is very small, and took less than three seconds. Execution time will vary depending on CPU speed and the type of disk drive, but in any case it is quite fast. Since the source programs tend to be small (one hundred lines of source gets you a very full flowchart), and since EasyFlow needs only a single pass, disk I/O time tends to be modest. EasyFlow was developed on a 2.5MHz system with floppies, and it produces charts at a very respectable speed.

In addition to producing great flowcharts from perfect instructions, EasyFlow also produces meaningful error messages from imperfect instructions. A typical EasyFlow error message is:

```
046 INVALID EXIT-DIRECTION FOUND WHILE PROCESSING CELL B2.
IF NO GOTO BAFFY XV ET
?
```

The first line is an english-language error report that outlines, as clearly as is possible in one line, what the problem is and where we were in the flowchart when the problem was detected. The second line is the source text that EasyFlow was processing at the time. The third line (the question-mark) points to the exact word that was being processed. Every EasyFlow error message has a number (046 in this case) so that you can quickly look up a detailed explanation of an error in the Error Description Appendix of the manual. This explains, in detail, what the error is, why it might have occurred, and how to go about correcting it.

The EasyFlow manual is complete, and is designed for both novices and experienced users. For the novice it explains (in the correct order, starting from the beginning of the manual) how to install EasyFlow on your system, how to back up the distribution diskette, and how to produce your first flowchart using one of the included demo charts. This is followed by a tutorial that explains the use of EasyFlow through the use of examples. The source text of all the examples in the manual is included on the EasyFlow distribution diskette, giving you a starting point for experimentation. For more experienced users there is a detailed syntax and operation description of all the EasyFlow commands, a chapter on configuring EasyFlow to produce the best charts with your particular printer, the error appendix and a chapter on defining your own shapes.

EasyFlow runs on Z80 CP/M machines that have a TPA of 38K or more. EasyFlow is available on SSSD 8" diskettes and KayPro format 5" diskettes. Other five inch formats: call.

\$49.95 (\$59.95 in Canada; Ontario residents add 7% PST).

Send check or money order today to:

HavenTree Software Limited
R.R. #1, Seeley's Bay, Ontario, Canada
K0H 2N0 (613) 542-7270



ing the student to the correct one.

Easier than it looks

At first appearance, PILOT looks complicated, but in fact, it's quite simple. The complexity is in the author's application, not the (language) framework in which the author works. Targeted at non-programmer educators, the language was designed to be simple. The goal was to have teachers writing interactive instruction within a day or two of becoming acquainted with PILOT.

Keeping in mind that its authors won't usually have a background in binary code, COMMON PILOT provides vital aid for the infernal process of debugging. A list of 16 error messages (*n*-Error), in which the *n* is a one-character code, represents one of sixteen common programming mistakes. They are explained in English, not computerese. These messages will flash if there is a problem in the construction of a PILOT program, alerting the author to the mistake. Many versions even show you where the problem is in the listing.

The hard part

The most difficult aspect of writing a program

using PILOT is deciding exactly what it is you want to accomplish. In this, PILOT is no different than any other programming language. Actually writing the program is easy compared to the mental effort required for successful planning.

This particular point cannot be over-emphasized. PILOT demands a willingness on the part of authors to work. Once you've got a grasp of the instructions and their possible permutations, it's up to *you* to make them do tricks. The instructions will do the actual work, but you provide the strategy, the parameters and the content.

One idea well worth investigating allows the students themselves to create their own lessons. This is interactive education at its finest. By having to know enough to specify the subject matter as well as plan how to present it, students wind up learning more. Indeed, letting a child go solo with the language may be PILOT's best application.

Kaypro version

COMMON PILOT for CP/M is not designed to fulfill everyone's educational needs. It was designed, however, to fit every CP/M system. The COMMON version is so generic in fact, that some functions will not operate on a Kaypro.

There is a version of PILOT available which has been adapted specifically for the Kaypro. Originated from the public domain version, it allows use of most of the instructions described in this article. It also has a few functions not outlined above, such as the Link instruction which links the current PILOT program to another one on the same disk. Information on this version is available from PILOT INQUIRY, 1106 Second St., Suite 166, Encinitas, CA 92024.

There are also other versions of PILOT floating about because the original version has been in the public domain for so long. Some you have to pay for, some you don't.

Concluding comments

CAI doesn't promise to be the cure for all learning problems. It does, however, make customized education a reality. It makes tutoring in the home a viable option for concerned parents and kids. It offers teachers an exciting new tool. COMMON PILOT is, in fact, uncommonly effective for personalized education. □

'C' COMPILER

AN OUTSTANDING VALUE

"We bought and evaluated over \$1500.00 worth of 'C' compilers... C/80 is the one we use."
 Dr. Bruce E. Wampler, Aspen Software
 author of "Grammatik"

C/80™ Full featured C Compiler for CP/M® with I/O redirection, command expansion, execution trace and profile, initializers, Macro-80 compatibility, ROMable code. **49.95**

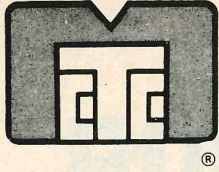
C/80 FLOATS & LONGS Adds 32 bit data types to C/80 3.0 compiler. Includes I/O and transcendental function library. **29.95**

FREE CATALOG Call or write for 16 page booklet detailing our programming languages LISP/80, RATFOR, Assemblers, and 25 other CP/M products.

The Software Toolworks

15233 Ventura Blvd., #1118 (213) 986-4885
 Sherman Oaks, CA 91403 Dealer inquiries invited.

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



TOLL-FREE TRAINING/SUPPORT BY SUBSCRIPTION

7 Days A Week—12 Hours A Day
(9 am. to 9 pm. pacific time)

MICRO COMPUTER TRAINING CORPORATION

"Years of experience with hundreds of happy customers"
"A Low Cost Toll-Free Kaypro® Training and Support Service"

TRAINING SERVICE COMPARISON CHART

SERVICES	MAYDAY* (\$198 ⁰⁰ package)	MICRO COMPUTER TRAINING CORP. (\$298 ⁰⁰ "One Time Plan")
*life time membership		X
*no call limit	(120 minutes)	X
*toll-free call in:		X
*service 7 days a week		X
*free public domain software		X
*up-dated manuals		X
*printer configurations	X	X
*in-house software set-up		X
*multiple software coverage	X	X
*free software data base by modem		X
*30 day trial period		X
*covers entire family or office		X

*"MAYDAY" is trademark of Teletech Service Corporation

"With MICRO COMPUTER TRAINING CORPORATION You Have A Choice"
Presenting our "HOT-LINE SERVICES" to the rescue.

"THE SHORT TERM PLAN" This plan offers you six months of Toll-Free training/support for six months—seven days a week covering all commercial software you may own, for one person and one machine including printer configuration. We pay for all the calls on your toll-free numbers. **\$198.00 total cost.**

"THE ONE TIME PLAN" This plan offers your entire family or office (up to ten persons) toll-free training/support for as long as you own any micro computer we support for a one time charge. Also included is complete support on modems/telecommunications and a deluxe full featured modem program with free utility programs to be used now or in the future on your micro computer. **\$298.00 total cost.**

"THE EXECUTIVE PLAN" This, our "Cadillac" of plans offers you the same services as "The One Time Plan". In addition this plan allows you access to hundreds of free utility programs by the use of any modem 24 hrs a day—seven days a week with your special access code to our free software data base. This also allows our trainers to access your computer by "remote-control" for training/support assistance. If you do not own a modem . . . please ask us about our complete modem package (including software and cables) for the incredible purchase price of \$25.00 complete, available on a limited basis with the purchase of the "Executive Plan".

FOR IMMEDIATE REGISTRATION AND HELP!!!

PHONE TOLL-FREE

1-800-252-9776 (California)

1-800-352-9776 (Elsewhere)

Visa . . . Master Card . . . American Express

Take the Programming Plunge

Hand-holding through your first S-BASIC program.

by Cindy Jo Lane

Experienced programmers, like experienced swimmers, don't worry about getting into deep waters because they have the background to handle it. If your feet are barely wet, however, the S-BASIC manual can be as intimidating as the federal income tax guidelines. Your early programming efforts will be more successful if you plan a logical solution to the problem and then implement that plan with the appropriate features of S-BASIC.

The biggest blunder a novice programmer can make is to assume that writing a program is as instinctive as sex. Spontaneity may be desirable in the bedroom, but it is a deadly practice when dealing with your Kaypro. Your computer tediously and predictably performs each instruction without bothering to wonder what you mean. A builder does not hammer a nail without blueprints in hand. A programmer should not write a single line of code without an outline of the solution to the problem in hand. Flowcharting is a simple, easily learned tool used to outline programs that are logically sound.

Unfortunately, flowcharting is like flossing your teeth: it is a bit of a bother and it requires discipline and motivation. But the payoff is tremendous. You will spend less time hunting down bugs (mistakes) in your code, especially logical errors which are tricky to find and fix. Your program will be concise and efficient, which means more room on the disk for other brainstormers. An investment of your time, thought, pencil and paper will make you a better programmer.

Flowchart logic

Suppose you want a program that figures out the mileage your car is getting. At this point there is no need to think about the details of S-BASIC. Using a

handful of flowcharting symbols, the program logic can be neatly represented as in Flowchart #1.

Parallelograms are used to show input or output to the program. Input is usually from the terminal in response to a question posed to the user, but input can also come from a data file or other source external to the program. Output is usually to the terminal, but can be routed to another file or to the printer.

The input/output parallelograms should be well defined from the beginning since it is essential to know this information before creating the chart. For example, if the input for number of miles consisted of two readings from the odometer, the program would have to determine the distance travelled by subtracting the two numbers. However, for simplicity's sake, my mileage program requires the user to provide the number of miles.

The rectangle is called a process block, which in layman's terms translates as a "do-something" block. The program's progress or flow is represented by the arrows. Flowchart #1 indicates that things are pretty much going to happen in a straight line, one right after another. If coded into a language, this program would consist of instructions executed in order from start to finish without special statements such as GOTO, IF . . . THEN, or WHILE . . . DO. Instead, this program directs the computer to execute instructions one right after the other, unless told to do otherwise.

Suppose, however, you want the program to figure out the mileage of two cars. You might come up with the solution shown in Flowchart #2. There are, however, several drawbacks to this chart. It is awkward and repetitive, and you would have a helluva time converting this to run for 100 cars. An improved version would use a loop in the program flow, as in Flowchart #3. *(continued on page 58)*

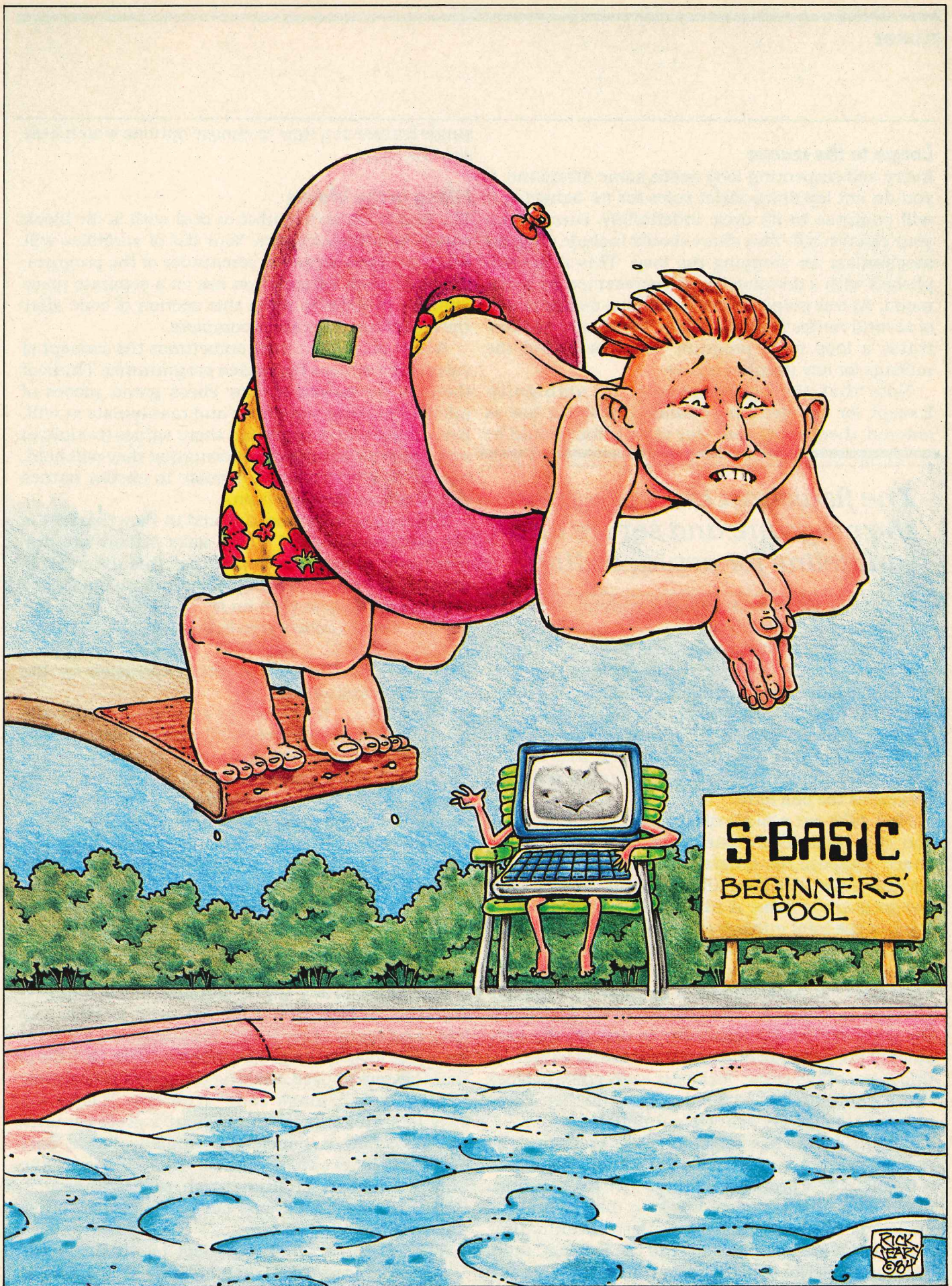


ILLUSTRATION BY RICK GEARY.

Loops to the rescue

Every self-respecting loop needs some discipline. If you do not lay down strict rules for its behavior, it will continue in its cycle indefinitely, running up your electric bill. Your chart should include a logical mechanism for stopping the loop. This is accomplished with a decision block, represented by a diamond. At this point the program must decide which of several routes it should follow. Flowchart #3 illustrates a loop for a program which will find the mileage for any number of cars.

Note that the chart contains no ambiguity. Except for the decision diamond, when a box is entered, there is only one way to exit. You should be

The flowchart is a skeleton of the program, and serves as a guideline for actual coding.

able to trace the arrows by hand without ever wondering what path to follow.

Another nice feature to toss in is a check on input, just in case some joker of a user decides to put in ridiculous numbers. Another decision block placed below the input parallelogram will do the trick. The decision can be based on the number of digits input, so that impossibly large numbers will not be accepted. Errors will be trapped before the program processes the bad data.

Now, take out a piece of scratch paper and see if you can incorporate one more features into the chart. Suppose the program should print the average miles per gallon for all the cars processed once the program is done. A hint: you will have to keep track of the total mileage and number of cars before you can compute the average mileage.

Check your efforts against the final product in Flowchart #4. Notice that it is as clean and uncomplicated as possible. The process block just below the start symbol is a reminder to declare the variables of the program and give them initial values. At this stage of the game, look over each process block to see if you should break it down any further. These blocks are narrowly defined in function.

The flowchart is a skeleton of the program, and now serves as a guideline for the actual coding into S-BASIC. (See program listing.) It can be implemented in small pieces, block by block, making decisions on S-BASIC features less intimidating. Although it is a good idea to read the S-BASIC manual to get a feel for the language, you can now study a

single feature at a time to choose options which best suit the chart.

Filling in the blocks

The first flowchart symbol to deal with is the block which handles variables. Your list of variables will develop as you write the remainder of the program. Jot down each variable you use on a separate piece of paper in order to write this section of code after the rest of the program is complete.

A note is in order since sometimes the concept of variables confuses the novice programmer. Think of them as the pawns of your chess game, pieces of information that you create and manipulate at will. Eventually, you must assign them values (initialize) and declare what type of information they will hold, but for now just take the trouble to choose names which reflect their function.

The next symbol encountered in Flowchart #4 is the decision diamond which asks if there are any more cars to process. Recall that this diamond is actually the hinge to a loop structure, so ignore the impulse to jump in with an IF . . . THEN. There are several ways to code a loop in S-BASIC: REPEAT . . . UNTIL; WHILE . . . DO; FOR . . . NEXT; and IF . . . THEN GOTO. Choose the best expression by the process of elimination.

The FOR . . . NEXT is not appropriate since the number of times the loop will execute depends on the person using the program. If you knew in advance that the program would always run for 50 cars, the loop could be formed using an instruction such as "for x = 1 to 50 next x."

A REPEAT . . . UNTIL loop is easy to spot in a chart. The distinguishing feature of this structure is that the loop must execute at least one time. Because of the position of the control decision diamond which asks if there are any more cars to process, it is possible to answer no to this question immediately and never enter the loop.

The IF . . . THEN GOTO can also be used in this instance. In fact, this is all you need to form any loop, and many other BASIC languages do not have the other loop options. The problem with GOTOs is that they are abused, making programs susceptible to the dreaded "jungle code" syndrome. It is far too easy to sprinkle them throughout a program until the logic flow is hopelessly tangled. If that isn't enough to deter you, remember that GOTOs are the bumper stickers of amateurish programmers. S-BASIC has advanced loop devices, so learn to use them.

The WHILE . . . DO is perfect for this example
(continued on page 62)

UNLEASH THE POWER OF YOUR KAYPRO

Now you can use your Kaypro to its fullest by building your own software library for as little as \$.98 per program. Just think of it, utilities, games, subroutines, tutorials, and data files to build your very own software library with, and all for as low as \$.98 each. Subscribe to BASIC-K, the only disk magazine for the Kaypro computers, and receive all of this and more. You will receive, via 1st class mail, a floppy disk each month with up to 8 ready-to-run programs. You will also receive our "GOLD SHEETS" which contain program documentation, editorials, product reviews and much more. By subscribing to BASIC-K MAGAZINE you will not only build a software library but at the same time will be expanding the use of your Kaypro computer. So SAVE up to \$55.00 off of the single issue price by subscribing today.

PROGRAM SUBMISSIONS

If you wish to submit a program or article for inclusion in BASIC-K, please write to:
BASIC-K MAGAZINE, 119 S 10th, Duncan, Oklahoma 73533

GUARANTEE

Damaged or faulty disks will be replaced at no charge. If you wish to cancel a subscription, simply return the most recent disk in its sealed package and you will receive a full refund for this copy and all unmailed issues.



SUBSCRIPTION RATES:

1 Year\$95.00
6 months\$55.00
Single\$12.50

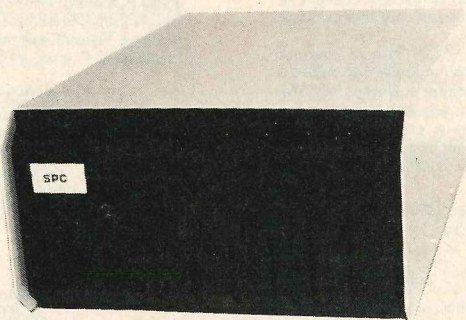
Send Check or Money Order to:

BASIC-K MAGAZINE
119 S 10th
Duncan, OK 73533

1 (405) 252-3297

We also accept Visa, Master Card or American Express.
COD add \$2.00. Oklahoma residents add applicable sales tax.

