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PROFILES

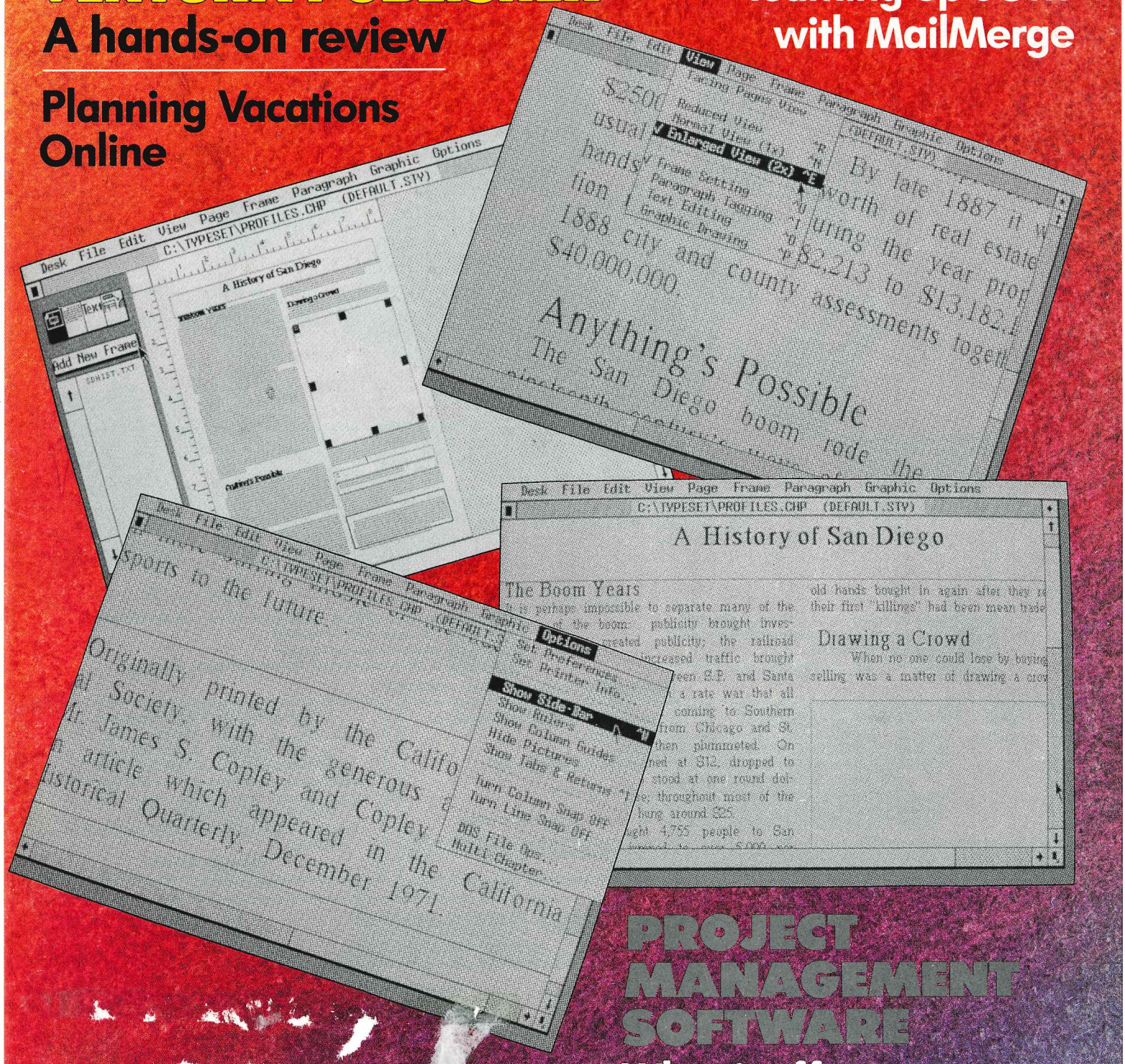
The TUTORIAL Magazine for Microcomputer Users

June 1987

VENTURA PUBLISHER
A hands-on review

Teaming up SORT with MailMerge

Planning Vacations Online



PROJECT MANAGEMENT SOFTWARE

What it offers
How to use it

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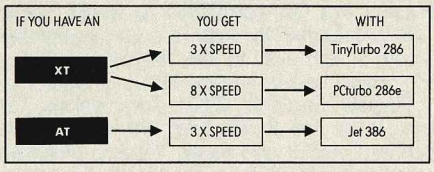

GET THE EDITOR'S CHOICE: TinyTurbo 286.™

The TinyTurbo 286™ supercharges your XT to run *three times faster*. Yet it's so small it takes up only half a slot in your computer. Just two reasons why *PC Magazine* named it the Editor's Choice.

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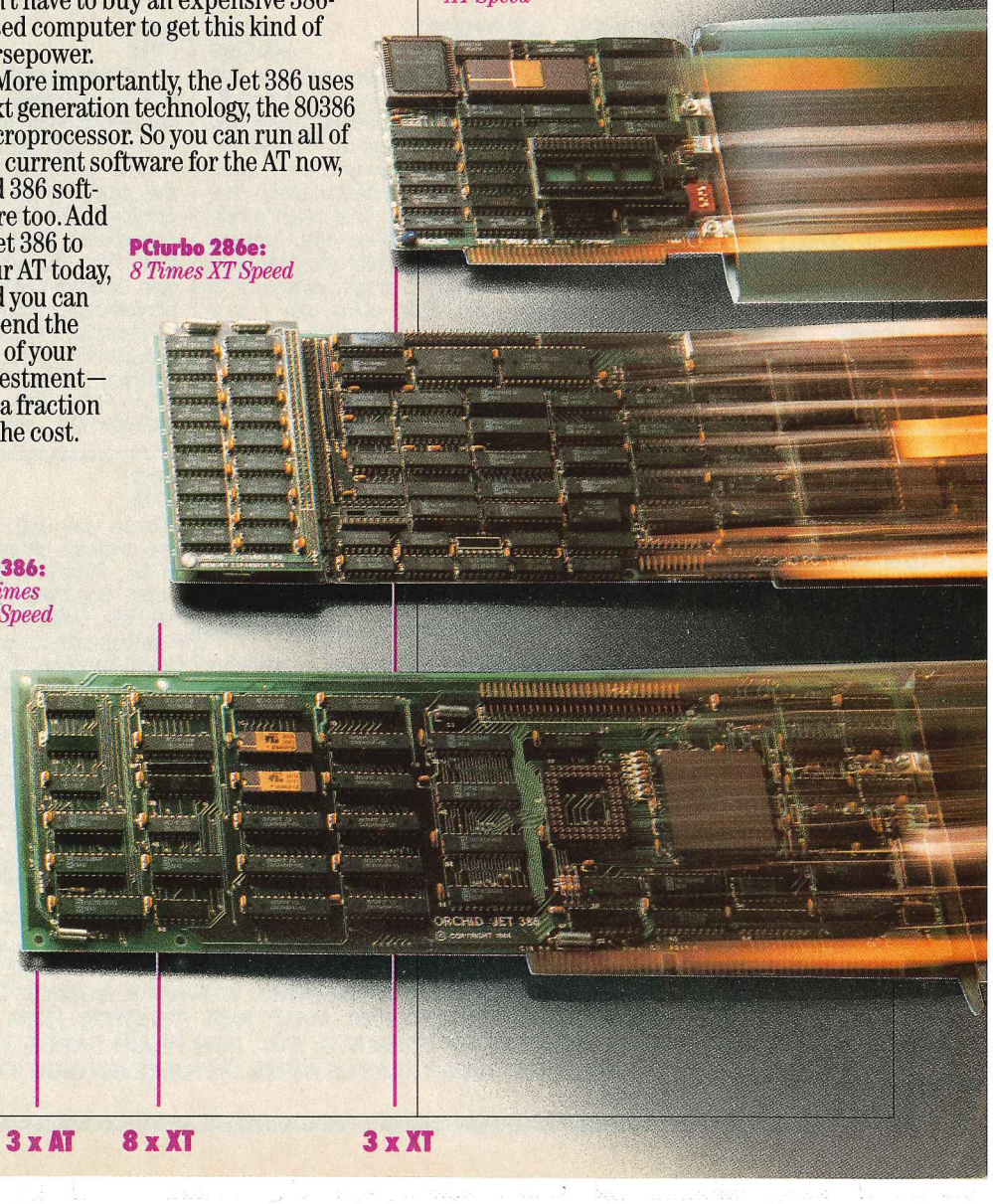

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Our software saves you money before it's installed

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).

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

ACCOUNTS RECEIVABLE

$80.00 CP/M — $100.00 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.

PAYROLL

$80.00 CP/M — $100.00 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. (CPM/MS-DOS), 98 Tax File Rcds.

ACCOUNTS PAYABLE

$80.00 CP/M — $100.00 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: **NEW A/R STSTEM FOR CP/M AND MS-DOS USERS NOW SHIPPING. NEW FEATURES INCLUDE 4 LINE NAME AND ADDRESS, FINANCE CHARGES, VARIABLE AGEING, DESCRIPTIVE BILLING, ASCII OUTPUT FILES, MULTI-CLIENT PROCESSING. MANY NEW REPORTS, ITEM INVOICE FORMATS, SERVICE INVOICE FORMATS, STATEMENT FORMATS, ETC. FOR PLAIN PAPER AND MANY POPULAR PRE-PRINTED FORMS. TAXABLE AND NON-TAXABLE ITEMS ON SAME INVOICE. FLASH REPORTING TO SCREEN OR PRINTER; MORE . . .**

PROFILES

The TUTORIAL Magazine for Microcomputer Users • Volume 4, Number 11 • June 1987

FEATURES

PROJECT MANAGEMENT SOFTWARE 20
BY ROBERT J. SAWYER
Planning, tracking and analyzing the easy way

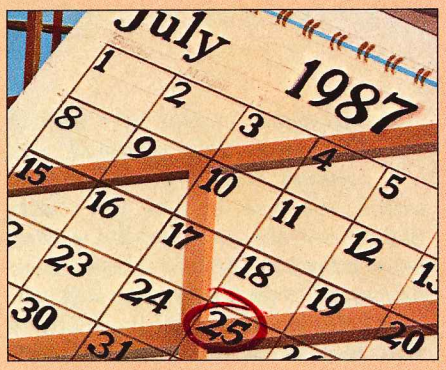
THE COMPLETE COMPUTERIZED TOURIST 28
BY BROCK N. MEEKS
Your computer can do everything for you but get a tan

BUILD YOUR OWN RAINBOW 38
BY EDWARD GELERINTER, Ph.D.
Using advanced data structures in Pascal

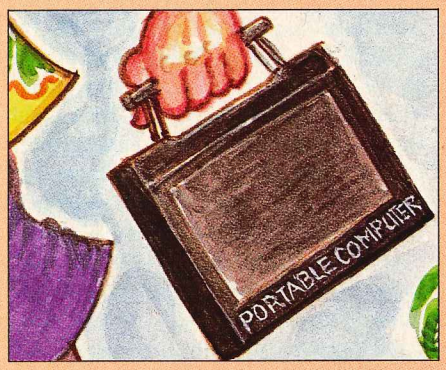
DO IT WITH STYLE 45
BY TED SILVEIRA
Ventura brings desktop publishing to MS-DOS

SORTING IT OUT . . 50
BY J. MICHAEL BUTLER
List management using SORT with MailMerge

SAVING TIME WITH PERFECT WRITER 54
BY TUCKER PARSONS
Teach your "old PW" new print-time tricks

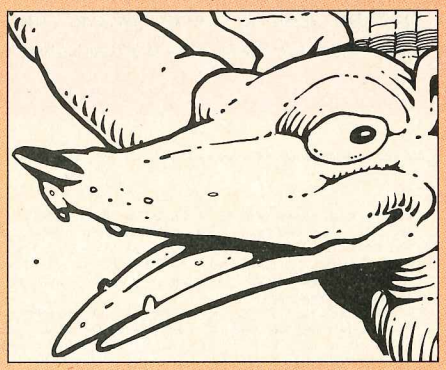


Project Management 20



Tourist 28

Rainbow 38



Perfect Writer 54

DEPARTMENTS

Editors' Notes 4
Letters 6
Tip Trader 61
Q & A 64
Technical Forum . . . 66
New Products 69
Product Updates . . 71
Advertisers' Index . . 72

COLUMNS

First Impressions . . . 8
BY TOM ENRIGHT

Flea Market 12
BY TED SILVEIRA

Life at 300 Baud . . 16
BY BROCK N. MEEKS

Reviews 58
BY RICHARD T. McMILLAN AND RICH HOVEY

ON THE COVER:
Ventura Publisher is desktop publishing software for MS-DOS machines. The photos on the cover are actual screens from Ventura. Our feature article, "Do It With Style," is a hands-on review of this program. The text is from an article about San Diego's boom years, first printed in the *California Historical Quarterly*, December 1971.

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Editors' Notes

An overview, a review, and more tutorials

Successful projects take careful planning. This planning was always done with paper and pencil, resulting in lists and charts that weren't always as helpful as they were intended. Special charts were developed to standardize the way projects were managed, but those charts still had to be manually created, updated, and revised.

Then came microcomputers—could project-management software be far behind? Our lead article this month is an overview of what project-management software is, what it's best used for, and how it works. We've included a list of the most popular packages for both MS-DOS and CP/M systems. Check it out and see if it can help you.

Desktop publishing—it's *the* hot topic in computing these days. Once the sole domain of Apple owners, now page layout software is available for MS-DOS machines. This has opened up the field to a whole new set of players and enthusiasm is running high. It takes more than enthusiasm to operate this new software, however, it takes time. Ted Silveira offers *PROFILES*' readers a hands-on review of one of the contenders—Ventura Publisher.

Also in this issue:

•Planning on taking a vacation this summer? Brock Meeks tells you how to use online services and data bases to investigate where to go and what to do. Once you've decided, you can make plane, hotel, and car reservations via modem. And if you're taking your computer with you, you'll want to read "Computing On The Road"—tips on what you need to know *before* you leave the country.

•*PROFILES* continues its series on programming with an article for advanced users about defining data structures in Pascal.

•MS-DOS users have a beginning tutorial on how to use the SORT command in conjuction with WordStar's MailMerge for "quick and dirty" sorts without the hassle of a data base program.

•CP/M users are offered a tutorial on easy printing with Perfect Writer. Hint: you bypass the menu system and manipulate Perfect Printer and Perfect Formatter directly.

Readers should note a couple of changes in *PROFILES*. First, in an effort to make computer commands more distinguishable, we have set them in a typeface that's different from regular text (and in many cases, put them on a separate line).

Second, the "Beginner's Luck" column has been replaced by a "Reviews" column. Actually, it's more of a swap. Beginning tutorials are being featured as full-length articles, which will allow adequate space for charts, diagrams, and more detailed explanations. Software reviews, which were previously handled as full-length pieces, are now formatted as a monthly column. Not to worry—tutorials for beginners will continue to appear regularly. We were all beginners once.

Diane Ingalls
Terian Tyre

General subscription information can be found on page 11. Our basic one-year rate is $25 for 12 issues. If your first issue does not arrive within eight weeks after ordering, or you miss an issue, please write to us: PROFILES Magazine, 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 your old and new addresses. Allow eight weeks for processing. International subscriptions are available directly through PROFILES Magazine only. Our regular yearly international rate is USD $40 (includes postage). Checks MUST be drawn on a U.S. bank in U.S. dollars ONLY.
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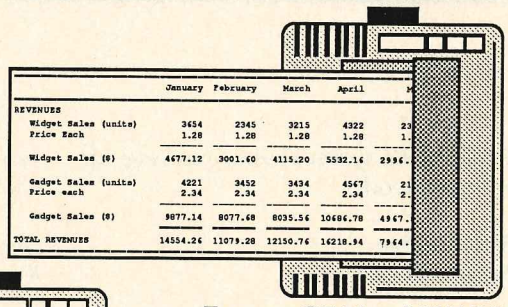

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ACCELERATE 8/16

includes MEDIA MASTER, an upgraded emulator *and* a special easy-to-install NEC V20 chip which lets your IBM compatible run CP/M software at max speed. Chip & software is just **$99.95.**

Call or write for full compatibility chart

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Profiles said, *"This is the program to which all other CP/M graphics software must be compared."*

REMBRANDT can do it all! Draw lines, circles, boxes and large characters on-screen. Automatically generate pie charts, xy plots and horizontal or vertical bar charts. Create on-screen slide shows featuring dazzling cinematic special effects. Print graphics on almost any dot-matrix or daisy wheel printer — and integrate text and graphics.

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Letters

Back to one issue

I have just received my April issue of *PROFILES* and I am delighted to see you have rejoined your MS-DOS and CP/M coverage in one magazine.

When I recently renewed my subscription as a Kaypro II owner, I was irritated that I would only get coverage of CP/M because, like many others, I also use an MS-DOS machine. I have long valued your magazine and hated that I would have to miss the articles on MS-DOS unless I subscribed twice. That seemed more than I could handle. I figured the money might be better spent on one of the mainline MS-DOS magazines.

Now you have restored my faith in your innate good sense and judgment. Bravo and thank you.

Richard Busacca
Berkeley, California

Thanks for the tips

Thanks for your continued efforts to support us old-time Kaypro CP/M users. My Kaypro II has long been "obsolete," but it routinely outperforms the IBM PC AT we have at the office, in part due to the encouragement and tips I have received in *PROFILES*.

I currently run a 5 MHz Advent Turbo board, a 1 megabyte MicroSphere RAM disk, and a 20 megabyte Advanced Concepts "Mini-Winnie" hard disk. All my software resides on the RAM disk that is continuously powered by a separate DC supply and a Cuesta Systems uninterruptible power supply.

Just 20 seconds after starting my machine, the RAM disk and hard disk drivers are automatically installed and my software and disk files are available with the flick of a finger. Because the RAM disk has a printer buffer, there is no wait while a printed file spools to the printer. Best of all, I never have to listen to the gnashing of the floppy disk drive.

It is a joy to sit down at a computer that writes a full screen of information at the blink of an eye and can run spreadsheets and data bases so big you forget you only have 64K of memory.

Thanks for the informative articles, particularly the latest one on linking Perfect Calc spreadsheets, and keep up the good work.

Tony George
Salem, Oregon

The article about linking Perfect Calc spreadsheets was "Making Perfect Calc Count," by James Spencer, and appeared in the CP/M version of the March 1987 issue of PROFILES.

Looking for the 1986 index

Where's the 1986 index? Did I miss it somewhere? Your front cover claims "The TUTORIAL Magazine, etc." I agree 100 percent. I use your past issues (I've kept them all) as a constant source of reference. I was especially happy to see the 1985 index (January 1986) since prior to that issue I had been running copies of each month's index and storing them in a notebook—a lot of trouble and nowhere near as easy to use nor as comprehensive as your "1985 Subject Index."

Are you planning a 1986 and hereafter annual index?

Max S. Traweek
Kerrville, Texas

The "1986 Subject Index" is in the February 1987 issue starting on page 49. And yes, we plan to print a Subject Index for every year of our publication.

More on NewSweep

William Murdick's article concerning NewSweep was incomplete. The explanation for the "Y" function of the program skipped over explaining about all the options available (are there seven of them?). Also not mentioned was the use of wildcard symbols.

NewSweep is one of the greatest little programs available for a computer (another extremely useful one is DIR-FILES). Such a great program deserves a full explanation.

By the way, it is good to hear that you are considering printing a few tutorial articles. We all miss the old *User's Guide* magazine where such articles were common place and much appreciated. Just don't overlook the fact that there are a lot of CP/M users still out here.

George L. McLean
Keyport, Washington

"Getting to know NewSweep" was the topic of last month's "Beginner's Luck" column (April, 1987) thus limiting its space for explanation. Starting with this issue, all of our tutorials for beginners will be featured as full-length articles. This will assure adequate space for complete instruction.

Adding a third footkey

Seldom have I read a more lucid step-by-step article on hardware modification than that by Bob Keith in the April issue ("Use Your Feet!"), describing how to add a footkey to the Kaypro keyboard. With one exception of a small trap that I immediately fell into, the article was correct to the penny and part number. Thank you.

I bought two of the footkeys and installed them, one each for the Escape and Control keys, the day after I received the April issue. As I write this letter (my first use) I now wish I had bought a third footkey for the shift key! I find myself instinctively wanting to use the Control footkey for every capital letter. Tomorrow I shall remedy this with a third footkey.

