

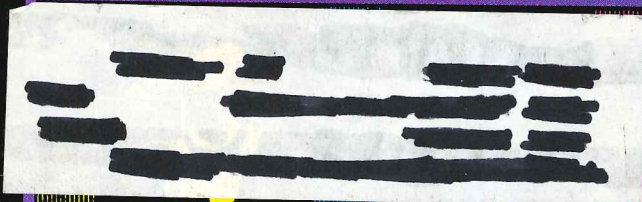
\$3.50

PROFILES

The Magazine for Kaypro Users
March 1986



CP/M
graphics



HANDYMAN

TURN YOUR KAYPRO ON TO HANDYMAN!!!

AUTO DIALER

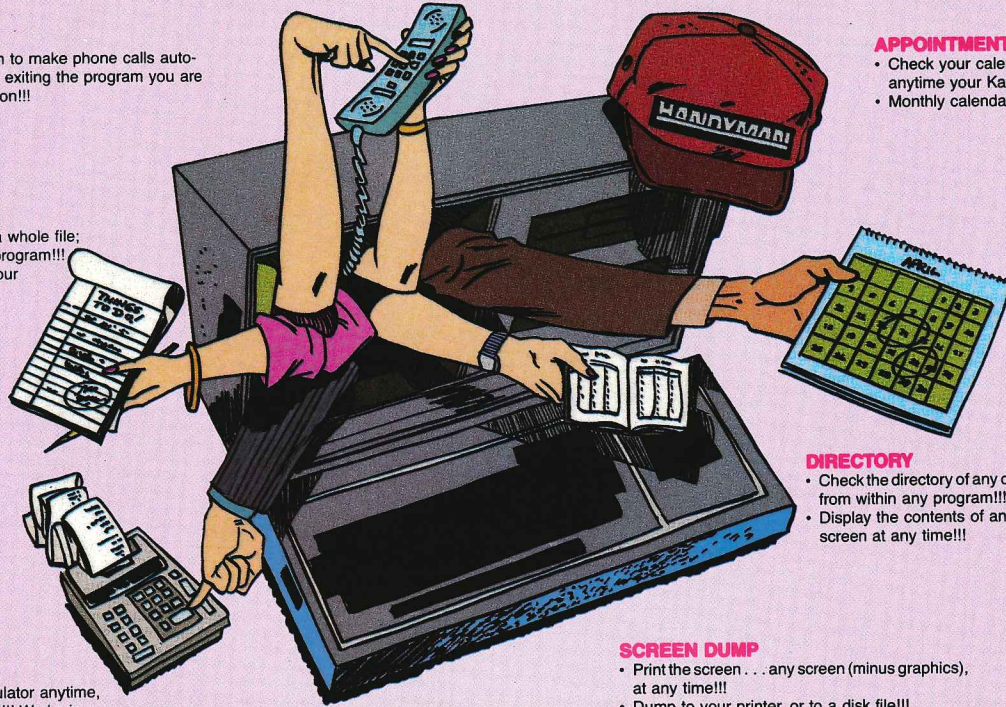
- Use your modem to make phone calls automatically without exiting the program you are already working on!!!

APPOINTMENT CALENDAR

- Check your calendar, schedule appointments anytime your Kaypro is on!!!
- Monthly calendars 1752-2099 AD!!!

NOTEPAD

- Write a note, paragraph, letter, a whole file; anytime, from within any other program!!!
- Edit another file without leaving your current file!!!



DIRECTORY

- Check the directory of any disk, any user number, from within any program!!!
- Display the contents of another file on your screen at any time!!!

CALCULATOR

- Punch up a four function calculator anytime, whenever your computer is on!!! Works in decimal, binary, hex!!! Works from within a spread sheet, or any other program!!!

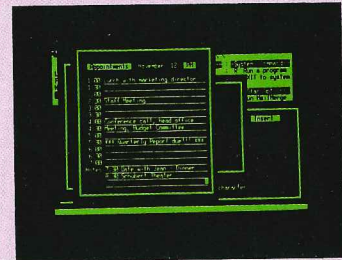
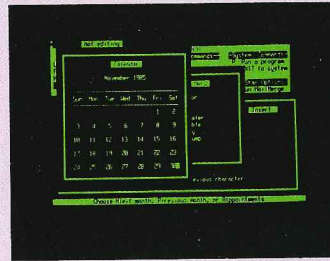
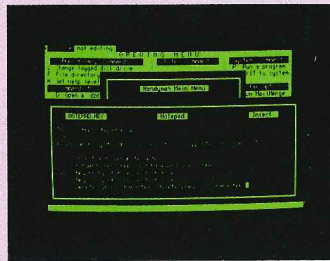
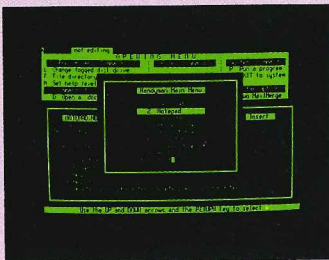
SCREEN DUMP

- Print the screen . . . any screen (minus graphics), at any time!!!
- Dump to your printer, or to a disk file!!!

- "Disk Full" message? With **HANDYMAN** you can check the disk directory and erase superfluous files from within any program!!!



Turn your Kaypro on!!! HANDYMAN is there!!!



HANDYMAN is a plug-in board for your Kaypro!!!
HANDYMAN Works with all Kaypro CP/M models!!!
HANDYMAN Easy to install!!!
HANDYMAN We'll talk you through it over the phone!!!

HANDYMAN Includes software in ROM and its' own working RAM!!!
HANDYMAN You never have to load it!
HANDYMAN Single stroke commands!!!
HANDYMAN is compatible with all CP/M application programs!!!

HANDYMAN Uses no main memory!!!

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IN CALIFORNIA
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YES! Send me _____ HANDYMAN(s) at \$124.95 each.

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California residents add 6.5% _____ Sales tax

Shipping and handling 5.00

TOTAL \$ _____

My KAYPRO is:

- II 2-84
- 2X 4
- 4-84 10
- Robie 10-84
- 4X 12X

Wordstar Perfect Writer **NOTEPAD** command set

Charge my

Card # _____ Exp. _____

C.O.D. and checks drawn on US banks also accepted.

Trademarks Kaypro (Kaypro Corporation) Wordstar (MicroPro International Corporation) Perfect Writer (Perfect Software, Inc.)

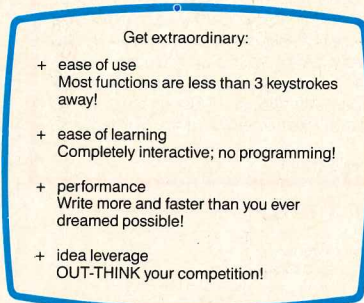
Idea Processing— Pure and Simple.

Announcing the all NEW

OUT-THINK™ outline processor.

See your ideas like you've never seen them before!

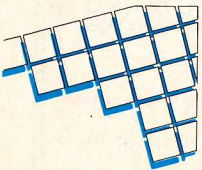
Capture your fleeting ideas. And keep 'em organized with OUT-THINK, the incredible, new outline processor from KAMASOFT. OUT-THINK unleashes the power in your workhorse CP/M computer and turns it into an Idea Processor.



OUT-THINK supports your thinking process and keeps you in touch with your ideas. That's because OUT-THINK works the way your mind works—naturally.



Begin by brainstorming. OUT-THINK lets you jot down ideas quickly, as you think of them. If you want to elaborate, you can add text with full screen editing.



Then develop your ideas using a familiar outline format. Change the structure as easily as you change your mind. Move an idea and all attached text moves with it.

You can keep track of your main line of thought by collapsing the details from view. Then, expand portions of the outline to develop the specifics when you need to. By collapsing and expanding, you can maintain an overview and literally see how your ideas fit together.

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OUT-THINK is brought to you by KAMASOFT. We pioneered outline processing and brought this amazing new technology to CP/M computers. For over 2 years, our

KAMAS programmable outline processor has been widely acclaimed:

"Outline processing might be the next wave in software, and KAMAS is a good place to start."
- Ezra Shapiro, BYTE

"The outline processor is simple, easy to use, and will appeal to all users."
- Mark Renne, INFOWORLD

"If you're a writer using a CP/M based system, get KAMAS. You'll love it. It's that simple."
- Marybeth Highton, FOGHORN

"Considering the quality of the program itself, the documentation, and newsletter, it has to be rated an outstanding value."
- Thomas Tucker, PROFILES
November, 1984

Our new OUT-THINK is simpler and easier to use than KAMAS. Yet, it offers more printing and formatting options, better handling and control, and faster operations. And at \$49.95 your ideas have never had it so good. OUT-THINK is simply spectacular. Try it for 60 days. If you're not completely satisfied, return it for a full refund.

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Rush me my choices now:



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special introductory
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the programmable powerhouse:

\$99^{95*}



KAMAS COMBO PACK
the power and the glory:

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Our software is available for most CP/M computers. Tell us about yours:

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Disk Size: 5 1/4" SSDD 5 1/4" DSDD 8" SSDD

Requirements: CP/M 2.2 or above (48K TPA). Minimum 200K of disk storage. 80 column x 24 line screen. (Note: KAMAS requires 56K TPA and Z80 processor.)

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PROPORTIONAL SPACING

for WordStar 3.3 or 3.31

only \$22.95

A program that automatically installs your WordStar to print in proportional spacing and right justified margin. This means such letters as "i" and "l" will occupy much less space than letters like "m" and "w," and the space between words will be evenly spread out. As a result, every document you print, every letter you send out from your office will be dramatically improved in printout appearance and look almost typeset! Moreover, you can continue to print in right justification, **boldface**, **shadow print**, **underline**, **superscript**, **subscript** and a combination of these features while in proportional spacing mode. Best results are achieved when you use a PS printwheel, but fine even if you use the ordinary non-PS 10, 12, or 15-pitch printwheels. No crowded characters even on one-word short lines. Comes with a disk and a manual plus a variety of printing tricks. Requires Kaypro, Juki, Brother, Star Power Type or any other letter-quality printers. Simply the best of its kind on the market at any price!

Extra Bonus for Juki 6100 Printer: Our proportional spacing program will also automatically install your Juki 6100 to print French cedilla (ç) and German umlaut (ü), two foreign characters not on your keyboard. Now your

Juki 6100 can print all the diacritical marks needed for French and German. Detailed instructions on how to print the other four special characters (ç, ù, £) on Juki printwheels are included in our manual.

Now, with more features added:

1. Allows you to install up to four different kinds of printwheels, including the new Juki Standard PS and the 15-pitch Mini Majestic (sold below).
2. Can print your NEW WORD files in proportional spacing and right justified margin.
3. Detailed instructions on how to customize our program, if necessary, to produce a printout that suits your own personal taste.
4. More printing tricks explained in plain English (not computerese) by our in-house printer specialist for you to take full advantage of your letter-quality printers.

Note: The Kaypro Letter Quality Printer is the same as the Juki 6100 in every aspect except color.

For all Kaypro models and IBM compatibles.

MAILING LIST only \$ 19.95

Just load it and start data entry! Extremely easy to use. Then print 1,2,3 or 4-across standard Avery labels. Specially set up for your DataStar and Mail-Merge so you will get all the sophisticated features of DataStar and MailMerge. Add, delete, sort and update your list anytime. Can sort any field. Number of records limited only by your disk capacity. Many tricks and tips included in our clearly written manual. Originally developed for a magazine subscription agency to keep track of more than 100,000 subscribers. Why waste time creating your own when you can use our fully tested and debugged program? *Requires at least DataStar and MailMerge to run.*

For all Kaypro models and IBM compatibles.

BIBLIOGRAPHY only \$ 19.95

An electronic marvel for modern scholars and writers! Just call it up and start building your own electronic bibliography database. Then print in MLA, Chicago, Trabian or any other styles. Specially set up for your DataStar and MailMerge so you can add, delete, sort and update your bibliographic items anytime. Can sort any field. Number of records limited only by your disk capacity. Many tricks and tips discussed in our manual. Used by the author in his Ph.D. dissertation on medieval Chinese military institutions. Saves you hours of frustration in creating your own. *Requires at least DataStar and MailMerge to run.*

For all Kaypro models and IBM compatibles.

GENUINE JUKI 6100 PRINTWHEELS (100 characters) only \$22.95 each (Types shown in actual size)

Roman PS	The Quick Brown Fox Jumps Right Over The Lazy Dog. [\]^`{ }~
Standard PS	The Quick Brown Fox Jumps Right Over The Lazy Dog. [Ω]Δ°½¼²
Courier 10	The Quick Brown Fox Jumps Right Over The Lazy Dog.
Prestige Elite 12	The Quick Brown Fox Jumps Right Over The Lazy Dog. [\]^`{ }~
Mini Majestic 12/15	The Quick Brown Fox Jumps Right Over The Lazy Dog. [Ω]Δ°½¼²
Letter Gothic 10/12	The Quick Brown Fox Jumps Right Over The Lazy Dog. [Ω]Δ°½¼²

Note: Only Courier 10, Prestige Elite 12 and Roman PS are in the Juki sequence and only these three can produce diacritical marks for French and German. The rest are in the Special Sequence and are capable of printing other

substitute characters as shown above. We now carry a full line of 18 genuine Juki-brand printwheels. You can order any Juki printwheel not listed here. Printwheel catalogue will be sent free with any order.

PUBLIC DOMAIN DISK only \$11.95

Our software engineer has fully tested and assembled a disk full of the finest CPM programs now in the public domain. Saves you time and money to collect these on your own. Includes WSINDEX (creates index from WordStar files), QUICKEY (redefines keyboard while you write), ENVELOPE (prints envelopes more easily), NEW SWEEP, UNERASE, FINDBD54, TYPYR, SQ, UNSQ, SCROLL, LIST, MAGE, DU and DISPLAY. With documentation. Absolutely a must. **For Kaypro CPM models only. Coming soon: MS-DOS version. Write for details.**

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only \$139.00

Can't keep your continuous form paper properly aligned on your Juki 6100 or Kaypro Letter Quality Printer? No matter. All you need is this tractor unit made by Juki in Japan. Installed in minutes. Easily removed when not needed. Works like a charm in printing mailing lists and long manuscripts. Comes with detailed installation instructions. FREE UPS shipping. New Jersey residents only: add 6% sales tax.

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Actually run our programs for 30 days: if unsatisfied, let us know why and we will give you full refund.

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Another CPM public domain program; teaches you touch-typing and keeps your score.

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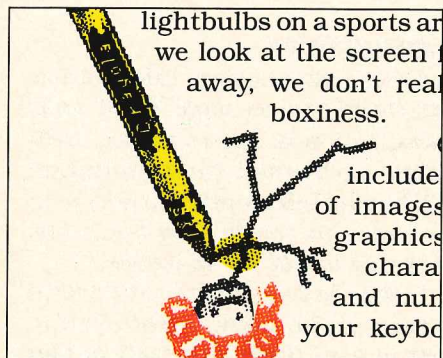
Dear Chaucer: Please **RUSH** me the following in 24 hours:

DESCRIPTION	PRICE	MONEY BACK GUARANTEE
<input type="checkbox"/> Proportional Spacing	_____	<input type="checkbox"/> Check Enclosed <input type="checkbox"/> VISA <input type="checkbox"/> MasterCard Card# _____ Expiration Date _____ Signature _____ Name _____ Address _____ City _____ State _____ Zip _____ Kaypro Model _____ Printer _____
<input type="checkbox"/> Mailing List	_____	
<input type="checkbox"/> Bibliography	_____	
<input type="checkbox"/> Printwheel	_____	
<input type="checkbox"/> Public Domain Disk	_____	
<input type="checkbox"/> Typing Tutor	_____	
<input type="checkbox"/> Juki 6100 Tractor	_____	
Subtotal	_____	
NJ residents only, add 6% sales tax	_____	
First Class Postage	\$2.00	
Foreign Orders add \$10 for Air Mail	_____	
TOTAL	_____	

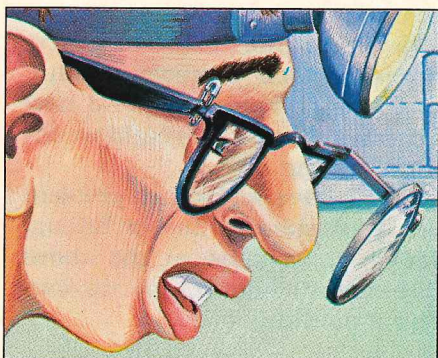
ORDER WITH CONFIDENCE

PROFILES

Volume 3, Number 8
March 1986
The Magazine for Kaypro Users



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Pixels 27



Enhancing Hardware 38



Deduction 46

On the cover: This self-portrait was created by artist Jim Alley. The camera, also created by Jim Alley, was superimposed on the portrait later. The modified picture was generated using SCS-Draw on a CP/M Kaypro. Airbrush by Pak Sing Chan.

DEPARTMENTS

About PROFILES	4
Letters	6
Q & A	10
Tip Trader	20
Technical Forum	66
Product Spotlight	69
New Products	70
Advertisers' Index	72

FEATURES

Pixels and Phosphor	27
<i>by Christopher Meeks</i> Drawing on a CP/M Kaypro	
Personal Bibliographic Software	33
<i>by Paul Ofman</i> Round up those references	
Enhancing Eight-Bit Hardware	38
<i>by Loren Marshall</i> Part 1: Gearing up	
Another Sweet Little Deduction	46
<i>by Tod Westcott</i> How to write off your Kaypro	
Page Breaks with Perfect Writer	52
<i>by Irvin Peckham</i> Ways around an irksome limitation	

COLUMNS

Life at 300 Baud	12
<i>by Brock Meeks</i>	
Flea Market	16
<i>by Ted Silveira</i>	
Beginner's Luck	60
<i>by Keith Hertzog and William Murdick</i>	

Keep in Mind

As you read *PROFILES*, there are a few things we recommend you keep in mind.


First, there is unavoidably at least a three-month delay between the time we receive an article and the time it is published. We make every effort to provide current information, but both commercial and public domain software is revised frequently, so the versions discussed in *PROFILES* articles may not be the latest ones.

For this reason, we suggest that before you purchase *any* program you call the manufacturer for details about the latest version, including the version's number, the date of the last revision, and specifics about what makes the latest version different from previous ones.

The same general rules also apply to hardware purchases. The important point here is to be sure about which model and series ('83 or '84) it works with.

Second, *PROFILES'* readership includes users with all levels of experience, from beginner to advanced, as well as users of both the CP/M and MS-DOS operating systems. A legend at the beginning of each feature article indicates which operating system and what level of expertise the article addresses.

For example, Beginner/8/16 indicates that the article is for novice users of either the CP/M (8-bit) or MS-DOS (16-bit) machines.

We will strive to provide a full range of material in each issue to meet the needs of all our readers. 

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Volume 3, Number 8
PROFILES (ISSN 8755-464X) is published twelve times a year by Kaypro Corporation, 533 Stevens Ave., Solana Beach, California 92075. Registered owners of Kaypro computers, within the United States, are entitled to a six-issue introductory subscription. Subscriptions within the United States are available for \$25.00 per year to people who are not registered Kaypro computer owners and for introductory subscription renewals.

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To direct *PROFILES* to a new address, attach a recent mailing label plus both your old and new addresses. Allow six to eight weeks for processing.

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LABS INC**

Communications & System Software Developers

TO: MITE COMMUNICATIONS SOFTWARE USERS
FROM: LARRY HUGHES, PRESIDENT
DATE: FEBRUARY, 1986

L. E. Hughes

SUBJECT: IMPROVING THE EFFICIENCY OF YOUR COMMUNICATIONS

Dear MITE User:

I have never had the opportunity of talking to so many MITE patrons at one time, but it is a pleasure for me, the developer of this software, to announce a major redesign of the MITE Communications Software, with the following improvements.....

MITE VERSION 4.0

MAXI MITE

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- * YMODEM PROTOCOL
- * TIMING CONSTANT MENU
- * MENU DRIVEN SYSTEM COMMAND MENU
- * TRANSMISSION TIME ESTIMATES
- * SUPPORT OF PATHNAMES (MS/DOS), USER AREAS (CP/M)
- * TAB EXPANSION DURING UPLOAD
- * ENHANCED CHARACTER FILTERING
- * "LOAD PARAMETERS" SHOWS AVAILABLE ".PAR" FILES
- * VT 100 EMULATION (MS/DOS ONLY)

MAXI MITE +

- * MULTIPLE TERMINAL EMULATION (MS/DOS ONLY)
- * KERMIT PROTOCOL
- * ZMODEM PROTOCOL (VERY HIGH EFFICIENCY)
- * TRUE SCRIPT LANGUAGE

If you use an early MITE version, or even a more recent one, now is the time to update it at a nominal cost. Take advantage of this special 20% saving, good only until APRIL 30, 1986. Thank you.

UPGRADE TO MAXI MITE \$40 - regularly \$50
UPGRADE TO MAXI MITE + \$60 - regularly \$75

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Zip: _____ Business Phone: _____
Home Phone: _____ (in case of problem with order)
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Terms: Check VISA Mastercard COD (add 1.90)
COMPLETE IF USING CREDIT CARD: Expiration Date: _____
Acct.No: _____ Signature: _____
(Shipping outside U.S.A. add \$10.00) Make checks payable to:
MYCROFT LABS, INC., P.O. BOX 4106, TALLAHASSEE, FLORIDA 32315

PRO MAR

A big disappointment

I was so sorry to hear that Kaypro was following the masses into the 16-bit arena. But then, assurances were given that the 8-bit machines would always be supported by Kaypro, and the overwhelming availability of CP/M programming would keep the 8-bit Kaypros alive.

Well, true to my (and many others') expectations, it would seem

that 8-bit support is dying. Matter of fact, for one major software supplier, it's dead already.

In the December 1985 *PROFILES*, there is a two-page advertisement from MicroPro on pages 64 and 65 extending to *PROFILES* readers only the availability of WordStar-compatible software. The ad seems to emphasize 8-bit and include 16-bit.

A call to the listed 800 number was fruitless—there was no such number. Calling MicroPro long distance in California gave a quick response with a corrected 800 number.

Calling the correct 800 number led to a big disappointment: *all* of the 8-bit software included in the ad (whose offer, incidentally, expires April 30, 1986) is no longer available. They were, however, kind enough to take my name and phone number and will let me know if the 8-bit software should ever become available again.

Contact with Kaypro dealers in the Baltimore area gave me the same response. They cannot supply the MailMerge software, either. Does this mean that in order for me to obtain a copy of MailMerge, I will have to violate the copyright and find someone with a copy that I might copy? I really don't want to resort to this, but it would seem that MicroPro is forcing honest Kaypro users to seek alternative solutions that they otherwise would not consider.

Anyone got a copy of MailMerge (and manual) they want to sell for \$49 (that's MicroPro's advertised price)?

Ronald A. Sanford
Catonsville, Maryland

The correct 800 phone number for MicroPro is (800) 443-0100, extension 112. The incorrect phone number in the ad was the result of a typographical error on MicroPro's part.

PROFILES has verified that MicroPro is not currently selling any of the 8-bit software listed in the ad in the December issue. You may leave your name and phone number at the 800 number, and MicroPro will get back to you if the 8-bit software becomes available again.

For questions regarding the installation or operation of MicroPro software and its compatibility

Complete your MicroPro collection with **SUPERSORT**

- Sort & Merge Up to 32 Files into a single file with amazing speed
- File sizes limited by Operating System
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- Conditional Testing using most Logical Operators is allowed
- Sort/Merge Command File Libraries may be created for repetitive operations
- CP/M® Version can be called as a sub-routine from BASIC, FORTRAN, or COBOL
- MS-DOS version can be incorporated into BATCH Files for automated Sort or Merge
- Works with WordStar®, DataStar®, MailMerge®, and InfoStar®

Exclusive offer
to KAYPRO users
\$69.95

To order phone toll free

National:
1-800-826-7595
(Except Alaska)

California:
1-800-325-2085

Please specify: CP/M, MS-DOS or
3½" KAYPRO 2000 Format.

SuperSort, WordStar, DataStar, MailMerge, and InfoStar are registered trademarks of MicroPro. CP/M is a registered trademark of Digital Research. MS is a trademark of Microsoft.



LIFESTYLE SOFTWARE, INC. 1299 4th St. #402 San Rafael, CA 94901
Telephone 415/459-0300

with Kaypro computers, call Kaypro Software Tech Support at (619) 481-3920.

For questions regarding the compatibility of one MicroPro program with another (e.g., whether the new MailMerge will run with an old version of WordStar), call MicroPro's customer technical support line at (415) 499-8320.

PROFILES regrets these problems, but it cannot be responsible for the content of advertisements.

Could have been kinder

The more I use MBAccount by Micro Art Programmers, the more I feel I must write to you because of a review you had in your November 1985 issue ("Automating Your Books") in which you casually mention MBAccount.

MBAccount is a very useful double-entry bookkeeping program that allows me to keep adequate and detailed bookkeeping records for companies for whom I perform various services.

The audit trail is good (you can't fool it), everything you do is fully recorded and can be called up by a single keystroke, and the reports offered are excellent in format and style.