NEED A HARD DISK DRIVE?



The DISKIT Expansion Chassis. Under the removable front bezel is any combination of 10, 20, 30, or 40 Mb. plated media drives with optional 5 Mb. REMOVABLE CARTRIDGE.

DISKIT also offers a 5 Megabyte removable cartridge disk as an option to back up your valuable data for only \$1195. Call us now for details, and order while delivery time is short, about 2 weeks. In addition to the KAYPRO computer shown, we also support IBM, SANYO, TELEVIDEO, CORONA, NORTHSTAR, EAGLE, etc.

SYSTEMS PERIPHERALS CONSULTANTS

9747 Business Park Avenue
San Diego, California 92131
(619) 693-8611

TAKE YOUR PICK...Z80 or 8088

Now you can use the inexpensive DISKIT hard disk subsystem with your Z80/CPM or 8088/MSDOS computer, either in an outboard expansion chassis or embedded in an existing 1/2 high slot. The DISKIT features from 10 to 150 Megabytes of data available at speeds that will really make you smile. Installation is easy, and the savings are yours when you buy direct.



The KAYPRO II with embedded 10 Mb. DISKIT, and expansion chassis.

Micro Cornucopia . . .

KAYPRO USERS DISKS for KayPro II, 4 and 10

\$12⁰⁰ each

The following are full disks of software assembled for the KayPro. Each program has a .DOC (documentation) file and many come with source.

KayPro Disk K1 Modem software

This disk is absolutely priceless if you will be using a modem to communicate with bulletin boards, other micros or mainframes.

MODEMPAT.COM: Menu selection of baud rate, bits/character, stop bits, & parity for serial port.

MODEM7.COM: Very popular MODEM 7 configured for KayPro.

MODEM7+.COM: This is MODEM7 & MODEMPAT combined - you can communicate with anything!

KMDM795.COM: Super-version of MODEM7 set up for KayPro.

TERM.MAC: Commented disassembly of the TERM program you get with your KayPro so you can configure it for any interface.

SQ/USQ.COM: Programs to squeeze and unsqueeze files for faster transfer.

KayPro Disk K2 Utilities

Really oodles of spiffy little (and big) programs to help you get full use of your KayPro.

ZESOURCE.COM: A true Zilog format disassembler for 8080 and Z80 object(.COM) files. Now you can turn .COM files into .MAC files.

UNERA.COM: Simply enter "UNERA" followed by the name of the file you just erased and presto, the erased file is back! A lifesaver.

FINDBD54.COM: Checks an entire disk, reports bad sectors, and then creates a special file containing those sectors. You save a bundle on disks.

CAT2: This a group of programs which create and maintain a single directory of all the programs you have on all your disks. Even keeps track of which programs are backed up and which aren't.

UNSPPOOL.COM: Use your KayPro II and print files at the same time. Doesn't slow down system response!

DUMPX, DU-77, COMPARE, SUPERSUB, FORMFEED, DIR-DUMP, . . . and all have documentation on disk.

KayPro Disk K3 Games

PACMAN.COM: Despite the KayPro's lack of graphics, this one looks and plays amazingly like the real thing! Keep it hidden.

ZCHESS.COM: Chess with a 1-6 level look ahead.

OTHELLO.COM: You learn it in minutes, master it in years.

BIO.COM: Generates custom graphic biorhythm.

MM.COM: Master Mind.

WUMPUS.COM: Classic wumpus hunting.

KayPro Disk K4 Adventure

This disk contains one 191K game, Adventure. **ADV.COM:** This is the latest, greatest, most cussed adventure ever devised by half-mortals. This is the 550-point version so the cave is greatly expanded and the creatures are much smarter.

KayPro Disk K5 MX-80 Graphics

A complete Epson MX-80 printer graphics package including example files. (Same as K19.)

KayPro Disk K6 Word Processing Utilities

A powerful line oriented text editor that looks like Unix's EX, plus a scad of text utilities written in C which handles pretty printing, shortening a file, multiple space output, add tabs, remove trailing whitespace, and more. Also includes **ROFF.COM** a very neat text formatter.

KayPro Disk K7 Small C Version 2 Compiler

This is a greatly extended version of Ron Cain's Small C compiler. Version 2 has more expressions and larger library, true subset of Unix C. Disk contains compiler, documentation, and library—everything you need.

KayPro Disk K8 Small C Version 2 Source

This disk contains the source (written in Small C) of the Small C version 2 compiler. Get K8 if you want to try extending the compiler. (You must have K7.)



KayPro Disk K9 ZCPR

ZCPR: The big news on this disk is the self-installing version ZCPR available only from Micro C. Once you have ZCPR in your CP/M, you'll never go back to straight CP/M! For instance, ZCPR searches drive A for any program not found on drive B, so, even an empty disk in drive B appears to contain every program on A. It's great for text editors, compilers, etc. Works on KayPro II and 4.

EX14: a super replacement for SUBMIT.

Plus many more: **TREK, FIX, FIND, SNOOPY, ALIENS** and **DIF2**.

KayPro Disk K10 Assemblers

We've received a lot of requests for a Z80 assembler. So Dana put in some long hours getting the Crowe Z80 assembler to run on the KayPro (and every other Z80 machine).

CROWECPM: This is a first class Z80 assembler. We use this assembler daily (and we included its source). Takes standard Zilog mnemonics.

LASM: This is a more powerful version of the ASM assembler you received with the KayPro. This will link multiple programs together at assembly time.

PRINTPRN: This program makes it easy to print the listing files generated by the Crowe assembler.

KayPro Disk K11 Library & Checkbook Programs

CHECKS: This has been a very popular group of programs. Categorizes checks so you can keep track which are tax deductible and which get charged to which projects. Includes source and excellent example check files. Very powerful.

LIBR: This is a complete set of library routines which let you group files into a single file called a library. Then CP/M sees them as a single program, but with the library routines, you can list them out separately, run them separately, or divide them up again. Almost like a unix environment.

DISPLAY, VLIST, PGLST: Additional screen and print utilities.

KayPro Disk K12 FORTH

Yep, this is FORTH, one of the most unique, most extendable languages known, and for a paltry \$12.00. This disk contains not just one FORTH, but two, along with an editor, decompiler and 8080 assembler! The editor even uses the cursor control keys.

FORTH: This is true fig-FORTH.

KFORTH: A very nicely extended version of fig-FORTH.

PLUS, all the rest of the FORTH goodies. (Forth Heaven!)

KayPro Disk K13 Source of fig-FORTH

All this disk contains is the 40K ASM source of fig-FORTH with the hooks in place for the KayPro. This disk is for FORTH hackers who just can't leave anything alone. (Look, you probably have faults, too.) The source of FORTH is here because there isn't room on K12. This is the only disk that isn't stuffed.

KayPro Disk K14 Smartmodem Programs

This is the disk for you if you have a Smartmodem compatible modem.

SMODEMK: Smartmodem program set up for the KayPro (and source).

XMODEM: Lets you remotely control your KayPro from a distant computer.

KAYTERM: This is the information you need to run or write modem software on the KayPro.

KayPro Disk K15 Hard Disk Utilities

This disk is for the KayPro 10 or any KayPro with a Winchester drive. With these routines you can not only backup files (with printed directories of the backup disks), you can also break up large files. The backed-up files are not encoded (as they are with KayPro's backup routine) so you can access them on any system.

KayPro Disk K16 Pascal Compiler

This is a real Pascal compiler. It supports only a subset of the language (no records, pointers, booleans, reals or complex) but it generates a real .COM file. Everything is on this disk: the compiler, its source, example programs and documentation.

KayPro Disk K17 Z80 Tools

This is for those of you who are into Z80 assembly-language.

XLATE.COM: A very good 8080 to Z80 translation routine.

DASM.COM: An easier to use version of ZZ-SOURCE (the Z80 disassembler). This full disk includes source and documentation for both routines.

KayPro Disk K18 System Diagnostics

Just as we finished editing the routines on this disk, we received a copy of KayPro's diagnostic disk. The memory test and drive exercise, routines on this disk are more powerful than KayPro's versions. (Plus, it's only \$12!) Setup for KayPro II and 4.

KayPro Disk K19 Prowriter Graphics

This is a complete Prowriter printer graphics package written by the same Micro C subscriber who wrote the MX-80 graphics package. Plot points, lines, circles, boxes, and more. Examples, documentation.

KayPro Disk K20 Color Graphics Routines

PACMAN.COM: This is a deluxe version of pacman for MicroSphere's color graphics board.

PIE.COM: Pie Chart generator.

SKETCH.COM: An easy way to sketch color graphic designs. You can even use a joystick with this software (see Micro C issue #15 for joystick interface).

Kaypro Disk K21

SBASIC Routines & Screen Dump

SBASIC: Finally a disk of SBASIC software. There are some good examples of structured programming on this disk (including one program written both ways so you can see the difference).

SCREEN DUMP: This is a screen dump for all Kaypros new and old. You can buy a similar package elsewhere for \$60.

Kaypro Disk K22 ZCPR (Again)

This disk is filled with ZCPR files. You get ZCPR for the Kaypro II, Kaypro 4, and the Kaypro 10. This version is fixed so that you can pass control characters (such as cntl-P) to the system and you can choose to have it recognize the semi-colon for drive select (as well as the colon). So you can enter "B;" or "B:" to select drive B. Super neat!

ZPCR, for those of you who don't know, makes CP/M a lot friendlier. It searches drive A for any .COM file it doesn't find on the current drive, the TYPE command scrolls text 24 lines at a time, and a new LIST command outputs a file to the printer.

Kaypro Disk K23 Fast Terminal Software & New BYE

This disk contains interrupt-driven terminal programs for all Kaypros. If you are tired of being limited to 1200 baud when you use your Kaypro as a terminal then take heart. With these programs, your Kaypro can outrun the big boys by receiving and sending up to 19,200 baud without dropping a single character!

Also, a new version of BYE that not only lets you run your KayPro remotely, but also figures out whether you have a 63K or 64K system so it will run with any Kaypro using an external modem.

Something special for your Kaypro!

Kaypro Disk K24 MBASIC Games & Keyboard Translator

We sifted through many, many games before coming up with these gems. All will work on any Kaypro and all come in MBASIC source.

USOPEN shows you the fairway on the screen. You select the club and direction for each stroke. After you reach the green the display shifts to show details of the green and flag. For one to four players.

DUCK is an offshoot of aliens (pardon the pun). Hunter tries to shoot down ducks while ducks try to bomb the hunter. (Much fairer than real life.)

CASTLE is an adventure in which you select your attributes (strength, dexterity, and intelligence) and you get to purchase arms and protection. Great documentation and very interesting game.

KSTROKES is a keyboard translator similar to Smartkey. Bill Forbes did an excellent job creating this program. You can create and save translation files on disk. The program even includes a table which generates WordStar commands from the Kaypro's keypad! You can define 8 keystrokes at up to 63 characters each.

Kaypro Disk K25 Z80 Macro Assembler

This is a real Z80 macro assembler! Syntax closely follows RMAC and MAC. Also includes pseudo-ops to support conditional assembly etc. No .phase or relocatable code.

Kaypro Disk K26 EPROM Programmer & Character Editor

This is the software for the Kaypro EPROM programmer written up in Issue #18. This software and the programmer turn your Kaypro into a very powerful development system. You can read ROMs, write ROMs, save data on disk and restore data from disk. Plus, you get a character editor which will help you design custom character ROMs for the non-graphic Kaypros!

Kaypro Disk K27 Typing Tutor

NEW!

A complete typing tutor for beginners and experts. Written in Australia, it comes complete with source. This was customized for Kaypro II, 4 and 10 by Barry Cole of WLAKUG.

The documentation says you can learn to touch type in 8 hours (probably a little longer for mortals).

NEW!

New Schematic Packages

Finally, a complete schematic for your portable Kaypro, logically laid out on a single 24" by 36" sheet, plus a very complete illustrated Theory of Operation that's keyed to the schematic. You'll get detail information on your processor board that's available nowhere else.

For instance, those of you with the 10 and new 84 systems get a thorough rundown on your video section complete with sample video control programs in assembly language and Pascal. Of course, all packages contain serial and parallel port details and programming examples as well as complete coverage of the processor, clock, I/O, and disk controller (information that is not even available in Kaypro's own Dealer Service Manual!).

Kaypro Schematic Packages

Kaypro II & 4 (pre-84) \$20.00

Kaypro 10 (pre-84) \$20.00

Kaypro 84 series (II,4,10) \$20.00

All prices include Postage

NEW!
NEW!

Micro Cornucopia Magazine

Want to speed up your KayPro? Want to find out what's going on under the KayPro's hood? Want to know who's selling good products and providing good support (and who isn't)? Want to find really inexpensive software? Then you're in the right place.

Micro Cornucopia (Micro C) is the friendly journal for those of you who want to stay abreast of the latest information on KayPros and other single board systems, or want to upgrade your KayPro yourself without paying an arm and a leg. We have regular columns on Pascal, C, S-BASIC, FORTH as well as the popular "On Your Own" feature for those of you who plan to make the KayPro your ticket to independence.

You can get all this and more when you order the special \$2.00 sample copy. In fact, you'll even find out how to turn a KayPro II into a KayPro 4 (or KayPro 8).

Edited and published by David Thompson

Subscription Rates

1 yr. (6 issues - bulk rate)	\$16.00
1 yr. (6 issues - first class)	\$22.00
1 yr. (Canada & Mexico)	\$22.00
1 yr. (other foreign)	\$30.00
Sample Issue	
(turn your II into a 4)	\$ 2.00

Special Offer!

Your First Schematic Package (If you also order subscription) \$10.00

Pro-8 ROM Package

The PRO-8 package from Micro Cornucopia upgrades your KayPro 4 to a KayPro 8 with 784K bytes (96 directory entries) per Tandon 100-4 (or equivalent) quad-density drive. Plus, you can select your own cursor character (and change it at will).

The package includes the new PRO-8 monitor ROM, a disk of formatters and copiers, and printed instructions. (We even tell you how to turn your KayPro II into a KayPro 4.) All you add is one or two double-sided double-density (390K), or double-sided quad-density (784K) drives. You get over 1.5 Megabytes on a two-drive quad-density system!

This new system can read, write, and format KayPro II and KayPro 4 disks as well as KayPro 8 disks. And it recognizes each disk type automatically!

All this for only \$49⁹⁵!

Watch Micro Cornucopia for more KayPro compatibles.

Call or write for information on the other KayPro II and 4 ROMS from Micro Cornucopia.

Plus-4 Decoder Board

With this nifty little plug-in board, your Pro-8 ROM can access up to four 5¼" drives. You just plug a four-drive 34-pin cable into this board and you can add up to two additional drives.

Now you can run any mix of 191K, 390K, and 784K drives as drives A, B, C, and D. You can run your original drives as A and B then add 380K or 784K drives outboard as C and D. You can even run four half-wides inside your original Kaypro!

The Plus-4 Decoder Board for only \$39⁹⁵

Watch for 4-84 and 10-84 compatible ROMs coming soon.

Micro Cornucopia



P.O. Box 223
Bend, OR 97709
503-382-8048
9-5 Pacific Time
Monday-Friday



since our loop is hinged on a condition, i.e. are there any more cars to process? It seems natural to ask the user for a yes/no response, read the response into a variable called "more" and control the loop accordingly. Technically, this will add an input/output parallelogram to the flowchart, but small modifications during coding must be expected.

Notice that no IF . . . THEN is needed for this loop. If there are no more cars, the WHILE . . . DO loop is skipped and program flow continues, ready to compute the average mileage of all the cars when no more remain to be processed.

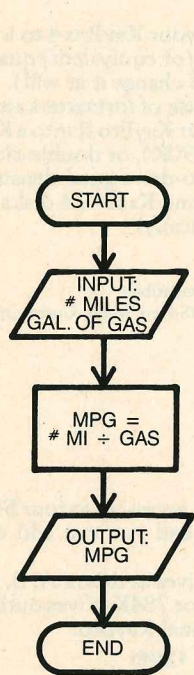
The input symbol is coded next, within the loop structure as it appears in the chart. S-BASIC allows the input statement to contain a string, useful for prompting the user for the correct information. It is not terribly user-friendly to allow a question mark to appear at the terminal without an explanation of what is expected. And your car will get amazingly poor mileage if you accidentally give the number of miles and amount of gas in the wrong order. As you

gain confidence, experiment with the different forms of input statements provided by S-BASIC.

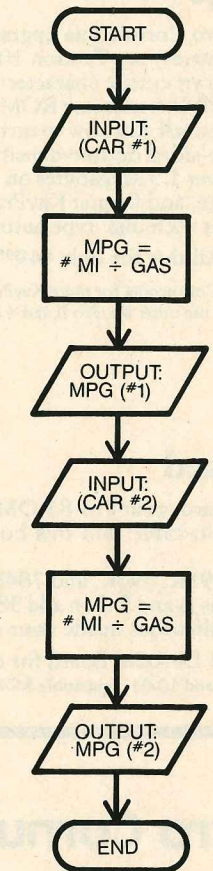
The next decision diamond is an error check on the input information. As always, there are many ways to handle this using different structures. A GOTO is rather tempting, but don't use it. Someone has to set a good example. An IF . . . THEN structure is best used here to screen the data before processing. If both input values are greater than zero (a wimpy error check), the last leg of the loop is processed within the IF BEGIN . . . END statement. If the input values are not reasonable, program flow skips to the loop hinge, "Any more cars?"

Notice that the program has two identical input statements in order to make the WHILE . . . DO work. The first input statement allows the program to be used without processing any data at all. This, combined with the second input statement, forces desirable program flow.

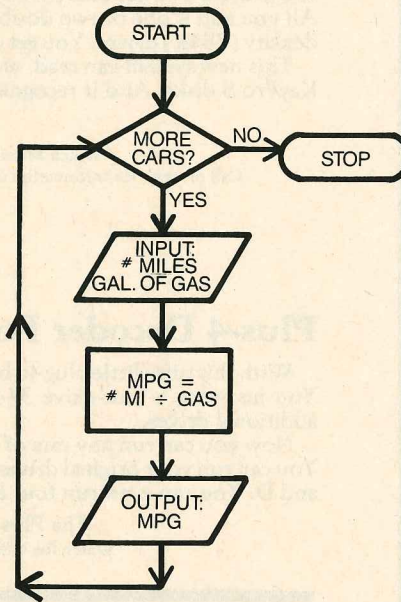
The process blocks are basically straightforward. If you dislike rude endings to programs, be sure to



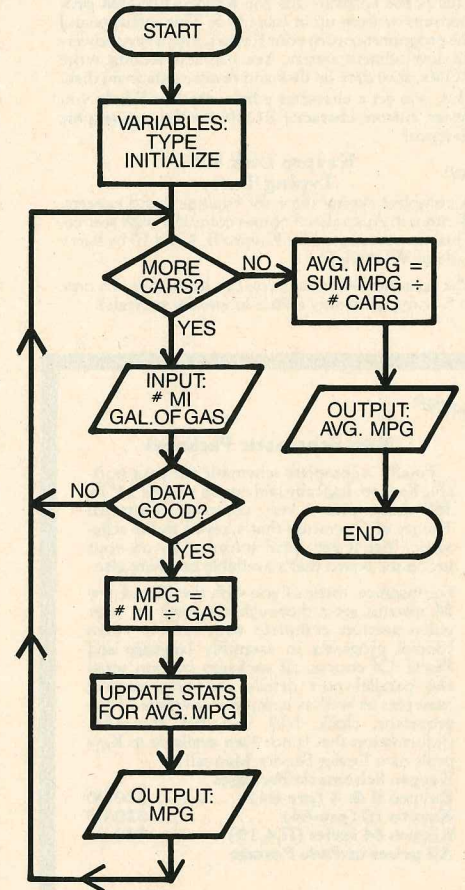
FLOW CHART #1



FLOW CHART #2



FLOW CHART #3



FLOW CHART #4

anticipate fatal errors such as division by zero. (Logically speaking, I believe that dividing by nothing should yield the original number, but mathematicians and computers don't see it that way.) Because variables were dutifully initialized in the program, an error check is easily implemented with an IF . . . THEN structure.

