

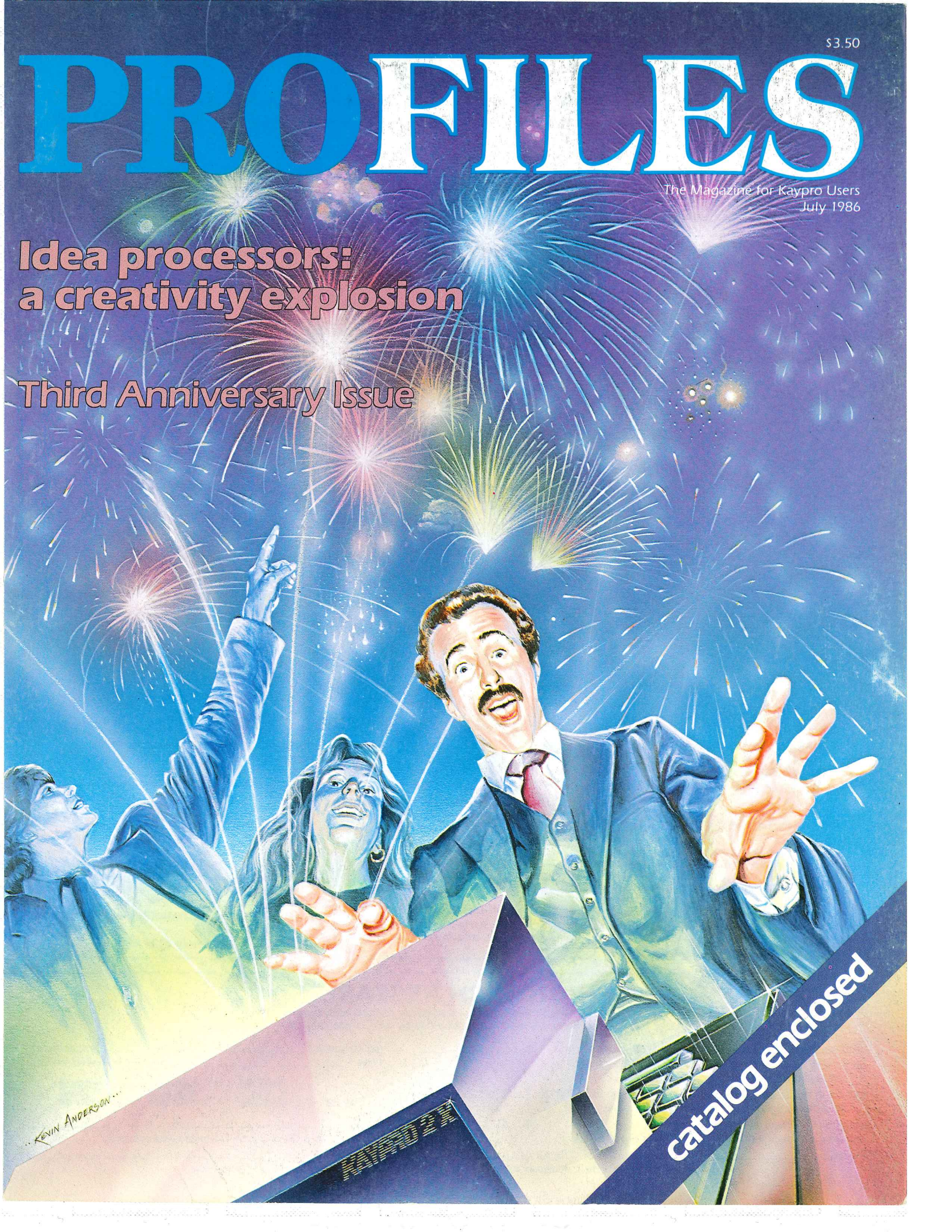
\$3.50

# PROFILES

The Magazine for Kaypro Users  
July 1986

**Idea processors:  
a creativity explosion**

**Third Anniversary Issue**



catalog enclosed

# HANDYMAN

TURN YOUR KAYPRO ON TO **HANDYMAN!!!**

**AUTO DIALER**

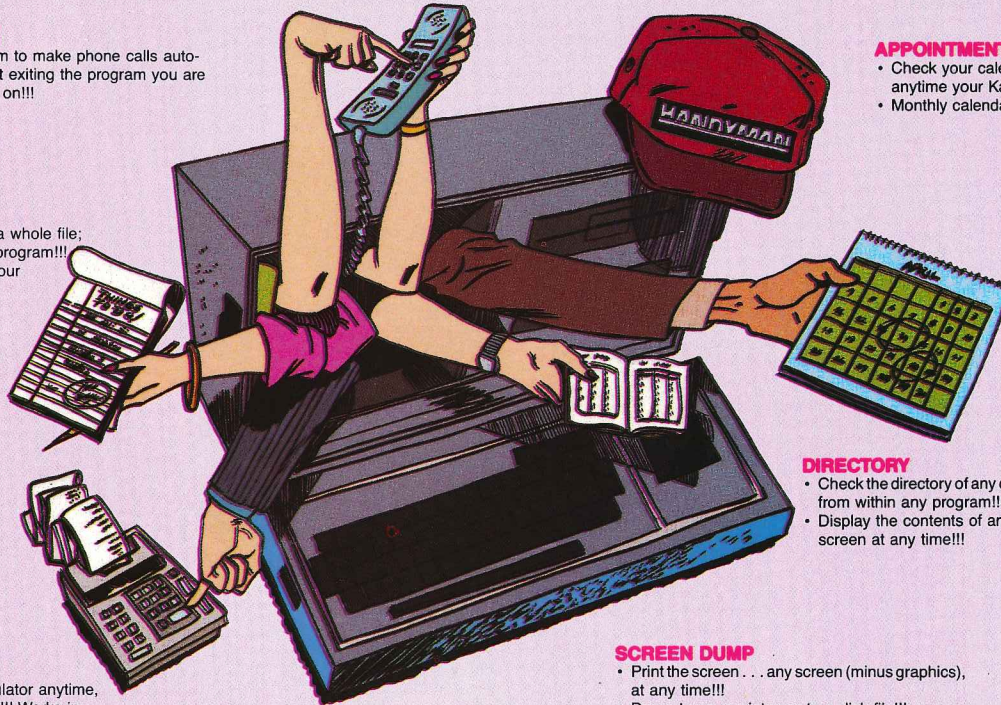
- Use your modem to make phone calls automatically without exiting the program you are already working on!!!

**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!!!**

**NEW — HIGH TECH K-20 COMPUTER — INTRODUCTORY PRICE — \$1,595.00**

Includes: All brand new components mounted in a Kaypro 10 case.  
 20 Megabyte Seagate 65 millisecond hard-disk drive.  
 800 Kbyte (quad-density) Panasonic floppy-disk drive. (Reads single and double sided double-density disks too.)  
 84 series Kaypro main board with modem and real-time clock.  
 Standard Kaypro software package (WordStar, etc.).  
 Advent Turbo ROM or MICROCode Kplus Rom. And of course **HANDYMAN**.

These are **complete computers — not upgrades**. Price and availability subject to change. Allow 3 weeks for delivery. Add 3% for credit card purchases (computers only) and \$20.00 shipping and handling. Call for prices on 30, 40, 50, & 100 Megabyte computers. 90 day warranty.

**NEW — HANDYMAN Version 1.3**

Now complete with File Manager. Copy files from any drive/user to any other d/u without leaving your original application file. Now enter Appointments with a single keystroke. Now available with Advent Turbo ROM or MICROCode KPLUS ROM. (Call) And much more. **HANDYMAN Still uses No Main Memory.**

**Still only \$124.95**

## HIGH TECH RESEARCH

1135 PINE STREET, #107 — REDDING, CALIFORNIA 96001  
 CALL 1-800-446-3220 — IN CALIFORNIA CALL 1-800-446-3223

YES! Send me \_\_\_\_\_ **HANDYMAN(s)** at \$124.95 \$ \_\_\_\_\_  
 My Kaypro signs-on (boots) as CP/M 2.2 \_\_\_\_\_ (letter).  
 (Required for 84 series Kaypros only).

Yes! Send me \_\_\_\_\_ **HIGH TECH K-20(s)** at \$1,595.00 \$ \_\_\_\_\_  
 Add 3% for credit card purchases (K-20s only) \_\_\_\_\_

California residents add 6% sales tax \$ \_\_\_\_\_

Shipping and handling (\$5.00 **HANDYMAN** — \$20 K-20) \_\_\_\_\_

Signature \_\_\_\_\_ **TOTAL \$** \_\_\_\_\_

My Kaypro is a \_\_\_\_\_ (model) \_\_\_\_\_ (model year).  
 I use \_\_\_\_\_ (Wordstar or Perfect Writer).

Charge my      

Card # \_\_\_\_\_ Exp. \_\_\_\_\_

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

Phone (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ Eve (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

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

**TurboROM:** Provides substantial improvements to your CP/M Kaypro computer. Adds many new features including ability to read and write up to 10 other disk formats directly. We invite comparison. You can't get more performance for your buying dollar with any other product.

- 2X to 4X speed on all disk writes (both hard and floppy)
- Faster disk reads (with Advent format)
- Supports 48 and 96 TPI drives
- Supports fast seek (3ms) for 96 tpi floppys that's easily installed
- Up to 4 floppy drives in any mix of SS, DS, 48TPI and 96TPI drives
- 256 directory entries using Advent floppy format
- Up to 10 built in disk formats including K2, K4, Osborne, QX-10, Xerox, Micro C
- Super-speed disk copying with Turbocopy program
- Allows redefining of logical drive assignments
- Up to 2 Mbytes more storage on K10 hard disks
- Add a second or larger hard disk to K10s
- Up to 3.25K more program area on K10s
- Built-in screen dump
- Programmable cursor—block, line, flashing, non-flashing
- Video screen blanking after 10 minutes of nonuse (optional on '83s)
- Improved video performance on '84 computers
- Time displayed on 25th line of '84 computers (Real Time Clock required)
- Hard disk support built in (up to 112Mb)
- Ram disk support built in (up to 2048K)
- 32 character type-ahead keyboard buffer
- ZCPRI included
- Advanced features list includes fine tuning floppy and hard disk performance
- Full set of utility software provided
- Compatible with all Plu\*Perfect CP/M enhancements
- Compatible with Uniform, Media Master, Fast Back, etc.
- No modifications required to your computer to use the TurboROM

**TurboROM** (Specify Kaypro model when ordering) ..... **\$79.95**

**RAM Disk:** Add an electronic disk drive to your computer. Enables programs to run faster than you ever thought possible. Ideal for applications involving word processing, spread sheets, data base management or any other tasks that require frequent use of the disk drives.

Features:

- Fastest RAM disk available for Kaypro computers
- 10 to 30 times faster than floppy drive
- More directory entries than floppy drive
- Low power consumption (no fan required)
- Easy expansion up to 2048K
- Software driver loads FAST! (driver not required with TurboROM)
- Software driver may be loaded above the system to conserve memory
- No software driver required if computer is equipped with TurboROM
- Can be assigned to any drive name (A: thru P:)
- Auto loads the system if assigned as drive A:
- Mounts inside the Kaypro
- Works on all CP/M Kaypro computers - Nothing extra to buy
- Expandable to include Real Time Clock/Calendar
- Expandable to include hard disks
- High reliability - Built to our proven high standards

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

Prices start at:

256K RAM Disk .....	\$249.01	Expansion Board .....	\$294.01
512K RAM Disk .....	\$354.01	256K Expansion Ram ...	\$39.95
768K RAM Disk .....	\$414.01	Real Time Clock .....	\$30.00
1024K RAM Disk .....	\$474.01		

**Clock/Calendar:** Real time Clock/Calendar for all Kaypro computers without built-in clocks. Works with Plu\*Perfect Datestamper or your own application software. Source code drivers provided for use with MBASIC, SBASIC, dBASE II, Turbo Pascal, C, and assembly languages. The Clock/Calendar also functions as a host adapter to our RAMDisk and hard disk add-on products. Add these other products as needed.

**Clock/Calendar Interface** ..... **\$99.95**

**Acceler 8/16:** Speed up your MS-DOS computer up to 15% plus be able to run CP/M programs directly. Just change the CPU chip with the one provided and load the software driver to upgrade your IBM or compatible. Media Master is provided to read and write 75 CP/M format. A \$140.00 value.

**Acceler 8/16** ..... **\$99.95**

All items are warranted for 90 days. 30 day money back guarantee if not completely satisfied. Money back guarantee for software applies only if diskette seal is intact. VISA and MasterCard are welcome. Please add \$2.50 freight per total order (additional freight and insurance on hard disk products) and \$2.50 for COD orders. California residents please add 6% sales tax. Prices, availability and specifications subject to change without notice.

Trademarks: Kaypro - Kaypro Corp., CPM - DRI, MS-DOS - MicroSoft, dBASE II - Ashton Tate

**Hard Disk Systems:** Now you can add hard disks to any CP/M Kaypro computer. Yet another reason not to sell your old workhorse to get the extra performance you now require. Add an additional 11, 22 or 34 Mb drive inside your Kaypro 10, or install a single 44 or 56 Mb drive. If complete systems are not what you need, then order just the parts you want. Call for more information. TurboROM included.

- High-speed disk read / write - much faster than K10
- Supports 1 or 2 hard disks up to 56 Mb each
- Each hard disk can be divided into 1 to 7 logical drives
- Each logical drive can be any size from 0 to 8 Mb
- User may select number of directory entries for each logical drive
- User-selectable block size for each logical drive
- Expandable to include RAM Disk
- Expandable to include Real Time Clock/Calendar
- Supports all features of our TurboROM
- Includes the Advent hard disk formatter software
- Advanced features include complete user definable disk formatting
- Supports a wide range of hard disk manufacturers and models

**Floppy Disk Kaypro Systems (Internal):** Add a single 11, 22 or 34Mb drive to any Kaypro II, 4, 2X, 1 etc.

System, less drive ...	\$576.67	22 Mb System .....	\$1196.67
11 Mb System .....	\$1090.62	34 Mb System .....	\$1401.67

**Kaypro 10 System (Internal):** Add 11, 22, or 34Mb drive to the existing hard disk. The 44 and 56Mb drives replace the existing 10Mb drive.

System, less drive ....	\$183.03	34 Mb System .....	\$1008.03
11 Mb System .....	\$696.98	44 Mb System .....	\$1600.98
22 Mb System .....	\$803.03	56 Mb System .....	\$2628.98

**External Hard Disk System:** Add from 11 to 112Mb plus up to 2048K of RAM Disk to all Kaypros except K10s. Allows for the hard disk to be shared between different computers. **Systems start at \$798.00.**

**Floppy Disk Add-On:** Convert any Kaypro with single sided (192K) drives to double sided (394K) drives. Or ad 96 tpi (780K) drives to any Kaypro CP/M computer including the K10. Add 3 or 4 drives in '83 computers. No modifications or soldering is required. Includes TurboROM. Kits start at \$119.90 less drives. Call for further information and pricing.

**5 MHz TurboBoard:** Our tried and true 5 MHz speed enhancement for the earlier Kaypro models.

**5 MHz TurboBoard for Kaypro II & 4** ..... **\$74.95**

**Software:** Advent stocks a large selection of software for Kaypro CP/M and MS-DOS computers. The following is a list of some of our more popular software products.

#### Utilities

DateStamper .....	\$39.00	Sidekick .....	\$54.95
General DateStamper...	\$49.00	Smartkey II .....	\$49.95
Media Master .....	\$39.95	Smartprint .....	\$29.95
Media Master Plus .....	\$59.95	Uniform .....	\$69.96
MultiCopy .....	\$49.95		

#### Programming Languages

C/80 Ver 3.1 .....	\$49.95	Turbo Pascal .....	\$69.96
C/80 MathPak .....	\$29.95	Turbo Toolbox .....	\$54.95
Toolworks C .....	\$49.95	Turbo Tutor .....	\$34.95

#### Accounting

Basic Business .....	\$89.95
Checks & Balances ....	\$74.95

#### Graphics

Rembrandt .....	\$79.95
Rembrandt '83 .....	\$89.95

#### Games

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Airport .....	\$19.95
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MyChess .....	\$34.95
Word Wiggle .....	\$29.95

#### Health & Diet

MyDiet .....	\$49.95
Computer Chef .....	\$29.95
What's For Dinner .....	\$19.95
Best of Wok Talk .....	\$29.95

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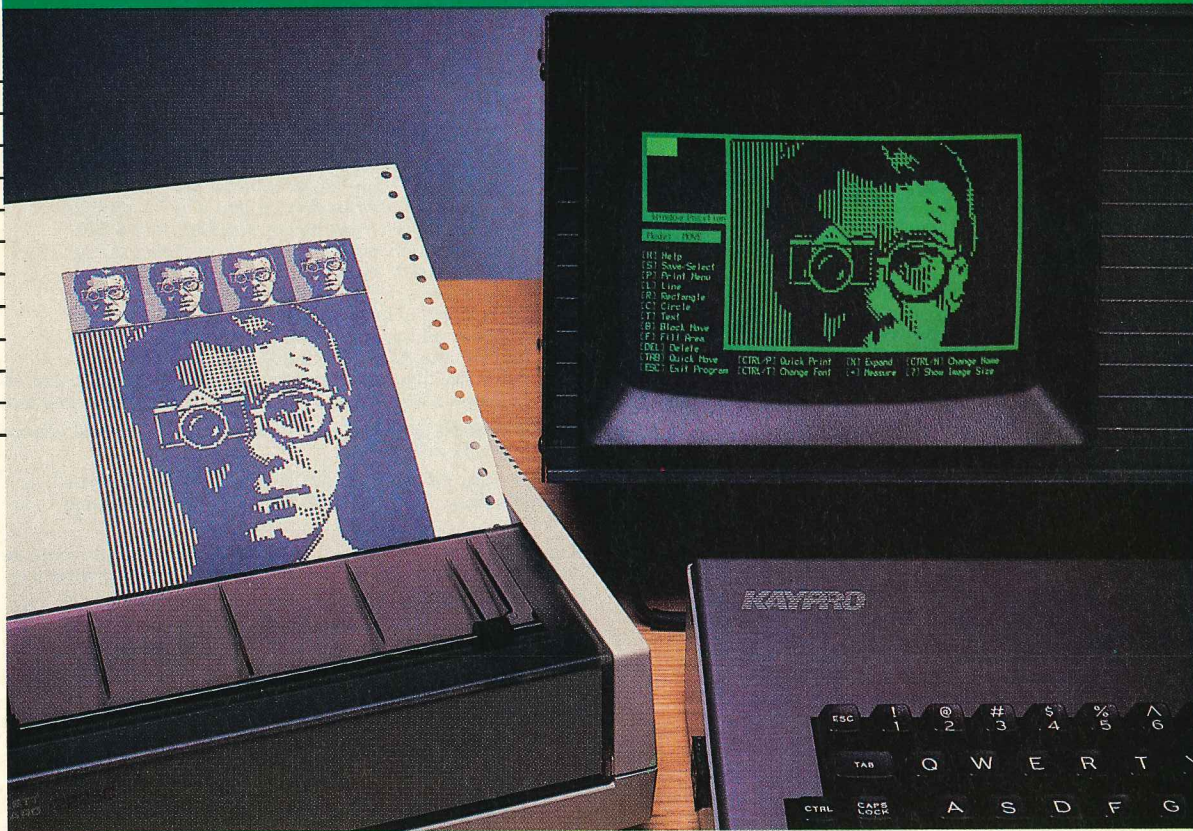
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## Do you have a "drawing" program that *can't*?

Take a good look at this photograph. Can you do this with the "drawing" program you have now? If not, maybe it's time to move up to the only *true* drawing program for your Kaypro—SCS-Draw.

SCS-Draw turns your mild-mannered Kaypro into a powerful drawing machine, with features that no other program can offer:

- True pixel-by-pixel drawing. (Not "building-block" characters.)
- A total resolution of over 120,000 pixels. (Over seven times the resolution of other Kaypro drawing programs.)
- Automatic pattern-filling, with one of 23 built-in patterns or a pattern that *you* design.
- Powerful printing options like enlargement/reduction (as shown above), rotation and mirror image.
- Pop-up menus, automatic on-line help, and much, much more.

So if you have a "drawing" program that can't draw a picture, design a logo, print a banner, make a sign, draw a map, illustrate a newsletter or print a party invitation, don't get mad—get SCS-Draw, the only true drawing program for '84, '85 and '86 Kaypro CP/M computers.

*"A fabulous program . . . SCS-Draw permits you to draw to the best of your abilities—and your computer's"*

—Chris Meeks, March '86 Profiles

### SPECIAL OFFER

If you already own a drawing program, it's easy to move up to SCS-Draw. Just include the disk or manual cover from *any* Kaypro graphics program with your order for SCS-Draw, and you'll pay only \$44.95. That's right—a full \$15 off, with no questions asked.

- SCS-Draw . . . . . \$59.95
- SCS-Draw plus the Image Extractor . . . \$79.95  
(The Image Extractor converts PrintMaster images to SCS-Draw Image Libraries.)

All pre-paid orders are shipped free.  
Call 312-577-7680 for COD orders or more information.

Second City Software  
P.O. Box 442, Mount Prospect, IL 60056  
312-577-7680



# PROFILES

The Magazine for Kaypro Users • Volume 4, Number 1 • July 1986

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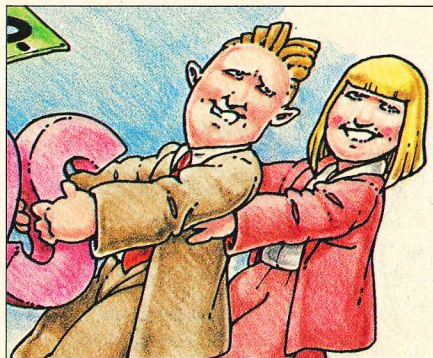


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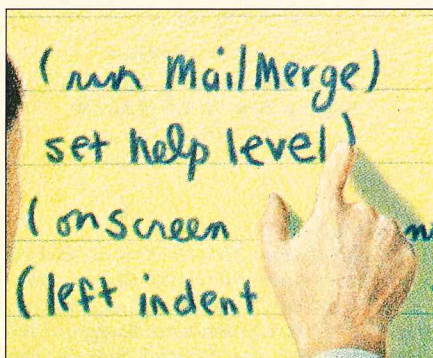


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### On the cover:

America celebrates another birthday, and so does PROFILES! Artist Kevin Anderson illustrates the veritable explosion of creativity and ideas that can result from using computers. In the forefront are idea processors — software made specifically for exploiting your creative talents.

## Editors' Notes

This issue marks *PROFILES'* third anniversary. Those of you who have been with us from the start have seen a lot of changes in the magazine and—we hope you'll agree—a lot of improvements.

With this issue you will see three more changes that should make the magazine even more useful to you.

One is "First Impressions," by Tom Enright, which is the former "Product Spotlight" column—expanded and improved. Where "Product Spotlight" gave a thumbnail sketch of one product a month, "First Impressions" will provide a quick rundown on three or four products that should be of particular interest to our readers.

Another new item is "Product Updates," which is intended to keep you informed of revisions of products you may already use.

Finally, we have arranged to have all public domain programs mentioned in *PROFILES* available through the KUG bulletin board, maintained here at Kaypro Corporation. No membership or fees are required and it's online 24 hours a day, seven days a week. The phone number is (619) 259-4437.

In addition, we have an anniversary gift for you this issue—a special guide, compiled by librarian Kathleen Low, listing research resources that can help you to quickly and easily track down the software and hardware to meet your needs. We hope you'll find it worth keeping.

And there are still more ideas we plan to implement in the coming months, ideas we think will help make *PROFILES* an indispensable aid whether you own a CP/M Kaypro or an MS-DOS model, and no matter what your level of expertise.

Terian Tyre  
Diane Ingalls

## About PROFILES

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### Subscriptions

General subscription information can be found on page 37. If your subscription is due to expire, we'll notify you by mail. No subscription will be cancelled until you are given a chance to renew. Our basic one year rate is \$25 for 12 issues.

If your first issue does not arrive within eight weeks *after* you've sent in your warranty card, or you miss an issue, please write to us: *PROFILES*, Circulation Dept., P.O. Box 2889, Del Mar, CA 92014. We'll extend your subscription or send the issue.

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.

If you have any other problem with your subscription or billing, *please* let us know at the above (Circulation) address so we can solve it promptly.

International subscriptions are now available directly through *PROFILES* Magazine (only). Our regular international subscription rate is USD \$40 (including postage), which will entitle you to a one-year subscription (12 issues).

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## Our software saves you money before it's installed

Computer Professionals, Inc. has been developing computer applications for business and industry for TWENTY years, often working behind the scenes for some of the biggest names in the industry. We have learned how to pack a lot of power into each computer program but we know that raw power and ability is worth little unless coupled with ease of use, good documentation and responsive support. CPI's Business Systems are all these things and more. They run faster, support larger capacities and cost less than any similar systems marketed today. They have been installed by thousands of users (since 1978) and are available from us directly or from your KAYPRO dealer. We specialize in KAYPRO systems.

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.**

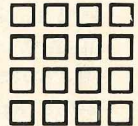
No system is perfect; CPI Business Systems are not exceptions. That's why users are entitled to support when they need it and that's why CPI continues to enhance each system regularly based on user's suggestions.

Most users need a little support when getting started so we include 45 days of FREE support with each application. Others charge hundreds of dollars extra. Users of CPI Business Systems can extend support for a full year for less than ten cents per day per application.

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 obsoleted by tomorrow's technology.

These powerful systems are described briefly below. If you don't feel confident yet ask for our 30+ page overview or try an application demo system at half price (demo prices apply to future system orders).

There are no extra charges for shipping, COD, etc. American Express, Mastercard, VISA card orders welcome. We ship in 48 hours. Please tell us what format you want (II/2X/4/10/16), etc. Demo systems in KAYPRO formats only.



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GREENVILLE, S.C. 29607  
Phone: (803) 268-3911



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

Comprehensive system with most wanted features. Provides accurate and well organized financial information for your business. Programs adapt easily to your unique needs. Create, modify and list charts (3 formats); make new departments automatically. Easy journal entry process to enter, change, delete, list, save, increment reference- #'s, duplicate data from prior entry, last 7 entries on display; source/run totals; validate account numbers at entry; prior period adjustments; repeating entries for depreciation, etc. Trial Balance high speed posting option plus trial balance report, worksheet, detail general ledger. Financial Statements (4 formats): current year, current and prior year, current quarterly, cumulative quarterly; report on prior period/s; variable # of current period months, optional disclaimer lines, show ratios with 1 or 2 decimals, optional computation of ratios based on non-income amounts. Budget Reporting (3 formats): remaining or variance (\$ and %); current, YTD, both; rerun prior periods; variable # months in current period. Full year Detail General Ledger. End-Of-Period makes backup file, updates repeating entries for next month, selects month/year end processing automatically; updates prior year's data. Accounting Transfer inputs data from other CPI Business Systems; posts; prints control reports; multiple transfers. Query Account/s to CRT or printer. Multi-client processing functions included for both CP/M and MS-DOS systems.