My use has strictly been on the general ledger program, and I highly recommend it, especially considering the \$79 cost. My only objection—and this is a petty matter—is that when operation illustrations are presented, they refer to dates in the 1980s, but any time you put dates or some other variable data in a document, you have this problem.

While you had nothing harsh to say about the program, I thought that the way it performs should have received kinder words. Overall, your reviews were good, and had they appeared earlier, they would have saved me many hours of research.

Ben R. Burney
Crystal Springs, Mississippi

It's a dirty job, but . . .

Sexist representation of women, "Third World" fluff, Kaypro commercialism. No one, it seems, is ever completely satisfied. But horror of horrors! Computer programming in a computer magazine? Such a disgrace! Notify the authorities!

If anything, C.W. Bendigo's letter shows the truth in the old adage, "Ignorance is bliss." His argument against learning to program was to use the analogy, "How many people would be using cars today if they had to rebuild them to use them?" This is incorrect. It would be more accurate to say, "How many people would be using cars today if they had to put the gas in themselves?"

Software is the fuel of computers. Without it, they are not worth the silicon they are made of. Know-

ing how to program is like using the self-service island at the gas station. It is usually quicker, cheaper, and much more satisfying—if you make the effort.

The full-service island is fine; sometimes you get what you pay for and sometimes you don't. But wouldn't it be nice to be able to do some tinkering in the self-service line? Why pay extra to have the windows cleaned when you only need the tank topped off?

Who knows, maybe when the Bendigos get tired of dBASE II and WordStar, they will end up buying a program created by one of the many PROFILES readers who crave issues like the October issue.

As for me, computer illiteracy? Ugh!

Bill Houle
El Cajon, California

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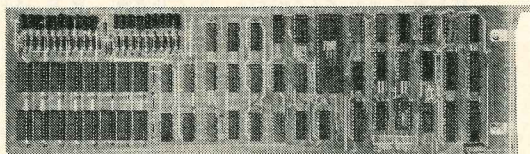
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Letters

Make it easier for us

This is an open letter to all suppliers of hardware and software:

I just placed an order with PeopleTalk Associates, Inc., for in excess of \$170 worth of hardware and software that I could have purchased from you.

The reason I made my purchase from PeopleTalk is that they honor the American Express card. As you may or may not know, corporations do not have VISA or other bank cards. Most corporations, however, do have American Express cards.

As president of a small corporation, it is much easier for me to place an order with a charge card than it is to send a check or arrange a COD shipment, so I always look for companies that accept the American Express card.

I might add that I make a lot of purchases for my Kaypro 10 computer. It is equipped with all the Perfect software, WordStar, dBASE II, 2.2E, Backgrounder, Smartkey II, Versaledger II, CPI Accounting software, Turbo Pascal, etc. I just bought Turbo ROM, Datestamper and Write-Hand-Man, and in the future I will probably buy SWP Co-Power Plus and maybe add another hard disk.

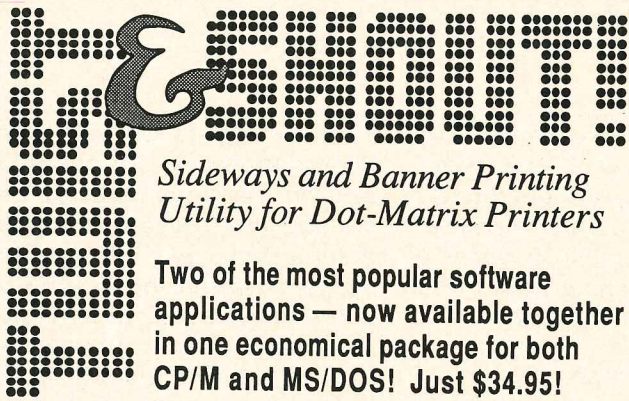
The purpose of this letter is to let you know that there are small corporations that purchase a lot of equipment for their computers and direct their purchases to the companies that make it easier for them to buy their products.

John C. Stone
Chicago, Illinois

No muss, no fuss

Thought you might enjoy this dust cover from a new Sierra Club book, *Rivergods*, enclosed. As you can see by the photo on the back flyleaf, my sturdy Kaypro had a major role to play in the writing of the book. My co-author would have his maga-

(continued on page 26)



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by Tom Enright

We welcome and read all your letters. Those of general interest are printed in the Letters column; pleas for technical help are dealt with here if they lend themselves to simple, concise answers, or in Technical Forum if the answer is more involved.

Due to the volume, we simply can't respond to all requests for assistance. Problems requiring an immediate reply should be taken to your dealer. Kaypro Technical Support can be contacted, but be aware that they give dealers' calls priority. They are at (619) 481-3920, or write to them at P.O. Box N, Del Mar, CA, 92014. Please include a daytime phone number.

Database puzzle

Now that I have mastered WordStar and have a little time on my hands, I would like to set up a system for cataloging rare books. I would like to have some of the fields in the database expandable. (I don't know in advance how many spaces to leave.) From the manual I gather this cannot be done using DataStar. Will any of the software that came with my Kaypro 2 do this, or will I have to purchase something that does allow expandable fields?

David Keller
Roosevelt, New Jersey

DataStar makes you define the maximum field size when you set up a database. The key word here is "maximum." When a record is written to disk, each field uses only as much space as it needs. As long as an entry doesn't exceed the maximum size for that field, you're okay.

The trick is to make the field's length longer than you think you'll need. That way each field can hold more information later on. If you define a field to hold 80 characters and enter only two, that field only uses two bytes of storage space on the disk.

Most other database programs, including dBASE II, use fixed-length fields. This means that if a field is defined to hold 80 characters, it always uses 80 bytes of storage regardless of how many characters are in the field.

Modem confusion

I am about to begin life at ? baud. What I don't understand is just what the difference between Bell 102 and Bell 212A compatibility means. Also, what are other important factors in choosing a modem?

Joseph Schmid
Jacksonville, North Carolina

The two Bell standards, 102 and 212A, define how 300 baud and 1200 baud modems work. The Bell 102 standard defines the frequencies a 300 baud modem uses to send information in this country. The Bell 212A standard does the same thing, with phase shifts instead of frequency shifts, for 1200 baud modems. Most modems that comply with the 212A standard also meet the 102 standard and can operate at either transmission speed.

Other features you may want to look for are Hayes emulation, a built-in speaker, and status lights.

The Hayes command set is recognized by more programs than any other modem command set. Therefore you have more software to choose from if your modem uses the same commands as Hayes modems.

An internal speaker lets you monitor the progress of a call more conveniently than a modem with no speaker. When a call doesn't go through and your modem doesn't have a speaker, you never know why. If the number was misdialed or busy, or the operator has come on the line to try to tell you something, you can hear what is going on if your modem has a built-in speaker.

Status lights let you monitor the progress of a communications session. Without them you have no way of telling what happened if something goes wrong. Status lights tell you if the modem is on, whether you're transmitting or receiving, what speed you are running at, and whether or not a carrier has been detected at the other end of the line.

Sealed Kaypros

An article in *PROFILES* ("Tales of the Unexpected," March 1985) mentioned using special "climate-hardened" Kaypros in areas of high temperature and humidity. I own a Kaypro 2X and may soon be buying a Kaypro 16. I will be taking my equipment into an area with a climate similar to the one described in the article. Could you give me advice on how to "climate-harden" my equipment?

James Vaughan
Gualala, California

Unfortunately the climate-hardened Kaypros referred to in that article were especially manufactured for the purpose. They were Kaypro 10s without any ventilation slots in the chassis, no floppy drives, and special sealing gaskets around the communications ports and CRTs.

Without floppy drives the only way to introduce new programs and download data is through the serial ports. Only a small number of these computers were made as an experiment by Kaypro. They are not available on special order.

Climate-hardening a floppy-based system is not a practical project. Even if all other phases were accomplished, the disk drives themselves would allow moisture-laden air to enter the chassis. Also, the oxide media on the diskettes can soften in high heat and humidity and gum up the drives.

If you must use any computer in

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a tropical environment, you should operate it in an air-conditioned room if at all possible. Otherwise the service life of both the hardware and diskettes may be shortened. If air conditioning is not practical, take precautions to allow as much air circulation around the computer as possible. And be doubly sure to make backup copies of all diskettes.

Cursor positioning

In the September 1985 "Q & A" section, you told a user how to position the cursor in BASIC. I offer this user defined function as just the thing BASIC programmers need to put the cursor in its place:
`DEF FNX$(X,Y) = CHR$(27) + "=" + CHR$(X+32) + CHR$(Y+32)`
 Then they can call the function with the statement `X = 1: Y = 25: PRINT FNX$; "HELLO I AM A FUNCTION."`

James Hicks
 Virginia Beach, Virginia

User defined functions are a more efficient method of positioning a cursor than the example I used in September. I chose to illustrate only the method that was most likely to be understood by the largest number of people. Not all readers are familiar with user defined functions.

Now that readers understand the introductory method from September, they should consider switching to the more efficient method you have illustrated. 



"Have you noticed how there seems to be so many software designers down here?"

"Kaypro makes a nice computer- too bad it doesn't do graphics"

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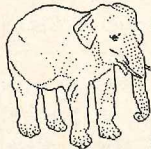


The first true drawing program for the Kaypro, **SCS-Draw** turns your computer screen into a sketchpad on which you can draw detailed images like those shown here. These images can be saved on disk or printed on a dot-matrix printer or the Kaypro/Juki letter quality printer.

There are many applications of **SCS-Draw**. For example, you could design and print your business card or company logo.



You could also use **SCS-Draw** to print party invitations, banners, or technical diagrams.

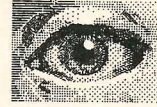


And the best thing about **SCS-Draw** is that it's fun to use -- when was the last time you had some fun with your Kaypro?



SCS-Draw gives you a variety of useful drawing tools to choose from. You can draw a detailed image dot-by-dot, or do a rough sketch with straight lines. Need a compass? **SCS-Draw** can draw circles of any size, wherever you need them.

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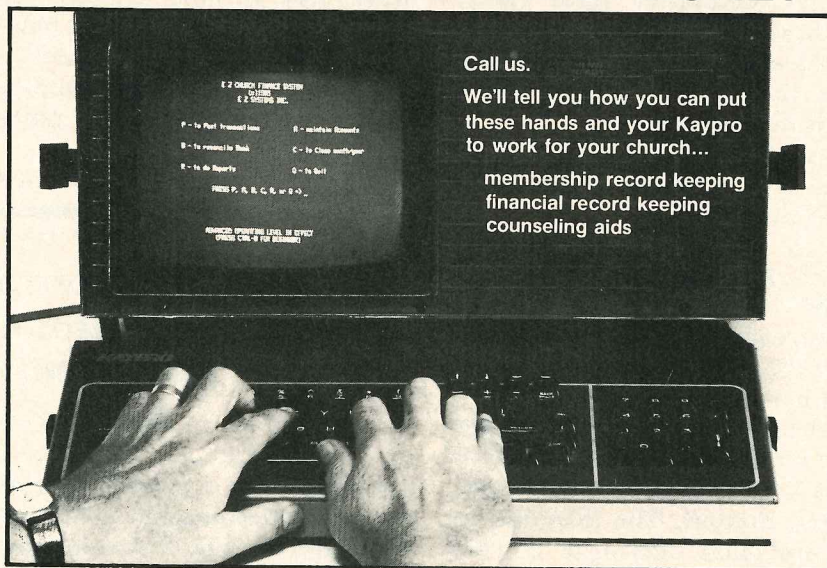
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by Brock N. Meeks

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Kiss your mother (Ma Bell, that is) good-bye and join the packet radio revolution.

Packet radio joins an old technology, amateur radio, with today's microcomputers to provide a unique form of communication.

For decades, amateur radio operators, known as "hams," have typically communicated via telegraph keys and microphones. With the development of a device called a "terminal node controller" (TNC), hams are now using micros to transfer computer data (text, graphics, or binary) over public domain airwaves via packet radio. Use of the airwaves is free, which means *no phone costs*.

Just how popular is packet radio? The Arizona phone company can tell you.

Score: packet radio 3, Ma Bell 0

The Tucson Amateur Packet Radio Group (TAPRG, known as "Tapper"), a nonprofit organization dedicated to the promotion of packet radio technology, was the first to offer a TNC in kit form (or any form, for that matter). The response to their first public offering of the TNC kit was amazing.

The first day TAPRG went public with its kit, calls came in to them from every state except Maine and Wyoming, and from every continent on the planet. The calls satu-

rated Arizona's phone network, shutting the system down on three separate occasions. Most Tucson residents were without phone service for several hours while efforts were made to bring the system back online.

And there is other evidence of the growing popularity of packet radio. As late as 1984 there were only 250 packet radio users in the United States. The Amateur Radio Relay League (ARRL), the political and educational organization for the nation's 400,000 hams, estimates that as of January 1, 1986, there were 10,000 people using packet radio.

Packet prelude

With just a \$400 hardware investment (for the TNC and a handheld two-way radio) and a month of study, you can cut the umbilical cord that ties you to the phone company.

The study time is what you must



offense.)

Packet particulars

The TNC replaces your modem and is the heart of a packet radio set-up. Physically, the TNC is no taller than a standard Hayes modem, but twice as long. It connects to your RS-232 port in the same manner as your modem. A four-pin cable attaches the TNC to the two-way radio of your choice. Any communications software used with a modem will work with the TNC.

TNCs are available in kit form only. You can get a kit from TAPRG (602/746-1166), or from HeathKit stores (item #HD-4040). The kit can be put together by a novice in about 90 minutes.

BBS of the air

Packet bulletin board systems (PBBSs) function just like BBSs, except that all communications are sent and received via airwaves instead of the phone lines.

The terminal node controller replaces your modem and is the heart of the set-up.

put in to pass a Federal Communications Commission (FCC) test for a Class One amateur radio operator's license. The test consists of a written exam and a demonstrable proficiency of five words per minute (read and write) in Morse Code. (Using the airwaves without passing this FCC test is a punishable

To reach a PBBS (there are currently 70 PBBSs operating in the United States and around the world) you must "bounce" your communications off a local "network node controller" (NNC). These NNCs are located on mountain peaks across the United States and act as relay stations for sending

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communications across the country. A single NNC can handle several individual communications simultaneously.

For example, if you were to send a message from the West Coast to someone in the East, your local NNC would take care of all the necessary routing (the routing information is built into a software program at the NNC).

You can also communicate with another packet radio user on a one-to-one "chat" basis. One-to-one message transfer is accomplished the same way as communication with a PBBS. Since each ham is given a unique "call sign" (such as W5ABC), the NNC knows just who to send the information to.

To reach an individual or a PBBS (which also uses a unique call sign), you simply address your message like this: **CONNECT W5ABC@W5XYZ**. The rest of the connection is a simple matter of protocol transfer and radio frequency compatibility.

Packet protocol

Basically, with packet communication, "the digital information is split up into little packets of information, which are just little blocks or groupings of data," explains Andrew Freeborn, founder and president of the Rocky Mountain Packet Radio Group.

"In fact, it's 128 bytes of information. And then there's an address that's attached to the front of the packet. There's some error-checking information on the back of the packet.

"It's sent out in a single burst, so when the receiving NNC gets that packet, it can look at the address and say, 'Oh, that packet's for me.' If it's not for that NNC, [the NNC] ignores it. The error-checking information allows that NNC to determine if the transmission was received error-free," says Freeborn.

"Packet communication is just a series of packets. They are formed back into whatever the original message was. The message could be anything. It could be a computer program you're sending to someone, or some data from a computer file, or just general chit-chat."



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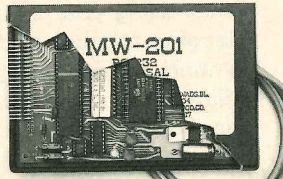
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International packeting

Soon packet radio users will be able to use a "bulletin board in the sky," according to Al Brinckerhoff, coordinator of Amateur Radio Satellite Corporation (AMSAT). Later this year AMSAT will launch the Packet Satellite (PACSAT) on an upcoming NASA space shuttle mission.

The PACSAT will have four megabytes of memory to store messages from "ground stations." Traveling in a low polar orbit, it will circle the Earth once every 90 minutes.

To use PACSAT, packet radio users will have to send their communications through a ground station set up to send and receive satellite communications. These ground stations will cost about \$1,000 to \$1,200. That cost might seem high, but when compared to the cost of setting up a ground station that can communicate with a geostationary satellite—about \$100,000—the price is right. (A geostationary satellite typically operates 22,000 miles above the Earth's surface and follows the Earth's rotation while maintaining a fixed position in relation to the Earth.)

The PACSAT will be able to "store and forward" messages. When the satellite is over your geographic "window" you can send it messages or query it for messages to you, via the ground station. A single ground station can handle several communications at once, eliminating the need for each user to have a separate ground station. This amounts to a cost-free global communications capability.

Packet predictions

Packet radio is already being used in several applications in place of modem links and telephone calls.

- The California Forestry Department used packet radio during the 1985 fire season to coordinate its fire fighting efforts in high-risk areas.
- The Red Cross has ordered 100 TNCs to use in its disaster communications network.

(continued on page 18)

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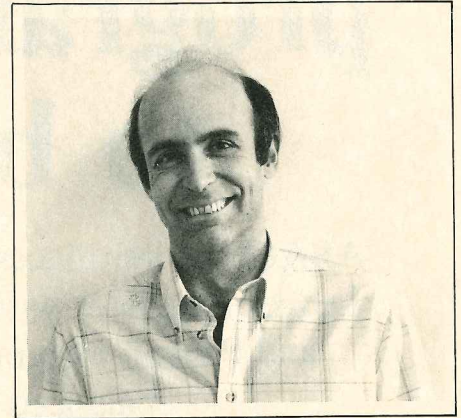
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Flea Market

Hidden talents in your Kaypro

by Ted Silveira



Graphics are red hot these days—from bar charts and other business graphics to computer-aided design and video painting. And though few people realize it, many Kaypros can do graphics, too. Mind you, these graphics are no threat to the Macintosh or Amiga, but they do open up new opportunities if you want pictures with your words or numbers.

The CP/M models that have graphics are the Kaypro 1, 2X, 2'84, 4'84, and 10. If your Kaypro has one parallel port and *two* serial ports, you should have graphics. These graphics are fairly crude: the finest line you can draw is about 1/20 of an inch thick. That makes a pretty fat line on the nine-inch screen, much fatter than lines used in the normal Kaypro text character set. Circles, boxes, and other figures are correspondingly crude. All the same, these graphics are already there in your Kaypro, just waiting to be used.

To use these graphics, however, you need some software—a graphics program to control your Kaypro's hardware and to send your pictures from screen to printer. These graphics programs come in two main types—graphing programs and drawing programs. Graphing programs let you create bar graphs, pie charts, and so forth from numeric values you supply. Drawing programs (sometimes called “paint” programs) let you

actually draw on the screen “freehand,” creating whatever images you can think up and the computer can reproduce. Most programs do one job or the other, though a few (like Rembrandt, from Spectre Technologies) can do both.

Graphics for free

While graphing programs are probably the most useful for many people, drawing programs are the most fun. And though most graphics software is commercial, there is a good CP/M Kaypro drawing program available free from public domain sources. DDraw version 2.0, written by Dan Griffith of

The screen itself is divided into *pixels* (picture elements, the smallest drawing unit) the size of the cursor. The drawing area is an invisible rectangle 100 pixel rows high by 160 pixel columns wide. Row 0, column 0 is the upper left corner of the screen; row 100, column 160 is the lower right corner; row 50, column 80 is dead center.

Moving and drawing

To move the cursor around, you use the number keys on your keypad. Key 4 moves straight left, 6 straight right, 8 straight up, and 2 straight down. You can also move diagonally: key 7 moves diagonally up

*You're not limited to
freehand drawing; mark
any two points and DDraw
connects them with a line.*

Tampa, Florida, is a reliable, fairly complete drawing program that does a decent job with the CP/M Kaypro's limited graphics.

When you start up DDraw, you're presented with a small cursor, less than 1/20 of an inch square, in the middle of an otherwise blank screen that makes up your sketchpad. The blank screen is a little intimidating to a new user, but typing a question mark brings a full-screen command summary.

and left, 3 down and right, 9 up and right, 1 down and left.

Of the remaining keys, 5 toggles the draw/erase mode, and 0 toggles the browse mode. To begin, DDraw is in the draw mode—when you move the cursor, it draws a line (like a snail leaving a trail of light). If you hit the 5 key, you toggle to the erase mode—DDraw will now erase (black out) any pixels the cursor crosses. Hit 5 again, and you're back in the draw mode.

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If you want to move without either drawing or erasing, hit the O key to move into the browse mode—now you can move anywhere on the screen without leaving a trail. Hit O again to move from browse back to draw. (You can also use a “go to” command to jump directly to any point on the screen.)

You're not limited to freehand drawing, however. With the line-draw command, you mark any two points on the screen, and DDraw connects them with a line. With the box-draw command, you mark two diagonal corners (either pair), and DDraw draws the appropriate box. And with the circle-draw command, you mark the center and edge of a circle, and DDraw creates a circle with the specified radius.

Once you've drawn a box, circle, or other closed figure, you can fill the enclosed space solidly with white. If your figure isn't completely closed, however, the fill will leak out, covering the entire screen unless you abort the command.

DDraw also has a command that lets you enter text. The text “overwrites” any underlying graphics, but the original graphics can be recovered by removing the text. And DDraw lets you assign four attributes—inverse, half-intensity, blinking, and underline—to any square or rectangular area of the screen, including text. So you can draw a box, fill it, and then set the fill to half-intensity and blinking, like a neon sign.

Saving and printing

One of the nicest features of DDraw is that it lets you store and recall not only entire screens but also areas of the screen, called sub-pictures. With this feature, you can create a picture and save it to memory or to disk (or both).

You can then recall this sub-picture and copy it into any drawing at any time. You can use this feature to move a picture from one place to another on the screen, to repeat the picture several times in one drawing, and to move a picture from one drawing to another.

If you recall a sub-picture in draw mode, it will merge with the
(continued on page 19)



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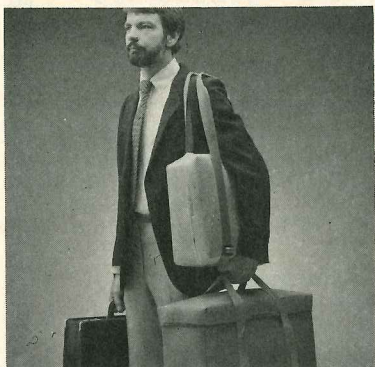


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300 BAUD
(continued from page 14)

- The U.S. Air Force uses packet radio during its "eye-of-the-storm" hurricane research. Because a storm's atmosphere makes all other forms of communication unpredictable at best, the Air Force relays its in-flight findings via packet radio to ensure error-free transmission.
- The Volunteers in Technical Assistance (VITA) is gearing up to use PACSAT to coordinate its worldwide development and technical assistance projects in Third World countries.

Why is packet radio so desirable to such organizations? Because it doesn't depend on telephone lines to get its message across. Packet radio is especially helpful in disasters, when phone lines are often useless. In places where phone connections are unpredictable or non-existent, packet radio is a fool-proof way to transmit data.

Packet radio does have a serious flaw in the area of data security. Data traveling on public domain airwaves is susceptible to interception by "air pirates" using packet radio set-ups. Data encryption helps, but the thought of having confidential information fall into unwanted hands will probably keep major modem users, such as big businesses, from using packet radio on a large scale.

Death of a modem?

So pour yourself a cold one, celebrate cutting Ma's apron strings (read phone lines), and turn your modem into a bookend, right?

Not so fast, ye modem warrior. Major databases are not accessible by packet radio. Nor are any of the commercial information utilities. If those kinds of services are vital to you, packet radio, at present, will be of little use.

However, if you are using telecommunications just to get information from one place to another, or using a modem to overcome the time and geographic constraints of traditional communications, packet radio could be a tremendous advantage to you.

FLEA MARKET

(continued from page 17)

existing picture. But if you recall a sub-picture while in erase mode, it will overwrite anything underneath it. You can take advantage of this last feature by defining a blank sub-picture and then recalling it in erase mode to punch holes in existing pictures.

You can also send any screen to the printer, if you have an Epson or Star Gemini dot-matrix printer. You have two print options—one that prints a straight bit-image of the graphics, with no text, and one that prints the screen full-width on the printer and includes text. These commands should also work on any printer that is *genuinely* Epson compatible.

Limits of DDraw

DDraw is a straightforward program. Its main limits are those of the Kaypro itself—the pictures you create will always look chunky and crude because that (as far as I know) is all the Kaypro allows. The Kaypro's graphics are decidedly low resolution, which means the lines you draw will always be fat.

It also means that any line you draw that is not precisely vertical or horizontal will suffer from the "jaggies." Because the screen pixels are so large, a 45 degree diagonal looks like a staircase. Lines that are just off vertical or just off horizontal are even worse because they take sudden jumps at irregular intervals, creating a broken look. Circles, which must be constructed from many very short lines, also suffer badly. This disease affects all computer graphics (at least, all I've seen), but it's less noticeable on higher-resolution machines like the Macintosh because the pixels (and hence the steps of the staircase) are much smaller.