Play it safe and initialize all variables to some number, though not necessarily zero. For example, it makes sense to initialize "more" to "Y." Variables are unpredictable little envelopes which can contain all sorts of programmatic residue, so avoid surprises.

Other possibilities

This elementary program does not utilize several other features available in S-BASIC which aid in structuring the flow: the CASE statement, the GOSUB, the FUNCTION and the PROCEDURE statements. The CASE statement is useful when one of several actions can be taken depending on the value of a particular variable. This situation can often be spotted in a flowchart that has a staircase of deci-

sion diamonds all dependent upon the value of the same variable.

Avoid the GOSUB, FUNCTION and PROCEDURE statements until you have some experience under your belt. They are not particularly difficult, but they require a bit of discretion. The idea behind these structures is that sometimes the same section of code needs to be used repetitively or at different points in a program. A set of statements, which usually perform a specific task, is isolated for easy reference.

A FUNCTION reads one or more values and returns an answer, such as the built-in functions of S-BASIC which do things like find the square root of a number. A PROCEDURE, however, may do several things and is more general in purpose. One off-the-cuff way to tell the difference between a function and a procedure is to ask if it would make sense to print the task you wish to isolate. You can print functions, i.e. PRINT SQR(X). It makes little sense to print procedures. The GOSUB statement can be thought of as a more basic implementation of a pro-

(continued on page 64)

Taxware Systems is your Total Solution

Taxware Systems Offers

- Software that's easy to use, fast and flexible
- Extensive end user support including toll free support lines and classroom training
- A variety of tax and accounting packages available on a wide-range of computers
- Nation-wide user base with systems available in most states

Demonstration software is available. For only \$100 you can now purchase a 1983 individual tax preparation system and demonstration versions of all other major programs. Among the many software systems available are complete client accounting,

payroll, accounts receivable and financial planning packages. All systems are CPA designed, tested and used to provide the best, complete package for any price. For the total solution to your tax and accounting needs, contact . . .

TAXWARE SYSTEMS INC.
P.O. BOX 329 604 No. Euclid Ave., Ontario, CA 91761
(714) 986-6019

CONFUSED?



Communications Software Can Be a Real Headache. For FAST RELIEF, use COMMX! It's Simple to Operate and Provides the Best Features Available for Both Personal and Business Communications:

- Easy to Use Menu Selections and Prompts
- Auto-Dial-Logon and Unattended Controls
- Dial Directory Handles up to 700 entries
- Install Utility for Intelligent Modems
- Programmable Terminal Emulation!
- Linkup with Information Services like WU Telex, TWX, USPS ECOM, CompuServ, NewsNet (free subscription included)
- Micro to Micro and Micro to Mainframe multiple File Transfer Protocols:
 - Text Upload/Download with Options
 - Text and Binary Upload/Download with proprietary Error-free COMMX protocol mainframe Versions available for VAX, CompuServe, DEC 10, IBM 370, HP3000, PRIME
 - MODEM7 Batch and Single file Send/Recv
- Direct Link High Speed Data Transfers
- Electronic Mail Management Software upgrade Available for Organizations
- InfoWorld Report Card A + + + + Dec 1981

COMMX is priced from \$195 (micro CP/M or MS-DOS) to \$900 (mainframe). OEM and multiple licenses available.



**HAWKEYE
GRAFIX Inc**

818-348-7909 / 213-634-0733
23914 Mobile, Canoga Park, CA 91307

PLUNGE

cedure or function using a GOTO type of structure. These statements not only save space and execution time, but can also simplify complex programs into more manageable chunks when used properly.

The last detail of coding is to declare a type for each variable used. Narrow the field by process of elimination. The six types allowed in S-BASIC are: REAL, REAL.DOUBLE, FIXED, INTEGER, STRING, and CHAR.

Remember that GOTOs are the bumper stickers of amateurish programmers.

Fortunately, S-BASIC politely makes certain type conversions if you mix types within an expression, i.e. if you add a variable type REAL with a variable type INTEGER.

Types STRING and CHAR are for character manipulation and are not well-suited for numerical computation. Use type FIXED for dollars/cents variables since this preserves two places to the right of the decimal. Variables of type INTEGER hold only whole numbers, such as -14, 0, 2. If the number might contain fractions, choose type REAL. The last choice, type REAL.DOUBLE, is for programmers who do things like measure the girth of electrons.

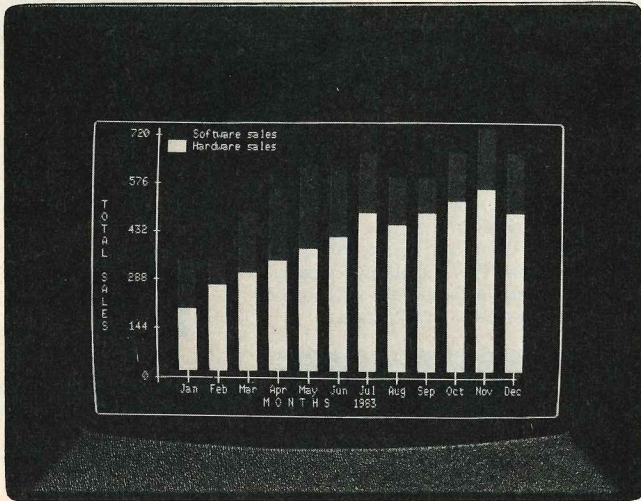
Once the program is coded, you are ready to compile it and run it. Before doing so, it is advisable to slip in a useful statement, \$TRACE, into the start of your program. This marvelous statement will feed you line numbers when the program is running, tracing the flow of the program so that you can check it against your chart. This is an invaluable debugging aid for errors in logic. If you see the same line numbers repeated over and over again without end, you have created a monster in the form of an infinite loop.

In summary

To review the process of writing an S-BASIC program: prepare an S-BASIC/word processor disk according to the instructions in your manual. Use the word processor to write your program into a non-document file (if using WordStar) with the file extension of type BAS. Save the file and return to the system (logged onto the disk where the S-BASIC/word processor resides). Compile the program by typing S-BASIC filename.BBX. Review gram-

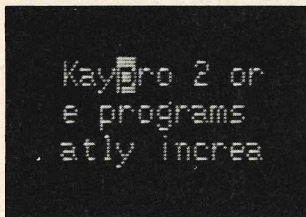
(continued on page 68)

MAXIMIZE YOUR KAYPRO®-FORMANCE

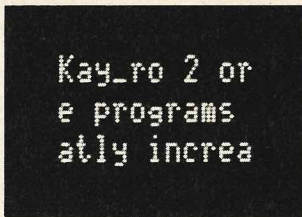


ProGRAPHICS PUTS THE PRO IN KAYPRO®

Character Comparison



ADVENT ProGRAPHICS VIDEO
Fully Formed Characters
True Character Descenders
True Cursor
Improved Aspect Ratio



KAYPRO STANDARD VIDEO
No True Descenders
Simulated Cursor

ProGRAPHICS gives your Kaypro 2 or 4 the ultimate in video display as well as graphic capability. ProGRAPHICS emulates the popular Televideo 925/950 terminal at the same time retaining full compatibility with existing software. Simple plug-in installation requires no soldering or other modifications. Here are just some of ProGRAPHICS' capabilities:

- 25 x 80 character display
- 8 x 10 character matrix with true descenders
- non-scrolling 25th status line
- both block (160 x 50 resolution) and thin line graphics
- user selectable character and screen attribute including:
 - reverse video
 - half intensity
 - normal
- real software selectable cursor.
- complete with all necessary hardware and software and illustrated installation instructions.
- an overlay program allowing Wordstar to use the new video attributes, and other features, making it much easier and faster to use.
- built-in monitor adaptor for connection to an external video monitor.
- the ability for your Kaypro to display video data 80% faster than stock.
- allows it to work at 9600 baud in telecommunications and terminal modes.
- fast, snow free scrolling.

PLUS: ProGRAPHICS is fully compatible with our 5MHz TurboBoard, Plu*Perfect's CP/M 2.2E, SWP's CO-POWER-88 and Micro Cornucopia's Pro-8 ROM.

ProGRAPHICS SYSTEM \$299.00

Warranted for 90 days. Money cheerfully refunded if not completely satisfied.

Kaypro is a registered trademark of Kaypro Corporation. CP/M is a registered trademark of Digital Research. Wordstar is a registered trademark of MicroPro International. CO-POWER-88 is a registered trademark of SWP Microcomputer Products.

USER-PROVEN SOFTWARE NOW FROM ADVENT.

Reportmaker for the Kaypro II & 4

An easy to use program that allows you to produce bar charts, pie charts and create your own headings, logos and designs. Works with WordStar.

REPORT MAKER \$130.00

BV Engineering for all Kaypro models

ACNAP

General purpose circuit analysis program \$49.95

SPP

General purpose signal processing program \$59.95

PLOTPRO

Set of four linked Microsoft Basic programs which plot scientific graphs on any 80 or 132 column printer \$49.95

REAP

Real Estate investment analysis program \$59.95

SmartKey II for all Kaypro models

Allows you to assign character strings or commands to any key on your keyboard. Tremendous time saver.

SmartKey II \$89.95

Checks & Balances for all Kaypro models

Complete personal checking program or business register. An excellent money manager.

Checks & Balances \$59.95

Plu*Perfect for all Kaypro models

Inexpensive software packages to dramatically increase the power and capability of your Kaypro.

Plu*Perfect Writer (comes with CP/M 2.2E)

Perfect Writer enhancement \$39.00

The Backgrounder (requires CP/M 2.2E)

Key definition program \$45.00

CP/M 2.2E

Enhanced CP/M \$32.00

Civilsoft for all Kaypro models

Powerful, easy to use engineering software. Over 20 programs available including structural analysis, surveying, hydraulics, and more.

Call for details and pricing.

CALL TODAY

National
1-800-821-8778

California
1-800-521-7182

DEALER INQUIRIES WELCOME.

Visa and MasterCard are welcome. Please add \$1.50 for C.O.D. UPS surface freight paid on all orders. California residents please add 6% sales tax.



3154 F E. La Palma Avenue, Anaheim, CA 92806 • (714) 666-0130

FREE With
Your Order For
Any 2 Or More Items
On These Pages Receive a

Giant 12 Foot Coiled Extension Cord for Your Kaypro keyboard

Send for your free cord today.
Enjoy that detachable keyboard.
One Free Cord Per Customer

Regarding this coiled retractable cord: Don't be fooled by cheap imitations. This cord has been specially manufactured to match the unique electrical requirements of the Kaypro computer and meets demanding Kaypro-like specs. It is guaranteed to work with every model Kaypro II, IV, and 10. Don't settle for less from copycat advertisers. Other cords will fail and may hurt your system. Order your free cord today.

This free offer applies to any 2 or more separate items. For example, a Kaypro Quality Cover and one template equals 2 items; 2 templates equal 2 items, but a single box of diskettes is one item. We must reserve the right to end this offer. Don't be disappointed, order today. 12 foot cords sold separately at \$12.95 per cord.

● Toll Free ●

Order Desk Only

800-533-8049 USA

800-624-5628 CA

Information Calls

(805) 524-4189

CENTRAL COMPUTER PRODUCTS
860 Central Avenue • Fillmore, CA 93015
© 1984 Central Computer Products

Kaypro is a trademark of the Kaypro Corporation

Enemies of Kaypro®... Spikes, Surges, and Noise!

The Kaypro has enemies. But now you can protect it from the mish mash of electrical currents that race through your home or business. Powerful up-surges of current can actually blow out your machine. Less powerful, barely noticeable spikes, surges, and noise can silently degrade your system in time, ruining chips, destroying data, and causing expensive service calls.

The Kaypro manual states, "Line filtering will protect your Kaypro...from power surges or other undesirable occurrences from the power source." Surge protection will help your Kaypro provide years of trouble-free service. Also, if you plan to use your Kaypro to access information by modem, you must have a reliable high frequency noise (EMI/RFI) suppressor to insure against data loss and scrambling.

There are many "toy" surge suppressors on the market. They are smartly colored, but beware. The performance difference is amazing. The best surge and noise suppressors on the market are made by Panamax. Our "Panamax Challenge Certificate" tells all. It is a startling comparison of Panamax quality with 11 other well-known brands. One aspect of this revealing report tells how Panamax responds to and cuts surges in 5 or less pico seconds, while most other suppressors respond at a comparably slow 5 to 50 nanoseconds!

Check our regular low prices. Try the Panamax of your choice for 15 days. Receive the "Panamax Challenge Certificate" with your purchase. If not completely satisfied with your purchase, return for immediate full refund. Your Kaypro deserves Panamax protection, the best there is. Order today.

Introducing A Classic Form Fitting Kaypro Cover

At last, the classic Kaypro dust cover you'll be proud to own and use. This first rate computer cover is made from a premium, lint free, static free, washable, free breathing, and fade resistant sailcloth. It comes in a rich looking Navy blue or Royal blue, and has a smart contrasting silver gray piping and trim that adds a superior finished look. Made to form fit and protect a Kaypro that is set up and ready to use.

This remarkable dust cover makes you feel good and will keep your computer dust free and looking brand new for years to come. For a limited time only, your price for this factory direct, custom made, sailcloth Quality Cover is \$16.95. When ordering remember to indicate color preference. This special low price is subject to change. You must be completely satisfied with your purchase of this cover or we will refund your money immediately. Order today.

Richly tailored inside and out. Look inside any of our Quality Covers; see the ultimate finishing; we use machines that sew with 3 needles so that no edge will ever unravel or shed lint. We stress perfection because you deserve the best. Compare for long-lasting satisfaction.

Kleertex®

- \$18.95 for one
- \$35.00 for two
- \$49.95 for three
- Why pay more?



your keyboard, software commands are only a glance away, at your fingertips. This makes it easy to learn programs that come with your Kaypro. Stop going back to the book to get a two or three keystroke software command or format. Now you can learn software commands super fast, so you can make better use of your powerful programs. The expertly organized Wordstar/Mailmerge template, for example, gets you into word processing in half the time. A special dBase II template cuts through the learning curve like a knife and gets you programming sooner. Kleertex templates for Perfect Writer/Filter and Perfect Calc get you moving fast on these programs too. Once you try Kleertex templates, you'll wonder how you ever got along without these useful tools. Central's special price for one template is \$18.95. Choose any two templates for \$35 and save. If you like, you may combine purchase of any of these four templates for super savings. Complete satisfaction is guaranteed or money-back. Makes learning software a breeze. Great value. Order today.



Photo: Form fitting Kaypro cover.

Matching sailcloth printer covers are \$14.95 each. Complete list sent with order.

New. Special two-piece Kaypro sailcloth cover. Set covers CPU and keyboard. \$19.95 per set.

- Quality tailoring
- Easy care fabrics
- Attractive colors
- Professional appeal

FACTORY DIRECT

Learn Software Commands Super, Super Fast!

Now Available:
Wordstar/MailMerge
dBase II

Time-saving Kleertex templates are made from a durable, non-glare plastic, and can be put on and lifted off the keyboard instantly. The software commands on Kleertex templates are easy to read and are conveniently arranged in alphabetical order. With a Kleertex template on

PANAMAX SURGE SUPPRESSORS

Description	List	Price
2 outlets, D	\$89.00	\$69.95
2 outlets, D NF	\$109.00	\$79.95
4 outlets, LC S	\$107.00	\$89.95
4 outlets, LC S NF	\$127.00	\$110.95
6 outlets, LC S RB	\$124.00	\$109.95
6 outlets, LC S RB NF	\$144.00	\$124.95

D: Connects direct to grounded wall jack.
LC: Includes 6 foot long heavy duty line cord.
S: Includes illuminated on/off switch.
NF: Includes EMI/RFI noise filter.
RB: Includes reset button.
All units include the added security of a 4 amp fuse. Unique Panamax EMI/RFI noise filters provide protection in common and transverse mode. Essential for modem communications, multi-user stations, etc. Panamax units are factory guaranteed for 24 months.

"Power line-associated problems are estimated to cause nearly 70 to 90 percent of the malfunctions in the IBM PC."

"Overvoltage can be fatal to both data and hardware alike."
P.C. Magazine, March 1983

"Spikes and surges can be the greatest threat to your computer outside a 4 year old child with a jelly sandwich aimed for the disk drive slot."



Photo:
Panamax
6 outlets LC S RB NF.

Lifetime Guarantee!

3M diskettes work like a charm on Kaypros. Every 3M diskette is guaranteed to last over 3.5 million passes per track. This means if you rewrote or updated every track on a 3M diskette once per hour, you would have to continue this process for more than 200 years to equal the 3.5 million pass level. Every disk comes with a reinforced hub ring. We guarantee trouble-free, lifetime performance of 3M disks or money back. Order today.

3M Quality Products

- \$19.20** — SS-DD 10/Box
- \$27.00** — DS-DD 10/Box
- \$21.95** — Head Cleaning Kit
- \$49.95** — Desktop Anti-Static Mat

Cables

Top quality, individually tested 36 pin Centronics-type standard parallel cables for all model Kaypros. These are made to work hard and long. Guaranteed.

- 5 ft cables ... \$18.95 each
- 10 ft cables ... \$24.95 each

Top quality, individually tested ribbon modem RS 232C cables designed with reinforced clamps for a sure continuous connection and made especially for your Kaypro. These work every time.