CAPACITIES: CP/M - 600 Accounts; MS-DOS - 2000 Accounts - 3-5 Digits for Account Numbers - 99 departments with 3.2 structure.

#### \$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. Multiple pay rates, multiple overtime rates, multiple other pay rates, eight user deductions (each can be an amount, a rate or %), deductions may be taken before or after taxes. Commissions, tips, tips considered as wages, earned income credit, SUI, SDI, etc. are all included. In short it's a very comprehensive payroll system but one which is very easy to use. Its functions include Employee File Maintenance; Employee Lists in multiple levels of detail; Input Worksheets; Time Card Entry; Regular, Overtime, Other, Commissions, Tips, Misc. Pay. Exception Processing is the rule so you need only enter variable data. Manual checks are processed quickly and easily. Weekly, Bi-Weekly, Semi-Monthly, Monthly pay cycles (run individually or combined); Departmental Payrolls; Checks; Check Registers; Deduction Registers; Earnings Reports; 941's; W-2's; Unemployment Reports; Multi-state; Manual Checks; G/L interface for Federal, FICA, State and Local Taxes, Federal/State Add-Ons, FICA, FUTA, SUI, SDI, EIC, 8 user deductions. CAPACITIES - 600/2000 emp. (CP/M/MS-DOS), 98 Tax File Rcds.

#### \$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.

#### 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 :

## SPECIAL SUMMER PRICING

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## **A program for recovering files**

The "Q&A" column in the May issue of *PROFILES* contained your answer to a question regarding using UNERA to recover lost files. The writer of the letter was wondering if there was a program that would recover all lost files on a disk.

Happily, I've discovered such a program. It is called RECOVER, and it displays to the screen the names of all erased files on a disk. Of course, it has the same limitations as UNERA—namely, you'd best use it as soon as possible after you erase the program, and before you write anything to disk.

There have been numerous occasions on which I have read letters to *PROFILES* and thought, "Gee, I know how to do that. How can I answer the question if I can't get in touch with the person asking it?"

All of which leads to the point of this letter. If *PROFILES* would include the mailing address as well as the names of people who write in, other readers might be able to help out as well.

On another note, the addition of MS-DOS to *PROFILES* doesn't seem to have had much of an adverse effect on the CP/M coverage. I mutter dark curses under my breath whenever I see an article on MS-DOS and threaten not to renew my subscription, but then the latest issue arrives with a fix to my latest CP/M problem or an answer to my next question and I think, "Where else would I get this much Kaypro-specific information?"

Robin Sheppard  
Juneau, Alaska

*Thank you for the suggestion, but our assumption is that not all who write to the magazine would want their addresses published, and rather than obtain permission on a case by case basis, it is far simpler for us to stick to a policy of publishing addresses only under special circumstances.*

## **Compliments and criticism**

Two comments on the magazine. First, I own a 2X and therefore am most interested in articles to do with CP/M capabilities. But I am also interested in any other aspects of the computer subculture and think that *PROFILES* does a great job presenting ideas and overviews of a variety of areas.

Even though I do not have an MS-DOS system, I found the article on MS-DOS graphics superb. So I just don't understand the letters that appear constantly accusing *PROFILES* of selling out by not devoting the magazine entirely to CP/M. Surely *PROFILES* has made it clear enough that it will not abandon CP/M. So enough of this true believer vs. heretic business.

Secondly, having congratulated the magazine, I now want to complain. I think that—probably in a quite unconscious way—the magazine is permeated with a masculine cultural flavor. I don't mean the magazine is "sexist" in any policy sense. It's just that when you look through it, the absence of a feminine orientation is obvious. Very few (if any) of the authors are women.

And your response may be, "Well, women don't submit articles." To which I would say, does the magazine, culturally, promise a welcome? If you look at the April 1986 issue, the only female figure is a secretary. And then look at the "Kaypro General Store": it's a perfect inventory of the male world. If you don't know what I mean, have a woman review the magazine.

The problem here may be that the whole computer culture is masculine in style. If this is true, it's a real shame, and it needs to change. Anyhow, other than this point, I have no complaints. Just keep up the good work and become more conscious of the interests and issues relevant to women.

Jan Mejer  
Hilo, Hawaii

*We're glad you find the MS-DOS articles useful. We believe we're serving our entire audience, and we, too, hope the debate is at an end.*

*As for your complaint—gee, we write about Ms. Dos all the time. (Sorry.)*

*You suggest that we have a woman review the magazine. If you look at the masthead, you'll notice that *PROFILES* is produced almost entirely by women—the only exceptions are the publisher and technical editor.*

*We don't control the content of advertisements, including those for the Kaypro General Store—if it bothers you, we suggest you write directly to Kaypro Corporation. But we do make an effort to keep the editorial tone of the magazine neutral by editing sexist phrasing out of articles and rejecting sexist cartoons, and the art director strives to present neutral images of both male and female computer users. (Regarding the "secretary" in the April issue, the image we assume you are referring to—on page 34—was merely of a woman in a suit at a desk, and we figured she was a harried high-level executive. Eye of the beholder?)*

*As for the topics of the articles themselves, we regard them as inherently neutral—computers have no gender, and we present information not for men or for women, but simply for computer users. It is true that few women submit articles to the magazine, and no doubt it stems from the fact that women are still conditioned to perceive technology in general as masculine. It isn't, and we think it's up to women to change their perceptions.*

## **Educational software**

I just read the letter from Michael McGroerty asking about educational software for the Kaypro.

I disagree with the editor's note that graphics and color are needed for good, effective educational soft-



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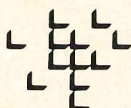
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**Letters**

ware. I wrote a bunch of programs to develop the skills needed in school, such as matching, counting, sorting, rhyming, and familiarity with the alphabet, on my Kaypro II for my children when they were 5 and 3. My daughter is still enjoying them at age 7, and they have worked very well in two local kindergartens and at our civic center, where I taught classes for children aged 4 and 5.

I would be happy to share them with any parent who could use them if they send me a diskette and \$1 for postage.

Elizabeth Van Kleek  
1012 Harmony Landing Lane  
Prospect, Kentucky 40059

**Data base managers**

Your article on data base managers ("Free-Form DBMs," April 1986) contains an error in stating that Free Filer can only search a single disk. With my venerable 1982 Kaypro II, I routinely search as many disks as I want, admittedly in series rather than in parallel, and put my hits in a single data file.

My Kaypro slaps an R/O on a drive whenever a disk is changed. By putting my receiving file on the Free Filer disk in drive A, I can change disks in drive B without trying to write to them. I put PIP, STAT, BAUD, and a wonderful little directory program called D on the Free Filer disk, taking up 108K and leaving 83K for data files, which has been adequate for my purposes so far.

I am doing historical research involving a lot of newspaper articles. I find myself putting more information than I ever intended on disk just so I can search it. I've been quite satisfied with Free Filer.

Dorothy Hoard  
Los Alamos, New Mexico

*The comment on page 60 was part of a summary, and that summary read by itself could have left*

the impression you describe. However, in the body of the article (page 57), we said that "Free Filer will only search one disk at a time," but you can "collect all your hits in one place, then search them further."

### Perfect Writer

Irvin Peckham's article, ("Page Breaks with Perfect Writer," March 1986), was useful, moderately cute even, but four items were left to reader ingenuity to decipher.

1. The author doesn't mention why anyone would want to know when a page break appears. The answer is to avoid widows (lone lines appearing at the top of the page) and orphans (lone lines at the bottom of a page). An article about page breaking that doesn't mention these unsightly creatures lacks a focal point, especially for beginners evaluating word processing packages for the first time.

2. How does someone deal with calculating page breaks when single-spaced text (like a quote) is embedded in a double-spaced article? Peckham should have addressed this common problem.

3. The command for setting the default page length in Plu\*Perfect Writer is `^X^P <n> <CR>`, not `^X^P <ESC> <n> <CR>`.

4. Finally, he mentions using The Backgrounder for configuring complex keystrokes into simple ones. Again, pity the poor beginner! Any keyboard definition package, not just the Backgrounder, can be used.

Peter Bates  
Brighton, Massachusetts

To respond to your points in turn:

1. The article was intended for intermediate users, not beginners, and was labeled as such. We assume that most of our readers who use Perfect Writer have had it for some time (since before Kaypro Corporation began bundling

WordStar) and that most of them would already know from experience why they'd want to see page breaks. There are a number of reasons in addition to the one you list.

2. There is limited space to devote to any article. Few articles can incorporate all the details every reader might want to see on a given topic.

3. We checked with the author regarding the command for setting default page lengths in Plu\*Perfect Writer. He acknowledged that your version is correct. We apologize for the error.

4. Though Peckham mentioned that he uses The Backgrounder, we don't feel that he implied in any way that this is the only program you can use. ■

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..by the way, *Thoughtline* is just right - excellent balance in design - Dick Runke, United Virginia Bank

I am writing about your great program *Thoughtline*. I only wish I had had this forty years ago. My writing would have been better and I would have done more of it. I wrote church school articles for 25 years, scores of articles and a dozen books, but with this I could have done better - Kenneth Jones, Academic Dean, Mid-America Bible College.

Hands down the most useful, powerful, fun to use and flashy piece of software I've encountered ... I caught on to it within half an hour of busting the wrapper and went straight to heaven - Paul Estrem

To the basic software I use frequently (WordStar, Supercalc II) I now add without reservation *Thoughtline*, as being equally useful and equally significant - Fred Schultze

...and as for *Thoughtline*, WOW! I bought KAMAS and waded through Adam Trent's obtuse mental gyrations until I was literally dizzy ... I sent for KAMAS's little brother OutThink. Again, another great disappointment. ... then comes *Thoughtline*. Now I can outline my books and articles just as I had hoped to when I bought KAMAS and later OutThink. - Dr. Erik Skousen, Writer

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# Q & A

by Tom Enright

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

Due to the volume of mail we receive, we simply can't respond individually to requests for assistance. If you have a question requiring an immediate reply, you should contact your dealer. You can contact Kaypro Technical Support, but please be aware that they give dealers' calls priority over those from end users. They can be contacted at (619) 481-3920, or write to them at P.O. Box N, Del Mar, CA, 92014. Please include a daytime phone number in letters.

## Printer problems

I have a 4'84 with an Okidata 92 as my main printer. I also have a Brother EM-200 electronic typewriter that has both serial and parallel connections. I would like to leave my Okidata connected to the parallel port and interface the typewriter to the serial port. So far I have had absolutely no luck in getting serial output using either STAT or CONFIG to reassign output to that port. In addition, I need to track down a custom printer installation for the typewriter. It does not use the command sets for any of the printers listed in my WINSTALL program. I have tried a little patching, but got anything but perfect copy. Any suggestions?

Ed Elrod  
Ventura, California

An alternative to using a serial interface to your typewriter is to buy a parallel printer switch. That way you simply flip a switch to select which printer gets the output from your parallel port.

Computer Friends, a PROFILES advertiser, sells one that is reasonably priced and switches all data lines (an important point). I've used this type of a setup for some time and have found it quite satisfactory. Jade Computer Supplies, a mail order outlet with stores in your area, also carries several different brands of printer switches.

If you really want to use the typewriter on a serial interface, you've got a little more work ahead of you. CONFIG normally acts upon the disk in drive A, and changes don't take effect until you reset the computer. Using CONFIG, you will have to set LST: to TTY: and the baud rate to whatever the printer is expecting to see. Then you'll probably need to have someone who understands serial interfacing make a custom

cable for you.

As for taking advantage of the Brother's printing capabilities, you will have to install them yourself. First get the interface working as a "backspacing standard printer." Then carefully go through WordStar's custom printer installation routine on a copy of your working disk.

## Kaypro 16 joy stick

At the time that I purchased my Kaypro 16 I also bought Microsoft's "Flight Simulator." I would like to use a joy stick with this program. My dealer does not know which, if any, joy stick can be used with the Kaypro 16 and what brands and models are recommended.

Wesley Heidenreich  
Salem, Oregon



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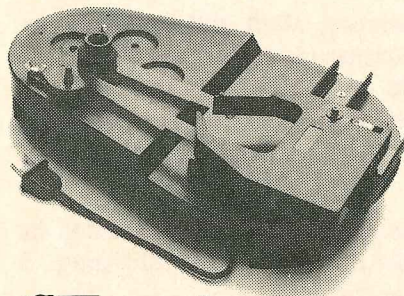
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## Q & A

Before you can use a joy stick with your 16 you'll need to add a joy stick interface. You should choose an IBM-compatible multi-function card that includes a joy stick interface (most of them do). The only thing to keep in mind is that any memory on the multi-function card will not be able to act as system memory to the Kaypro. Most multi-function cards that come with memory also come with RAM disk software provided by the card manufacturer. RAM disk software should have no problems functioning as its manufacturer intended.

The multi-function card will come with recommendations on which joy sticks are compatible. There are two types; the simplest is the Apple style that only indicates which direction the stick is moved. The IBM type also indicates how far the stick is moved in each direction. For Microsoft's Flight Simulator you should get a card that uses the IBM type joy stick (some cards support both).

### Calculator intent

I'm trying to locate a pop-up calculator that has trigonometric functions, square roots, and parenthetical equations. I'm a surveyor, and a calculator like that would be useful to me while my Kaypro 16 is busy with other surveying software. I expect that other professionals (engineers, architects, and mathematicians) would also find these to be a useful feature. Do you know of any such pop-up program for DOS?

Paul Hannan  
Derby Line, Vermont

I have never heard of any pop-up calculator program for DOS machines that provides these features. I would imagine that either no developer has thought of it yet, or they don't feel there is enough of a market to develop one. I'm afraid that for the time being

you're going to have to rely on the professional calculators from Texas Instruments and Hewlett-Packard.

### Perfect Writer to WordStar

I own a Kaypro 4'83 and frequently work in both WordStar and Perfect Writer. I'm fairly certain that sometime last year PROFILES printed a command to strip away the hard carriage returns that appear at the end of each line of a file created by Perfect Writer. It is annoying having to replace each one by hand when I edit the same file with WordStar. The problem is that I can't remember just when PROFILES printed the command.

John Rouse  
New Orleans, Louisiana

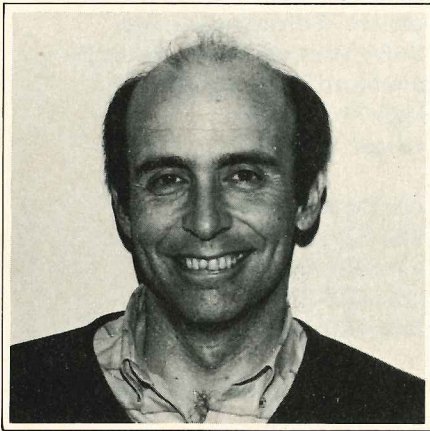
There are two possible answers to your question. The first one is a rather involved procedure that appeared in the September/October 1983 issue of PROFILES. The article was "Double Your Fun," by Ezra Shapiro. This article was on the differences between WordStar and Perfect Writer, as well as problems encountered when moving files from one to the other.

Since that time several public domain programs have come out that do precisely what you ask. Two of them that I've used and recommend are CRSOFT.COM and HARDOFT.COM. Both of them do an excellent job of eliminating the hard returns in Perfect Writer files. In the DOS area, a public domain program called XWORD fills the same niche.

You can find these and other public domain programs on the KUG BBS, maintained by sysop Jim Durkin, KUG Manager for Kaypro Corporation. The KUG BBS phone number is (619) 259-4437, and its online 24 hours a day, seven days a week.



# Flea Market



by Ted Silveira

There was a time, about two years ago, when I thought there'd never again be a new CP/M product of any kind. But in the last year or so, I've seen a steady stream of interesting new CP/M releases, including pop-up desk accessories and idea processors, both of which are hot products brought over from the MS-DOS world.

This "stream" of products is nothing like the deluge constantly being released for MS-DOS, but it's heartening all the same. Even more important for CP/M users, a number of developers have demonstrated enough confidence in the CP/M market to invest time and money in upgrading their products. Here's a look at some interesting things I've seen lately.

## Pop-up wars

Spectre Technologies (maker of Rembrandt) has released version 2.0 of Presto!, its pop-up desk accessory. This new version uses less memory than previous ones, leaving more room for your main programs to work in (or for other memory-resident programs like XtraKey). Spectre reduced the size

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## CP/M product improvements and more MS-DOS file-handling programs

by moving some functions into disk-based overlays instead of keeping them in memory all the time. Now when you call for the calculator, for example, Presto! first loads it from the disk and then brings it into the window on the screen.

This method saves memory but causes a slight delay before the function appears. The tradeoff is unavoidable—either you have all functions available instantly and use up more memory, or you save memory and accept the slight delay. Apparently Spectre's customers have said they'd rather have the free memory, and I agree—my main objection to the previous version of Presto! was the amount of memory it used. (See the April 1986 *PROFILES* for T.F. Chiang's review of Presto!, version 1.03, and other pop-up programs.)

Not to be outdone, Poor Person Software has released a new version of its pop-up desk accessory, Write-Hand-Man (version 2.1), with some new features. WHM can now dial numbers from its phone book, if you have a Hayes-compatible modem, and it also has a simple keyboard macro function that allows you to redefine eight keys with macros of up to 15 characters each.

And WHM now has a simple cut-and-paste function (more limited than Presto!'s). You can cut up to

128 characters at a time from either the notepad or the view function and paste them into your application program. You can also cut the currently displayed value from the calculator.

Most interesting, WHM now has a unique "swap" function that lets you freeze your current application program while you run another program and then pick up your original application right where you left off. WHM works this trick by simply saving all your working memory (containing the current program and all the data it's using at the moment) to disk and then restoring it when you're ready.

If you're using floppy disks only, you'll have a noticeable pause while 50K or so of memory gets written to or restored from the disk. If you have a hard disk, the pause will be only momentary, and if you have a RAM disk, it should be practically undetectable. You have to be careful what you do when you freeze an application program like this because CP/M was never designed for such tricks. In particular, don't start changing disks.

Presto! still has the edge over Write-Hand-Man in features and general polish because it's specifically written for the Kaypro; on the other hand, Write-Hand-Man's swap function is a feature you can't get anywhere else in the CP/M world. (For a review of the earlier

version of Write-Hand-Man, see "Flea Market," November 1985 and March 1986.)

### Hot hardware

If it's hardware you want, I saw a board that could help you build the ultimate Kaypro. This board, which carries the odd name of LATK, is marketed in the United States by Southern Pacific Computer Products USA, Inc. It's an exact replacement for the main board of your Kaypro and contains a complete computer based on the Hitachi HD64180 8-bit superchip. This chip is upward compatible with the Z80 now used in your Kaypro, but can do much more, including handle 512K of memory through an on-board memory-management unit. The chip runs at 6 MHz, and the company claims that its greater integration makes it equivalent to a Z80 running at about 7.5 MHz (almost twice as fast as the Z80 in newer Kaypros).

The LATK board runs CP/M 3.0, which offers extra features such as time and date stamping of files and automatic disk logging. It uses 64K of the LATK's possible 512K memory for running programs (giving you a usable space of 60K, about 5K more than a typical Kaypro), a second 64K bank for the operating system, and the remaining 384K for a RAM disk (if you've expanded the memory to the full 512K).

The LATK2 fits Kaypros with one serial port, and the LATK10 fits Kaypros with two serial ports, including the Kaypro 10. Both the LATK2 and LATK10 have an SCSI hard disk interface, and the LATK10 also has an interface for the standard Kaypro hard disk and controller. The boards can support not only normal Kaypro floppy drives but also 8-inch drives, 3-1/2-inch drives, and the high-density (1.2 megabyte) 5-1/4-inch drives used on the IBM PC AT.

The LATK video section offers many extras if you're a video programmer, but more important, it supports the standard Kaypro video attributes, meaning that pro-

grams like WordStar should run without reinstallation. Don't look for this support to go too far—I wouldn't expect programs like Presto! or screen dump programs to work.

The best news is that all you need to install this monster is a screwdriver. Take off your Kaypro's cover, unplug and unscrew the main board, plug in the LATK, replace the cover, and run.

### Kaypros boot Z-System

If you were intrigued by the two-part description of the Z-System (*PROFILES*, December 1985 and January 1986) but shied away because the installation looked too tough or too time-consuming, you have a new option. Echelon, the distributor of ZCPR3 and the rest of the Z-System, now markets "bootable" Z-System disks for Kaypros. With one of these disks, all you need to do is copy the master disk, put the copy in drive A, and hit the reset button—you're running the Z-System. That's about as simple as you can get.

E. Bekker and can be found on CompuServe in the Kaypro Forum. It will also probably be on various Kaypro bulletin board systems by now.

For more information on the above CP/M products, contact:

Spectre Technologies, Inc.  
22458 Ventura Blvd., Suite E  
Woodland Hills, CA 91364  
(818) 716-1655  
Presto!, \$39.95

Poor Person Software  
3721 Starr King Cir.  
Palo Alto, CA 94306  
(415) 493-3735  
Write-Hand-Man, \$49.95

Southern Pacific Computer Products USA, Inc.  
21 Altarinda Rd.  
Orinda, CA 94563  
(415) 253-1270  
LATK2/LATK10, \$525/\$535

Echelon, Inc.  
885 N. San Antonio Rd.  
Los Altos, CA 94022

## Echelon now markets bootable Z-System disks for the Kaypro; that's as simple as you can get.

These bootable disks are available for the '83 model floppy-disk Kaypro, the '84 model floppy-disk Kaypro, the Kaypro 10 with the D BIOS (CP/M 2.2d), the Kaypro 10 with the F, G, or H BIOS, and any Kaypro with the Advent Turbo-ROM. It's not, unfortunately, available right now for Kaypros using the U BIOS or U ROM (CP/M 2.2u), which includes the Kaypro 1 and other recent Kaypros.

People with U ROM Kaypros can, however, find a public domain installation kit, which requires more work than the bootable disk but not as much as a full manual installation. This kit, K1Z3-IN.LBR, comes courtesy of Peter O.

(415) 948-3820  
Kaypro Z-System, \$69.95

### The MS-DOS corner

This month I have three more file-handling programs to review, but these three are unique to MS-DOS, rather than copied from CP/M.

*FFM21*. I have no idea what the name FFM stands for, but this program, by Bill Neidert of Texas, is nice. It's a shareware program—the requested payment is \$35.

FFM21 can do all the usual things—copy and delete files either singly or in bunches, sort file names, protect and unprotect files, view files, change to new directories or sub-directories, even create



sub-directories. It uses the function keys for one set of commands and lists another set in a typical MS-DOS menu bar at the bottom of the screen. You can choose from the menu by highlighting a selection or by typing its first letter, and all commands proceed quickly and smoothly, asking for confirmation only where necessary.

FFM21's unique feature is that it splits the screen into two windows and allows you to have a different disk or directory listed in each window. You can work in either window and quickly switch between them. I love this feature—I can check the free space on each one, see if any files are duplicated, and so on. You can also call up a help menu for the function keys in either window.

FFM21's only real drawback, as far as I'm concerned, is that it can create a sub-directory but can't delete one, not even an empty one.

**FM.** FM (File Manager), by Timothy Stouse, seems to be a public domain program. (Neither the program nor the very brief documentation carries any shareware notice.)

Like FFM21, FM has all the usual functions—copy, delete, tag, and so on. Most functions are listed on a menu bar at the top of the screen and executed with single keystrokes. Unlike FFM21, which lists files in a single column, FM lists files in four columns and lets you use the cursor keys to move among them in any direction.

FM also has a unique twist—it can be made memory resident. If you load FM in its memory-resident mode, then you can call it up again any time, even in the middle of another program. FM uses more than 100K in this memory-resident mode, which may turn out to be too much for some people.

The only real drawback I found to FM is that when I sneakily tried to copy a sub-directory (containing a file) into itself, FM let me try and then crashed. After that, I couldn't reload it without a reset.

**Commando.** File Commando is by Sandi and Shane Stump, (continued on page 18)

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<b>TERMS</b>		
Visa, Mastercard, Money Order Sorry no COD's or Checks	Price	\$59.95 U.S
	Postage & Handling	\$3.00
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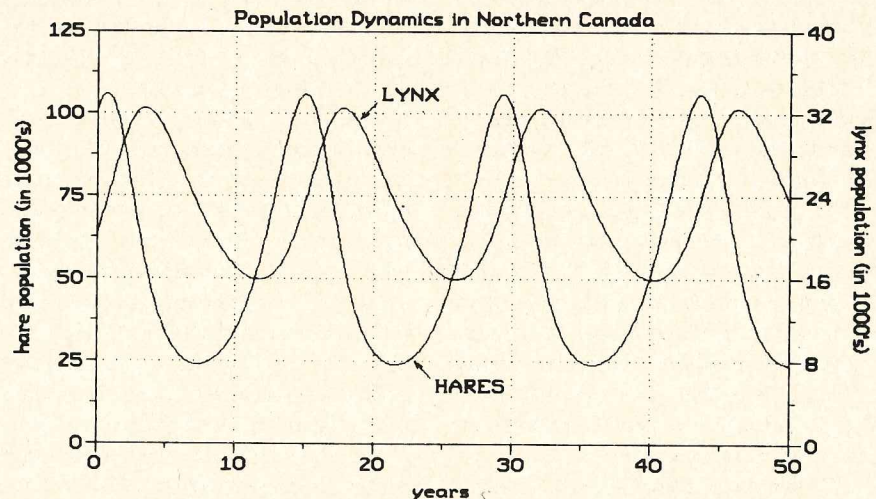
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# GRAPHICS

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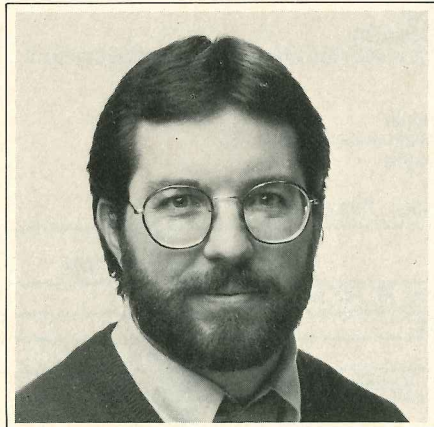
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# Life at 300 Baud



by Brock N. Meeks

**A**re you getting tired of logging on to the same bulletin boards all the time? That's not surprising. Psychologists say that adding variety to your daily routine is healthy, so why not variety online as well? Reader Del Atwood agrees. He sent the following interesting story via MCI Mail:

"Feeling bored with the local BBS crowd, I remembered a story I heard about a South African businessman, Cecil Rhodes.

"Mr. Rhodes was once asked by a friend why he chose to come to Africa. Rhodes replied, 'Some will tell you that I came on account of my health, or from a love of adventure—and to some extent that may be true; but the real fact is that I could no longer stand the cold mutton of an English supper.'