DDraw does have a few weaknesses of its own. To me, the main one is error trapping. You can clear the screen or quit DDraw with a single keystroke, losing all your work unless you've recently saved your picture to disk. DDraw should at least ask for confirmation before executing these commands.


Documentation is also a bit skimpy—it explains all the commands but gives no demonstrations. Fortunately, there is now a DDraw tutorial in the form of a WordStar file, DDRAWTUT.WS, circulating in the public domain. It was put together by PeopleTalk Associates and contains a decent beginning tutorial along with a slightly revamped version of the original documentation. You should be able to get it from the same public domain source where you find DDraw.

The future of DDraw

After finishing DDraw 2.0, Dan Griffith went to work on a new version, DDraw 3.0, which he plans to release as a commercial product. Among the enhancements he plans are a pattern fill, which will allow you to fill any enclosed space with a pattern instead of just solid white. If you want information about DDraw 3.0, contact Griffith at the address below, and be sure to enclose a stamped, self-addressed envelope for the reply.

DDraw 2.0 will continue to be available free through various public domain sources.

Write-Hand-Man update

In November, I reviewed Write-Hand-Man, a SideKick-like desk accessory program for CP/M computers. At the time, I complained about the program's calculator, which could only do integer (whole number) arithmetic. Since then, I've received an updated version that solves that problem. The new version has two calculators, one that can handle decimal numbers (and lets you control the number of decimal places in the answer) and another that is integer only but can handle hexadecimal numbers (like the old calculator). The new version includes other minor improvements and still sells for \$49.95. 

Information on DDraw 3.0:
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Multi-line headers

It is possible to trick WordStar into doing multi-line headers or footers, assuming that one of the User Printer Patches is available. A line feed (0Ah), either with or without a return (0Dh), is patched into one of the User Printer Patches.

If the RETURN is included, your printer head will return not to your WordStar-set margin (page offset), but to the printer's column one. Thus you will have to space forward the number of spaces of your page offset before beginning to type the second line of your header or footer. (Note: On the screen it still looks as though you are on the same line, which, in fact, is why this works.)

If User Patch 1 were used this way, then you might have:

```
.po 5
.he Header one ^Q   Header two
```

(You could have three or more header lines, but PROFILES' page layout did not permit us to show this. A ^Q should appear after all but the last header line.)

The headers would print as:

```
Header one
Header two
(etc.)
```

If return (0Dh) is not included in the patch, then you can use ^PH to back up to where you want your second line to start printing. One application where this is the better solution is typing papers in APA format, where a heading of

```
Short title
#
```

is required. This is achieved by:

```
.he Short Title^Q^Q^H#
```

It must be noted that WordStar does not know it has inserted these extra lines. Therefore, the top and bottom margins must be adjusted to shorten the printed page by the number of additional header or footer lines. Also, WordStar should

be using form feeds rather than carriage returns to advance to the next page. For printers that do not accept form feeds, the page length (.PL) should be adjusted.

A final suggestion: to relieve the tedium and possibility of error while counting the number of times you hit the space bar to get back to your page offset, type single digit numbers equal to page offset (i.e., 1234567890 equals 10, 123456789012 equals 12). In "insert off" mode, use the space bar to type over these numbers. Use the copy command for third and subsequent header or footer lines.

Edward Seliger
New Paltz, New York

A Turbo tip

For all you Turbo Pascal users, this patch will automatically skip the "Include error messages?" query and not read the TURBOMSG.OVR file. This is for the 2.0 CP/M version; 3.0 might have different addresses but similar coding.

Use the (A)ssemble function of DDT to replace the old code and SAVE the changes.

For those who have no idea what I'm talking about, see "WordStar Deluxe" in the July/August 1985 issue of PROFILES and your favorite CP/M manual or book for DDT patching info.

(Remember always to keep a copy of the original just in case . . .)

```
OLD
210A call 0225
210D dcr c
210E ldax b
210F ldax b

NEW
210A sub a
210B nop
210C jmp 212c
210F ldax b
```

Bill Houle
El Cajon, California

Solving underlining problems

At the end of his invaluable article "WordStar Deluxe," Ted Silveira referred to a "catch" associated with the continuous underlining feature of the Epson printer (and probably of most other printers having this feature): "... you must turn the continuous underlining off at the end of each line. Even if you want the underlining to carry over from one line to the next, you must stop it at the end of each line and restart it at the beginning of the next. If you don't, the printer will underline through your left margin (that's why it's called continuous underlining)."

I would like to point out that there are two ways of configuring WordStar for printers capable of true underlining that make it unnecessary to stop underlining at the end of each line and restart it at the beginning of the next.

One solution is to enter the codes for starting and terminating true underlining at the PALT and PSTD addresses respectively, rather than in any other addresses. With this configuration, ^PA starts and ^PN terminates true underlining.

This solution requires users to give up turning true underlining on and off by means of a toggle. If having a toggle is so important, there is another, and in fact better, solution.

First set WordStar's left margin (or page offset) to zero by entering 00 at address 369 (INITPF+17? in the 3.30 8-bit and 037E in the 3.30 16-bit version.)

Second, enter the printer's own left margin code into the initialization string. In Epson and other printers using similar command codes, it's ESC "1" CHR\$(n), i.e., 1B 6C ???. The hex value to fill the "???" slot should be determined by experimentation, depending on the desired initial pitch and the left margin.

(For example, I configure Word-

Star to cause my Epson printer to begin printing in Elite. I do this by entering the code for Elite—1B 4D—also into the initialization string. To obtain a one-inch left margin at this pitch, I fill in the ?? slot by the value of 09, so my initialization string contains the sequence 1B 6C 09.)

This configuration affords two advantages: first, it allows you to enter the codes for true underlining at any of the available addresses (RIBBON, RIBOFF, USR1, USR2, etc.) without worrying about the left margin being underlined. Second, it allows switching pitches within a document, without having to enter dot commands to maintain an even left margin.

Yigal Zan
Mangilao, Guam

Disk management

Keeping track of all the filenames on your floppy disks can be frustrating and time consuming, particularly if you write them down manually. The following procedure will generate a quick printout of all filenames on your disks.

At the A> prompt, type a ^P <RETURN>. Your printer will "hiccup" to indicate that the print-screen function has been turned on. Then type in the DIR A: (or DIR B:) command, followed by another carriage return, which tells CP/M to list the names of all the files on the disk.

As it lists the filenames on the screen, it will also print them on your printer. Another A> prompt will appear at the bottom of your screen, and you may repeat the DIR command for the other disk drive if you wish, or replace the previously listed disk with another.

When you're finished, turn the print-screen function off with another ^P <RETURN>.

Jerry Johnson
Plano, Texas

Multiple copy lever

Regarding a letter in the January 1986 issue about warped characters on a printout: This is the most common service call in the typewriter business. A control called the multiple copy lever is set at the wrong position.

All quality printers have this lever for setting the optimum distance between the printhead and

the platen to allow for different forms thicknesses.

It would be good for everyone to experiment with this lever in different positions to see what the print quality looks like when you have this problem. It may save you a \$30 repair call.

George Shull
Rockford, Illinois



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HARD DISK SYSTEMS by Emerald Microware

Now you can run a **10 or 20 megabyte** hard disk inside your Kaypro. Our 3 1/2" internal hard disks fit just like a single 5 1/4" floppy, without overloading your power supply. Also available as a 5 1/4" stand alone unit, or just buy the parts (drive, cabinet, controller, or host) that you need.

10 Megabyte Complete System — internal or external	\$ 795.00
20 Megabyte Complete System — internal or external	\$ 995.00
20 Megabyte External System with Dual 96TPI floppies	\$1295.00
Host, controller, and software only	\$250.00

QP/M by MICROCode Consulting

The ideal operating system for hard disk systems! This CP/M replacement has the ability to access **32 user areas**, transparently **time/date stamp** your files (even without a real time clock), and to maintain file access data so that you only have to **backup** files that have been modified since your last backup. Includes 9 new transient commands and 5 new internal commands. Complete, bootable QP/M (specify model) \$ 80.00

ROM UPGRADES

Want the option of running up to **four quad** density (96TPI), double sided disk drives on your system, or booting from your **hard disk**? Rom includes many advanced features such as built in screen dump and automatic stepping adjustment for reading 48TPI disks on 96TPI drives. Versatile enough that you can install our rom on your Kaypro as it is and add your expansion hardware later. ROM Upgrades for all Kaypros (specify model and year) \$ 49.95

HALF-HEIGHT DISK DRIVES by Panasonic

These are some of the finest new space savers available today. Get much lower power consumption with much better reliability than the older full height disk drives.

National JA551 (or Shugart 455) — DSD, 48TPI	\$ 99.00
National JA561 (or Shugart 465) — DSQD, 96TPI	\$114.00

2 MEGABYTE SEMIDISK by SemiDisk Systems

The SemiDisk ram based disk emulator board is the single, most significant speed improvement that you can make to your system. And its **BIG** enough to fit both your program and working files on the SemiDisk at the same time.

2 Megabyte SemiDisk	\$995.00
Optional battery backup unit	\$150.00

UNIFORM by Micro Solutions

The solution to the diskette incompatibility problem. This program allows files to be transferred back and forth between your Kaypro and close to a hundred other computers, including some 96TPI formats. Lists computers by name, with no special technical knowledge required. Uniform \$ 64.95

We guarantee satisfaction on all of our products, or your money back. Include \$3.00 shipping and handling on prepaid orders, or 3% on bankcards. \$6.00 for COD. Phone hours — 8:30am to 5:00pm weekdays; by modem 10:00pm to 7:00am seven days a week.

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MARVEL PRINT

**Version 2.1 now offers Total Printer Control
for your dot matrix printer.**

- ★ Access all print features with single character codes or WordStar code.
- ★ Print proportionally spaced (micro-spaced) text with right margin justified.
- ★ Backspace diacritical marks above and below foreign characters.
- ★ Print multiple columns or a specific number of copies.
- ★ Convert WordStar text to ASCII
- ★ Powerful label program included.
- ★ Optional character set package includes Italics, script, Hebrew, Arabic, Russian, Greek, Math & Science, Foreign, Upper ASCII.
- ★ Automatic reversal of Hebrew and Arabic keyed in from left to right to print right to left.
- ★ And much, much more.

ACTUAL EXAMPLES USING MARVEL PRINT

Notice how this paragraph is right margin justified, yet all of the text is evenly spaced? **MARVEL PRINT** does it for your Okidata 92, 192, 2410, Epson FX-80, IBM Proprinter and other similar printers. Call to find out if we have added other printers. In order to use our character sets you must have a printer that has a down loading feature such as the above mentioned printers (Oki 92 Plug n Play and Epson MX-80 do not). We mixed in some Italics, now we will mix in a bit of script on this last line.

Here are more character set examples created and printed with **MARVEL PRINT**:

$$\sum_{i=2}^{\infty} = \frac{\pi}{\sqrt{6}} \int_a^b [f(x)]^2 dx$$

מציג דוגמה של עברית

أطبخ العصور حمان اسد

These two columns were printed in one file using automatic reverse line feed and left margin set.

MARVEL PRINT	\$70
MARVEL PRINT with Character Set package	\$95
MARVEL PRINT Demo Diskette (Refunded with purchase)	\$5
Domestic shipping & handling	\$5
Available in all popular CP/M formats & MS-PC/DOS	

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For credit card orders please call our toll-free order line 24 hours: 1-800-622-4070. In Illinois: 1-800-942-7317. For detailed info, dealers or purchase orders, call (718) 336-2323 or write: **MARVEL SOFTWARE**, 1922 Avenue N Brooklyn, N.Y. 11230

Tip Trader

WordStar tip

Here's a tip for anyone who uses the Search & Replace command a lot. Whenever you want the operation performed both automatically and as quickly as possible, try this. Type **^QA**, and answer the questions. When it asks "Options," enter **GN** for Global and No asking permission to replace each occurrence—then press the **ESCAPE** key after pressing Return. Pressing **ESCAPE** will cause WordStar to not stop and refresh the screen each time the word(s) are replaced.

Doris Greene
Provo, Utah

SuperCalc 3 and K2000

I own a Kaypro 2000 and use SuperCalc 3 in my work as Treasurer for a small business corporation. I wanted to convert about two dozen spreadsheets I had created with CalcStar and I didn't want to rekey everything. The solution was to convert the CalcStar worksheet to a DTA file and then use Super Data Interchange to convert that DTA file into a CAL file, which SuperCalc can use.

Load CS and then the worksheet you want to convert

Type **“;P”**

Type **“filename”** (This writes the file in DTA format.)

Copy the DTA files to the SuperCalc disk

Load SDI and select **“B”**

Now type **“filename.DTA”** - **“filename.CAL”**

After the processing is done, type the SC3 filename.

Your file will appear as a SuperCalc spreadsheet. Now you'll need to change some column widths and correct the format. Last, you will have to rekey your calculation formulas. The formulas do not convert, only the resulting value.

Wade A. Hansen
St. George, Utah

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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 comparatively 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.

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 this cover or we'll 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.

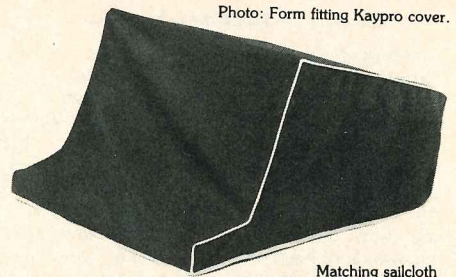


Photo: Form fitting Kaypro cover.

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
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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 software command. 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 CalcStar, Perfect Writer/Filer 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 \$17.95. Choose any two templates for \$34 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.

MORE ON NEXT PAGE 

PANAMAX SURGE SUPPRESSORS

Description	List	Price
2 outlets, D NF	\$ 79.00	\$ 59.00
4 outlets, LC S RB NF	\$ 89.00	\$ 69.00
6 outlets, LC S RB NF	\$ 99.00	\$ 79.00
UltraMax, LC S UA NF	\$149.00	\$ 99.00
TeleMax, D 10L 2PJ NF	\$ 89.00	\$ 69.00

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.
OL: Includes outlet.
PJ: Includes 2 phone jack receptacles.
UA: Includes under voltage alarm/brown out protection.
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.
All Panamax units are factory guaranteed for 60 months.

"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."

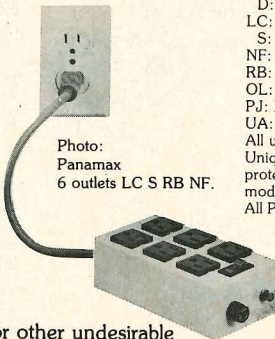


Photo: Panamax 6 outlets LC S RB NF.

"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

Lockable Diskette Defender

Handsome, sturdy, smoke-tinted acrylic tray holds 70 Kaypro-size diskettes. Flip-up lid keeps out dust, debris, and moisture, and locks securely to guard your important work. Comes with 7 dividers that make for easy filing and keep floppies upright to prevent bending, warping, and scratching. Tough metal lock never comes in contact with diskettes because it is enclosed in a plastic housing. Super value at \$23 for one, or \$21 each if you buy 2 or more. Keep prying eyes and sticky fingers away from your important data. Order today.

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 ... \$19.95 each
10 ft cables ... \$25.95 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

The All New SmartKey

— now comes with **Windows** and much more!

Get ready for real computing power! *SmartKey* Version 4.2 now comes with windows. Lets you redefine every key on your keyboard from inside any program. Just push a key, a window opens up on your screen, redefine the key. Move the cursor anywhere in the window. Make corrections in the window. Simple. Redefining keys is easier than ever. Lots of new features. Will save you thousands of keystrokes. Really fun. Touch a key and spell out your entire name and address. Or anything else you want. Unlike similar programs, *SmartKey* does not interfere with the regular function of your keyboard. Once you've tried it, computing will never be the same. Lets you save numerous complex command codes, boilerplate paragraphs, inventory numbers, or whatever, and inject any of them into your work with a single key.

Central's super priced *SmartKey* combo pak includes a free copy of Paul Golding's \$15.95 book, *Screen Smarts, The Computer Tamer's Guide*. This book tells how you can use *SmartKey* to turn your computer into a supercharged mean machine. Saves money. Look at these prices. Order today.

Description ‡	List	Central
SmartKey 4.2 CP/M	\$49.95	\$45.00
SmartKey 5 MSDOS	\$59.95	\$54.00
SmartKey & SmartPrint	\$69.00	\$57.00

‡ Includes \$15.95 *Screen Smarts* book free

Attention: When comparing *SmartKey* 4.2 to similar programs, please ask if they have a real delete key, windows, and other features that make *SmartKey* clearly superior.

Text Filing Machine

Turn your Kaypro in to a powerful text filing machine. *SuperFile* is a textual matter database manager unlike any other. It puts you in control of your information. It allows you to easily store and retrieve notes, letters, random thoughts, contracts, depositions, invoices, new product information, sales reports, reference articles, scripts, abstracts, bibliographies, customer profiles, and much more. *SuperFile* accepts as many as 65,000 entries per database; allows 512,000 keystrokes per record, each of which can have up to 250 keywords; and indexes information you've stored on as many as 255 diskettes per database. Powerful.

Input for a *SuperFile* database comes from your word processor, so you can easily include information you already have into a database without having to re-key it. No fancy fields to define. This is a completely free-form database system. No programming language to learn. There's nothing difficult here. You can be up and running within minutes. *SuperFile* uses logical searching procedures to find your information fast. *SuperFile* searches from 60 to 400 entries per second. Save yourself the time and effort of filing and cross-filing information by hand or in overly structured data fields. *SuperFile* lists at \$195. Central's price is \$145. Order today to get *SuperFile* fast.

Print Bright Pages

Wow! You'll be amazed at the compliments you'll get from using this program. No wonder. *FontStar* makes you look good. All you do is put a few *FontStar* commands in your letter, bulletin, invitation, or manuscript, and print. It's easy.

Don't let *FontStar*'s low price fool you. It's a powerful program. Although it's not as versatile as *Fancy Font*, it really brightens up plain jane dot matrix printing and for much less too. Works with Epson FX, RX, MX, and LQ1500 printers. Also works with Epson compatibles like Gemini printers too. Gives same results. Impressive. Good looking reports, letters, invitations, announcements, etc.

FontStar comes with 16 preprogrammed fonts, but it also lets you design your own fonts or character sets. *FontStar* doesn't require complex commands, or any tricks to operate. It makes typeset quality justification a snap, so everything you print looks super professional. Use as many fonts as you like in your documents. By the way, each font also comes with a complete set of foreign language characters, so printing in Spanish, French, or other European languages is a snap. Make your own Greek or Hebrew font sets too. Design special characters too. No matter what you print out, *FontStar* will make it look better. *FontStar* is only \$49. Order *FontStar* today. Get more from your dot matrix Epson or compatible than you every thought possible. Order today.

Attention: Imagine dot matrix printing with a flair. That's what *FontStar* does. Makes a page look bright. *FontStar* works with any word processor that produces plain ASCII files including WordStar and NewWord. Order today to get *FontStar*-type printing fast.

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Full Power Computing

T/Maker Integrated is a highly acclaimed powerhouse program that can turn your CP/M Kaypro into a computing workhorse. At last, you can enjoy productive computing like never before. Imagine doing full-featured word processing, relational database management, spreadsheet analysis, horizontal bar chart graphics, and checking your spelling all within the same program. No more switching back and forth between barely compatible programs to accomplish these simple tasks. *T/Maker Integrated* is universally acknowledged as a unique integrated software system that is just plain easy to learn. There is an alternative to doing things the hard way. *T/Maker* can put the hidden and largely untapped power of your Kaypro at your command. *T/Maker Integrated* is regularly \$450. Central is proud to offer this outstanding multi-function package for the low, low introductory price of \$179. Yes, this includes the entire feature-packed *T/Maker* package, so please treat yourself to this excellent super productive software today. Experience the power of true software integration on your Kaypro. Order *T/Maker* today. Get it fast.

Bodoni
Bodoni Italic
Micrograma Extended
Flash Bold
Broadway
Sans Serif Shaded
OCR B-Font
Commercial Script
Old English

Sample of some of *FontStar*'s 16 Fonts.
Make Up Your Own Alphabet or Characters too.



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Product Description List Central

Kaypro CP/M and MSDOS Software

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MBasic	Speeds learning.	\$ 39.95 \$ 33.00
Multiplan	Gives fast results.	\$ 75.00 \$ 57.00
Wordstar		\$ 75.00 \$ 57.00

BORLAND INTERNATIONAL		
Turbo Pascal 3.0		\$ 69.95 \$ 58.00
Turbo Database Toolbox		\$ 49.95 \$ 44.00
Turbo Tutor, Step by Step		\$ 34.00 \$ 29.00
Turbo Holiday Pak		\$125.00 \$99.00
— Pak includes all the above. Call for MSDOS prices.		

CDE SOFTWARE		
Checks & Balances		\$ 74.95 \$ 64.00

CHUCK ATKINSON PROGRAMS		
Quick Check + AR		\$195.00 \$149.00
Quick Check Money Manager		\$ 95.00 \$ 69.00
— Recommended for comprehensive ease of use		

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— All superior WordStar enhancers		

COMPUTRONICS		
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The Real Estate Consultant		\$399.00 \$349.00
with The Creative Loan Consultant		
— Don't buy or sell property without this software		

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Banner Plus		\$ 37.95 \$ 18.95
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Footnote and Pair ★		\$ 99.00 \$ 79.00
Grammatik ★		\$ 75.00 \$ 69.00
Hyper Typer, Typing Tutor		\$ 39.95 \$ 32.00
Index ★		\$ 99.00 \$ 79.00
Milestone, Project Planner		\$ 99.00 \$ 89.00
Bibliography and Footnote		\$150.00 \$128.00
Notebook		\$150.00 \$ 99.00
Writer's Pak — includes		\$250.00 \$189.00
all ★ products and Random House Checker		
— Call for prices on other DM or PT products		

EWDP SOFTWARE		
Filebase with UTL		\$150.00 \$ 99.00
— Mailmerge enhancer and database manager		

FRESHWARE NEW		
DateMate		\$ 29.95 \$ 27.00
— Design & print personalized calendars anytime		

FYI, INC.		
FYI 3000		\$395.00 \$299.00
SuperFile with Sort & Merge		\$195.00 \$145.00
— Free form textual matter database managers		
— Index material spread over 255 diskettes		

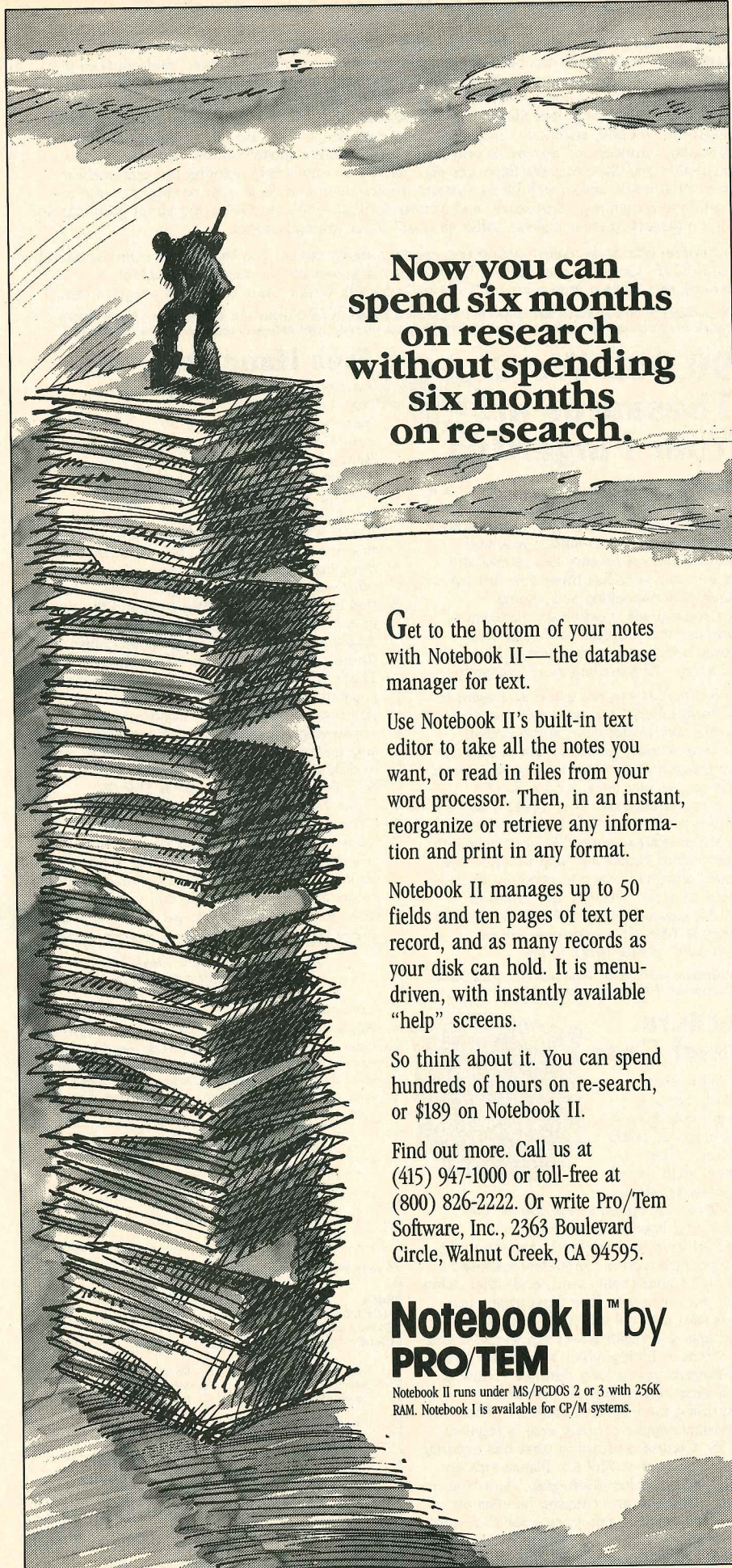
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Deadline		\$ 49.95 \$ 43.00
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Infidel		\$ 44.95 \$ 39.00
Witness		\$ 39.95 \$ 37.00
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Zork II & III each		\$ 44.95 \$ 39.00
— Call for prices on other Infocom products		

MENDOCINO SOFTWARE		
Eureka, Disk Cataloger		\$ 50.00 \$ 48.00
— Helps you find the right file instantly		

MICROSOFT		
MBasic Compiler		\$395.00 \$299.00
MultiPlan		\$195.00 \$149.00

MICROSOLUTIONS		
Uniform Kaypro II/2		\$ 69.95 \$ 49.95
Reads 32+ machine formats		
Uniform Kaypro 2X/IV or 10		\$ 69.95 \$ 49.95
Reads 90+ machine formats		
Uniform for all other machines		\$ 69.95 \$ 49.95

continued on next page —



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six months
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Notebook II runs under MS/PCDOS 2 or 3 with 256K RAM. Notebook I is available for CP/M systems.