- 2 ft cables ... \$14.95 each
- 5 ft cables ... \$16.95 each

SHOP-BY-MAIL

CENTRAL KAYPRO® SOFTWARE

Product Description	List	Central
Software		
ATI TRAINING DISKS		
CP/M	\$ 75.00	\$ 62.00
MBasic	\$ 75.00	\$ 62.00
Multiplan	\$ 75.00	\$ 62.00
Wordstar	\$ 75.00	\$ 62.00
BLUE CHIP SOFTWARE		
Millionaire	\$ 59.95	\$ 49.95
BORLAND INTERNA		
Turbo Pascal	\$ 49.95	\$ 47.95
CDE SOFTWARE		
Checks & Balances	\$ 54.95	\$ 49.95
COMPUTRONICS		
VersaBusiness Series		
VersaLedger II	\$149.95	\$115.00
Any other modules	\$ 99.95	\$ 79.50
CONTINENTAL SOFTWARE		
Home Accountant Plus	\$ 99.95	\$ 79.95
DIGITAL MARKETING		
Datebook II	\$295.00	\$228.00
Footnote	\$ 99.00	\$ 79.00
Grammatik	\$ 75.00	\$ 69.00
Hyper Typer	\$ 29.95	\$ 26.00
Milestone	\$250.00	\$199.00
Notebook	\$150.00	\$109.00
EAGLE ENTERPRISES		
Citation	\$185.00	\$155.00
FYI, INC.		
SuperFile	\$195.00	\$175.00
FYI 3000	\$395.00	\$295.00
LEXISOFT		
SpellBinder	\$495.00	\$299.00
MICROSOFT		
MultiPlan	\$195.00	\$155.00
MICROSOLUTIONS		
Uniform Kaypro II	\$ 69.95	\$ 49.95
Reads 25 machine formats		
Uniform Kaypro IV & 10	\$ 69.95	\$ 49.95
Reads 40 machine formats		
PLU PERFECT SYSTEMS		
Plu Perfect Writer CP/M 2.2E	\$ 39.95	\$ 37.00
Backgrounder	\$ 45.00	\$ 42.00
CP/M 2.2E only	\$ 32.00	\$ 30.00
QUIC-N-EASY PROD.		
Q-Pro-4	\$595.00	\$395.00
with multikey file indexing		
SAN FRANCISCO COMP		
Power!	\$169.00	\$125.00
DocuPower!	\$169.00	\$125.00
SOFTCRAFT		
Fancy Font	\$180.00	\$149.00
SOFTWARE TOOLWORKS		
Eliza	\$ 24.94	\$ 22.00
MyChess	\$ 34.95	\$ 29.95
Word Wiggle	\$ 29.95	\$ 27.00
SORCIM		
SuperCalc 2	\$295.00	\$235.00
STAR SYSTEMS		
The Accounting Partner	\$395.00	\$285.00
T/MAKER COMPANY		
T/Maker Intergrated	\$495.00	\$379.00
with database manager		
Hardware		
ADVENT PRODUCTS		
Anti-Glare Screen	\$ 24.95	\$ 21.95
5 Mhz Speed-Up Turbo Board	\$ 99.95	\$ 89.95
External Monitor Adaptor	\$ 69.95	\$ 59.95
ProGraphics	\$299.95	\$269.95
PANAMAX		
PowerMax	\$459.00	\$379.00
200 Watt Battery Back-up		
Supplies		
Dysan SSDD Kaypro II disks	10/box	\$ 29.95
Dysan DSDD IV & 10 disks	10/box	\$ 39.95
Bookware		
Compleat Kaypro II, IV & 10		\$ 16.95
CP/M for the Kaypro		\$ 16.95
with an Intro to dBase II		
Wordstar and Friends	\$ 21.95	\$ 20.95
Guide to the Kaypro 10	\$ 24.95	\$ 23.95
Free Software Handbook	\$ 17.95	\$ 16.95

Free yellow Hi-Liter pen sent with every book order.
Prices, specifications, and offers subject to change without notice.

Do You Wish Writing Was Easier?

If you need to write, or want to write clearly, your Kaypro and the software program *Punctuation and Style* can help you get there faster. It improves, clarifies, and enriches your writing by identifying sentences with misused, redundant, faulty, cliched, or erroneous phrases, and shows you how to improve them. It helps you rewrite and check your work by quickly marking and annotating your files for easy correction. In addition to computer-fast identification of awkward, muddy, pompous, and wordy sentence structure, it also finds missing or improper punctuation, unbalanced quotes, wrong abbreviations, faulty capitalizations, and much more. *Punctuation and Style* actually improves your writing by mercilessly pointing out grammatical errors. After a few weeks with Oasis System's *Punctuation and Style* your writing is bound to become more dynamic, expressive, and honest. In time, you'll stop worrying about grammar and work on projecting ideas instead. After all, that's what writing is about.

Punctuation and Style makes writing and rewriting much easier. The list price of *Punctuation and Style* is \$125. Central's price is \$99. Experience the power of this valuable "Punctuation Checking and Writing Improvement Software" yourself. Order today to get this program fast.

Punctuation and Style works on files created with Wordstar or Perfect Writer. It comes with an easy to use, clearly written manual and is packaged in an attractive binder. Join thousands who now write with more confidence, faster, and better.

SmartKey II™ 3,750 Strokes per Key!

SmartKey II speeds up and improves accuracy in computing by reducing often used multiple keystrokes to single keys. It allows you to easily reprogram as many upper and lower case keys on your keyboard as you want, even while Wordstar, dBase II, Perfect Writer, or any other software is in operation. You can assign up to 3,750 characters to a single key. Once you have redefined keys, you can put them to work or change them at will. You can also store your "smart key" definitions in a special file for use later. Imagine saving complex command codes, boilerplate paragraphs, sentences, proper nouns, inventory numbers, or whatever, and then injecting any of them into your work with the stroke of a single key. This is a must-have, time saving computer program for all Kaypro users.

For a limited time only, Central's SmartKey II and SmartPrint II combination pack is only \$79. These programs are regularly \$129. SmartPrint II lets you give single-stroke commands to make your dot matrix printer produce italics, greek characters, graphic symbols, boldface, underlining, extended typefaces, accent marks, and much more. Order today to get these great programs fast.

Warning: SmartKey II makes lesser programs look dumb, dumb, dumb. Comes with step-by-step manual.

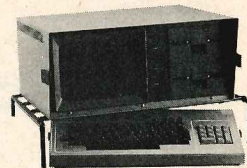
Cordura Travel Case



A full featured, padded carrying case at a price that is down to earth. The Coverman Kaypro carrying case is made from a strong, super-material called "cordura." This material is rip, shred, and water resistant. The Coverman case comes fully padded and lined, so your Kaypro is protected from unexpected bumps and jolts. Since your Kaypro is completely enclosed in this case, it keeps rain, sand, and other debris out of your machine. The Coverman case comes with external carrying handles, and a detachable, heavily padded shoulder strap, that comes in handy when you have to carry your Kaypro over a long distance. There is also a large interior pocket, perfect for transporting manuals and diskettes. The Coverman Kaypro carrying case is regularly \$79.95. Central is proud to offer this expertly constructed case at \$59.95. Please indicate your choice of color: gray-green, dark blue, or brown. All straps and carrying handles are black. You must be completely satisfied with your purchase of this handsome travel case or we will refund your money immediately. Order today.

Perfect Kaypro® Stand

Simple, strong, sturdy, safe. These words describe an attractive, angled stand that provides a perfect spot to place your Kaypro.



This stand is made from rounded, steel rods covered with a thick, shiny, soft, black polymer material that protects your Kaypro and table top from scratches. Unlike flat wood or acrylic panels used in other stands, the tough supporting rods of the Smart Stand (TM) do not obstruct air flow. In fact, since your Kaypro is lifted off the table top and gently angled by this stand, air rises up from under your computer, and flows freely through it to help keep it cool. When you're finished computing, you can slide the keyboard completely under the stand to create a working area on your desk. The Smart Stand is a super value at \$34.95. Try it for 15 days. If not completely satisfied, send it back for a full refund. Matching 80 or 130 column printer stands are only \$24.95. Order today to get the Smart Stand fast.

CENTRAL COMPUTER PRODUCTS

860 Central Avenue, Dept. 3A
Fillmore, California 93015
(805) 524-4189

Dear Central,

Please send me the items listed below. I want fast, friendly service. Don't forget to include my free 12 foot extension cord. I understand there is no charge for this cord if I purchase 2 or more items from these pages. My check, money order, or card no. is enclosed. Thanks.

Description **Price**

Kaypro Model _____ Sub Total _____

FIRM MONEY BACK GUARANTEE ORDER WITH CONFIDENCE	CA Resident 6% Tax _____
	Postage & Handling \$ 3.00
	Total \$ _____

Navy blue Royal blue

Send free catalog Send free 12 foot cord

Check enclosed Money Order enclosed

Visa/Mastercard # _____

Exp. Date _____ Sig. _____

Name _____

Address _____

City _____ State _____ Zip _____

Visa and Mastercard phone orders accepted. **Call toll free.**

To order by mail use coupon, letter, or photo copy. Thank you.

```

REM      Program to compute car mileage
REM
REM
VAR      more = CHAR
VAR      numcars = INTEGER
VAR      avgmpg, gas, miles, mpg, mpgsum = REAL
REM
REM      Initialize variables
REM
          avgmpg = 0
          gas = 0
          miles = 0
          mpg = 0
          mpgsum = 0
          numcars = 0
          more = 'N'
INPUT   "Any more cars? Y/N"; more
WHILE  more = 'Y' DO BEGIN
          INPUT "Total number of miles"; miles
          INPUT "Amount of gas used"; gas
          IF miles > 0 AND gas > 0 THEN BEGIN
              mpg = miles/gas
              numcars = numcars + 1
              mpgsum = mpgsum + mpg
              PRINT "Mileage is"; mpg; " miles per gallon."
          END
          INPUT "Any more cars? Y/N"; more
        END
IF numcars > 0 THEN BEGIN
          avgmpg = mpgsum/numcars
          PRINT "Average mileage is"; avgmpg
        END
        ELSE PRINT "No cars were processed."
END of mileage program

```

matical errors, correct them in the BAS file, and recompile the file until it compiles without a hitch. Run the program by typing the filename (with no extension). The tracer should help you find logical errors. Each time you change something in the original BAS file, you must recompile it to run the new version.

Once this program is running to your satisfaction (your standards may drop drastically as time drags on), erase the \$TRACE line and reap the benefits of your time and effort. Try not to get too discouraged during the first few programs. It *does* get easier.

Moving?

Address changes should be mailed to our Editorial Offices at least eight weeks in advance, and should include your mailing label. Send information to:

PROFILES Subscriptions
533 Stevens Ave.
Solana Beach, CA 92075

ENHANCE WordStar

with

P-r-o-p-o-r-t-i-o-n-a-l Spacing on WordStar

You are reading text printed by WordStar in proportional spacing, providing a professional, easy to read, typeset appearance, direct from the print command on any version of WordStar. Also print two or more columns on a page, underline spaces between words, and much more. Works with most letter quality printers (Diablo, Qume, NEC, Juki, Brother, C. Itoh, Silver Reed, others).

"The best and least expensive method of dramatically improving the appearance of any WordStar text" - LIST
Disk version (CP/M, MS/PC-DOS) *automatically* modifies WordStar \$75 including manual. Manual only (100 pages - with full details for implementing PS using Install) \$25. *No* technical skill is needed. Text can be right justified. Printer does *not* require PS logic. Prices include shipping in U.S. NYS add tax.

Okay! My check is enclosed for \$..... (or charge my VISA/MC acct # exp).

Writing Consultants

Suite 232, 11 Creek Bend Drive - Fairport, NY 14450
1-800-828-6293 (in NYS 1-716-377-0130)
phones open 24 hours - dealers please call or write

The Word Plus Connection

Streamlining WordStar to run your bundled spelling checker.

by Michael L. Yard

I've used many word processors, from a no. 2 pencil, complete with bitten-off eraser, to a number of sophisticated computerized word crunchers. And in spite of its quirks, I find I keep returning to WordStar.

So I finally decided to stop wasting my time (and dollars) exploring the multitude of other programs on the market. And instead of complaining, I'm doing something to make WordStar even more user friendly. A lot can be done with a guide to CP/M in one hand, a telephone in the other, WordStar manuals spread about on the floor, and a good dose of irritation at MicroPro for their unwillingness (or inability?) to answer questions about WordStar on the Kaypro.

One of my pet peeves has been the way you have to run The Word Plus to check spelling. The Word Plus really is a great little package. But, what a time consuming process it is to pick the No-File Menu's "Run a Program" option, type in "TW," wait for WordStar to load and execute the program, then type in the name of the document. (About this time I begin to wonder just what the name of that darn document *was*.) And, after The Word Plus has done an admirable job of correcting misspellings, more wasted time must be spent hitting "any key" to return to WordStar, and waiting some more.

There is an easier way, it turns out, for those of us who don't have or don't want to use Spellstar. A bit of tinkering will enable you to call The Word Plus directly from the No-File Menu. The key to the problem is in the overlay files. DDT's dump facility helped me to discover that the file WSOVLY1.OVR calls the SPELSTAR.OVR file. To make WordStar call The Word Plus instead, simply change a few of the hex numbers in WSOVLY1.OVR.

Begin in CP/M, and at the A > prompt, call up the DDT utility by typing **DDT WSOVLY1.OVR**. After the program introduces itself and gives you its hyphen-like prompt, follow the list below, typing in the entries shown in boldface and pressing the RETURN after each entry.

For WordStar 3.3 users:

DDT vers 2.2	2819 45 45	281F 4F 43
NEXT PC	281A 4C 57	2820 56 4F
8400 0100	281B 53 4F	2821 52 4D
-S2817	281C 54 52	2822 00 C
2817 53 54	281D 41 44	?
2818 50 48	281E 52 2B	-C

SAVE 131 WSOVLY1.OVR

For Wordstar 3.0 users (the memory addresses are slightly different in the earlier version of the program):

DDT vers 2.2	2816 45 20	281B 52 20
NEXT PC	2817 4C 20	281C 4F 43
8900 0100	2818 53 20	281D 56 4F
-S2814	2819 54 20	281E 52 4D
2814 53 54	281A 41 20	-C (Ctrl-C)
2815 50 57		

SAVE 136 b:(or c:)WSOVLY1.OVR

Now you should be back in CP/M, with one last detail to take care of. Rename the file TW.COM to THEWORD+.COM (by typing in **REN THEWORD+.COM=TW.COM**), and you have yourself a new, improved Word Plus connection.

For a trial run, first make sure you have a text file accessible (switch your disks around if you have to), and then call up WordStar. At the No-File Menu, hit "S" for the Spellstar option. Instead of telling you there's no such file aboard, WordStar should by now be friendly enough to ask the name of the file to check. Type in the name of the text file—and after a few short whirs of the disk drive, The Word Plus will be up and running.

Now, when you want to run The Word Plus on a file you've just been editing, you need only enter R when it asks for a file name. And when you have cleaned up all the typos and misspellings, hit RETURN and voila—WordStar No-File Menu appears, without having to read and respond to "Hit any key . . ."

No more waiting, no more chewed pencils. □

Data Acquisition Made Easy

Bundled software cleans up the lab.

by Julie Knott and David Prochnow

Instantaneous communication using computers is rocking the scientific community. The advent of mass printed media has made it possible for a discovery made in Lincoln, Nebraska to be studied the next day by a student in Bonn, West Germany. As a result scientists can rapidly disseminate their most recent findings among their colleagues for virtually spontaneous debate. But more serious is the impact created on the laboratory environment by the tidal wave of printed materials that arrives daily.

Until recently, laboratories have been trademarked by overflowing cabinets, shelves sagging under the weight of accumulated reports and papers, and desk drawers bulging with uncompleted correspondence. Place a personal computer in charge however, and voluminous stacks of data can be contained in only 1/100 of their original physical space. As a matter of fact, the only clutter remaining in the new "computerized" lab might be a box or two of floppy disks!

Software such as WordStar and the integrated Perfect series can serve essential functions in handling the paperwork of a laboratory before it reaches an unmanageable state. Because after the paperwork starts rolling in, if you don't transfer to a computer quickly, you'll have to develop a fondness for paper cuts.

The Perfect solution

Three major activities confront every scientist: data acquisition, data processing, and data management. Many times the researcher will avoid the purchase of a personal computer because it fails to satisfy all of these requirements. Luckily for the Kaypro owner, this is not a problem because of the included selection of bundled software.

Beginning with word processing, there are the obvious, almost mundane, applications such as article preparation for journal submission, as well as keeping up with the general laboratory correspondence. Although WordStar is popularly accepted as the industry standard, one may still choose Perfect Writer because the Perfect software series is integrated. You can then make use of files developed with the other Perfect component packages. For example, files could be created with Perfect Filer that contain cross-referenced file cards, specimen inventories, and address labels. Information from any of these files could then be intermixed within the text of a Perfect Writer file during the preparation of a report. Or, the file's database could be scanned and the disposition of a particular reference easily determined.

To illustrate this latter feature, we will use a subject that we researched in our academic days, the phylum Tardigrada (microscopic invertebrate animals sometimes called "water bears"). With very little effort, we designed a file card template for Perfect Filer. It contained the journal article's title, author's name, and if we had a copy of it in our files. Here is a sample printout from this database:

MORGAN, C.I. 1977. Population Dynamics of Two Species of Tardigrada, *Macrobiotus hufelandii* (Schultze) and *Echiniscus (Echiniscus) testudo* (Doyere), in Roof Moss from Swansea. *J. Anim. Ecol.* 46: 263-279 XEROX.

In order to simplify our data entry, we elected not to use underlining on scientific names and journal titles.

We could, of course, just go over to our file cabinet

WORK SMARTER - NOT HARDER

WITH THE SMART-CARD™ MANAGEMENT SYSTEM*
FROM EXEC-U-PLAN™

GET MORE DONE IN LESS TIME
Control 20-50—even hundreds of projects at a time with the smartest, easiest, most flexible method ever developed for planning and monitoring activities, schedules, appointments, performance, details and deadlines. The SMART-CARD Management System helps busy executives accomplish more in less time—by freeing the mind's memory banks and thought processes to focus where it counts! No matter how well organized you are, The SMART-CARD Management System will give you a better return on your time investment. **We guarantee it!**

CONTROL HUNDREDS OF PROJECTS WITH COMPUTER-LIKE EFFICIENCY

The SMART-CARD Management System is designed to function in many ways like a personal data processing center, but, with much greater flexibility and ease. Simply record all important information directly onto color-coded SMART-CARDS. Then insert them in the system's exclusive see-through panels—for visual control of hundreds of entries at-a-glance. Merge cards into the system after or priorities change. Retrieve information instantly. The SMART-CARD Management System's unique features and six special purpose cards help you plan and manage more effectively than ever before.

QUALITY CRAFTSMANSHIP

Individually crafted of the finest genuine leathers or rich leather grained vinyls, each SMART-CARD System comes personalized with your name or initials on the cover. Take the handsomely styled, highly portable EXEC-U-PLAN System with you to meetings, on business trips, or for a more productive daily commute.

WORKS FOR EVERYONE

Available in three styles to satisfy a wide range of needs and preferences, The EXEC-U-PLAN SMART-CARD Management System is ideal for all executives and professionals. With the system you're always so well organized, the time you save won't just be your own—it will increase the productivity of everyone around you. So, to Work Smarter, Not Harder, put the remarkable new EXEC-U-PLAN SMART-CARD Management System to work for you, and those around you, today!

***PATENT PENDING**

SPECIAL BONUS

Now—for a limited time only—receive a handsome, matching Pocket Organizer **FREE** with any model shown at left. This compact tuck-away version of the SMART-CARD Management System puts key data in your pocket—and lets you easily make new entries on-the-go. Retail value \$15.00.

**CREDIT CARD ORDERS
PHONE TOLL FREE**

1-800-USA-0700

OR WRITE: **EXEC-U-PLAN™** DEPT. 32

31-17 QUEENS BLVD., LONG ISLAND CITY, N.Y. 11101

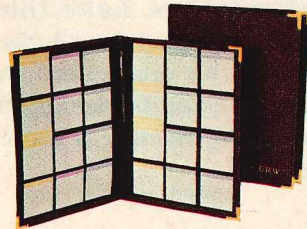


DELUXE

Our most popular model

- Manages 288 projects—72 SMART-CARDS per side. Expands to 1440 w/purchase of extra panels
- 750 asst'd SMART-CARDS
- Color-coded signals
- Name or initials on cover
- Pen, tablet and business card storage
- Deluxe lock Plus the SMART-CARD Management System Manual

Leather grained vinyl **\$44.50**
Genuine leather **\$84.50**
Plus \$4 shipping and handling

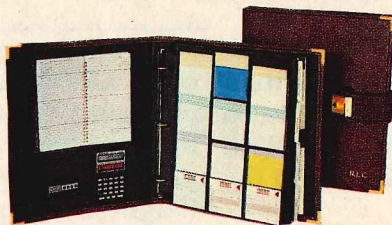


THE TRAVELER

Our streamlined model

- Manages 144 projects
- 500 asst'd SMART-CARDS
- Color-coded signals
- Name or initials on cover
- Pen holder Plus the SMART-CARD Management System Manual

Leather grained vinyl **\$27.50**
Genuine leather **\$52.50**
Plus \$4 shipping and handling



SUPER DELUXE

Our premier model

- Manages 576 projects: 4 panels—72 SMART-CARDS per side. Expands to 1440 w/purchase of extra panels
- 4 tabbed dual pocket dividers
- 1,000 asst'd SMART-CARDS
- Multi-function calculator
- Digital time piece and alarm
- Calendar-phone-address book
- Color-coded signals
- Name or initials on cover
- Pen, tablet and business card storage
- Deluxe lock Plus the SMART-CARD Management System Manual

Leather grained vinyl **\$105.00**
Genuine leather **\$155.00**
Plus \$4 shipping and handling



All Models Available in:

LEATHER GRAINED VINYL

Chestnut Brown (dark), Willow Brown (medium), Black, Burgundy and Natural Tan Suede.