"Calling up a long-distance BBS is great for leaving behind the 'mutton' of the local [BBS] scene."

Although I don't advocate going to South Africa for a little adventure, there is something to be said for making a few long-distance treks by the light of your CRT.

**No flak from this hack**  
Board Name: Guideboard

## *Beyond the local BBS scene*

**Location:** San Francisco, CA  
**Phone Number:** (415) 864-3858  
**Hours of Operation:** 24/day  
**Log-on:** Password issued; validation within 24 hours.  
**Baud Rate:** 300/1200

Getting the maximum benefit from a visit to a large city takes a certain skill. Finding the best restaurant, knowing where to shop for a bargain, or ferreting out interesting sites far from well-trodden tourist trails can be an exhaustive research project. So you need a guide. Hail a rolling reference desk—flag down a cab.

Cab drivers are generally considered quasi-experts on the inner workings of the city they cover mile by mile. Drivers pick up on a lot of information about the best—and worst—a city has to offer from conversations with their passengers.

If you're thinking of going to San Francisco, you don't have to wait to hail a taxi and chat with the cabbie; just dial into this BBS.

Guideboard may be the only BBS in the nation run by a taxi driver. Sysop Richard Swartz, a six-year taxi veteran, started Guideboard in December 1985. Swartz describes the board as "a combination of a cabbie's guide to San Francisco and a consumer bulletin board."

The board is a collection of "real people" reviews about what is called one of the world's most beautiful cities. This BBS combines the

elements of a tourbook and a corner pub. It's a forum where people meet to compare experiences and expenses for "everything from doctors to dim sum," says Swartz.

Guidebook is as diverse in structure as the "city by the bay" is in culture. Whatever your interests, you'll find a spot in the 25 available message sections to discuss them.

In one message section I saw a comment about a current display at the museum of modern art ("The Avedon show is most intriguing . . . in the West it is on par with important work done during the Depression."). And in another section there was a highly technical discussion on the capacity of the new NEC V-20 chip. And for those who get tired of discussing the tangible, the board has a resident swami available for online consultations.

Billed as "Swami Tommy's Astrological Mystery Tour," this section carries messages on horoscopes, trance channeling—I'm serious—and astral dice. Tommy is quick to point out that he is neither a "licensed" astrologer nor a swami, but simply someone with "15 years of star-gazing and telling fortunes at parties" to fall back on. Users can ask Tommy all kinds of questions, and his answers are based on reading the stars.

For those who don't have time to check in with the Guideboard before catching that 747 for the

West Coast, Swartz would like you to know that he has determined that the only good seafood on San Francisco's beautiful Fisherman's Wharf is the fish fillet sandwich at McDonald's.

### **Big Apple BBS**

**Board Name:** Grand Central BBS

**Location:** New York, NY

**Phone Number:** (718) 967-2974

**Hours of Operation:** 24 hrs/day

**Log-On:** Password issued; validated in 24 hours

**Baud Rate:** 300/1200

If San Francisco is one of the most beautiful cities in the world, New York is certainly one of the busiest. And sysop Larry Central is at the controls of one of New York's most popular bulletin boards. Indeed, this board is the epitome of busy—it's aptly named "Grand Central." (And, yes, the sysop did deliberately work his last name into the board's name.) If you have ever been to New York, this board will bring all those memories back. As Yogi Berra once said, "It's like *deja vu* all over again."

sage section you can discuss all types of railroad activities (model, mainline, Amtrak, subways and the trolley) in the 20th Century Limited message base. Or you might prefer the Daily News Building for coverage of local events. If you tire of the news you might try some R&R (rest and relaxation) at the OTB (Off-Track Betting) section. Here you will find discussions on gambling, lotto, cards, and horse racing. Finishing here, you can walk down 42nd Street and stop by the U.N. building (political discussions) or the Harley Hotel (a meeting place for teen-agers).

For some unabashed online conversation you can jump into Times Square—I'll leave that area for you to discover on your own. Grand Central is well laid out, and I found it fun just looking around. Call early in the morning, because you'll run into the typical rush-hour traffic during prime time.

### **Dial-a-pharmacist**

**Board Name:** National Pharmacy BBS

include hospital pharmacy, computers in pharmacy, biopharmaceutics, and more. Each section holds files and programs relevant to the assigned area.

In the nutrition data base, for example, there is a BASIC program called FOODRX.BAS that tells you what foods react negatively to certain kinds of drugs. And in the clinical pharmacy data base the RESP.BAS program simulates respiratory emergencies and tests you on how to handle such cases.

These programs aren't just for the professional. The FOODRX.BAS program is a good guide to how your diet could interact with whatever medication you're taking.

The board, however, carries an up-front caveat: "Pharmacists and other health professionals who download patient-oriented information from this board are especially cautioned to test and verify any information or calculation produced by any program."

That applies to you, the lay person, as well. Check out any information you find here with your local pharmacist.

---

## *If you've ever been in New York, Grand Central BBS will bring all those memories back again.*

---

When first logging on you are put in a waiting line—what the board calls "applying to become a ticket holder." Your "ticket" gets validated in 24 hours and you are then free to wander at will. (First-time users are only allowed to fill out the ticket application.) The board has 24 separate message sections—a tribute to the flexibility of the board's TBBS software.

Once online, your first entry point will be Grand Central's Main Lobby. From here you can stroll onto Lexington Avenue or check out the Waiting Room, where you can download ASCII maps of downtown New York.

Off the Lexington Avenue mes-

**Location:** Creighton Univ., NE

**Phone Number:** (402) 280-3023

**Hours of Operation:** 24 hrs/day

**Log-On:** Password issued

**Baud Rate:** 300/1200

There are many BBSs dedicated to professionals in one field or another, and just as many that provide valid services to their users. This board combines the two, and it makes for a first-rate BBS.

For professionals in the pharmacology field, here is an online reference guide to such things as a listing of all deans of U.S. colleges of pharmacy—set up for use with MailMerge. In addition, there are a dozen data bases dedicated to special areas of pharmacy. These areas

### **New wood**

If you never left your house, never journeyed past your city limits, never flicked on "Late Night with David Letterman," your world would soon close in around you. The same thing can happen online.

That's the secret—develop those new interests.

### **News from The Pub**

The Electronic Pub (owned and operated by yours truly) went through some remodeling recently.

The Pub's number has changed as well. You can reach it at (619) 462-4428, after 5:30 p.m. PST. ■

### **Correction**

In the June 1986 "Life at 300 Baud," the phone number given for the Writers' Electronic Bulletin Board (WEBB) in Branson, Missouri, is incorrect. The correct number is (417) 546-2118. We regret any inconvenience.

## Back Issues

Some back issues of *PROFILES* are available. Highlights of recent issues are detailed below. We'll send you the desired issue(s) for \$4.00 each, including postage and handling. Enclose your name and address along with a check or money order payable to *PROFILES* and mail to:

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### June '85

- Micros in the Third World
- Perfect Series ver. 2.0 review

### July/August '85

- \$100,000 a year freelancing
- Customizing WordStar

### September '85

- CP/M educational software
- DU (Disk Utility), part 1

### October '85

- MBASIC to Turbo
- Sorting algorithms

### November '85

- dBASE general ledger
- Accounting software

### December '85

- Z-System, part 1
- Key definition software

### January '86—SOLD OUT

### February '86

- Beyond letter-quality print
- Assembly language tutorial

### March '86—SOLD OUT

### April '86—SOLD OUT

### May '86

- Turbo Lightning
- Customizing MASMENU

### June '86

- CD-ROMs
- Business games

## FLEA MARKET

(continued from page 15)

authors of PCSWP21, which I covered last month. Like PCSWP21, Commando is shareware—the requested payment is \$30.

Commando has a mass of features beyond the usual copy, delete, and so forth. It can execute a program the cursor is pointing to or execute any command you would give at the DOS prompt, and when the program or command is complete, you return to Commando. While the other program is running, you can interrupt it, jump temporarily to Commando, and then return to the interrupted program.

resident programs I tried—FM (mentioned above) and PC-Outline, an outline processor. Commando apparently takes complete control of the keyboard, because neither program would respond when Commando was running, though both were still available once I quit Commando.

Commando also requires more keystrokes to execute a function than other programs of this type, particularly more than FFM21 and FM. Commando forces you to go through sub-menus and to select commands by moving the cursor (instead of just typing the first let-

*I did have a couple of problems with Commando, as expected with version 1.00 of any program.*

This kind of jumping back and forth isn't quite the same as what you do with FM (which is truly memory resident) because you must start off in Commando, but it's useful nonetheless.

Commando also offers commands to format disks, do track-to-track copying (like DISKCOPY), and even catalog disks (this last is available only to people who pay the shareware fee). Commando can also squeeze and unsqueeze files, edit text files (the editor isn't fancy, but it's useful), and patch non-text files. Like its predecessor, PCSWP21, it packs in commands for almost everything, though it lacks PCSWP21's library mode.

I did have a few problems with Commando, as might be expected with version 1.00 of any program. The RMDIR command for erasing a sub-directory quite correctly wouldn't let me erase a sub-directory that still held a file, but gave me the wrong error message. Also, the file-patching feature didn't work correctly, forcing me to exit Commando to straighten things out.

More important, Commando didn't mix well with two memory-

ter of the command, for example), and it also requires confirmation of your selection too often for my taste.

### **What's best**

I'll hold off on this version of Commando—I think it still needs some polishing and tinkering. FM is a good program and the clear choice if you want a memory-resident file-handling program and can afford to give up 100K. But I personally use FFM21, partly because I *don't* want to give up the 100K, but mostly because I love FFM21's dual windows and its overall slickness. It's a very good program.

These programs should be available on bulletin boards that carry MS-DOS programs and through the IBM forums on CompuServe (IBMSW or IBMNEW).

You can also find these programs, or any other public domain software mentioned in *PROFILES*, on the KUG BBS maintained at Kaypro Corporation. Some of the programs mentioned in past issues will also be available. No membership is required and the system is online 24 hrs/day, 7 days/wk. The number is (619) 259-4437. ■

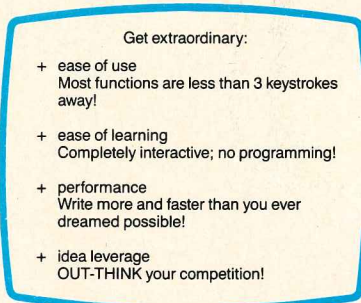
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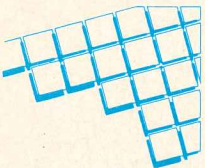
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- Ezra Shapiro, BYTE

*"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

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\*But for some people, enough is never enough. Some like the challenge; others need the power. For you, we have the KAMAS Combo Pack. You get OUT-THINK's ease of use coupled with the extra horsepower of the KAMAS programming environment. And both use the same outline files.

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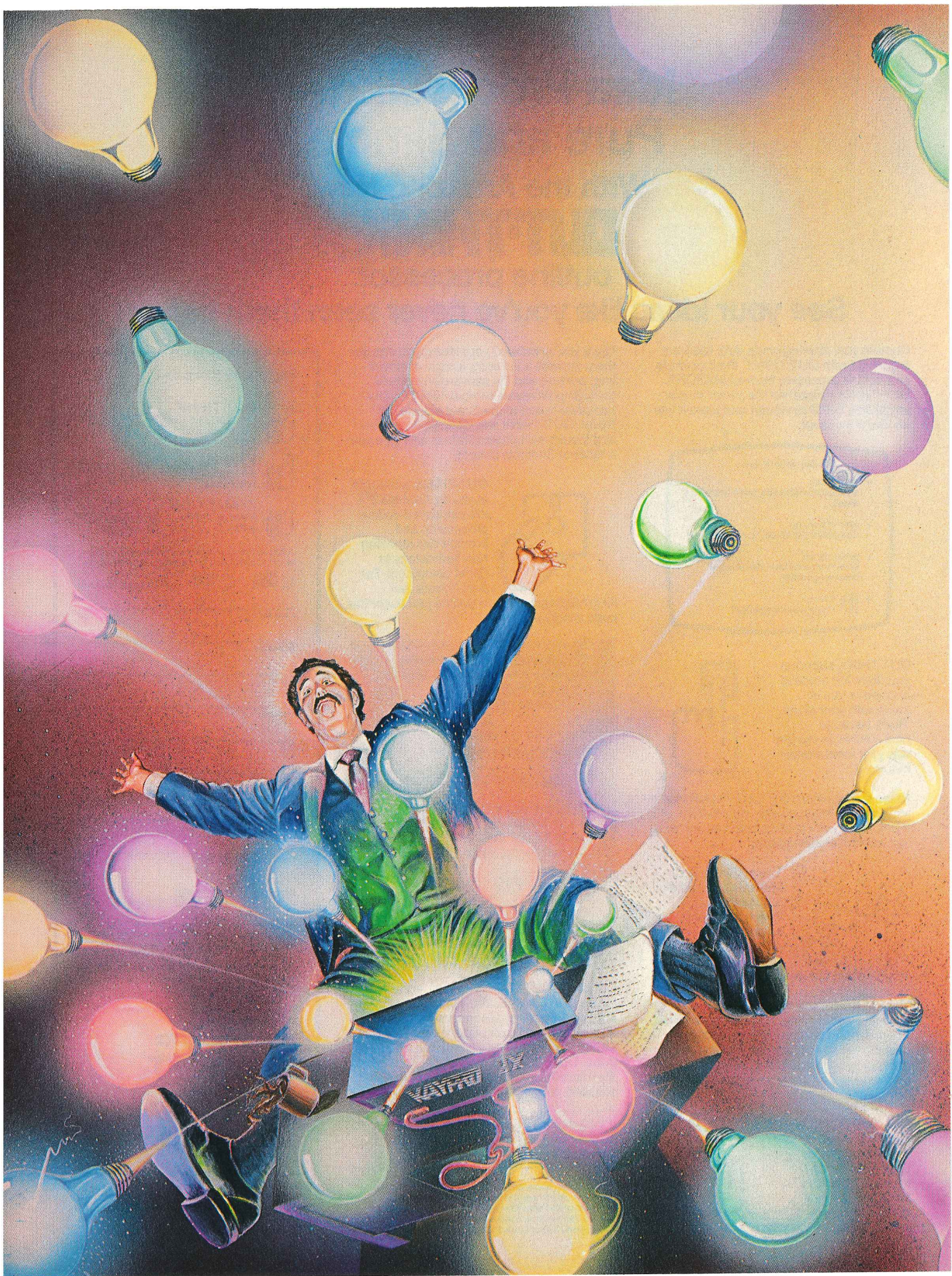
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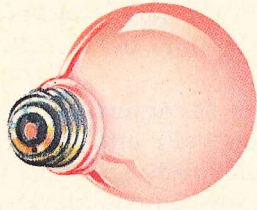
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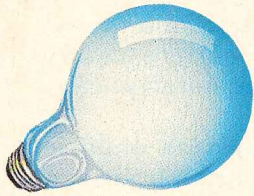




# IDEA PROCESSORS

*For when those good ideas just keep popping out*

by Ted Silveira



Word processors are great for working with words, but if you work with ideas or tasks or problems, try something new—an idea processor. What a word processor is to the manual typewriter, an idea processor is to the chalkboard or scratchpad.

With an idea processor, you organize information by grouping similar items together and listing details under more general headings, producing an outline like that in Figure 1 (see page 22). Then, using the idea processor, you massage the outline into shape—adding and deleting entries, experimenting with different arrangements, and hiding some pieces of information while you concentrate on others.

In Part 1 of this review, I'll briefly describe what you can do with an idea processor and what basic features it needs, and then I'll review three CP/M idea processors. Next month, in Part 2, I'll review half a dozen MS-DOS programs.

## **What can you do with an idea processor?**

You can use an idea processor to do top-down analysis. Start with a broad idea—a project at work, a report you need to write. Divide that idea into parts—major steps in achieving your project goal, major points in your report. Then divide each one of those parts into smaller parts, and still smaller parts, until you've reduced one large project to a series of manageable steps. As you work, use the outline form to keep everything organized and to make sure you haven't left anything out.

Or you can use an idea processor for brainstorming, a bottom-up approach. Make notes of ideas, details, anything at all concerning your topic, without regard to how important it may be or where it fits in. Then use the idea processor to sort

and categorize your notes, collecting the particular details under more general headings and filling in blank spots. As you begin to develop a rough outline, experiment freely with the structure, moving groups around until you find the order that suits you, and the topic, best.

The more you use an idea processor, the more tasks you'll find for it. It can store reference information (such as a help file) in an easy-to-use outline form. It can be a type of electronic "Day Organizer" that includes to-do lists, a telephone book, contact reports, an appointment calendar, and so forth. Or it can be like a scratchpad by your phone, a place for notes, doodles, lists, phone numbers, and even outlines.

## **What makes a good idea processor?**

An idea processor is like a specialized word processor—specialized because it needs a whole set of commands for working with the outline structure. The basic unit an idea processor works with is a "heading," a line of text that states your thought. With the idea processor, you arrange these headings into a tree-like branching structure of headings, sub-headings, sub-sub-headings, and so on.

So an idea processor should do several things. It should let you enter headings freeform, in any order, allowing at least a line for each one, and it should let you attach a block of text, which can be shown or hidden, to the heading (see Figure 2 on page 22 for an example). An idea processor must let you manipulate these headings with commands for inserting, deleting, marking, moving, and copying. It should let you move quickly through all levels of the outline, both physically (from one heading to its immediate neighbor) and logically (up or down a level, or to the next or previous heading on the same level).

**FIGURE 1:** Typical screen display from an Idea processor showing indented outline structure. This view shows the headings only; all the text blocks are hidden.

```

+ Cuisinarts for the Mind, Part 1
  + Introduction
    - word proc. for words, idea proc. for ideas
    = idea processor like chalkboard or scratchpad
    = make outline, massage it into shape
    - split review — CP/M part 1, MS-DOS part 2
  + What can you do with an idea processor?
    )= top-down analysis
    = bottom-up brainstorming
    + other uses
      - information storage, like help file
      = time-management system
  + What makes a good idea processor?
    = like specialized word processor
    - enter headings freeform
    - attach text to heading
    - edit, rearrange, insert, delete headings
    = move logically and physically through outline
    - show/hide parts of outline
    - good edit commands in heading & text editor
    = screen-oriented
    - output to printer or disk file
    - good manual w/tutorial and reference
    - fast enough not to drag
    
```

An idea processor should let you display the whole outline at once or hide some levels so you can concentrate on a small area. It should have reasonable text-editing commands for both headings and text blocks, and it should be screen-oriented (that is, you move your cursor to the heading you want to work on). It should have a search command to locate information quickly in a large outline. It should let you send all or part of your outline to either a printer or a disk file. And like all programs, it should have a good manual (tutorial and reference) and be fast enough to stay out of your way.

### Idea processors in CP/M

CP/M users have several idea processors to choose from (with rumors of more on the way). The three I'll review here are commercial programs—OutThink, Thoughtline, and SmartBrain. (For a review of a more limited public domain program, TOUR, see *PROFILES*, September 1985, page 20.)

### OutThink

OutThink, from Kamasoft, is descended from KAMAS, a flexible but somewhat slow idea processor that includes its own Forth-like programming language. To create OutThink, Kamasoft dropped the programming language and greatly enhanced the program's idea processing power, speed, and ease of use.

*Strengths.* Overall, OutThink is a polished program with few rough edges. It's fully screen-oriented and lets you use either Perfect Writer- or WordStar-style commands.

OutThink has a full set of commands for moving around the outline both logically and physically and for editing and rearranging headings (either singly or in blocks), including two special commands, "hoist" and "dehoist." *Hoist* lets you isolate a branch (a heading and all its sub-headings) while you work on it, and *dehoist* returns you to the full outline.

OutThink lets you attach a text block (called a leaf) of up to 2,420 characters (slightly over 2K) to any heading. Its leaf editor has good text-editing commands, including an un-do command and block moves (even between different leaves), and lets you print a leaf directly from the editor.

OutThink has a fast and powerful search command, made possible because OutThink uses a special file structure and because each OutThink heading (called a title) contains a 31-character "key." This command very quickly searches all keys using a sound-alike technique that locates similar sounding words. If it finds no match, it then searches all text for an exact match. The command can search the current file and up to 15 other OutThink files and can automatically switch to the file it finds a match in.

OutThink is well-suited to working with multiple files and hard disks (or multiple disk drives). You can specify a series of disk drives, called a search path, that OutThink will check when looking for files. While editing an outline you can get a directory of all outline files on the search path and jump quickly to a different outline file. And you can copy branches or leaves (text blocks) between files.

**FIGURE 2:** Here a paragraph of text attached to one of the headings in Figure 1 — "top-down analysis" — has been unhidden so that it can be worked on.

```

+ Cuisinarts for the Mind, Part 1
  + Introduction
    - word proc. for words, idea proc. for ideas
    = idea processor like chalkboard or scratchpad
    = make outline, massage it into shape
    - split review — CP/M part 1, MS-DOS part 2
  + What can you do with an idea processor?
    top-down analysis
    
```

You can use an idea processor to do top-down analysis. Start with a broad idea — a project at work, a report you need to write. Divide that idea into parts — major steps in achieving your project goal, major points in your report. Then divide each one of those parts into smaller parts, and still smaller parts, until you've reduced one large project to a series of manageable steps. As you work, use the outline form to keep everything organized and to make sure you haven't left anything out.



---

OutThink also has other features to make file-handling easier. Its main menu shows all available files, the date each was last changed, and how full each is. Every file can have a 31-character name, such as "Agenda for September Meeting." And OutThink lets you assign owners to files and to set up a password system, which can be useful if several people use the same computer.

OutThink comes with an excellent manual that contains both an extended tutorial and a complete reference section, as well as an extensive table of contents, glossary, and index. The manual has a few minor typos and opaque sections, but it's much better than what CP/M users are used to seeing (including the old KAMAS manual). OutThink also has online help, including a special help file and menus available at all points in the program.

And for a program that's not primarily a word processor, OutThink has good print-time formatting commands for page layout, justification, and direct insertion of printer control codes.

**Weaknesses.** OutThink's two biggest weaknesses are directly related to its use of keys in headings and its special files. First, you must enter a heading in two separate parts—the 31-character key and the 63-character subtitle—with a noticeable pause between the two as OutThink files the key away. I find this annoying when I'm brainstorming because I don't want to think about keys and subtitles at that point or wait while the program writes to the disk. Second, while OutThink is generally a good performer, it often pauses for disk accesses, not only to enter keys and subtitles, but also to read and update its file.

These two weaknesses represent a conscious trade-off by Kamasoft—they are the penalty you pay for OutThink's fast multi-file searches and its ability to work with extremely large files. Of course, they're much less of a problem if you have a hard disk or a RAM disk, and in any case, OutThink is faster than its parent, KAMAS.

My other complaints are less serious. When you create a new OutThink file, you must give it a maximum size. Once you've filled up this file, you must either delete parts of the outline to make room or resize the file (slow).

I also wish I could quickly repeat a search operation and move the cursor by word (not just by character or to beginning or end of line). And I wish I could mark and move a "broken" list (a scattered bunch of headings). Some commands allow a broken list, but not the move commands.

### **Thoughtline**

Thoughtline, from Spite Software, is a promising newcomer and the only idea processor currently available in both CP/M and MS-DOS versions. It takes a freeform approach, noticeably different from OutThink's structured one.

**Strengths.** Thoughtline uses almost pure WordStar

commands—the cursor commands (by character and word), all the ^K commands, and many of the ^Q "quick cursor" commands—making it easy to learn if you know WordStar.

Thoughtline puts few restrictions on you. To enter a heading, just type in a line—no keys or subtitles necessary. If you type past column 65, Thoughtline automatically moves you into an attached text block (which it calls a paragraph). Unlike OutThink's text blocks, which are limited to 2,420 characters (2K), Thoughtline's paragraphs can range from 3K up to about 20K, depending on how much free memory you currently have. When you're done with the paragraph, hide it and you're returned to the outline again.

Thoughtline allows more than one entry at the top level and allows the first entry to be at any level, not just the top. In addition, you don't need to set the size of an outline beforehand—Thoughtline allocates space as you need it.

Thoughtline is also pretty much "mode-less." That is, there's no difference between the move-around-the-outline mode and the edit-a-heading mode—you just

---

*With Thoughtline you  
can lose your outline  
if you're out of avail-  
able disk space.*

---

move the cursor to the heading you want and start editing.

Thoughtline is quick and pauses less often than OutThink, but it does use program overlays and swaps parts of the outline to disk as the memory fills up, so it pauses occasionally, most noticeably when you reveal or hide a paragraph text block.

Though Thoughtline doesn't have hoist and dehoist, it does have three powerful organizing commands of its own. The "prioritize" command lets you mark a list and quickly sort it by priority. The "bin" command lets you mark up to 10 headings as bins (categories or general headings) and then quickly move down a list of other headings, "tossing" them into one of the marked bins (i.e., making them subheadings of the bin).

Finally, the "clone" command lets you create two (or more) identical entries. Unlike copies, all clones of an entry are automatically updated when *any* clone of that entry is modified. You can, for example, create a combination appointment calendar and phone book/dossier (with information on all your business contacts). When you schedule an appointment, clone the person's dossier into your calendar to have the information easily available. After the meeting, enter your notes in your appointment book, and the person's dossier will be automatically updated.

Thoughtline never works on your original file, only on a work copy, so that you can't lose more than one

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## Keep in Mind


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

First, notice that every feature article is labeled with a legend that indicates which operating system and what level of expertise it addresses. For example, **Beginner/8/16** means 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.

Second, there is an unavoidable 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.

In hardware, some of the same cautions apply. The important aspect with hardware is to be sure about which model and series ('83 or '84) it works with.

For this reason, we recommend that you always *call the manufacturer* of any product for the latest information on revisions, price changes, etc.

Finally, while reading articles, note that all commands are in boldface type. This is to help you see easily what is part of the command and what is not. You should enter everything that appears to be boldfaced, including colons, semicolons, etc. 

## IDEA PROCESSORS

session's work (unless you trash the entire disk). And last but not least, every registered Thoughtline user gets two free updates.

**Weaknesses.** Thoughtline has several weaknesses. Most important, you can lose your outline if you run out of disk space, and since Thoughtline, like WordStar, makes BAK files and buffer files to keep track of your edits, you need free space equal to about twice the size of your file to be safe.

To test this, I built an outline larger than the free space on the disk and tried to save it. Thoughtline flashed the message "Abandon without saving? (Y/N)." When I answered "no," the program refused to budge. When I answered "yes," I was dumped straight to the A > prompt and lost the outline file. The manual does warn about just such a crash, but the program needs to give better warning—or allow you to save at least part of your work. (By using the ^KS save-and-resume command, you reduce the risk somewhat.)