Naturally, I found the one detail Bob failed to mention. Radio Shack part #274-292, the sub-mini phone jack, has three small prongs besides the one the instructions said to clip off. One of these is a ground, and if you make the solder connections to the ground, the key will not work at all, and neither will your keyboard! The correct prongs are positioned at right angles to each other, with the incorrect prong being on the same small ring as the one clipped off. I examined the part before beginning, but obviously overlooked this connection and soldered the ground right in. An inexperienced person such as myself could easily make the same mistake—the phone jacks are quite small.

Dave Ellen
Estacada, Oregon

Stock market software

I was pleased to read your November 1986 article entitled, "Stock Market Madness—Aid for the individual investor." At last computer magazines are beginning to take seriously investment and financial software. You are to be congratulated.

At the time of your article NewTEK Industries had not yet come out with their new Compu/Chart3 software. It could only be speculated how the software might be set up and function. Well, the software is out, and I have to report that it is pretty impressive. Most technical analysis programs print beautiful graphics and give historical information but are unable to provide real statistical analysis to your specifications.

Compu/Chart3 is a well thought out program. In fact, it is the best of the programs that I have examined. It provides the user with the ability to set his or her own parameters for a wide spectrum of analysis. The manual is comprehensive and someone really answers the phone if you need to call their support line.

Robert Landbauer
Pueblo, Colorado

DOS confusion

This has to do with the abbreviation you have chosen to use consistently when writing about the Microsoft Disk Operating System. It seems to me to offer the possibility of major confusion to refer to MS-DOS as simply DOS, when there are many other operating systems around that could also be referred to by the same acronym.

In my own workplace, we have Apple computers that run ProDOS and (I think) AppleDOS, and Tandy machines that run TRS-DOS, as well as IBM machines and compatibles that run either PC-DOS or MS-DOS.

To further illustrate the confusion that can arise from these similarities, let me say that I was recently given a demo disk by a fellow KUG member for examination. He thought it would run under (MS-) DOS, and he was half right. It ran under Apple's (Pro)DOS. So, would you please consider running a comment somewhere in the regular explanatory banners that spells out that "DOS" as used in *PROFILES* refers only to MS-DOS and to no other disk operation system?

Jonathan D. Miller
Kirkwood, Missouri

We'll go you one better. We'll refer to MS-DOS by its full acronym (starting with July's issue). As you correctly point out, DOS just stands for Disk Operating System—pretty generic.

CP/M and laser printing

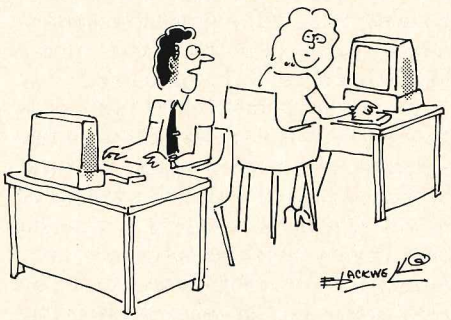
This is a comment about the otherwise excellent article "Printing the Light Fantastic" by Robert J. Sawyer (March 1987). Newword 2 (which I use) is not the only word processor for CP/M that supports a laser printer.

There are two other CP/M word processors that support the Hewlett-Packard LaserJet. Spellbinder is my favorite word processor, it supports true proportional printing on any printer capable of proportional printing, including the Epson LQ-1500.

The other word processor in CP/M that has laser support is WRITE. While I do not currently have access to a laser printer, these word processors leave my options open. This also provides some evidence that CP/M, at least in word processing, is still viable.

Thank you for your excellent magazine and articles.

George W. Richards
Rochester, New York



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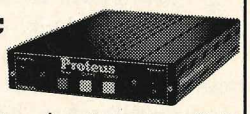

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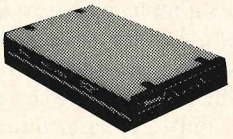

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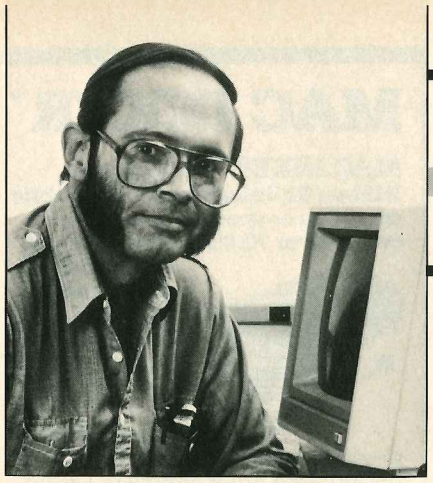

First Impressions

A hard drive, a window utility, and a Modula 2 compiler

by Tom Enright

This month we will be looking at three products: a super-fast, high-capacity hard drive from Core International; a memory-resident DOS window utility from WindowDOS Associates; and a Modula 2 compiler from Workman and Associates.

The hard disk system from Core International is the HC-115 Winchester disk subsystem. This disk boasts 120 megabytes of storage with a 15-millisecond average seek time. WindowDOS is a memory-resident utility that allows you to open a menu-driven window to DOS from within applications programs. FTL Modula is an inexpensive Modula 2 compiler that is available in both MS-DOS and CP/M versions.

Core hard disk system

The Core HC-115 is a replacement hard disk subsystem for AT-class computers such as the Kaypro 286i. It consists of a 5-1/4-inch, full-height hard disk; a replacement disk controller card; interface cables; an auxiliary set of ROMs, and the necessary software for installation and use of the system.

Neither MS-DOS nor the standard disk controller card on AT-class machines supports drives larger than 30 megabytes. For that reason the Core system requires some changes to *DOS* as well as replacement of the disk controller card. Also, since the controller must be replaced anyway, Core has optimized the performance of its controller with its drives. The alterations to DOS are taken care of by a patching program, adding their ROMs, and a special device driver declared in your CONFIG.SYS file.

Installation of the Core system could be better documented. The documentation and installation instructions are sufficient for technicians or systems integrators—but not the average user. Some experimentation and a couple of calls to Core's technical support number were required before I could get the system running correctly. The problem is that the documentation is fragmented (several groups of loose pages stapled together) and assumes too much knowledge on the part of the person installing the system.

Once the physical installation is done, the disk is ready for partitioning and formatting. If the Core disk is installed as the second hard drive in your system, you simply partition and format the disk using software supplied by Core. At this point another shortcoming of the documentation comes to light. Your standard hard disk will not work with the Core controller until you isolate and cut one line of the interface cable to the standard drive. This procedure is not mentioned in Core's documentation. It took a call to Core's technical support to find out about this requirement.

If you want to install the Core disk as the only hard drive in the system, things get even more more complex. You must separate the hard disk into two logical drives. One of these logical drives, the boot device, must be partitioned and formatted by MS-DOS's FDISK and FORMAT programs. The other device is formatted by the Core software.

Once the installation chores are sorted out, this drive is a real "screamer." Benchmark tests fully support Core's claimed performance. The tests gave an average seek time readout of 15.3 milliseconds. And that, friends, is *fast*. By comparison, the 30 megabyte Seagate drives in the regular 286i test out at 36.3 milliseconds, and some of the 10 megabyte NEC drives deliver a leisurely 68 millisecond seek time.

The HC-115 hard drive, from Core International, is a real "screamer."

This kind of performance has a high price: $4,995. At that price, not many of us are going to rush out and buy this subsystem. The primary customers for this kind of system are the business and software development communities. They are the only ones who really need the capacity and performance, and the business community will not object to the necessity of having the system installed by a professional.

An AT- or 386-class machine with this drive subsystem would be ideal as a file server for a local area network. The system even comes with documentation on configuring it for the Novell Network. Once installed, this system delivers performance that is difficult to equal.

WindowDOS

Ever been in the middle of a program, with several files opened, and found that you needed to format a disk, copy files, or do some other chore normally

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PHOTO BY R.S. POWERS

done from the operating system? In the past you had to exit your program, do whatever needed to be done, and then restart the program.

WindowDOS, from WindowDOS Associates, is a menu-driven utility that allows you to open a window to DOS from within other programs. Pressing the Ctrl-Ins key activates WindowDOS and presents you with a display of the current directory. Then you move a highlighted bar around to select files or execute selected commands displayed at the bottom of your screen.

The general flavor of this program is similar to SWEEP, XTREE, or one of the other file management utilities. You can tag files and copy, erase, rename, and view individual files or groups of tagged files. You can also alter the read/write status of files and hide individual files or complete directories so they do not show up on normal directory listings.

In addition to normal file-oriented operations you can format disks, create new directories, and display your directory structure. On AT-class machines the format command gives you the option of formatting the disk in high-density (1.2 megabyte) or normal-density (360K) formats.

Some WindowDOS commands are of more use to advanced DOS users than to casual users who are looking for a menu-driven front end to DOS. Entering ^E when the program is active displays the "Environment Window." This is a display of all programs currently RAM-resident, their segment addresses, the amount of memory used by each, and the DOS interrupts each one uses. If there is a conflict between resident programs, this information can be used to figure out which program is responsible for the problem.

Other commands let you set up complex and repeatable copy parameters. You can mark a drive and directory with ^S for later selection by a single keystroke during a copy operation. You log on to the target directory or drive, enter ^S to mark the drive and directory, log on to the source directory, tag your files, enter the copy command and reply with ^D when asked for the destination. This is a convenient capability when backing up files to a series of disks.

The program also saves a record of which directory was last accessed on each drive. To see the last directory accessed on drive A, simply press the 1 key and that directory is immediately displayed. Drive B is selected with the 2

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key, drive C with the 3, and so on. Pressing zero returns you to the directory from which you entered WindowDOS.

Since WindowDOS is a resident program you can put the command to run it in your AUTOEXEC file. It has a whole slew of options to the basic RUN command. Command line options can alter the way files are sorted in the directory display, change which directory is displayed when you call the program, and activate a time-out feature that blanks your screen if no input occurs for five minutes. Also, if you like the program but do not want it to be memory-resident, it can be run as a normal program by appending "X" to the RUN command.

The fact that it is memory-resident lifts WindowDOS from run-of-the-mill status and makes it very useful. The further fact that it's capable of advanced and complex operations makes it attractive to advanced users and programmers as well as casual users. WindowDOS Associates puts no silly copy protection schemes on its distribution disks. In fact, you're encouraged to make as many copies of the program as you find useful. The documentation is well organized and useful to a wide audience. This program will give XTREE a real challenge in popularity and usefulness.

FTL Modula

Modula 2 is one of the more popular new programming languages. It was designed by Nicholas Wirth to correct the imperfections that he felt existed in Pascal, which he also designed. Modula 2 is much more of a professional programming tool than Pascal. It allows you to write and compile a code "module" once, and then use that module in any program you write.

FTL Modula, available in either DOS or CP/M, is inexpensive enough ($49.95) that you can try the language to satisfy your curiosity. FTL comes on two disks that contain full source code for all the standard modules. Most other implementations of the language make you pay extra for source code. Workman and Associates consider it part of the basic package. I find that a very commendable attitude.

FTL Modula is a "programming environment," much like Turbo Pascal. It has its own editor, compiler, and linker, along with a small menu-driven front end for the system. Workman's menu system is not as smooth and elegant as Borland's, but that doesn't detract from the product. It is a fully functional Modula 2 compiler that complies with the standards established by Wirth.

Modula 2 is not as easy a language to learn as some others. You have to know which external module contains the functions you want to use. Modules must be included in your source code by name. The compiler is also case sensitive, which is something I had not encountered before—reserved words must be in upper case. Also, module names must be entered in the precise combination of upper and lower case letters that they were originally defined with. Modula is a much less forgiving language than Turbo Pascal or BASIC.

FTL's documentation does leave a little to be desired. It is brief and makes no attempt to teach anyone the language. Workman and Associates state up front that their manuals are for reference, not tutorials. To learn the language you will have to invest in some third-party books on Modula 2. One of the better ones is *Modula 2, A Seafarer's Manual and Shipyard Guide*, by Edward J. Joyce.

FTL Modula is a solid, no-frills Modula 2 compiler. You don't get any handholding, but at this price you shouldn't expect it. It is inexpensive enough to buy even if you aren't certain that you want to learn the language. On top of all that, Workman and Associates have a reputation for good product support. All things considered, I find this to be a good product.

Quick Reference Summary

Product: Core HC-115
Manufacturer: Core International
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Phone: (305) 997-6055
Sugg. List Price: $4,995

Product: WindowDOS 2.0
Manufacturer: WindowDOS Associates
Box 300488
Arlington, TX 76010
Phone: (817) 467-4103
Sugg. List Price: $49.95

Product: FTL Modula 2
Manufacturer: Workman & Associates
1925 East Mountain St.
Pasadena, CA 91104
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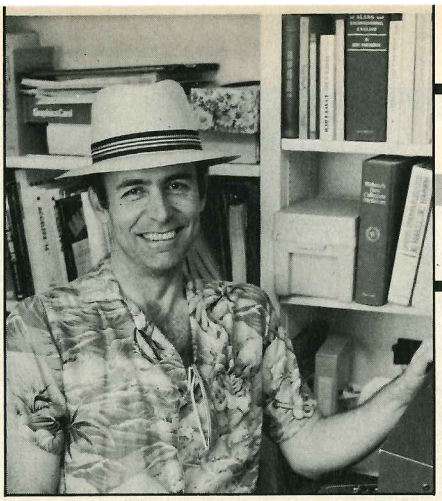

Flea Market

Some MS-DOS utilities and CP/M surprises

by Ted Silveira

After months of tinkering, I've finally settled on a group of MS-DOS file handling utilities for everyday use. And it all started when Bond Shands, the sysop of the Kay*Fog bulletin board (415/285-2687), pointed me in the direction of a program called QFILER23.

QFILER, a shareware program by Kenn Flee, is a file maintenance utility—it lets you copy, delete, rename, protect, and view files as well as move around the directories of your disk. The program itself is a dead ringer for FFM21, which used to be my favorite file program (see "Flea Market," July 1986). Like FFM, QFILER splits the screen into side-by-side windows so that you can call up a different directory in each window, copy files between them, and so forth, a feature I refuse to be without now that I've used it. In short, QFILER can do everything FFM can do.

But QFILER isn't just a clone of FFM—it adds some tricks that its prototype can't match (at least, not yet). QFILER adds these features not by including them in its own code but by creating links to other shareware programs. For example, instead of including a file-viewing function as part of the main program, QFILER links to a separate program, Vern Buerg's LIST (shareware, latest version LIST61A). Several of these programs are discussed below.

LIST. LIST is really worth a column in itself. I don't know about you, but I spend a lot of time scanning text files—reading a few lines to identify a forgotten file, checking some documentation on disk, and so forth. But I don't want to use my word processor—it loads too slowly to use for a quick peek, and I don't need all its editing and formatting functions. So I use LIST instead.

LIST loads like lightning and scrolls so quickly that new screens snap into place. I can view text files in ASCII or other files in hex, and I can filter out the high bit if I'm viewing WordStar files. I can scroll horizontally, search for text, have long lines wrap (or not), and print files. I can set the on-screen colors, and because I have an EGA card, I can switch to a 43-line screen, if I want.

LIST lets you specify an ambiguous file name so you can view a whole series of files in a row.

Another thing I love about LIST is that I can specify an ambiguous file name (using the * and ? wildcards) so that I can view a whole series of files, one after the other, without leaving LIST. Even if I haven't used an ambiguous file name, I can load a new file without exiting the program.

LIST is the best program of its type I've ever run across. The fact that I can use it from inside QFILER instead of some primitive built-in file viewer just makes me that much happier.

QEDIT. For those times when you do need to edit a file rather than just look at it, QFILER also links to the text editor of your choice. In my case, that's QEDIT, a shareware text editor by Sammy Mitchell (latest version, QEDIT130).

I use QEDIT for writing batch files, quick notes, and short programs, and for other jobs where I don't need the word wrap and print formatting of a true word processor, but I do need to be jumping in and out of files quickly. QEDIT is small by MS-DOS standards (only 33K) and very fast. It loads and scrolls like lightning, and it has all the commands I expect in a text editor—cursor movement, insert/overwrite, deletions (by character, word, line, block), block functions (though all block marking is line-oriented), search and replace functions, and file reads and writes.

With QEDIT, I can split the screen to edit two files at once and change windows or move blocks from one window to another. In fact, QEDIT can have up to 99 file buffers so that I can work on many files at once, even though I can only see two at a time. QEDIT also has a completely customizable keyboard. It comes with one WordStar-like setup and one DOS-like setup, but I can easily create an entirely different keyboard by editing a short text file.

There may be a better text editor floating around in shareware land, but I haven't seen it, and QEDIT is plenty good enough.

FINDIT. When I'm using QFILER to organize files on my hard disk, deleting unnecessary or duplicate files and moving other files to new directories, I often

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PHOTO BY TODD TSUKUSHI

need to find out where on the disk a certain file is—without having to log into every sub-directory. To solve this problem, QFILER links to a separate program called FINDIT (by Larry McMains), included with QFILER.

FINDIT works just like the WHEREIZ utility I covered last month. It will locate any file I specify, searching all the sub-directories on my hard disk and reporting every occurrence of the file. If I use wildcards in the file name (Q*.* to locate every file whose name begins with Q, for example), FINDIT lists every file that matches the specification. It's a quick and simple way to locate individual files and to find out if you have duplicate files on a disk. FINDIT isn't fancy, but it works fine.

FILECAT. To help keep track of files, QFILER links to FILECAT, a file cataloging program, also by Kenn Flee. FILECAT will catalog disks, reading in the file names and building a catalog of files and their locations, and it will then search the catalog to locate a file or files. (It will also print the catalog and do the other things you expect of a cataloging system.)

So far, I haven't been using a file cataloging system in MS-DOS (though I have in CP/M for a long time), but I've now hit the critical mass of files—I'm starting to lose track of what files I've got and where I've got them. Though I haven't tested all the various shareware and public domain cataloging programs available in MS-DOS, I'm going to be using FILECAT for one very good reason—I can access it through QFILER, which I use quite a lot, so I'm much more likely to keep the catalog up to date.

ARC-A, ARC-E, ARC-V. Just as CP/M has its LBR (library) files, so MS-DOS has ARC (archive) files. An ARC file is simply a group of files that have been gathered into one larger file for storage. Since the individual files are compressed as they are added to the ARC file, you save a great deal of storage space (sometimes as much as 40 to 50 percent). In addition, you gain the convenience of having related files stored together. All bulletin boards and many user groups store their files in ARCs for just these reasons.

The problem is that you have to extract an individual file from the ARC before you can do anything with it, so you need a special set of ARC utilities to work with these files. There are several different sets of ARC utilities available,

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and QFILER has a link to one of the best—Vern Buerg's ARC-E, ARC-A, and ARC-V programs for extracting from, adding to, and viewing the contents of ARC files. Using QFILER, for example, I can tag a group of individual files and then squash them into a single ARC file with just a few keystrokes. I can also point to any existing ARC file, check its contents, and then extract any files I want from it, still without leaving QFILER.

Each of the programs I've mentioned is worth having on its own, but they really shine when used in combination with QFILER. Together, they make up a system that will let you handle 90 percent of your computer housekeeping chores without ever leaving QFILER (and if you do need to leave, QFILER has a shell command that lets you pop out to the DOS prompt and then return instantly). Until something better comes along, I'm hooked.

CP/M only

For the past couple of months, I hadn't seen any new CP/M programs, and now suddenly, I've stumbled over a bunch of interesting programs all at once. I guess I was looking in the wrong places.

Page Makeup. Peter Donnelly is the creator of ARTIE, a "free for non-commercial use" paint program along the lines of DDRAW (see "Flea Market," March 1986). Donnelly manages to do quite a bit with the limited graphics of the '84 series Kaypros—lines drawn with various brush patterns, fill patterns, cut-and-paste, text fonts, printouts on dot-matrix printers, and even a slide-show utility.

Now, most people would be happy enough to get that far on a computer never meant for such things. But I think it's clear that Donnelly is quite mad—his latest project is ARTPAGE, a $29.95 page makeup program for '84 series Kaypros.

I haven't yet seen the full version of ARTPAGE, but I have had the chance to play with a demo version that's circulating around the bulletin boards under the name PAGEDEMO.LBR. And you know, the program really does appear to do what he says. Specifically, it allows on-screen formatting of a page of mixed text and graphics. It includes graphics tools like line draw, circle draw, pixel draw, and cut-and-paste. It reads text files into a window anywhere on the page and also reads graphics files from ARTIE and, with some limitations, from Spectre's Rembrandt program. It handles headline characters in different fonts. It works with many dot-matrix printers *and* through the early Kaypro letter-quality printers (which are Juki 6100 printers under the skin). And there's more, including the ability to chain-print files and on-screen video effects for boldface, italics, and underlining.

On the one hand, the ARTPAGE's final product still looks like something printed on a dot-matrix printer (since it was), and the program itself is not a threat to Ventura Publisher or PageMaker in the field of desktop publishing. But on the other hand, if you have a CP/M Kaypro and a dot-matrix printer, it could be just what you need for newsletters or flyers.