GENUINE LEATHER

Black, British Tan and Burgundy.

SATISFACTION GUARANTEED

If for any reason you are not completely satisfied with your EXEC-U-PLAN SMART-CARD System, simply return it within 30 days of purchase for a full and prompt refund.

Add \$7.50 per model for shipments to Canada, Alaska, Hawaii and Puerto Rico, \$12 to Mexico and \$18 to all other countries. Copyright 1983, Executive Management Systems, Inc. U.S. and International patents pending, EXEC-U-PLAN™, SMART-CARD™, SMART-CARD Management System™ and the products named herein are trademarks of Executive Management Systems, Inc.

and see if we had a file folder containing the Morgan paper, but computerizing the process lets you do more than simple retrieval. Perfect Filer allows each record to be made up of numerous fields. In our case, we made a name field, a year field, a title field, a journal field, and a status field (Xerox, reprint, etc.). Therefore, we are able to make a custom printout under any field that we specify. Additionally, we have target words in each article title that form another field so that lists relevant to our current needs can be generated on demand.

Profitplan in the lab

Perfect Filer could be used for the immediate logging of specimen names or the referencing of important papers, but these activities are only pale examples of true data acquisition. Real data acquisition is the inputting of large volumes of figures (such as experimental data) that can be later interpreted through managerial or processing techniques with potential meaningful results.

The word to remember here is "meaningful." Unless you take care during the data acquisition stage, you jeopardize all subsequent results and also run the risk of having to repeat experiments. With just a little effort, Profitplan can be adapted to the data acquisition role.

Whereas most people feel that an electronic spreadsheet must be used only for entering columns of actuarial data, Profitplan can complement the Perfect series. (Perfect Calc could also be adapted to this scientific data handling role, but the techniques would have to be modified.) Profitplan can be custom designed to accept data for population dynamics studies or for relational changes examined over time and space. The key is in establishing the appropriate formula for each spreadsheet cell.

One of the tardigrade projects that we worked on was a study of population densities on moss cushions at different heights on tree trunks. In this study, numerous parameters had to be monitored throughout the research period. Profitplan was easily structured to accommodate each of these parameters. It also offered an alternative to a process that normally consumes great quantities of the scientist's time—projections. Just as a company's financial report can be projected over the next quarter, we were able to predict what our population densities would be over a number of months. Valuable data was obtained when these projections were compared with their real life counterparts.

For most scientific Profitplan applications only two commands and three options will be necessary to create a data acquisition spreadsheet. If you need

to use formulas to manipulate raw data, the FORMULA and PLUG commands will automatically calculate the final figures for any data you enter. In our population study, this allowed us to have an immediate mean and median computed in regards to tardigrades versus other invertebrates for each moss sample.

However, if your data changes at a fixed rate or requires the addition of a single value, the CONSTANT, GROW, and INCR option can provide meaningful results. Briefly, CONSTANT will enter the same value for an entire row or column. For example, if you always use the same sample size, CONSTANT

*With just a little effort,
Profitplan can be adapted to
the data acquisition role.*

saves time by filling in all sample size entries at once. GROW uses an increasing percentage for changing the value of an entry. Finally, INCR will increase or decrease a base value by your specified amount. Since in our study, each moss cushion height on a tree trunk was always on a fixed, increasing basis, INCR adjusted our template accordingly.

Another command which further increases the ability of the projection is CHANGE. Using CHANGE you can selectively alter a given parameter and then record the actions of the other factors. Later this action can be experimentally duplicated and the results compared with those of the projection. In this way, a more accurate template can be designed and scientific prognostication will become a more reliable factor in the laboratory.

WordStar and the rest

Even though Perfect Writer has the value of being a member of an integrated software package, WordStar deserves close attention too. More and more frequently, publishers of books, magazines and scientific journals are accepting final manuscript submissions on WordStar formatted floppy disks. Because of its increased ease and versatility in formatting, use of WordStar text-files has become widespread. In addition, the WordStar non-document mode does provide access to files created with Profitplan software. While this is not true integration, at least it is a step in the right direction.

Not to be overlooked among the Kaypro bundled
(continued on page 74)

Mycroft Labs and Kaypro® Announce

A Super Deal on a Suprterm Replacement

The \$150 MITE Communications Package for \$20.
Exclusively for Owners of Kaypro's Suprterm!

Kaypro Corporation has chosen Mycroft Labs' **MITE**, the full-featured data communication package, for bundling. For a limited time, Mycroft Labs has agreed to sell current Suprterm owners a copy of **MITE** at a substantially reduced price. Each Suprterm owner will be allowed to purchase one copy of **MITE** at the reduced price of \$20.00 + \$2.50 postage and handling. Some of **MITE**'s features are: automatic logon to popular information services, supports multiple protocols, transfers files at speeds greater than 1200 baud without losing characters, supports most popular auto-dial modems, provides interactive HELP and has a flexible script/batch file capability.



If you want a great deal on a full-featured data communications package for your Kaypro, fill out the coupon **TODAY** and mail it with your check to Mycroft Labs at the address below.

Mycroft Labs, Inc., P.O. Box 6045, Tallahassee, FL 32314

Yes, I would like to upgrade my copy of Suprterm to **MITE**.

Enclosed is **\$22.50** (which includes shipping, or \$24.00 for COD orders).

Kaypro computer serial # _____

Name: _____

Company: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Phone: (_____) _____

Signature: _____

**MYCROFT
LABS INC**

Phone: (904) 385-1141

Payment Method

Check

COD

VISA

MasterCard

Card # _____

Exp. Date _____

SUNRISER CRUNCH™

A GENERAL PURPOSE DATA ANALYSIS PROGRAM

PROGRAM FEATURES:

Large spreadsheet - up to 100 columns by 64k rows • Menu driven for ease of operation • Separate, unlimited equation files • High resolution printer graphics • Word processing/data merging.

PROGRAM USES:

Stock and commodity analysis • Scientific experimentation • Any tasks requiring a spreadsheet • Any tasks requiring data plots • Maintaining mailing lists • Producing customized letters and many more!

6 EXAMPLE FILES:

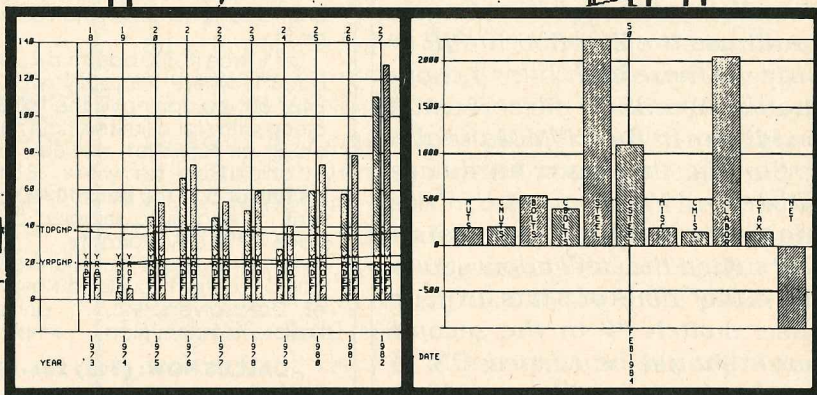
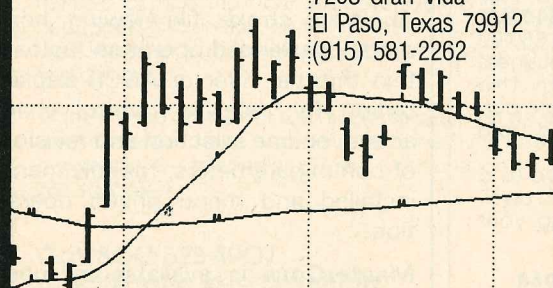
Financial market analysis • Company sales • Federal debt projection • Legendre polynomials • Mailing lists • Checkbook

This integrated software was written in assembly language for fast program execution. All program and example files are on one disk.

ONLY **\$149**

Specify computer and printer when ordering from:

SUNRISER CO.
7208 Gran Vida
El Paso, Texas 79912
(915) 581-2262



XXXXXXXXXXXXXXXXXXXX		XXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXX	
	X						X
1 2 J U 1 8 2	2 6 J U 1 8 2	0 0 O O C C 2	2 0 O O C C 2	0 0 O O C C 2	2 0 O O C C 2	0 0 O O C C 2	4 0 O O C C 2

BDOS ERR: BAD SECTOR appears. After formatting I get bad sector error messages when verifying the disk. **FINDBAD** won't help because there are too many errors. However, when I get lucky everything written on the disks is readable. Could it be the disks? Is it the machine? The program?

Another problem I have with my 10 is the graphics. About 3 weeks ago it wouldn't draw lines. Inverse video, blinking, underlining and reduced intensities, but not the graphics. What's wrong?

Thirdly, because I live in Mexico I can't join in the fun with bulletin boards. How can I get free software and everything else without high phone bills?

John Taylor
N.C. Grandes, Mexico

Your solution is a trip to your dealer! The formatting problems may indicate trouble with your floppy disk drive, which is way beyond the scope of this column.

It's possible you can solve the disappearance of your graphics by running PUTOVL. Try it before you go to the dealer with your machine.

Finally, check the advertisements in this issue. Several offer disks with public domain programs, not for free, but at nominal cost.

Reconfig confusion

Can you send me prices in connection with the CONFIG utility program designed to change my numeric and cursor keys into a set of dedicated function keys? Can CONFIG be used on non-Kaypro computers?

Mrs. Norbut Reuben
East Rockaway, New York

CONFIG is a utility program that comes with your Kaypro computer—it's on the CP/M diskette. And no, it won't work on non-Kaypro computers, although other computers may come with similar programs.

There are several commercially available keypad and keyboard configuration programs that will run on the Kaypro and other computers. See Susan Hyman's review in the March/April issue, and check the advertisements in this and other magazines. □

ANNOUNCING FULL DISKCLOSURE

We couldn't figure where to draw the line. So we invented a new one. Full Disclosure: Spite's new catalog on a disk.

Full Disclosure gives you all the technical information a print catalog can't—without taking any short cuts on the brief, clear, simplified explanations you've come to expect. It's menu-driven; you find what you want immediately. It tells the whole story;

you control the level of description detail. It's automatic; ordering is as simple as pressing a button.

Check out Full Disclosure, view our product line at your convenience, and, as a special bonus, receive a free program that defines function keys. Full Disclosure \$2 postage & handling or free with any order. If ordering only Full Disclosure, please use order form.

THE WRITE STUFF

■ **Writer's Aide.** From counting words to encrypting files, Writer's Aide gives word processing users seven menu-driven utilities programmed to get the most out of WordStar. Attorneys will appreciate its line numbering function. \$39.95.

■ **SuperDex.** Designed for writers, SuperDex indexes files created with WordStar and features full-screen, in-context display. \$59.95.

■ **Getting the most from WordStar.** This book addresses everything MicroPro doesn't, saving WordStar users the trial and error of self-discovery. \$14.95.

DOLLAR SAVERS

■ **Meal Calc.** A cook's dream, this meal planner is programmed to help you save money, lose weight, and spend less time in the kitchen. It proportions recipes, plans menus, prints shopping lists, and counts calories. \$29.95. Disk with 100 recipes, \$9.95.

■ **Disks.** Unlabeled SSDD production overruns from a well-known manufacturer. Our price is so competitive, many software houses buy from us. Minimum order 100 disks @ \$1.20; order 1200 @ \$1.10.

ORDER FORM

Name _____

Address _____

City _____ State _____ Zip _____

Check Visa MasterCard COD

Card No. _____ Expires _____

Item _____ Cost _____

Postage & Handling \$2.00

Spite Software **Total \$** _____

Dept. PF2
13531 SE Foster Place
Portland, OR 97236

Technical Questions? Call 1-503-224-0137
Order Now Toll Free 1-800-824-7888
In Alaska and Hawaii call 1-800-824-7919
Ask for Operator 311



FOREIGN TONGUES

■ **Turbo Pascal 2.0.** Jerry Pournelle called this Borland International compiler "The Buy of the Show" at the West Coast Computer Faire. We call it fast—1200 lines in less than a minute—a snap to debug, a superset of the Jensen & Wirth standard, and a bargain at \$49.95.

■ **C/80 3.1.** Byte gave this Software Toolworks compiler its "Fastest Execution" rating. Ditto from *Microsystems*. The powerful "C" language implementation is \$49.95. Floating point and long arithmetic is an extra \$29.95.

■ **Simply dBase.** This instructional manual shows how to adapt dBase programs to suit your needs. \$9.95.

FREE GIFT

Buy two or more products and receive **free:**

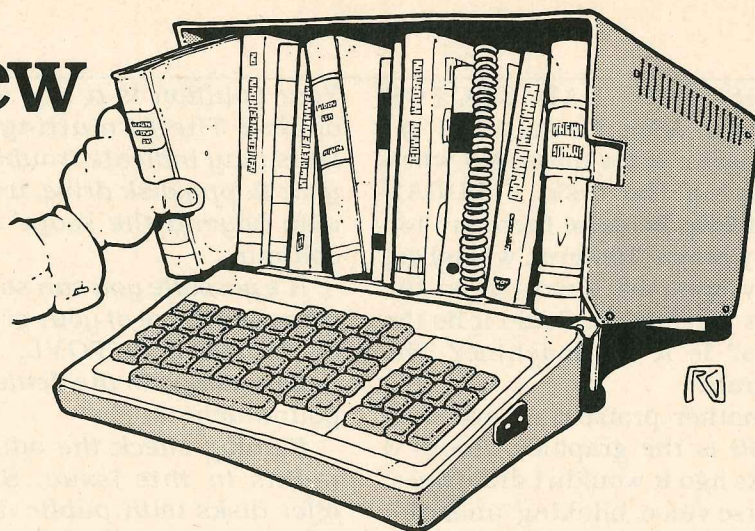
■ **Disk:** The Greatest Hits of the Public Domain, or

■ **Stick-on key top labels** for WordStar, New Word, and dBaseII.

Writer's Aide, SuperDex, Meal Calc are TM of Spite Software, Turbo Pascal is TM of Borland International; WordStar is TM of MicroPro Intl; C/80 is TM OF Software Toolworks.

Book Review

Computers, Education and Special Needs



Reviewed by Roy Katz

In the early and mid-sixties, teachers were putting up their barricades against the invasion of the so-called "teaching machines." Yet today teachers and administrators are welcoming personal computers as a long overdue addition to their classrooms. However, as E. Paul Goldenberg, Susan Jo Russell, and Cynthia J. Carter point out in their new book, *Computers, Education and Special Needs*, computers are only a tool, and they "do not want the computer to be any more focal in the classroom than a blackboard should be. Good teaching is done by good teachers. Tools are merely tools."

This book was written primarily for teachers and administrators who are responsible for students handicaps and learning disabilities. However, it will also be of interest to parents of these children as well as other individuals who are concerned with improving educational opportunities for all children. The book emphasizes that the major problem lies not with computer technology which is here and now and widely available. Rather, they maintain the real problem is "a matter of social and political will."

While this book covers a broad range of topics that explain how computers and software are helping children with a variety of learning disabilities, its main fault is that it tries to cover too much material. In many cases, it touches upon subjects all too briefly and superficially before moving on to the next subject. A little more depth and substance would have been greatly appreciated.

The book's most comprehensive section discusses various methods of using computers to teach mathematics. It describes several new software packages which have been developed to enable handicapped students to learn and do different types of mathematics. One of the most intriguing programs is SemCalc, which is short for "Semantic Calculator." Functioning as a type of "mathematical word processor," SemCalc helps students keep track of various steps and mathematical information, such as different quantities, that are required to do multi-step algebra and other advanced mathematics. (Available from Sunburst Communications, Room M-5, 39 Washington Ave., Pleasantville, NY 10570.)

This program allows stu-

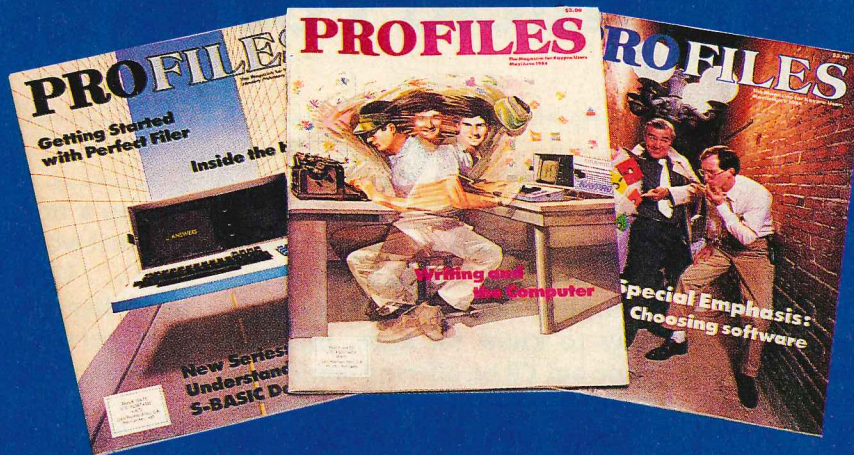
dents to record the information on their computer and "focus on the reasonableness of their results in relationship to the original problem," the authors explain. They add that SemCalc "does not tell the user whether the answer is right or wrong, or even if it is reasonable. These are judgments the user must make for herself. Instead, SemCalc acts as an electronic scratch pad which makes it easier for the student to make those judgments."

About CAI

The book includes several timely warnings which should be seriously considered by teachers and administrators before bringing computers into their classrooms. The first is that computer-student interactions can be dull, unimaginative or not challenging enough. Therefore, the book warns, "The role of the teacher remains critical in selecting, matching and integrating computer experience into the curriculum. The computer not only doesn't replace the teacher, it demands the same hard work of observing, questioning, leading and supporting in a new and unfamiliar domain."

They also emphasize that the "use of a computer is not the solu-

MORE IS BETTER!



PROFILES is growing...

from 6 to 10 issues per year. Eight monthly issues plus 2 big double issues means you get 10 issues a year – giving you more information on your Kaypro more often.

- In the past, PROFILES has offered information (unavailable elsewhere) on WordStar, S-BASIC, and the Perfect Software packages. In the coming year we will be adding coverage of dBASE II, MS-DOS, and other software.
- PROFILES' columns announce and review new products. They also offer insights into making the most of your purchase.
- Unlike other magazines, PROFILES is specifically dedicated to your needs as a Kaypro owner.
- PROFILES' advertisers are concerned with your needs as a Kaypro owner.

RENEW NOW!