Thoughtline also doesn't provide the help that Out-Think does. Its manual has a tutorial and a reference section, but it's skimpy and not well organized for new users (especially insecure ones). And unlike both Out-Think and WordStar, Thoughtline has *no* menus or online help once you get past the main menu. If you don't know your WordStar commands, you'll need to keep the manual chained to your computer.

Thoughtline also lacks some useful editing commands. The version I tested (2.05A) doesn't support the delete key, so deleting the character to the left of the cursor requires two keystrokes (move left, then delete) instead of just one. And though it has physical cursor movement commands, it has no logical movement commands (allowing you to move to the next or previous entry on the same level, for example). It also has no block commands in its paragraph editor and no search commands at all.

A few minor complaints: There's no way to enter an outline directly from the A > prompt. There's no way to mark a broken list. There's no direct way to "unclone" an entry the same way you can unmark one; in fact, when you delete a clone, the clone marker remains on its surviving twin (unimportant but distracting). In short, Thoughtline is a first-generation product that still has some rough edges.

### SmartBrain

SmartBrain, from Software Research Technologies, Inc. (the makers of SmartKey), is an import from England. In fact, the documentation I received still referred to it by its British name, Brainstorm.

**Strengths.** SmartBrain lets you enter headings free-form, and because it keeps itself and your outline in memory at all times, it reacts quickly when you add, move, or modify headings. It has a useful set of movement and editing commands, including a clone command something like Thoughtline's, and a search command that can use wildcards.

It also has a slightly offbeat method of moving headings. First, you mark a heading (or branch). Then when you move to another part of the outline, you use a "get" command, which pulls the marked heading to your current position, or a "put" command, which takes your current heading and inserts it at the mark. You can also use a "jump" command that moves your cursor to the mark and the mark to your previous cursor position (exchanges them, in other words).

SmartBrain has a decent manual—not as good as OutThink's, better than Thoughtline's—that includes a brief but useful tutorial and a reference section. It also has brief menus available in the program.

**Weaknesses.** SmartBrain has three major weaknesses, plus some minor ones not really worth mentioning because the major ones overshadow them.

The least serious of these major problems is that SmartBrain limits your outline to a size that will fit entirely in memory. On a normal Kaypro, this limit is about 40K, which is more than most people will need, but it does rule out SmartBrain for large projects.

A more serious weakness is that SmartBrain limits headings to one line of 72 characters. You have no way to enter a longer heading or attach a block of text to a heading to expand an idea.

But SmartBrain's most serious weakness—a real

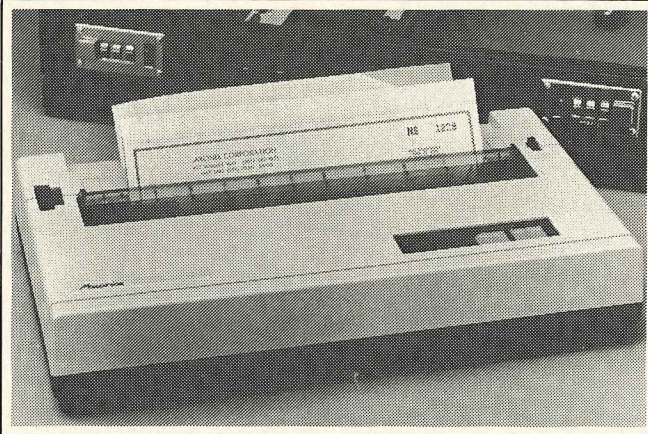
killer—is that it lets you see only one level of your outline on the screen at a time. To see the whole outline at once, you must send it to the printer or a disk file. An idea processor should *allow* you to limit your view, but shouldn't *force* you to. It should allow you to see three, four, or more levels on the screen so you can view headings in their larger context. After all, that's why people use outlines—to make a visual model of the relationships between elements at different levels.

### Winners and losers

SmartBrain's flaws put it out of the running in the CP/M idea processor sweepstakes. But choosing between OutThink and Thoughtline is tough because each has different strengths and a different style.

OutThink has the advantage over Thoughtline if you expect to be working across several outline files or several disk drives (or a hard disk), if you have multiple users or want password protection, or if you want to work with very large files. And its powerful search capabilities give it the advantage if you're interested in storing and retrieving lots of information.

I also like OutThink for its superior manual and help system, its logical (as well as physical) cursor movement commands, its hoist and dehoist commands, its more extensive print formatting, and its general polish.



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And, of course, it rates higher if you want to use Perfect Writer-style commands.

On the other hand, if you want to do brainstorming, Thoughtline has the advantage with its freeform entry of headings, its automatic wrap into the text block, its lack of restrictions on placement of headings, and its more or less "mode-less" operation.

I also like Thoughtline for its powerful clone, bin sort, and prioritize commands, for its two free updates, and for its slight edge in speed.

Each of these two idea processors has its own game, at which it's superior to the other. So if you know which game you want to play, your choice is made. But if you're looking for one program to play both games, you have a tough choice. At the moment, I'd say that OutThink plays Thoughtline's game a little better than Thoughtline plays OutThink's.

Both Kamasoft and Spite are working on improving their products. By the time you read this review, Spite should have released Thoughtline version 2.10, which they promise will not only fix the delete key problem but also add an important feature that will read in a WordStar file, treating the first line of each paragraph as a heading and the rest of the paragraph as an attached text block. Spite also plans to add search commands and block text moves to later versions. Kamasoft, meanwhile, is working on removing the key/

subtitle restriction in the headings without sacrificing the powerful search commands and is also developing an MS-DOS version of OutThink. No release date has been set for either of these yet.

## Quick Reference Summary

**Product:** OutThink (ver. 1.0)  
**Manufacturer:** Kamasoft, Inc.  
 P.O. Box 5549  
 Aloha, OR 97007  
**Phone:** (503) 649-3765  
**Sugg. Price:** \$69.95

**Product:** Thoughtline (ver. 2.05A)  
**Manufacturer:** Spite Software  
 4875 Southwest Nineteenth Dr.  
 Portland, OR 97201  
**Phone:** (503) 224-0137  
**Sugg. Price:** \$69.95

**Product:** SmartBrain (ver. US1.0)  
**Manufacturer:** Software Research Technologies, Inc.  
 3757 Wilshire Blvd., Suite 211  
 Los Angeles, CA 90010  
**Phone:** (213) 384-5430  
**Sugg. Price:** \$79.95

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# A TAXING QUESTION

## *Financial decision-making with Turbo Pascal*

by Edward Gelerinter

*Editor's note: As this issue was being prepared, the Senate Finance Committee passed a tax revision plan that, if it becomes law, would do away with deductions for IRA contributions for workers who have pension plans at work, and with income averaging, among other things. We decided to let the article stand—the plan has yet to become law, and the article still presents a good exercise in Turbo Pascal.*

**N**obody likes to pay taxes, and that certainly includes me. In fact, it has become sort of a hobby to figure out ways of lowering my tax bill by learning as much as possible about the tax code and then using that knowledge to reduce my taxes.

Since programming is also one of my hobbies, it should surprise no one that I have written a few programs here and there to help me make financial decisions. In this article I'll discuss an interesting financial question that many of you will have to face at one time or another. I will also present a fairly simple Turbo Pascal program that will help you answer this taxing question. A correct answer could save you thousands of dollars. I'll bet that got your attention!

Many people receive a lump sum distribution from some sort of retirement or annuity plan during their lifetime. For example, a young worker may get a distribution from his retirement plan when he changes jobs, or an older worker may get a distribution as a result of retirement. If the worker has been in the plan for many years, the amount of the distribution can be substantial. Therefore you need to plan for the handling of this money to minimize the tax bite.

### **Choosing your options**

There are two main options, as I see it. You could rollover the money into an Individual Retirement Account (IRA), or, in some cases, you could use the special ten-year income averaging method. There are

other possibilities I do not recommend, such as ordinary income averaging or declaring the distribution as ordinary income. (If there is a large amount of money in the distribution, and/or you have other sources of income that put you in a higher tax bracket, then the last of these options will result in the IRS taking a large portion of your money.)

The IRA option is easy. Within 60 days, take all or some of the distribution and invest it in any of the allowed IRA investments. Any money not invested within 60 days will be taxed as ordinary income, so be careful when you decide how much to hold back for your own needs.

### **Ten-year averaging**

There are several conditions that must be satisfied if the ten-year averaging option is chosen. First, the plan must be a qualified pension plan that is approved by the IRS. When you get the distribution, you should also get a form 1099-R, which will show you if your plan qualifies.

There are other things you must do: You must receive all of the money due you in one tax year; if you are an employee, as opposed to self-employed, you must either leave the service of your employer, reach the age of 59-1/2, or die (this is not recommended); if you are self-employed, you must reach the age of 59-1/2 or become disabled (also not recommended); and you must be in the plan at least five years before getting the distribution.

Ten-year averaging has some very nice advantages. It treats the distribution as income quite independent of any other. Basically, the process consists of dividing your income by ten and looking up your taxes (no deductions), assuming that you are a single taxpayer. You need to be careful if you use the tax tables that came with your tax forms, since they have a deduction built in. If you belonged to the plan *after* 1974 and your distribution was \$100,000, then you would only be

**LISTING 1: Main Program, "Choice," Which Accepts Input Data and Then Calls the Appropriate Procedure**

```

PROGRAM choice; (** Averaging or Rollover
with Payout Options**)
VAR z,yyy,tr:integer;
    r,p,pp:real;

{$I rollover.pro}
{$I forward.pro}

(*****MAIN PROGRAM*****
BEGIN
    WRITE('How much is the distribution :');
    READLN(pp);
    WRITE('Years the money will stay in the account :');
    READLN(yy);
    WRITE('marginal tax rate (integer) :');
    READLN(tr);
    WRITE('What is the percentage return on your investment :');
    READLN(r);
    WRITE('Type 1 for averaging option, 2 for rollover :');
    READLN(z);
    WRITELN('DISTRIBUTION = ',pp:13:2);
    WRITELN(1st,'DISTRIBUTION = ',pp:13:2);
    WRITELN('Options Tax rate = ',tr:2,' Return = ',r:5:2);
    WRITELN(1st,'Options Tax rate = ',tr:2,' Return = ',r:5:2);
    WRITELN;WRITELN(1st);
    IF z=1 THEN
        aver(yy,tr,r); (** Call Averaging Procedures**)
    IF z=2 THEN rollover(yy,tr,r,pp); (** Call Rollover Procedure**)
    WRITELN(1st,chr(12));
END.

```

```

    WRITELN(y:3,' 0 ',p:13:2,(1-rate/100)*p:13:2);
    WRITELN(1st,y:3,' 0 ',p:13:2,(1-rate/100)*p:13:2);
END;
END;
wt := 0; y := 0;
IF rans = 1 THEN rrate := return/100 ELSE rrate := 0;
(** 1 = withdrawals reinvested**)
(**** Life Expectancy Payout ****)
IF ans=1 THEN WHILE y<le DO BEGIN
    w := p/(le-y); y := y+1;
    wt := wt + (1-rate/100)*w + wt*(rrate)*(1-rate/100);
    p := (p-w)*(1+return/100);
    WRITELN(yr+y:3,wt:13:2,p:13:2);
    WRITELN(1st,year+y:3,wt:13:2,p:13:2);
END;
(**** Fixed Payments ****)
IF ans=2 THEN WHILE (p>amt) AND (y<30) DO BEGIN
    w := amt;
    wt := wt + (1-rate/100)*w + wt*(rrate)*(1-rate/100);
    p := (p-w)*(1+return/100);
    y := y+1;
    WRITELN(year+y:3,wt:13:2,p:13:2);
    WRITELN(1st,year+y:3,wt:13:2,p:13:2);
END;
IF ans=2 THEN BEGIN
    w := p;
    wt := wt + (1-rate/100)*w + wt*(rrate)*(1-rate/100);
    p := 0;
    WRITELN(year+y:3,wt:13:2,p:13:2);
    WRITELN(1st,year+y:3,wt:13:2,p:13:2);
END;
END;

```

**LISTING 2: File Name = ROLLOVER.PRO;**  
**Procedure to Calculate Effects of Rollover and/or**  
**Different Payout Options**

```

PROCEDURE rollover(year,rate:integer; return,dist:real);
(** Rollover with Payout Options**)
VAR rans,ans,le:integer;
    rrate,w,wt,amt:real;
BEGIN
    WRITE('Payout Option? 0=none,1=Life expectancy,2=fixed :');
    READLN(ans);
    IF ans = 1 THEN BEGIN
        WRITE('What is your life expectancy :');
        READLN(le);
        WRITELN(1st,'Life expectancy = ',le);
    END;
    IF ans = 2 THEN BEGIN
        WRITE('How much is the fixed yearl withdrawal :');
        READLN(amt);
        WRITELN(1st,'Yearly withdrawal = ',amt);
    END;
    WRITELN('Do you plan to reinvest your withdrawals?');
    WRITE('yes = 1, no = 2 :');
    READLN(rans);
    IF rans = 1 THEN WRITELN(1st,'Withdrawals reinvested');
    WRITELN(1st);WRITELN(1st);
    WRITELN('YR',' WITHDRWL ',' BALANCE ',' AFT TAX');
    WRITELN(' CUM');
    WRITELN(1st,'YR',' WITHDRWL ',' BALANCE ',' AFT TAX');
    WRITELN(1st,' CUM');
    p := dist;
    IF year>0 THEN BEGIN (** Accumulation Phase**)
        FOR y := 1 TO year DO BEGIN
            p := dist*(1+return/100);
            dist := p;

```

(continued on next column)

**LISTING 3: File Name = FORWARD.PRO;**  
**Procedure to Calculate Results of Ten-Year Averaging**

```

PROCEDURE aver(year, tax:integer; rate:real);
(** Forward Averaging**)
VAR sb:real;
BEGIN
    WRITELN('Starting Balance?'); (** From Form 4972**)
    READLN(sb);
    WRITELN(' AVERAGING OPTION STARTING BALANCE'
        ,sb:10:2);
    WRITELN(1st,' AVERAGING OPTION STARTING BALANCE'
        ,sb:10:2);
    WRITELN('YR',' EARNINGS ',' AVAILABLE ');
    WRITELN(' AFTER TAXES');
    WRITELN(1st,'YR',' EARNINGS ',' AVAILABLE ');
    WRITELN(1st,' AFTER TAXES');
    FOR y := 1 TO year DO BEGIN
        p := (1 + (rate/100)*(1-tax/100))*sb;
        (** Prin after taxes**)
        WRITELN(1st,y:3,p-sb:10:2,p:13:2);
        WRITELN(y:3,p-sb:10:2,p:13:2);
        sb := p;
    END;
END;

```

taxed at the rate of 14.56 percent, leaving you with \$85,440 after taxes. Pre-1974 contributions are treated slightly differently. Use the IRS form 4972 to guide you through the calculation.

The form that you received with your distribution (1099-R) will show the different types of income you have to fill in on the tax form. You may find IRS publication #575 helpful. There's no need for tax form phobia—follow directions and filling out the form will not be any worse than going to the dentist.

*Follow directions and filling out the tax form will be no worse than going to the dentist.*

### Which financial plan is best for you?

You have a choice of rollover or ten-year averaging. There are many things that will influence your decision. Among them are how soon the money will be needed, the size of the distribution, the rate of return on your investments, and the marginal tax rate. The decision sounds complicated, but the computer is good

at keeping track of several variables and performing the required calculations. The main Pascal program that will be used is shown in Listing 1. (*Listings 1, 2 and 3 appear on page 28.*) You will notice that the compiler includes directives (\$I) that will cause the procedures in disk files "ROLLOVER.PRO" and "FORWARD.PRO" to be compiled along with the main program. These procedures are shown in Listings 2 and 3, respectively.

The main program asks for some basic information and then offers you the choice of averaging or rollover. You indicate your choice and the proper procedure is called. Suppose you choose to rollover \$100,000. The funds can be dormant for, say, ten years, the marginal tax rate is 25 percent, the investment return is 10.25 percent, and there is no payout option for now. The results of this calculation are in Figure 1 (next page).

The last two columns show the balance in your account and the amount after taxes following complete withdrawal of the balance. This last column is needed if you are to make a fair comparison with the averaging option. The very simple calculation is performed by a section of the "rollover" procedure labeled "Accumulation Phase."

If you choose averaging, then you need to tell the program the starting balance from form 4972. In the

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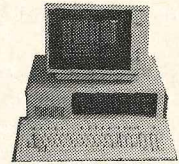
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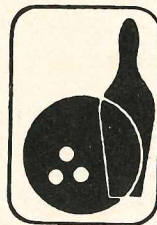
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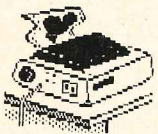
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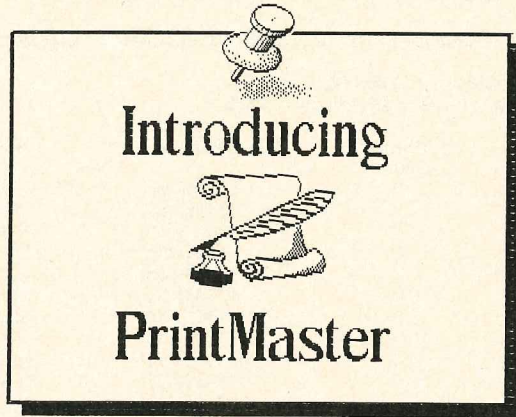
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illustrative case it is \$85,440. The results of an averaging calculation appear in Figure 2, below.

**FIGURE 1: Output From "Choice" Using Rollover Option**

DISTRIBUTION = \$100,000.00  
 OPTIONS: Tax rate = 25; Return = 10.25

YR	WITHDRWL CUM	BALANCE	AFT TAX
1	0	110250.00	82687.50
2	0	121550.62	91162.97
3	0	134009.56	100507.17
4	0	147745.54	110809.16
5	0	162889.46	122167.10
6	0	179585.63	134689.22
7	0	197993.16	148494.87
8	0	218287.46	163715.59
9	0	240661.92	180496.44
10	0	265329.77	198997.33

**FIGURE 2: Output From "Choice" Using Averaging Option**

DISTRIBUTION = \$100,000.00  
 OPTIONS: Tax rate = 25; Return = 10.25

AVERAGING OPTION STARTING BALANCE = \$85,440.00

YR	EARNINGS	(AFTER TAXES)	AVAILABLE
1	6568.20		92008.20
2	7073.13		99081.33
3	7616.88		106698.21
4	8202.42		114900.63
5	8832.99		123733.62
6	9512.02		133245.64
7	10243.26		143488.90
8	11030.71		154519.61
9	11878.69		166398.30
10	12791.87		179190.17

The printout shows earnings and the total amount available after taxes. Remember that the funds are not in an IRA, so taxes must be paid each year. A glance at Listing 3 will reveal that most of the procedure is concerned with printing out a nice heading. The first two lines are for entering the starting balance. The actual calculation and information printout commands are contained in the short segment between BEGIN and END.

**Comparing the findings**

Compare the last columns in Figures 1 and 2. For the first five years the averaging yields a higher after-tax return. After that, the rollover option yields the better return. If you plan to spend your distribution before five years are up, you are clearly better off taking the averaging option. Otherwise, take the rollover option.

If you performed the calculation assuming a higher tax bracket, you would find that the crossover point would move out to a later year. This is because the averaging ignores your tax bracket, while money taken out of the IRA is taxed as normal income. If you can wait long enough, the rollover option will win out, but if you need the money in the foreseeable future, a calculation must be made to decide upon the correct choice.

There is another consideration if you choose averaging. The money becomes part of your estate and may

impact your estate taxes. Estate tax laws vary greatly from state to state, so a local tax adviser should be consulted.

Even if you choose the rollover option, there will come a time when you will start withdrawals from your account. If you are lucky enough not to need the money, the government still requires that you start taking out cash when you are 70-1/2 years of age at a rate based upon life expectancy. This can be your life expectancy or the combined life expectancy of you and your designated beneficiary. The actual life expectancy depends upon your age and the sex and age of your beneficiary.

If the expectancy is 18 years, you would be expected to withdraw 1/18 of the balance the first year, 1/17 the second, etc. The IRS in its finite wisdom realizes that it is possible that you may live more than the 18 years expected, thereby finding yourself with nothing in your IRA. Recently, it was ruled that you can recalculate your life expectancy every year.

**Figuring your life expectancy**

In our example, if you lived five years your new life expectancy would be considerably greater than the 15 years given by the simple calculation. Our program does the simple calculation, but you can always rerun the program every year to calculate your required withdrawal. Your banker should be able to give you data on life expectancy, or you could look up the information in the library (any fair-sized library has life expectancy tables).

In Figure 3, below, I show a printout using a \$100,000 distribution invested at 12 percent for a person in a 35 percent tax bracket. This calculation assumes retirement at 65, with a payout starting five

**FIGURE 3: Printout of a Life Expectancy Payout Starting in Sixth Year**

DISTRIBUTION = \$100,000.00  
 OPTIONS: Tax rate = 35; Return = 12.00

Life expectancy = 18

YR	WITHDRWL CUM	BALANCE	AFT TAX
1	0	112000.00	72800.00
2	0	125440.00	81536.00
3	0	140492.80	91320.32
4	0	157351.94	102278.76
5	0	176234.17	114552.21
6	6364.01	186416.59	
7	13491.70	196505.01	
8	21474.72	206330.26	
9	30415.70	215683.90	
10	40429.59	224311.26	
11	51645.16	231903.33	
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14	94032.45	244355.61	
15	111680.35	243269.59	
16	131446.01	238404.20	
17	153583.54	228868.03	
18	178377.58	213610.16	
19	206146.90	191394.70	
20	237248.54	160771.55	
21	272082.37	120042.76	
22	311096.27	67223.94	
23	354791.83	0.00	


years later. A life expectancy of 18 years is used and the funds are not reinvested. For convenience in calculation, the withdrawals take place at the beginning of the year.

The second column in Figure 3 is the cumulative withdrawal after taxes and the third column is the balance in the IRA account. Notice that you run out of money on schedule in year 23, which is the 18th year of payment. Also notice that the balance continues to increase until year 14, even though withdrawals started in year six. If you still did not need the withdrawals immediately, you could have chosen the reinvestment option. Of course, taxes would have to be paid each year on the reinvested money, but the program would do the calculation for you. If this option was chosen, the numbers in the second column would be considerably higher.

### Pascal's "Choice"

Choice, a rather simple Pascal program, is quite versatile. In addition to calculating payouts based on life expectancy, the program can also calculate payouts based upon fixed payments. If you choose this option, be sure to pay yourself at least as fast as life expectancy

does or you may find yourself penalized by the IRS. The program is self documenting. Type choice <RETURN> and questions appear on the screen. Answer the rather simple questions and Choice prints its results on the screen. It will also print on paper if your printer is on. Choice spends less time calculating than you would typing in the options. This allows you to check out many options in a relatively short time.

Choice has all of the virtues of a Pascal program. It is modular. The main program sets things up and then calls a procedure. All of the variables need to be declared in advance. This may cause some frustration if you insist upon fighting it. On the other hand, if you don't fight it, you will become a much more organized programmer. The article "Pretty Pascal" in the January 1986 issue of *PROFILES* tells more about the structure of the language. 

*Edward Gelerinter is a physics professor at Kent State University who uses computers both at work and as part of his hobbies at home. He feels that it is his patriotic duty to minimize the amount of tax that he has to pay using any legal means at his disposal.*

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# Multi-Format Programs

*A software solution to a common problem*

by T.F. Chiang

Perhaps you work with two different brands of CP/M computers—one at work and the other at home. Or maybe you own two Kaypros—one CP/M and the other MS-DOS. Or perhaps you're working on a project with someone who owns a different computer. In any case, you'll undoubtedly want some way of transferring the work you've done on one machine to the other. The problem is that the machines can't read each other's disks.

There are two reasons for this very common problem. One, of course, is that CP/M and MS-DOS machines use different operating systems—they speak different languages. The other is that every CP/M computer manufacturer, wanting buyers to use only software made for that particular computer, ensured that the machine couldn't read disks from any other CP/M machine. To transfer information from one brand of machine to another, it was necessary to get them talking to each other through a serial cable—a very complicated procedure.

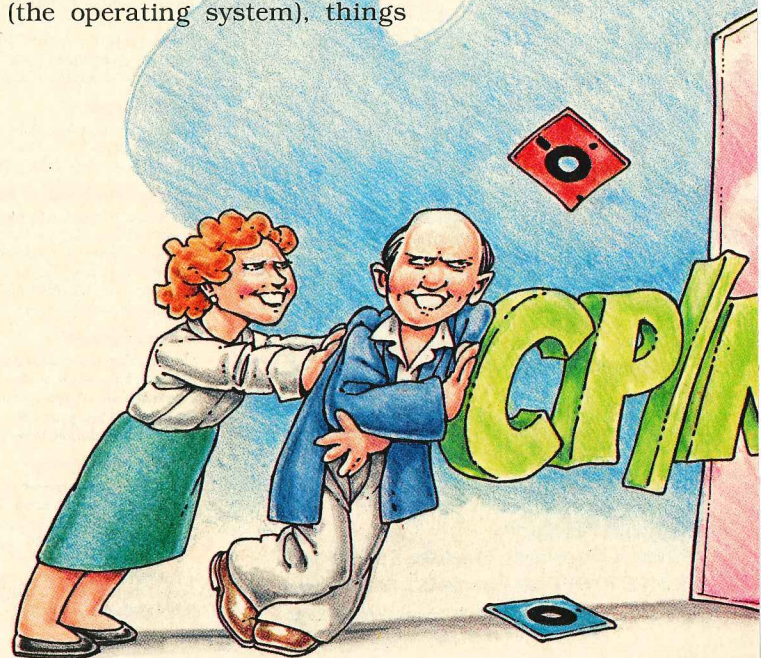
A better solution, of course, is multi-format programs. These programs will let your computer read from and write to disks in another computer's format. They're very handy and quite popular (Kaypro Corporation even wrote one, MFDISK, for use on Kaypros.) Unfortunately, they are not a perfect solution. To see what they can and cannot do, let's look at the incompatibility problem.

## *The many faces of compatibility*

All 5-1/4-inch disks look alike, and a disk for one IBM-PC compatible machine can be used in another. But you can't take a disk from one CP/M computer and use it in a CP/M computer manufactured by someone else, or in an MS-DOS machine. Why not? The answer to that question gets complex and can be difficult to understand. Without getting too technical we'll examine some of the reasons for disk incompatibility.

The inability to swap disks between different brands of CP/M machines can stem from differences in either hardware or software. In the hardware area you have disk drives with different mechanical capabilities. A single-sided drive can only use one side of the disk and will get hopelessly confused if you insert a double-sided disk (which has information recorded on both sides). Putting a quad-density disk in a standard double-density drive results in a similar impasse. Since quad-density drives record information at 96 tpi (tracks per inch) and double-density drives only work at 48 tpi, you are asking the drive to do something that is physically impossible.