I'll tell you more when I get my hands on the real thing, but in the meantime, pick up the demo version—it's fun.

Script Writing. Even if you discount the talent required, scripts are tough to write because the typical script format requires changes in margins, capitalization, and so forth every few lines. So if you write scripts—film, television, stage, audio-visual—you should know about FeatureFormat Professional (FF), a CP/M shareware program from PowerSoft in Los Angeles (where else?).

I can't begin to tell you all the things FF does, but let me give you a sampling. When you run FF, it loads itself and then runs WordStar, but WordStar with a difference. Once WordStar is running, you'll find that some of your keys have been redefined for special purposes and a number of new features have been added.

You now have single-keystroke commands to set your format for dialog, descriptions, transitions, parenthetical comments, interior and exterior cuts, and slug lines. What's more, some of these commands automatically put you in caps-lock mode if it's appropriate (and take you out of it also). And it even understands the difference between *writing*, when you're going to be adding both headings and text, and *rewriting*, when presumably you're going to be redoing just the body text and not the headings.

You can also assign words or phrases (like character names) to single keys. In fact, the program includes a "record" mode you can turn on and off to create your definitions (it also auto-records in appropriate circumstances). You can nest definitions, and once you have worked up a nice set, a single command saves both your definitions and your script.

And since most of the special format definitions are assigned to the symbols that inhabit the top row of keys (above the keyboard number keys), FF has an option that lets you toggle these keys so that you can get the symbol without using the Shift key. (Clearly this program was put together by someone who hates Shift keys and wants to concentrate only on the words, feelings I sympathize with.)

FF can also deal with various kinds of page breaks (break in dialog, in description, etc.) and can insert the proper *continued* marker (and the name, if it's dialog).

Through all this, your original WordStar remains intact. You can turn FF off if you want to do some straight word processing or, better yet, reset some of FF's unique features to make your ordinary writing easier, too.

I've only given you a brief recap here, but I'm sure you scriptwriters are panting already. Pick up this gem, and for heaven's sake, send PowerSoft their measly $20 (which gets you the full manual, latest version, and update notices).

I've got a lot more programs to cover, but I've run out of space. Tune in next month. As always, all the public and shareware programs mentioned here are available from the KUG ROS bulletin board at (619) 259-4437.

Quick Reference Summary

Product: ArtPage
Manufacturer: Artie Software
964 Heywood Ave., #220
Victoria, BC
Canada V8V 2Y5
Phone: (604) 383-4955
Sugg. List Price: $29.95

Product: FeatureFormat Professional
Manufacturer: PowerSoft, Inc.
1029 Magnolia Ave.
Los Angeles, CA 90006
Sugg. List Price: $20

CP/M SOFTWARE

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EDITORS/WORDPROCESSORS

7012) VDO: Ver. 2.5. Video Display Oriented editor. Full screen editor with help menus uses only 7K of memory!

7013) WORDSTAR PATCHES: Patch subroutines and patch locations for modifying Wordstar.

7048) EXPRESS: Version 1.0. A full screen editor designed for programmers. This editor can access files in any user area, on any disk from anywhere on disk to anywhere on the disk.

7049) VDE: Version 2.31. A small powerful text editor that takes up only 10k of memory.

EDUCATIONAL

7006) DB HELP: Dbase help program listing all Dbase II commands and functions. (Requires Dbase II).

GAMES

7000) NEW ADVENTURE: Enter into the Colossal Cave to find fortunes of treasures and gold.

7002) DC10: An exciting flight in the cockpit of a DC 10. Includes instrument representation. (Requires MBASIC).

7015) GAMES, GAMES, GAMES: Star Trek, Chess, Aliens and more. (includes source code).

7017) BASIC GAMES: Star Traders, Chase and Nuclear Reactor. (Requires MBASIC). (Requires Turbo Pascal).

7021) THE MINES OF MORIA: A complex fantasy game that changes every time you play it. (Requires MBASIC).

GRAPHICS (REQUIRES KAYPRO w/ GRAPHICS)

7003) DDRAW: Version 2.0. Create pictures on your screen and save them on disk to recall later. This program also allows you to dump graphics to your printer. (Includes PASCAL source code).

7034) ARTIE: Version 6.0. An excellent graphics design program that allows you to dump your art files to your Okidata or Panasonic printers.

7053) & 7065) PLOT: Version 3.3. A very impressive high resolution plotting system for dot matrix printers. The plotting program comes preconfigured for Epson, C. Itoh, and Okidata printers. Source code is included. High level language facilities for creating the vector files are supplied for MBASIC, TURBO PASCAL and Microsoft FORTRAN80. Requires disk 7065. **(2 disk set. Must order both disks)**

HACKERS/SECURITIES

7005) DB SQZ6L: Take this program and encrypt your Dbase II command files to protect them from prying eyes. (Requires Dbase II).

7046) SCRAMBLE: Version 2.0. A very effective way to protect your files. This program scrambles your file using an eight character password. Even the author says he could not decypher without the password!!!

LANGUAGES

ALGOL

7040) ALGOL-M: An algol subset suitable for learning algol. Includes compiler and interpreter.

APL

7063) APL: Yes you read right ... APL. Don't know much about this program except that it appears to be bug free and supports standard APL.

ASSEMBLERS AND STUFF

7026) NEW ZASM: A Z80 macro assembler that assembles standard Z80 mnemonics into Intel hex format.

7027) ZMAC: A Zilog mnemonic assembler that generates relocatable object code. Also included is ZLINK a linkage editor for programs assembled by ZMAC. Generates native code.

7033) XLATE: Version 5.0. Xlate takes 8080 source code using Intel mnemonics and creates a new Z80 source code using Zilog mnemonics.

7042) DAZZLE STAR: Z80 disassembler with built in editor. The editor uses Wordstar compatible commands.

BASIC

7041) NBASIC: Nbasic is a basic preprocessor for Mbasic and Basica*. This preprocessor allows the programmer to use alphanumeric labels, REPEAT/UNTIL loops, case statements and fortran like subroutine calls.

C

7023) SMALL C COMPILER: Version 2.0. Expanded version of Ron Cains Small C. (Includes sample programs).

7024) SMALL C SOURCE: Version 2.0. Source code for C compiler. For those who want to modify a C compiler. (Requires 7023 to compile compile itself !).

7025) SMALL C MACRO FILES: Macro source files for Small C.

COBOL

7068) COBOL: Compiles to interpreted code. Includes interpreter and full documentation.

FORTH

7038) FORTH 83: 1983 standard forth interpreter.

LISP

7036) & 7070) ILISP: This is an implementation of LISP based on the LISP dialect called SCHEME.(Requires CP/m 2.*). **(2 disk set. Must order both disks)**

MODULA 2

7064) MODULA 2 SOURCE CODE: This disk contains fifty Modula source code files. Included are many useful utility procedures.

PRINTER UTILITIES

7022) FONTSY: Banner program for all printers. (Includes source).

7028) BRADFORD: An excellent near letter quality printer program for your Wordstar or standard text files. Comes with five fonts for Epson MX w/Graftex, IBM Dot Matrix, Star Gemini 10x/15x, and Epson FX/RX printers. A truly amazing program.

MISCELLANEOUS

7020) EXPERT SYSTEMS: Written in Pascal. (Requires PASCAL Compiler).

7039) DESK MASTER: A computer desk organizer. Desk Master comes with a calendar, card file, memowriter, and calculator.

7043) TOUR: Version 2.0. Document editor for outlining projects, also include desk calendar.

TELECOMMUNICATIONS

7004) DBBS: A space efficient dynamic bulletin board system that incorporates passwords. (Requires MBASIC).

7009) MBYE: Version 4.0. This is a remote console program for CP/M 80 computers. This disk contains assembly language source code only and is NOT for the novice programmer.

7010) & 7069) ROS: Version 3.4. Remote Operating System including PASCAL source code. Requires Turbo Pascal. **(2 disk set. Must order both disks)**

7069) ROS: Requires disk 7010.**(Disk 2 of 2).**

7011) ROSMAC: Set of machine dependent I/O and clock drivers for ROS V 3.3 and 3.4.

7018) MODEM 7: Powerful modem program that supports auto-dial for Signalman Anchor Mark XII, Hayes Smartmodem 300 or 1200, U.S. Robotics 300/1200 and PMMI 103 s-100 Plug-in.

7035) MEX: Version 1.11. Modem program that also incorporates a phone number librarian.

7054) & 7055) PBBS: A Small, very fast BBS program written in Z-80 assembly language. PBBS provides 8 level user profile,private and public message system, BYE504 or 339 bdos interface, automatic user/message automatic file maintenance. Plus more. **(2 disk set. Must order both disks)**

7058) & 7059) MBBS: A very powerful BBS. (Version 4.5). **(2 disk set. Must order both disks)**

7060) MBBS UTILITIES: Set of utility programs for MBBS.

7061) IMP: Version 2.44 Modem program that supports both KMD batch protocol in addition to MODEM7 type.

UTILITIES

7001) CPM POWER: Version 2.53. A CP/M subset with many additional commands.

7007) DB UTILITIES: Set of Dbase II utility programs and overlays. Includes source code.

7008) FBAD: Version 6.0. Checks your hard or floppy disk for bad tracks. Includes source.

7014) YANC: Version 2.4. Yet ANother Catalog program for those who attempt to keep themselves organized...

7016) MISC. STUFF: Contains XCCP, DASM, and I/O Cap.

7029) QUIKKEY: Version 2.0. Key redefinition utility.

7030) SUPERSUB: Version 1.3. Replaces SUBMIT on CP/M. Allows submit files and supports interactive mode.

7031) EPEX: Version 1.1. Evironmental Processing EXecutive. EPEX ia a very powerful environmental program with such features as batch processing including IF /ELSE /END /GOTO, named directories, aliases system control and much more. Includes full documentation.

7032) EPEX TOOLS: Tool package for EPEX V 1.1.

7037) EGUTIL: Set of CP/M utilities including free disk space by sector, file tagging, and hidden files.

7044) NEWARC: Set of archive tools written assembly language for increased speed. Tools include copy, add, del, directory, sort, and type. There is even a utility for running command files from the archive

7045) CRUNCH: Version 2.3. Utility for crunching and uncrunching files.

7047) FU-12: Full screen binary editor using commands patterned after Wordstar.

7050) SPOOLBUFFER: Throughs all output to the printer to disk file then from disk to printer for more efficient use of CPU time.

7051) CONIX: Conix is an operating system that operates under CP/M. Some of the capabilities of Conix include path searching, automatic overlay, redesigned user areas, 8M Print spooler, user definable function keys, virtual disk system, user definable I/O devices and much, much more. Conix is a must for any serious CP/M user.

7052) & 7071) CONIX DOCUMENTATION: Complete documentation for Conix. **(2 disk set. Must order both disks)**

7056) KMD: Version 1.5. Very popular file transfer.program.

7057) LBRDISK: This set of programs fool BDOS into thinking that a library is actually a logged disk device.

7062) MAGIKEY+: A key redefinition program that allows you to create and keep key definition files.

7066) & 7067) FATCAT: Version 2.4. A catalog program that allow cataloging hard drives as well as floppy disks. Very easy to operate and configure. **(2 disk set. Must order both disks)**

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Life at 300 Baud

More government bulletin boards

by Brock N. Meeks

Good ideas have a way of sticking around—even if they come along before anyone can figure out a way to use them. They'll hide in the shadows of somebody's mind until the snags get straightened out and they can be put into action. This is the case with bulletin board systems (BBSs) operating under the auspices of governmental agencies.

As last month's column showed, the basic goal of federally sponsored BBSs is to make more information available to more people. The only flaw in this seductive idea was, until recently, a widespread reluctance to entrust governmental data to a microcomputer's hard disk. That reluctance is breaking down—rapidly—as several governmental agencies are now supporting BBSs.

State and local level BBSs

It's interesting to note that BBSs are being used not only by federal agencies, but also at the state and local levels. For example, Los Angeles sponsors an official city BBS run by its microcomputer lab. According to its sysop Greg Fiero, the board contains various policy statements from the mayor and city officials. In addition, Los Angeles residents can ask their city officials questions, or simply register any compliments (or complaints) they might have. The board runs at 300 or 1200 baud, and can be called at (213) 617-3599.

At the state level, in California, a BBS is run by the Utilities and Commerce Committee. Though it is not open to the public as of this writing, both legislators and citizens should have access to the BBS sometime this summer. According to Robert Jacobsen, principal consultant to the committee, the board is really a testing ground. "Other committees and legislators want to see if the board is well received, and well used," said Jacobsen. If the BBS is successful, Jacobsen predicts that within a couple of years anyone with a modem will be able to electronically bend the ear of any member in the California legislature.

If you know of a BBS run by a state or local agency in your area, I'd like to hear from you. In this month's column, we'll finish up our look at federally sponsored BBSs by examining three more boards.

Some people are using NANci to track down old naval squadron buddies.

Top gun BBS

Operating Agency: U.S. Navy, *Naval Aviation News*
Location: Washington, D.C.
Phone: (202) 475-1973
Password: Password issued, no preregistration
Baud Rate: 300/1200
Hours of Operation: 5 p.m. to 7 a.m. weekdays; 24/day weekends

This board started out as DIANA (DIamond Anniversary of Naval Aviation) and is now known as NANci (*Naval Aviation News*, computerized information). Sponsored by the U.S. Navy and *Naval Aviation News*, this board is both an online extension of the magazine and an excellent reference on naval aviation history—a *Top Gun* in phosphor and silicon.

NANci is for those interested in stories, facts, and historical information relating to naval aviation. (And judging from the success of the hit movie *Top Gun*, that's a substantial number.)

It is a continuing service in honor of the 75th Anniversary of Naval Aviation program. Its forerunner, DIANA, was established to help celebrate that anniversary. (The sysop, Commander Howard Weeler, says the board is serving the Navy by acting as a kind of electronic information officer.)

NANci carries several different message bases, called conferences, where you are encouraged to leave your "war stories" or questions you might have about naval aviation history. Some users are even tapping into NANci as a starting point for tracking down old naval squadron buddies.

Through NANci you can submit articles for publication in *Naval Aviation News* (NAN) by sending a message to the editor of NAN. Stories and information uploaded to NANci for publication may be published in NAN hardcopy, or they may be distributed electronically in a special section of the BBS.

The board runs under the TCOMM software, which resembles the RBBS software in look and feel. The board supports Xmodem, Kermit, and Ymodem file transfer protocols.

Beyond the wealth of naval aviation information, this board carries a huge assortment of MS-DOS shareware and public domain files. The Utilities/Files and Communications/Files sections are inviting enough to keep your modem

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tied up in file transfer mode for hours; fortunately for your bank account NANci allows you only 60 minutes of online time per day.

For your first date with NANci I suggest you download the following:

•MASTER.LST, a complete listing of all NANci files;

•GOUGE.DOC for new-user information on how to get around in NANci.

And for as long as they last, NANci is offering some free gifts to its users, courtesy of naval aviation. I won't spoil the surprise by telling you what those are. You can log on and discover them for yourself.

Cracking the books

Operating Agency: Department of Justice, Comptroller of Immigration and Naturalization Service, Budget/Financial Board
Location: Washington, D.C.
Phone: (202) 786-3640
Password: Password issued, no pre-registration required
Baud Rate: 300/1200/2400
Hours of Operation: 24/day

This board is an open and active forum encouraging an exchange of information related to budget and financial management in the federal government. In addition, it is an electronic message and file transfer system for the Immigration and Naturalization Service (INS).

Anyone involved in budgeting or financial matters will benefit from this board. Its user base is peppered with budget and financial experts. Given this, you might expect this board to be an excellent source of spreadsheet data and data base applications—and you won't be disappointed.

New users are given an access level of one. Until you're verified by the sysop you won't be able to download any files; however, you are encouraged to look around and make yourself familiar with the layout of the system. Verification takes about 48 hours.

There are 12 file transfer sections covering everything from Accounting Reports to INS Policy Statements; Odds & Ends to Lotus 1-2-3 Utilities.

Most of the information and files on this board are open to the public and may be downloaded by anyone with the proper access level. However, the sysop exercises control over access to privileged working files. For example, many financial reports and working budget files cannot be released to the public

User Groups

Learning to operate a computer is not easy—everyone needs help at one time or another. This is precisely the reason why user groups were born.

Basically, a user group is a collection of computer owners and users who learn from each other. These are nonprofit membership organizations devoted to making life with a computer easier.

Almost every computer brand and operating system has user groups that support it; many groups are a mixed bag. For example, owners of many different brands of computers find they all use the same operating system, and therefore, have some common ground.

Most user groups have members with a wide range of expertise and experience—from absolute beginners to those who have "working" knowledge to people who are "power users." Often people's expertise breaks down into types of software applications—word processing, data base managers, spreadsheets, telecommunications, etc. Perhaps more often, a member's knowledge is specific to a particular piece of application software.

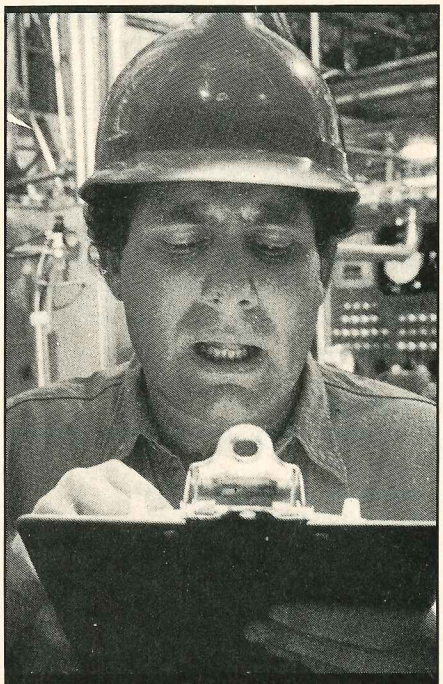
The bottom line is that user groups are a veritable goldmine—and the mother lode is information. an expert overnight, and no one does it alone.

KUGs

For those readers who own Kaypro computers, Kaypro User Groups (KUGs) exist in every state, in Canada, and in countries all over the world. To find the KUG closest to you, write to Fred Zuill, KUG Manager, at Kaypro Corporation, 533 Stevens Avenue, Solana Beach, CA 92075; (619) 481-4368 (voice). Be sure to include your zip code.

Fred Zuill also maintains a BBS—the KUG ROS—for the exchange of information and help. It contains a message section, as well as lots of public domain software for both the CP/M and DOS operating systems. Public domain programs mentioned in *PROFILES* can also be found there. The system is online 24/hrs, 7 days a week, and can run at 300/1200/2400 baud.

KUG ROS — (619) 259-4437



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The first step is to call the Coalition for Literacy at **1-800-228-8813.** Do it today. No investment your company has ever made is more important.

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until they have been approved by the appropriate officials within INS. Files with an extension of WKS, DBS, or SEC cannot be downloaded by users with security levels of less than 5 (level 5 is reserved for INS analysts and staff members).

Digging in

Operating Agency: U.S. Army Corps of Engineers
Location: Washington, D.C.
Phone: (202) 272-1514
Password: Password issued, no pre-registration required
Baud Rate: 300/1200
Hours of Operation: 24/day

The title of this board's sponsor is intimidating: Manpower and Force Management Division, Headquarters, U.S. Army Corps of Engineers. But titles can be deceiving.

This board is well laid out and runs under the familiar RBBS software. Sysop Rich Courtney says the board was established as "a vehicle for information exchange among personal computer users throughout the United States. It is available to anyone who wants to dial in and agrees to abide by the board's rules."

Because the board is also used for internal information exchange within the Corps of Engineers, some areas of the system are restricted to Corps of Engineers users only. But these areas are clearly identified and shouldn't cause any difficulty during your time online.

The above mentioned rules are an explicit set of guidelines regarding the posting of information that might be classified—a potential problem most government-sponsored BBSs have to contend with.

For example, rule number one states the intention of the board this way: "To actively encourage and promote the free exchange and discussion of information, ideas and opinions, except when the content would compromise the national security of the United States; violate proprietary rights, personal privacy, or applicable state/federal/local laws and regulations affecting telecommunications; or constitute a crime or libel." You can hardly expect less from a BBS run by the Army.

Beneath the system's somewhat gruff exterior there lies a seemingly endless supply of public files.

The board has 17 file transfer sections ranging from Communications to Programming Aids. To take full advantage of the extensive file system, I suggest you download a file called MASTER.ARC. This file is a comprehensive listing of the system's public files.