The rest of this year will see issues focusing on education, telecommunications and business applications. Don't miss an issue!

For a limited time we are offering a special renewal rate of \$21.00 per year (10 full issues). This is a savings of 40% off the cover price.

(You can save even more by enclosing your payment of \$21.00 with the attached card and receive an 11th issue absolutely free!)

Technical Forum

by Tyler Sperry

In keeping with the theme of education, this time out we're going to look at where you can go for the answers. This column will be a break from tradition; this time out we not be dealing with the failings of S-BASIC, Kaypro documentation, Perfect Writer or Perfect Filer, the internal workings of the serial ports or even the video circuitry on the newer Kaypros. What we are going to deal with is how you, as an independent Kaypro owner, can get a little more proficient at solving your technical problems without the delay of waiting for Technical Forum to discuss them.

In the beginning

When I started this column, it was with the idea that some of our more technically minded readers would be able to help other readers out of difficulties that the various software/hardware concerns wouldn't, or couldn't, get around to. Alas, as the magazine has progressed, it hasn't worked out that way. As our readers have gotten more advanced, so have the questions. The answers haven't kept pace with the increased interest, however. Indeed, almost all of the helpful responses consist of answers to one or two questions about the peculiar behavior of Perfect Writer.

Now there *are* many technically advanced readers out there who are solving problems with the Kaypro, and a few of them do occasionally drop us a line with a suggestion, but generally the mail bag is pretty slim picking for answers. (There seems to be no shortage of questions.)

My suspicion is that, given the right tools, many of you could develop into valuable Kaypro technical resources. There is no way to know for sure, but this time out I'll be offering some suggestions of where you can get the background information you need to start solving problems.

First lesson

This is bound to be misinterpreted, but I don't know how else to phrase it honestly: don't expect a lot of help from either *PROFILES* or Kaypro Corporation. This is not a matter of "wimping out" on Kaypro owners; it is a matter of numbers. Right now there are well over a hundred thousand Kaypro owners, and perhaps two-thirds that many *PROFILES* readers.

PROFILES currently has one Technical Editor. Now Tom Enright is certainly competent, but he is only one man and his primary job on the magazine is writing articles and checking the accuracy of submissions. And don't forget the inquiries we get for the Q & A section. Tom certainly has more than enough work to keep him off the streets.

While the numbers aren't as bad for the Technical Support staff for Kaypro Corporation, they are still pretty bad. We often give out the number at the top of the Q&A column to callers, but the number of callers keep the phone lines busy all day. And when all of the folks in Tech Support are talking to callers, all you get is a busy signal.

(Now that they've fixed the phone system. There was a time when, if all the phones were in use, the next call was switched

over to a non-existent extension, where it would ring, and ring, and ring . . . Until that person hung up in disgust—at which point the next person would be switched . . . well, you get the idea.)

The other channels

So where can you go for good, solid technical information? Well, it's not the same with dealers as with Kaypro Corporation—the ratio of customers to dealer support gets down to a rational number—but there are a few problems with that route. Remember that most of the dealer's staff will be people who have perhaps a six-month lead on you in experience. That is, after six-months to a year, you will probably be as competent with the bundled software as the salesman. Now you might be able to get access to the store's technician once or twice with questions, but it won't take too much of this sort of attention before you have used up your good will with the dealer. (Contrary to popular belief, good will is a two-way street.) A friendly dealer can often keep your problems in the reasonable range of Advice instead of Consulting or Repair, if you establish a good rapport.

When you think about it, with the number of different programs packaged with the Kaypro and their sophistication, it might well be unreasonable to expect expert help from anywhere but the software company. Telephone support from software companies—with some rare exceptions like Oasis Systems—has at least as many problems as telephone support from Kaypro Corporation. Even the most reputable software

companies take pains to point out that their support efforts are not the same thing as free training. By extension, unless you have carefully documented where/how your problem occurs, and *have carefully read the manual*, most software companies will assume operator error. And in some cases they'll be right.

Unofficial channels

So, once you have tried your dealer and Kaypro's Technical Support and, if applicable, the software manufacturer without result, what do you do next? (We're assuming that you haven't the three months it will take for a speedy *PROFILES* reply.) If all else fails you could try a user group. Many groups already have volunteers who act as coordinators of useful information. Often you will find out that someone else in your users group has already faced your problem and either a) has a nifty solution, or b) has confirmed it is really a bug, or c) is in the same boat you are.

Actually, I probably don't have to dwell on Kaypro User Groups: most of our readers seem to have noticed Richard Conde's column by now. If you haven't joined a KUG, and want to, then contact Richard at the address elsewhere in this issue and he will be happy to send you the address for the KUG nearest you.

The last resort

When all else fails, including the reading of the manual, you might consider fixing things yourself. Obviously there are some bugs in programs that no amount of experimentation will fix because the problem really *is* a bug. And likewise there are intermittent electronic problems that will crop up that only an experienced (and patient) technician will be able to

crack. In between these two extremes, there is huge number of problems that require only knowledge for their solution.

The disadvantage of this approach to solving problems with your Kaypro is that, at first, you'll be living with the constant fear that you're getting in over your head. Of course, you might indeed be getting in over your head, but history is full of people didn't realize their problems were insoluble until after they had solved them. (In fact, one or two software companies have started in just that fashion.)

On the off chance that one or two of our readers might want to gamble on success, here are some suggestions for further reading:

On the subject of Perfect Writer, without a doubt the best "under the hood" book is Kris Farry's *An In-Depth Look At Perfect Writer*, available for \$19.95 from Win-Com Publishing, Box 106, Waynesville, OH 45068. If Kris every writes a book about Perfect Filer, it will certainly be worth getting.

With regard to S-BASIC, the pickings are slimmer. The **only** book I am aware of is a tutorial called *Programming With the S-BASIC Compiler* by Sven Erlandsson. It's a good look at programming with the MBASIC programmer in mind. I'm sorry to report that I don't have a price for this one, but you can contact the author for details: Sven Erlandsson, 3268 Leon Brisebois, Ile Bizard, Quebec, Canada, H9C 1W2.

If you want to get deep into the heart of CP/M and BIOS-hacking, there are a lot of good books around. The only caution I would offer is that generally the copy editors on computer books aren't electrical engineers or programmers: it's not uncommon to find

(continued)

YOU'LL NEVER HAVE POWER PROBLEMS AGAIN.

Introducing the GAMMA Power System I D.C. Uninterruptible Power Supply from GAMMA RESEARCH, Inc. of Southern California. With the GAMMA Power System I you will never experience the "crash" due to transients, surges, spikes, sags, brown-outs or blackouts ever again.

- Complete under/over voltage protection.
- Minimum one hour of reserve capacity power.
- Fully portable; weighs under 10 pounds.
- Reduces internal heat up to 70%.
- Operates and charges from any 12 volt power source.
- Supports Kaypro II, IV and 10.

12 month limited warranty.
See your computer dealer or contact us directly. Dealer inquiries invited.

GAMMA RESEARCH
6253 Hollywood Blvd. #1129
Los Angeles, CA 90028

(213) 463-2345

\$125 ea. or \$395 Set of Four

ACCOUNTING FOR MICROS

ACCOUNTING FOR MICROS is a set of interactive accounting programs which meet professional standards. Programs are fast and easy to use, with complete and concise documentation. Slipcase and binder manual also includes valuable tutorial information on bookkeeping and general small computer use. Written specifically for small business, our software can take care of your record-keeping so you can take care of your business.

GENERAL LEDGER \$125

Allows up to 1,000 accounts & 1,000 transactions/month. Retains mo/end balances for Last Year, This Year and Forecast. Includes Cash Disbursements, Cash Receipts and General Journals. Reports include Balance Sheet, Income Statement, Annual Summaries and Journal Reports.

ACCOUNTS RECEIVABLE . \$125

Allows up to 2,500 customers and 1,000 invoices per month. Invoicing can access Inventory Module. Keeps customer names and addresses. Invoice prints on plain paper or any preprinted form. Statements can be printed at any time.

ACCOUNTS PAYABLE \$125

Allows up to 500 vendors and 600 invoices/mo. Records invoices and handwritten checks. Prints computer checks on any preprinted form. Keeps vendor names and addresses.

INVENTORY \$125

Allows up to 5,000 parts. Keeps 3 month history of unit sales as well as year to date. With AR, can be used as point of sale system (prints invoices, handles cash). Reports include Inventory Value and Stock Report, Internal and Customer Price List.

COMPLETE SET \$395

JAMES RIVER

Group Inc.

125 N. First St. Minneapolis, MN 55401 (612)-339-2521

DEMO DISK \$18.00

Try all 4 programs — order our DEMODISK for \$18.00 (includes shipping). Condensed versions of the programs will give you the “feel” of both data entry and access. Includes sample reports and instructions. Also includes “ACCOUNTING FOR MANAGERS”. Is it a credit? Is it a debit? Read and find out.

RUNS ON MOST CPM AND MSDOS MACHINES:

IBM PC, XT, PCjr	Columbia
Kaypro II, 4 and 10	Compaq
Morrow MD2, MD3, MD11	Corona
Osborne I & Executive	Sanyo
Xerox 820 5"	Eagle
TeleVideo	Cromemco
Epson QX-10	Otrona
	Others

Available direct, from computer dealers, and some B. Dalton bookstores.

ORDERING: Please specify machine and density. Send check or money order, or use your VISA or MASTER-CARD (Please supply expiration date as well as account number). Price includes shipping (MN residents add 6% sales tax). Your order will be shipped by return mail. C.O.D. add \$2.00 per order.

TECH FORUM

typos in the included programs.

As a general rule, we don't get much into hardware in *PROFILES*, but you could do a lot worse than reading books by Don Lancaster. His *TTL Cookbook* and *CMOS Cookbook* (both books from Howard W. Sams & Co in Indianapolis, IN) are a little dated, but are still better than the other books around for learning about logic ICs from the standpoint of an experimenter.

(And while we're at it, you might look for a copy of his *The Incredible Secret Money Machine* (also from Sams.) It is a great book, on all counts, if you are considering starting up your own small technical business.)

And finally, there are the magazines. Anyone interested in Kaypros should check out *Micro Cornucopia*. (I have the word of one our columnists that it's the best magazine around.) Not only is it a good magazine, but their ad also offers public domain software on disk for a reasonable cost.

Another good bet is *BYTE*, not so much for your immediate use, but for future reference. Many of the articles that *BYTE* uses will seem incomprehensible now and invaluable a year from now.

For solid tutorials, I would be hard pressed to recommend a magazine better than *User's Guide*. Tony Bove and Cheryl Rhodes have been putting this bimonthly magazine out for quite a while, and if tutorials on subjects such as DDT and dBASE II interest you, then this is the magazine.

For the experienced user, both *Dr. Dobb's Journal* and *Microsystems* have heavy duty technical articles on a regular basis. The major appeal of both magazines for *PROFILES* readers will be the columns on CP/M and Public Domain Software. □

Best Prices On

MODEMS (300/1200 baud)
US Robotics Password 375.00
Hayes Smartmodem 529.00

PRINTERS

LETTER QUALITY

Transtar 120 449.00
Transtar 130 579.00
Transtar tractor feed 139.00
Sheet feeder for 130 349.00
NEC 3500 series 1399.00

DOT MATRIX

Okidata Call
Smith Corona Call

We Pay All Shipping Charges
 Send M.O., Cert. Check or Visa/MC # to:

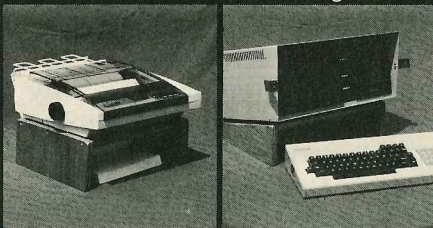
ALLEN COMPUTING
 5608 HIGHWAY 51 SOUTH
 SCHOFIELD, WI 54476
 (715) 355-1056

Wisc. Residents Add 5% Sales Tax

THE USER'S STAND

Why pay more?

\$22.95 small \$19.95 large \$22.95



- ★ Improves viewing angle to reduce fatigue
- ★ Not so high as to hamper hunt and peck typing styles
- ★ Beautiful hand oiled hard wood finish

User stand with small printer stand only \$37.95
 User stand with large printer stand only \$40.95

Call or Write

Ergo Systems
 P.O. Box 4007
 Malibu, CA 90265
 (213) 457-3011

CA residents Shipping and Handling
 add 6½% tax \$2.00 per item

There's Only One Client Ledger Program That's Complete!!

NEW!!

COMPLETE Bar graphs may be printed showing monthly activity in any account over the last fiscal year and the current year to date.

COMPLETE All employee, casual help and subcontract information required for printing quarterly form 941, ESA reports, form 1099 reports and W2 forms automatically.

COMPLETE Transactions may be posted to any prior period and all new financial statements for that period can be printed including comparative reports.

COMPLETE Comparative balance sheet and income statements may be run on any fiscal period up to the current period. Comparisons by month or year to date totals.

COMPLETE Simplified payroll postings up to 18 individual account postings to be added to the journal with as little as two keystrokes.



- Easy to use including instructional step by step cassette.
- No installation required.
- Program **guaranteed** to work as stated in manual
- All programs on the 400K disk.
- Several clients on one data disc. (average of 200K per client.)
- Written in d-BASE II.

COMPLETE

Available Only thru: MERIT SOFTWARE
1516 Monte Sano Ave., Augusta, Ga. 30904 • (404) 736-0941

JOIN THE K.I.P.S. GROUP

Kaypro Information, Peripherals & Software Group

Listings of Available Software, Including super low cost user group software, mail lists, accounting packages, custom application packages, etc., etc., etc.,

Custom Software Development*

Editorials, Articles & Periodicals
Newsletters - An absolute must for all Kaypro users

Including:

VIDEO MONITOR ADAPTER KIT *

Interface the Kaypro video output to any external monitor — Hooks up in minutes!

DISCOUNT SOFTWARE

LISTINGS OF ALL KNOWN KAYPRO SOFTWARE, GAMES, KNOWLEDGE, LEARNING AIDS, ETC.

DISCOUNT FIRMWARE

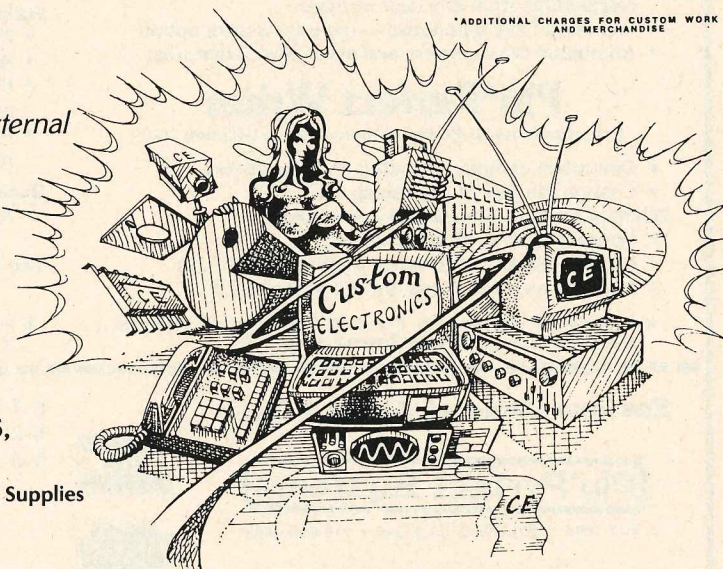
HARDWARE, BLANK DISKS, BOOKS, TEMPLATES, ETC...

**MODEMS, 8 INCH DISK ADAPTORS,
BLANK DISKS, CABLES, PRINTERS, DESKS,
MONITORS, HARD DISK ADAPTORS, ETC.**

Your One Source for all Kaypro Kits, Software, Peripheral & Supplies

ALL AT K.I.P.S DISCOUNT PRICES!

Year membership includes: Periodical mailings of Hardware and Software tips from users nationwide. ONLY \$14.95



CALL FOR SPECIAL DEALER-DISTRIBUTOR PRICING AND LOW COST ADVERTISING RATES

MAKE CHECKS PAYABLE TO: Custom Electronics • 3134 N. Palm • Fresno, CA 93704 • (209) 442-1816

FOREWORD

(Continued from page 17)

Plus would remind me that what I *really* meant to say was 'receive'.

The result? After two years of these patient, gentle reminders I am no longer embarrassed by my spelling. Because I no longer make mistakes in spelling. (Well, at least they're rare enough now that I call them typos.)

Now, understand that I didn't start using the program to learn to spell, and my friend Wayne doesn't promote The Word Plus as an educational program, and probably not everyone will find the use of his program as effective as I have. Still . . .

The point is that many people learn best from a non-traditional school. Some kids will take to MBASIC in public school, others will discover geometry at home through TLC-Logo on their Kaypro, and some might even

learning accounting by playing with a spreadsheet. The one thing that all of us share, as Kaypro owners, is a Continuing Education workshop that opens for business every time we flip the power switch. The very aspects of personal computers that make it difficult to integrate them with traditional schooling methods also create new learning opportunities in other quarters.

In times when the popular media consists of such mind-boggling intellectual exercises as diet books and romance novels (let's not even discuss television, thank you) it can be a comfort to know *your* mind, at least, hasn't turned to mush. So the next time you feel like shredding your User's Manual in exasperation, consider that a certain amount of frustration is a natural part of the learning process. And learning

something new is a good way to stay awake. Even on Monday mornings. □

Enhance Your KAYPRO®

CP/M 2.2E

Enhancements for the CP/M operating system

- FASTCOPY. Much faster copy and format operation for single and double-sided disks.
- PUBLIC FILES. Access one copy of your program and related files from any user number.
- Improved TYPE command — includes a print option.
- Automatic drive search, and other useful features.

Plu*Perfect Writer

Enhancements for Perfect Writer versions 1.03 and 1.20

- One touch commands, using any keypad key.
- Change the size of your swap file.

While editing, with new PW commands:

- Obtain a built-in directory listing
- Change disks • Change user number (1.20)
- Set page size and move around pages (1.20)

★ Available for Kaypro II (2), 4 and 10. Enquire about installation procedure on Kaypros with Drivetec drives.

The Backgrounder

— with definable keys —

Suspend any program to:

- Print the screen • Write a background file
- Use a Help key • Use any built-in CP/M command

Fully definable keys:

- Every key is redefinable — up to 255 characters
- All regular keys are still available
- Create and save definitions while running a program
- Automatically load customized definitions for each program

Background printing:

- Print files while running programs.

The Backgrounder — It's like having a second computer! (requires CP/M 2.2E)

★ Previous customers: send original disk plus \$5 to upgrade to latest versions.

See Your Dealer or Purchase Direct

Plu*Perfect Systems

BOX 1494 • IDYLLWILD, CA 92349 • 714-659-4432

(Orders outside N. America, \$5 shipping per disk. Any checks should be drawn on U.S. bank.)



K-1 Plu*Perfect Writer & CP/M 2.2E	\$39	_____
K-2 The Backgrounder	\$45	_____
K-3 CP/M 2.2E	\$32	_____
Deduct \$5 if ordering 2 or more disks		_____
Subtotal		_____
California sales tax (6%)		_____
Shipping & handling		3.00
TOTAL		_____

Trademarks: The Backgrounder (Plu*Perfect Systems), Kaypro (Kaypro Corporation), CP/M (Digital Research), Perfect Writer (Perfect Software).