Once you get away from the physical limitations of the drive and into the variations controlled by software (the operating system), things



start getting more complex. All disks are organized into sectors and tracks by a formatting program. However, nobody agrees on the details of a standard 5-1/4-inch disk format for CP/M machines. You get variations in the number of sectors per track, the size of the sectors, how far apart sectors are on a track, format of directory entries, and even how the boot tracks are configured. Each manufacturer has its own ideas of what these should be and doesn't want to use anyone else's. No two CP/M 5-1/4-inch disk formats are the same, and swapping disks between different CP/M computers just doesn't work.

CP/M-MS-DOS incompatibility is a different story. As we've already said, the two machines use different operating systems. This means that programs written for one machine will not run on the other. Any executable programs (.COM or .EXE) for MS-DOS use instructions specific to the 8088 CPU (central processing unit). CP/M responds only to instructions for the 8080 or Z80 CPUs.

But while programs can't be carried over from one system to another, data or text files *are* transferable between CP/M and MS-DOS with no problems.

This is because data and text files contain just numbers and letters represented in ASCII (American Standard Code for Information Interchange), a code both types of computers understand.

If a data file is in some special format, as are dBASE II's data files, you will need the DOS version of the program before

you can utilize the data. BASIC source code is a special case. Normally when you save a file in BASIC, the file is "tokenized;" that is, key words are represented by hexadecimal digits to save disk space. A tokenized BASIC file saved under MBASIC will be unintelligible to the GW-BASIC interpreter, and vice versa. However, if you save the file in ASCII format (i.e., SAVE "FILE-NAME.BAS",A), either interpreter can read the file correctly. There are still some minor syntax differences between the two BASICs that you'll have to edit before the program will run. But that is certainly easier than retyping the entire program.

For all these reasons, disk swapping doesn't work unless you use special software called multi-format programs that know about the variations other manufacturers use. Nothing can change the physical limitations of disk drives, but this software *can* let a CP/M Kaypro read disks from an Osborne or even an IBM PC or Kaypro MS-DOS machine.

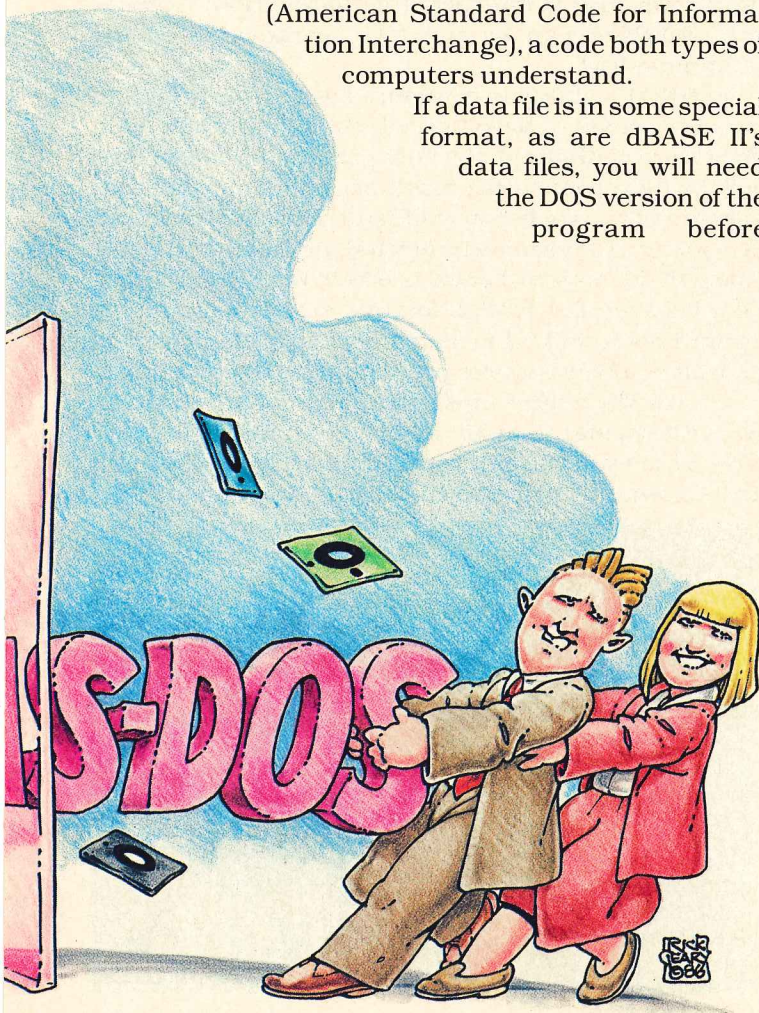
With a multi-format program you can read, write, and transfer files to or from disks that your computer couldn't normally read. You can transfer any file, regardless of whether it's a data file, a program, a text file, or an overlay file—although, as we've explained, whether your computer can do anything with that file is another question. If you transfer programs from another CP/M computer, they should run *unless* they use video commands specific to the other computer or directly manipulate the BIOS.

So that leaves us with *data compatibility* between any two computers that we can get the multi-format software for. This means that ASCII, BASIC, and data files for the same program (WordStar, dBASE II, Multiplan, and others) should all transfer with a multi-format program. Now let's examine three of the most popular multi-format programs—two for both CP/M and DOS, and one that is strictly CP/M.

### UniForm (CP/M ver. 3.03; MS-DOS ver. 1.08)

The original version of this program was bundled with the first Kaypro IIs ('83 series); it had three foreign formats and came as two programs, SETDISK and INITDISK. UniForm for CP/M now handles 87 formats, and it's a single program with a 78K overlay file. The typeset manual includes error messages, instructions for customizing UniForm to your terminal or drive configurations, and advice on using it.

The program starts out by presenting you with a menu of three choices: assigning a foreign CP/M format, transferring files to or from an MS-DOS disk, and the same operations on a TRS-DOS (Radio Shack) disk. The first choice leads you to four screens of the available CP/M formats, arranged alphabetically, with the density and tracks per inch given for each format. You choose one and drive B (on floppy systems) is assigned to that format after you exit the program. Configuring a drive in this manner allows you great freedom in accessing disks of another format. A BIOS filter, which



changes the disk format parameters for a selected drive, resides in memory, largely transparent to CP/M. This lets you read the directory, use PIP or NSWP to move files back and forth, or even access the drive directly through an application program. A status message reminds you of the foreign format each time you warm boot.

Initializing (formatting) a blank disk in another format must be done from within UniForm. Once you've chosen a format from the list, you can initialize a disk in that format by hitting the **TAB** key. If you hit the key accidentally, don't worry, because initialization doesn't begin immediately. (However, exiting any menu option is done by hitting **RETURN**, which is very easy to hit accidentally; this can try one's patience, since re-entering a menu option takes a rather long period of disk accessing.) Configuring a drive or initializing a disk can also be done from the command line.

The second and third options exist for MS-DOS and TRS-DOS file transfers; these operations require a different I/O procedure, so they cannot be incorporated into a BIOS filter. This means that all operations on MS-DOS or TRS-DOS disks take place from within UniForm, not from the **AO>** prompt. You can display a numbered directory of either your CP/M or DOS disk, and copying is done by specifying file numbers. (None of the programs reviewed here can copy files found in MS-DOS sub-directories.)

One thing I noticed about UniForm in particular was drive noise. When writing to another format, the disk drive made some distinctly unpleasant noises. This is to be expected considering some of the acrobatics the drive must perform, but prolonged use in another format isn't the healthiest thing for your drives.

While the MS-DOS version of UniForm is similar to the CP/M version, it is much faster and more flexible. You choose which drive will always be assigned to a foreign format (if you have two floppy drives) during installation. Then, when you run UniForm and choose one of the 79 formats, that format is assigned to a virtual (imaginary) drive, which is the next unused drive in your system. Example: If you have a Kaypro PC with two floppy drives (A and B) and a hard disk (C), the next unused drive designation is D. Assume that you installed UniForm to act on drive B and that you have chosen Osborne as your foreign format. When you access drive B, it is a normal DOS drive. When you access drive D, UniForm still diverts the signal to drive B, but expects to find an Osborne CP/M disk in it. Also, the MS-DOS version of UniForm doesn't have the annoying delay when loading new formats that is present in the CP/M version.

### Compat (CP/M ver. 3.2A)

Compat is from Mycroft Labs, the same people who brought you the Mite communications program. Compat is actually divided into three programs: COMPAT (20K), for selecting a format; FORMAT (24K), for initial-

izing disks; and MS (12K), for MS-DOS file operations. Another program, MYCOPY, is included as a general PIP replacement. Besides describing all of the programs, the manual has an informative section on the technical aspects of compatibility, lists the formats supported, and has a good index.

*Compat's programs let you pick a format, initialize disks, and have MS-DOS file operations.*

COMPAT gives you six screens showing 105 formats, listed by density and then alphabetically, with the disk capacity given. As with UniForm, you configure a drive to the selected format. You have a choice of either drive or both, and when you exit the program it gives the new TPA (transient program area) size with the filter in place (a 6K reduction is typical). When you use **FORMAT**, you choose from the same menus and initialize a disk in drive B; any foreign format that drive B has previously been configured for is ignored while **FORMAT** runs and is returned afterwards. Both COMPAT and **FORMAT** can be run from parameters on the command line.

COMPAT's ability to configure both drives to foreign formats seems to have limited usefulness. Once both drives are configured, the only programs you can load will be those for another machine, which may not run; file transfers then become difficult. Nor can you return to your normal formats by any means other than a cold boot. Media Master (below) is better when exchanging files between two foreign formats directly; you do file operations from within Media Master, without having to load your file transfer program from a foreign disk.

To use MS, a drive must have been configured to an MS-DOS format (though the drive is unusable outside MS). When you run MS, you find yourself in an interactive command environment, with an **"A>"** prompt. All

#### TIME TRIALS

Following are the approximate times taken by these programs to perform some exercises in disk manipulation. The CP/M programs were timed for initializing (format and verify) a diskette in MS-DOS DSDD format. Then they copied 162K of files from a CP/M disk to the MS-DOS disk. The MS-DOS programs initialized a diskette in Kaypro DSDD format, and copied the 162K of files back onto that disk. (All times given in min:sec.)

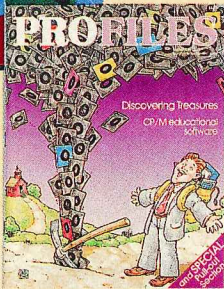
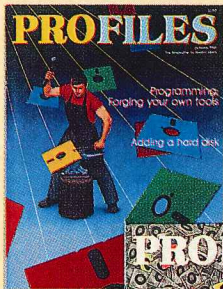
	Initializing	Copying
<b>CP/M</b>		
Media Master	1:15	4:18
Compat	.57	2:17
UniForm	1:05	2:18
<b>MS-DOS</b>		
Media Master	1:45	1:55
UniForm	1:20	1:06

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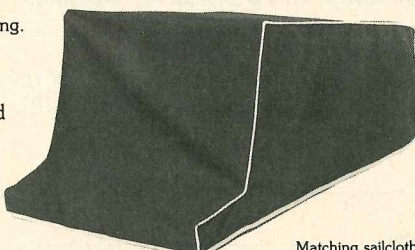
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system commands associated with CP/M are available; they act on the MS-DOS drive when you enter them normally, and on the CP/M drive when preceded by a "/". Moving files back and forth is done with PUT and GET commands (to and from the MS-DOS drive). A help command lists all the commands, though it doesn't mention a command to exit; ^C seems to be the only way out.

I found MS to be a little erratic in reading MS-DOS disks. The program is supposed to automatically recognize any MS-DOS format, whether version 1.xx or 2.xx, single- or double-sided. However, it was inconsistent in what it would recognize, and I could discern no pattern to its behavior. (Disks initialized in MS-DOS format by Compat's FORMAT program posed no noticeable problems.)

The MYCOPY utility replaces or improves on most of the functions of PIP. Its functions can be run directly from the command line, in an interactive mode, or off a batch file in automated fashion. When copying files, you can specify user number, and you can use ambiguous file name expressions that exclude certain files. MYCOPY's parameters include most of PIP's, plus such options as query for each file, compare the contents of two files, or transfer files in alphabetical order. You can even execute CP/M system commands via MYCOPY. Some of the additional commands can display space left on disk, reset drives to R/W, and set file attributes.

### **Media Master (CP/M ver. 2.02k4; MM Plus MS-DOS ver. 1.15)**

This program's CP/M version has 70 formats and is broken into two programs, MMSMALL (40K) and MMFMT (30K). Unlike the previous two programs, Media Master does not leave a drive configured in a foreign format. You can only access the foreign disk from within Media Master, not through other programs. It does, however, allow you to access either or both drives in a foreign format. The manual is typeset and includes error messages.

MMSMALL begins with a menu of eight options, more than the other two programs, since you have all the necessary file manipulation capabilities within the program itself. MS-DOS operations are treated just like those for any other format. The option to log onto a new disk lists all the formats, and MMFMT repeats those listings when you want to initialize a disk. Other options allow you to display or print a directory and delete or copy files with optional wildcards; you can also change the user number or verify flag. Some of Media Master's safety features are rejection of illegal file specs, request for confirmation before deleting a file, and, when doing mass file copying, prompting you for a new disk when the destination disk is full. Another is that if you press ESCape anywhere in the program, you are returned to the previous screen.

The MS-DOS version is a single .EXE file, 57K in size. It has 72 formats, but is otherwise similar to the CP/M

version. The main differences are menu options for initializing a disk (you don't need a separate program), for viewing a file, and for operating on sub-directories (on a hard disk). Also, the MS-DOS version of Media Master has an annoying problem with Kaypro-formatted disks, which is acknowledged in the manual. A disk initialized on a Kaypro machine may not work with Media Master. You must initialize a disk in the Kaypro format using Media Master's own formatting procedure. The resulting disk can be read by Kaypros as well as Media Master. Also, a disk formatted by Uni-Form cannot be read by Media Master, and vice versa.

The Plus version for MS-DOS machines includes something called ZPEM, a program that allows an MS-DOS computer to run *some* CP/M programs. When the IBM PC was still new, several co-processor cards were available for running CP/M on your IBM. For a long time the MS-DOS world didn't care about CP/M compatibility, but now there is renewed interest. NEC's new V-series of chips make it simple for an MS-DOS machine

*Media Master's safety features include the rejection of illegal file specs . . .*

to run CP/M programs (8080 only, no Z80 programs) very nicely, and now many chip/software packages are available. Plain ZPEM does not include the NEC chip; everything is handled through software emulation. (*Editor's note: Intersecting Concepts also offers its ACCELER-8/16 package at \$99.95, which is ZPEM with support for an included NEC V-20 chip to speed things up considerably.*)

There are different versions of ZPEM to emulate the (non-graphic) video control codes of a Kaypro, Osborne, or a Heath/Zenith. Once you've executed the program, you're in a simulated CP/M environment, the only difference being an EXIT command to return to MS-DOS. ZPEM cannot read Kaypro CP/M disks, so all of your CP/M programs need to be transferred to a DOS diskette. Additionally, CP/M programs, but not data files or overlays, must be renamed to have the filetype .CPM instead of .COM. ZPEM can't run programs that make direct BIOS or BDOS calls, nor can it run programs written specifically for a Z80 CPU.

As for speed, the manual claims ZPEM runs between one and two MHz, depending on the nature of the program. WordStar takes only 20 seconds to load, because the speed of disk accessing doesn't change. Screen I/O, on the other hand, is far slower; it takes ten seconds just for a screen rewrite. A cursor movement takes close to a second, and searching for a word on the same line takes almost three. Terminal emulation is perfect. WordStar had no problems, and neither did

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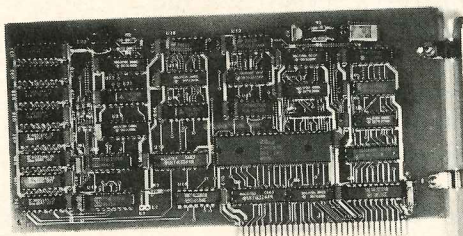
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## Common Formats Available

The beauty of multi-format programs lies in their ability to translate data from one "language" to another. This allows your computer to work on files that would otherwise be inaccessible on your machine. With the multitude of machines and formats currently in use, it was inevitable that a solution for this problem would be found—a software solution.

What follows below is a partial list of machine formats supported by multi-format software. Notice that it is "partial." Some programs offer close to 100 formats, and some of them are extremely obscure. These are only the best-known machine formats, but they're a representative sample of what's available.


Machine Brand	Disk Type	TPI
Bondwell 12	SS:DD	48
Bondwell 14	DS:DD	48
DEC VT-180	SS:DD	48
Epson QX-10	DS:DD	48
Epson QX-10 (European)	DS:DD	48
Heath w/Magnolia CP/M	SS:DD	48
Heath w/Magnolia CP/M	DS:DD	48
Hewlett-Packard HP-125	DS:DD	48
IBM-PC using CP/M-86	SS:DD	48
IBM-PC using CP/M-86	DS:DD	48
Kaypro II	SS:DD	48
Kaypro 4 or 10	DS:DD	48
Morrow MD2	SS:DD	48
Morrow MD3	DS:DD	48
NEC PC-8001	SS:DD	48
NEC PC-8801	DS:DD	48
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Otrona Attache	DS:DD	48
Sanyo MBC-1000	DS:DD	48
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Superbrain 40 Track	SS:DD	48
Superbrain QD	DS:DD	48
Televideo	DS:DD	48
TI Professional CP/M-86	DS:DD	48
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Zenith Z-90 48 TPI	SS:DD	48
Zenith Z-100 CP/M	SS:DD	48
Zenith Z-100 CP/M	DS:DD	48

LADDER with its animation. It is the speed that may limit this emulator to being a toy rather than a useful tool.

*(Editor's note: Another multi-format program for DOS, Read/CPM, came to our attention too late to be included in this article. Read/CPM offers more than 100 CP/M formats and allows you to access data on CP/M disks using standard DOS commands. It is available from Micro Interfaces Corporation of Miami, Florida, (305) 823-8088.)*

*When choosing, don't just look at the number of formats supported.*

### Some final comments

When choosing a multi-format program, don't just look at the number of formats supported. All of them have plenty, and you probably don't need to transfer files to all those obscure machines; the programs described here all support MS-DOS, which is the main concern nowadays. See which program runs in a manner you like. Do you want to be able to reconfigure a disk drive? Do you want to be able to run all the functions within a single program? Do you want to be able to use both drives in foreign formats? And if a program lacks a particular format you want, ask the company for details about its policy on adding formats; putting another entry in a BIOS table is not difficult. 

*T.F. Chiang is a student at Brown University in Providence, Rhode Island.*

## Quick Reference Summary

**Product:** Compat (CP/M)

**Manufacturer:** Mycroft Labs, Inc.

P.O. Box 6045

Dept. PND

Tallahassee, FL 32314

**Phone:** (904) 385-1141

**Sugg. Price:** \$39.95

**Product:** Media Master (CP/M) and Media Master Plus (MS-DOS)

**Manufacturer:** Intersecting Concepts, Inc.

4573 Heatherglen Crt.

Moorpark, CA 93021

**Phone:** (800) 824-7888 (operator 251)

**Sugg. Price:** \$39.95 (CP/M), \$59.95 (MS-DOS)

**Product:** UniForm (CP/M) and UniForm-PC (MS-DOS)

**Manufacturer:** MicroSolutions, Inc.

125 South Fourth St.

DeKalb, IL 60115

**Phone:** (815) 756-3411

**Sugg. Price:** \$69.95 (both CP/M and DOS)

# Handling Endnotes

*A bare-bones program that gets the job done*

by David Weinberger

If you're like most Kaypro owners, you selected your computer at least partly because of the completeness of the software package bundled with it. Then, only after you started to use it, did you realize that there's no such thing as complete. That's why there are programming languages—tools for making the tools you really need. Instead of staring blankly at a peculiar problem not addressed by whoever designed your software, you can write your own program perfectly suited to the task at hand.

For example, three years ago I bought a Kaypro so I could type my wife's dissertation using WordStar. The easiest way to write a scholarly work is to put the footnotes right in with the body of the text, and only extract them when you're doing a final draft. This is exactly how my wife handed her first version to me. When it came time to do the final draft, I went through each chapter looking for footnotes (which I had put into brackets). Here's the sequence of commands:

^QF[ <CR> <CR>	{Find footnote [^L after the first]}
^K1	{Set place marker}
^KB	{Mark beginning of block}
^PT12^PT	{Write footnote number, superscripted}
^F^F^F . . .	{Move to end of block}
^KK	{Mark end of block}
^QC	{Move to end of file}
^KV	{Move the block}
^Q1	{Return to place marker}
^PT12^PT	{Write footnote number, superscripted}

If I got a footnote number wrong (or if my wife revised a footnote out) I would have to go back through and renumber all the footnotes. My wife's dissertation was 350 pages long and had 500 footnotes.

Not surprisingly, I soon tired of this. Instead of repeatedly issuing a complex set of instructions to move the footnotes to the end of each chapter, I decided to write a program that would have the computer do it for me. At first I did it in MBASIC, but when Borland

International released Turbo Pascal, I switched over because of the increased control, flexibility, and clarity of Pascal.

Here is the tool I designed for myself. It's a bare-bones version, but it does the job. The "bells and whistles" can be added later (the version I use for myself has them). In particular, the program manipulates text files in some elementary ways that may be interesting to Kaypro owners who do a good bit of writing.

The program, ENDNOTE.PAS, reads a document (e.g., EXAMPLE) and writes two new documents: EXAMPLE.FTN, which contains everything in the original that was placed between backslashes, and EXAMPLE.FMT, which contains everything *except* what was between backslashes. The comments between backslashes (the endnotes) are numbered, and the corresponding numbers are left in EXAMPLE.FMT. The footnote numbers in both .FTN and .FMT are surrounded by ^T, which superscripts them in WordStar. You can begin the endnotes with any number, in case your original file is too big and you've broken it into more than one file. Because the original is untouched, if you want to add or delete endnotes, do it in the original and just run it through ENDNOTE again.

## Why Turbo Pascal?

Since MBASIC comes free with CP/M Kaypros, why use Pascal? Because Pascal is an elegant, efficient language, and Borland overcame the two main objections to Pascal: ease of use and price.

Pascal, unlike BASIC, is a compiled language. That is, after you type in your program, Pascal translates the whole thing into the "language" the computer can understand and writes it into a ".COM" file. Only then can you try running the program to see if it works. BASIC, on the other hand, is an interpreted language. After you type in your program, BASIC translates one line, executes it, translates the next, and so on. The advantage of this is that you discover your mistakes faster. The disadvantage is that your finished BASIC program runs much more slowly because every time it runs each line has to be retranslated.

## LISTING 1: ENDNOTE (Turbo Pascal)

```

1: program ENDNOTE:
2: (* (c) D. Weinberger, 1985 Brief version: 8/10/85
3: May be copied but not sold or distributed commercially *)
4:
5: CONST SuperChar1 = ^T;
6:       SuperChar2 = ^T;
7:       ClrToEnd   = ^W;
8:       Beep       = ^G;
9: VAR   fv,fvfmt,fvftn: text;
10:      footnotefile,formatfile,filename: string[14];
11:      filechr: char;
12:      howmany,footnumb,nchar: integer;
13:      backslash,lnEndnote: boolean;
14:      delimiter: set of char;
15:
16: (* ===== PROCEDURES ===== *)
17:
18: PROCEDURE SIGNON;
19: Begin
20: clrscr;
21: writeln('____\ ENDNOTE / ____':47);
22: writeln('(c) D. Weinberger, 1985 Brief version 8/10/85':58);
23: writeln;writeln;writeln;
24: end;
25:
26: PROCEDURE GETFILENAME;
27: var ok: boolean;
28:     x: integer;
29: begin
30: ok:=true;
31: Repeat
32:   write('Enter name of file to use: ');
33:   readln(filename);
34:   (*uppercase it*)
35:   for x:=1 to length(filename) do filename[x]:=upcase(filename[x]);
36:   assign(fv,filename);
37:   (*$!-*) reset(fv) (*$!+*);
38:   ok :=(IResult = 0);
39:   if not ok then writeln('Cannot find file ',filename);
40: Until ok;
41: end;
42:
43: PROCEDURE OPENNEW ;
44: begin
45: (*strip anything after dot in filename*)
46: if pos('.',filename)>0 then delete(filename,pos('.',filename),10);
47: formatfile:=filename+'.FMT';
48: footnotefile:=filename+'.FTN';
49: assign(fvfmt,formatfile);
50: rewrite(fvfmt);
51: assign(fvftn,footnotefile);
52: rewrite(fvftn);
53: end;
54:
55: PROCEDURE MAKESCREEN;
56: begin
57: gotoxy(1,2);
58: write(ClrToEnd);
59: writeln;writeln;writeln;write('Footnotes to begin with number: ');
60: readln(footnumb);
61: writeln('Searching ',filename,');
62: write(ClrToEnd,'Number of footnotes found: ',howmany);
63: end;
64:
65: PROCEDURE WRITESUPERSCRIPT;
66: begin
67: footnumb:=succ(footnumb);
68:   write(fvfmt,Superchar1,footnumb,Superchar2);
69:   write(fvftn,Superchar1,footnumb,Superchar2);
70: end;
71:

```

```

72: (* ===== PROGRAM ===== *)
73: begin
74: (* initialize *)
75: InEndnote:=false; footnumb:=1; howmany:=0;
76: delimiter:=[chr(92),chr(220)];
77:
78: SIGNON;
79: GETFILENAME;
80: OPENNEW;
81: MAKESCREEN;
82:
83: footnumb:=pred(footnumb);
84:
85: (* ----- MAJOR LOOP ----- *) while not eof(fv) do begin (* ----- *)
86:
87:   read(fv,filechr);
88:   (* Is it a backslash? If so, don't save it, but reverse flag *)
89:   if filechr in delimiter then backslash:=true
90:   else backslash:=false;
91:   if backslash then InEndnote:=not InEndnote;
92:
93:   (* -- If current char is BACKSLASH -- *)
94:   if backslash then begin
95:     (* Write Subscript *)
96:     if InEndnote then begin
97:       howmany:=succ(howmany);
98:       gotoxy(28,7);write(howmany);
99:       WRITESUPERSCRIPT;
100:    end;
101:
102:    (* Backslash is end of a footnote *)
103:    if not InEndnote then begin
104:      writeln(fvftn); (* Put in CR/LF *)
105:      writeln(fvftn); (* Extra line between footnotes *)
106:    end;
107:  end;
108:
109:   (* -- If current char is NOT BACKSLASH -- *)
110:   if not backslash then begin
111:     if InEndnote then write(fvfmt,filechr) else write(fvfmt, filechr);
112:   end;
113:
114:
115:   (* ----- *) end; (* of main loop ----- *)
116:
117: close(fv); close(fvfmt); close(fvftn);
118:
119: writeln;writeln;writeln;
120:
121: (* Write on screen how many notes found *)
122: if howmany>0 then begin
123:   writeln(Beep,howmany,' footnotes written to ',footnotefile,'. ');
124:   writeln('Formatted version written to ',formatfile);
125: end
126: else
127:   if howmany=0 then begin
128:     writeln(Beep,'No footnotes found. ');
129:     (* If none found, erase pointless FMT and FTN files *)
130:     erase(fvfmt); erase(fvftn);
131:   end;
132:
133: (* Catch a potential error *)
134: if InEndnote then begin
135:   writeln; writeln('** There is an unmatched pair of backslashes. ');
136: end;
137:
138: end.