Here are some highlights. In the Graphics section there are several files that let your PC "read" digitized Macintosh pictures. In the Data Base Applications section there are several "unprotect" files. These files allow you to install copy-protected programs, such as Lotus 1-2-3, on a hard disk. In the Text Editors section I counted no less than ten different word processors. And in the Programming Aids section I discovered several files of Turbo Pascal tools and even a public domain ADA compiler called AGUSTA.ARC.

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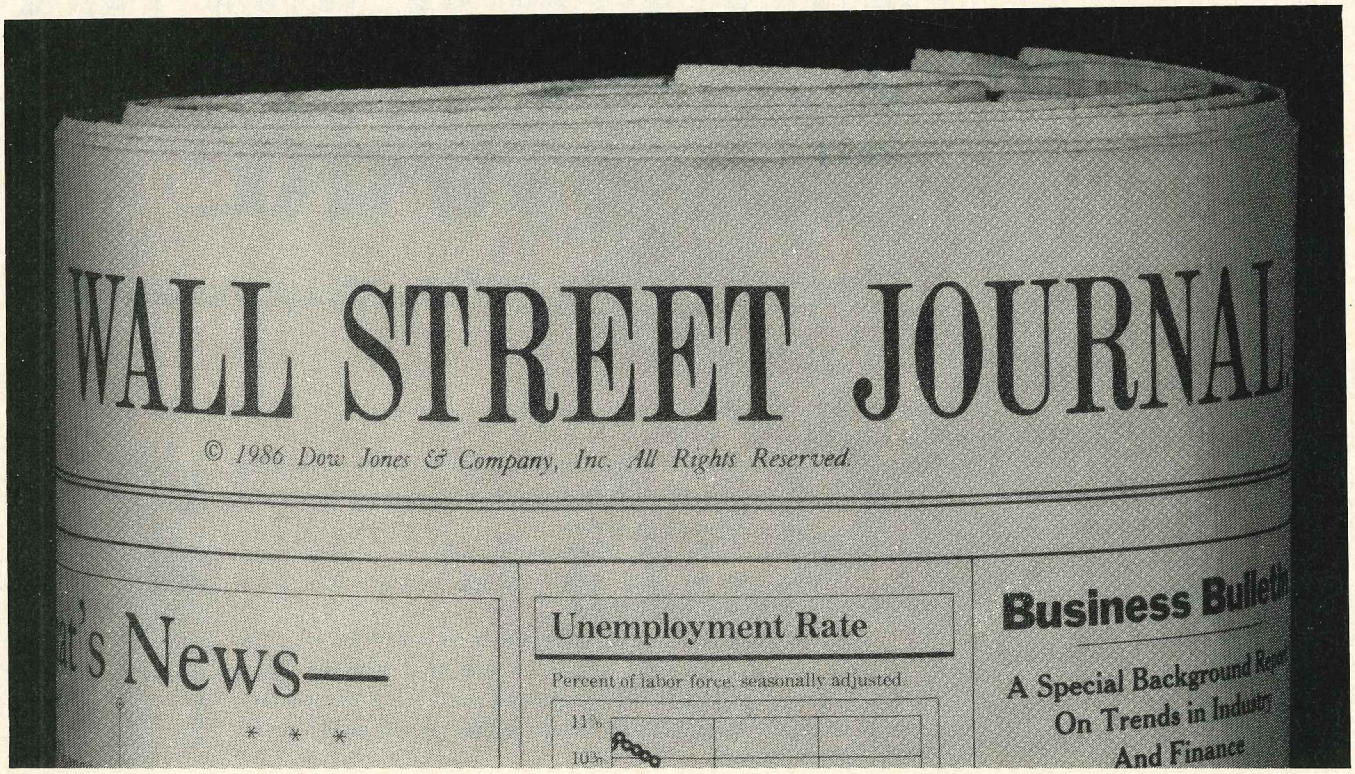

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PROJECT MANAGEMENT SOFTWARE

Planning, tracking and analyzing the easy way

by Robert J. Sawyer

Question: What do erecting a skyscraper, writing a novel, and bringing a new product to market have in common?

Answer: They are all projects—and they can all be done more efficiently with the aid of project-management software.

Project-management software can help you with all three phases of a project's life: planning (setting goals and deadlines), tracking (following the project while it is underway), and analysis (figuring out what factors contributed to its success or failure).

Most project-management programs provide you with a "Gantt chart," a sideways bar chart listing individual tasks along the vertical axis and showing their start and finish times along the horizontal axis. Figure 2 (on page 24), which we will look at in more detail later, is a Gantt chart.

Many programs also offer a "PERT chart" (Figure 4 on page 26), similar to a programmer's flowchart, graphically showing how different tasks interrelate.

Most programs also indicate the "critical path," a chronological sequence of tasks that can't be delayed without changing your project's completion date.

Project-management software isn't necessary for every job. Indeed, using such a program for a simple undertaking is a bit like booting up Lotus 1-2-3 to add two and two. The makers of Time Line, the best-selling project-management program, suggest this rule of thumb: Use one of these packages if your project consists of more than 50 separate tasks and will require three or more people.

History of project management

The Gantt chart was developed by Henry L. Gantt (1861-1919). He had a natural affinity for finding the shortest path to a goal, entering Johns Hopkins University at age 16. Gantt became a

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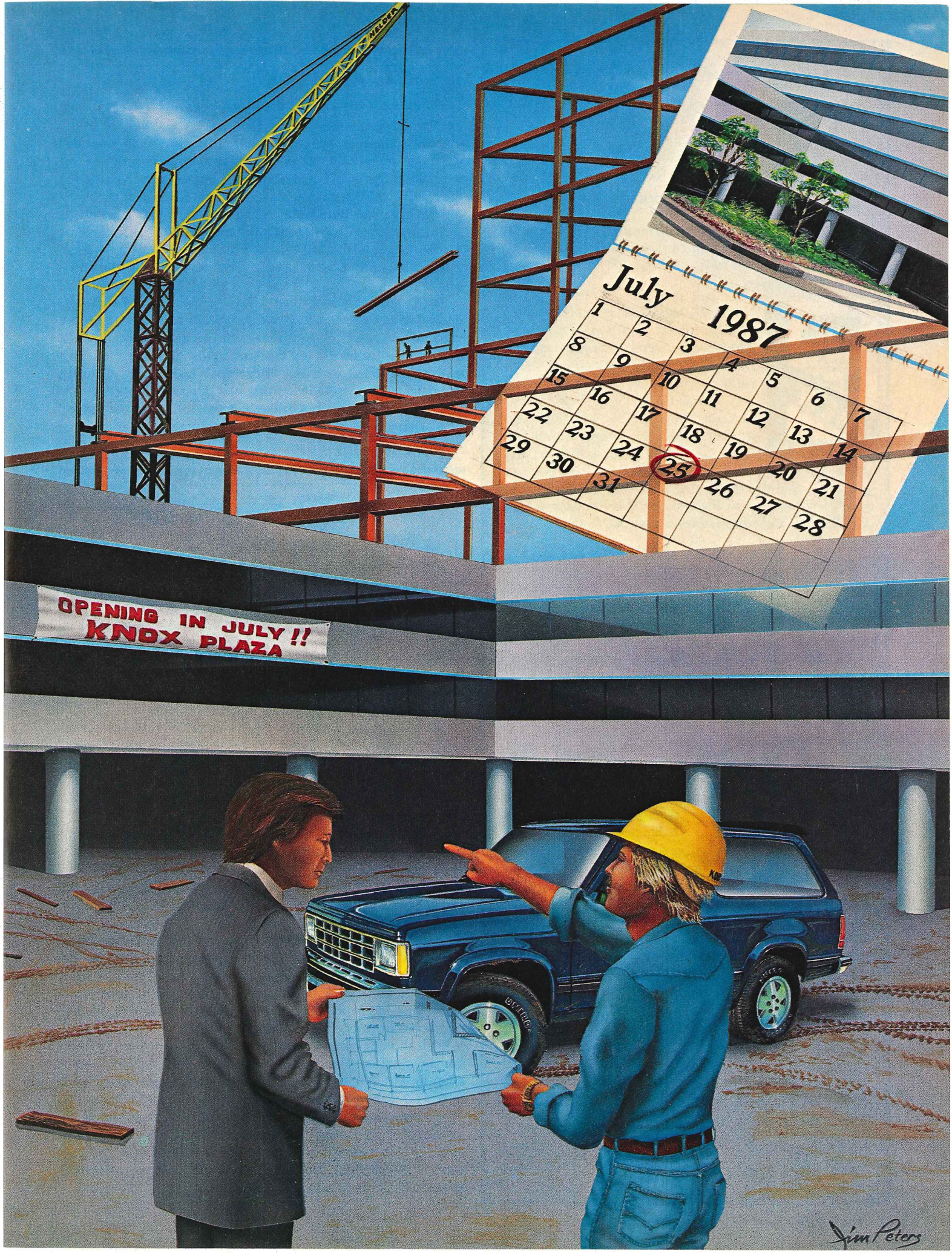
ILLUSTRATION BY JIM PETERS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maverick management consultant, proponent of the heretical view that workers were people and not commodities. It was while helping the U.S. Government plan its offensives during the first World War that he developed his namesake chart.

After the war, the Gantt chart percolated into the private sector, starting with the construction industry. Gantt charts are the main tool of the critical-path method of project management, a technique based on finding the shortest time to a project's completion.

The Program Evaluation and Review Technique (PERT) also had a military genesis. Its principal author was Willard Frazar, who helped the U.S. Navy manage the development of the Polaris submarine during the late 1950s. He found that this project consisted of many individual tasks that, although performed at separate locations, had to come together in the end. Further, being able to begin a new phase of the project often depended on the successful completion of something else.

Gannt charts are the main tool of the critical-path method of project management.

Frazar set about devising a way to analyze how component tasks interrelate. It took a while for his PERT to catch on, but Secretary of Defense Robert S. McNamara eventually ordered that it be used to track all large defense projects.

The techniques developed by Frazar and Gantt were eventually computerized. Today, the most powerful project-management software runs on mainframe systems and can cost up to $200,000. A few personal computer programs are re-written versions of mainframe software, but most were created specifically with the micro user in mind.

I know of only a couple of CP/M project-management programs. One is Milestone ($99.95); it offers a tiny subset of mainframe capabilities best suited for the management of small projects. The other is MicroGANTT ($195), which uses critical-path techniques to produce Gantt charts. It can handle sub-projects with up to 40 tasks.

Owners of MS-DOS computers have more to choose from. There are several good project-management programs for around $500. Although big computers still provide more power, these MS-DOS packages often have better user interfaces, are more cost-effective to operate, and can be run interactively, providing rapid updates.

Even though there are many titles to choose from, project management is still a specialized software genre. Last year, a total of 150,000 project-management packages were sold. Lotus 1-2-3, by comparison, sold more than 600,000 copies.

In descending order of market share (as calculated by InfoCorp of Cupertino, California), the big four microcomputer project-management programs are Time Line, 30 percent; Harvard Total Project Manager, 25 percent; Microsoft Project, 15 percent; and SuperProject Plus, also 15 percent.

Although all four of these programs can handle both approaches to project management, Microsoft Project and Time Line lean toward Henry Gantt's critical-path method, while SuperProject Plus and the new Harvard Total Project Manager II are mainly PERT affairs.

At the end of this article is a Quick Reference Summary containing a list of more than a dozen project-management software packages. This is not an exhaustive list, but it does cover the wide range of packages that are available.

Using a project-management program

To get a feel for these programs, let's use one to manage a simple project: The preparation of the manuscript for this article.

From my point of view, that project consisted of many *tasks*: proposal, approval, research, first draft, final draft, proofreading, and so on.

It also required *resources*, all of which, in this case, were human beings: Diane Ingalls (the co-editor I deal with at *PROFILES*); Suzanne Kesling, *PROFILES* assistant editor, who looks after arranging review copies of software; Carolyn Clink, my wife, whose keen eye supplements my own proofreading; and me.

If lists of tasks and resources were all that I needed, an outline processer (such CP/M's Thoughtline or MS-DOS's Ready!) would have been the best tool. But by entering the same information into a project-management program, I found out not only how long the project would take, but also which things had to be done right away and which could be put off.

Figure 1, below, shows part of a "task form" used by the program Time Line. Some of the fields are derived (that is, the computer figured out what should go in them, based on the data found in other fields). For instance, because I indicated the task "First Draft" should start ASAP (as soon as possible), Time Line filled in the current date and time in the "Start" field. I told it I wanted five days to work on the that draft and Time Line computed the end date. This stretch happened to run from a Monday to a Friday. If a weekend had fallen in the middle, Time Line would have compensated, making sure five working days were allotted.

shown by an "M"—are actual deadline dates that Diane and I had agreed on. The "M" stands for *milestone*. A milestone is a point to be reached rather than a thing to be done. Although they have no duration, milestones are always on a project's critical path.

At first glance, things looked good. All the thick task bars are followed by thin lines representing time remaining after the task's completion but before the project deadline. It seemed like I would finish everything by December 16, six weeks before the manuscript had to be at the *PROFILES* office.

But wait! Look at the "Status" column. Almost every task has an "R" beside it. That means resource conflicts, in this case people being asked to work more hours than there are in a day.

Obviously, the tasks would have to be spread over a longer period of time. That couldn't be done randomly. After all, some things could not be started until others were finished (that is, some tasks were *dependent* on others). For instance, I had to wait for the vendors to deliver review software to me before I could start evaluating it. To tell Time Line about that dependency, I positioned my cursor on "Deliver Software," hit the 1 key, then moved to "Evaluate Software" and tapped 2.

Figure 3, on page 25, shows the final Gantt chart for writing this article after all the dependencies had been marked. Although this project didn't contain any, it's possible to schedule *partial dependencies* (tasks that can partly overlap their predecessors).

As I said at the outset, project-management programs can help track a project as well as plan it. Figure 3 shows the project about halfway though its life, on January 1st (indicated by the vertical line).

As you can see, once Diane gave me the go-ahead on this article, I wrote to various vendors asking them to send me brochures about their project-management products. I figured it would take three weeks for the literature to arrive. But, as Time Line points out, even if it took an extra week it still wouldn't have changed the date on which I would finish the manuscript. That extra week (shown by a thin line on the chart) is *slack time*. All tasks that do not have slack time are on the critical path.

Figure 1: Part of Task Form from Time Line

```
-------------------------------------------------------------------------------
 Name : [First Draft                          ]      Type: (Fixed, ASAP, ALAP, Span)
 Start: [17-Nov-86 11:00am] plus [ 1  ] (Minutes, Hours, Days, Weeks, Months)
 = End: [21-Nov-86  3:00pm].
 Time to Complete: 1 week                Current Status:  (Future, Started, Done)
-------------------------------------------------------------------------------
--Who/Cost----Amount--------Who/Cost----Amount--------Who/Cost----Amount------
 [Robert    ][1.00       ] [           ][           ] [           ][           ]
---------------------------------- Task Form ----------------------------------
```

I treated filling out the task forms as a kind of brainstorming, so I didn't worry about what order the tasks went in. I simply indicated how long each should take (duration) and who was responsible for it (resource allocation).

Once I'd completed a form for each task, Time Line presented an initial Gantt chart (Figure 2 on page 24). On its own, the program arranged the tasks in increasing order of duration.

In this example, most events started immediately, which is about as ASAP as something can get. The exceptions—each

If you stare at Figure 3 long enough, you'll be able to puzzle out which tasks I marked as dependent on which other tasks. There's an easier way. Figure 4, on page 26, is a PERT chart, clearly showing those dependencies. It was produced by SuperProject Plus. (Time Line can also do PERT charts, but SuperProject's are much more detailed.)

Note that there are two paths leading from "Request Outline" to "Deadline." The one consisting solely of double-walled boxes is the critical path, as determined by SuperProject.

Delaying any of those events would have changed the project's end date.

For Figures 2 and 3, I told Time Line that the project should end on February 1. That's why the second Gantt chart shows slack time between "Proofread 2" and the final "Deadline" milestone. For Figure 4, I let SuperProject Plus determine the shortest possible time it could take to complete this project. As you can see from the last task box on SuperProject's PERT chart, the program computed January 26 as the earliest the manuscript could be finished.

Like spreadsheet programs, project-management software lets you painlessly perform "what if?" analyses. If I wanted to take a week off starting January 5, I could quickly check what repercussions, if any, my absence would have on the project. If I had to change the start or finish date of this undertaking, the programs would have automatically reshuffled all other dates.

This "what if?" capability also comes in handy once a project is finished. It's an old saying that everybody has 20-20 hindsight. In reality, it often takes much thought and analysis to understand why some things didn't work out as expected. Several project-management programs will graphically display where the actual project deviated from what had been planned.

What to look for

In selecting a project-management program you should demand these basic features: the ability to specify tasks by name (rather than just by number), the ability to assign resources (including people) to those tasks, the ability to include salary and cost figures in that assignment, and the ability to rank tasks both in order of time and importance. Time ranking should allow the task to begin "as soon as possible" (ASAP), "as late as possible" (ALAP), or on a specific date.

In Figure 2, we had many resource conflicts. A resource conflict happens when the total scheduled hours for a resource exceed the number of hours that resource is available for. In our example, we managed to resolve these conflicts by setting dependencies. However, some resource conflicts may remain

Figure 2: Initial Gantt Chart from Time Line

```
Schedule Name:    PROFILES Feature:  Project-Management Software Overview
Project Manager: Robert J. Sawyer
As of date:       17-Nov-86  9:00am   Schedule File: C:\TLDATA\PMS

Tasks, resources and durations shown, but no dependencies assigned.

                                        86              87
                                        Nov  Dec        Jan          Feb
                        Who   Status    24   8  15 22   5  12 19 26  2    17 23

Give Go-Ahead           Diane         M———————————————————————————.    .  .
Request Software        Robert        M———————————————————————————.    .  .
Proofread 1             Carolyn    R  ■———————————————————————————.    .  .
Proofread 2             Carolyn    R  ■———————————————————————————.    .  .
Request Brochures       Robert     R  ■———————————————————————————.    .  .
Prepare Outline         Robert     R  ■———————————————————————————.    .  .
Evaluate Outline        Diane         ■———————————————————————————.    .  .
Order Software          Suzanne       ■■———————————————————————————.    .  .
Pick Key Software       Robert     R  ■■———————————————————————————.    .  .
Evaluate Software       Robert     R  ■■■———————————————————————————.    .  .
Final Draft             Robert     R  ■■■———————————————————————————.    .  .
First Draft             Robert     R  ■■■———————————————————————————.    .  .
Deliver Brochures       Vendors    R  ■■■■■■■■■■———————————————————.    .  .
Deliver Software        Vendors    R  ■■■■■■■■■■———————————————————.    .  .
Request Outline         Diane         M .    .  .  .   .  .  .  .  .    .  .
Deliver Outline         Robert          .M   .  .  .   .  .  .  .  .    .  .
Deadline                Robert      C   .    .  .  .   .  .  .  .  M    .  .

-----------------------------------------------------------------------------
D Done                  ■■■ Task            — Slack time (■■——), or
C Critical              ■■■ Started task      Resource delay (——■■)
R Resource conflict       M Milestone       > Conflict
p Partial dependency
Scale: Each character equals 2 days
-----------------------------------------------------------------------------

TIME LINE Gantt Chart Report                                        Strip 1
```

even after all dependencies are in place. If that happens, it is necessary to do *resource leveling*: delaying tasks until no more resource conflicts exist. Some programs will do resource leveling automatically. These include SuperProject Plus, Time Line, and a powerhouse (and expensive) package called Primavera Project Planner.

Unless you and your co-workers only work on one project at a time, the ability to schedule people and equipment across multiple projects is important.

All project-management programs let you schedule projects on a daily or weekly basis. Many will let you schedule hour by hour, which may be particularly useful with smaller projects. Harvard Total Project Manager II and Time Line can schedule by the *minute*, something probably only necessary for the most picayune managers.

Like a data base management program, a project manager is only as good as the reports it can generate. Yours should be able to present a variety of information in tabular and graphic formats. Microsoft Project, for instance, can generate 16 different reports, eight of which compare actual progress to schedule. You will probably want the ability to generate a resource histogram (a bar chart showing how heavily each resource is being used), a display of actual vs. planned costs, actual vs. planned schedules, and a running list of those projects that have been completed.

Your program should also be able to print the charts you see onscreen. Most use the graphic abilities of dot-matrix printers to good advantage. Some, such as Milestone, use only the ASCII character set, so they are equally comfortable with dot-matrix or daisywheel printers.

Like spreadsheets, Gantt and PERT charts tend to go on for several pages. To make these easier to read, some programs (such as Microsoft Project and SuperProject Plus) support sideways printing on dot-matrix printers.