LITERACY

(Continued from page 32)

(This is what is not necessarily a good thing. Think about it. How about the *Grapes of Wrath* game? The *Moby Dick* game? What would be the point of reducing a painstaking work of prose to the situational: "You are Ishmael. Your challenge is to get on board the Pequod, kill the white whale and get back to port before Crazy Cap't Ahab sinks the ship!"? The answer: one can only assume there is money to be made. One can only infer that a youngster who will not, or cannot, read *Moby Dick* might be enticed to play it—though it can only provide the spectacle and none of the substance.)

Unfortunately, the jargon developing in the marketing of the games renders no distinction between an adventure game based on a novel and a disk bearing some text. They are both called computer novels. Not to be confused with novels actually written by computers; those are also computer novels. (Go figure it.) One can only speculate how the 13- or 14-year-old computer literate non-reader will distinguish the adventure game from the work as it was designed to be experienced:

"How'd ya like *Moby Dick*, Johnny?"

"I dunno, I got killed in the second chapter . . ."

Some last words

When viewed as a response to the literacy crisis, the policy of software manufacturers seems to be simply acquiescing to a non-reading public. To argue that if one plays the game, one will want to read the book is specious reasoning: compare the head count at a video-game arcade with one at your local library. Sadly, access does not insure use.

We are a society being trained to expect entertainment without effort, a nation rebelling at the demands of reading. Even educators are forced to deliver the lesson with diabetes-inducing levels of head- and eye-candy. Self-expression becomes the act of blasting marauders from space, of pushing the right buttons instead of choosing the right word. In short, this is the demise of eloquence—the fluent, powerful, apt use of language.

This is not to suggest that your Kaypro is leeching your brains out of your ears as you sleep. The computer is a marvelous tool for language. It is a word and information manager. You may eventually have the wealth of a library in the compact space of your desktop. But because language is constantly mutating, because, historically, it adapts to the demands of cultural change, it is that much more important to preserve language as it progresses, and not to let it schism so radically that we are unable to communicate effectively.

It is evident the computer has the potential to be

either hero or villain in the literacy crisis. UCLA's Lanham cautiously offers hope: "I guess in the long run, I'll permit myself to be an optimist. The more society becomes what everybody already agrees it is; an information society . . . (and) the more it insists on symbolic translation, mathematical and verbal, the more we are going to finally create the kind of linguistic awareness from which, traditionally, eloquence and literacy have sprung."

If there is a lesson in these words, it is this: a paragraph can be worth more than a thousand pictures—provided someone is able to read it. □

Moving?

Address changes should be mailed to our Editorial Offices at least eight weeks in advance, and should include your mailing label. Send information to:

PROFILES Subscriptions
533 Stevens Ave.
Solana Beach, CA 92075

ENHANCE WordStar with

P-r-o-p-o-r-t-i-o-n-a-l Spacing on WordStar

You are reading text printed by WordStar in proportional spacing, providing a professional, easy to read, typeset appearance, direct from the print command on any version of WordStar. Also print two or more columns on a page, underline spaces between words, and much more. Works with most letter quality printers (Diablo, Qume, NEC, Juki, Brother, C. Itoh, Silver Reed, others).

"The best and least expensive method of dramatically improving the appearance of any WordStar text" - LIST
Disk version (CP/M, MS/PC-DOS) *automatically* modifies WordStar \$75 including manual. Manual only (100 pages - with full details for implementing PS using Install) \$25. *No* technical skill is needed. Text can be right justified. Printer does *not* require PS logic. Prices include shipping in U.S. NYS add tax.

Okay! My check is enclosed for \$..... (or charge my VISA/MC acct # exp/.....).

Writing Consultants

Suite 282, 11 Creek Bend Drive - Fairport, NY 14450
1-800-828-6293 (in NYS 1-716-377-0130)
phones open 24 hours - dealers please call or write

New Products

The following new product listings are not reviews, and should not be considered as tested endorsements. We have looked at some of the products, but we do not necessarily have hands-on experience with them.

To be considered for publication in new products, please send press releases and product information to: New Products Editor, PROFILES Magazine, Kaypro Corporation, P.O. Box N, Del Mar, CA 92014. Send 8 X 10" black and white glossy photos if available.

MBASIC enhancements. The BASIC Toolbox adds six features to MBASIC that promote more efficient programming. One is a preprocessor (PREPROC) which produces a formalized listing as well as an executable BASIC file. PREPROC also uses "COPY" file subroutines, and allows the user to increment line numbers by a specified amount.

Another component of The BASIC Toolbox, CROSSREF, provides a formalized cross-reference listing from PREPROC source files or executable BASIC files. LISTFILE prints output listings from PREPROC and CROSSREF, while SCANFILE finds and reports all occurrences of specific strings in one or more files. REPLACE will search for strings and replace them with another, and SITEINIT creates a file containing control informa-

tion for use by other programs.

\$50. Unicorn Systems, 11527 Summer Oak Drive, Germantown, MD 20874 (301) 428-3278.

Text information manager. Designed especially for use in academic and research situations, FYI 3000 will file, cross-index, search and retrieve word processed text. It is designed to manage free-format text, and doesn't require putting information into fixed-length fields and records like a data base manager. FYI 3000 manages up to 65,000 individual entries in a single filing system.

FYI 3000 lets you cross-index on all words in text, or on separate key words. Entries can be paragraphs or text between start and end markers. You can have up to 2 million characters per entry if you use separate key words, or 500 words per entry if you use all words in cross-indexing. Up to 128 words can be linked in a single search request using the words "and," "or" and "not."

In addition, the FYI Sort Utility will alphabetize and format text in a variety of ways, and print the information on labels and envelopes. This program can handle up to 1500 characters per format.

\$395 for FYI 3000; \$125 for FYI Sort Utility; \$50 for FYI 3000 demonstration program. FYI, Inc., P.O. Box 26481, Austin, TX 78755. (512) 346-0133.

Phone line power protection.

The SurgeSentry® data line protector monitors telephone lines to prevent electrical interference when sending or receiving information via modem.



Once the device (which plugs directly into a household phone jack) detects a power fluctuation, it clamps on the surge and absorbs the unwanted power from the line.

\$89.50. RKS Industries, 4865 Scotts Valley Drive, Scotts Valley, CA 95066 In CA: (408) 438-5760 Outside CA: (800) 892-1342.

Disk fix and recovery utility.

DISK FIX can be used to reconstruct files with bad sectors, recover files from disks with damaged directories, restore erased files and do general disk editing. It is menu-driven and can display, edit or copy any sector of a CP/M floppy or hard disk. Direct on-screen editing is provided in both hexadecimal and controlled ASCII.

\$150. The Software Store, 706 Chippewa Square, Marquette, MI 49855 (906) 228-7622.

Scientific graph printing program. PLOTPRO is a set of four linked MBASIC programs which makes scientific graphs on any 80- or 132-column printer. PLOTPRO creates linear, semi-logarithmic, and full logarithmic plots with one or two Y axes, and will plot multiple functions on the same graph.

The program creates templates of the physical appearance of any graph. These templates specify the type of scaling (linear, log, forced or autoscale), graph labeling, axis labeling, plot labeling, ranges for each axis and other information. PLOTPRO controls plotting and printing of graphs limited only by paper length; it also plots vertical formats suitable for use in reports, and viewgraphs.

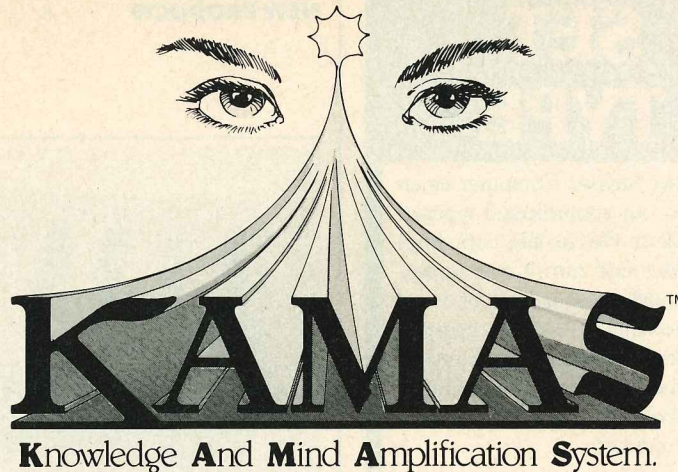
Data files for PLOTPRO may be generated in BASIC, FORTRAN, etc., or data may be entered into PLOTPRO manually.

\$49.95. BV Engineering Professional Software, P.O. Box 3351, Riverside, CA 92519 (714) 781-0252.

Moving program. This software helps homeowners and small businesses keep track of their possessions during relocation. The program MOVING creates an inventory of items packed in each box, and prints a self-stick label describing each box's contents. After the boxes are delivered, MOVING can tell where to find specific items in the boxes, and where the boxes are located.

\$39.95. KD Systems, Inc., P.O. Box 2476, Northbrook, IL 60062.

Serial port expander. The GANGBOX expands the single RS-232 serial port on your computer to three, enabling you to connect to three separate peripherals (such as a modem, printer and plotter) at the same



A unique blend of familiar productivity tools with dynamic new ones:

- Outline Processing** lets you organize your ideas in a familiar outline form.
- Information Retrieval** keeps your thoughts at your fingertips with astonishing speed.
- Word Processing** fills out the structure of your ideas with text.
- Telecommunications** lets you set up a structured, electronic bulletin board.
- Programming Environment** lets you get under the hood and extend your horizons.

It all adds up to **awesome Knowledge Processing power.** Your chance to join the next wave of the integrated software revolution.

Available for CP/M, Z80 systems. Special introductory offer: \$147. Send now for your **free** copy of *The KAMAS Report*.



**COMPUSOPHIC
SYSTEMS**

Dept. 101 • 2525 SW 224th Ave
Aloha, Oregon 97006 • (503) 649-3765

KAMAS is a trademark of Compusophic Systems. CP/M is a registered trademark of Digital Research, Inc. Z80 is a registered trademark of Zilog, Inc.

SOFTWARE FOR KAYPRO

SBACOUNT: Accounting for small business. Tracks all income & outgo, prints checks, posts chart of accounts. Prints chart of accounts, trial balance, profit and loss statement, & check ledger. Reconciles and prints reconciliation. Generates an Income & Expense journal for audit purposes. **ONLY \$79.00**

MBACOUNT: Accounting for small business. Full general ledger (20 asset, 20 liability, 20 income, 30 expense & 10 capital accounts all user assigned) PLUS all the features of SBACOUNT as above. **ONLY \$89.00**

PROFBILL: Automatic bookkeeping & invoicing for Doctors, Lawyers and other professional people who invoice at various hourly rates. Will handle up to nine partners/employees. Prints invoice or saves for future billing. **ONLY \$89.00**

MAILLIST: Mailing list, customer handling, filing program, ten data fields per customer. 8 character cust # - user (or dated program) assigned, sorts by most fields. Add, delete or modify any record. Prints all or part on 1, 2 or 3-up labels on 80 column printer. **ONLY \$89.00**

\$FINANCE: Personal financial program. Prints checks, posts amount to selected budget category, posts debits and deposits, prints check ledger, reconciles and prints reconciliation statement. Similar program for charge cards. Extracts and prints list of expenditures in selected budget categories. **ONLY \$79.00**

TOUCHTYP: Touch typing course, Beginning, Intermediate & Advanced. Tests and displays typos and displays final score **ONLY \$79.00**

STANFORM: Need to fill out standard or non-standard forms? This program generates programs for printing data in the proper location on invoices, gov't forms, insurance claims, any form that will fit into your printer. **ONLY \$79.00**

MBSCHART: Prints MICROSOFT BASIC programs, prints cross reference list of all referenced lines, prints list of variables cross referenced to each line where used. A godsend if you modify or debug Mbasic programs. **ONLY \$79.00**

Price includes disc, manual, and shipment next working day by first class mail. Mail in your order today or request detailed program listing. Better yet, if using accepted credit card, phone your order or data request to our 7 day, 24 hour phone service. Californians must add 6% to all prices.

MAP

(Visa, Mastercard & American Express accepted)

Micro-Art Programmers

173 Birch Avenue, Cayucos, California Phone: (805) 995-2329

MBASIC® is a registered trademark of MICROSOFT

SET TYPE

Use your Kaypro Computer as an input to our sophisticated typesetting system. We can take copy from your discs and turn it into professional quality type galley, at a cost of approximately 1/2 of that charged by commercial typesetting services. Since there is no rekeyboarding or reproofreading, production time is greatly reduced.

We have over 100 typefaces available. **Now your Manuals, Newspapers, Newsletters, Books, Directories, Cookbooks, etc. can have the benefit of top quality typesetting.**

Write or call us for very complete information.

ACCENT GRAPHICS

226 So. 16th St. • Lincoln, NE 68508
(402) 475-5533

dBASE II in ENGLISH I

WE BROKE THE CODE

dBASE II LANGUAGE DECIPHERED

NEW BOOK SENSATION

**SIMPLE - LOGICAL - EASY TO UNDERSTAND
PERHAPS THE FINEST COMPUTER BOOK
EVER WRITTEN. WILL TEACH ANY NOVICE
TO PROGRAM IN dBASE II.**

242 pages full of great examples which are easy to follow on your computer.

- EXPLAINS DATA ENTRY AND RETRIEVAL
- SHOWS ALL COMMANDS & FUNCTIONS
- SHOWS YOU HOW TO WRITE MENUS
- TEACHES PROGRAMMING TECHNIQUES

Written by

STEVEN & LARRY DOROFF

ORDER YOUR COPY TODAY.

Send \$29.95 or MC/VISA to: (address below)

NOW INTRODUCING

WordStar in ENGLISH I

Amazing 184 page book transforms difficult letter commands into meaningful names. (CTRL) G = Good-bye. (CTRL) K P = Kingdom Print. Makes learning WordStar a breeze. Easy to understand explanations and clear examples. Includes use of MailMerge and special IBM keys. Send \$12.95 or MC/VISA to:

ENGLISH I COMPUTER TUTORIALS
1617 N. Troy St. Dept. C
Chicago, IL 60647
(312) 489-1588 Dealers Inquiry Invited

NEW PRODUCTS



time. A switch on the box lets you quickly change between those devices. No special cabling is required, and the box has a one-year parts and labor warranty.

\$49.95. E-Systems, Berkeley, Sales Dept., 2308 Fourth Street, Berkeley, CA 94710 (415) 486-0686.

Video tape learning system.

Designed for people baffled or intimidated by computers, Soft Fuzzies are video tapes used to introduce computers to workers in a non-threatening way. The first Soft Fuzzy is for word processing and lasts about 45 minutes. It is divided into eight sections, which present common questions and relate the answers to everyday office situations. The tape is generic and useful with all word processors.

Tapes for databases and spreadsheets will be coming soon.

\$169.95. Soft Fuzzy Productions Inc., P.O. Box 24706, Minneapolis, MN 55410

Affordable software for writers. "Author, Author" is a set of twenty-four programs that make writing, organizing and printing on a CP/M-based computer easier and more effective.

To increase writing productivity, the package includes a program that redefines the keyboard, does automatic outlines, and makes indexes for articles or books. Other programs aid

in organizing files: an automatic master catalog system for disks, an alphabetical directory display utility, a disk management tool, a program to restore erased files, and a program that allows the Kaypro 2 and 4 to read other disk formats.

Printing tools include a spooler program, a utility to rapidly set Epson printer modes, a program to make disk directory labels and a fun program to print gothic letter banners. There are also instructions for installing advanced printer controls in WordStar.

\$10 for 24 programs. Fourth Street Software, 14045 Dinkytown Station, Minneapolis, MN 55414.

CRT cleaning system. Regular glass cleaners can sometimes damage computer screens. Falcon CRT ScreenSafe System is specially formulated to clean this



area. The system has a 4-ounce bottle of optical grade cleaning solution and a packet of 6 X 6" optical quality wipes. Also included is a 3-ounce introductory size Pocket Dustoff and a complete Falcon Computer Cleaning pamphlet.

\$12.95. Falcon Safety Products, Inc., Department V, 1065 Bristol Rd., Mountainside, NJ 07092.

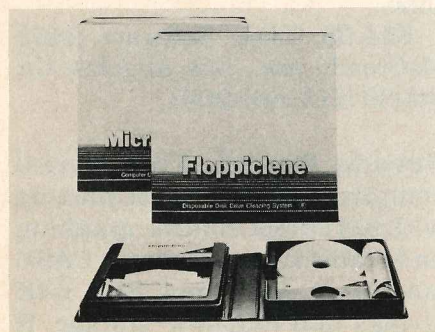
CP/M LISP. iLISP, a new implementation of the LISP programming language for Z-80 microcomputers, offers the traditional advantages of LISP programming: extensibility, modularity of code, and a flexible and highly interactive programming environment.

iLISP is based on the LISP dialect called SCHEME and offers advanced LISP features including runtime LISP macros and input time READ macros, and programmer control of the executive, error handling and start-up functions. There's also documented source code for all iLISP utilities including a LISP list editor, and a function library system for maintaining random access libraries of documented LISP code and values. A documented and easily extended implementation of ELIZA, the famous psychotherapist parody is also included; it has an improved version of the original script and a complete explanation of its operation.

A 165-page reference manual comes with iLISP, which has an alphabetic dictionary of functions and a subject-oriented guide, plus a 60-page introduction to iLISP programming.

\$49.95. Computing Insights, P.O. Box 4033, Madison, WI 53711.

Disk drive cleaner. Floppiclene™ is a disposable, wet/dry cleaning system designed to eliminate



contaminants that can damage drive heads and destroy data. The kit comes with Safeclene aerosol cleaning solution, easy insert jacket and 10 disposable cleaning disks.

\$19.95. Automation Facilities Corporation, P.O. Box 06346, Columbus, OH 43206 (614) 221-4201.

Fixed-assets accounting system. DEPRECIATION-MASTER II software does the simple function of providing depreciation figures for capital assets, so CPA firms, banks, and businesses can handle fixed-asset accounting on their computers.

The software can handle up to three depreciation methods per asset, which allows firms to do accounting for federal tax rules, internal book methods and separate state methods all within the same asset database file.

\$149. Requires the MBASIC interpreter. Direct inquiries to Lyn Durant, Marketing Director, Generic Software, 190 Timber, Dept. 14P, Marquette, MI 49855 (906) 249-9801.

Manufacturer's representative software. The REPTRAKKER package lets manufacturer's reps keep track of orders, shipments, commissions and samples. It also summarizes bookings by salesman, product or territory over any period of time. Cash flow projections, expense reports and sales analysis can also be done.

Some optional features include mailing list maintenance and chart/graph generation.

\$599. Reptronics, P.O. Box 312, Byron, CA 94514 (415) 634-1343.

Home management program. The FRIENDLY Home Computer is a software package that helps with home budgeting and organization, without the need for docu-



**UO-LISP
Programming Environment
The Powerful Implementation
of LISP for
KAYPRO and other MICROS**

The LEARN LISP Package includes:
Tutorial Guide & System Manual, Interpreter
with Lisp Editor, On-Line Help & other Utilities.

Name _____

Address _____

City _____ State _____ Zip _____

Visa/Mastercard # _____

Exp. date _____ Sig _____

Learn Lisp **\$39.95**

Format: II IV CA Res 6½% tax _____

10 SS DS Postage & Handling _____

Free Catalog: (U.S. Funds only) **TOTAL** _____

Postage & Handling - \$3.00 USA — \$10.00 outside USA

Northwest Computer Algorithms

P.O. Box 90995, Long Beach, CA 90809

Phone Orders Accepted — (213) 426-1893

PROGRAMING IN 'C' ?