```

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## ENDNOTES

Turbo has managed to offer the best of both worlds. It compiles so quickly that it is just a few seconds between writing your program and having it compiled; in case of mistakes, it brings you back to the offending line in your program. You can thus shuttle back and forth between compiler and editor, fixing your mistakes quickly and efficiently.

*Turbo lets you shuttle back and forth between editor and compiler, quickly fixing mistakes.*

Turbo Pascal version 3 costs \$69.95, and Borland provides excellent support. You get a full Pascal and an excellent editor (modeled on WordStar), along with some utilities and frills. Turbo is the fastest, most compact Pascal you are likely to find anywhere. It contains advanced features that make it easy and a delight to use. When you are finished with your program and have it debugged, you end up with a .COM file version on your disk. In one test I tried, Turbo sorted a list of numbers in 29 seconds, whereas MBASIC took 19 minutes.

### Explaining the program

To follow my comments, please refer to the listing on pages 44-45. The line numbers are not part of the program; they were added afterward for easy reference.

**Line 1:** Including the title this way is optional.

**Lines 2-3:** Anything between “(\*)” and “(\*)” is a comment, not really part of the program. You can also use “{...}”. You can even “nest” these two: (\* This is a comment {this is a comment within a comment}\*)).

**Lines 5-8:** These are constants, i.e., variables that do not vary. Everywhere in the program, instead of writing ^W (which causes the screen to be cleared from wherever the cursor is on down), I can write “Clr-ToEnd,” making it obvious what the program is doing at that point. Likewise, “Write(Beep)” is clearer than “Write(^G).” “SuperChar1” and “SuperChar2” are what the footnote numbers will be surrounded with. If you want something other than ^T, replace the ^T with what you want. For example, you might make “SuperChar1” into “[” and “SuperChar2” into “]”. By using a constant, you need make this change only once in the source code.

**Lines 9-14:** You must declare all your variables before using them in Pascal. The first line (9) sets up three “file variables” and says they will be used with “text files.” A text file is one that contains letters and other characters; what you will be pulling endnotes



from will be a text file. You need one file variable for each file you will be using: your original, the one minus the endnotes (.FMT), and the one containing only the endnotes (.FTN).

Line 10 sets up three string variables, each with a maximum of 14 characters. A string is a set of characters. "Filechr" is a character variable; it can contain any one character. Filechr will be filled with each character as it is read from EXAMPLE.

Line 12 sets up three integer variables that can contain numbers in the range -32678 through +32767.

Line 13 declares two boolean variables. Booleans can only be true or false.

Line 14 sets up the variable "delimiter" to contain a set of characters. At line 76 I declare what those characters will be: the code number (i.e., ASCII number) of a backslash and (because of a peculiarity of WordStar) the code number +128.

**Line 16:** Now begin a set of procedures. A procedure is a sub-routine—a small part of a program that you call upon to perform a function. There are two reasons to use procedures. First, if there is some task you are going to be doing over and over, instead of writing it over and over, you can write one procedure and then call it whenever you need it. To call it in Pascal, all you do is state its name in the main part of your program (e.g., lines 78-81). This saves typing time and computer

memory.

Second, even if you use a procedure only once in a program, it is helpful to think in terms of procedures, because it gets to you write a structured program. By thinking of what procedures you will need, you are forced to break your program into a set of sub-tasks. Then you write a mini-program (procedure) for each one. You're much less likely to get lost if you're not jumping around all over the place, as you would using GOTOs. And you can gather a library of handy procedures usable in other programs.

**Lines 18-24:** SIGNON simply prints a title on the screen. "Clrscr" is a function provided by Turbo that clears the screen. "Writeln" prints on the screen whatever is in the parentheses. The ":47" causes the title, ENDNOTE, to be flush right in a field 47 spaces wide, which effectively centers it.

Note that procedures begin with "Begin" and end with "End". Also notice that every instruction in Pascal must end with a semicolon.

**Lines 26-41:** GETFILENAME tries to find your original file. Two variables are declared. They operate only within this procedure. Other procedures could declare the same variables, or they could be declared at the beginning of the program, but Pascal will treat them as entirely separate.

At Line 30, notice that you let a variable be filled with

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## ENDNOTES

a content by using a “:=”, not just a “=”.

Lines 31-40 are part of a repeat loop: those lines are executed until the condition at line 40 comes true. In this case, the condition is that the boolean variable “ok” be true and not false. (The opposite condition would be “Until not ok”.)

Line 32 prints a message and leaves the cursor on the same line (unlike “writeln”). Line 33 waits for you to input a file name and then makes the variable “filename” equal to it.

Line 35 takes care of the possibility that you did not write your file name in upper case letters. It loops around however many letters there are in the file name you typed in. “X” starts at one and is increased in each go-round. Turbo treats every string as an array (if you don’t know what an array is, skip this sentence) and lets you access each letter by giving its position in the array. So, if EXAMPLE is your file name, “filename[1]” equals “E” and “filename[4]” equals “M.” (“Filename[0]”, by the way, contains the number of letters in the string.) “Ucase” turns whatever letter is in the parentheses into upper case.

Line 36 tells the computer that you want the file variable “fv” to be used in conjunction with the file name you have entered. Line 37 has the computer look for that file. The comment “(\*\$I-\*)” turns off the compiler’s error-checking routine so you can use your own instead. The “(\*\$I+\*)” turns it back on again. Line 38 takes advantage of a function Turbo gives you: if the file isn’t there, IOresult will be greater than zero. In such a case, your program writes an error message on line 39 and at line 40 loops back to ask for another file name.

Lines 43-53: OPENNEW sets up the files to receive the new, endnote-less version of your original and your endnotes-only file. At line 46 it looks at the name of your original. If it has an extension (e.g., EXAMPLE.TXT instead of just EXAMPLE), it strips what is after the dot and replaces it with “.FMT” (line 47) and “.FTN” (line 48). Then it opens EXAMPLE.FTN for the endnotes (lines 49-50) and EXAMPLE.FMT for the de-footnoted text (lines 51-52).

Lines 55-63: MAKESCREEN sets up the screen to receive information while ENDNOTE runs. Since ENDNOTE is not particularly swift (it took 1 minute 46 seconds to do a 24K file—4,168 words—with 22 footnotes), it’s comforting to be told that things are moving along. It also has you input what number you want your footnotes to begin with, and at line 60 it stores that number in the variable “footnumb”.

Lines 65-70: WRITESUPERScript does just what it sounds like: it writes the number of the footnote into EXAMPLE.FMT and EXAMPLE.FTN, surrounding it with what you chose at lines 5-6. Notice that you use the file variables previously assigned in OPENNEW to indicate which file you want the data written to. First it boosts by one the number of the footnote you are working on (this is shown on line 67). (“Succ(x)” means “get the successor to the number X”.)

Now the procedures are finished and the main program begins at line 72. It begins with "begin" and ends with "end".

**Lines 75-76:** These two lines initialize variables. Turbo does not do this for you automatically. If you want to use something other than a backslash to

## *MAKESCREEN sets up the screen to receive information while ENDNOTE runs.*

indicate the beginning and end of a footnote, change what is in the brackets in line 76, remembering to include not only the delimiter you want, but also the delimiter+128 (because, to put it in CompuSpeak, WordStar sometimes sets the high bit).

**Lines 78-81:** Now the program calls four procedures in a row. The last one, MAKESCREEN, has you tell it what number footnote to start with. At line 83 you lower that number by one ("pred[x]" means "get the predecessor of the number X"), which you do because at line 67 you increase the number.

**Lines 85-91:** At line 85 the major loop of the pro-

gram begins. It reads EXAMPLE character by character, looking for members of the set called "delimiter," which in this version have been defined (line 76) as the backslash and the backslash with its high order bit set. If the character it is reading is a backslash, it sets the boolean variable "backslash" to true (line 89); if it is not a backslash, it sets "backslash" to false (line 90). If you've hit your first backslash, then you are about to begin reading a footnote; if it is your second, then you are about to resume reading the regular text. To signal this, you want to reverse the value of the boolean InEndNote that keeps track of whether the present filechr is to be written to .FMT or .FTN.

**Lines 94-107:** At line 94, you begin doing what you must if the present character is a backslash, indicating that you are either beginning or ending an endnote. If you are beginning one—i.e., if InEndNote is true—then you want to increase your counter of how many endnotes there are (line 97). Then you will update the screen display by going to coordinates *x* and *y* (*gotoxy*) and writing how many footnotes there now are (line 98). Now you will write the superscript (line 99). But if you are not in an endnote, then you have just finished one and want to write two carriage returns into .FTN to put a space between the footnotes (lines 104-106).

(continued on page 61)

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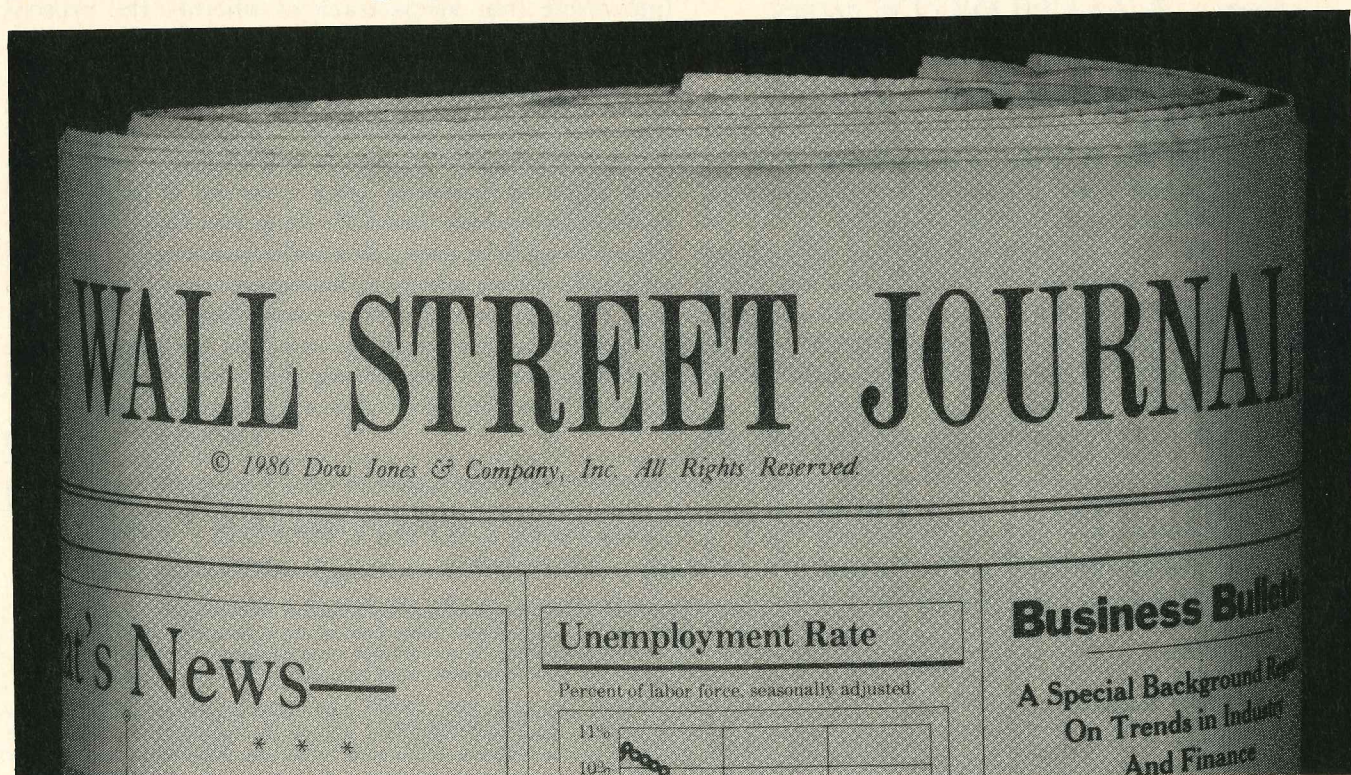
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# Do It Your Way

If you don't like WordStar's commands — change them!

by Robert J. Sawyer

**W**ordStar unfriendly? It seems that way when you start out. Sure, marking a block with ^KB and ^KK has a weird logic to it, since B is the beginning letter of the word "block" and K is the ending letter. And jumping to the right margin with ^QD follows, sort of, from ^D being the command for move right one word. But ^OG for temporary indent? Even loyal WordStar users like me have trouble with that one.

Fortunately, you don't have to let WordStar bully you into doing things its way. For instance, I mark a block by enclosing it in square brackets. I go to the right edge with <ESC><RIGHT ARROW>. And temporary indents are a breeze with <ESC><TAB>. What's more, everything can still be done the old way, too. My wife only uses WordStar occasionally, so that keeps her happy.

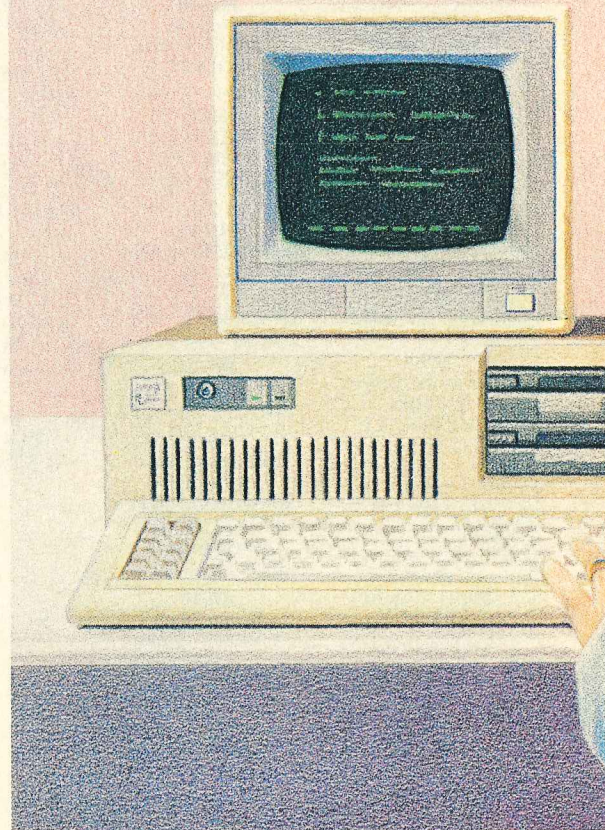
If you've got a keyboard macro program like SmartKey or ProKey, fine. But you don't need one to get these extra commands. All it takes is some simple changes to WordStar's built-in keyboard tables.

Each command is represented in one of these tables by a string of four bytes. The first byte is the ASCII hexadecimal equivalent of the first keystroke. If the command is one keystroke long, the second byte is zero. If it's a two-keystroke command, the second byte is the hex equivalent of the second keystroke.

The third and fourth bytes cause WordStar to jump to the part of its code that knows how to perform whatever function the keystrokes represent.

I minored in psychology, so forgive me for thinking of these bytes in terms borrowed from B.F. Skinner. The first two are the stimulus: the keystrokes you give to WordStar. The second two are the response: what those keystrokes cause WordStar to do.

WordStar has three keyboard tables. First is the No-File Table (Listing 1, this page). It contains stimulus-response pairs for the Opening Menu commands,



including D ("Open a Document") and R ("Run a Program").

LISTING 1: NOFTAB: The Opening Menu Command Table

OFFSET OF 1ST BYTE	KEY STROKES	HEX EQUIVALENTS	COMMAND DESCRIPTION
0	D	04 00	open a Document file
4	N	0E 00	open a Non-document file
8	H	08 00	set Help level
C	X	18 00	eXit to system
10	P	10 00	Print a file
14	M	0D 00	run MailMerge
18	Y	19 00	delete a file
1C	F	06 00	File directory on/off
20	Z	1A 00	scroll file directory up
24	W	17 00	scroll file directory down
28	L	0C 00	change Logged disk drive
2C	R	12 00	Run a program
30	O	0F 05	cOpy a file
34	E	05 00	rEname a file
38	V	16 00	UNUSED COMMAND!
3C	S	13 00	run SpellStar

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Second is the Editing Table (Listing 2 on pages 54-55). It contains stimulus-response pairs for commands used within a document, such as ^F (jump right one word) and ^OT (hide ruler line).

Finally, there's the Extra Table (Listing 3 on page 56). In factory-fresh WordStar, the Extra Table is empty. It's there so you can play matchmaker, pairing up your own stimuli with any responses WordStar is capable of.

### Editing the tables

You can edit the tables using the installation program that comes with WordStar. MicroPro made it easy by giving each internal address a name, or *label*.

No-File Table labels are in the form NOFTAB+n, where *n* (the *numeric offset*) is the hexadecimal count of how many bytes the address is the table. The first byte of the No-File Table is NOFTAB+0, or simply NOFTAB. The second byte is NOFTAB+1, and so on.

Editing Table bytes have labels in the form VTAB+n. And Extra Table labels are in the form XTAB+n.

If you have WordStar 3.3, the installation program is WINSTALL.COM. If you have an earlier version, it's INSTALL.COM. (By the way, keyboard tables for Perfect Writer Version 1 can be modified, too. See the appendix on "Changing the Command Keys" in the Perfect Writer/Perfect Speller manual).

Old hands at patching who prefer DDT.COM (CP/M) or DEBUG.COM (MS-DOS) will need the following absolute hex address information to get started. In CP/M WordStar 3.0 and MS-DOS WordStar 3.3, NOFTAB begins at 0430h; VTAB at 0481h; and XTAB at 0649h. In CP/M WordStar 3.3, NOFTAB begins at 043Ch; VTAB at 0489h; and XTAB at 0655h. By adding the offsets given in the listings to these base figures, you can determine the absolute hex addresses for each of WordStar's stimulus-response pairs.

If you haven't customized WordStar for your printer

## LISTING 2: VTAB: The Editing Command Table

Beginning at VTAB is the code defining WordStar's editing command stimulus-response pairs. If you've got CP/M, use the offsets in the left column for WordStar version 3.0 and the right column for version 3.3. If you've got MS-DOS, use the offsets listed in **boldface**.

OFFSET OF 1ST BYTE		KEY STROKES	HEX EQUIVALENTS	COMMAND DESCRIPTION
CPM 3.0	CPM 3.3			
0	0	^Q.	11 FF	deactivated ^Q flash menu
4	4	^K.	0B FF	deactivated ^K flash menu
8	8	^O.	0F FF	deactivated ^O flash menu
C	C	^J.	0A FF	deactivated ^J flash menu
10	10	^H	0A 08	set help level
14	14	^S	13 00	non-destructive backspace
18	18	^H	08 00	non-destructive backspace
1C	1C	^D	04 00	move one character right
20	20	^A	01 00	move one word left
24	24	^F	06 00	move one word right
28	28	^X	18 00	move one line down
2C	2C	^E	05 00	move one line up
30	30	^QS	11 13	move to column 1
34	34	^QD	11 04	move to right margin
38	38	^QX	11 18	move to screen bottom
3C	3C	^QE	11 05	move to screen top
40	40	^QB	11 42	move to beginning of block
44	44	^QK	11 4B	move to end of block
48	48	^QP	11 50	move to previous position
4C	4C	^QV	11 56	move to source
50	50	^Q0	11 30	move to place marker 0
54	54	^Q1	11 31	move to place marker 1
58	58	^Q2	11 32	move to place marker 2
5C	5C	^Q3	11 33	move to place marker 3
60	60	^Q4	11 34	move to place marker 4
64	64	^Q5	11 35	move to place marker 5
68	68	^Q6	11 36	move to place marker 6
6C	6C	^Q7	11 37	move to place marker 7
70	70	^Q8	11 38	move to place marker 8
74	74	^Q9	11 39	move to place marker 9
78	78	^QR	11 12	move to beginning of file
7C	7C	^QC	11 03	move to end of file
80	80	^QF	11 06	find
84	84	^QA	11 01	find and replace
88	88	^QL	11 0C	find SpellStar flag
8C	A4	^L	0C 00	repeat last find
90	8C	^QW	11 17	continuous scroll up
94	90	^QZ	11 1A	continuous scroll down
98	A8	^Z	1A 00	window down one line
9C	AC	^W	17 00	window up one line
A0	B0	^R	12 00	window up one screen
A4	B4	^C	03 00	window down one screen
A8	B8	<DEL>	7F 00	destructive backspace
AC	BC	^_	1F 00	destructive backspace
B0	C0	^G	07 00	delete character
B4	C4	^Y	19 00	delete line
B8	94	^Q<DEL>	11 7F	delete to beginning of line
BC	98	^Q^_	11 1F	delete to beginning of line
C0	9C	^QY	11 19	delete to end of line
C4	C8	^T	14 00	delete word right
C8	CC	^V	16 00	insert on/off
CC	D0	^B	02 00	reformat
D0	A0	^QQ	11 11	repeat next command
D4	D4	^N	0E 00	insert line
D8	D8	^I	09 00	tab
DC	DC	^M	0D 00	carriage return
E0	E0	^P	10 00	send a print control (eg. ^PS)



OFFSET OF 1ST BYTE		KEY STROKES	HEX EQUIVALENTS	COMMAND DESCRIPTION
CPM 3.0	CPM 3.3			
E4	E4	~KH	0B 08	hide block on/off
E8	E8	~KB	0B 42	begin block
EC	EC	~KK	0B 4B	end block
F0	F0	~K0	0B 30	set place marker 0
F4	F4	~K1	0B 31	set place marker 1
F8	F8	~K2	0B 32	set place marker 2
FC	FC	~K3	0B 33	set place marker 3
100	100	~K4	0B 34	set place marker 4
104	104	~K5	0B 35	set place marker 5
108	108	~K6	0B 36	set place marker 6
10C	10C	~K7	0B 37	set place marker 7
110	110	~K8	0B 38	set place marker 8
114	114	~K9	0B 39	set place marker 9
118	118	~KV	0B 16	move block
11C	11C	~KC	0B 03	copy block
120	120	~KY	0B 19	delete block
124	124	~KN	0B 0E	column mode on/off
n/a	128	~KZ	0B 1A	UNUSED COMMAND! (3.3 only)
128	12C	~U	15 00	interrupt
12C	130	~KX	0B 18	save and exit
130	134	~KD	0B 04	save and close
134	138	~KS	0B 13	save and continue
138	13C	~KQ	0B 11	abandon file
13C	140	~KR	0B 12	read from a file
140	144	~KW	0B 17	write to a file
144	148	~KJ	0B 0A	delete file
148	14C	~KF	0B 06	file directory on/off
14C	150	~KP	0B 10	print a file
150	154	~KL	0B 0C	log disk drive
154	158	~KO	0B 0F	copy a file
158	15C	~KE	0B 05	rename a file
15C	160	~OL	0F 0C	set left margin
160	164	~OR	0F 12	set right margin
164	168	~OI	0F 09	set tab
168	16C	~ON	0F 0E	clear tab
16C	170	~OF	0F 06	read ruler from document
170	174	~OW	0F 17	word-wrap on/off
174	178	~OJ	0F 0A	justification on/off
178	17C	~OV	0F 16	variable tab on/off
17C	180	~OD	0F 04	print control display on/off
180	184	~OT	0F 14	ruler line on/off
184	188	~OP	0F 10	page break on/off
188	18C	~OE	0F 05	soft hyphen on/off
18C	190	~OH	0F 08	hyphen help on/off
190	194	~OG	0F 07	paragraph tab
194	198	~OX	0F 18	margin release on/off
198	19C	~OC	0F 03	center line
19C	1A0	~OS	0F 13	set line spacing
1A0	1A4	~JD	0A 04	help with print directives
1A4	1A8	~JS	0A 13	help with status line
1A8	1AC	~JF	0A 06	help with flag characters
1AC	1B0	~JP	0A 10	help with place markers
1B0	1B4	~JB	0A 02	help with paragraph reform
1B4	1B8	~JM	0A 0D	help with margins, spacing, tabs
1B8	1BC	~JI	0A 09	help index, entering text
1BC	1C0	~JV	0A 16	help with moving a block of text
1C0	1C4	~JR	0A 12	help with ruler line
n/a	1C8	~JA	0A 01	UNUSED COMMAND! (CP/M 3.3 only)

**LISTING 3: XTAB: The Extra Command Table**

Starting at XTAB are 36 empty bytes of code to accommodate up to nine new keystroke commands such as (ESC) + (UP ARROW) = go to the top of file.

OFFSET OF 1ST BYTE	KEY STROKES	COMMAND DESCRIPTION
0	00 00	user-definable stimulus-response pair 1
4	00 00	user-definable stimulus-response pair 2
8	00 00	user-definable stimulus-response pair 3
C	00 00	user-definable stimulus-response pair 4
10	00 00	user-definable stimulus-response pair 5
14	00 00	user-definable stimulus-response pair 6
18	00 00	user-definable stimulus-response pair 7
1C	00 00	user-definable stimulus-response pair 8
20	00 00	user-definable stimulus-response pair 9

or set the program's defaults, see Ted Silveira's excellent tutorial "WordStar Deluxe" in the July/August 1985 *PROFILES*.

Place a copy of WS.COM and either INSTALL.COM or WINSTALL.COM and its companion WS.INS on a working disk in drive A. Type **WINSTALL** or **INSTALL** and follow the on-screen prompts.

To change WordStar's keyboard tables you have to access the *label patcher*. MicroPro chose to hide it in most copies of WordStar 3.3. Once you reach the INSTALLATION MENU, type a plus sign (+). It's not listed as an option, but WordStar understands it anyway. The screen will fill with step-by-step instructions on how to use the label patcher, then take you to the patcher itself.

Getting to the label patcher is different in WordStar 3.0. The program will ask you a series of questions about printer types, communications protocols, and so on. Simply type **U** for no change at each of these menus and **Y** for yes when the program asks you to confirm your choice. After a few such exchanges, you'll be asked "Are the modifications to WordStar now complete?" Type **N** for no and the program will present the label patcher.

### Changing the opening menu

MailMerge is a much more versatile printing utility than WordStar's **P** command. It can print multiple copies, double-space hardcopy (use **.PF ON** and **.LS 2** at the top of your file), and insert your letterhead automatically (use **.FI file name**).

I need the combined WordStar/MailMerge printing options all the time, but didn't want to retrain myself to hit **M** instead of **P** to print. So I changed one byte in the No-File Table.

The No-File Table is 64 bytes long, four bytes for each of the 16 opening menu commands. From Listing 1, you can see that NOFTAB+14 is the first of the four bytes that control how to summon MailMerge.