For truly large projects, a plotter is called for. A few programs, SuperProject Plus and Harvard Total Project Manager II among them, include plotter support. For Time Line and Primavera Project Planner, you'll have to shell out for add-on

Figure 3: Final Gantt Chart from Time Line

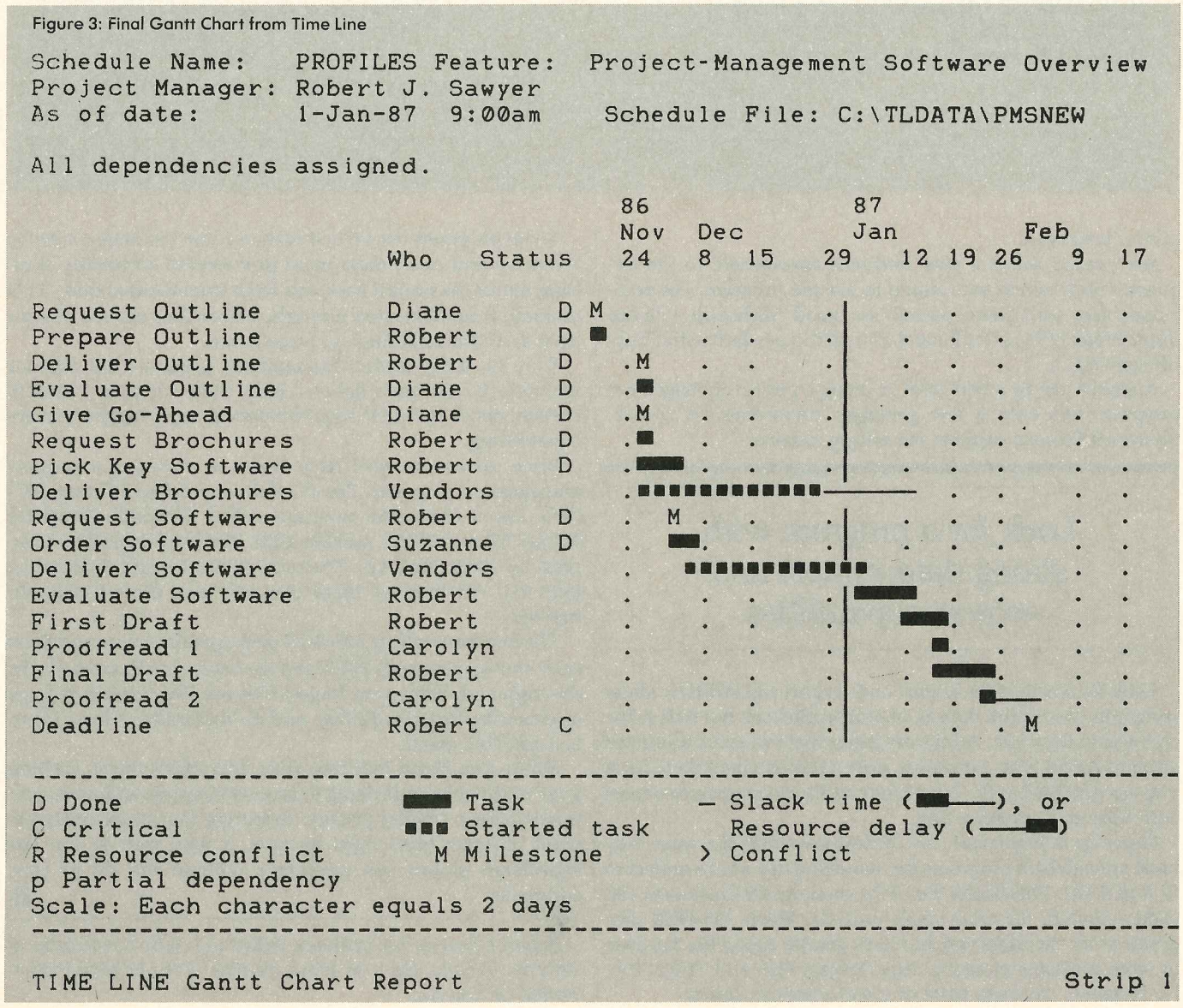
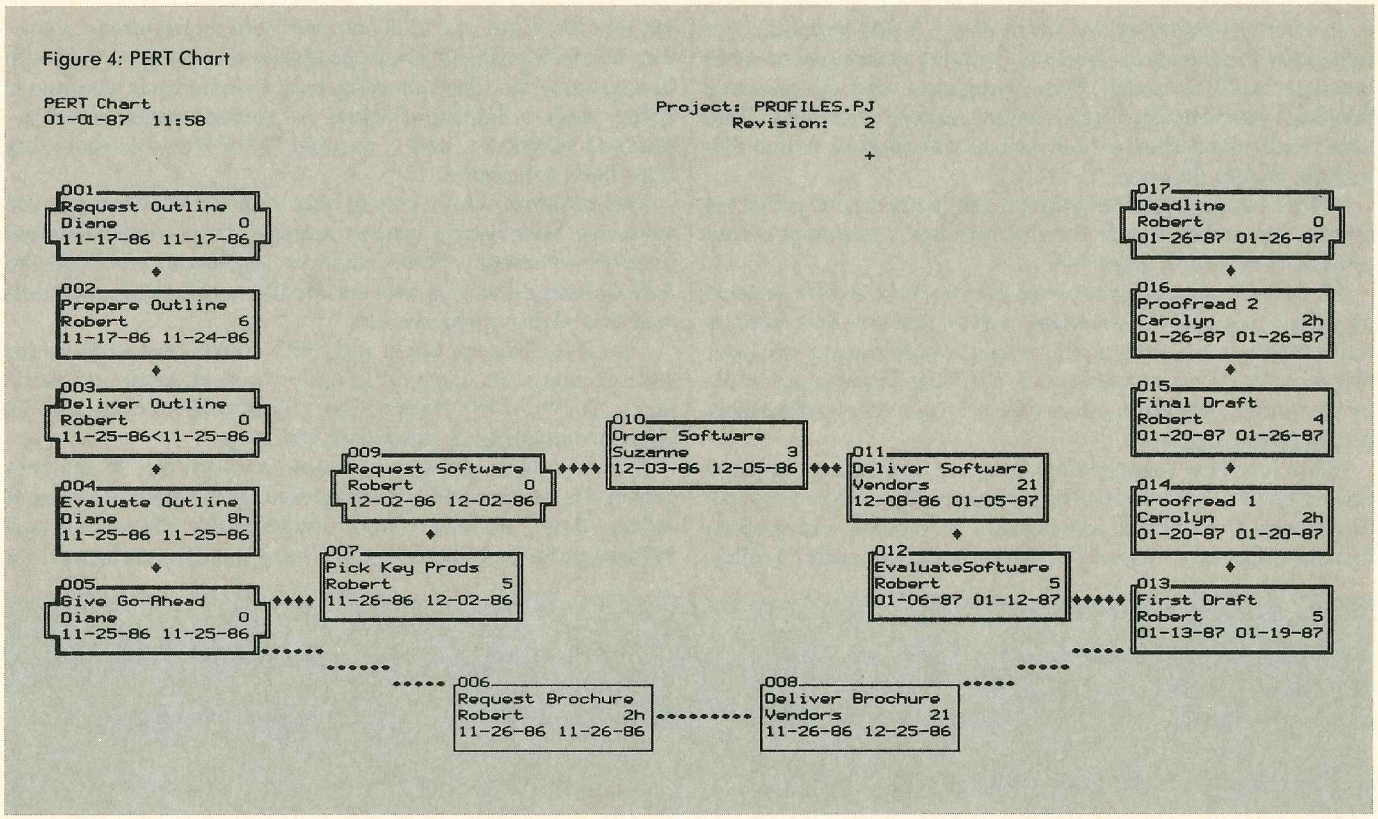


Figure 4: PERT Chart



plotter packages.

You should select a user interface appropriate to the frequency with which you intend to use the program. For occasional use, pull-down menus are good (although I found SuperProject Plus's implementation of these to be frustratingly idiosyncratic).

A mouse can be a real asset in using a project-management program, but only a few packages (including, of course, Microsoft Project) support the rolling rodents.

Look for a program with strong data-import and -export capabilities.

Look for strong data-import and -export capabilities: Many programs can output data as a Lotus worksheet, but only a few can read in from one. All the programs that I've seen can output straight ASCII files, but again, only a few can read them in. If you use dBASE II or III, Time Line's ability to import and export DBF files may appeal to you.

Capacity is important, too. Milestone works the same way most spreadsheet programs do, requiring the whole project to fit into RAM. This limits the CP/M version of Milestone to 190 tasks—enough for most small projects. Many MS-DOS programs work the same way but have greater capacities because of more available memory. SuperProject Plus and Time Line, for instance, can keep track of 1,000 activities apiece.

Some programs use virtual memory (the technique used by WordStar and many other word processors), constantly shuffling bits of the project back and forth from RAM to disk. This method, if implemented properly, makes the capacity of your hard drive the only limit on project size.

Even so, many project-management programs are pigs for memory. If you don't have at least 512K on your MS-DOS system, check the RAM requirements of any program you are considering.

Price, of course, will be a factor in choosing a project-management program. The PC Software Interest Group (PC-SIG) has a shareware program called Personal Computer Project Manager (disk number 423). The least expensive commercial programs are Protracs ($59.95) and Milestone ($99.95). All three of these can only use the critical-path method.

The four best-selling MS-DOS packages list for around $500 each and include both PERT and the critical-path method. On the high end, Primavera Project Planner (the darling of large engineering firms) is $2,500, and its big brother, Finest Hour, is a cool five grand.

Before you begin building your next office tower, writing your next book, or devising your next business endeavor, you might plan a smaller project: Selecting the project-management program that's right for you. It may well be the last significant project you undertake without the aid of your computer.

Robert J. Sawyer is a freelance writer and radio broadcaster in Toronto, Canada. He is an active member of the Science Fiction Writers of America.

Quick Reference Summary

Product: Advanced Pro-PATH 6
Manufacturer: SoftCorp, Inc.
2340 State Rd., Suite 244
Clearwater, FL 33575
Phone: (800) 255-7526
Sugg. List Price: $199

Product: Harvard Total Project Manager II
Manufacturer: Software Publishing Corp.
1901 Landings Dr.
Mountain View, CA 94043
Phone: (415) 962-8910
Sugg. List Price: $595

Product: MicroGANTT for CP/M-80
Manufacturer: Earth Data Corp.
P.O. Box 13168
Richmond, VA 23225
Phone: (804) 231-0300
Sugg. List Price: $195

Product: Microsoft Project
Manufacturer: Microsoft Corp.
10700 Northrup Way
Bellevue, WA 98009
Phone: (206) 882-8080
Sugg. List Price: $395

Product: Microtrak
Manufacturer: SoftTrak Systems, Inc.
1977 West North Temple
Salt Lake City, UT 84116
Phone: (801) 531-8550
Sugg. List Price: $595

Product: Milestone
Manufacturer: Spectre Technologies
22458 Ventura Blvd., Suite E
Woodland Hills, CA 91364
Phone: (800) 628-2828, ext. 918
Sugg. List Price: $99.95

Product: Personal Computer Project Management
Manufacturer: Greg Gothard
1141 Amador
Berkeley, CA 94707
Phone: (415) 525-8842
Sugg. List Price: $50 (shareware);
also on PC-SIG Disk 423

Product: Planning Pro
Manufacturer: Kepner-Tregoe Inc.
P.O. Box 704
Princeton, NJ 08542
Phone: (800) 223-0482, (609) 921-2806
Sugg. List Price: $250

Product: Primavera Project Planner, Finest Hour
Manufacturer: Primavera Systems, Inc.
Two Bala Plaza, Suite 925
Bala Cynwyd, PA 19004
Phone: (215) 667-8600
Sugg. List Price: $2,500—PP Planner,
$5,000—Finest Hour

Product: Project Scheduler Network
Manufacturer: Scitor Corp.
250 Lincoln Centre Dr.
Foster City, CA 94404
Phone: (415) 570-7700
Sugg. List Price: $575

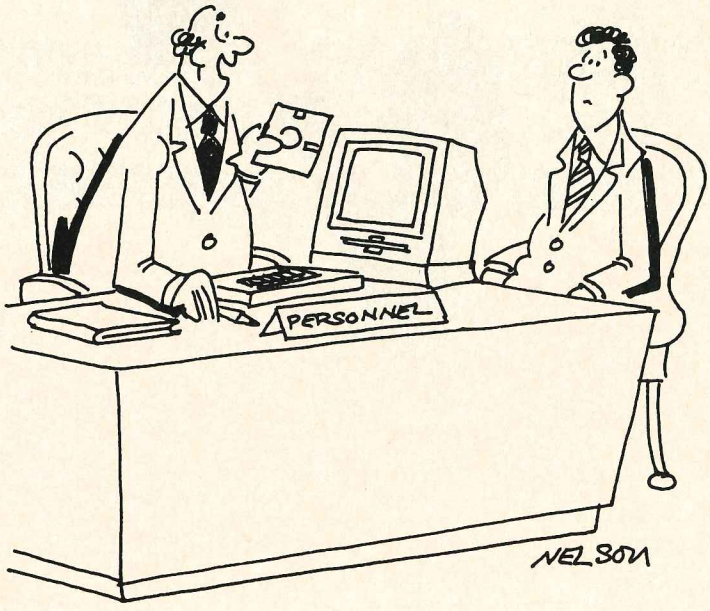
Product: Project Workbench
Manufacturer: Applied Business Technology Corp.
365 Broadway, 6th Floor
New York, NY 10013
Phone: (212) 219-8945
Sugg. List Price: $750

Product: Protracs
Manufacturer: Applied MicroSystems, Inc.
P.O. Box 832
Roswell, GA 30077
Phone: (404) 475-0832
Sugg. List Price: $59.95

Product: SuperProject Plus
Manufacturer: Computer Associates—Microproducts Division
2195 Fortune Dr.
San Jose, CA 95131
Phone: (408) 432-1727
Sugg. List Price: $495

Product: Time Line
Manufacturer: Breakthrough Software
505 San Marion Dr.
Novato, CA 94947
Phone: (415) 898-1919
Sugg. List Price: $495

Product: VisiSchedule
Manufacturer: Paladin Software Corp.
2700 Augustine Dr., Suite 178
Santa Clara, CA 95054
Phone: (408) 970-0566
Sugg. List Price: $100



"I don't have to be a good judge of character. I've got software to do that."

GYPSY
VAGABOND
PORTABLE COMPUTER
McCORMICK 1987

The Complete Computerized Tourist

Your computer can do everything for you but get a tan

by Brock N. Meeks

Designer vacations are travels that you custom design by using your computer to tap into a dazzling array of online travel services.

Booking the airlines, reserving a rental car, or purchasing tickets for special events, can all be done in a matter of minutes, using your computer and modem as a link to the travel industry. From start to finish you can be the creator and architect of your ideal vacation.

For most people any trip more complex than a drive to granny's house is better handled by a travel agent—that mystical person with the power to somehow take you where you want to go, enable you to see and do what you want to see and do, and turn it into a logical itinerary. That power is no longer the sole domain of the travel agent. Anyone with a computer and modem can tap into the same travel data bases that travel agents use everyday. However, that doesn't mean there's no effort involved.

Getting from "here to there" takes some time. Whether you're traveling to Cape Cod or the Cape of Good Hope, there are three unavoidable steps in the process of "getting there": decision, planning, and booking (making reservations).

For each of these three steps there is an electronic "guide" just waiting for you to call on its services. Within each step there are more guides; these take the form of interactive forums and networks, data bases, and electronic scheduling services.

Decisions, decisions

We've all seen or heard the old gag: "What do you wanna do?" "I dunno, whatta you wanna do?" "I dunno . . . " And although that routine is at first funny, it carries with it a grain of truth. Often the hardest part of planning your trip is deciding what you want to do, and where you want to go once you've decided what to do. Using your computer you can "test the waters" of several different ideas by uploading them to different online forums, or travel SIGs (special interest groups), and asking people to give you feedback on your ideas.

Because these forums draw people from all walks of life and from locales around the globe, chances are very good that someone participating in one of these travel forums has already "been there" ahead of you. These people can offer the kind of personal information the travel brochures and the travel agent seldom provide.

What follows below is a quick tour through some of these forums. If the forum is on CompuServe or The Source, the keyword needed to get there is provided. If the service is an independent one, the contact phone numbers for them can be found in the Quick Reference Summary provided at the end of this article (page 35).

Travel Forum. This is a general forum available on CompuServe (GO TRA-12). It is managed by "Captain Wooky," also known as Floyd Fessler, and it is possibly the best all-around source of travel information available anywhere online.

The objective of this forum is the exchange of information with fellow travelers and to share travel experiences. There is a data library that contains hundreds of detailed journeys, each chronicled by forum participants. These are files from people who have traveled all over the globe, providing information on where they've been, what they've done, and suggestions on where to eat and stay. The message base section is where you can upload your travel ideas and receive feedback on those ideas, often in the same evening. A real-time conferencing area

ILLUSTRATION BY MIKE DORMER

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allows members to "chat" with each other about their travel experiences.

Florida Forum. Also on CompuServe (GO FLORIDA), this forum's name says it all. Here you'll find information on attractions, recreations, getting around, and traveling for the handicapped. Every Tuesday night a travel expert is available in the real-time conferencing section to answer questions about Florida tourist attractions. The Florida Division of Tourism fields questions in a special message base. Walt Disney World also maintains a special section in this forum.

Also some metropolitan areas have online systems called "regional networks." These often contain sections on lodging, entertainment, restaurants, etc. These systems are interactive, so you can leave questions and get responses. You'll even find special discount rates for network users.

Boston CitiNet. This is a regional network that bills itself as a "publication of Applied Videotex Systems." The network encompasses all areas of tourism and commerce for Boston and its surrounding areas. It's a combination of an information network and online magazine. It's updated as often as twice a day. From its main menu you'll want to enter the section called "Boston." This drops you into a data base that provides reviews, comments, and listings for the area's entertainment and dining establishments. This same section holds information on hotels and bed and breakfast inns. Each section is set up so that you can perform keyword searches. For example, if you want to know what music groups are playing in town during your stay, you can enter a date and the data base returns a listing of who is playing, what day, and where. Ski resorts are also online with snow conditions being updated twice daily. Private pilots can check a special aviation data base for places that rent planes. CitiNet is free to use; only long-distance charges apply.

INFO. This network also serves as an online guide to the Boston area. The data base includes information on topics such as business and finance; employment and education; shopping and personal services, among others. For those traveling to the area there is an extensive travel data base with ten different sections. These include travel agents, airlines, hotels, ski areas, activities, and New England inns. Most of the information contained in these sections reads like a phone book; a typical listing includes name, city, and telephone number. Under the travel agents section you can find discount travel packages. You don't need a subscription to use INFO; you will have to pay for any long-distance telephone charges.

Shuttle Express. Shuttle Express Corporation operates two online systems for anyone interested in the Seattle, Washington area. One is free—the Shuttle Express; the second—Shuttle Information Service—charges a small monthly fee, plus online charges.

The Shuttle Express isn't available on a network, so you'll have to make a long-distance telephone call. No subscription is needed to access the service. This service allows you to order goods from local merchants, including discount tours from the Travel Company. General information about Seattle can be gathered by leaving your questions in the message base.

The fee-based Shuttle Information Service is also a long-distance phone call; however, you must first call (voice) and sign-up for a subscription. The information available here focuses on the flavor of the Seattle area as it details news and events from all corners of Seattle's tourism and trade industries.

Information please

Once you've narrowed down your travel plans to the type of vacation you'd like to take, there are several travel data bases to help you select the locale. These differ from the travel forums in that they are set up to provide you with very specific information. They are also not as interactive as the travel forums or the networks, where you can solicit feedback.

The A-Z/ABC Worldwide data base contains more than 22,000 hotels from around the world.

So once you've decided on taking that cozy, laid-back trip to a bed and breakfast inn or that exciting African safari, you're ready to roll up your sleeves and dig into these data bases. The ones below will help you uncover the ideal spot to fit both your taste and budget.

A-Z/ABC Worldwide Hotel Guide. Located on both The Source (USROOM) and CompuServe (GO HOTELS), this data base contains more than 22,000 hotels from around the world. Information on these hotels includes address, toll-free phone numbers, rates in U.S. dollars, and sport and leisure facilities. To help you find the "perfect" hotel you can search this data base using 16 different key words such as "movies," or "downtown." You can further narrow your search by specifying a price range, exact hotel name, hotel chain, or amenities such as continental breakfast or Nautilus workout equipment.