At last, a **BTREE LIBRARY** ready to use!
We have already done the work of
developing a
'GENERIC' BTREE LIBRARY

Just set our defines in your main and
link with our "BTREE.LIB".
Our **BTREE** library makes no assumptions
about your DBM application:

- You control your data files and use our BTREE functions to maintain your keys.
- You control the length of your keys.
- You control the values of your keys.
- You control the size/speed trade-offs.
- You can have multiple keys per **BTREE**.
- You can have multiple **BTREE** data bases.

This is quality software you can use for
serious DBM software development.

Documentation and **BTREE LIBRARY:**
\$99.00

(Ca. residents add 6.5% sales tax)
Dealer Inquiries Invited.

INTEGRATED COMPUTER SOLUTIONS

175 Bernal Rd., Suite 240
San Jose, Ca. 95119
(408)-629-8675

Shine your
WordStar
and
other word processors
with
MagicSeries

MagicPrint™, MagicBind™ and MagicIndex™ upgrade your word processor with features that are not only indispensable to modern office but also save you time and money. Let's see a few examples.

Case history 1: A publisher tries several programs offering proportional spacing, but finds printout quality unacceptable due to unseemly gaps between words as if a word or two were missing.

Case history 2: A word processing service purchases footnoting programs to print out a dissertation, but cannot put in "Trabian footnotes" as requested by customer.

Case history 3: An attorney acquires an indexing program for legal citations, to find the program allowing only a short single line as an index entry.

Think how much time and money (and frustrations) you can save by starting out with our software. **Not all proportional spacing is created equal.** The MagicSeries™ emulate the most skillful professional type-setter (without greasing the hands). The handsome documents produced by our software will help enhance **your professional image.**

Multi-line heading/footing, column printing, micro-centering, automatic numbering, table of contents, customized legal documents, form letters ... To find out how the 70+ features of MagicSeries can save time and money and solve your old word processing woes, contact:

Computer EdiType Systems
509 Cathedral Pkwy 10A
New York, N.Y. 10025
(212) 222-8148



NEW PRODUCTS

mentation. In the checkbook section, all you do is record your checks and the program sorts it into a budget, including possible tax deductions. Also included is a mini word processor and a home organizer section on such items as flowers, restaurants and theaters.

\$79. P & B Computer Services, Inc., 13701 N.E. Bell-Red Rd., Bellevue, WA 98005 (206) 641-7390.

CP/M FORTH. MasterFORTH is a complete programming language designed for Z-80 computer users that meets all the provisions of the Forth-83 International Standard. It includes a built-in macro-assembler with local labels, screen editor and string-handling package. The input and output streams are fully redirectable and use the host operating file structure.

The package includes *Forth Tools*, a 200-page textbook by Anderson & Tracy, which gives the user an in-depth view of input and output—from reading the input stream to writing a mailing list program. The language also comes with a technical reference manual and a complete listing of the MasterFORTH nucleus.

\$100 or \$140 (with floating point). MicroMotion, 12077 Wilshire Blvd. #506, Los Angeles, CA 90025 (213) 821-4340.

Kaypro local area network. With The WEB™ local area network, up to 100 Kaypros can communicate through ordinary telephone wire with every other computer on the network over a distance of up to 2000 feet. The package has networking software and a hardware modification. The price includes a users' manual, instructions for set-up, hardware, software and connecting cable.

\$450 per computer. Adecco, Inc., P.O. Box 606, Camp Hill, PA 17011 (717) 763-1799.

Real estate analysis software. Real Estate Investor II performs a detailed, multi-year analysis of before and after tax cash flows, and rates of return from any type of improved real estate. It offers nine different loan types, and includes variable parameters and eight depreciation methods. It computes ROI, ROE, IRR and FMRR, provides a detailed sales analysis and produces a formatted multi-page report.

REMs Software, 526 NW Second St., Corvallis, OR 97330 (503) 757-8887

Personal finance software. Checks & Balances is a checkbook and budgeting program that allows you to display, add or change entries on the screen with all the features of a word processor. It is a single-entry system, which can handle multiple checkbooks and print checks. Also, a search feature can locate specific dates, check numbers, categories, payee names or memo notes for printing.

As many categories as necessary can be assigned to checks for taxes and other reasons. Checkbook entries can be broken down into several categories for your records. Checks & Balances also has monthly budgeting for 64 categories and handles a full year of financial activity at a time.

\$54.95. C.D.E. Software, 2463 McCready Ave., Los Angeles, CA 90039 (213) 661-2031.

Nevada Pascal. This Pascal compiler has screen formatting with full cursor control, graphing and statistic procedures, a CASE statement, GET and PUT, 64K strings and dynamic storage. It

also has separate compilation of auto-loading external procedures, sequential, random and indexed files, 14-digit precision, floating point -64 to +63, and 200 English language error messages. Not only does it provide full support of operating system calls, but it also includes an 8080 assembler for special interfacing needs.

\$39.95. Ellis Computing, Inc., 3917 Noriega St., San Francisco, CA 94122 (415) 753-0186.

Marine navigation programs.

This library of 18 programs can be used for piloting small boats through ocean passages. They cover the full gamut of celestial navigation, including star identification, sun schedules, and sight reduction using the sun, planets, stars, moon and polaris. Not limited only to celestial navigation, the programs also do en route computations of great circle distances and directions; dead reckoning position; horizon distances; sunrise, sunset, moonrise and moonset times; true wind determination from boat speed/heading; relative wind velocity direction; and tidal height and current predictions.

For price and other information, write to Thurman Smithey, 56 Center St., Chula Vista, CA 92010.

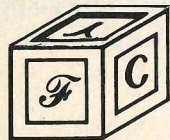
Data transfer and communications software. MOVE-IT links together micros with different operating systems and disk formats, and can be installed in under five minutes. It takes only one command to move all the files from one computer to another, and even stops when the disk is full to ask if you want to switch disks. MVOE-IT can also connect you to The Source and other information utilities.

\$125. Woolf Software Systems, Inc., 6754 Eton Ave., Canoga Park, CA 91303 (213) 703-8112. □

KO-PILOT. Kaypro Owners' PILOT is a version of the well-known PILOT language for use in Computer Aided Instruction (CAI). Other possible uses include writing your own text adventures or anything else which relies heavily on a question and answer format.

Source programs can be written with any CP/M compatible text editor, then run under KO-PILOT. Features included file-handling and video attributes control. KO-PILOT will run on any Kaypro.

\$19.95. KO-PILOT, 1106 Second St., Suite 166, Encinitas, CA 92024. □



**Family
COMPUTING, INC.**

119 N. El Camino Real
Encinitas, CA 92024
(619) 942-8419

Dealer inquiries invited
\$3.00 shipping • VISA/MC
* Source code available

PRINTSETTER — \$24.95

Font and Typewriter Program.

FAST FILER — \$39.95

Super fast electronic note pad

FCI INVENTORY — \$79.95

Small business inventory program

O.P.I. SYSTEM — \$429.95

Integrated Order Entry, Point of Sale, and retail Inventory System. Run under DBASE II or add \$100.00 for Runtime software.

Disk Format Conversion Service

We can transfer your files across most CP/M® (-80 or -86) and PC-DOS disk formats (8" or 5", single or double sided, any density, 48 or 96 tpi).

* Very reasonable rates (total cost \$4 to \$8 per input and output disk).

* No quantity restrictions.

* We also do 9-track tapes.

* MasterCard, Visa, Amex, COD welcome without surcharge.

Call or send for free detailed brochure and have it handy.

CP/M, PC-DOS are trademarks of Digital Research and IBM respectively.

COMPU-DRAW

1227 Goler House
Rochester, NY 14620
Phone: (716)-454-3188

EXPAND YOUR PRO-TENTIAL

• HARD DISK ADAPTOR

Allows you to add megabytes of storage. Easy to install. Includes complete software and documentation.

\$95.00 single unit quantity.

• CP/M 3.0 BIOS UPGRADE

Allows installation of CP/M 3.0 giving you a faster more powerful system.

\$50.00 single unit quantity.

• ALAN* NETWORK

—local network for Kaypro® computers.

OEM/DEALER INQUIRIES WELCOME
Quantity Discount Available.

Call to order or for information



* ALAN is a trademark of Huntington Data Systems, Inc.

Solutions that work. For you.

**307 SIXTH STREET
HUNTINGTON BEACH, CA 92648
(714) 960-7498**

Users' Groups

Computers, KUGs and You

by Richard Conde

The impact of the computer revolution is like a tidal wave. The computer wave continues to increase in size, power and momentum as innovative ideas coupled with new technology enter the marketplace. The importance of how to use computers is becoming evident.

As time goes by, the people who are intimidated by or choose to ignore this wave will surely flounder in its economic undertow. Since the business world is looking to technology to keep its competitive edge, jobs requiring computer skills will, for the most part, be financially rewarding and offer advancement opportunities.

Kaypro owners across the nation have taken the initiative to organize user groups which exchange information to help navigate these unfamiliar waters. One-on-one coaching, group seminars, workshops, telephone hot lines for specific software information, and the publishing of newsletters are just a few of the methods user groups employ to educate their membership.

A user group is the best environment for a new computer owner to learn about his/her computer. It's likely that the new member will meet more than one person in the user group that will take him under their wing and open the doors to this new technology.

If you are not affiliated with a Kaypro Users' Group, check with your local dealer or contact the Kaypro Users' Group department at Kaypro Corporation for information on the user group in your city. We encourage you to contact them, attend one of their meetings and see for yourself the advantages of riding this new wave.

Kaypro Corporation has been providing user groups with information and technical assistance and will continue to do so, while being careful to respect their independence.

A new program, ONKUG (Official National Kaypro User Groups) has been developed to assist user groups in their worthwhile cause. All KUGs will be sent ONKUG membership cards, entitling card holders to special consideration and promotions

from Kaypro. The KUG RCPM-assist and KUG referral programs are up and off to a positive start.

The premiere issue of ONKUG Newsmagazine features a special article on the filming of the movie *2010*, starring Roy Schneider. New product releases by Kaypro a look at some of the user groups special interest newsletters, and the latest in public domain software are also included.

Well, that's it for now.

PS: In the interest of creating space in the magazine, we discontinued the KUG listings. Any person interested in the name of the user group in their city should contact the KUG department at Kaypro Corporation.

Richard Conde
KUG Manager
Kaypro Corporation
533 Stevens Ave
Solana Beach, CA 92075
(619) 481-3941

Copyright © 1984 by Richard Conde. All rights reserved.

Advertisers' Index

Advertiser Page No.

Accent Graphics	90	Legacy Computers	18
Advent Products, Inc.	39,65	Merit Software	85
Allen Computing	84	Micro Art Programmers	89
Basic K Magazine	59	Micro Computer Training	55
Beck Manufacturing	10	Micro Cornucopia	60
Borland International	5	Micro Peripherals, Inc.	Inside Back Cover
C. Atkinson Programs	13	MicroPeripheral Corp.	74
Canyon State Systems	36	MicroSphere	1
Central Computer Products	66	Mycroft Labs	73
CI Software	22	New World Software	43
CompuDraw	93	Northwest Computer Algorithms	91
CompuServe	96	Okidata	Inside Front Cover
Compusophic	89	P & B Computer Services	9
Computer Editype Systems	92	Paradigm Consultants	35
Creative Computer Products	47	PeopleTalk Associates	7
Cuesta System	51	PluPerfect Systems	86
Custom Electronics (K.I.P.S.)	85	PROFILES Magazine	46,81
D & LN Co.	38	R.E.M. Co.	38
Data Solvers, Inc.	75	SBT Corporation	17
Dyna Comp	14	S-Basic Tutorial	95
Ellis Computing	15	Sheepshead Software	80
English 1 Tutorials	90	Soft Gold, Inc.	95
Ergo Systems	84	Software Store, The	75
E-Systems Berkeley	26	Software Toolworks, The	35,54
Exec-U-Plan	71	SOS Computing	4
Family Computing, Inc.	93	Specialty Systems	23
Gamma Research	83	Spite Software	77
H & E Computronics	Back Cover	Sunrizer Co.	76
Haventree Software	53	SWP	27
Hawkeye Graphix	64	Symbolized Systems, Inc.	34
Huntington Data Systems	93	Systems Peripherals Consultants	59
Infocom	79	Taxware Systems	63
Integrated Computer Solutions	91	Walonick Associates	74
J & M Systems	31	Woodsmith Software	80
James River Group	84	Writing Consultants	95
Kaypro General Store	34	X-Perf Software	23
Laserworks Software	37		

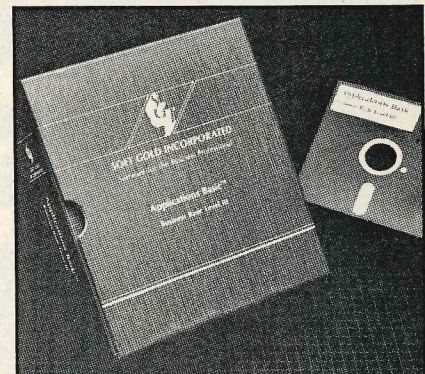
S-BASIC TUTORIAL

140 pages, including index, of letter size sheets for 3-ring binder covering the aspects of S-Basic Programming (with references to M-Basic)

Send \$20.00 money order (to cover cost for copying and mailing) to:

Sven Erlandsson
3268 Leon Brisebois
Ile Bizard, Quebec
Canada, H9C 1W2

APPLICATIONS BASIC for Kaypro, CP/M and MS-DOS



Featured in the August 17, issue of PC Magazine.

Applications BASIC is an internationally used Business BASIC language that has been in existence for over 15 years.

- Multiple File Types
 - Keyed (ISAM) Files, Relative and Sequential/with access to any systems files
 - 64 Files can be opened simultaneously
- String Lengths Bounded Only By Memory
- Full Set of Utilities Included
- Applications Software Availability List

Applications BASIC is designed to run on any 8-bit CP/M or 16-bit system using MS-DOS.

Only... \$395.00



Soft Gold Inc.
P.O. Box 2718, Newport Beach, CA 92663
(714) 476-3004 TELEX# 182737 HQ NPBH

Need to find a nearby Kaypro dealer?

Call our toll-free
dealer referral line:

800-447-4700



CompuServe

If you could get your investment information where Wall Street gets its investment information, you'd get it from us.

Now CompuServe's Executive Information Service puts the most accurate, comprehensive investment information available at your fingertips.

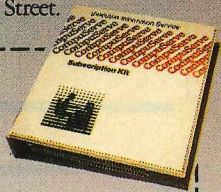
For the first time ever, individual investors can join the ranks of the most prestigious Wall Street firms who depend on CompuServe to provide them with a broad spectrum of comprehensive financial information for research, portfolio management and merger/acquisition strategies. **Instant retrieval** of continuously updated quotes on over 9,000 issues and 10 years of daily historical pricing on over 50,000 securities... **Standard and Poor's** descriptive information on more than 3,000 companies... **Value Line Data Base-II** extensive fundamental data to analyze the performance of more than 1,700 major corporations...

Disclosure II descriptive and financial information derived from SEC filings for over 8,500 companies... **Institutional Brokers' Estimate System (IBES)** earnings projections on over 2,800 widely followed companies... **Evans Economics** daily updated economic forecasts, historical statistics and analysis of more than 20 major economic indicators plus continuous public opinion polls on economic and financial issues... **Reports** on technical market trends, personal portfolio evaluation and the most comprehensive analysis capabilities currently available.

You get all this plus demographic information on every zip code in the U.S., access to consultants through the Geneva Series, state of the art electronic communications, the full scope of the prestigious AP Wire Services, travel information and reservations and more of the high quality financial information that has made CompuServe

the premier supplier of investment information to the greatest names on Wall Street.

For a free illustrated guide to CompuServe's Executive Information Service, write or call:



Name _____
Address _____
City _____
State _____ Zip _____

CompuServe

Executive Information Service
P.O. Box 20212
5000 Arlington Centre Blvd.
Columbus, Ohio 43220
800-848-8199
In Ohio, call 614-457-0802

An H&R Block Company

Sprinter™



Portable



A new generation printer that combines portability, dependability and quality. **Sprinter** is travel convenience — lightweight and rugged with an easily removable travel cover and plenty of space for storage.



Personal

A friendly printer that is easy to operate. Ease of operation is top priority for this printer. A **SoftSwitch™ Control Pad** allows the user to control forms' length, print density, tabulations, baud rate and character sets.



Professional

A fast printer, the 160 CPS **Sprinter** comes standard with a 4K buffer expandable to 68K with MPI's **MemoryMate™** option. It comes equipped with an **EasyLoad™** front paper feed for quick paper insertion and handles everything from letterhead to multi-part forms.

Travel with the Best!

See the Sprinter at your local computer store or call us for the dealer nearest you. 1 (800) 821-8848



Micro Peripherals, Inc.

4426 So. Century Dr. • SLC, UT. 84123
(801) 263-3081

Introducing the Most Powerful Business Software Ever!

FOR YOUR TRS-80 • IBM • APPLE • **KAYPRO** • COMMODORE 64 • MSDOS OR CP/M COMPUTER*



The VERSABUSINESS™ Series

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

VERSARECEIVABLES™ \$99.95
 VERSARECEIVABLES™ is a complete menu-driven accounts receivable, invoicing, and monthly statement-generating system. It keeps track of all information related to who owes you or your company money, and can provide automatic billing for past due accounts. VERSARECEIVABLES™ prints all necessary statements, invoices, and summary reports and can be linked with VERSALEDGER II™ and VERSAINVENTORY™.

VERSAPAYABLES™ \$99.95
 VERSAPAYABLES™ is designed to keep track of current and aged payables, keeping you in touch with all information regarding how much money your company owes, and to whom. VERSAPAYABLES™ maintains a complete record on each vendor, prints checks, check registers, vouchers, transaction reports, aged payables reports, vendor reports, and more. With VERSAPAYABLES™, you can even let your computer automatically select which vouchers are to be paid.

VERSAPAYROLL™ \$99.95
 VERSAPAYROLL™ is a powerful and sophisticated, but easy to use payroll system that keeps track of all government-required payroll information. Complete employee records are maintained, and all necessary payroll calculations are performed automatically, with totals displayed on screen for operator approval. A payroll can be run totally, automatically, or the operator can intervene to prevent a check from being printed, or to alter information on it. If desired, totals may be posted to the VERSALEDGER II™ system.

VERSAINVENTORY™ \$99.95
 VERSAINVENTORY™ is a complete inventory control system that gives you instant access to data on any item. VERSAINVENTORY™ keeps track of all information related to what items are in stock, out of stock, on backorder, etc., stores sales and pricing data, alerts you when an item falls below a preset reorder point, and allows you to enter and print invoices directly or to link with the VERSARECEIVABLES™ system. VERSAINVENTORY™ prints all needed inventory listings, reports of items below reorder point, inventory value reports, period and year-to-date sales reports, price lists, inventory checklists, etc.

VERSALEDGER II™ \$149.95
 VERSALEDGER II™ is a complete accounting system that grows as your business grows. VERSALEDGER II™ can be used as a simple personal checkbook register, expanded to a small business bookkeeping system or developed into a large corporate general ledger system **without any additional software.**

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

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

SATISFACTION GUARANTEED!

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

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

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

DEALER INQUIRIES WELCOME

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

COMPUTRONICS

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

*The VersaBusiness Series is available for TRS-80 · IBM · APPLE · KAYPRO · COMMODORE 64 · OSBORNE · XEROX · TELEVIDEO · SANYO · ZENITH · NEC · DEC · TI · EPSON · MORROW MICRO DECISION · NORTHSTAR · MSDOS and CP/M computers with 8" disk drives (Computer names are trademarks and/or trademarks of their respective manufacturers).