Letters

(continued from page 8)

zine articles and journals written onto diskettes, and I would check facts, add background and sand the rough edges. No muss, no fuss, no stacks of paper: exactly what this word processing is supposed to be all about.

We found the rugged Kaypro to be ideally suited to this project and were happy to give it a plug.

I'd also like to thank you for a very useful magazine. God forbid I should let my subscription lapse. Each issue of *PROFILES* has something to add to a previous one, and something more for my working knowledge. Case in point your columns on customizing WordStar, which are instructive and, eventually, productive.

So keep up the good work, and don't be afraid to deal with social issues and Third World uses for microcomputers—those who want only technical matters to fill their brains so they can play with their toys are not part of the solution . . . which means, as we used to say, they're part of the problem.

Christian Kallen
Angels Camp, California

I've been receiving *PROFILES* for two years and have a Kaypro II and a Kaypro 16 (hard disk). I'd like to take this time to tell you how pleased I am with both the magazine and the machines.

With such a diversified audience, it is hard to please everyone. I think you're doing a great job of serving all of us, whether we are CP/M or MS-DOS users, writers or programmers, beginners or experienced users.

On that note, I like the new format of the January issue with the user-level code for each article, Tip Trader, and Little Mysteries. As you might imagine, I didn't hate the articles "Pretty Pascal" and "The Z-System."

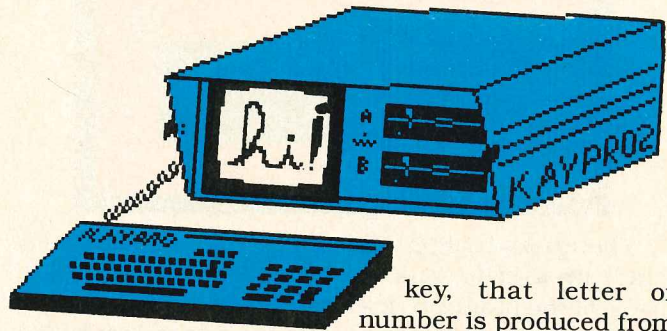
Peter Dempewolff
Burlington, Vermont



Pixels & Phosphor

Drawing on a CP/M Kaypro

by Christopher Meeks



Now that you can leap correspondence in a single bound and process your taxes faster than a speeding bullet, you might feel you're using your Kaypro to full advantage. Word and data processing—a snap. The title of this article, however, might cause you to think, “Really? Drawing? On my CP/M Kaypro?”

Yes! If you have a Kaypro with a graphics screen, the kind that produces sharp sans-serif letters, you can pepper your correspondence with drawings, highlight a business proposal with line graphs, pie charts, bar charts, and charts of all kinds, create mazes, design a logo, and more, using graphics software.

When Kaypro introduced its computers with the graphics screens in 1984, no available software took advantage of the screens. Now several programs do, and more are in development. Here I will examine four programs: Rembrandt, SCS-Draw, FrankArt, and the public domain DDraw—all of which allow you to draw on your screen and print out on a variety of printers.

Graphics in general

Let me explain a bit about monitors and graphics. When you are using your computer for word processing, take a close look at your screen. Each letter is made of a series of square dots. If you think the letter G looks wonderfully curved, look closer. You could compose it on a grid pattern. It could be a letter in lightbulbs on a sports arena scoreboard. When we look at the screen from two or three feet away, we don't really notice the letter's boxiness.

Computers—Kaypros included—produce two types of images: alphanumeric and graphics. The alphanumeric characters are the letters and numbers represented on your keyboard. When you hit a

key, that letter or number is produced from the character set stored in ROM (read-only memory). Alphanumeric characters appear much more distinctly than graphics characters.

Graphics characters are blocks, or partial blocks, that use small squares called pixels. “Pixel” is short for “picture element.” A Kaypro graphics character cell is two pixels wide and four pixels tall. The Kaypro screen itself is 160 pixels across and 100 pixels down. Your drawings use or leave blank any of 16,000 pixels.

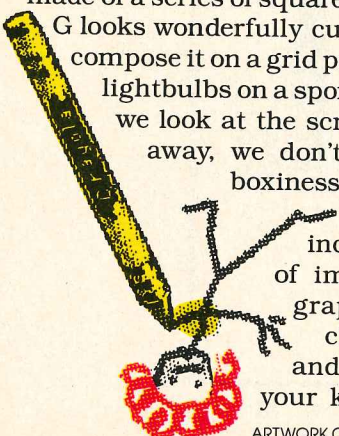
A single graphics character may look like a solid rectangle, an upside down L, half an H, or many other angular variations. Because graphics characters come in chunks instead of small dots, they appear more bulky than alphanumeric characters. Kaypro graphics characters are stored in ROM (read-only memory).

On any computer, the smaller and more numerous the graphics chunks, the sharper the image will be. The smaller and more numerous the chunks, however, the more memory you need. Kaypro CP/M computers have 64K of memory, so you won't be using a Kaypro for the sophisticated tricks of a Macintosh. Kaypros must show graphics characters in a somewhat larger size because of their coarser graphics resolution. That's why drawing, as you'll see, can look so angular. This aside, CP/M Kaypros can do amazing things.

Rembrandt

Rembrandt is presently king of the drawing jungle. This is the program to which all other CP/M graphics software must be compared.

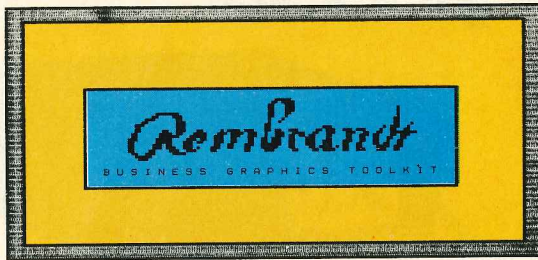
Rembrandt comes in three easy-to-use components: “Board,” “Graph,” and “Brief.” The first part, Board, turns your screen into a drawing board. You use the arrow keys to move the cursor over your screen; by hitting one of ten keypad keys, you select the type of trail your cursor leaves. Thus, by choosing direction and type of trail, you create images. The directions (up,



ARTWORK COURTESY OF SECOND CITY SOFTWARE

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down, right, and left) tend to force the user to make angular-looking pictures, but you can get around the boxy images somewhat by varying the type of trail you leave. The cursor can create any of 256 shapes (including the alphabet). Through creative selection of these shapes, you can give a flowing and rounded quality to your work. For an example, examine the Rembrandt logo below.



The stylized calligraphic look, on close inspection, is made up of little squares—the pixels. You can get the hang of the program in minutes, but it will take a few hours to master the more subtle aspects of Rembrandt. Once you do, your imagination is your only boundary.

Rembrandt also offers such powerful features as reverse highlighting, medium highlighting, flashing video, an alpha mode (to type on screen), and a wide-character mode (to type large characters on screen). You can mix and match these modes. Moving and copying pictures takes only a few keystrokes.

When you are finished drawing your picture, you save it to disk by first hitting the ESCape key. This brings you to the main menu, where you are given the choices of:

- Enter DRAWING BOARD Mode
- LOAD Picture From Disk
- SAVE Picture To Disk
- COMMAND Summary
- EXIT to CP/M

By using the up and down arrow keys, move to the third choice, hit the return key, and your image is saved. Simple. If you want to print your picture, you exit

to CP/M, and at the A > prompt you type the command appropriate to one of 13 dot-matrix printers or one of 13 daisywheel printers. You also type the name of your picture file. I have an Okidata 92 printer, so I use the command OKIPRINT. If I'm printing a picture titled FIRST, after the A > prompt I type the words OKIPRINT FIRST and press return. The printer leaps to life.

Business graphics

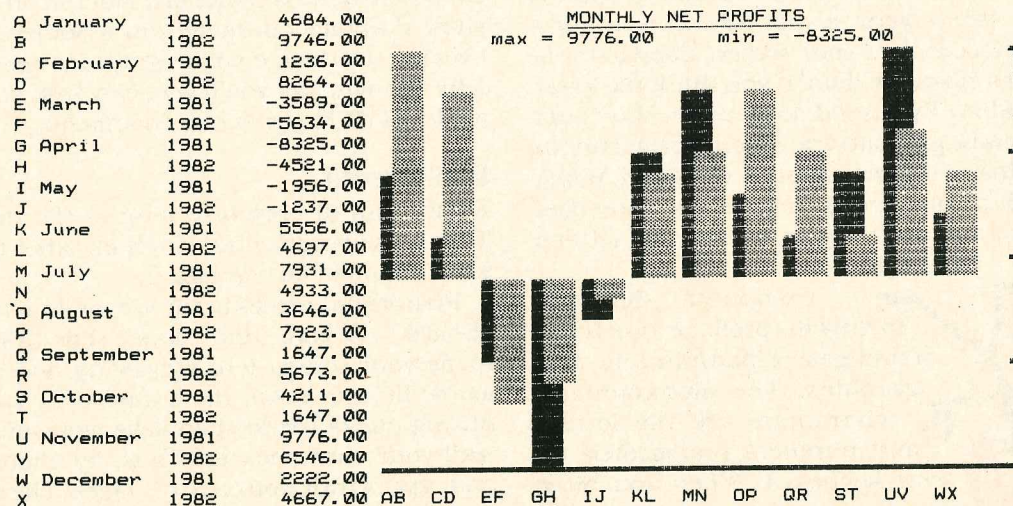
Rembrandt stresses that business graphics are its greatest strength. Business graphics use charts and graphs to communicate numerical data. The "Graph" part of Rembrandt lets you make four types of charts: vertical or horizontal bar charts, pie charts, and "XY" graphs. Each type presents data in a visually different way. With four choices, you can use the type that best communicates your point.

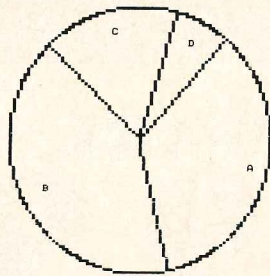
Bar charts show relational data well, such as profit/loss ratios or growth over a period of time. Pie charts are excellent for showing percentages, and you use XY graphs (also called "scattergrams") when you want to place a large number of data points on a screen to show a relationship.

An important point to consider when choosing a business graphics program is the number of ways data can be entered. All programs accept direct keyboard input, but many allow you to transfer files from a spreadsheet. Rembrandt is one of these. You can download your information right from MBASIC files, dBASE files, SuperCalc files, or files from any program that can output numerical data in ASCII form. The Rembrandt manual gives clear instructions on how to interface with each type of file.

Brief

The "Brief" part of Rembrandt lets you create onscreen slide shows of the drawings and graphs you've made. In live presentations, you can show several graphs or pictures in any order you choose. Rembrandt will vary the display time for each graph or picture, allowing it to





Quarterly Sales Summary
for 1982

LABEL	VALUE	%
A First Quarter	6589258.00	35.45
B Second Quarter	7643000.00	41.12
C Third Quarter	3125689.00	16.82
D Fourth Quarter	1226980.00	6.60

stay onscreen from one second to 98 seconds. You can also keep each picture onscreen until you hit a key to move to the next. Program author David Grenewetzki says this feature alone sells many copies of the program.

With Rembrandt, therefore, you have a versatile package that allows you to draw and create business graphs, drawings, and "slide" shows. The program retails for \$79.95. If you use a letter-quality printer, graphs and drawings print slowly, using the period on your daisywheel, but if your graphics needs are few, this feature is ideal. You don't need to buy a dot-matrix or ink-jet printer.

Note: If you have an older Kaypro 2 or 4 ('83 series) and wish you could create graphs onscreen as with newer Kaypros ('84 series), step right up. Spectre Technologies now offers a version of Rembrandt for the older Kaypro machines. With it comes a new ROM chip that is extremely easy to install. This new ROM chip gives the computer new character definitions, which include graphics characters. You won't get the same sharpness as on the newer screens, but the result is nonetheless quite good. The whole system—chip and software—costs \$89.95.

SCS-Draw works much like Etch-a-Sketch, a popular toy from the 1950s.

SCS-Draw

Though Chicago has dropped to third place behind Los Angeles in population, people still refer to the windy town as the Second City. Second City Software hails from there. The small company, headed by Doug Mahugh, recently introduced a fabulous program called SCS-Draw.

By typing "draw" at the A > prompt, you launch into this program. Two-thirds of your screen becomes a green field—your sketchpad. Another part of your screen indicates which part of the sketchpad you are in. With SCS-Draw, the visible portion of your sketchpad is about one-ninth of the total area you can use. The

bottom part of the screen gives a menu of commands.

The three basic commands you need are D for Draw, M for Move, and E for Erase. To draw, hit D, and then press the arrow or keypad keys to move the small flashing cursor. As the cursor moves, it plows lines into your green field—the lines of your drawing. This works much like "Etch-a-Sketch," a popular toy from the 1950s. The type of images I first made looked rather stiff; unlike Etch-a-Sketch, you can't work in two directions at once. As I became more proficient, though, my drawings became more advanced.

One of SCS-Draw's great features is the expand option. You can produce a small drawing, type X (for "expand"), and your picture enlarges, instantly and simply. Another splendid feature is the text mode. This mode converts alphanumeric characters into graphics characters. For instance, say you want the word TIM to appear large and bold. Hit T for Text, type the word "Tim," and hit the return key. The word, made up of graphics blocks, appears enlarged on the screen. If you want it larger, hit the X key again.

TIM

SCS-Draw creates circles by just marking the radius, as does Rembrandt. The program produces true round (as opposed to oval) circles when you print.

To print your handiwork, press ^P at any time. You don't have to save your image to disk before you print. When you do want to save an image, however, you hit the letter S. SCS-Draw will ask you for a filename—you give it one, hit return, and it's saved.

The printed product looks different from what you see onscreen only in size. The blinking cursor represents one pixel; one pixel represents one dot on a dot-matrix printer. The pixels onscreen appear larger than the dots on paper (by a nine-to-one margin). Therefore, your printed product is one-ninth the size of the image onscreen. What seems huge onscreen prints out in a modest size. (A 3 x 3-inch box prints out to be 1 x 1 inches.)

SCS-Draw, however, has a printing-enlargement option. By going into the Print menu and hitting ^O, you can enlarge the printout by a factor of one to six. At factor six, that 1 x 1 box becomes 6 x 6 inches, or two times larger than the 3 x 3 box you had onscreen. If you choose to enlarge the printout by a factor of three, then you will get a 3 x 3-inch box, matching what you see on screen. Clever.

If you enlarge an image onscreen using the X command, and then enlarge it more when printing, you can get some incredible results. I enlarged the letter Y as far as I could go. The letter occupied most of one page and stood not quite six inches tall.

Several other options include the ability to flip or rotate images, fill in image areas with patterns, and print inversely. Pop-up help menus are only one key-



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PIXELS

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SCS-Draw permits you to draw to the best of your abilities—and your computer's. It sells for \$59.95.

Frank-Art

This graphics software program comes in three progressively more elaborate versions: standard, deluxe, and plus. Designed to run on *all* CP/M Kaypros, including '83 series without the enhanced graphics screens, it puts graphics in reach of all Kaypro owners.

All versions come with a library of pre-made designs and images. You can also create your own designs. Each art file can be saved to disk to re-use later. With an included program called "Micro Brush," you can put any part of an image "under a microscope" and edit any or all of the pixels.

You can also define a block within a picture and print, erase, black it in, store it to disk, move it, duplicate it, or put it in reverse video. In addition, you can make a block transparent or solid in relation to the image on which it's overlaid. Blocks or entire pictures can be shaded with any of over 3,000 pre-defined shades and patterns.

Standard Frank-Art allows you to create a single picture of up to three square inches, which you can format a variety of ways. Larger images can be created by "stacking" two or more files.

The deluxe version can make bigger images—up to 5.3 inches by 10 inches. It adds five typeface fonts for text, which you can edit and then shade with a pattern. A "stringer" program strings together letters to create messages that you can position anywhere on the background and fill with a pattern. A "Setup" program that asks you questions about your picture is also included. It stores all that data into a master setup file. When you want to draw that picture, simply use that setup file and Frank-Art will do the rest.

Frank-Art Plus increases the size of images possible from 5.3 inches to 6.5 inches wide and up to several feet tall. Blocked areas can be flipped upside down or mirrored. The Micro Brush program can automatically construct geometric patterns that can be shaded with a pattern. Also, several *thousand* more patterns are available.

A demo (\$18) is offered and a trade-up policy is available.

DDraw

No, DDraw is not a typo, but the title of a wonderful little program. DDraw is not quite as powerful as the other three programs, but it's in public domain. That is, the price is right—it's free. You can download it from several Kaypro-specialty bulletin boards, or ask your friends with Kaypros. (It's amazing how fast a good

piece of public domain software gets around.)

What you get is something like SCS-Draw, but without all the options. One pixel on screen equals one dot on your Epson-compatible printer. This means that whatever you draw on the screen will print out to one-ninth the size. You can't expand images, but you can draw circles and boxes with a flick of a few keys. Drawing diagonals is a breeze, and you can move images, or parts of images, around at will. (See *Ted Silveira's column on page 16 for more specifics on this public domain gem.*)

Dan Griffith is the author of this copyrighted software, and he is, I'm told, improving it all the time. Instructions come on disk under the name DDRAW.DOC. You might try this program first to get a taste of what Kaypro graphics can do. This may be the only program you need—or you might get hooked and find you want the power of one of the other programs.

In sum, any one of these programs will splash designs onscreen direct from your own personal visions. Go to it! Now you can compute on the right side of your brain. ■

Christopher Meeks is senior editor at Prelude Press and a playwright. He is not related to Brock Meeks.

Quick Reference Summary

Product: Rembrandt
Manufacturer: Spectre Technologies
22458 Ventura Blvd., Suite E
Woodland Hills, CA 91364
Phone: (818) 716-1655
Price: \$79.95; with new ROM: \$89.95

Product: SCS-Draw
Manufacturer: Second City Software
Box 267960
Chicago, IL 60626
Phone: (312) 577-7680
Price: \$59.95

Product: FrankArt
Manufacturer: FrankArt
P.O. Box 12282
Boulder, CO 80303-2697
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\$234 for Plus.

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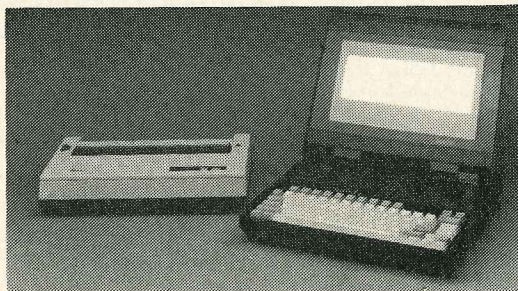
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P E R S O N A L

Bibliographic

S O F T W A R E

Rounding up those references

by Paul Ofman

Every researcher has to collect data. That's what we usually think research is—collecting. Whether it's butterflies from the Amazon or references from the New York Public Library, we have to get our facts together before we can know what's what.

But when everything's collected, our job is only half done. We've got to *keep track* of all that stuff!

Take bibliographies, for example. A typical academic tome may have anywhere from 200 to 1,000 references. Keeping all of them straight used to be the thankless task of secretaries and overworked graduate students. But in this age of limited funding, authors often have to do the dirty work themselves.

As many of us have found to our dismay, anything over 100 references is almost impossible to keep straight. Was that Weisman or Wiessmann? 1873 or 1875? Where did I see that article on basal ganglia?

We all know the questions. And before computers, the answers were on 3x5 cards scattered on our living room floors. Now there's a better way.

Reference management

The answer, of course, is a good database management (DBM) program. But not just any program will do. Regular database managers can keep track of everything from avocados to zebras, but often get hung up on text. Either they only allow 50 or so characters per entry—try fitting multiple authors in *that* space—or they're so complicated only a programmer can figure them out.

What's a plain vanilla writer to do? That's what this article—and its sequel next month—are all about.

You see, some software makers have realized that a single design for DBMs won't work for everyone. Different needs require different designs. This month we'll look at some "reference managers"—programs that are designed to handle bibliographies (and some other things as well).

Next month we will review some free-form text-oriented DBMs ("garbage bags" in *The Whole Earth Software Catalog's* lingo, because they hold just about anything).

Before getting into the specifics of the reference

managers, however, let's think about what you need them to do. Only then can you choose the right program (or choose none at all, if the Perfect Filer, DataStar or dBASE II that you already own meets your needs.)

What to look for

Like most database programs, reference managers organize information in categories, called "fields." These data fields hold items like authors, titles, publication data, etc.—perhaps even an abstract, if you're ambitious. Since you're likely to be working with different types of references (e.g., books and journal articles, single and multiple authors), the kinds of fields available should be pretty flexible. You want to choose a program that lets you store everything you need.

Programs differ in their treatment of fields. Some programs allow unlimited field lengths, while others keep you to rigid bounds. You will want a program that can handle occasionally long fields—multiple authors, long titles, or detailed publishing information.

But if the program has to save lots of disk space just to accommodate the occasional long title, you'll run into size problems. How many references will fit on a single floppy? Can the database span more than one disk? Usually the capacity varies inversely with the size of each entry, but here again some programs are better than others.

Another question is how you enter data. Must you use a word processor while keeping formats in your head? Or will the program provide data entry screens, essentially blank forms you fill in? Or will it just ask you questions ("What's the title?", etc.)?

How easy is it to fix those inevitable mistakes? Programs vary widely here, too.

You'll want to search and sort your database. How quickly does the program find the reference you're looking for? Can you read in keywords—reminders of a book's contents—to make searching easier? How many can you use? Are they easy to change?

Will the program store abstracts, in addition to author/title information? If it does, how big can they be? Can the program's search routines find words or phrases in them? (This might make using keywords superfluous.)

Beyond these basics, there are some powerful features. For example, once you've stored your references, you may not enjoy having to manually assemble a bibliography every time you write a book or article. Several programs will scan your text file, pull out the references you've used and automatically create a reference list for you. Some can even store different citation styles and use whichever you specify.

Sometimes you need to "import" data from another program or "export" data so you can use it elsewhere. The ability to pull references from commercial databases like BRS or Dialog, or to print them to disk in a MailMerge-like format can save you lots of typing time.

Of course, not everyone will need all these features. Now that you know what to look for, you can match a program to your requirements.

Microlibrarian

The least expensive program I looked at was Microlibrarian, which is available only on Kaypro and Osborne disk formats. At \$79.95, it is eminently serviceable and does several of the things described above.

The program is menu-driven: you enter bibliographic references in response to prompts (like "Enter the title"). Data fields included in each record are: author's name (more than one name is accepted), title, publication, date, page number, and abstract (up to 250 characters). (The length of the other fields is also limited.) All data must be entered through the keyboard via the appropriate screen prompts, and these prompts cannot be changed. Also, data cannot be "imported" from another source.

You can sort references at any time, either alphabetically by author, title or publication, or chronologically by date, or by any two categories. You can search the database for a given author, title, or publication, using up to seven keywords.

*Microlibrarian lets
you change keywords
directly from an
alphabetized list.*

To aid you when searching, Microlibrarian can print an alphabetized list of keywords. As a further enhancement, you may change keywords *directly* from this list, eliminating those that have outlived their usefulness.

Records selected in searches can be printed out as hard copy or written to a disk in MailMerge format with each field of a record enclosed in quotation marks and separated from other fields by commas. Brief but helpful instructions are given on how to make use of these files in WordStar/MailMerge or dBASE II.

Microlibrarian's documentation is clear but terse; the index only covers menu choices. In general, how-

ever, this is a simple, easy-to-learn program that can organize, sort, and list your references with some flexibility.