Mobil Guide. Located on The Source (USREST), this data base is based on the *Mobil Travel Guide* series, published by Mobil Oil Corporation. Here you'll find descriptions and ratings (one to five stars) of 20,000 hotels, resorts, motels, and restaurants in some 4,000 cities in the U.S. and Canada. Each listing includes name, address, and a description of the features found on location. You can search this data base by city and facilities offered.

Sun and Sand Vacations. This data base, located on CompuServe (GO SNS), is for those interested in the area bounded by Florida, the Caribbean, the Bahamas and Mexico. The data base also includes world cruise packages.

TravelVision. Available through CompuServe (GO TRV), this data base provides a variety of information to those traveling by car. Information is geared to those traveling in the U.S., Canada or Mexico. Types of information available include travel guides, globes and atlases, and road maps. In addition there is a directory of toll-free telephone numbers for airlines, car rental agencies, accommodations, and other travel services. You can also order individualized travel plans that include maps marked with suggested travel routes.

Vermont Tourism. For those interested in a New England

vacation in Vermont, this data base is for you. Sponsored by the Vermont Office of Tourism, and accessible on CompuServe (GO VERMONT), you'll find information on where to stay, things to do, where to eat, weather conditions, and what to wear. Data on Vermont cities is listed alphabetically.

West Coast Travel. This data base is maintained by travel writer Lee Foster, available on CompuServe (GO WEST-COAST). It includes write-ups on 51 destinations in the western half of the U.S., from San Diego to Fairbanks and east to the Rocky mountains. Each write-up includes the following: "flavor" of the location, how to get there, main attractions, nearby trips, and a brief history of the area. The write-ups are constantly updated by Foster. In addition there is a question and answer message base where you can leave any questions you might have about one of the destinations; Foster answers all questions.

Worldwide Property Guide. This data base is offered on CompuServe (GO WWX) and offers listings of several types of recreational facilities such as bed and breakfast inns (worldwide), vacation homes, and recreational vehicles. You can search for yachts that are available for long- or short-term lease, or for trade. For each type of facility listed you'll find information describing size, sleeping capacity, cooking facilities, and location. Producers of the data base say: "We are dedicated to making real estate and holiday facility renting/chartering, exchanging, buying or selling, fun and easy. We make it possible for people to experience their dreams in reality or fantasy." The data base is updated twice a week.

American Express Advance. This service is for the more adventurous person. Carried on CompuServe (GO AMEX) and Dow Jones News/Retrieval Service, this data base provides you with a variety of overseas tour packages. American Express vacations can take you to Mexico, Europe, the Middle East, Africa, and the Far East. You'll find full itineraries for the travel packages. You even get a sneak preview of the proposed menus.

Small catch: you must have an American Express card. Further, you must register with American Express to acquire a PIN (personal identification number). You can apply for your PIN online, or call the American Express office and have the forms sent to you. Until your PIN arrives you can't use the online service. (You use the PIN in conjunction with your card number, this foils a credit card thief from using your card number. Without the PIN, the service won't accept an online order.)

The above data bases are a broad sampling of the types of travel information you can access online. You might think of these data bases as thousands of travel brochures; you don't get the full-color pictures, then again, you don't have all those brochures cluttering up your home.

After looking through these data bases you should have a clear picture of where you're going, what you're going to be doing, and what kinds of activities to expect once you get there. The last step in the process is to tie everything together by making your reservations.

Getting there

The Official Airline Guide Electronic Edition (OAG EE), Travelshopper, and EAASY SABRE are three major online services allowing you to book airline flights, hotel rooms, and rental cars. Contact information for these services can be found in the Quick Reference Summary.

EAASY SABRE. Available on General Electric Information Service's network, GEnie, EAASY SABRE is a product of American Airlines, and is the "new kid on the block" as far as online travel services go. Here you'll find flight information on over 650 airlines, worldwide. This comes to around 13 million different fares. Rental car and hotel reservations can also be made, and you decide how to have the tickets delivered.

The TWA data base Travelshopper has over 4.6 million international fares.

Official Airline Guide Electronic Edition. This service is the standard for the online travel industry. Available for decades in hardcopy form, the electronic edition is the online service used by most travel agents. Available through direct dial access or through CompuServe (GO OAG), OAG has over a million customers. OAG supplies information on millions of direct and connecting flights.

The data base monitors the flight schedules of over 750 airlines, and you can access the fare for any flight. Through a special menu selection you can also search through an extensive hotel listing. However, hotel descriptions are sparse—the data base is mainly used to check room availability and rate structure.

OAG gives you several ticketing options, however the official travel agency for OAG is Thomas Cook Travel. If you choose to have Thomas Cook Travel act as your ticket agent, the agency will make sure all your reservations are confirmed (airline, hotel, and rental car). A representative from the agency then calls when all your travel plans are "locked in." In addition, they will mail out your airline tickets, or inform you of a Thomas Cook Travel agency near your home where you can go and pick up the tickets at your convenience.

Travelshopper. This data base is run by Trans World Airlines (TWA). This two-year-old service is available via CompuServe (GO TWA) or on a subscription basis from TWA through a direct dial line. The service is designed more for the casual user than for the expert travel agent. Through a series of menus you specify your seating arrangements (smoking or non-smoking; window, middle, or aisle seat), non-stop preference, airport and airline, etc. Once you've given the system all this information it uses what TWA calls "an objective algorithm" to determine the best route from point A to point B. It then lists the most desirable, and least expensive route, first. Alternative routes are shown as well.

Travelshopper contains over 4.6 million international fares—eight times more than OAG—and almost 5 million worldwide schedules—twice the number carried by OAG. Travelshopper further enhances its online offerings by giving

you "frequent flyer" points for booking trips online.

A menu selection will locate an authorized Travelshopper travel agent in your area. Once you've selected a travel agency through this menu, you can send the agency messages regarding your needs for hotel and rental car reservations. A travel agent then acts on your request, and calls you when your plans are confirmed. When you pick up your tickets, you receive a printed itinerary for each phase of your trip, including rental cars and hotel rooms.

From chaos to itinerary

With so many data bases to choose from, and several different forums available at your disposal, you might start to think that planning a trip by computer is more work than it's worth. That's simply not the case; you "work" only as hard as you want to.

Because the computer knows no time limits, you can do all your planning at *your* convenience. You don't have to spend hours in a travel agent's office, explaining your every move and making on-the-spot decisions you may regret later. The com-

Computing on the Road

You wouldn't think of traveling overseas without packing a toothbrush, extra socks, an English translation dictionary, etc., and you plan accordingly. The extent of this planning is often nothing more than finding an empty corner in your suitcase.

However, when your computer and associated peripherals are on that "must have" list of travel items, your logistical problems mushroom. The following "travel briefing" will alert you to some of the potential problems when traveling with a computer.

Power play

Traveling with electrical appliances to places like England, France, and Germany present a problem right at the source—the electrical outlet. In many places around the world the voltage from an electrical outlet is incompatible with American-made electrical devices.

American-made appliances are typically designed to run on 110v at 60 Hz (cycles). In Europe, however, the standard power output measures 220v at 50 Hz. Plugging your computer directly into one of these 220v/50 Hz outlets will give you a blown fuse, at best, and a smoldering circuit board, at worst. To run your computer in a foreign country you *must* set it up to run on the correct voltage. This can be accomplished in one of two ways: Have a service technician switch your power supply so that it's compatible with a 220v/50 Hz system or buy a voltage converter.

By far the easiest way to handle taking your computer overseas is to have a repair shop convert your computer to run under 220v. This is a painless procedure—most computers (including Kaypros) are designed to run at either 220v or 110v. A small adjustment inside your computer is all that it takes. Your dealer can adjust your computer in less than an hour. If you would rather not have this work done, then you'll need a voltage converter.

A voltage converter acts as a "middle man" between your computer and the foreign electrical system. You simply plug the converter into the foreign electrical outlet, and plug your computer into the converter. Unfortunately, finding the correct voltage converter is a bit confusing.

A voltage converter contains a "step down transformer." This transformer "steps down" 220v to 110v, allowing your computer to run just as if it we're plugged into your basement socket in Cleveland.

You can find several voltage converters on the market. These are typically shown being used with a hair dryer or an electric shaver—and for those small appliances, they work fine. They are *not* the ones you need to run your computer. These small appliance converters are designed for short term use; no one runs a shaver all day. Further, their electrical circuits, although designed to stop a small appliance from overheating, aren't sophisticated enough to completely filter occasional bursts of 220v from sometimes getting to your appliance. So you need something a bit beefier to run your computer.

When shopping for a voltage converter for your computer go to an electronics supply house (check the yellow pages). You'll find converters come in various "wattage" ratings. The key word here is *wattage*.

Wattage is the "power" rating of your computer. Electric shavers, for example, have a small wattage rating. A computer has a much higher wattage rating. Kaypro CP/M computers, for example, draw between 65-75w, depending on the model. To safely run your computer you should get a voltage converter that can handle at least *twice* the power rating of your computer. For example, if your computer draws 75w, get a converter rated at least to 150w. There are voltage converters that handle much more than 150 watts, so buy one that meets your needs.

If you're taking a printer along, you'll need a voltage converter that will handle both the computer and printer. The equation is simple: add the two power requirements, multiply that sum by two and you have a figure to shoot for when buying a converter.

Another thing to keep an eye out for when buying a converter is to make sure the "cycle" rate is 60 Hz—a slower cycle rate, such as the European 50 Hz, will cause problems with your fan and the electronic timing of your computer's circuitry.

It might be noted here that you can plug an American-made surge protector into these voltage converters if you're worried about occasional "spiking."

Plug problems

Not all wall outlets are created equal. Almost every continent has a different "standard" for the shape of electrical plugs. And

puterized tourist can spread the process over several days, or several weeks. And when plans are finalized, it's merely a matter of mechanics to book the reservations. Let's look at how a trip might be booked.

Suppose that, as a writer, you've just finished a long manuscript. After turning the project over to your editor, you're entitled to a well-deserved vacation. You want to go somewhere quiet. And after trading a couple of messages with people on the Travel Forum, someone suggests you browse through the Worldwide Property Guide for a listing of bed and breakfast inns. Great idea.

Logging onto CompuServe you make your way to the data base suggested. To your surprise, the first menu contains a specific reference to bed and breakfast inns. After selecting this item from the menu you're presented with a listing of 20 states from Arizona to New York. A secondary menu provides five more options: Virginia, Vermont, Washington D.C., Europe, and Multiple Listings. You decide to wander through

in Europe you'll find the outlets in Germany are, for example, different from those in England.

You can buy an "adapter kit" which usually contains several different plug types, each one corresponding to a different continent or country. The best advice here is to "stock up." It would be extremely aggravating to lose a day's work because you didn't have a two-dollar adapter plug.

If you're going to be staying in one country you might want to consider having some custom power cords made up before you leave. This way you don't have to worry about losing your adapters.

A final word of advice about plugs and outlets: take along a screwdriver or your Swiss Army knife. You might have to remove the outlet's cover plate to insure the adapter plug gets a snug fit.

Packing a printer

Traveling with a computer is bulky enough, add a "standard" dot-matrix printer and you're going to have some serious problems with weight and space restrictions. (Should you go over your allotted limit, you'll have to pay for the additional baggage; air freight isn't cheap.)

If you must travel with a printer you might want to consider a battery-powered "inkjet" printer. These printers produce acceptible-looking type far better than the only other reasonable alternative, a thermal paper printer.

If you're looking for the best bet in size and performance, a strong contender would have to be the Diconix 150 from Diconix Inc. This printer runs on five C-size nickel-cadmium batteries that reside inside the platen. It weighs only 3-3/4 pounds and is only 2 inches high, yet handles full-size sheets of tractor feed paper.

Another inkjet printer to consider would be Hewlett-Packard's Think Jet. This printer can be battery operated as well.

To recharge your batteries, you can plug the recharger into the voltage converter you're using for the computer; don't plug your recharger directly into the 220v outlet or you'll be minus one recharger.

Service, service

Even if you've taken all the possible precautions, Murphy's Law, like the Law of Gravity, is universal. If you have computer trouble in a foreign country and need a repair shop, where do you go?

A phone call, *before you leave*, to the manufacturer of your computer will get you locations and phone numbers of any authorized repair or sales facilities near the area in which you'll be traveling. (Kaypro owners can call KLEADS at (800) 4-KAYPRO for this information.)

Odds and ends

Sometimes little things, like mosquitos, can ruin a trip. Here are some suggestions to keep the "bugs" from spoiling your trip:

•Prepare for customs—taking computer equipment across international boarders is not as easy as it may seem. One way to reduce much of your customs paperwork is to obtain a Carnet (pronounced *car-nay*) from the United States Council for International Business (1212 Avenue of the Americas, New York, NY 10036; 212/354-4480).

Carnets allow for temporary importation of professional equipment, commercial samples and other items that might normally be subject to custom duties. Carnets must be validated by U.S. Customs before you leave the country. There are some fees involved when using a Carnet.

If you choose not to use a Carnet, it is still wise to register your equipment with the U.S. Customs Department. You'll have to take the computer equipment down to the Customs office so they can verify the serial numbers; you'll then fill out Form 4455. Upon your return a Customs agent may require you to prove you didn't buy your computer overseas. (Overseas purchases are subject to duty tax.) The 4455 does an end run around this problem.

•American Embassies and Consulates—As an American traveling abroad, you can obtain help from the American Embassy or Consulate closest to where you are staying. Embassy staff will help you if you suddenly become ill, are arrested, need an American document notarized, etc. For a complete listing of American Embassies, contact the Public Affairs Bureau, Department of State, 2201 C St. NW, Room 6800, Washington, DC 20520; 202/647-6575.

•*Your Trip Abroad*—is a free booklet that contains basic information, such as how to apply for a passport, customs tips, lodging information, and how American consular officers can help you in an emergency. It is available from: Publications Distribution, Bureau of Public Affairs, Department of State, 2201 C St. NW, Room 5815A, Washington, DC 20520; 202/647-6575.

•To find out just how "exciting" your vacation spot is you can call The Department of State Traveler Advisory Service at 202/647-5225, or access the same information on CompuServe (GO STATE). Information here warns of civil disturbances, natural disasters, epidemic diseases, strikes, shortages of hotel rooms, and terrorist activity.

•Protect your investment—buy a travel case for your computer, at the very least a travel bag. And be sure to transport the computer with the disk drive protectors inserted properly.

— **B. Meeks**

the listings for Massachusetts (number 12 on the menu).

After browsing for a short time you find the following entry:

> W.HYANNISPORT. BED AND BREAKFAST CAPE COD. Capewide reservations in Historic Country Inns. Sea Capt's Houses and B and B Host Homes await your visit. Deluxe or modest accommodations, private or shared bath, some with fireplaces, waterviews, beaches, full or continental breakfast. Enjoy Cape Cod hospitality and friendliness. Write P.O. Box 341, West Hyannisport, MA 02672, or call TEL:617-775-2772.

It sounds perfect. You capture the information to disk and think about it for a couple of days. Meanwhile you return to the Travel Forum and ask if anyone has visited this particular place. Within 48 hours three people have responded; they all loved it, and so will you.

Now that you've made the decision to go, set your departure and return dates, you're ready to book the flights and make reservations.

Once again using CompuServe, you decide to book your flight using the Official Airline Guide. (To learn OAG's full range of command options, choose the **/I** option from the opening menu; don't forget to capture the instructions to disk for future reference.) Once online with OAG's data base you see the opening menu (see Figure 1 below) and opening command prompt. Here you enter the single line command:

/ssan diego;boston;04sep1800

This command has just informed OAG that you want to see the schedules of all airlines flying from San Diego to Boston on September 4th, leaving at 6 p.m. The system responds with your available flights (see Figure 2 below). To check the price of these flights you enter the command **F1**. OAG returns the rate structure for these flights (see Figure 3 below). (Using the **/I** command, from the opening menu, will give you an explanation of each column presented on the various screens.)

Figure 1

```
            ** OAG COMMAND MENU **
ENTER: /I   FOR INFORMATION AND ASSISTANCE
       /F   FOR FARES DISPLAYS
       /S   FOR SCHEDULE DISPLAYS
       /H   FOR HOTEL/MOTEL DISPLAYS
       /M   FOR THIS MENU
       /Q   TO   EXIT FROM THE OAG EE
       /C   TO   REVIEW OR CANCEL A RESERVATION
       /U   FOR USER COMMENTS AND SUGGESTIONS BOX

ENTER THE COMMAND OF YOUR CHOICE
   /f
```

Figure 2

```
                DIRECT FLIGHTS      FRI-04 SEP
FROM-SAN DIEGO, CA, USA
# TO-BOSTON, MA, USA
  NO EARLIER DIRECT FLIGHT SERVICE
1*   650A SAN 435P BOS CO 96 M80 B 1
2*   657A SAN 442P BOS AA 62 767 B 1
  NO LATER DIRECT FLIGHT SERVICE
  * THOMAS COOK TICKETING ONLY
PRESS RETURN KEY FOR CONNECTIONS
ENTER CX, X#, F#, RS, B#        (#=LINE NUMBER)
```

Figure 3

```
FARES IN US DOLLARS                    FRI-04 SEP
SELECTED FOR SAN-CO  96 BOS

#  ONE-WAY   RND-TRP ARLN/CLASS FARECODE
  NO LOWER FARES IN CATEGORY
1*            288.00    CO/M     ME00P
2*            318.00    CO/Q     QE70P
3*  163.00               CO/Q     Q
4*            338.00    CO/Q     QE30X23P
5*            358.00    CO/Q     QE70P
6*            358.00    CO/Q     QE70P
7*  199.00               CO/Q     Q
8*            418.00    CO/F     FE30P
  * ENTER L# TO VIEW LIMITATIONS
ENTER +,L#,X#,S,RS        (#=LINE NUMBER)
```

The round-trip fare in line #1 looks good, but there are some limitations (denoted by the "*" next to the number 1). To check the limitations you enter the command **L1**. After viewing the limitations, you decide to book the flight anyway. Enter **S** to return to the schedule screen.

Once OAG has returned the schedule screen enter the command **B1**. This tells OAG that you want to book that particular flight. You are now dropped into the electronic booking section of OAG.

From here you will be presented with a series of questions regarding the type of flight (one way, round trip, or multiple city), return date, and time you wish to leave. OAG presents you with return flight schedules and you simply choose an outbound flight like you did when selecting your departure flight. If the outbound flight you've chosen is available, OAG quotes you the total price and asks you to fill in your name and those traveling with you.

After filling in the names of all travelers, you're asked for a home and business phone number. After you supply this information OAG presents you with the ticketing options menu. After you select your ticketing preference, get out your credit card. OAG takes VISA, MasterCard, American Express, Diners Club, or Carte Blanche. OAG asks you to input your credit card number and expiration date. Once you successfully complete these steps you're presented with the hotel/car reservations menu.

This is where you inform Thomas Cook Travel of your hotel/car needs. Here's where you ask them to book you into that cozy bed and breakfast inn, and that you'd like a car to drive from Boston to Martha's Vineyard. When you're done, enter the command **/Q** to exit OAG's data base. Once you're back to CompuServe type in **bye** and you're done.

Booking your trip took about eight minutes (not counting five or so minutes to download the instructions).

Within 24 hours the Thomas Cook Travel agency will call and let you know that your plans are confirmed; your tickets and complete itinerary will be mailed within a day.

Working in tandem

Using online travel planning services allows you to make choices on your own time, however online travel services can't provide you with the kind of personal services provided by a travel agent. For example, even though there are extensive hotel/motel listings available online, an exhaustive data base

simply doesn't exist. Sometimes you'll need to go outside the technology for your information; a travel agent can be your personal "outside" link to that much needed information.

A travel agent will help you sort through the staggering amount of information provided by the travel industry. This is why it makes sense to work in tandem with a travel agent. But you don't have to physically go to a travel agent's office to get help. As shown above, using special message sections, you can tap the expertise of a travel agent right from your keyboard.

Online travel services can't always provide you with that personal service provided by a travel agent.

Designed and delivered

Whether your trip is a complicated, multi-city, whirlwind tour, or a family vacation to Disney World, online travel services can help you design and plan a memorable vacation. With your vacation plans in hand, delivered to your doorstep, the adventure has only just begun. *Bon voyage.*

Brock Meeks is a frequent contributor to PROFILES *who specializes in telecommunications.*

Quick Reference Summary

Service: Boston CitiNet
Vendor: Applied Videotex Systems
Phone: (617) 439-5699 (modem); (617) 439-5678 (voice)

Service: CompuServe Information Service
Phone: (800) 848-8990 (voice)

Service: EAASY SABRE
Vendor: General Electric Network for Information Exchange
Phone: (800) 638-8369 (modem); (800) 638-9636 (voice)

Service: INFO
Phone: (617) 247-3048 (modem); (617) 262-2860 (voice)

Service: Official Airline Guide Electronic Edition
Phone: To set up direct dial account call (800) 323-4000. Available on three packet-switched networks: Telenet, Tymnet or Dunsnet

Service: Shuttle Express
Vendor: Micro Peripherals Corporation
Phone: (206) 882-3447 (voice)

Service: The Source
Phone: (800) 336-3366 (voice); in VA (703) 821-6666

Service: Travelshopper
Phone: To set up direct dial account call (800) 892-1011.