In the Installation program, ask to see NOFTAB+14. You'll have to add a colon to the label. In version 3.3, the colon precedes the label, so you type **:NOFTAB+14**. In version 3.0, the colon follows the label but precedes the

numeric offset, so type **NOFTAB:+14**.

You'll see that the value for that byte is 0D, which is hexadecimal for **^M** (there's a hex conversion chart in your *Kaypro User's Guide*).

Why **^M** instead of **M**? Most WordStar commands can be typed three ways: as capital letters (such as **M** for run MailMerge or **^KS** for save a file); as lower-case letters, (**m** or **^ks**); or as control keys (**^M** or **^K^S**). The keyboard tables only contain one of these forms. Which form it is varies from command to command.

If you like, you can look at the next four bytes. NOFTAB+15 contains 00. It's empty because this is a single keystroke command (the control key isn't included when counting strokes). The next two bytes, NOFTAB+16 and NOFTAB+17, are the response: they cause WordStar to invoke MailMerge.

To make **P** be the stimulus that summons full-featured printing, change NOFTAB+14 from 0D to **10**, which is hexadecimal for **^P**. Now, whether you type **P** or **M** from the Opening Menu, you'll always get all of WordStar's printing capabilities.

If you still want the anemic print abilities of the **P** command, you can change NOFTAB+10 to **0D**. Then **P** will give you Power printing (with MailMerge) and **M** will give you Mild printing using WordStar alone.

You'll also notice in Listing 1 that **V** is a main menu option. It doesn't do anything, though. I don't know what feature MicroPro was thinking of putting in there, but my guess is a View option that would let you examine a document without being able to change it (particularly useful on multi-user systems).

### Modifying editing commands

Sometimes it's helpful to have multiple ways of accomplishing the same thing; that is, having two or more stimuli that elicit the same response.

WordStar has some examples of this built in. Backspace can be generated by both **^S** and **^H**. Delete can be accomplished by hitting the **<DEL>** key (which sends 7F hexadecimal) and by **^\_** (1F hex). And since there are two ways to delete, there are two ways to delete-to-beginning-of-line, **^Q<DEL>** and **^Q^\_**. MicroPro provided an alternative delete because some computers, like the Osborne 1, don't have **<DEL>** keys.

If you always use **<DEL>** for delete, then **^\_** is being wasted. There's no point carrying around code that isn't doing any work. I changed my **^\_** to do the same thing as **^QP**, which is WordStar's default way of saying "move to the previous cursor position." Since **^QP** is often necessary after **^KS** (save and resume) or **^B** (reformat a paragraph), having a shorter way to get the same response is a real timesaver.

**^QP** begins at VTAB+48. The first byte you'll see there is 11, which is hexadecimal for **^Q**. The second byte is 50, hex for **P**. Take note of the next two bytes (the response part), which vary from version to version.

Now go to **^\_**. It starts at VTAB+AC in CP/M WordStar

3.0 and MS-DOS WordStar 3.3 and at VTAB+BC in CP/M WordStar 3.3.

The first byte there is 1F, hex for ^\_. The second is 00, because this is a single keystroke command. The next two bytes vary from version to version. Whatever they happen to be doesn't matter. Replace them with the values you found for the response bytes for the ^QP command. Now the stimulus ^QP and the stimulus ^\_ will both give the same response: jump to previous cursor position.

### Flash menus

The first four stimulus-response pairs in the Editing Command Table represent what I've called deactivated flash menus (Listing 2). There's no way to use these commands as they exist now, because the second keystroke for each has been set to FF, which doesn't correspond to any key. If you want to see what they do, change VTAB+1, VTAB+5, VTAB+9, and VTAB+D from FF to 5C.

When you boot your new WordStar, open a file and type ^G^. Regardless of what help level you use, you'll see a menu of ^Q commands come up on your screen, then disappear a moment later of its own accord. Likewise, ^K^, ^O^, and ^J^ will each flash the appropriate menu. If you can read fast enough, you might find them useful for checking things like whether column mode or soft hyphen entry are on or off.

Be warned that activating these menus disables WordStar's built-in help function. Once you've seen what they do, you'll probably want to put them back the way they were.

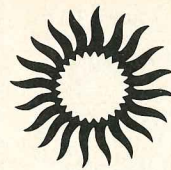
### Adding personal commands

The Extra Table is set aside for your own keystroke combinations. You can patch in up to nine sets of four bytes, matching up any one- or two-keystroke stimulus that WordStar doesn't already use with any response the program is capable of.

Listing 4, on page 58, contains the patches for my seven favorite new WordStar commands, some of which I mentioned at the beginning of the article. When patching values into the Extra Table, always begin with XTAB+0 and work your way toward the end. WordStar will think the rest of the table is empty if the first of any group of four bytes is 00.

The first set of patches is my favorite: super arrow keys for large cursor movements. To use these keys, tap the <ESC> key, *release it*, then tap the appropriate arrow. You'll fly around your file with the greatest of ease.

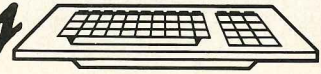
(Note to users of The Word Finder thesaurus program from Writing Consultants: with the super arrow keys installed, the thesaurus can't recognize words in certain screen positions unless you put the cursor on the first character. The fix: change the summon-thesaurus command from <ESC> <ESC> to ^^^. You'll have to dig into the installation program ADDSF.COM



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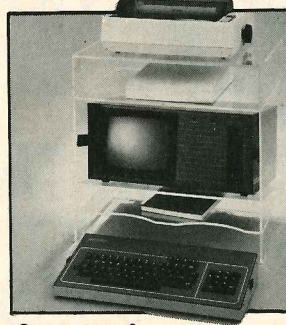
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## YOUR WAY

### LISTING 4: Suggested Patches

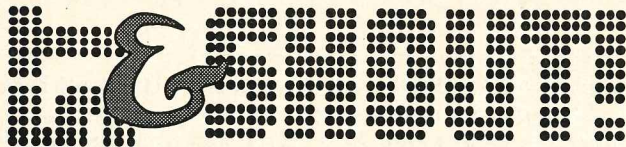
Super Arrow Keys			
Address	CP/M WS 3.0	CP/M WS 3.3	MS-DOS WS 3.3
<ESC> followed by <LEFT ARROW> To column 1 (same as ^QS)			
XTAB+0	1B	1B	1B
XTAB+1	13	13	08
XTAB+2	F1	67	BA
XTAB+3	63	64	7E
<ESC> followed by <RIGHT ARROW> To right margin (same as ^QD)			
XTAB+4	1B	1B	1B
XTAB+5	04	04	04
XTAB+6	D3	49	95
XTAB+7	63	64	7E
<ESC> followed by <UP ARROW> To beginning of file (same as ^QR)			
XTAB+8	1B	1B	1B
XTAB+9	05	05	05
XTAB+A	18	98	D1
XTAB+B	6B	6B	87
<ESC> followed by <DOWN ARROW> To end of file (same as ^QC)			
XTAB+C	1B	1B	1B
XTAB+D	18	18	18
XTAB+E	1E	9E	D7
XTAB+F	6B	6B	87
Square Bracket Block Delimiters			
Address	CP/M WS 3.0	CP/M WS 3.3	MS-DOS WS 3.3
[ Begin block (same as ^KB)			
XTAB+10	5B	5B	5B
XTAB+11	00	00	00
XTAB+12	1C	9C	8C
XTAB+13	6A	6A	86
] End block (same as ^KK)			
XTAB+14	5D	5D	5D
XTAB+15	00	00	00
XTAB+16	1D	9D	8D
XTAB+17	6A	6A	86
Easy Temporary Indent			
Address	CP/M WS 3.0	CP/M WS 3.3	MS-DOS WS 3.3
<ESC> followed by <TAB> Paragraph tab (same as ^OG)			
XTAB+18	1B	1B	1B
XTAB+19	09	09	09
XTAB+1A	48	48	48
XTAB+1B	02	02	02

to do this. For the CP/M version, change the bytes at addresses 537Dh and 5384h from 1B to 1C.)

The next group of patches lets you mark the beginning of a block with the [ key and the end with the ] key.

What if you want to type the square brackets in your file? Simply precede them with a ^P and they will appear.

Part of my work involves script writing, so I use WordStar's temporary indent ability a lot. MicroPro calls this the "paragraph tab" command and has provided ^OG as the way to invoke it. ^OG is an awkward series of keystrokes that doesn't seem to stand for anything. So I made the final patch in Listing 4, adding



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<ESC> followed by <TAB> as another way to do this.

Now if you type <ESC>, release it, then hit a <TAB>, your left margin will be temporarily reset to the first tab stop in your ruler line. Type <ESC>-<TAB> again, and it'll be set to the second tab. When you type a RETURN, the left margin will go back to its default value.

There are still two places left in the Extra Table for commands of your own. What if you need more? Well, unless you use SpellStar (a program I loathe), you can replace the Find-SpellStar-Flag command, ^QL, with

### *Super arrow keys for large cursor movements is a patch that lets you fly around your file.*

whatever you want. It's found at VTAB+88. And if you don't use WordStar's help menus, you can rewrite the code for the deactivated flash menus (beginning at VTAB+0, +4, +8, and +C). You can also rewrite all the ^J commands, starting at VTAB+1A0 in CP/M WordStar 3.0 and at VTAB+1A4 for all versions of WordStar 3.3. WordStar 3.3 also has an unused ^KZ command (who knows what new block function MicroPro never got around to finishing?). It's at VTAB+128. Finally, CP/M WordStar 3.3 has an unused help command, ^JA, at VTAB+1C8.

### *WordStar and disabled typists*

Last summer my right hand got mangled up pretty badly. I discovered that WordStar was unforgiving of one-handed typists because of its heavy use of the control key. With your pinky on <CTRL>, it's a long reach to I, O, P, K, L, and M. Fortunately, changing the keyboard tables provides a solution for that, too.

There's no need to ever hit ^I, since <TAB> does the same thing, and ^M is the same as <RETURN>.

But typing ^P with one hand is almost impossible. Try this: change VTAB+E0 from 10, which is ^P, to 5C, which is \. This will allow you to toggle underlining with \s (type a backslash, release it, then type an s). To get bold, type \b, and so on. The letter part of the commands can be either upper or lower case.

^L is another keyboard-spanning command. Try replacing it with an equals sign (=). Call up VTAB+8C (CP/M WordStar 3.0 and MS-DOS WordStar 3.3) or VTAB+A4 (CP/M WordStar 3.3) and change 0C to 3D. Then, when you want to repeat the last Find or Find-and-Replace operation, hit the equals key.

The last two are trickier because they're the first keys of two-key editing commands. Change the commands that begin with ^K to begin with /. Starting at VTAB+E4, change each occurrence of 0B (hex for ^K) to 2F (hex for /). From then on, you'll mark blocks with /b

and /k, move them with /v, and hide them with /h.


Finally, ^O commands can be changed to ' commands. They begin at VTAB+15C in CP/M WordStar 3.0 and MS-DOS WordStar 3.3 and at VTAB+160 in CP/M WordStar 3.3. The hex equivalent of ' is 60. This will let 'r change the right margin, 't hide the ruler line, and so on.

To get an equals sign in your document, type \=. Likewise, any of the other keys you've redefined can be entered into your text simply by preceding them with a backslash.

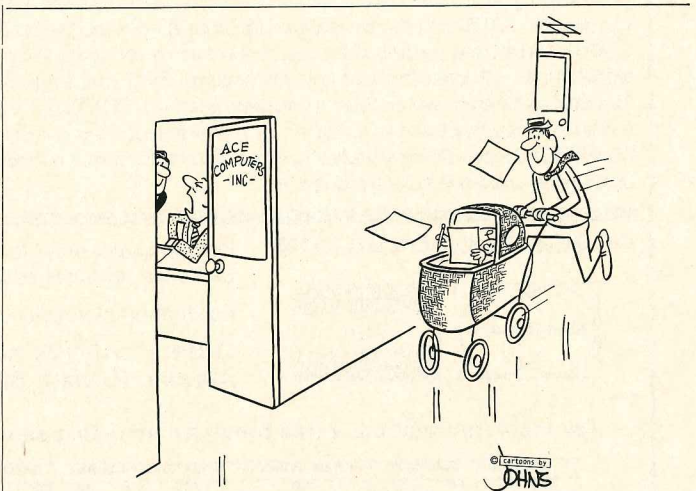
If your hands are smaller than mine, you might also have trouble reaching ^J for help. That's no problem on CP/M Kaypros: the <LINE FEED> key does the same thing.

If you use WordStar at help level 3 or 2, you can still get the help menus to appear by changing the first byte of the ^K and ^O deactivated flash menus (VTAB+4 and VTAB+8) from 0B and 0F to 2F and 60. Make sure the second byte in each stimulus pair is set to FF. No patch is needed to make \ summon the Print Menu.

### *Other applications*

There are lots of other useful changes that can be made to WordStar's keyboard tables. If you're having trouble remembering WordStar's arcane commands, try coming up with your own mnemonic keystroke combinations. If you're a Perfect Writer user, you could modify WordStar's commands to resemble that program's. If you use SmartKey or a similar program to redefine your keyboard to the Dvorak layout, you might modify the Editing Command Table so that WordStar's cursor keys still form the same convenient diamond shape near the control key. Happy patching. 

*Robert J. Sawyer is a freelance journalist and word processing consultant in Toronto, Canada. He is an active member of the Science Fiction Writers of America.*



"Jim, child prodigies in the computer field aren't particularly new. How old is this one? Twelve? Ten?"

# Little Mysteries

## The 2K minimum

by David Weinberger

**Question:** If you have a Kaypro II with single-sided drives, the smallest file you can save takes up 1 kilobyte (1K). If you have a Kaypro with double-sided drives, the minimum file size is 2K. Why?

**Answer:** Part of the Basic Input/Output System (BIOS) of the CP/M operating system is the Disk Parameter Block (DPB). This contains important information about how your disk has been divided up (by formatting it) into usable areas that can be easily referenced by the disk drives. The disk is divided into concentric rings called tracks, and pizza slices called sectors. Each sector contains 128 bytes. A double-sided disk has twice as many tracks as a single-sided one. When your system warm or cold boots, it checks the DPB; thus, if you try to switch types of disks without warm-booting first, your machine will get confused.

## *Drives operate on 128-byte blocks of information.*

Drives operate on 128-byte blocks of information. For example, if you want to change a single byte on a disk, you will have to read a cluster of 128 bytes (i.e., a sector) into computer memory, make your change in the cluster in memory, and then read all 128 bytes back on to the disk. The alternative would be for the machine to pluck a byte from the disk, process it, pluck another, and so on. But since the disk drive is the second slowest part of the entire system—for the disk is a mechanical device that does not move somewhere near the speed of light, as do the electrons coursing through the electronic portions of the computer—this would slow the system down intolerably.

CP/M, however, looks at larger clusters of data (called “blocks”), for this means even fewer time-consuming calls to the disk drives have to be made. The smallest unit CP/M deigns to deal with is eight 128-byte sectors, and  $8 \times 128 = 1024$ , which is exactly 1K.

If you look at your disk directory, by using DU or some other disk-doctor program, you will see that the addresses of files on a disk are noted by blocks. Each block is numbered, and the number takes up one byte. Because of the nature of a byte, the highest number it can represent is 255. Now, if each block is a cluster of 8 sectors (=1024 bytes, or 1K), then the maximum number of bytes the directory can address is  $255 \times 1K$ , or 255K. (We should add one, however, because 0 can be an address of a block also.)

That was fine for the original single-sided Kaypros.

The Kaypro designers had decided that it would not tax the disks or the drives too much to divide the disk into 40 tracks, and each track into 40 sectors. Multiply 40 tracks times 40 sectors of 128 bytes each, and you find a single-sided Kaypro disk can store 204,800 bytes, which equals 200K. (Ten of those kilobytes are then sacrificed to CP/M information.) The 256K of addressable disk memory was more than sufficient.

But double-sided Kaypro disks can store twice as much information, or 400K. If the highest block number can only point to 256K, 144K of the disk's storage capacity would be wasted.

The solution? Have the DPB declare that each block contains 16 sectors (=2K) rather than 8. This means we have more than enough block numbers to take care of all the data on the disk. But it also means that the smallest file—even one that contains only a single datum of information—would have to be addressed by a block number that points to an entire 2K of space on a disk. Thus, the smallest file occupies 2K. †

### ENDNOTES

*(continued from page 49)*

**Lines 110-111:** At line 110 you do what you must if the present character is not a backslash. In that case, if you are in an endnote (i.e., InEndNote is true), then you want to write the character to .FTN; else, if you are not in an endnote, you want to write it to .FMT (line 111).

**Lines 112-119:** This ends the loop. Now you close all three files you have been using to update the disk directory (line 117). In fact, you really don't have to close a file you have only read from, such as your original EXAMPLE, but the manual recommends that you do it anyway, just in case you're on a multi-user system.

**Lines 121-136:** After printing on the screen how many footnotes were found (lines 121-131), you check to see if you are still in an endnote (line 134). If you are, then there was an unmatched pair of backslashes, which may indicate an error.

### Testing and modification

Now compile the program, test it, and use it—or even better, adapt it to your needs. Put in a help screen if you would find it more convenient. Give a menu of possible superscript characters (^T, brackets, condensed print characters, etc.). Have it count characters or words and report when it's done. Have it count lines and tell you what page it is working on. Write a utility that rejoins the .FMT and .FTN files, allowing you to erase your original file and make revisions in .FMT.

In short, see how ENDNOTE works for you, think about what else you need from it, and make the appropriate changes. After all, learning to program is just the means to an end—the goal is to make your own tools. †

*David Weinberger has a Ph.D. in philosophy and teaches philosophy, logic, and computer science. He has been published in Creative Computing, Popular Computing, and Maclean's (a Canadian news-weekly).*

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# Tip Trader

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## Our mistake

Well, somebody goofed. In my contribution to the "Tip Trader" section, in May's issue, there was an error in the program as published.

In the POLAR COORDINATES program line 35 is incomplete. The complete line reads: 35 PRINT CHR\$(27); "L"; CHR\$(82); CHR\$(112); CHR\$(82+X); CHR\$(112-Y); Running the program as published produces some weird results.

Russell Kirkpatrick  
Eules, Texas

*Ed. Note: The missing material was inadvertently dropped during production of the magazine. We apologize for the error.*

## Retrieving your work

A common criticism of WordStar is that it is unable to hold deleted text in a buffer. Hence, once a block is deleted, it can only be recovered from the initial .BAK file. There is a sequence of keys that can be used to eliminate this problem by first storing the block in a file called SAVE.TXT, which can be recalled at any time.

The delete sequence is **^KJ SAVE.TXT**, then **^KW SAVE.TXT**, and finally **^KY**. The first part of the command deletes the current buffer, while the next step writes the marked block to disk. Finally, the block is deleted, but not until the entire block is saved.

To recall the text accidentally erased, place the cursor at the spot where the block should appear, then type **^KR SAVE.TXT**. Note that the entire text is back exactly where it belongs.

This sequence will only work when deleting a marked block of text; it will not work with the DElete key, **^G**, or **^T** deletions. However, accidental erasure of a word is not as potentially devastating as deleting a paragraph or page.

If you have a key definition program such as SmartKey, these

sequences become even easier to use. For example, in keeping with the WordStar convention of the "Y" key representing deletion, I use **<supershift>Y** to delete the block, and **<supershift>U** to Unerase.

Please note that the first time you use the delete sequence, it will not work because WordStar will not have the file SAVE.TXT. All you need to do is create one with one character in it. Once it's created, you're in business. Remember, the only limit to the size of the block you save is the available disk space.

Steven L. Sincoff  
Roseville, California

## Perfect Writer and SWP

I enjoyed Durwin Schmitt's article about RAM disks in the May issue. He did an excellent job of covering the subject and addressed most of the questions that SWP is asked.

Here is a tip about operating Perfect Writer on a RAM disk.

Perfect Writer (and Calc) uses a virtual memory technique that moves the file being edited to a disk file on the logged drive called PW.SWP. (This file is used to allow you to edit files that are too large to fit in the computer's memory. Once the file is copied to PW.SWP, the file being edited is closed and Perfect Writer works on the image in the PW.SWP file.)

When the text is saved, Perfect Writer reopens the original file and writes the contents of PW.SWP to it. As a result of this trick, it is not necessary to copy the files you want to edit to the RAM disk.

For example, with the RAM disk defined as drive A and the Perfect Writer program copied to it, you can edit a file on another drive by specifying the drive identifier along with the file name. **C:TEXT.DOC** will open TEXT.DOC on drive C and copy it into PW.SWP on drive A. Everything will work normally, except it will be much faster. When you save the text with **^X^S**, the

contents of PW.SWP is written back to TEXT.DOC on drive C. Or, you can write the text to another file—be sure to include the drive identifier with the new file name.

Be sure and move the changed files back to a real disk for permanent storage.

Richard Lamb  
SWP Microcomputer Products, Inc.  
Fort Worth, Texas

## Speeding up your start-up

I've noticed over time various comments on ways to organize the auto start-up, including Tom Enright's comments in the June 1985 issue. There is a much easier way that has not yet been mentioned.

The copy command on the CP/M disk contains the main menu with one of the options labelled "O OTHER." If this is entered, a list of further options is presented, one of which is SYSGEN. Pressing **S** for SYSGEN will bring up a short explanation about the CCP command line. If the name of the file required to auto-start is entered at this point—instead of a RETURN—then that file will load automatically when the disk is used from reset.

I use the XtraKey program, and I have arranged my disks so that the same XtraKey code (**\w**) on all of the program disks will activate a "A:\C SUBMIT W" sequence. In each case the W.SUB file contains slightly different instructions, depending on whether I am loading WordStar, dBASE II, or MITE. This obviates the need to push a lot of keys around and considerably reduces the tedium of shifting disks.

Martin J. Slater  
Tempe, Arizona

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# Beginner's Luck

by William Murdick

Using The Word+

**T**he Word+ is one of the programs that may have been bundled with your Kaypro. Its main function is to find spelling and typographical errors in your text. It does this by making a list of all unique words in your file, comparing that list to its dictionary, and presenting you with a list of all words that don't match.

Although The Word+ can be used with other word processors, this article will focus on using it with WordStar.

For this tutorial, we'll assume you have a *working* copy of The Word+ on a separate disk from WordStar, and we'll explain its use by walking you through a spelling check on an imaginary file named JONES.MEM in drive B. We'll pretend that you've already written this file with WordStar and saved it with ^KX, which puts you back at the A0> prompt.

## Starting The Word+

Once you have the A> prompt, remove your WordStar disk from drive A and put in your Word+ disk (owners of hard disks should have The Word+ in the same user area as WordStar and obviously will not have to make this change). Type ^C to warm boot your computer.

Now, type **TW B:JONES.MEM** and stop. *Do not press RETURN yet.* Look back over the command line you have entered. Make sure you haven't made a typing error. Notice the space between "TW" (which stands for The Word) and "B:" and the absence of a space between "B:" and "JONES.MEM." If you have made a mistake, erase backward using the BACKSPACE key and retype the command. Then press RETURN and watch what happens on your screen.

At this point, about the only problem that might arise is that The Word+ won't be able to find your document, in which case you will get the message "Input file is NOT on disk." This means you either mistyped the name of the file

or forgot to put "B:" in front of the file name, or you have the wrong disk in drive B.

## Setting your defaults

The Word+ begins by asking you to determine its default (standard) settings. This slight complexity is to your advantage, since it allows you some control over how The Word+ will operate. The seven

questions allow you to choose the style of operation best suited to your writing habits. For now, we will recommend settings. You can always change them later. The questions you'll see are:

Save context info? Y/N (Ret=N) :

Ignore lines starting with? (Type char, Ret=No) :

Ignore UPPER case words? Y/N



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(Ret=N) :  
Ignore text between? (Type char,  
Ret=None) :  
Mark words that change length?  
Y/N (Ret=N) :  
Marking character :  
Save new defaults? Y/N (Ret=N) :

The first question asks whether you want to save the context in which a word appears. When The Word+ finds a word that may be misspelled, it can save the line of text in which the word appears. Then you can ask to see that line when you are making corrections. The "Y/N" means type Y or N to indicate yes or no. The (Ret=N) means that hitting RETURN is the same as typing N. Answer by typing Y for yes.

The next question, "Ignore lines starting with?", means that The Word+ can ignore certain lines entirely. The character to enter here is the period. This prevents The Word+ from seeing all your dot commands (print commands like ".OP" that you put in your document) as misspelled words.

The third question, "Ignore UPPER case words?", is useful if you use a lot of abbreviations or acronyms. It's also easy to add such "words" to your dictionary. Most people should answer "N" so that their upper case titles are not ignored during the spelling check. Type N in answer to this question.

The fourth question is "Ignore text between?" This pertains to word processors other than WordStar and therefore has no relevance to you. Press RETURN.

The next question, "Mark words that change length?", is more useful. When a word is corrected, it may change in length and ruin your paragraph formatting. You can choose to mark these words so you can easily find them and reformat the paragraph. Type Y.

The next setting reads "Marking character:". Words that change length have to be marked with

some character from your keyboard. Choose one you never use in your writing, such as the "\*" character on the 8 key. Let's choose the asterisk for this tutorial. Type \*.

The last question is "Save new defaults?" Type Y, because you want these settings to be permanent. (If you wanted to use these settings just once for a special purpose, you would, of course, type N.)

The last message pertaining to settings reads, "These are the current settings. Press return to proceed, or space to change." You will get this message each time you use The Word+, allowing you to change your settings if you wish. You don't want to change your settings now (you just set them), so hit RETURN.

### Correcting spelling errors

The Word+ will now check your spelling. The only problem that can occur at this point is a "WRITE ERROR." If you get that message, it means that The Word+ ran out of room on drive A to write its word list. You can solve this problem by erasing some unnecessary files on your *working copy* of The Word+. Here are some you can erase: HOMONYMS.TXT, HYEXCEPT.TXT, WORDFREQ.COM, and also ANAGRAM.COM.

Assuming there are no problems with the spelling check itself, when the check is completed you will be presented with a screen with the word "REVIEW+" at the top. Below that you will find a menu of commands, and below that will be the first possibly misspelled word with the cursor blinking next to it. Here is an explanation of the commands:

**U>pdate Dictionary**—type "U" to add the selected word to your main dictionary.

**S>pec. Dict. "SPECIALS.CMP"**—type "S" to add the current word to your special purpose dictionary.

**M>ark word**—type "M" to mark a word with your marking character

for later action when you are back inside WordStar.

**D>iscard word**—type "D" if the word is spelled correctly and you don't wish to add it to your dictionary.

**C>orrect word**—type "C" to manually enter the correction.

**P>revious word**—type "P" to back up to the prior word if you made a mistake.

**N>ext word**—type "N" to move forward through the list.

**R>esume review**—type "R" if you backed up several words and wish to pick up the review where you left off; you could accomplish the same thing by hitting "N" repeatedly.