Bibliofile

For a bit more money, Bibliofile (\$250 for MS-DOS or CP/M) offers many of the features needed for start-to-finish reference management. Although it requires a word processor for entering text, the program demonstrates an attention to the fine details of the reference task.

Bibliofile can handle multiple authors, institutional authors, underlining, and many other details that often arise when working with bibliographies.

With the stipulation that each field be less than 500 characters and each record no more than 2,000 characters, this program will allow you to quickly search any combination of its six fields according to simple or complex criteria. You can't include lengthy article summaries, and you must use keywords judiciously, but these are minor drawbacks.

The main power of Bibliofile is its ability to scan a text file (your next journal article?), extract citations from it, and prepare an alphabetized bibliography of only those references from your database that appear in the text.

This capability is even further enhanced by Bibliofile's ability to define and store up to 32 output formats. These formats are extremely flexible and will allow for the subtle differences in punctuation that different journals and disciplines require. Hallelujah! No more retyping when you switch citation styles!

In spite of not being menu-driven, Bibliofile is easy to learn and use, particularly with the "task maps" that guide you through its various steps. A database may span *more than one disk*. While the documentation doesn't show how, a creative person could easily adapt the six fields for other uses besides bibliographies. The lack of data entry screens would make this easier, since one would not be confused by inappropriate field names.

Notebook and Bibliography

These two programs from Pro/Tem Software together cover most of the ground mentioned above.

Notebook (\$150 for CP/M, \$189 for MS-DOS) is a text-oriented database manager with entry screens and a text-editor that uses WordStar-like commands. It can be used for references, recipes—or anything else, for that matter. You may have up to 20 separate data fields, which you may name whatever you like. Up to 500 characters are permitted in each field, with a maximum of 4,000 characters per record (more in the MS-DOS version). Records may contain more than a screenful of information, and disk capacity is the only limit to the number of records.

Printing is extremely flexible. Print formats, including page layout, headers, and footers, are entirely

under your control, and any or all data fields may be included in any order in a report. Reports can be columnar (i.e., in columns with appropriate headings), or concatenated, as they would be in a bibliography. You can choose what words or punctuation will appear between printed data fields—a critical detail if you must follow strict citation styles.

*Bibliofile can define
and store up to 32
output formats.*

You can print to paper or to disk for later editing. Since so many output details are at your command, you can easily use Notebook with other software that uses text files as input. Conversely, Notebook will accept input from other programs, provided data can be written to disk and certain simple conventions observed.

You can use up to two strings (in boolean relation to each other) to search the database. You can store the search criteria to disk for later use. Records selected in searches can easily be made into separate databases.

The only limitations I found were the absence of word-wrap among Notebook's edit features, and more importantly, that when subsets of a database are merged into one, records that were in both appear twice. Deleting the duplicates is an extra chore.

Bibliography (\$99)—Notebook's companion—does just what its name implies: it scans text files for demarked citations (e.g., %Freud, 1905) and matches these to references in your database to produce a properly formatted, alphabetized bibliography.

The program is distributed in two forms: one works with Notebook database files (and uses all of Notebook's flexibility in printing); the other uses "library" files you enter in a special format with a word processor.

To run Bibliography, you specify a text file to scan, the database you're using, and a filename for the reference list. You also select options, such as whether the citation in the text should be replaced with the complete reference (often a useful feature).

Your bibliography can be constructed with author, title, etc. on separate lines, or concatenated with a period and space at the end of each field. You will still have to edit this listing with your word processor to get it into final form.

Bibliography can work with several text files at once, such as book chapters. A merge utility pulls each of the separate reference lists together—up to three at a time. Four chapters require two merge runs. Unfortunately, references appearing in more than one list will be repeated; you need to delete them with a word processor.

For safety, the program makes a special file listing

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BIBLIOGRAPHIC SOFTWARE

those citations for which there was no matching database entry. Most of your typos will end up there, ready for correction.

Bibliography will work with database programs other than Notebook, provided the program in question can write to disk in the "library file" format—not a particularly difficult job.

The documentation for both programs is complete and informative. Taken all together, Notebook and Bibliography represent a powerful research aid. Individually, the programs are not onerous to learn and will likely be a great help. Aside from a few minor insufficiencies—mainly the duplicated entries—the programs handle their tasks in a thorough manner.

(Writers who want to put their references in footnotes will be interested in Footnote (\$99), a third Pro/Tem product, which sets footnotes in WordStar texts. Footnote was reviewed with Bibliography and Notebook in the December/January 1985 *PROFILES*.)

Personal data manager

Sci-Mate Personal Data Manager and Universal Online Searcher (\$399 each or \$718 for both) make another impressively packaged pair of programs. The programs are available in either CP/M or MS-DOS versions. However, the CP/M version is now available only on 8-inch single-sided single-density disks, which

means that it will have to be downloaded to your disk format. Both are menu-driven and come with tutorials and online help. The documentation is thorough, and the publisher provides a toll-free number if you get confused.

As a database program, the Personal Data Manager offers more flexibility to combine differently formatted data than any other package I reviewed. Set-up is a snap, and different kinds of data can be freely intermixed. It can handle data downloaded from online commercial data services or from other database programs. Entries may be wider than one screen and can be lengthy as well. Changeable entry prompts are provided for all fields.

The program is fast, relatively easy to learn, and provides very powerful search capabilities. It uses standard boolean operators, as well as the more complex "ornot" and "andnot." Searches can be made visually by accession number (order of entry into the database), or by paging through the database in whatever order it was last sorted. Or searches may be conducted on the whole database, with all "hits" saved for further use. Onscreen editing makes entering or changing data easy. Any entry can be printed out on paper.

The program has some striking inadequacies, however. While it allows flexible formats for printing
(continued on page 56)

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Speed Comparison at 4 MHz - Times measured in seconds.

Function	Floppy	MicroSphere	SWP	Advent
Load "Ladder.com"	8.89	2.21	1.82	.80
Write 64K file	55.65	3.25	2.93	1.52

256K RAM Disk	\$399.95	Expansion Board	\$332.50
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Hard Disk Systems: Now you can add hard disks to any CP/M Kaypro computer. Yet another reason not to sell your old work horse to get the extra performance you now require. Add an additional 10 or 20Mb drive inside your Kaypro 10, or install a single 32, 40 or 56Mb drive. If complete systems are not what you need, then order just the parts you want. Call for more information. TurboROM included.

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20 Mb System \$812.98 **56 Mb System** \$2638.93

External Hard Disk System: Add from 10 to 112Mb plus up to 2048K of RAM Disk to all Kaypros except K10s.

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Enhancing Eight-Bit Hardware

Part 1: Gearing up

by Loren Marshall

Three months ago, an ordinary Kaypro II sat on my desk. It was an old model, 1982 vintage, and I had grown impatient with single-sided disk drives and long waits during text formatting. More recently, friends have nicknamed it the "born-again Kaypro" and my enthusiasm for computing has returned.

What happened? After preparing carefully and enlisting a friend's technical help, I added two 784K floppy disk drives and increased processing speed from 2.5 to 5 megahertz. Now, storage problems are history, screen refreshes seem instantaneous and the computer is waiting on *me* for a change.

Eight-bit CP/M Kaypros lend themselves well to modifications that help them keep pace with evolving hardware features. Many owners, not convinced that an expensive new computer is their only avenue to increased performance, are turning to the hardware upgrade market.

If you think upgrading is for you, this article should help you do the necessary groundwork, and next month's follow-up article will help you get started on specific modifications.

New ground

How will you know whether to trust advertising claims and make an investment in a hardware upgrade? Short of direct contact with someone who has tried the upgrade, objective reviews provide the best perspective. Magazines and Kaypro users' group newsletters frequently publish upgrade reviews. Especially useful ones will be cited here.

Unless you have technical experience, most of these upgrades will demand research and preparation. But limited knowledge needn't stop you. The trick is to arrange your technical support *before* you need it. Under "Methodical Mail Order," you'll find ideas on how to get the most help from your suppliers, too.

Caution and patience can neutralize the majority of the risks in hardware work. The less you know, the more work it will be and the more help you'll need. Beyond the risks, though, lies an alluring reward. Few satisfactions equal that of finishing even a simple change and

firing up the computer to test your own craftsmanship. Technical topics never seem quite as intimidating once you've ventured inside.

How much can you do?

Let's say you have an idea what you want, but you don't know if the project will be over your head. What will you need to know?

The prerequisite skills cover a wide range. Being able to remove the cover with a screwdriver is the lowest common denominator, and a few modifications add to that only chip replacement and a healthy respect for fragile components.

With several upgrades, you can take on as much or as little of the work as you choose. If you are experienced at soldering on an IC board and following technical directions, or if you're confident enough to practice up and try anyway, you can make the modifications yourself. *Micro Cornucopia* magazine regularly publishes instructions for performing Kaypro upgrades from scratch.

If the screwdriver and drill tax your abilities, however, you're still in good company. Many upgrades come as "daughter boards"—components that implement all necessary circuit changes in a small board that simply plugs into your computer's motherboard.

When the job requires soldering, a power connection, or a switch installation, seek out a friend's help or negotiate for half an hour of a technician's time.

The stakes

A certain degree of risk comes with the territory in upgrading. You can minimize risks by learning good work habits. Here are a few cautions.

1. *Soldering.* The art of soldering on an IC board calls for a delicate touch, but you can learn it. Do choose someplace other than your Kaypro's motherboard to start, though. Extreme heat will ruin ICs or lift traces (connections that run between ICs on the board). Adherence to good soldering technique and dry runs on scrap materials may be enough to get you ready for simple projects. *Micro Cornucopia* printed an article for beginners in Issue #24, June-July 1985.

To prevent soldering damage, use a maximum 15-watt pencil-style iron, 30-gauge "wire wrap" wire for jumpers, and fine gauge resin-core solder. Torches, soldering "guns," acid-flux solder and long heating intervals are verboten. It shouldn't take more than two or three seconds to heat those tiny legs and jumper wires. A magnifying lens may help your aim.

2. *Static electricity.* Static discharge from your hands or tools can zap an IC in an instant. This applies to new components as well as those in the Kaypro. You won't notice it happen, or be able to detect damage visually, which makes diagnosis of the inevitable malfunction troublesome.

*A certain degree of
risk comes with the
territory in upgrading.
Here are a few cautions.*

Solution: keep yourself grounded. First, fight the causes by humidifying the air in your workspace and insulating yourself from dry, fuzzy carpet. Work barefoot, or on an antistatic mat. Or spritz the rug with a 50:50 mix of water and liquid fabric softener.

Next, ground yourself *every time* before you reach into the computer or pick up a loose part. Touch a grounded antistatic mat or a bare wire connected to the center screw of a wall outlet plate. Don't try to use the Kaypro itself. The chassis is not grounded unless the machine is plugged in, and you should *never* work on your machine with it plugged in.

Leave new ICs in their non-conductive black foam or plastic tubes until needed, and store those that you remove with equal care. (I've already gotten through one emergency with an old chip.) If you don't have the foam or tube, pierce the IC legs through a sheet of foil.

3. *Physical damage.* IC legs bend easily. During removal, pry cautiously at alternating ends with a tiny screwdriver, or use an IC removal tool. Keep both sides and ends level until the chip slides loose.

4. *Electrical shock.* The power supply is always "hot" when the cord is plugged in, even if the power switch is off, and many other components are dangerous when the switch is on. It's also a good idea to let the computer sit for an hour after you unplug it. Components around the CRT retain a charge for awhile even after the computer is unplugged.

5. *Interpreting instructions.* This phrase encompasses most of the other trouble you can get into. Instructions are funny things. Unless they are unusually thorough, they make much more sense to people who don't need them than to those who do. The cook who yearns for recipes that begin, "Go to the kitchen," has little use for a master chef's notes.

Read all directions twice before you begin a project,

identifying parts and board locations as you go. Pay attention to what the instructions assume—the aspects they *don't* explain. Are these safe assumptions for you? Any uncertainty means you need more study, and perhaps advice, before proceeding. Make a thorough checklist as you read and follow it carefully during the actual work. Schedule the project so you won't have to hurry, preferably when you can do without the computer for a day or two.

6. *Warranties.* Since internal modifications will void Kaypro's warranty, wait until it expires to do upgrades.

Methodical mail order

Gathering information from remote suppliers about the equipment and service you need by scanning ads and calling them with questions is an indispensable phase of the project. Patience in this early stage can head off all manner of problems later.

You don't have to know everything about what you need before you start calling. After you study articles on your project, asking questions by phone helps complete the learning process. Locating vendors who view customer support as a natural part of their work portends well for any hardware modification.

During your initial research, try to locate at least two articles on your project to fill in holes in your knowledge and broaden your perspective. If reviews are hard to find, ask if the manufacturer has seen one. Vendors may also be able to refer you to a user or dealer in your area who has experience with the upgrade.

For an advertising search, in addition to *PROFILES*, try *Byte* magazine, *Computer Shopper* and other periodicals. Lay out a comparison chart for your findings, with columns for brands and prices, as well as "comments" spaces for notes on credit terms, shipping charges, warranties, phone numbers, and the page on which the ad appears.

*Interpreting instruc-
tions: this phrase
encompasses most of the
trouble you can get into.*

When calling vendors, introduce yourself by name and location to establish a personal contact and improve your chances of being remembered later. Note the name of the person you speak with as well. Have questions written down, both about company policies and the product. Short of direct contact with someone who has done an upgrade, this dialogue provides the best chance to assess whether you should attempt the project. Ask specifically about the "comments" items from your chart, whether the product is in stock (an important question with aggressive discounters), technical support after purchase, and the company's expe-

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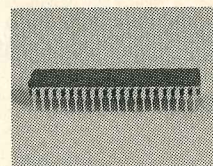
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ENHANCING HARDWARE

rience in interfacing its equipment with yours.

As the chart takes shape, you'll see prices beginning to fall into clusters. Price is only one of several advantages—and thus priorities—in mail-order shopping. Reflect on the subtle differences between vendors, such as willingness to explain details and appreciation of your interest, in addition to "hard" data. A good attitude on both ends of a transaction pays off after the money changes hands, because even successful upgrades generate questions.

Information survival kit

The best news about the information so valuable for upgrade projects is the number of high-quality sources. Tyler Sperry reflected on "unofficial channels" of information such as users' groups and other paths toward self-sufficiency in *PROFILES*' "Technical Forum" column, September 1984.

You'll have to assemble your own survival kit. A few recommendations:

1. *PROFILES* magazine (but you knew that already).
2. *Users' groups*. Typically referred as KUGs—for Kaypro users' groups—these informal, service-oriented computer clubs assist thousands of Kaypro owners. Users' groups certainly offer a lot, but their reliance on volunteers and their distance from many owners do limit their services.

No matter where you live, you have access to much of

What's what in the Kaypro line?

Advertising for Kaypro hardware, when you're lucky, refers to Kaypros by abbreviations that name the model and its vintage at the same time. Two ideas will help you understand these shorthand designations.

First, eight-bit Kaypros, which run under the CP/M operating system, fall into two groups. The '83 series consists of the original Kaypro IIs, 4s and 10s, built through late 1983. Except for the 10s, these machines came with ordinary screens and limited graphics capabilities. Weak graphics and 2.5 megahertz processing speed make a number of upgrades most attractive to '83 series owners.

The Kaypro 2, 4 and 10 models with higher-contrast screens and graphics power (reverse video menus in WordStar, for instance) are '84 series machines.

Thus, a II'83 is an older series Kaypro II, and the newer model with graphics is a 2'84. The motherboard changed substantially between these two generations and buyers should confirm the availability of upgrades specifically compatible with their model and series before proceeding.

Second, please note that IBM-compatible Kaypros—the 16s, 286i, 2000, and PC, which run under MS-DOS—represent an entirely new system architecture and will not accept any of the modifications that we'll be looking at in Part II.

this sort of help through newsletters. Groups in the San Francisco Bay area (BAKUP), Detroit (D:KUG), Wisconsin (WISKUG), Boston (BOSKUG) and Fort Collins, Colorado (KUAFC), for instance, consistently produce issues dense with software suggestions, technical help, program listings and product reviews.

3. *Kaypro dealers.* A cooperative dealer and a helpful technician can be two of your best friends. They are not obligated to work on products you purchased elsewhere, but they may be willing to discuss upgrades, suggest parts sources, and perform the more difficult steps in a modification.

Some owners complain about dealer policies, but the relationship is a two-way street. Owners who expect everything for nothing must realize that their dealers make a living selling computers and have more overhead than mail-order houses. Dealers tend to most willingly support customers who read and think before calling with problems, and who continue to bring business back after the initial sale.

4. *Micro Cornucopia.* Editor-Publisher David Thompson and his staff believe that the CP/M world deserves more acclaim than it gets, and they've shown a special interest in the Kaypro since 1982. In addition

to a monthly column, "Micro C" often devotes feature articles to Kaypro hardware projects.

5. *The PeopleTalk Quarterly.* When a computer consultant and a communications counselor met repeatedly at their mutual Kaypro dealer seeking answers to software questions, they decided to help others with the same problems. The result of that decision was *Peopletalk Quarterly*.

Your assignment

Homework for Part II, if you would like to try a simple, low-tech modification, is to move your Kaypro's reset switch to the front panel. The project costs nothing if you have a power drill. Here's how:

Remove the cover, unscrew the round retainer that holds the button to the outside of the machine, and push the button back in. There should be enough wire to let you select a new spot between the drives and the CRT. Mark that spot and make sure there's nothing but air space behind it. Use a countersink bit, or several turns of masking tape at the appropriate depth on a regular one, to avoid hitting internal components.

Drill a hole just large enough for the button and its threaded post (probably 3/8 inch). Protect the com-

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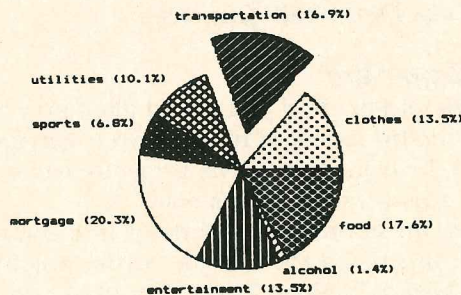
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puter from drill filings with a piece of wide tape on the inside front wall, leaving a loose pouch directly behind the drill site so the bit won't puncture it. After drilling, press the pouch tight against the wall to trap all filings, then remove it carefully. Hold a vacuum near the front site to catch stray metal shavings.

Now, insert the button in the new hole, replace the retainer ring, and enjoy one of life's little conveniences. You can also relocate the video intensity knob to the front panel, but you may have to splice in extra wire to make it reach. Measure front clearance to avoid discovering later that the keyboard won't snap on for travel. Clearance is best high on the front face. This one shouldn't take much preparation.

Next month, Part II will discuss upgrades that require more consideration: what they do, approximately how much they cost, and where you can learn more. 

Loren Marshall works as a paramedic in Anchorage, Alaska.

Write-Hand Man

"Almost a Sidekick for CP/M"

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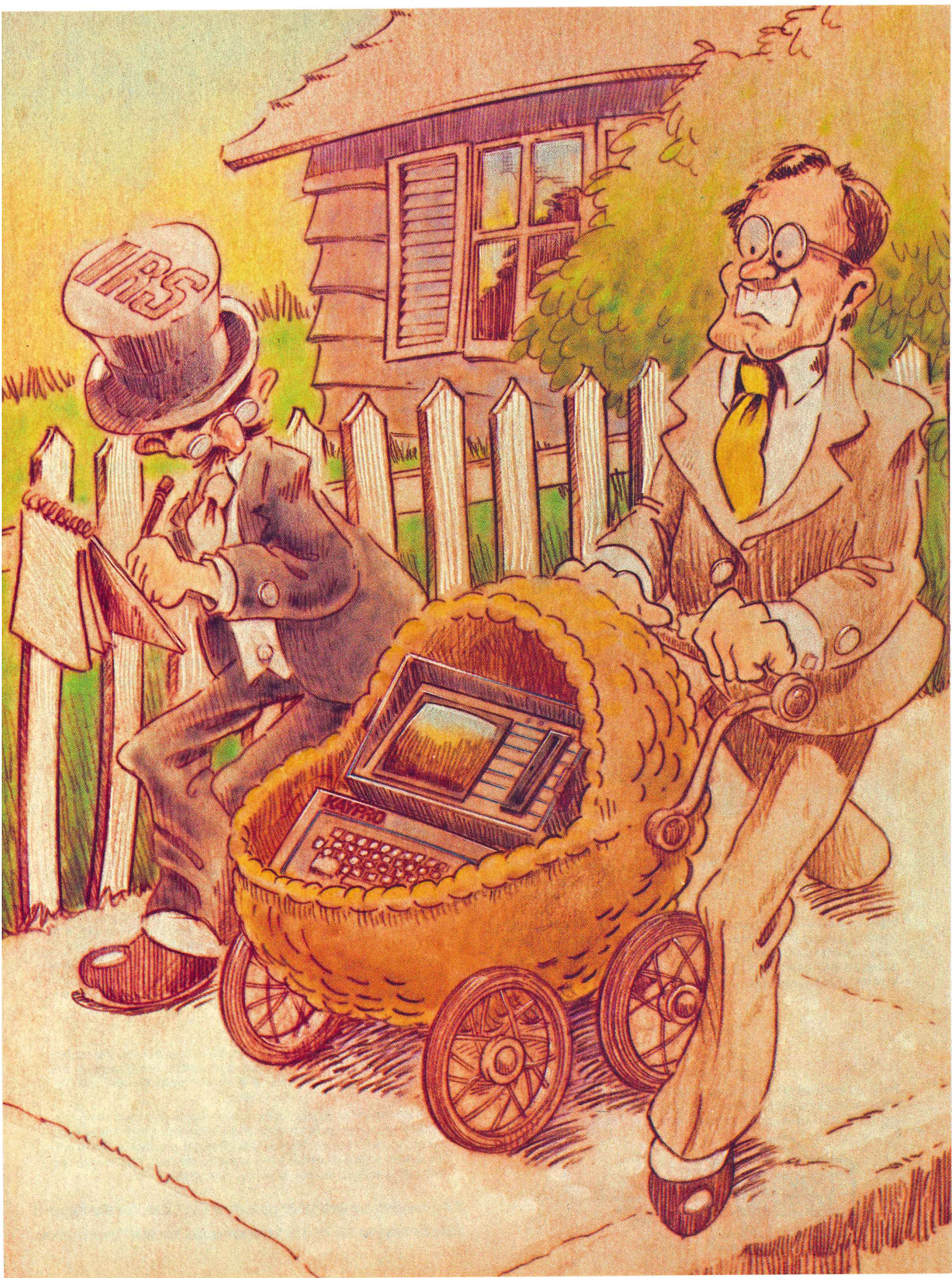
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Another Sweet Little Deduction

How to write off your computer

by Tod Westcott

Please note that the information here pertains only to computers purchased in 1985 or earlier. Pending tax reform legislation is expected to eliminate the investment tax credit benefit for business equipment, including computers, purchased and put in use after 1985.

PROFILES would like to acknowledge the assistance of tax consultant Christine Fontana, who verified the accuracy of the article and contributed important information.

If you have questions about any of the information as it applies to your situation, PROFILES recommends that you seek the advice of your own tax professional.

One of the joys of buying a computer for business use comes when you file your tax returns: The computer can yield a sizable deduction and allow you to pay less taxes. In fact, tax time will be the only time you might complain about Kaypro's bargain price, since the low price results in a smaller deduction.

If you have never written off a computer, the extra forms involved and the unfamiliar terms like "depreciation," "accelerated cost recovery system," and "tax investment credit" might discourage you from trying. You may be tempted not to bother with the extra paperwork and to just pay the taxes you would owe without the writeoffs.

I understand such feelings, because I once felt that way myself, and I realize that the thicket of details presented here may seem like tough going at first. But close reading and a little patient study will show you that deducting your computer is not an exceedingly difficult task. First I'll outline the ways you can write off your computer, and then I'll briefly discuss how to decide which is best for you. With a little time, you can master what you need to know, and you won't pay a single penny more in taxes than you have to.

Before you get all excited, however, you should know that you cannot deduct a computer and peripherals if they are not used for business purposes. You are not eligible for any deductions or claims if you use your computer solely for playing games, writing personal letters, or other personal uses.

But you don't have to use the computer exclusively for business in order to write it off. If you use your computer for business purposes 55 percent of the time, for example, you can deduct 55 percent of the cost of the computer. However, the Deficit Reduction Act of 1984 has placed significant restrictions on those who purchased their computers after June 18, 1984, and use them for non-business purposes 50 percent of the time or more. To be able to take full advantage of the tax writeoffs available, more than 50 percent of your computer time must be for "qualified business use."

"Qualified business use" is use that occurs on the premises of a regular trade or business. Home offices are usually considered qualified businesses, so using your computer for business purposes in your home office qualifies as business use. Be aware, however, of what is and isn't considered a regular trade or business. Analyzing personal investments, for example, is not normally considered a regular trade or business, so time spent analyzing investments doesn't count toward the "more-than-50-percent" test.

The deductions available for computers used for business less than 50 percent of the time are described in the section on mixed-use property at the end of this article.