The World's Smallest Battery-Operated Full-function Printer
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This amazing printer weighs only 2.2 pounds (with batteries) and measures 11 by 4.5 by 1.75 inches. With its built-in parallel interface, the TTXpress printer can connect to any of your Kaypro computers including the II, IV, 16, 286i, and the Kaypro 2000 laptop. We even include a printer cable!

Because of its thermal technology, the TTXpress printer has fewer moving parts for greater reliability. It prints clear text (with true descenders) and graphics on either 8½" roll or single sheet paper at 50 characters per second, and 40, 80, or even 160 characters per line. It is compatible with the Epson MX-80 and prints condensed, enlarged, emphasized, and underline characters. It even supports bit-mapped graphics!

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Price Breakthrough — Sharp PC 7000 Price Slashed

The Sharp PC 7000 is strong, compact, and lightweight. It is 99.99% IBM compatible. It runs Lotus 123, dBase III, and graphics programs. The keyboard is roomy and full size — you don't have to have dainty little hands or hold them in an unnatural position to get your work done.

$749

Includes 30 day money back guarantee and free $79 travel case.

Sharp PC 7000 Specifications

● 8086 CPU switchable to 4.77 MHz or 7.37 MHz ● 8087 socket for math chip ● 320k RAM expandable to 704k on the motherboard ● Two standard 5¼ DSDD 360k floppy drives specially shock mounted ● Documentation includes Sharp PC User's Guide and MSDOS Reference Manual ● 1 parallel printer port ● 1 serial port ● MSDOS 2.11 operating system ● Built in diagnostics ● Full size 84 key AT-type keyboard with separate function keys and standard size return key ● 120 volt power ● Weighs 18.8 pounds ● Built in carrying handle ● Internal clock, calendar ● Entire unit 16 5/32 inch wide x 6 5/16 inches deep x 8 15/32 inches high ● PC compatible ● Large 25 line, 640 x 200 pixels, bit-mapped illuminated crystal LCD for clear, detailed graphic images and text display

Desktop Power in a Portable

The built-in adjustable flat screen of the PC 7000 has a standard 80 column by 25 line screen that is super readable from any angle. It has a bright, clear, high-contrast LCD screen image that you can control with the touch of a knob. So you don't need special lighting or have to strain to read it. This makes it easy to use.

The PC 7000 is filled with super features that make it a pleasure to use. In addition to a parallel and serial port, you get switchable speed operations, built-in monographics capabilities, and two standard size 5 1/4 inch disk drives. So you can run all regular MSDOS programs without playing around with non-standard 3 1/2 inch disk drives.

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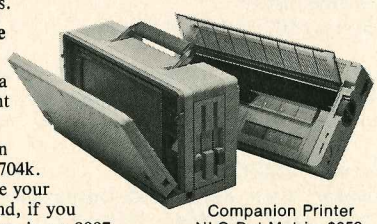
The Sharp PC 7000 packs the speed, power, and convenience of a desktop computer into a lightweight portable. Carry it anywhere.



Companion Printer
NLQ Dot Matrix: $359.

It comes with 320k RAM but can easily be expanded to a whopping 704k. This is more than enough to handle your large databases or spreadsheets. And, if you do alot of number crunching — drop in an 8087 math chip for extra power. Or get your PC 7000 the optional 1200 baud auto-dial, auto-answer internal modem. When you need a full size screen — get the optional CRT color adapter card. This card fits inside your PC 7000 and lets you use any standard external monochrome or RGB color monitor with your computer. This is it.

Why this Low, Low Price?

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You can see from the quotes here the Sharp 7000 has gotten rave reviews. It's a great portable with a super readable adjustable screen. It runs all popular IBM type software like Lotus 123, dBase III, Flight Simulator, and all the other favorites. However, a new model is coming so if you hurry, you can get one of the last few remaining Sharp PC 7000s from Central Computer for only $749.

To avoid disappointment, please order today. Remember quantities are limited. This is not a fire sale. The Sharp 7000 is not an orphan computer. The PC 7000A looks just like the PC 7000. Both share the same options including a portable printer, internal modem, and internal CRT color adapter. These will still be available for your PC 7000. Factory fresh. $749 price includes 90 day warranty and a rugged $79 travel case with generous side pockets free. Satisfaction guaranteed. Order today.

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"The Sharp PC 7000 is an 18 pound package full of great surprises. An electroluminescent panel illuminates (backlights) the 25-line by 80-character crystal display — the result is easy readability in all lighting conditions."

"About the size of a double toaster..."

— *Pico Magazine*

"The Sharp PC 7000 is a well-built, quality portable...it has many...endearing touches."

"...this is the most readable LCD screen we have seen. It is backlit, and the contrast is adjustable for a wide range of lighting conditions."

"...comes with color emulation in shades of gray, so you can run color software on the LCD screen."

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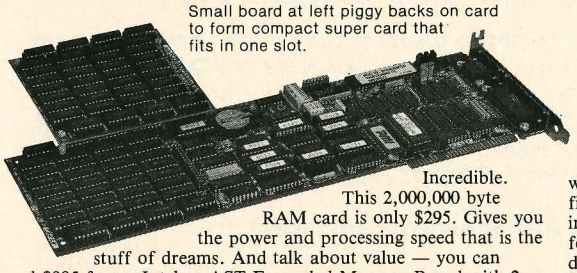

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— *continued next page*

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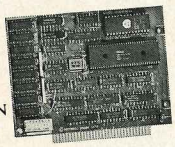

The Micro Interface RUN CP/M Z80 Co-Processor lets you share your PC hardware with CP/M software. Use PC ram resident programs like SideKick on top of CP/M programs. Operate CP/M programs from any floppy disk, ram section, or hard disk on your PC without resetting or exiting programs. Completely natural operation. It's just like putting a 5 MHz 64k Z80 computer in your PC. Run any CP/M software as is. Save software replacement costs. Does everything $595 co-processors do but only costs $195. One year warranty. Fully guaranteed. $195. Order today.

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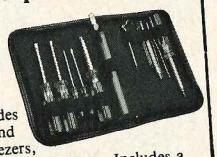

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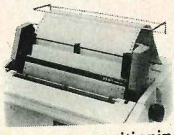
Kaypro Printer and Juki 6100 Tractor



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Toshiba 321 Bi-Directional	$ 95

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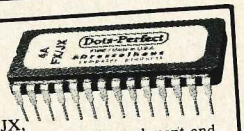

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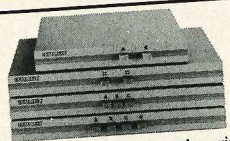
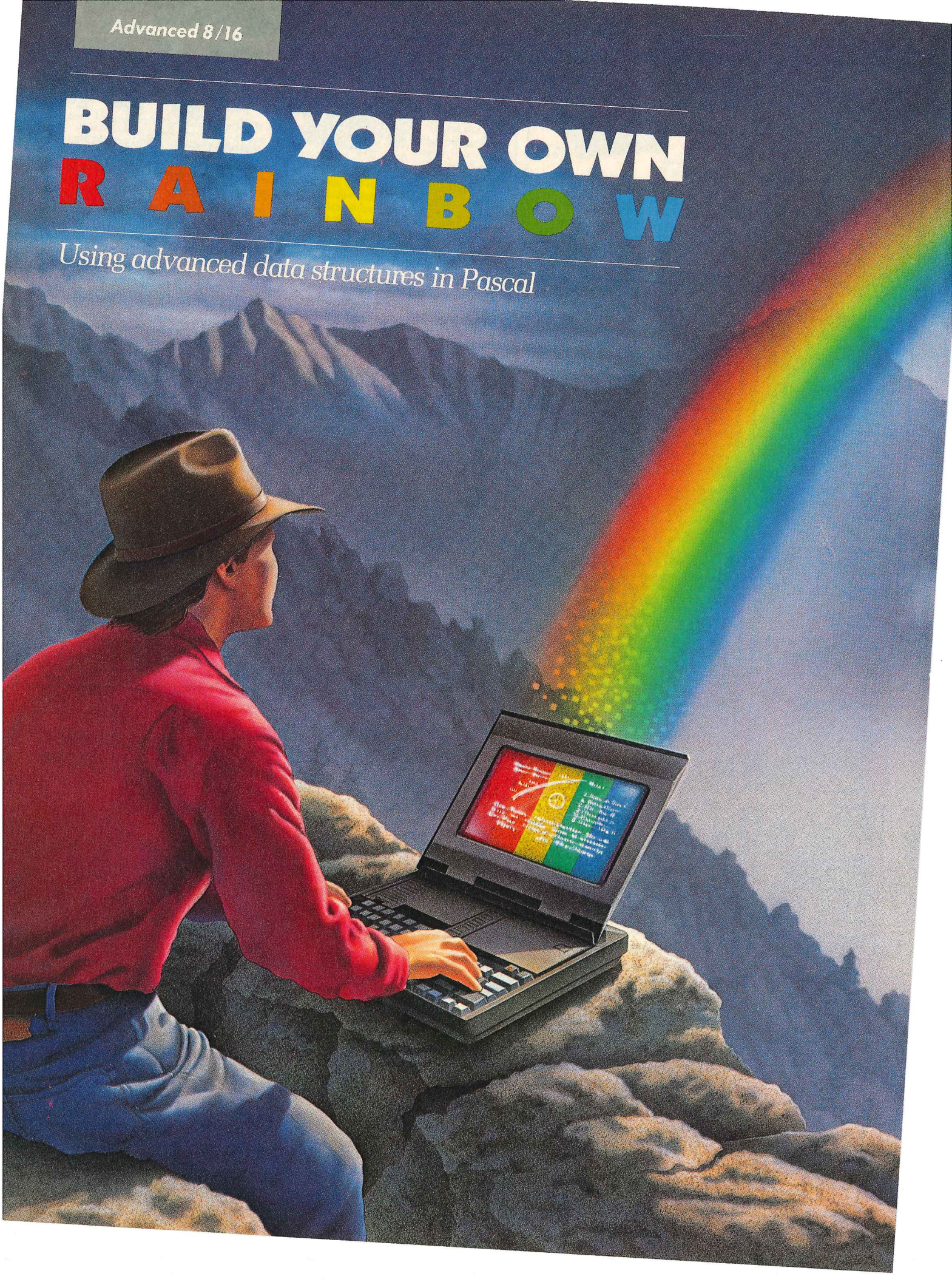


These rugged slimline switch boxes are built to last. Save wear and tear on cables. No more switching cables back and forth to get a job done. Hook up two printers to your computer. Print on one or the other with the push of a button. Serial and parallel models. The AB Parallel two switch model is $89. The ABC parallel three switch unit is $129. Please call on other configurations including cross-switching units. Remember these Data Spec switch boxes include lifetime factory warranties. Built to perform a minimum of 20,000 switches. Satisfaction guaranteed. Order today.

Advanced 8/16

BUILD YOUR OWN RAINBOW

Using advanced data structures in Pascal



by Edward Gelerinter, PhD.

As a programming language, Pascal's strong points are discipline and flexibility. It forces you to write clean code—so you always know what your program is doing. And it frees you from the limits that languages like BASIC place on the kind of information you can handle.

The secret of Pascal's flexibility is its variable types. Structured variables such as records and arrays, combined with user-defined variables, let you describe almost anything. Once mastered, these tools will help you write programs that leave ordinary languages behind.

This article will introduce you to user-defined variables, structured variables, records, and arrays. It is written for the experienced programmer—someone that has mastered the basics of Pascal and now wishes to move on to the more exciting and complex features of the language.

The implementation of Pascal used for examples is Turbo Pascal from Borland International, by far the most popular Pascal for both CP/M and MS-DOS microcomputers.

Variables

Variables, of course, are those program elements that distinguish computers from calculators. A good calculator can evaluate the expression $X/2 + X^3$ for any given X (if X=7 it's 346.5, for example). But who wants to solve it manually for every X from 1 to 100? Variables let the computer do it for you.

Most computer languages provide a number of different variable types so you can handle different kinds of information. BASIC, for example, gives you integers, single- and double-precision real numbers, and strings. Your computer stores each type of variable differently to optimize speed and memory use. You have to specify which type of variable is which or else the computer gets confused. For example, in BASIC, where C$ is a string variable, the expression X=C$^2 is meaningless: how do you square a string?

Pascal allows many more variable types than other languages. It lets you tailor your variables to the data you want to work with, allowing quicker and more efficient code. Standard *scalar* variables include integers, real numbers, characters,

ILLUSTRATION BY GREG MARTIN

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bytes, and Booleans. (This last is a logical data type, which has a value of true or false.) Strings are another variable type. These aren't found in all Pascal dialects, but are prominent in Turbo Pascal, the dialect I'll be using in this article. You can think of them as groups of characters—that's just how Turbo treats them.

Besides these, Pascal lets you define your own scalar variables. And it provides some truly unusual types: records, arrays, sets and pointers. This article will introduce you to user-defined variables, records and arrays. Sets and pointers are more complicated and deserve treatment on their own.

Pascal allows many more types of variables than other languages.

User-defined variables

User-defined variables are just that: Variables that can take on any values that you specify—and *only* those values.

Let's start with an example. Suppose we wish to define a new variable type that we will call rainbow and this type will be able to take on the values red, orange, yellow, green and blue.

We must tell the computer about our new variable type, so insert the following TYPE declaration between the CONST and VAR declarations. (Notice that I observe the convention of writing reserved words in uppercase.)

```
TYPE
    rainbow = (red, orange, yellow, green, blue);
```

Note that the values that rainbow can take are enumerated in order: red is followed by orange, and so on. This is an *ordinal* data type: the colors are stored in order in the computer's memory. (Actually they are stored as 0, 1, 2, etc.—which takes up a lot less memory than do strings like red and orange.)

Variables assigned to this type can receive any of these values. For example, `color1 := green;` and `color2 := red;` are allowed as long as `VAR color1, color2 : rainbow;` appears among the variable declarations. We can use these variables however we want—provided we obey the logic of whatever takes the values red, orange, yellow, green and blue.

Suppose color2 and color3 are declared variables of type rainbow and we have assigned `color2 := yellow;`. We cannot write `color3 := color2 + 1;` since color is not a number. Nor can we write `color3 := sqr(color2);`—squaring colors makes no more sense than squaring strings.

But we *can* compare variables: `IF color3 < > color2 THEN different := true;` is a perfectly good statement, so long as different is declared Boolean.

Read and write statements do not work with varaibles that you just think up, however. How are you going to write yellow without turning it into a string?

Fortunately Pascal has ways around this problem. One secret is the CASE statement. Suppose we have defined a TYPE cards and now wish to read in values for variables of that type. The method is illustrated in Listing 1 (next column).

Figure 1: Use of CASE Statements to Input and Output the Value of the Variable "Card"

```
PROGRAM UseCase(input, output); {example of case statement}
TYPE
 cards = (hearts, diamonds, clubs, spades);
VAR
 card:cards; {variable of type cards}
 n:integer;
BEGIN
 writeln('Input an integer from 0 to 3');
 readln(n);
 CASE n OF  {use case statement to assign value of card}
  0: card := hearts;
  1: card := diamonds;
  2: card := clubs;
  3: card := spades
 END; {of case n}
 write('card is ');
 CASE card OF {use case statement to write card value}
  hearts: writeln('hearts');
  diamonds:writeln('diamonds');
  clubs:writeln('clubs');
  spades:writeln('spades')
 END; {of case card}
END. {of program}
```

CASE and OF are reserved words. In the first segment of the program "n" is used as an index and the form is `CASE index OF`, followed by the value of the index and what action to take. If n equals zero, the action is to assign hearts to card; if n equals one, diamond is assigned to card, and so on. CASE..OF is really a Boolean operation that isn't over until the END is encountered.

(Note the absence of a semicolon between spades and END and between `writeln ('spades')` and END. In Turbo Pascal the list of statements in a CASE statement does not have to end in a semicolon, but Turbo does want to see the semicolon *after* the END.)

In the second CASE statement the index is "card" and the action is to write the value of card to the screen. Pascal won't write the value directly, so you have to specify a string to print for each value—easy to do in this example.

Here's a shortcut. Remember how the computer stores user-defined variables—as ordinal numbers? Turbo lets you use these numbers to assign values to the variables you make up.

Assuming the declarations of the previous program, the first CASE statement can be replaced by `card := cards(n);`. Ordinal values are counted zero, one, etc., so if n equals zero then card will be assigned the value hearts, if n equals one it will be diamonds, and so on. Pascal calls this *type conversion*.

The program in Listing 2 (on page 41) is a streamlined version of Listing 1 using type conversion.

Other transformations

While we are on the subject of type conversions, let's look at some of Pascal's other predefined functions for converting one kind of variable to another.

We can correctly guess that `integer(diamonds)` will yield the value 1 since diamonds is the second enumerated value (remember that we start counting from zero). What do you think `integer('n')` is? The answer is the ASCII value for 'n', which is 110! `Ord('n')` is equivalent to `integer('n')`. Both forms

Figure 2: Previous Program Modified to Avoid Using CASE Statements

```
PROGRAM UseCase(input, output); {example of case statement}
TYPE
 cards = (hearts, diamonds, clubs, spades);
VAR
 card:cards; {variable of type cards}
 n:integer;
BEGIN
 writeln('Input an integer from 0 to 3');
 readln(n);
 card := cards(n);
   {use retype statement to assign value to card}
 write('card is ');
 CASE card OF
   {use case statement to write value of card}
  hearts: writeln('hearts');
  diamonds:writeln('diamonds');
  clubs:writeln('clubs');
  spades:writeln('spades')
 END; {of case card}
END. {of program}
```

are allowed in Turbo Pascal, but ord is the form that appears in most Pascal dialects, so it's the one generally used.

We can go the other way with `chr(110)` or `char(110)`—both of which yield the value 'n'. `Chr(integer)` is the preferred form since it appears in most Pascals. It will yield the character in the ASCII code corresponding to the integer. Of course, you should limit your input to numbers between zero and 127.

`Succ` and `pred` ('successor' and 'predecessor') do something like type conversion and they make user-defined variables lots easier to handle. Let's say that `color2 := yellow;` as in our first example. We can make color3 equal green with the statement `color3 := succ(color2);`. `Color1 := pred(color2);` assigns color1 the value orange. Then the statement `color0 := pred(color1);` assigns color0 the value red. Of course, all of these variables must have been pre-declared to be of the type rainbow.

User-defined variables make your programs smaller and faster.

User-defined variables are a lot of fun—and can make your programs smaller and faster because of the way they are stored. Now you know enough to explore them on your own!

Structured variables

Now let's look at another powerful type of variable in Pascal's arsenal—structured variables. These are characterized by the fact that they normally store more than one piece of data. This opens up interesting programming options not otherwise available.

In the rest of this article I'll introduce two of Pascal's structured variable types: records and arrays. We'll want to know three things about each type: the kinds of data it handles; how to create it; and how to get at the information stored in it. I've found it helpful to sprinkle examples in with my explanations to make the points more clear.

The record type

The record is exactly what it sounds like: a collection of data that records various bits of information about a subject. A school record, for example, might consist of the student's name, address, phone number, math grade, English grade, etc. An inventory record might have a stock number, a description, the number in stock, how many to reorder and the price, as follows:

```
TYPE itemdata = RECORD
                  itemnum : integer;
                  description : string[20];
                  num_in_stock : integer;
                  reorder : integer;
                  price : real
                END;
VAR
  beans, peas, cereal, apples : itemdata;
```

Each piece of information is stored in a field, whose variable type must be declared. The field list consists of the field name followed by a colon (:), a predefined variable type (such as integer) and a semicolon (;). The field list must be terminated with the reserved word END and another semicolon. (RECORD is also a reserved word.)

The joy of records is that they can be made up of several different types of information. Integers and strings can be associated, as they often are in real life. You still can't mix them, but they travel together through your program. Keeping track of related data becomes significantly easier.