**L>ook up word**—type "L" to have The Word+ check its dictionary for words spelled similarly. For example, if the word were AUDIANCE, the check would produce "0 audience." The zero is there because suggested words are numbered (beginning with 0); if you wish to choose one of them (in this case there is only one), you type "C" (for Correct word) and then the number (in this case, 0), and then press RETURN.

**V>iew context**—type "V" to see the line of text in which the word appears. Frequently you need to see how you used a word before deciding on the correct form and spelling.

Eventually you will arrive at a message that says "End of list. Press return if done." Press RETURN and watch the screen. You will get a summary something like this:

2 words marked  
3 words corrected  
2 words changed length. \* reform \*  
Completed file B:JONES.MEM

(continued on page 67)

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# Technical Forum

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by Tom Enright

In the December 1985 issue of *PROFILES*, a MicroPro International ad offered WordStar 3.3 for CP/M Kaypros. Those who tried to take advantage of this offer received their money back, along with a form letter stating "Unfortunately, we have found problems in adapting our software to your Kaypro machine. We are returning your order and apologize for the inconvenience this may have caused you."

Historically MicroPro has distanced itself from the end-user, preferring that authorized MicroPro dealers or OEMs (original equipment manufacturer) do any custom installation and provide end-user support on all MicroPro products. Installing WordStar for a specific computer or terminal is considered "custom installation." Kaypro, as an OEM, installs WordStar for the machines it is bundled with, but the OEM agreement with MicroPro does not allow Kaypro to sell WordStar separately.

Owners of Kaypro MS-DOS machines don't have the same problems locating software. Every mail order outlet in the country seems to carry WordStar and its companion products for DOS. And all dealers carry DOS software—sometimes that's the only kind of software they do carry. Sixteen-bit Kaypros use the same WordStar the IBM PC uses, so compatibility isn't a problem. It's the CP/M owner who is left out in the cold when it comes to finding software.

## **MicroPro and its dealers**

The only legal way an owner of CP/M WordStar 3.0 can upgrade to 3.3 is to purchase it on the retail market. The problem is that surprisingly few dealers—Kaypro or otherwise—know or care much about CP/M-80 software. (CP/M-80 is the generic term for 8-bit CP/M, as opposed to CP/M-86, which is the 16-bit version of CP/M.) There are exceptions to this rule, but they are few and far between. For the

most part, CP/M computer owners are left with mail-order houses as their primary sources of commercial software.

You can buy WordStar 3.3 for CP/M-80 from MicroPro dealers. If they do not stock it, they can order it from MicroPro. However, what you will get is generic, uninstalled WordStar on a single-sided, single-density, eight-inch disk. You still have to get the program downloaded to a Kaypro format 5-1/4-inch CP/M diskette and install the program for Kaypro's video protocol. Furthermore, this is WordStar only—not MailMerge or any other WordStar accessory software.

If you want to purchase the WordStar Professional Package for CP/M-80, (WordStar 3.3, MailMerge, SpellStar, and StarIndex), you can call (800) 227-5609 and order it directly from MicroPro. I've called the number and it is current and correct. However, you're still getting uninstalled software on eight-inch disks—downloading and installation are neither included nor available.

Other sources of MicroPro's CP/M-80 software are: Riva Software Distributors, 448 Ignacio Blvd., Novato, CA 94947, (415) 382-1080; and BroadReach, 534 Industry Dr., Seattle, WA 98188, (206) 575-4160. Riva Software can deliver all CP/M-80 MicroPro software except WordStar, and can, for a fee, download to Kaypro diskettes. BroadReach sells the same products but does not have any downloading facilities. Neither company can supply MailMerge for WordStar 3.0.

There are also probably other sources of MicroPro CP/M-80 software, but these are the only ones I've been able to find so far.

## **Installing generic WordStar**

There is an advantage to owning generic WordStar that you don't get with the version delivered by Kaypro—the ability to install it for any terminal. Kaypro delivers WordStar with the terminal installation options of WINSTALL disabled. Generic WordStar comes with this feature of WINSTALL still

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*I've been able to locate  
one outlet that can sell  
CP/M-80 WordStar already  
installed for Kaypros.*

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I've been able to locate only one software outlet that is able to sell CP/M-80 WordStar 3.3 and other MicroPro software that is already installed for your Kaypro (including cursor keys) and on Kaypro format 5-1/4-inch disks. This company is LifeStyle Software in San Rafael, California. It advertises in *PROFILES* regularly and has several phone numbers to call, depending on where you live. Please consult the ad in this issue for phone numbers.

Other vendors carry MicroPro CP/M-80 software but do not, unfortunately, sell WordStar.

functioning.

The first step in installing generic WordStar is to run WINSTALL and define your terminal's video protocol sequences. Refer to your *User's Guide* to find the video control sequences for your model. I am aware of only one Kaypro model that had incomplete video protocol information in the *User's Guide*—the Kaypro 1. Kaypro 1 owners should refer to the April 1986 "Technical Forum" for a full list of '84 series video sequences.

A disadvantage to generic WordStar is that you're on your own as far as a cursor key patch is con-

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## Technical Forum

cerned. The basic problem was outlined in the June 1986 "Technical Forum." Most users' groups should have someone who, given that information, can come up with a reasonable patch that will fit in WordStar's MORPAT area.


Anyone who does come up with such a patch should make it as public as possible. The Kaypro SIG on CompuServe (no connection with Kaypro Corporation or *PROFILES*) would be one excellent place to post it. From there the patch could easily be distributed to other BBSs and RCPMs. (The Kaypro SIG, by the way, is the best forum I'm aware of for discussions of Kaypro computers and the software that runs on them.)

### Patching alternatives

A viable alternative to patching the MORPAT area is to use a KDP (keyboard definition program) such as XtraKey, SmartKey, or Plu\*Perfect's 2.2E/Backgrounder combination. By using this approach, you can load a definition file each time you start a WordStar work session. The definition file can redefine the codes generated by your cursor keys, plus any other command string definitions.

Each of these KDPs comes with sample definition files for use with WordStar. You can build on these to create a series of custom single-keystroke commands that perform an entire series of WordStar functions. Ted Silveira devoted the May and June 1985 installments of "Flea Market" to this subject.

### Conclusions

To summarize, Kaypro can't sell you that new copy of WordStar or MailMerge, but MicroPro can, if you know the right number to call. You can also get it from MicroPro dealers or one of several third-party software vendors. And at least one of those sources can supply you with the newest version of CP/M-80 WordStar, already installed and ready to run. 

(continued from page 64)


The message means that two words are now blemished by your marking character—the asterisk—and two paragraphs are now misshapen and need “reform.”

### Finishing up

Remove The Word+ disk from drive A and re-insert your WordStar disk. Type **WS B:JONES.MEM** to call up the document for editing.

Type **^GF \*** and then press the **ESC** key. You are using the **FIND** command to locate the first asterisk mark. The cursor should jump to the first location.

Type **^G** to erase the asterisk. Then check the Status Line at the top of the screen to make sure that your right margin and line spacing are correct for the document; then reform with **^B**. Reforming will send the cursor to the end of the paragraph, perhaps skipping over other marked words. If so, then you need a **^GP** to send the cursor back to where it was before you reformed the paragraph.

Repeat the process (you can use **^L** to find the next asterisk) until you get a “NOT FOUND . . . PRESS **ESC** KEY” message, indicating that you’ve handled all marked words. Then press **ESC** when you are prompted to do so. Finally, save your document with **^KD**. 

*William Murdick is an English professor at the California University of Pennsylvania, and he runs a word processing lab on campus.*



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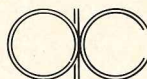
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The key to the Mini-Winnie system is the **INSTALL** program, which links your drive and your computer, the way **YOU** want it. Extensive menu options allow selection of any ST-506 compatible drive, as 1 to 4 logical drives within CP/M at any drive letter. Diagnostic and format capability provided to match the installation. Distributed in **SOURCE** form.

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# First Impressions

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by Tom Enright

Three items worth noticing

Nothing in this world is static; everything has to change in order to survive, and this column is no exception. The intent of "Product Spotlight," as it was originally named, was to augment the "New Products" column by looking at one product in greater depth each month. To better serve our readers, this column—as its new name implies—will feature impressions of three or four products each month.

Note that these are "impressions," not reviews. These are my initial reactions to products available for both CP/M and MS-DOS Kaypros. The opinions expressed in "First Impressions" will be based on short-term use, not weeks of exhaustive testing. Most—though not necessarily all—products covered here will be new. I'll be looking at both hardware and software that I think should be brought to the attention of our readers. The exclusion of a product from these pages is not a condemnation; available space and time limit the number that can be covered.

I have three items to call to your attention this month: a new color printer from Okidata, a multi-video card from Array Technologies, and a new piece of productivity software from Borland International.

## **The Okimate 20**

The Okimate 20 (\$299 in serial or parallel versions from Okidata, 532 Fellowship Rd., Mt. Laurel, NJ 08054; 1-800-OKIDATA) is an IBM-compatible thermal printer that prints text and graphics in up to 100 colors. This 13 x 7-1/2 x 2-1/4-inch, 6.2-pound box comes with a minimum of manual controls and is designed to be controlled by software codes—not by buttons or switches on the printer.

Manual controls consist of a select button, a slide switch to adjust image darkness, a thumb-wheel to move paper, a lever to release the pinch rollers so you can

load paper, and an ON/OFF switch on the side. The command set in the IBM version is the same as in Okidata's 100 series, IBM's graphics printer, and Epson's MX/FX series printers. Colors are controlled by sending the dot pattern once for each color on the three-color ribbon.

The most interesting part of the Okimate 20 is its approach to "color mixing." Thermal printers work by heating the pins of the print head before pressing them against chemically treated paper. Okidata combines this with a wax film ribbon that has the three primary colors. Each color layer is melted into prior colors and mixes with them on the paper. Add the ability to control the dot density of each color layer and you can put 100 different colors on the same piece of paper.

Substitute a black ribbon for the colored one and you have a normal dot-matrix printer. Alternatively, you can use standard "thermal printer" paper and forego the use of a ribbon entirely. Okidata recommends using special treated paper when printing in color. You can also substitute copier paper of the type used in Savin copiers for single-sheet use. The black ribbon will function on normal fan-fold computer paper.

image around on the paper.

Okidata provides two excellent manuals with the Okimate 20. One is a *User's Guide* with setup instructions, tutorials, technical data and maintenance instructions. The second manual is a guide for the screen dump program.

The only weak point of this printer is speed—the Okimate 20 is not fast. Multi-color screen dumps can take eight or more minutes to print. The manual claims an 80 cps (characters per second) print speed in draft mode. This is "burst speed," not reflecting the true throughput you actually get. The Okimate 20 prints uni-directionally (left to right only), so your real printing speed on single-color text is in the 30 cps range as measured by my own tests.

The Okimate 20 is a good graphics output device and will be better when more software supports its method of printing colors. People who need inexpensive color/graphics output will love it. But its printing speed is too slow for more than occasional use as a text output device.

## **ATI video card**

The "Graphics Solution" video card (\$299 from Array Technologies Inc., 450 Esna Park Dr., Mark-

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*You can dump color/  
graphic images from  
the screen directly to  
the printer in color.*

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The IBM version of this printer comes with a memory-resident "screen dump" program. Once it is installed for your video board, you can dump color/graphic images from your screen directly to the printer in color. When dumping a graphics image, you can remap the colors, alter horizontal and vertical image size, and even move the

ham, Ontario, Canada L3R 1H5; 416/477-8804) is a multi-capability answer to your computer video problems.

The ATI Graphics Solution is a real multi-video card—it has seven video modes. With an RGB color monitor, the ATI card can be a standard IBM color/graphics card or a Plantronics color/graphics card.

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The Plantronics mode lets you have regular text plus 320 x 200 pixel graphics in 16 colors or 640 x 200 pixel graphics in four colors. For the programmer, there is a third ATI mode with 16 colors at 640 x 200 pixels. This last mode isn't supported by any commercial software, so it's pretty well limited to programmers' use.

With a monochrome monitor the ATI card functions as a normal IBM monochrome card or a Hercules graphics card and lets you run standard color/graphics software on a monochrome monitor. And, if you can put up with small letters, you can have either 132 columns by 25 lines or 132 columns by 44 lines of monochrome text. The last two modes are of limited use because the characters are too small to read easily.

The card comes with its own mode switching software that allows you to switch between any of the available modes. When changing from a color to a monochrome mode the software pauses until you switch monitors and press any key. (Sending the wrong signals to some color or monochrome monitors can damage them, so the pause is built in as a safety factor.)

In addition to all those video modes, the ATI card can take an expansion card that adds both a serial port and a parallel port. The parallel port can be configured as LPT1:, LPT2:, or LPT3:, and the serial port can be set up as either COM1: or COM2:. The expansion card plugs into the side of the ATI card and can make for a tight fit between adjacent cards.

It seems that Kaypro Corporation is as impressed with this card as I am. Kaypro is now manufacturing a similar video card, under license from ATI, with the same video mode capabilities. The only difference between Kaypro's new multi-video card and ATI's is that the Kaypro card doesn't have the I/O port expansion capability.

### **Traveling Sidekick**

Traveling SideKick (\$69.95 from Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066; 408/438-8400) is a separate, free-standing enhancement to regular SideKick. You get an IBM-sized (6 x 9 inch) binder to organize appointments, names and addresses, and expenses. Except that it includes software, it's like a well packaged week-, month-, and year-at-a-glance organizer.

Traveling SideKick software can work with the regular SideKick appointment calendar files, or it can work by itself. (SideKick and Traveling Sidekick are separate but complementary products.) The conventional (non-resident) software lets you manage two data bases—one of appointments and the other of names and addresses.

Reports printed by the software are done in a special format so you can insert them in your Traveling SideKick binder. The reports use standard paper (8-1/2 by 11 inches), which folds neatly in half to fit the padded binder.

The forms provided by Borland duplicate the format used in the printed reports and have a ledger form on the back to record your expenses (or whatever else you want to use them for). More blank forms can be ordered from Borland whenever you run low. Tabbed dividers let you separate the reports and forms into daily, monthly, and yearly areas.

Traveling SideKick also comes with command summaries for all Borland products, a list of toll-free phone numbers for major hotels and airline reservations, U.S. and world maps with time zones marked, and a reference of international and U.S. area codes. Inside the front cover is a four-function solar calculator in its own pouch.

Traveling SideKick is what "integrated software" should have meant all along. It integrates functions used by business people. ■

## **Product Updates**

**SmartKey** version 5.1 will offer more than two dozen new features to strengthen its appeal as a front end to business applications. New features include Hercules and EGA Graphics support. Software Research Technologies, Inc., 3757 Wilshire Blvd., Suite 211, Los Angeles, CA 90010; (213) 384-5430

... **Reflex** version 1.1 has double the memory and fields of the previous version, and the update is being offered for \$10. Borland has also extended to all its registered customers the opportunity to obtain 3-1/2-inch disk versions of the company's IBM PC-compatible software. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066; (408) 438-8400

... **MicroTeX** has been revised to run on dual-floppy systems and to load, operate, and produce typeset output 25 percent faster. Also available is TeX PREVIEW for viewing MicroTeX's typeset output on a computer screen before printing. Addison-Wesley Publishing Company, Reading, MA 01867; (617) 944-3700

... **Smartmodem 1200B** is now available to fit in half-card slots while maintaining all previous features. Hayes Microcomputer Products, Inc., P.O. Box 105203, Atlanta, GA 30348; (404) 449-8791

... **Rags To Riches IV** has been released for IBM PCs and compatibles. Designed with the same artificial intelligence concept as earlier versions, this accounting package includes a ledger, plus accounts receivable and accounts payable modules. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129; (408) 246-8020

... **EASY, WordStar, and WordStar 2000** are now available on 3-1/2-inch diskettes. MicroPro International Corporation, 33 San Pablo Ave., San Rafael, CA 94903; (415) 499-1200

*Product Updates provides information about revisions of existing products. Information for this column must be received at least eight weeks ahead of the publication date. Users should contact vendors for more complete information and current prices.* ■

# New Products

The following new product listings are not reviews and should not be considered endorsements of tested products. To be considered for publication in *New Products*, press releases should be sent to *New Products Editor*, PROFILES Magazine, 533 Stevens Ave., Solana Beach, CA 92075. Releases must state prices and on which Kaypro models products run. Include black and white photographs if available.

## Speed reading

The average reader reads 300 to 400 words per minute. Reading Professor can increase this rate to 900 words per minute. It provides seven exercises designed to increase reading speed, train eye movement, stretch the user's ability to absorb information, and improve retention.

To avoid repetition in the exercises, the program uses a general-interest library of 48 passages, totaling over 25,000 words. Additional add-on libraries are available at levels for teenagers, adults, and business- or career-oriented users.

Other features include immediate feedback after lessons and exercises are completed, automatic upgrading of lesson speed, and individual progress reports.

Reading Professor \$59.95; additional libraries \$15.95 each. All Kaypro CP/M and MS-DOS computers. The Software Toolworks, 14478 Glorietta Dr., Sherman Oaks, CA 91423; (818) 986-4885.

## Top seller

Organizing for Successful Selling is an information-based system for time, territory, and account management designed to help sales professionals improve their planning and effectiveness.

The program allows you to gather and analyze information about yourself, the business environment, plus each account and its buyers, in order to develop a sound sales strategy with appropriate tac-

tics for each account.

\$275. All Kaypro CP/M and MS-DOS computers. Computer Strategies, Inc., P.O. Box 88039, Atlanta, GA 30338; (404) 458-9023.

## The whole picture

Mr. Blue, a file display/search/print program, features a full screen display window (23 lines down by 256 positions across) as an alternative to the single-direction, single-line scrolling and line wrapping characteristics of DOS's PRINT and TYPE commands.

You can shift the display window to any position in the file, and an optional scale line can also be displayed or printed for alignment purposes.

Mr. Blue can search for character strings in the selected file. You can then decide whether or not to use its printing feature to obtain a hardcopy of the display window, any other section of the file, or the entire file.

The program has no limit on input file sizes and allows changing disk drives at any time (which includes real, RAM or virtual, and mainframe virtual disks).

\$25. All Kaypro MS-DOS computers. Lambid Development, Inc., P.O. Box 3290, Skokie, IL 60076-6290; (312) 328-4875.

## Inventory package

Home Inventory (+) is a complete personal inventory storage and retrieval system. Just type in your inventory (more than 65,000 items allowed) and you will get the total inventory amount in dollars and cents for each room or area you designate and a total amount for all items. The program will also point out if you are over- or underinsured.

Printouts are available on the complete inventory, with sub-totals and totals, or just on particular entries.

Home Inventory (+) allows you to have as many data files as you need on disk and lets you change back and forth among them from within

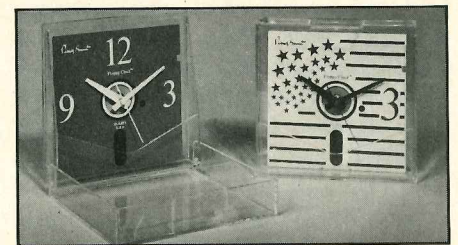
the program.

A manual is included and full phone support is provided.

\$39.95. All Kaypro CP/M and MS-DOS computers. Hurd Computer Systems, 6330 Lincoln Ave., Cypress, CA 90630; (714) 220-2720.

## It's about time

The Floppy Clock is the newest in desktop utilities. It uses a real 5-1/4-inch floppy disk as its face and has analog, battery-operated, precision quartz movement.



The clock is packaged inside a clear software storage case and can be displayed on a desktop or a wall. It's available in five designs in 13 colors, and can be customized with any user's name, company logo, address, telephone number, sales message, artwork or promotional copy.

\$19.95. Passez-Sonna Co., 2458 Lomita Blvd., Suite 124, Lomita, CA 90717; (213) 539-9577.

## Child's play

Hodge Podge is a pre-school program that provides an enjoyable introduction to learning and computers. It consists of many cartoons, animations, and songs and provides everything from apples to zig-zags for the child to explore.

With the help of an adult, the child can discover magnets, numbers, musical notes, animals, and much more. When alone, the child will be amused by the color, sound, and pictures displayed.

\$19.95. All Kaypro MS-DOS



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computers. Artworx Software Company, Inc., 150 North Main St., Fairport, NY 14450; (800) 828-6573.

### **Growing insurance needs**

Builder's Risk Insurance Package lets an insurance company file customer policies and locations of insured buildings. The system can be expanded with your business—it allows additions of new clients and newly-insured buildings.

Information is stored in two files, the customer and building files. The link between these files is the insurance file number. Multiple firms with the same name can be listed in the customer file without difficulty, and each firm has its own file number for quick identification.

Data can easily be added, changed, or deleted. For example, it lets you add new buildings to a customer's policy without having to re-enter the policy from scratch.

\$299.50. All Kaypro MS-DOS computers. SourceView Software International, 835 Castro St., Martinez, CA 94553; (800) 443-0100, ext. 440.

### **E-mail made EZ**

TEAMWORK is a communication software package that provides timely and cost-effective exchange of information for teams of personal computer users and for telecommuters.

TEAMWORK integrates correspondence management, file exchange, and the handling of business forms using existing PCs and telephone facilities. It is based on X.400, the emerging international standard for electronic mail systems.

TEAMWORK will print on ordinary paper or on pre-printed forms, and the information can be edited without having to be rekeyed. It can retrieve or send large documents, graphics, spreadsheets, and data bases. Password protection against unauthorized remote access is

provided.

Other features include unattended operation, which allows a PC to call various locations at night and collect information, and a User Directory, which works as an online address notebook.

TEAMWORK implements all E-mail functions and does not rely on any centralized host or third-party network, but a terminal emulator is included for those who need access to third-party information services and mail services.

Introductory price through July is \$125, which includes two copies of the program. Additional copies are available for \$59 through July. All Kaypro MS-DOS computers. Computer Technology Associates, Inc., 5670 South Syracuse Cir., Englewood, CO 80111; (303) 889-1200.

### **Multi-lingual**

Multi-Lingual Scribe is a word processing program that allows the user to write and edit in combinations of English, most European languages, Hebrew, Greek, Arabic, and Russian.

Multiple alphabets can be written in one file and can be both viewed onscreen and printed with full vowel points and accent marks without hardware modifications. Hebrew and Arabic are written from right to left, and bi-directional text is fully supported by all the word processing features, such as word wrap, block moves, search/replace, and more.

The program includes fonts for onscreen viewing and printing.

Multi-Lingual Scribe requires an IBM or Hercules color graphics card or Hercules monochrome card and is fully compatible with most printers.

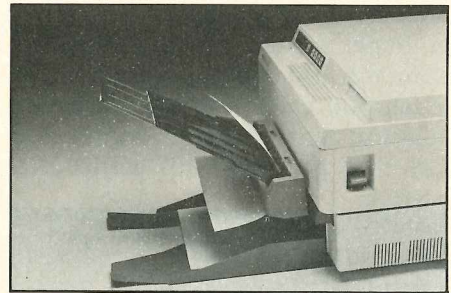
\$184. All Kaypro MS-DOS computers. Gamma Productions, 710 Wilshire Blvd., Suite 609, Santa Monica, CA 90401; (213) 394-8622.

### **Keep it in order**

Flipper is a device that keeps laser

printer pages in sequential order, with the first page at the front of the pile.

While many laser printer output bins only hold 20 pages, Flipper can hold up to 400. This allows you to leave it unattended.



Flipper is available now for the Hewlett-Packard LaserJet, LaserJet Plus and Canon LBP-8 laser printers.

\$200. BDT Products, Inc., 17152 Armstrong Ave., Irvine, CA 92714; (714) 660-1386.

### **Voice synthesizer**

The Voice utilizes National Semiconductor's Digitalizer microprocessor system to generate a very understandable and realistic male voice. It can be used for education, games, alarm systems, handicap aids, and much more.

The Voice allows the formation of sentences using more than 650 distinct words, and custom-made vocabularies are available.

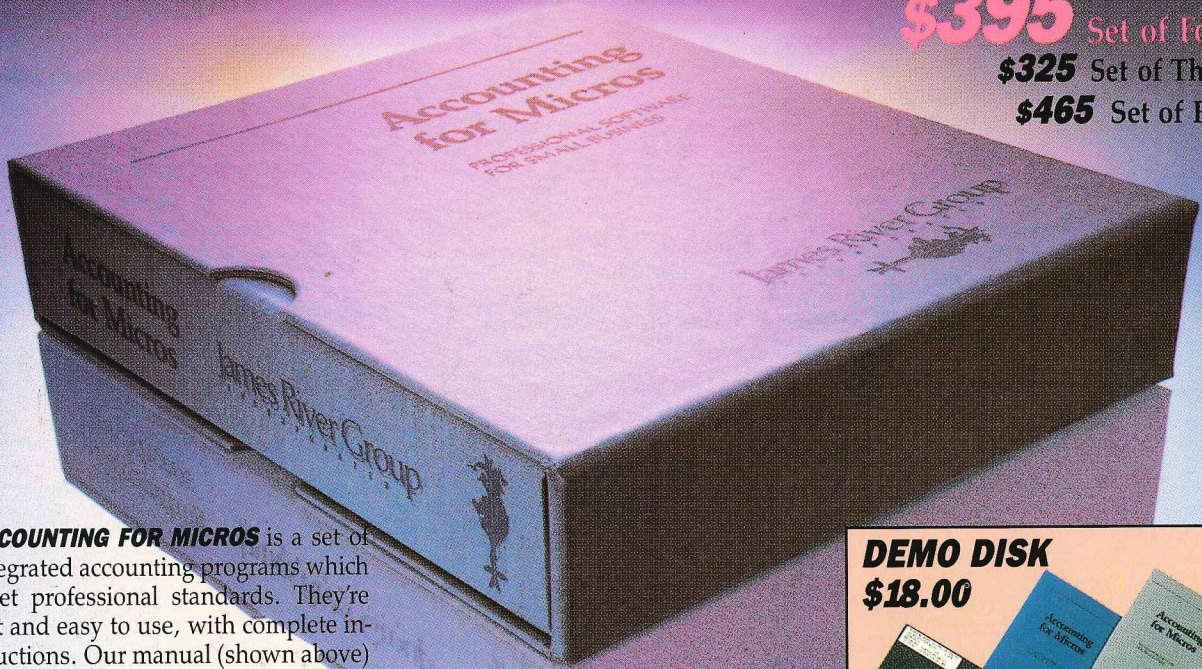
It connects to any computer with a standard Centronics parallel printer port, and no hardware modifications are necessary.

The package includes AC adaptor, built-in amplifier, speaker, volume control, on/off switch, and RCA audio output for connection to an external amplifier or cassette recorder.

Prices range from \$99.95 for the bare kit to \$159.95 for the product assembled and tested. All Kaypro CP/M and MS-DOS computers. Progressive Products, P.O. Box 435, Cupertino, CA 95015; (408) 252-9001.

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