Computers bought before June 19, 1984 (whether or not they meet the more-than-50-percent test), or computers bought after June 18, 1984 and used more than 50 percent of the time for business qualify for either Section 179 expensing or a combination of the investment tax credit (ITC) and the accelerated cost recovery system (ACRS) depreciation deduction discussed below.

(Roughly, "expensing" means taking your whole

deduction in one year; depreciating is spreading the deduction out over several years.)

Section 179 expensing

Section 179 expensing is probably the least complicated method of deducting a computer, but unless you have a high income and need a large deduction, it is not necessarily the most advantageous method.

Ordinarily, property with a use life longer than a year must be depreciated over several years. However, legislation has been passed that allows certain office equipment—including computers—to be treated as an expense, which means that you can deduct the entire *business* cost, up to \$5,000, the first year. (A ceiling of \$7,500 had been scheduled to go into effect in 1985, but the persistent deficit has caused legislators to put that move off until 1988.)

Form 4562 is used for this deduction. To give you an example of how the deduction is claimed, assume that in 1985 you purchased a Kaypro 16 for \$3,300 and used it 100 percent of the time for business. You could therefore expense the entire \$3,300. This figure would be written in Part I, Section A of Form 4562 under the "Cost" heading, as well as under "Expense Deduction." You would enter "5 year" under "Class of Property." If business use constituted only 60 percent of total use, you would write \$1,980 (60 percent of \$3,300) under the "Expense Deduction" heading.

If you buy two Kaypro 16s for \$6,600 and use both of them 100 percent for business, you can treat \$5,000 of that figure as an expense and apply depreciation and the investment credit (described below) to the remaining \$1,600.

Investment tax credit

The investment tax credit (ITC) can significantly reduce the taxes you have to pay. Technically, it differs from a deduction in that it is subtracted from the *taxes owed* rather than from your income. A little calculating quickly reveals that this makes the ITC a good deal more potent than a deduction.

For example, if you earned \$10,000 in 1985 and had \$1,000 in deductions, you would pay taxes on \$9,000. If you had an ITC of \$200, however, the \$200 would be subtracted from the *taxes owed*. Thus if you owed \$900 in taxes on the \$9,000 income, you would have to pay only \$700 in taxes after claiming the credit.

The amount of the ITC is found by calculating 10 percent of the business cost of your computer. A Kaypro 16 that cost \$3,300 and was used 100 percent for business would give you a credit of \$330 (10 percent of \$3,300 is \$330). If business use of this same computer constituted only 60 percent of total use, then the credit would be found by taking 60 percent of \$3,300, which is \$1,980, and taking 10 percent of that. This would result in a claim of \$198.

You claim the investment tax credit on Form 3468.

Depreciation

Depreciation is a type of deduction that allows you to recover the cost of equipment over time. The IRS has established categories of equipment and property and the time periods over which they can be depreciated. Computers, classified as business equipment, are depreciated over a period of five years *when they are used for business more than 50 percent of the time*.

Depreciation is a deduction that allows you to recover the cost of equipment over time.

The method used to depreciate your computer and peripherals is called the "accelerated cost recovery system" (ACRS). Using this method, a certain percentage of the total business cost is deducted each year. For computers, the set percentages are 15 percent for the first year, 22 percent for the second, and 21 percent for each of the final three years.

It should be noted that if you use both the investment tax credit and the ACRS depreciation deduction, you must alter the figure used to calculate the depreciation deduction. Use of the ITC requires that one-half of the 10 percent figure be subtracted from the total cost of the equipment. The depreciation deduction is then calculated from this new figure. For example, if your ITC is \$330, then \$165 would be subtracted from the total business cost of equipment before the depreciation deduction is calculated. Thus the first-year deduction for a \$3,300 Kaypro 16 used 100 percent for business purposes would be $([\$3,300 - (\$330 \times .50)] \times .15)$, or \$470.

If business use constitutes only 60 percent of total use, then you would find your deduction by multiplying \$3,300 times 60 percent to derive the total business cost, \$1,980. Half of the investment credit ($\$198 \times .50$) would be subtracted from \$1,980, which in turn would be multiplied by 15 percent, resulting in a depreciation deduction of \$282.

These figures are entered in Section B ("Depreciation of recovery property") of Form 4562.

It should be noted here that if you sell your computer within five years of the time you bought it, a pro-rated portion of the Section 179 deduction or of the investment tax credit must be "recaptured"—in other words, you have to pay back some of what you deducted.

If business use is *less than* 50 percent and the computer was purchased *after* June 18, 1984, then the depreciation period must be stretched out over 12 years instead of the usual five (more about that later.)

Decision time

You should have a pretty good grasp now of the three

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We know that floppy disk users don't appreciate shuffling four or five disks in and out per application. We know that no users like to abort in the middle of an application to change printer pitch. We know that users don't like copy protection and complex licensing agreements. We don't believe that any systems with these 'features' can be considered easy to use so we left them all out of CPI Business Systems.

Fancy packaging and expensive type set manuals add greatly to the cost of most application packages but have little lasting value. Once your system/s are up and running for a week or so their real worth is their day-to-day productivity and responsiveness; the other materials gather dust. CPI Business Systems include **comprehensive manuals, sample data files, tutorial sessions, etc.—everything you need is included.** Our manuals are prepared and printed on computer systems.

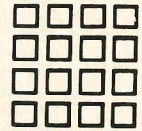
No system is perfect; CPI Business Systems are not exceptions. That's why users are entitled to support when they need it and that's why CPI continues to enhance each system regularly based on user's suggestions.

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CP/M users may become MS-DOS users in the years ahead; CPI has planned ahead for this possibility and we provide data file conversion service to any user. CPI will, however, continue to support and enhance these fine systems for CP/M users for years to come. Your investments today will not be obsolete by tomorrow's technology.

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\$80.00 **GENERAL LEDGER** **\$100.00**
CP/M MS-DOS

Comprehensive system with the most wanted features. Provides accurate and well organized financial information for your business. Check the partial feature list below. Accepts data automatically from all other CPI Business Systems for completely integrated accounting. The entire program library fits on one 191K disk. Menu driven for ease of use but the menus won't get in your way.

PROGRAM FUNCTIONS: **Systems Initialization** customizes programs for your business and hardware. **Master File Maintenance** to create, modify and report on charts of accounts; auto Make Departments function speeds setup; lists charts in 3 formats, on 8 1/2" wide forms at 10 cpi. **Transaction (Journal Entry) Maintenance** to enter and change and delete and post and list (3 formats); auto increment for reference from numeric pad; auto duplication of any field from prior entry, last 7 entries on display; source/run totals; validation of account numbers at time of entry; true prior period adjustments; repeating entries for depreciation, etc. **Trial Balance** summary reports (2), worksheets and detail general ledgers; **Full/Consolidated/Selective departmental (FCS) processing.** **Financial Statements** in 4 formats: current year, current and prior year, current quarterly, cumulative quarterly; FCS selection (see above); run any report for any prior period; indicate # of months for the current period even when re-running prior periods; disclaimers (two 78-char lines) for Accountants. **Budget Reporting** with remaining or variance computations; current, YTD, both; rerun prior periods; FCS processing, variable # months on current period. **Full Year Detail G/L** high speed build up system; over 3,800 records on 191K disk; detail is shown on original input sequence by account; FCS; partial year reports when disk space is limited; auto buildup for hard disk users. **End-Of-Period** creates backup file automatically; updates repeating entry date fields for new month; selects month/year end processing automatically; updates prior year's data. **Accounting Transfer** inputs data from each CPI Business System; posts; prints control reports; multiple transfers from other applications allowed. **Query Account** - high speed displays to CRT or individual or range-of-account displays to printer. See the Hardware Requirements section also. All CPI systems include easy data entry and correction via formatted screens, Back-Up, Void & End keys.

CAPACITIES: CP/M - 600 Accounts; MS-DOS - 2000 Accounts, 3-5 Digits for Account Numbers - Up to 99 departments using 3-digit account number and 2-digit department number. Each K of disk can hold 8 records (i.e. 300+ accounts and 1200+ transactions on a 191K disk.)

\$80.00 **ACCOUNTS PAYABLE** **\$100.00**
CP/M MS-DOS

Improve your cash management with this fine system. You'll get the up to date accurate picture of accounts to be paid, cash requirements for the data on file. Payments and notes vouchered automatically insuring timely payments. Complete check writing included. The system reports include Vendor File Lists, Open Vouchers, Ageing By Due Date, Discount Date Ageing, Cash Requirements, Check Registers, G/L Transaction List, Query Vendor Status, Credit Vouchers, Deleted Vouchers. **CAPACITIES** of 600 Vendors, (CP/M), 2000 Vendors (MS-DOS) - no limit on transactions.

\$80.00 **ACCOUNTS RECEIVABLE** **\$100.00**
CP/M MS-DOS

Super system with Invoices, Service Invoices, Statements, etc. A full range of reporting abilities include Customer Reports, Ageing Reports, Transactions Reports, G/L Transaction List, etc. Auto billing feature eliminates mistakes. Sales can be distributed to 100 accounts. Build up statement option combines the virtues of ledger card history detail and the speeds of today's computers. Use preprinted forms and/or plain paper for invoices and statements. **CAPACITIES** of 600 Customers (CP/M) 2000 (MS-DOS) - no limit on transactions, multiple customer disks OK.

\$80.00 **PAYROLL** **\$100.00**
CP/M MS-DOS

A complete payroll system supplied with current tax routines for every state. Functions include Employee File Maintenance; Employee Lists in multiple levels of detail; Input Worksheets; Time Card Entry; Regular, Overtime, Other, Commissions, Tips, Misc. Pay, Exceptions Processing so you only enter variable data; Weekly, Bi-Weekly, Semi-Monthly, Monthly pay cycles (run individually/combined); Departmental Payrolls; Checks; Check Registers; Earnings Reports; 941s; W-2s; Unemployment Reports; Multi-State; Manual Checks; G/L Transactions. Federal, FICA, State and Local Taxes, Federal/State Add-Ons, FICA, FUTA, SUI, SDI, EIC, 4 other deductions. **CAPACITIES** - 600/2000 emp. (CP/M/MS-DOS), 98 Tax File Rcds.

HARDWARE REQUIREMENTS

CP/M: 64K (53K TPA) & CP/M 2.0 or higher.
MS-DOS: 128K (or more) & MS-DOS/PC-DOS 2.0 or higher - ANSI.SYS.
Printer: 132 columns (compressed pitch supported), continuous forms.
Disk/s: Dual Floppies/Hard Disk/Both - 191K recommended, less works.
CRT: 80/24 with Clear, Home, Clear to EOL, Up, Down, Left, Right.

CURRENT UPDATE:

THE C.P.I. GENERAL LEDGER SYSTEM WAS REVIEWED IN THE NOVEMBER 1985 ISSUE OF PROFILES (STARTS ON PAGE 49). HERE ARE SOME OF THE BETTER QUOTES FROM PAGE 50, BUT BE SURE TO READ THE WHOLE REVIEW. "THIS TOP LEVEL PACKAGE RATES AS ONE OF THE BEST PROGRAMS WE REVIEWED. . . COMPARES FAVORABLY TO PACKAGES COSTING HUNDREDS OF DOLLARS MORE. . . FEATURES OFFERED BY THE C.P.I. SYSTEM MAKE IT EXTREMELY POWERFUL AND FLEXIBLE. . . THE DOCUMENTATION IS EXCELLENT. . . USER SUPPORT PROGRAM INDICATES A HIGHER THAN AVERAGE INTEREST IN USER SATISFACTION."

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Features:

- ★ Can be powered externally ★ 255 directory entries
- ★ Fully buffered data transfer using Z80 PIO
- ★ Compatible with Pro 8 and Plu-Perfect or 5 Mhz speed up kits
- ★ RAM disk memory not lost on cold boot or reset of Kaypro
- ★ Printer buffer sizes: 4K, 32K, 64K ★ 10 Mhz microprocessor speed
- ★ Printer buffer runs independently of RAM disk operation
- ★ Micro Cornucopia Pro 8 Version 3 ROM includes RAM Disk Code
- ★ Installation Kit for Kaypro 1,2-84 and 2X without clock or modem included at no charge if required ★ Choice of drive A or E
- ★ On 4-84 the standard installation disables either internal modem or real time clock unless you install the adapter board
- ★ All installation materials included in listed price except for Kaypro 10 Adapter Board

NEW: Kaypro 10 RAM Disk Adapter Board

For Kaypro 10 without internal modem \$ 50.00
Adapter board can also restore either internal clock or modem in Kaypro 4-84 or can add additional decoder parallel ports on all Kaypros.

Any RAM Disk listed below can be expanded to 1mb by adding memory chips

Tested RAM Disk without RAM Chips	\$295.00
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Kaypro II to IV Upgrade

... includes 2.5Mhz to 5Mhz speedup, two 390K disk drives (double sided drives) to replace the single sided drives, price does not include shipping \$395.00

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SWEET DEDUCTION

methods of deducting the cost of a computer used for business more than 50 percent of the time. Now you must decide which method or combination of methods you should use.

Someone unfamiliar with tax forms other than the 1040-EZ may feel tempted to take the easy way out and use the Section 179 deduction. This approach might indeed prove the most advantageous for someone with a large income who could use the large deduction. But for someone who has a not-so-large income, the combination of tax investment credit and depreciation deduction may result in the greatest tax advantage.

For example, again supposing you have a \$3,300 Kaypro 16 used 100 percent for business, if you do not go the Section 179 route, you can claim \$330 (\$3,300 x .10) as your ITC. (The ITC must be taken during the year in which the computer was put in service or you lose it altogether.) You can then take the ACRS depreciation deduction, which is \$470 [(\$3,300 - (\$330 x .50)] x .15). Then for year two, you still have the depreciation deduction of \$690 (\$3,135 x .22), while years three through five offer a deduction of \$658 (\$3,135 x .21).

Federal tax laws provide an alternative to this method, which is generally attractive only if you expect your income to increase in the next few years.

Instead of claiming a 10 percent investment tax credit, you may take an 8 percent tax credit and apply the ACRS to the entire cost of the computer each year.

For example, using this method, the ITC will be \$264 (\$3,300 x .08), and the ACRS deduction will be \$495, for a total cost recovery the first year of \$759. This is less than if you had taken the full 10 percent, but it allows higher deductions in years two through five.

Multi-purpose use

The tax picture is not quite as rosy for those who purchased their computers after June 18, 1984 and use them for business 50 percent of the time or less.

Under these circumstances, the investment tax credit is not allowed, the Section 179 expensing is out, and the depreciation deductions must be made over a 12-year period using the straight-line method (taking 1/12 of the deduction per year). Thus if you purchased the \$3,300 Kaypro 16 after June 19, 1984, and used it for business 40 percent of the time, your depreciation deduction would be \$110 [(\$3,300 x .40) x 1/12].

However, you can count certain uses other than qualified business uses when figuring your depreciation deduction. If you use your computer to keep track of rental property, stocks—anything related to reportable income—you can add the time spent doing that to the time the computer was used for qualified business purposes.

For example: Assuming the same circumstances as in the example above, except that business use is 50 percent, time spent analyzing investments is 25 percent, and other personal use is 25 percent, you can use

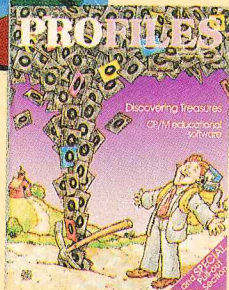
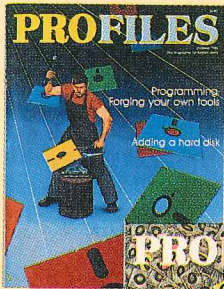
(continued on page 59)

Introducing

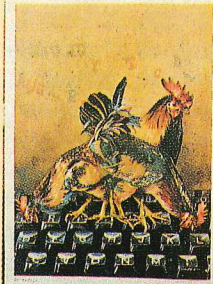
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PAGE BREAKS BREAKS With Perfect Writer

Ways around an irksome limitation

by Irvin Peckham

For reasons best kept to myself, I have a bad habit of writing from four until six every morning, after which I have breakfast with my family and go about my usual business of teaching.

I had long been in love with my Parker pen, which reluctantly gave way to an IBM Selectric, and when I finally saw the binaries written on the wall, to a Kaypro and Perfect Writer. The Kaypro I'll never regret, but PW drove me to the edge.

For two months I was getting up at this absurd hour to go out to a cold room and do battle with Perfect Writer. My stories are legend: the drives that wouldn't turn off, the infuriating lists of errors scrolling past my eyes, the printer that wouldn't print—and that, when it finally did, insisted on slipping the left margin just when I thought I had finally mastered the art of printing one manuscript page.

A difficult courtship cements a marriage. I have flirted with other word processing programs, but I have always returned to my wildly Imperfect Writer. In the process of writing two books, countless letters, and enough essays and short stories to subsidize the U.S. Postal Service, I have examined just about every dimple and pimple of PW.

We have learned together and grown together so that neither of us would recognize the mate we married. I have stripped her of her menu and spangled her with Backgrounder and PluPerfect Writer; I'm not quite sure how she has spangled *me*, but I do know she has made me a more tolerant man, if not a better writer.

I would have switched to WordStar, but during my prenuptial battles I had grown used to the convenience of multiple buffers, split screens, and yankback. WordStar's pedestrian what-you-see-is-what-you-get philosophy also got in the way of my method of cramming as many words as possible on the screen, because I'm a rearview-mirror writer: I find out where I'm going by watching where I've been.

In fact, I circle back on myself as much as I go forward, blending writing and rewriting into each other in a way that I would have thought insane in my Parker or Selectric days. When writing first drafts, I usually set my fill column to 75 (80 doesn't work

because of word-wrap) to fill the screen from left to right, as well as from top to bottom.

Keeping track of page breaks

As I have my complaints about WordStar, WordStar cheerleaders fault Perfect Writer for her capricious formatting and her refusal to show page breaks. Her capriciousness I have accepted as the price of her power—although I realize it is more a consequence of my failure to know her than of her irresponsible behavior. Her page breaks, however, I have learned to control, in spite of the curves she throws now and then.

While I'm writing first drafts, I keep track of how many pages I have written by using the following PluPerfect commands to change the default page length to 26, the number of lines of text that appear on printed copy when I double-space: `^X ^P ESC 26 <CR>`.

Text method

Whenever I want to know how many pages I've written, I thereafter type `^X =` and PluPerfect tells me what line of which page I'm on. To keep page information exact, I have to employ a little Perfect Writer ingenuity.

To keep page information exact, I have to employ a little Perfect Writer ingenuity.

When I double-space my final manuscript, my title page is always 16 lines of text, whereas subsequent pages are 26. To equalize page count, I keep all my title page information in a separate file called "TexTitle." (see Figure 1 on next page). The "Tex" indicates that I want to print this file in a Text environment.

The `@Blankspace(5 lines)` command gives me six lines above the title (five lines plus the default one line "Above" style parameter), and the `@Blankspace(3 lines)` command gives me four lines between the centered title and text. I change the header spacing to one

```

@Begin(Verbatim)
Irvin Peckham
210 Carneros Rd.
Aromas, CA 95004
Tel 400/222-3333
@End(Verbatim)
@Pageheading(left = "Irvin Peckham",
right = "@NEWPAGE"; line = "Aromas, CA")
@Style(Spacing, 2 lines, headerspacing 1 line,
footerspacing 0 lines)
@Blankspace(5 lines)
@Center(@NEWPAGE
by
Irvin Peckham)
@Blankspace(3 lines)
@Include(B:@Newpage)

```

First Serial Rights
ca. 2000 words

Figure 1: Title page file, "TextTitle"

line, which becomes two lines between my header and text when I double-space—one of the Perfect Wife quirks I have learned to tolerate in order to preserve our marriage.

@Include directs Perfect Formatter to include the article, story, or chapter that I have written, the first page of which begins with ten lines that PF will ignore because I have placed them in the @Comment environment. (See Figure 2 below.)

```

@COMMENT(
LINE
LINE
LINE
LINE
LINE
LINE
LINE
LINE
LINE
LINE)

```

For reasons best kept to myself, I have a bad habit of getting up at four a.m. to write for two hours with my KayPro and Perfect Writer. The first I'll never regret, the latter has driven me to the edge. My stories are of course legend; the drives that wouldn't turn off.

Figure 2: First page of text.

Although PW recognizes new paragraphs by blank lines, I write screen copy with only a carriage return and tab (set to five characters) between paragraphs. Not only do I then see where my lines will end, I can also find my page breaks and change them if PF would start or end a page with the last or first line of a paragraph.

Using Backgrounder, I have configured \Linefeed to equal ESC26N (scroll forward 26 lines), and \Backspace to equal ESC26P (scroll backward 26 lines). I insert normal page breaks with \Del, which I have configured to equal @Newpage<CR>. I insert the corrective page breaks with \v, configured to equal ^P@Comment()@Newpage. I include the @Comment() command to insert an extra line so that my line count will not be thrown off by my having changed the page break.

Although it is not necessary, I insert the @Pagebreak command even when PF would put it in the right place because in the final draft I like to see where all page breaks will occur. Using these keys, I can go through a 20-page chapter, inserting page breaks in less than a minute.

The expected exceptions

PW, being who she is, has insisted on three important exceptions to this otherwise Perfect Peckham system. I have to be aware of any @Style or Environment commands because they take up a line on the screen that PF will ignore, and I have to adjust for any environments in which I have single-spaced by counting every other line.

The third exception made me scream when I discovered it. Because PW treats a period and the space following it as one character, if any line ends with a period, she will wrap the last word of the sentence around to the next line, leaving white space and sometimes adding an extra line to the paragraph.

Changing my footer spacing to zero lines allows for an extra line if Perfect Formatter throws one in. If I have inserted my @Newpage command every 26 lines, I will still have three lines between the last line of text and my page number. However, PF rarely fools me with this extra line, because I am alert for periods in column 65, and I insert an extra blank character before the last word of that sentence. The keypad period, which I have configured to equal ESC . . . Q (justify), then forces PW to put that word on the next line.

This Byzantine method of controlling PW's page breaks goes for naught if I don't do a little housekeeping before company comes. After I have inserted my @Newpage commands and am ready to print my final draft, I have to tell PW to insert blank lines between paragraphs so that PF will know a new paragraph when it comes, for PF is incapable of recognizing what a carriage return and five quick spaces mean. A search-and-replace mission inserts the extra blank lines in seconds. I tell PW to find every <CR>Tab and replace it with <CR><CR>Tab, and like Perfect Husband, I sit back with a cold beer while the wife does the work.

Verbatim method

I avoid this final search-and-replace duty and the possibility of those sneaky little end-of-line periods by using the Verbatim environment when I am writing fiction, because I do not insert any environment commands with their carriage returns that Verbatim obnoxiously picks up. I keep a different title page file, "VerTitle," for my fiction (see Figure 3 on next page).

The parameters in this file give me exactly the same spacing as I have with my Text title page—six lines above the title and, surprisingly, four lines below. When I gave my @Begin(Verbatim) command, PF started counting carriage returns, finding one at the end of @Begin(Verbatim) and another at the end of @Style(Spacing, 2 lines).

I inserted two carriage returns after each line of my centered title because I didn't give my double-space command until after the second @Begin(Verbatim). Verbatim is extremely literal, printing exactly what it

```

@Begin(Verbatim)
Irvin Peckham
210 Carneros Rd.
Aromas, CA 95004
Tel 100/222-3333
@End(Verbatim)
@Style(headerspacing 0 lines, footerspacing 0 lines)
@Blankspace(6 lines)
@Pageheading(left="Irvin Peckham",
             right="GOOD-BYE, JOHN", line="Aromas, CA")
@Center(GOOD-BYE, JOHN)

by

Irvin Peckham)
@Begin(Verbatim)
@Style(spacing 2 lines)
@Include(B:John.)
@End(Verbatim)

```

First Serial Rights
ca. 5000 words

Figure 3. Title page file, "Vertitle."

sees until it finds a style or environment command within its fences that tells it to do otherwise.

In Text, the @Newpage command is optional, but in Verbatim, I have to insert the @Newpage command every 26 lines. If I inserted the @Newpage command only when I wanted to alter my page break, Verbatim, seeing the carriage return at the end of the command, would add two extra lines between the header and text.

My header spacing is consequently zero lines, which becomes two lines after Verbatim counts and double-spaces the carriage return at the end of each @Newpage command. My footer spacing I again change to zero, although this is unnecessary. I simply like to have the option of adding an extra line if I need to by inserting @Newpage after the 27th rather than the 26th line.

Using PFCONFIG, I have changed my default style parameters to five for tab spacing (#10) and 1270 micas for the amount to indent the first line of paragraphs (#9)—although I could leave the indent parameter as zero for Verbatim; with these default values, PF will make my printed copy appear exactly as I have it on the screen. No tricks.

*I format to device
Pseudo and read my
manuscript onscreen as
it will appear on paper.*

Final check

Whether I have used Text or Verbatim, I do not use Perfect Printer until I have seen how PF has changed PW. I have defined my special printer Pseudo by answering questions 1 through 8 exactly as I answered them for my letter-quality printer and answering question 9 (generate online-readable output?) with "yes."

I usually format to device Pseudo (PF <filename> - DEV PSEUDO) and read my manuscript on the screen

exactly as it will appear on paper before I print. I prefer to read my formatted file while in Perfect Writer because I make this my last proofreading as well as my check on page breaks.

I use a split screen with a small screen for my text file above and a larger screen for my formatted file below. I can usually add, delete, or change words in the text file without altering page breaks; if I make more significant changes, I erase all subsequent @Newpage commands with a search-and-replace mission that tells PW to replace every @Newpage<CR> and @Comment()@Newpage<CR> with nothing. The trick here is to hit ESC when PW asks "with <ESC>:". After I have made all changes, I then go through the file again, adding @Newpage and @Comment()@Newpage <CR> commands.

When I am either overconfident or careless, I check my formatted file with a TYPE command, which immediately displays the file on my screen. Sometimes when I am traveling away from my Kaypro, I'll print a next-to-last copy on my dot-matrix printer to read as a galley proof before printing the final manuscript on my Brother HR-1—letter perfect, page perfect, ragged right, and with end words hyphenated where I want them broken. This is all it takes to print with Perfect Writer. Sometimes I wonder why I love her. But I do. She has tricks WordStar lovers only dream of. ■

Irvin Peckham is a graduate student at the University of California, San Diego.



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reports, these reports are only columnar. One can make readable 80- or 132-column reports, but they will be useless for inclusion in any paper requiring standard citation style.

To make matters worse, it is not possible to write the output to disk with any flexibility, so you can't directly use MailMerge or a similar program on your data. You can, however, edit a data file with a word processor.

Also, Personal Data Manager has no facility for scanning a text file and extracting references.

Databases, while not strictly limited to one disk, can become complicated if they're very large and may require some calls to the toll-free help line.

While I didn't get a chance to test the companion program, Universal On-Line Searcher seems to be a fine way to put the information available from commercial online databases to your own use. Not only are you

Personal Data Manager is fast and provides powerful search capabilities.

saved having to learn the search language of each database, but you don't have to retype what you find into your own database files. The program guides data from Dialog, NLM, BRS and other systems right into Personal Data Manager, where you can manipulate it to your heart's content.

Searcher is set up to handle Dialog, NLM, BRS, and Orbit, as well as several databases that ISI, the program's publisher, puts out. For other databases, you must use their native search language, but the program will still manage your data for you.

Overall, this package offers some power and flexibility unavailable in other programs. However, its price and surprising shortcomings may dull its appeal.

Reference Manager

At \$595 for either CP/M or MS-DOS versions, Reference Manager is clearly the priciest of all bibliographic database programs I tested. This fast and powerful menu-driven program does a lot—and costs a lot, too.

You enter data in response to prompts (ENTER NAME OF AUTHOR, for example) and have a chance to correct each entry before it's written to disk. Once entries are on disk, you can edit them by selecting the field to edit. The program will flag words or names that are spelled differently than in previous entries to call your attention to possible errors before they "pollute" the database.

Unfortunately, you don't get any standard edit functions except word-wrap; if there's an error, the data in question must be completely retyped.

The limit of 26 authors or 27 keywords per reference

is unlikely to cramp anyone's style. However, each name can only be 30 characters long—the same length limitation applies to journal names—and may require the use of abbreviations. Text notes may be any length, and entries may be books or journal articles.

Reference Manager offers useful search routines and good advice on how to structure searches to work most efficiently. It tells you how successful a search was, and records selected in searches may be used to create separate databases.

Reference Manager, like Bibliography and Bibliofile, will scan a WordStar text document for citations in order to prepare a bibliography. But there's a catch. Citations in the text must be by the number assigned to each reference by the program. These numbers must appear in parentheses, and they are not flagged with a special character as they are in other programs. Instead, *non-citation* numbers in parentheses must be flagged—e.g., the year (1975) must appear as (@1975) so as not to be treated as a citation! This seems "counterintuitive," to say the least. And it's conceptually easier to cite with author and year than with a seemingly arbitrary number.

A final reference list can be in alphabetical order or in the order of the citations' appearance in the text. Citation numbers appearing in the text and not in the database are listed in a special file intended to catch mistakes. The number citation in the text can be replaced with the author's name (or, if there are many, with the first author and ET AL) and the year of publication.

Reference Manager easily handles different citation styles, which can be stored to disk for future use. The program doesn't control margins and indents, so you will have to edit your list with a word processor before sending it to your publisher.

Perhaps the nicest part is that all this is done simply and easily.

Three extra modules let the program accept downloaded Medline and BRS Colleague citations (or data from other databases that you have put in Medline format), help you prepare lectures and manage slides, or format your citations in biomedical journal style. The download module sells for \$59, the slide manager for \$39, and the biomedical formatter for \$39.

Research Information Systems, the program's publisher, claims that with minimal notes, 750 references will fit in 320K. Large databases with extensive notes require a hard disk, as a database may not span more than one floppy.

The documentation is clear and very concise. No index is provided, but I had no trouble finding what I needed.

Reference Manager offers some features not found in other programs, such as the ability to detect duplicate database entries. And it is clearly designed with respect for and understanding of the demands of research reference management.

Take it with you

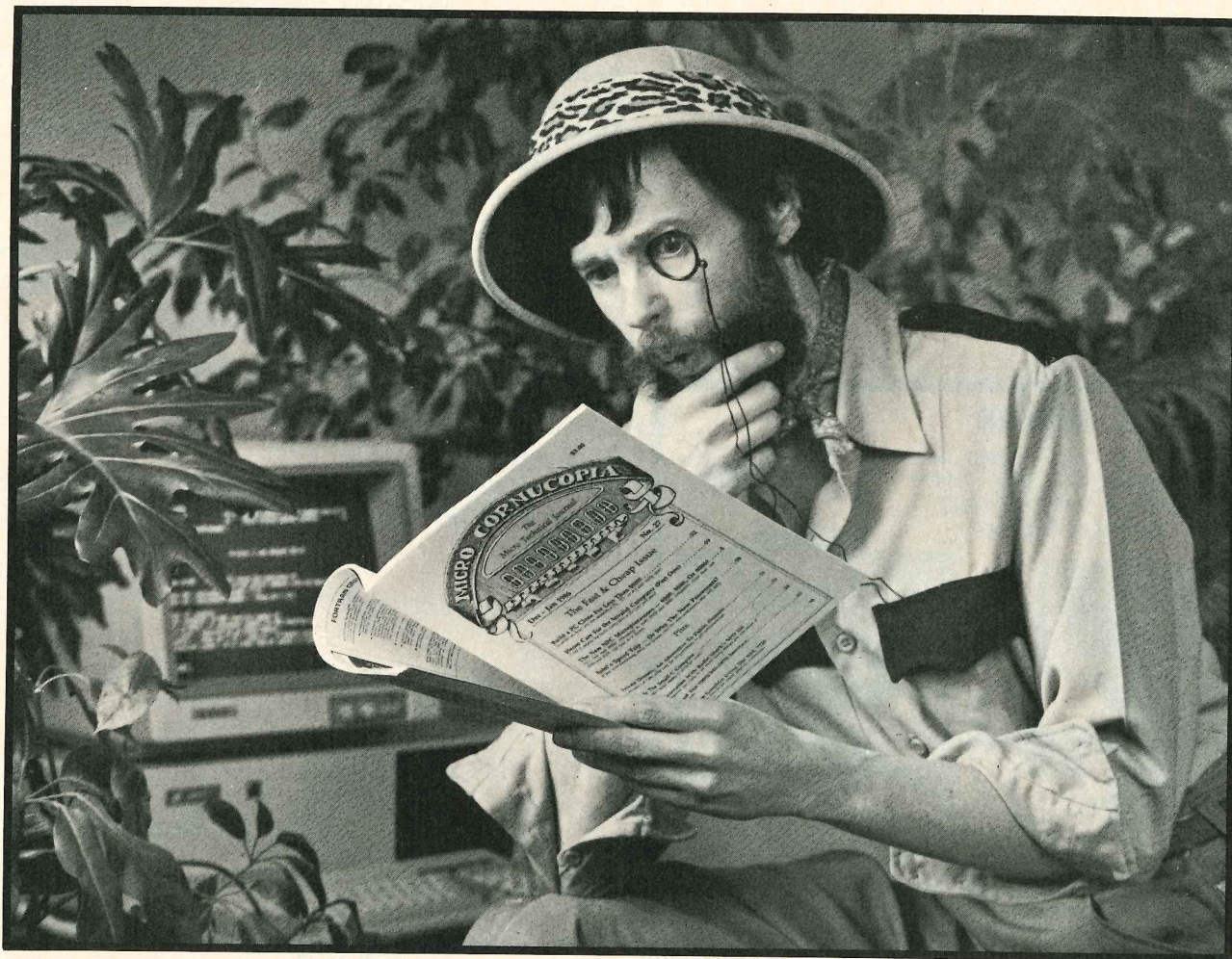
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Paul Ofman is a freelance writer in New York who writes on microcomputer topics and also a doctoral candidate in clinical psychology.

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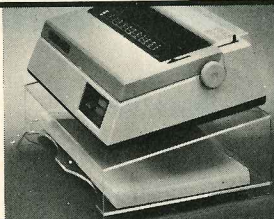
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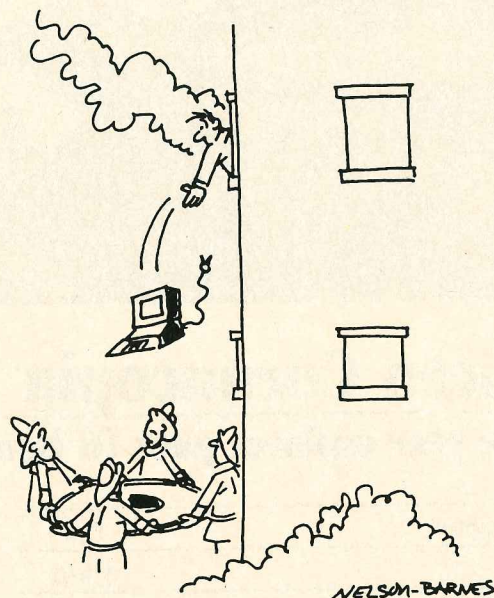
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SWEET DEDUCTION

(continued from page 50)

the figure of 75 percent in calculating your depreciation deduction. The depreciation deduction is thus \$206.25 ($[\$3,300 \times .75] \times 1/12$). To reiterate, time spent analyzing personal investments cannot be used to meet the more-than-50-percent qualified business use test for claiming the ITC, but it is used when calculating the depreciation deduction.

Record-keeping and employee use

Keeping records of the time spent on the computer is a must for those who do not use their equipment exclusively in a place of business. This record generally consists of a time log, showing the computer time spent for business purposes and the time spent for personal purposes. The IRS may require the availability of this record to determine the percentage of computer business use. If it is not available, the deductions claimed by the owner may be totally disqualified.

It is possible that employees can receive deductions for computers they own and use in their line of work. However, stringent requirements must be met. The computer must be used for the convenience of the employer; it must be required as a condition of employment, and it must be necessary in order for the employee to perform his duties. If these conditions are not clearly met, it's likely the IRS will scrutinize any deductions or claims.

Conclusion

If all of this is not yet perfectly clear, you can find books on how to prepare your taxes at almost any newsstand. I have found the *H.R. Block's Income Tax Workbook* particularly clear. Last year it listed for \$6.95 (which is tax deductible) and had examples of most of the forms you would use. ■

Tod Westcott runs a word processing service and wanted to write off the computer he uses in his business. He decided to research the topic, and this article is the result.

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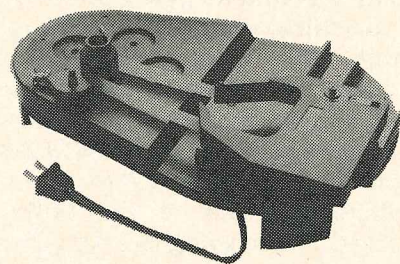
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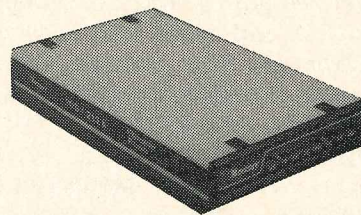
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Beginner's Luck

A first session with MITE

by Keith Hertzog and William Murdick

Telecommunication is one of the most enjoyable, widely useful, and, alas, difficult of all the standard computer applications. No single column is going to teach you how to do it, but we can give you some sense of what to expect.

We'll do that by allowing you to eavesdrop while we call up a public bulletin board thousands of miles away, using the MITE telecommunications program, which comes bundled with certain Kaypros, and a Kaypro 2X internal modem.

Getting set up

We began with a borrowed 2X, which we had to physically set up for telecommunications. This was easy. Into the wall phone jack (which your local phone company will install for you) we plugged a dual phone jack device that allowed us to run two phone lines out of the same jack, one to our Kaypro and one to our telephone. You can buy the "modular to modular" phone cord and the "duplex" jack device from your local Radio Shack (the parts number on the duplex jack device is 279-393).

Then we had to install the software program, MITE. After making an operating copy of MITE from our master, we put the operating copy in drive A and typed **DIR** to view the directory. Sure enough, there among all the MITE programs was one called "MINSTALL" (Mite INSTALLation). At the **A0>** prompt, we typed **MINSTALL <RETURN>**. That gave us a list of modems MITE works with. We identified our modem by typing the number **1** to select "Kaypro Internal Modem." MITE then automatically configured itself and returned us to the **A0>** prompt.

Setting parameters

Next we started up our newly installed MITE program by typing **MITE <RETURN>** at the **A0>**

prompt. A Main Menu appeared on the screen. (If you have a copy of MITE, put it in drive A and follow along.) From the Main Menu, we chose to view the "Parameter Menu," which gave us this intimidating selection of choices:

B - Baud rate	= 300
D - Data bits	= 7
P - Parity	= EVEN
S - Stop bits	= 1
R - Role	= ORG
M - Mode (duplex)	= FULL
A - Auto Redial Count	= 0
N - Phone number	=
I - Modem Init String	=
H - Dial Prefix	=

Regardless of what kind of telecommunications you are going to do, you will have to find out certain information before you begin, in order to set your parameters.

name); the next time we wanted to call this bulletin board, instead of having to reset the parameters again, we could just use the **L** option from the Main Menu, which would allow us to load the "BILL" set of parameters.

Finally, we chose the **D** ("Download menu") option to get at the "Capture Mode" option. Capture Mode was off when we began, and we needed to turn it on. With the Capture Mode ON, any text from the bulletin board that appeared on our monitor would automatically be "captured" by our computer—that is, downloaded (copied) first to our computer's memory and then to our floppy disk in drive A.

"Go Start Communications"

These were the magic words. We were ready. We typed **G** at the Main Menu: "Go Start Communica-

*You must find out
certain information
before you begin in
order to set parameters.*

We have learned, for example, that most bulletin boards use eight data bits and no parity, so we duly made those changes by selecting **D** and then **P**. We also selected **A** and changed to **15** the number of times the modem would redial the phone number, in case it got a busy signal. And finally, we chose **N** to enter the phone number of the bulletin board. (We're going to withhold the name and number of the board so that it doesn't get swamped with hundreds of beginners trying to log on after reading this column; board numbers are published widely in books and magazines, including *PROFILES*.)

We returned to the Main Menu and selected **S** to save this particular set of parameters under a filename (we used "BILL" for the

tions." Immediately the screen went blank, and then a message appeared saying that MITE was dialing our number. We waited and watched, waited and watched . . . and gradually grew uneasy as nothing further showed up on the monitor. We lifted the phone off the receiver to find out what was happening. We heard a dial tone . . .

We considered editing out this minor setback, but decided you might like to know that even for people with some experience in telecommunications the best laid plans can go awry. We found out later that MITE won't dial a number for you on the Kaypro internal modem without a program fix, which your dealer should perform for you; take him your operating copy of MITE. (This problem may

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no longer exist when this column is published, so try your software before asking the dealer to fix it.)

Our solution at the time was very simple. After erasing the phone number we had entered under the parameters menu so that MITE wouldn't try to dial it, we picked up the telephone and dialed the number ourselves. The moment we heard the carrier signal, a loud tone indicating we had connected up to the target computer, we typed G again from the Main Menu and gently hung up the phone. After a moment, some text began to appear on our monitor. We were on the bulletin board.

Capturing the help files

The first message the board sent us was a query: **Nulls, if needed (0-9)?**

Some computer monitors cannot receive data as fast as the bul-

letin board will send it and require delays in the form of null characters at the end of each line; the typing of the invisible nulls delays the carriage return until the monitor can catch up. IBM PCs have that kind of problem, for example, but not CP/M Kaypro, so we entered 0.

Immediately we were presented with some introductory messages: the name of the board, the hours it was open, the type of computer the board used, a warning against "illegal activities," and so on. Each board you log on to will have its own set of opening messages.

Then the board wanted to know something about us: our last name or a "SYSTEM ID" we wanted to use on this board; it also asked us for a password (we entered "KEITH"). We were then given an ID number, in our case 145, which we could enter the next time we signed on,

thereby skipping the tedious identification process.

Once the board knew who we were, it checked our mail and came back with: "Sorry, you have no mail," meaning none of our friends had left us any messages. And finally, we were given our first command prompt, which would allow us to start doing things: **(Enter ? for help) Command: ?**

Naturally, we typed a question mark. Not only did we need to see what the various commands were, in order to know how to do things, but we also wanted to capture them on our disk.

After we entered a question mark, our screen filled with a set of commands at our disposal. At the bottom it said **Press RETURN to continue**, which meant there was more to the help file, so we pressed **RETURN**. The rest of the file

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appeared on our screen, and we got a new "Command:" prompt. Here is the one important lesson we have to offer in this column: *Don't waste time reading help files and trying to figure things out while you are online.* It's too expensive! With the Capture Mode on we had the help files downloaded, so we prepared to do the smart thing—log off!

The main help file, most of which you can see in the figure below, told us that the command "BYE" would allow us to quit, so that's what we entered at the prompt. Immediately we were disconnected from the bulletin board and returned to MITE's Main Menu.


Our last step in this session was to type **D** from the Main Menu to obtain the "Download Menu." There we selected option **W**: "Write Captured Data." The Capture Mode had downloaded material into a section of memory in our computer (a "buffer"); periodically, whenever the buffer filled up, our computer would transfer the captured text over to our floppy disk. By choosing

the **W** option, we now told our computer to take the remaining text in the not-yet-full buffer and send it over to the file on disk.

Now that we had the help files (as well as all the beginning messages) saved on disk, we got out WordStar and printed them out. When we originally turned the Capture Mode to ON, MITE had asked us for a document name for the material that would be captured. We had called it HELPDOC, and now that was the document we printed.

With printout in hand, we studied the commands and planned on paper exactly what commands we would need to accomplish what we wanted to do. In this instance, we started with **C** and then the directory commands **PWD** and **DIR**, all of which you can find in Figure 1. This particular BBS ran under the Z-System. Other boards use different operating systems, but the basic commands are similar. Like many bulletin boards, this one had other help files that showed up as we progressed, and we later cap-

tured those as well, and printed them. After two calls we had all the help information we needed to use the board quickly and efficiently for downloading public domain programs, which had been our original goal.

If your goal is to get started in telecommunications, we encourage you to put any fears behind you and dive in. You may eventually need a little help from your more knowledgeable friends, or from your dealer, but that's how we all learned. 

William Murdick is an English professor at the California University of Pennsylvania. He runs a Kaypro word processing lab on campus, and he wrote a book on Perfect Writer, published by PeopleTalk. Keith Hertzog builds computers and digital electronic equipment. He is a professional programmer who has taught computer science, and he repairs and upgrades computers for friends.

MAIN HELP FILE FOR BULLETIN BOARD

--- Message Commands ---

RP = Read NEW messages (since last login) with yes/no/reply prompting
 RR = Read messages in reverse order with yes/no/reply prompting
 RS = Read messages in forward order with yes/no/reply prompting
 R = Individual message retrieval
 (Optional auto increment/decrement or selective search -
 use '?' for help)
 REPLY = Replies to a particular message #
 E = Enter a private or public message
 K = Kill a message
 Q = "Quick" scan of messages (subject only)
 S = Scan messages (gives sender name, date and subject)
 M = Check for mail (Done automatically on entry to system)

--- File Functions ---

A = Articles Section
 B = View Bulletin File
 N = Notes Section
 O = View Other Systems File
 W = View Welcome File

--- System Functions ---

BYE = Immediate disconnect
 G = Disconnect w/comments
 C = Go to ZRDOS w/comments
 J = Go to ZRDOS (no comments)
 Y = Chat w/sysop (6pm to 10pm)
 X = Toggle expert mode
 # = System statistics (high msg
 number, caller number, etc)

--- Userlog Functions ---

L = List users from user database
 U = Change user parameters like password, paging, auto read function, and optionally save changes permanently
 Z = Show list of recent callers

--- Special Z-MSG Commands ---

ZNEWS - Shows you the most recent newsletter, for your reading pleasure.
 SENDZNEWS - Invoke XMODEM to send the most recent newsletter, via Christensen protocol.
 PWD - Shows the directory names of the ZRDOS section of the Z-Node
 DIR - Displays the files within a directory name (as shown by PWD)

Writing for PROFILES

PROFILES looks to its readers to supply many of the articles that appear in the magazine. If you are interested in submitting an article for possible publication, here's how to proceed.

First look through our back issues to be sure the topic you want to write about has not been covered recently. We are looking for articles that will appeal to our major readership groups: business people (owners, managers, sales reps); writers and others who use their computers primarily for word processing; members of the academic community; scientists, engineers and researchers; programmers and other technically advanced users; and the general Kaypro community.

We use articles pertaining to both CP/M and MS-DOS machines and on public domain and commercial software. If you wish to write a review, state your qualifications and any connections, however remote, you have with the manufacturers. Do *not* contact the companies directly for review copies of software.

Before you write your article, send us a query letter and representative samples of your writing, published or unpublished. If we are interested in your topic, we'll ask you to submit your article on speculation (that is, we are not obligated to buy the article). At that time, we'll inform you of our rates and send writers' guidelines. PROFILES will not be responsible for unsolicited manuscripts.

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Our comparison chart lists just a few of XtraKey's features. We could have included XtraKey's built-in screen dump to printer ability

(Kaypro only), typewriter mode, caps lock function, printer on/off feature, printer output to screen redirection, or built-in menu. But we didn't. After all, things are one-sided enough.

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Mistakes made while entering a definition can be corrected without having to reenter.	YES	NO
All keys, including numeric keypad and cursor keys, can be directly redefined. (Kaypro only)	YES	NO
Number of extra definition sets ("shifted") that can be used at any one time.	7	1
Maximum number of characters per definition or all definitions combined.	NO LIMIT	3,838
Bytes of memory required per 500 bytes of definition data.	500	1,000
Definitions can be sent to printer, CRT, or punch device (in any combination).	YES	NO
Definitions can "chain to" or activate other definitions.	YES	NO
Automatic definition file loading.	YES	NO
Disk space required in minimum configuration to use and save definitions.	7K	24K

SmartKey II Plus is a trademark of Software Research Technologies, Inc.
*Version 1.1b

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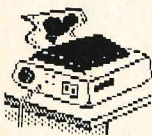
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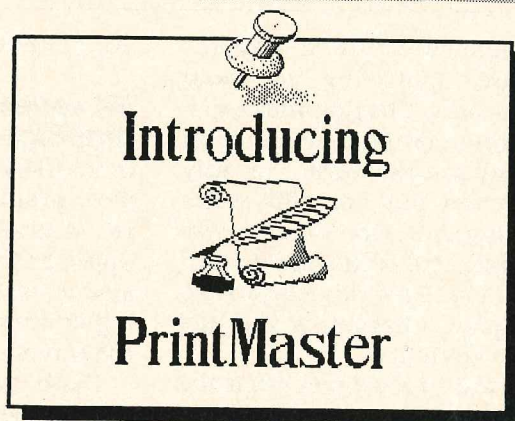
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by Tom Enright

Graphics on CP/M Kaypros are confusing to most owners. The graphics capability of your computer depends on which Kaypro you have. The only graphics you have on '83 series Kaypros are some Greek characters in the upper half of the ASCII character set. The '84 series Kaypro has both graphics characters and line drawing capability.

If you want to see just what the graphics characters on *your* Kaypro are, run this BASIC program:

```
10 FOR I = 128 TO 255
20   PRINT CHR$(I); " ";
30   IF (I-127) MOD 40 = 0 THEN
      PRINT:PRINT
40 NEXT I
```

(Please note that line 30 is broken into two lines only as a convenience in printing this article. You should enter it as one line.)

'83 series character graphics

The ASCII character set defines the codes your computer uses to represent printable characters. Each code is a single byte with a value between 0 and 127. Since the ASCII codes end at 127 and one byte can hold a value up to 255, 128 possible character codes (128 through 255) are not defined in the ASCII character set. Manufacturers can put any special characters they choose in those spaces.

In '83 series Kaypros the upper half of the ASCII code holds part of the Greek character set. These Greek characters are accessed from the keyboard by first typing ESC G. (First press ESCape, then G.) Then, whenever you type a lower-case letter, a Greek character will be printed on your screen. To get out of Greek mode you'll have to press the reset button.

To print Greek characters from inside a program you have to send the ASCII code (128 through 154) of the character to your screen. In BASIC you would use the **PRINT CHR\$(X)** command, where X is the ASCII code of the character you

want to print.

'84 series character graphics

In the '84 series Kaypro you get a lot more graphics capability; there's a set of graphics characters in the upper half of the ASCII range, plus a series of ESCape codes for drawing or erasing lines and pixels on the screen.

Each graphics character occupies the same space a normal character would fill. That space, called a character cell, is divided up

Each bit that is set to 1 turns on its corresponding pixel in the character cell. Notice that the bit that should control pixel #7 has to be a 1. If bit #7 were zero, the code would be for a normal printable character, not a graphics character. That leaves you with a problem if you want pixel #7 to be on. There are two solutions.

One is to print the character in reverse video. If you want to print a graphics character with all pixels on, you would first send the reverse video command **PRINT CHR\$(27)**

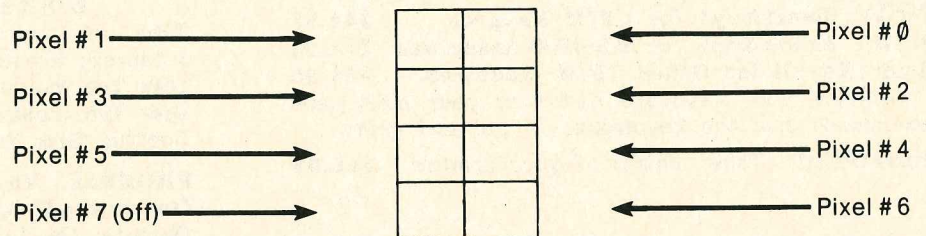
Each graphics character occupies the same space a normal character would fill.

into eight segments called pixels. The code you send defines which of those segments are turned on.

The character cell is mapped like this:

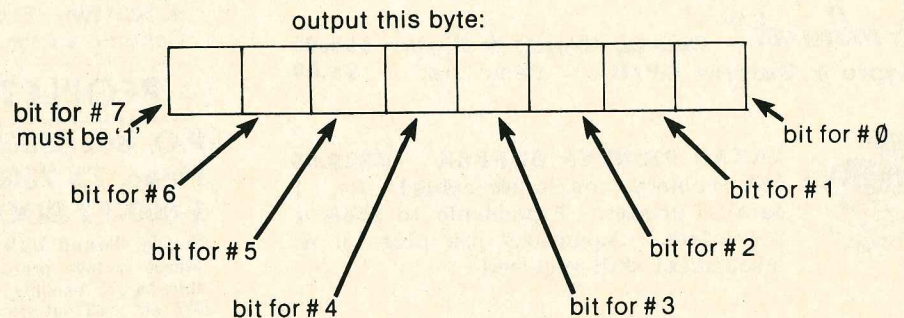
+ **CHR\$(66) + CHR\$(48)**, which is (ESC B 0). Then send the *inverse*, except for bit 7, of the code that you want printed. The code would be **PRINT CHR\$(128)** (128 decimal is

i.e., to write these pixels....



And the binary value of the code you send maps the character cell this way:

equal to 10000000 binary). Don't forget to turn reverse video off (ESC C 0) before printing any other char-



acters.

The other method is to make use of Kaypro's video mode command. When video mode is on (ESC B 5) you have to send two bytes to print each graphics character. Bit 7 of the first byte controls whether pixel #7 is on or off (the rest of the first byte is irrelevant). The second byte controls pixels 0 through 6 in the normal manner. Video mode has no effect on conventional printable characters. Just be sure to turn video mode off (ESC C 5) when you're finished.

Graphics characters can have the same attributes as any other characters. You can print them in reverse video or make them bright, dim, or blinking. This gives you a good deal of latitude to the finished appearance of your screen.

'84 series pixel graphics

In addition to graphics characters, '84 series CP/M Kaypros can draw lines and individual pixels on the screen. Pixel graphics are drawn with a screen resolution of 160 by 100. Line and pixel drawing is done with ESCape sequences sent to your screen. Four basic commands are available: draw a line, draw a pixel, erase a line, and erase a pixel.

Graphics drawing commands for CP/M Kaypros are as follows:

Draw pixel: ESC * V1 H1

Erase pixel: ESC <space> V1 H1

Draw line: ESC L V1 H1 V2 H2

Erase line: ESC D V1 H1 V2 H2

V1 and H1 are the vertical and horizontal locations of the pixel or starting point for a line. (Note that an offset of 32 decimal must be added to all vertical and horizontal locations.) V2 and H2 are the ending coordinates of line segments.

Let's say you wanted to draw a diagonal line from row 5 column 10 to row 90 column 150. (Remember the 160 by 100 resolution.) The BASIC command to draw this line would be `PRINT CHR$(27) + CHR$(76) + CHR$(37) + CHR$(42) + CHR$(122) + CHR$(182)`. And the command to erase the

same line is `PRINT CHR$(27) + CHR$(68) + CHR$(37) + CHR$(42) + CHR$(122) + CHR$(182)`.

Since entering all those numbers every time is a lot of trouble, you may want to define a function to do most of the work for you. In the initialization section of your BASIC program would be this line: `DEF FNDRAW$(V1,H1,V2,H2) = CHR$(27) + CHR$(76) + CHR$(V1+32)`

`+ CHR$(H1+32) + CHR$(V2+32) + CHR$(H2+32)`.

V1, H1, V2, and H2 have to be set aside as variables to which you assign values before printing the function.

Now, to draw the same line as before, the command would be `V1 = 5: H1 = 10: V2 = 90: H2 = 150: PRINT FNDRAW$(V1,H1,V2,H2)`. Since the function adds the offset

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Technical Forum

for you, you simply set the variables for the desired coordinates and print the function. User-defined functions can take a lot of the work out of drawing graphics.

One disadvantage of pixel graphics on '84 series Kaypros is that you can't assign attributes to pixels. In the section on character graphics we mentioned that you could assign attributes (bright, dim, or blinking) to the graphics characters, but pixels are either on or off; they can't blink or be brightened or dimmed.

Another thing to keep in mind is that pixel graphics will not print over normal text characters. If you try to draw a line over text, the line will skip over the text.

Graphics software

Commercial graphics software isn't as readily available for CP/M Kaypros as it is for DOS computers, because CP/M computers usually don't have any graphics capability. Kaypro is an exception in this area.

Kaypro's line of CP/M computers have proven to be popular enough that some software developers have written graphics programs for Kaypro. Rembrandt from Spectre Technologies is the best known Kaypro CP/M graphics package. This program is available in versions for both '83 and '84 series Kaypros. Another commercial graphics package is SCS-Draw from Second City Software. And even one public domain graphics program, DDraw, is available on many BBSs across the country.

Most arcade game software for Kaypro CP/M machines constructs pictures from combinations of alphanumeric characters. This results in crude uninteresting screens. The only arcade graphics program for CP/M Kaypros that I am aware of is the Desolation series from BC Software. I've never seen their program in action, but the very fact that it exists speaks well for CP/M Kaypros popularity in the marketplace.

Back Issues

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- DU (Disk Utility), part 1

October '85

- MBASIC to Turbo
- Sorting algorithms

November '85

- dBASE general ledger
- Accounting software roundup

December '85

- Z-System, part 1
- Key definition software

January '86

- MS-DOS and CP/M
- Turbo tutorial

February '86

- Beyond letter-quality print
- Assembly language tutorial

Product Spotlight

by Tom Enright

Okidata has been in the printer business for a long time and is known for making solid, dependable printers. The Okidata microline 192/193 (80- and 132-column) printers are its newest under-\$1000 offerings for personal computer owners.

Okidata 192/193 printers come in two versions: the standard Okidata version and IBM-compatible version. In the IBM version Okidata's command set is replaced with a superset of the commands for the IBM 5152 graphics printer. The Okidata runs at a faster speed than the IBM (160 characters per second versus 80 cps) and offers a wider range of capabilities (12 characters per inch print and more printing modes).

Features summary

Key features offered on Okidata 192/193 printers are:

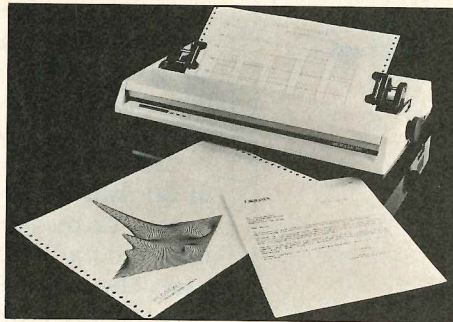
- Nine-pin printhead for more readable characters;
- 160 cps in draft mode (9 x 9 matrix) and 33 cps in near-letter quality mode (17 x 17 matrix);
- 10 characters per inch (cpi), 12 cpi, 17 cpi, and double-width characters. Draft, enhanced, emphasized, and near-letter quality print modes;
- Graphics in 60 by 216, 120 by 216, and 240 by 216 dots-per-inch densities;
- Proportional spacing and single-pass underlining (the underline is printed at the same time as the character, rather than during a second pass);
- Two software switchable character sets available online, and the ability to download custom character sets; software for font editing and downloading is included with the IBM-compatible versions;
- Default options selected via an online menu rather than with dip switches (a series of questions is printed on paper and you answer by pressing buttons on the printer's front panel);
- A self-inking ribbon cartridge

that replaces the spool ribbons used on prior Okidata printers. This small cartridge has an ink reservoir that re-inks the ribbon while it is in use and is rated to print up to 3 million characters before replacement;

- An eight-kilobyte buffer that is standard equipment;
- A one year warranty on parts, labor, and printhead.

Product assessment

A basic criterion for sizing up a printer is the overall impression you get when using it. Okidatas



give an impression of being compact, solid pieces of equipment. The Okidata 193 is 20.5 inches wide, 10.6 inches deep and 3 inches high (not counting the external tractor), and it weighs 13.2 pounds. The 192 is 14 inches wide and weighs in at 9.9 pounds (other dimensions are the same as for the 193).

Another indicator of solid construction is how quietly a printer operates. Okidata doesn't publish noise levels, but you'll have no problem carrying on a conversation next to these printers.

The way a printer handles white space has a major impact on its overall throughput speed. On horizontal tabs or spaces, the printhead speeds up to 200 cps. Line feeds are generated at 1.7 inches per second (at 6 lines per inch a linefeed takes 0.1 second). When a series of line feeds is sent to the printer, as WordStar does with short pages, the pause between individual line feeds is imperceptible.

How well existing software sup-

Okidata 192/193 printers

ports a printer is a good measure of that printer's usefulness. The IBM version of the Okidata 192/193 family responds to the same set of commands as the IBM 5152 graphics printer, the Epson FX series, and the Epson RX series printers. You're unlikely to find any commercial software that doesn't support at least one of these command sets.

Getting paper into and out of a printer is something manufacturers often don't plan very well. Okidata owners have always had the choice of feeding paper from the rear or the bottom of the printer.

Feeding paper from the bottom alleviates the problem of outgoing paper getting tangled up with paper entering the printer.

Options and pricing

The list of options is fairly short. A tractor feed comes with the Okidata 193 but is an extra-cost option (\$45) on the 192. All Okidatas come with a Centronics parallel interface. High-speed (up to 19.2K baud) serial interfaces are optional (\$79 for RS-232 and \$125 for RS-422). You can also get a cut sheet feeder (\$229) for either printer and a roll paper stand (\$59 for the 192 only) from Okidata.

The 192 comes with pin-feed built into the platen for 9 1/2 by 11-inch fan-fold paper. If you'll be printing odd-sized forms or mailing labels, you should buy the optional tractor feed.

Suggested list prices are \$499 for the 192 and \$699 for the 193. You can easily find them at a discount for less than \$400 for the 192 and less than \$550 for the 193. ■

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Press releases and product information for this column should be sent to: New Products editor, c/o PROFILES Magazine, 533 Stevens Ave., Solana Beach, CA 92075. Releases must include prices and must list the Kaypro models on which the products can be used. Send black-and-white photos if available.

"In-house" storage

Scorecard is a hard disk drive that sits on a card you place inside your computer. This low-power drive/controller combination mounts directly into an accessory slot.

Claiming an average access time of 80 milliseconds, the Scorecard crams 22 megabytes of formatted data onto a 3 1/2-inch Winchester disk. The controller electronics provide for direct system bootup and include an additional port to which a second internal or external hard drive may be attached.

\$895. Kaypro 286i, Kaypro PC. SPC, 9747 Business Park Ave., San Diego, CA 92131, (619) 693-8611.

Investment analysis

Solo is an investment and portfolio analysis software package that's designed for individual investors.

Your portfolio may include your home, other real estate, a money market fund, etc.

With Solo you can do an after-tax analysis of individual investments or of your portfolio as a whole. Solo calculates the after-tax rate of return and net present value. Using the portfolio's rate of return you can produce a graphic display of projected values over a 30-year period.

\$90. All Kaypro CP/M and MS-DOS models. Financiometrics, Inc., P.O. Box 1788, Lafayette, CA 94549, (415) 376-9455.

Design your own

With Memory/Shift you can create

a "desktop" software package of your own design.

For example, you can switch from WordStar to Lotus 1-2-3 or to Crosstalk IV instantly. Memory/Shift lets you store up to nine different programs in memory at once. Each program is allocated a memory "partition."

\$99. All Kaypro MS-DOS models. North American Business Systems, Inc., 3840 Lindell Blvd., St. Louis, MO 63108, (314) 432-6106.

Solar power

The G110 solar panel is for Kaypro 2000 users looking for a way to extend their work time between battery charges.

The G110 increases the duty cycle of the K-2000. Currently, the computer can only be used for three to four hours per battery charge. During the day, this three-pound, 13.7 x 13.1-inch solar panel can power the idle load directly and recharge the battery from disk drive power drain. The usage period of the K-2000 then is extended by three or four times without the need for AC wall charging.

\$129. K-2000. Photocomm Inc., 400 N. Broadway, Escondido, CA 92025, (619) 741-2766.

Split personality

The Amdek Color 500 is a 13-inch monitor that accepts both RGB and composite video input signals.

Although designed as a computer monitor, it can work with a VCR or video disk player as well.

An audio amplifier, speaker and headphone jack are built in. Its front-panel text switch can display green text characters on a black background for monochrome viewing.

\$399. Kaypro 286i, 16, PC. Amdek Corp., 2201 Lively Blvd., Elk Grove Village, IL 60007, (312) 364-1180.

Bug map

Program Map is a cross reference

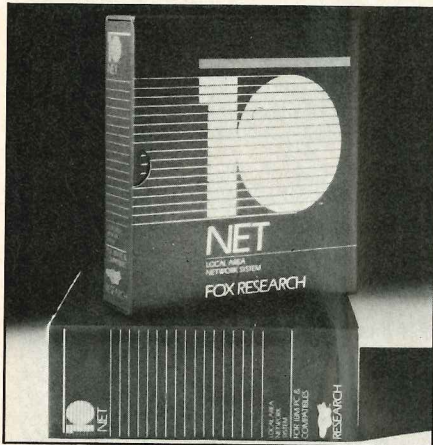
tool for Microsoft BASIC programs. Program Map aids in program development by helping to "debug," modify, convert and document your MBASIC programs.

Program Map produces alphabetical lists of variables, commands, functions, constants, quoted strings and line numbers. Each "word" is listed with the line number(s) in which it is found. Print width and paging control are included.

\$150. All Kaypro CP/M models. The Software Store, 706 Chippewa Square, Marquette, MI 49855, (906) 228-7622.

LAN-in-a-box

10-Net LAN offers a break from the "a la carte" LAN (local area network) tradition. Electronic mail, electronic bulletin boards, calendar, print spooling, interface card, tap box and tap connecting cable are all included.



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\$695 per node. All Kaypro MS-DOS models. Fox Research, Inc., 7005 Corporate Way, Dayton, OH 45459, (513) 433-2230.

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Spike Blok is a wall unit spike protection device. The unit plugs directly into an existing outlet and converts that twin outlet into six outlets with full noise and spike suppression.



The Spike Blok has two indicator lights: one to show that power is present, the other to show that the protection circuitry is working.

\$25. Tripp Lite, 818 W. Lill, Chicago, IL 60614, (312) 329-1777.

Easy access to DOS

Harvey ProDisk Control (which bills itself as the Invisible Software) simplifies access to DOS commands and applications through the use of "hop-up" menus that appear over an empty "desktop" in place of the familiar "A>" prompt.

Each menu offers a choice of commands, applications, utilities or other menus; any choice can be executed in a keystroke.

The Harvey package also offers utilities such as a watch-and-calendar time and date display and a paging facility.

A user can create any number of menus (limited only by disk space), each with up to 15 entries; menus nest within each other. Any menu can call up another menu, a program (.COM or .EXE), or a batch (.BAT) file. Any menu can be color coded or color coordinated; background and foreground menu color choices are separately controlled and user configurable.

\$90. Harvey Software, P.O. Box 1863, Cape Coral, FL 33910, (800)-231-0296.

Advertiser	Page No.	Advertiser	Page No.
Advanced Concepts E&C.....	19	Marvel Software	22
Advent Products	37,61	Michelle-Lynn, Inc.	18
Alpine Data	71	Micro Art Programmers	43
Axonix.....	32	Micro Cornucopia	57
C.E.I.	35	Micro Interfaces, Inc	67
CDE Software.....	13	Micro R & D	14
Central Computer Products ..	23,24,25	Microcomputer Systems Consultants	44
Chaucer Software	2	MicroSphere	50
Computer Friends	59	Mycroft Labs.....	5
Computer Professionals, Inc.	49	Ohio Plastics.....	58
Decmaton.....	8	PeopleTalk Associates	64,65
Discount Supply Center	17	Poor Person Software.....	44
Diversified Software	18	Pro/Tem Software	26
Emerald Microware	22	PROFILES Magazine.....	51
EZ Systems, Inc.....	11	Rocky Mountain Software Systems ..	41
Financial Track Systems	31	Rose Associates.....	30
H & E Computronics	Back Cover	Second City Software.....	11
High Tech Research Inside Front Cover		Softcraft, Inc.....	21
Hurd Computers	17	Southwest Computing	71
Intersecting Concepts.....	42	Spectre Technologies	9
James River Group Inside Back Cover		SunSoft Inc.....	15
Jon & George Software.....	7	Techware.....	8
Kamasoft.....	1	Traveling Software	45
Kaypro General Store.....	36	Westwind Computer.....	55
Letzten-Pfenning Software.....	68	Woodsmith Software.....	32
Lifestyle Software.....	6	Workman & Associates	14
Lionheart.....	72	Xpert Software	63
Martz Software	70		


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Traveling SideKick also prints out SideKick's calendar, including any portion of the user's appointment files, in four different formats: daily, weekly, monthly or yearly.

The day-timer binder measures 9 x 8 x 1 3/4 inches and has a padded, black vinyl cover and divider tabs for its address book, phone directory, reference, finance, calendar, and miscellaneous sections.

\$124.95. All Kaypro MS-DOS models. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066, (408) 438-8400. 



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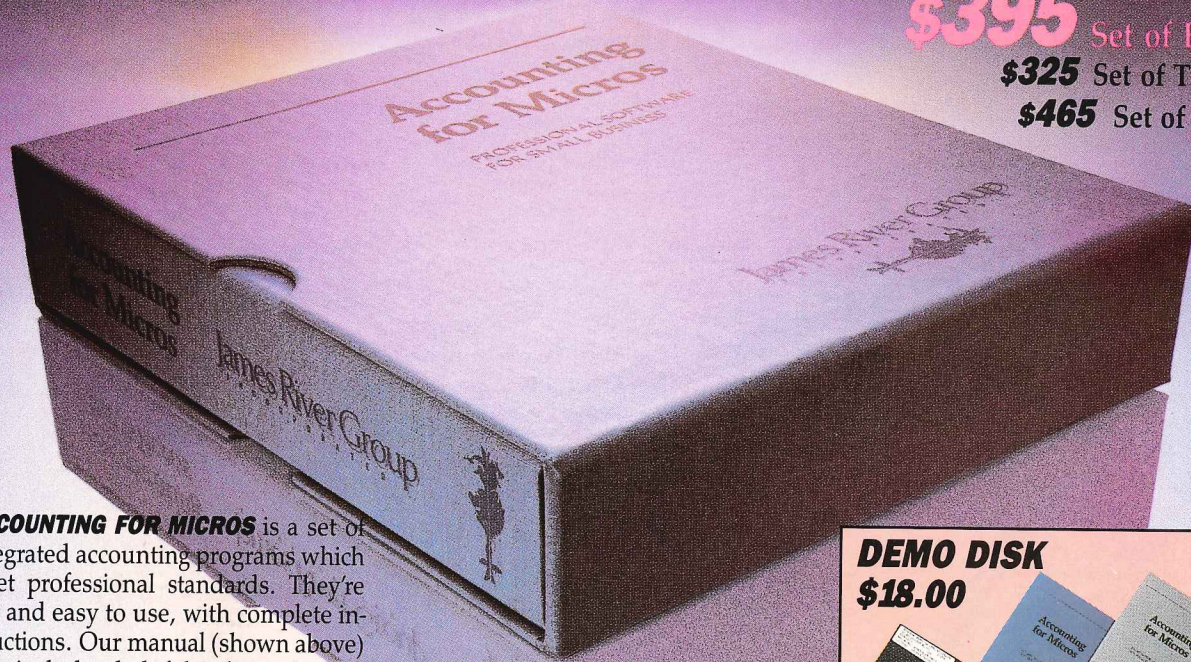
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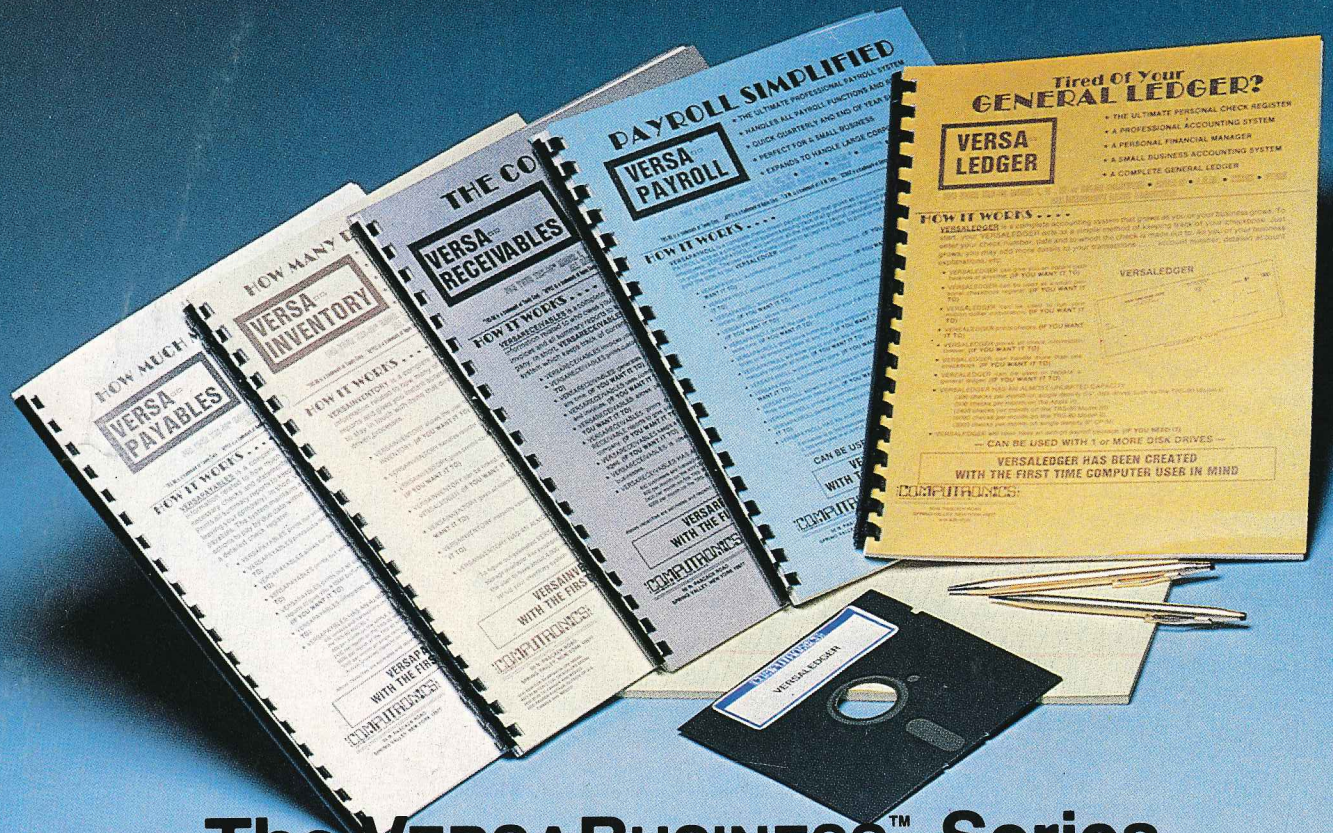


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