In the record example we declared four variables of the type itemdata. In other words, we declared four records. But the creation of these records is not complete until we have loaded data into them. As with ordinary variables, we use an assignment statement. We reference each field by the name of the record followed by a period and the name of the field. For example:

```
beans.itemnum := 1;
beans.description := "Old Home Baked Beans";
beans.num_in_stock := 87;
beans.reorder := 35;
beans.price := 0.24;
```

If the record beans had many fields, then this method of assigning values to the fields becomes tiresome. You would have to type "beans." for each field. Pascal comes to the rescue with a new construct consisting of `WITH record name DO`. Values are assigned to the individual fields without retyping the record name, as illustrated below:

```
WITH beans
    DO BEGIN
        itemnum := 1;
        description := "Old Home Baked Beans";
        num_in_stock := 87;
        reorder := 35;
        price := 0.24
    END;
```

Either the period or the WITH construct can be used to input values from the keyboard or to output values to the screen with read and write statements respectively. The following two ways of handling input to and output from beans are equivalent:

```
writeln(beans.itemnum);
readln(beans.price);
```

or

```
WITH beans
    DO BEGIN
        writeln(itemnum);
        readln(price)
    END;
```

Another method, called *complete record assignment*, is useful when we have records of the same type. If we wanted to assign all the values currently in beans to peas, we would write `beans := peas;`. This is only reasonable and useful in very limited applications, but it warrants mentioning.

Nested records

Let us take another look at the inventory records. Suppose we'd like to allow for the possibility of two can sizes of vegetables, large and small (modern usage would be jumbo and large), with two corresponding prices. Then we might have the program segment shown below. Notice that beans is now a record with a field (price) that is also a record (amt). You can nest records within records—amazing!

```
TYPE amt = RECORD
              large : real;
              small : real
           END;
           itemdata = RECORD
              itemnum : integer;
              description : string[20];
              num_in_stock : integer;
              reorder : integer;
              price : amt
           END;
VAR
  beans, peas, cereal, apples : itemdata;
```

We can assign values to the price fields of beans three ways:

```
beans.itemnum := 1;
beans.price.large := 0.78;
beans.price.small := 0.24;
```

or

```
WITH beans
  DO BEGIN
        itemnum := 1;
        price.large := 0.78;
        price.small := 0.24
  END;
```

or (more complexly)

```
WITH beans, price
        {read as 'WITH beans, WITH price}
    DO BEGIN
        itemnum := 1;
        large := 0.78;
        small := 0.24
END;
```

The third technique is a great shortcut, but can get you into trouble if you're not careful. To see why let's look at a program segment in which a nested record is used to store the location coordinates of a given position. In the example, the coordinates are 3 feet 10 inches north of the reference point and 17 feet 3 inches east of the reference point. The correct way to load the nested record is shown in Listing 3 below.

Figure 3: Correct Way to Assign Values to the Fields of a Nested Record Using the WITH Statement

```
PROGRAM position(input, output);
TYPE
 direction = (north, south, east, west);
   {user-defined variable}
 coordinates = RECORD
       feet, inches:integer;
       compass:direction;
 END;{of coordinates}
 posit = RECORD
       vert,horz:coordinates;
 END; {posit}
VAR
 location:posit;
BEGIN {MAIN}
 WITH location, vert DO BEGIN
  feet := 3;
  inches := 10;
  compass := north
 END; {with}
 WITH location, horz DO BEGIN
  feet := 17;
  inches := 3;
  compass := east
 END; {with}
 .
 .
 .
END.
```

One might try to shorten the program by using a triple WITH statement in the main program: **WITH location, vert, horz DO BEGIN**. This is a definite *no no* because the program has no way of knowing if you're referencing the subfields of vert or the subfields of horz!

You can, of course, nest several WITH statements, as long as you know what you are doing. But in Turbo Pascal, if you want to use more than two you must reset compiler directive W. You can have up to nine—but be careful!

Arrays

Arrays are also collections of variables. They're like a set of storage bins—each one able to contain a value.

If the bins are in a single row or column, the array is said to be one-dimensional and each bin is indexed by a single quantity—Bin[1], Bin[2], etc. If the bins are in rows and columns, two indices are required: Bin[1,2], Bin[2,1]. Arrays can have as many dimensions as you like, but more than three gets difficult

to envision. I prefer to stick to one-, two- or three-dimensional arrays.

When declaring the array we need to supply the following: data type, maximum number of elements, and how we plan to index the elements. You can use any data type, but only one type per array. All elements must be of that type. Integers, real, subrange, ordinal or structured variables are all allowed. Many other computer languages also use arrays, but few are as flexible as Pascal in the choice of the element types.

Then we index the elements so we can work with them easily. Assuming a one-dimensional array, we could index ten elements by numbering them 1 through 10. We could also index them A through J, and so on. The size of the array is indicated by the upper bound (J is the tenth letter)—this meets the requirement of indicating the maximum number of elements.

There are more interesting ways to index arrays. If we have declared a `TYPE days = (Sun,Mon,Tue,Wed,Thu,Fri,Sat);` we can index using Mon . . . Wed—a subrange of days. Here again, you can let your imagination run wild. Anything to make your programming easier.

The type declaration for an array takes the form

```
identifier = ARRAY[bound..bound] OF element type
```

or it can take the form

```
identifier = ARRAY[index type] OF element type
```

ARRAY and OF are reserved words. In standard Pascal, sometimes you see the notation "PACKED ARRAY"—"packed" being a compiler instruction indicating how to store the array. Turbo Pascal automatically packs all arrays.

Several different type declarations of arrays are shown in Listing 4 (see below), along with some variable declarations. Only predefined variables can be used in arrays, so we first define several useful ordinal variables. Then we can use them in our array type declarations.

Figure 4: Some Illustrative Array Declarations

```
TYPE
 days = (Sun,Mon,Tues,Wed,Thur,Fri,Sat);
 coins = (quarter,dime, nickel, penny);
 months = (Jan,Feb,Mar,Apr,May,Jun,Jul,Aug,
           Sep,Oct,Nov,Dec);
 Str = PACKED ARRAY[1..80] OF CHAR;
 DaysInMonth = ARRAY [months] OF 28..31;
 coder = ARRAY ['A'..'Z'] OF CHAR;
 money = ARRAY [coins] OF INTEGER;
 SickDays = ARRAY [days] OF REAL;
VAR
 Strings:str;
 dave:SickDays;
 PiggyBank:money;
 RainyDaysInJune: ARRAY [1..30] OF BOOLEAN;
```

The last variable, RainyDaysInJune, illustrates an alternate way of declaring an array. In many cases, this is a shorter and easier way to go.

Arrays are not restricted to these simple types. They could be collections of structured variables like records, or even other arrays! The statement

```
Gradebook = ARRAY[1.. NumStu]
        OF ARRAY[1..NumPapers] OF 0..100;
```

is perfectly acceptable, provided the constants NumStu and NumPapers have been previously declared.

Two-dimensional arrays have two indices, declared in the form `type = array[range1,range2]` of element. The gradebook in the last paragraph could be expressed as a two-dimensional array by the statement

```
Gradebook = ARRAY[1..NumStu, 1..NumPapers]
                    OF 1..100;
```

Now if two-dimensional arrays are good, maybe three dimensions are better. Well, that depends upon the application. Listing 5 (below) uses arrays to keep track of a three-dimensional game of Tic Tac Toe. The type definition is

```
game = ARRAY[1..3, 1..3, 1..3] OF (X,O,empty);
```

(We could have declared the enumerated variable first—e.g., `TYPE mar =(X,O,empty);`—and then declared elements of the array to be of that type, but the option shown is faster.)

Figure 5: Program Using a 3-dimensional Array

```
PROGRAM TicTac(input, output);
TYPE
 game = ARRAY [1..3,1..3,1..3] OF (X,O,empty);
VAR
 TTT:game;
 i,j,k:integer;

PROCEDURE MOVEO(VAR tic:game); FORWARD;

PROCEDURE display(tic:game);
BEGIN {display Tic Tac Toe game}
 clrscr; {implementation dependent}
 FOR i := 1 TO 3 DO BEGIN
  FOR j := 1 TO 3 DO BEGIN
  FOR k := 1 TO 3 DO
   CASE Tic[i,j,k] OF
    empty: write('empty ');
    X:   write(' X  ');
    O:   write(' O  ');
   END; {case}
  writeln;
  END; {loop J}
 writeln;
 END; {loop i}
END; {display}

PROCEDURE moveX(VAR tic:game);

CONST
 n = X;
BEGIN {X moves}
 writeln('Where do you move? (3 integers 1-3)');
 readln(i,j,k);
 IF tic[i,j,k] = empty THEN
      tic[i,j,k] := n
  ELSE BEGIN
    writeln('Square is occupied. try again.');
    moveX(tic)
  END; {else}
```

(continued)

```
 display(tic);
 moveO(tic);
END; {moveX}

PROCEDURE moveO; {VAR tic:game}
CONST
 n = O;
BEGIN {O moves}
 writeln('Where do you move? (3 integers 1-3)');
 readln(i,j,k);
 IF tic[i,j,k] = empty THEN
      tic[i,j,k] := n
  ELSE BEGIN
   writeln('Square is occupied. try again.');
   moveO(tic)
  END; {else}
 display(tic);
 moveX(tic);
END; {moveO}

BEGIN {main}
 {initialize game}
 FOR i:= 1 TO 3 DO
  FOR j := 1 TO 3 DO
   FOR k := 1 TO 3 DO
    TTT[i,j,k] := empty;
 display('TTT');
 writeln('X goes first');
 moveX(TTT);
END. {main}
```

Reading and writing arrays

Arrays are not difficult to read and write considering that read and write statements only work with the standard variables. Let us look at the loading of the three-dimensional Tic Tac Toe game shown in Listing 5.

The program starts with the declaration of the array. It is written in modular form (of course!) and contains procedures for displaying the game, entering an X and entering an O. Since moveX calls moveO and moveO calls moveX we have to forward declare one of them. The program chooses to forward declare moveO.

The main program starts by initializing the game—it uses a triple nested loop to load "empty" into each position of the array. Notice how the array is referenced—

```
ArrayName[index,index,index] := empty;
```

The program then calls the procedure "display" which uses a triple nested loop to write Tic Tac Toe to the screen. Here we have to use the CASE statement to write the array elements; as with all user-defined variables, they cannot be written directly. Extra writeln's make the display more readable.

The move procedures start by asking the player for the three indices that represent the position for the X or O. They must be entered in the form

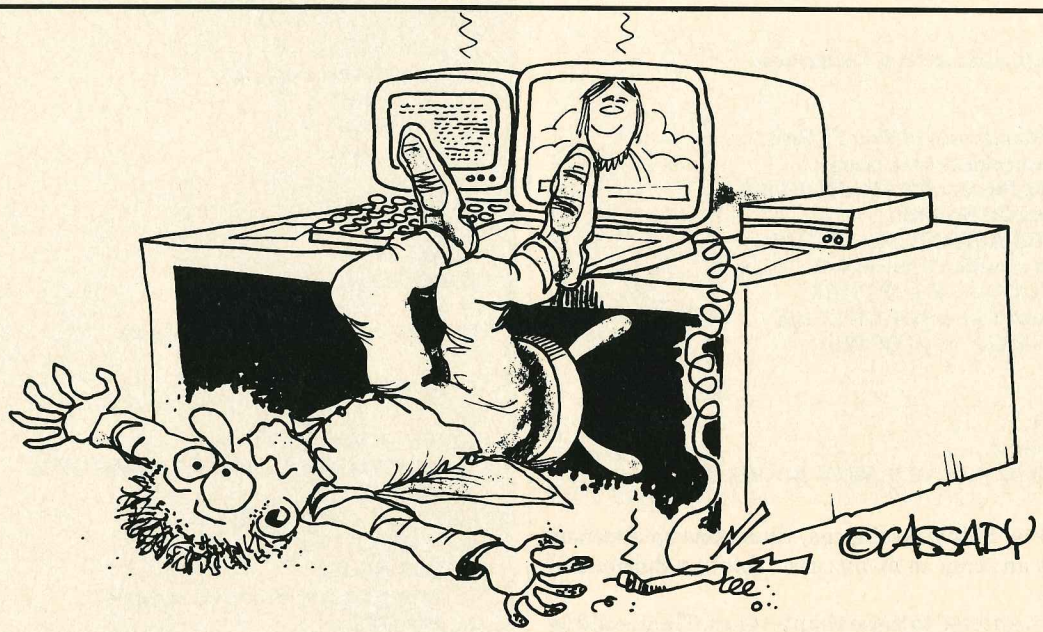
```
index<space>index<space>index
```

and the indices must be within the proper bounds—otherwise the program will crash. (You are invited to improve this on your own.)

If the position is empty, then the program enters an X or an O. If the position is occupied, then the player is so informed and given another chance. The game is displayed so that the next player can decide on a move.

The two procedures moveX and moveO are nearly identical. The program as written requires the players to check for a winner, but you could add a procedure to check automatically. Give the game a try and enjoy.

Dr. Gelerinter is a physics professor at Kent State University. Although he programs in different languages depending upon the particular application, Pascal is his favorite.



"Lacking in computer graphic experience, Darnell tried to use a refill in his light pen."

DO IT WITH STYLE

Ventura brings desktop publishing to MS-DOS

by Ted Silveira

Whether it's a 300-page book or a two-page newsletter, the job of turning words and pictures into good-looking printed pages is a tricky business that requires both artistic flair and finicky attention to detail. That's why it's long been a sort of black art, beyond the understanding of ordinary mortals. The recent invasion of this business by personal computers—the phenomenon known as desktop publishing—isn't going to put commercial typographers out of business, but it does open the door to the rest of us, especially when we can get software like Ventura Publisher.

Ventura Publisher is a *page makeup* program, a program that lets you mix text and graphics on your computer screen to create the image of a printed page and then print the results on a laser printer or compatible typesetting machine. The program creates a WYSIWYG (what-you-see-is-what-you-get) display so that you can see on the screen an accurate image of what you'll get when you print.

Until recently, professional-quality page makeup software costing less than $1,000 was only available for Apple's Macintosh computer, and as a result, Apple dominated the new field of desktop publishing. But now all that is changed—Ventura Publisher brings professional desktop publishing to MS-DOS.

The basics

Ventura Publisher will run on any IBM-compatible MS-DOS computer, including the Kaypro PC and the Kaypro 286i. It requires a hard disk with several megabytes of free space and at least 512K RAM (random access memory). For anything other than short pieces, you'll want 640K RAM.

Ventura Publisher also requires a graphics card. It will work with the CGA (color graphics adapter) and EGA (enhanced graphics adapter) cards and the Hercules monochrome graphics card, as well as high-resolution graphics systems such as the MDS Genius full-page display and the Wyse WY-700.

The program really requires a mouse, though it will work without one, and supports all the major brands, as well as the Summasketch tablet. For output, it can use the Hewlett-Packard Laserjet and Laserjet Plus laser printers, Tall Trees' JLaser system, any Postscript laser printer or typesetter (including the Apple Laserwriter), the Xerox 4045 laser printer and 4020 color inkjet printer, and any Epson MX or FX dot-matrix printer (for drafts only).

This first release of Ventura Publisher runs under Digital Research's GEM system, which gives MS-DOS an interface very much like that of the Macintosh (so much so that Apple threatened legal action over an earlier version of GEM). The next release will also include a Microsoft Windows version.

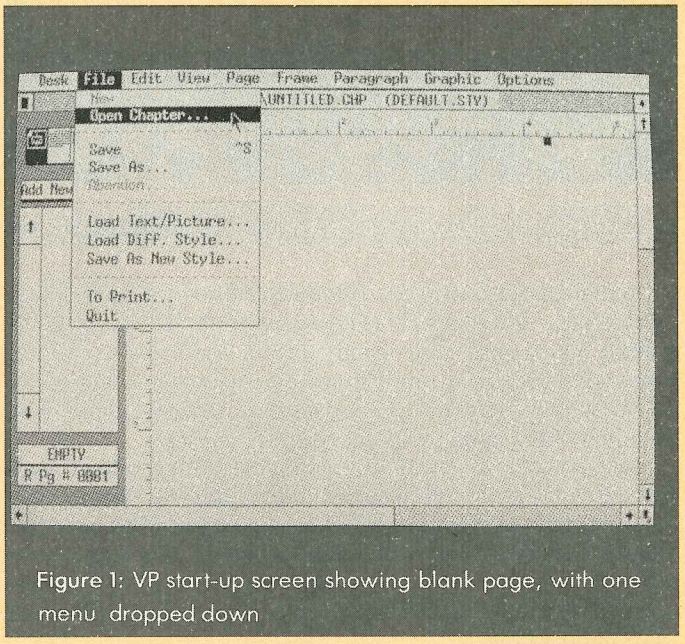


Figure 1: VP start-up screen showing blank page, with one menu dropped down

The underlying page

When you start Ventura Publisher, you'll see a screen like that in Figure 1 (see above): black letters and lines on a paper-white background; drop-down menu bar at the top of the screen; scroll bars at the right side and bottom; sidebar on the left, with status information, a list of files, and icons (pictures) of the tools available; and, in the middle of the screen, a blank page.

PHOTOS BY RON POWERS

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This blank page, called the *underlying page*, is controlled by a *style sheet*, which is a special file that contains information on the size and orientation of the page, the number of columns and their margins, and the style, size, spacing, and other features of all the type to be used (body text, headings, footnotes, etc.). Ventura Publisher starts with a simple default style sheet, but you can easily load a new one, either one of Ventura's 21 sample style sheets or one you've created yourself. You can also modify any existing style sheet.

The underlying blank page is your template for all the pages

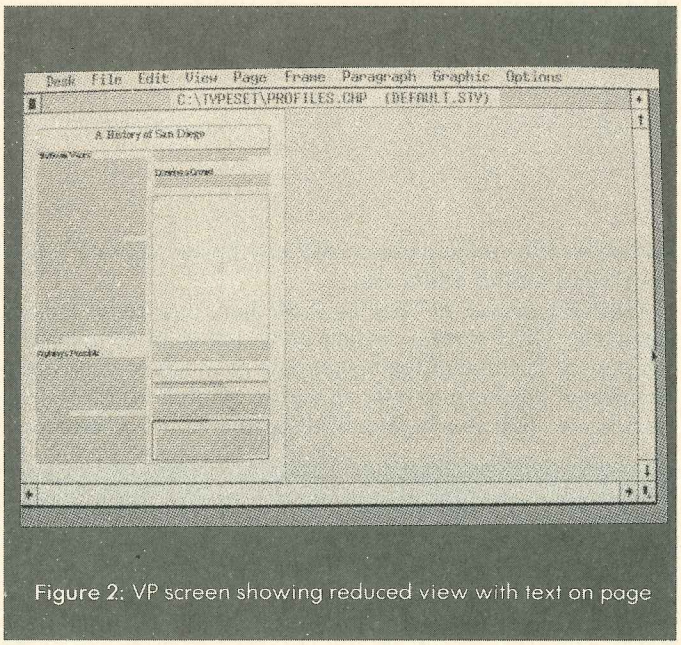

Figure 2: VP screen showing reduced view with text on page

in your document. You can set the size of the page (half, letter, legal, 11x17, B5, or A4) and its orientation (portrait or landscape). You can decide whether right-hand and left-hand pages will be different, and if so whether chapters will start on a right page or a left. You can also define up to eight columns of varying widths, along with margins and gutters.

Once you set up your underlying page, you can load a text file into it. Ventura Publisher will automatically flow the text from column to column and from one page to the next (see Figure 2 on this page). It'll create as many new pages as it needs to hold all your text, always using the template you have created. This text on the underlying page is the backbone of your publication.

On any individual page, you can define any number of *frames*, rectangular areas into which you can place graphics or text (such as sidebars or boxed text). A frame can be any size (up to a full page) with margins and columns. Unlike the underlying page, a frame defines a limited space. If you place a long text file into a small frame, the text that doesn't fit won't automatically flow to another page; instead, it will simply not be shown. (You can create other frames, even on other pages, to hold the rest of the text.)

To draw a frame, click the mouse on the frame icon, move the mouse to what will be the upper left corner of your frame, hold down the mouse button, and pull the mouse down and to the right. As you move the mouse, the rectangular frame will expand on the screen. When you release the mouse button, the frame will be set, and the text on the page will flow around it automatically (see Figure 3 on next page). You can move a frame to a new position at any time, even after you fill it with text or graphics.

Ventura Publisher's combination of the precisely placed frames and the free-flowing underlying page gives you great flexibility. If you're doing a book or manual, where the text is all

Ventura offers four views of the text on the screen—normal, enlarged, reduced or facing pages.

in one piece, lay out columns on the basic page and flow the text into them, using frames to place any charts or other graphics. If you're doing a magazine or newsletter, where you have several articles on the same page and where an article may jump from page 1 to page 6, use frames to block out all the articles so that you can control the text flow precisely.

At any time, you can choose one of four views of the page on your screen. The *normal* view shows everything at actual size, the *enlarged* view shows it all at twice normal size, the *reduced* view fits an entire page on the screen, and the *facing pages* view fits both left and right pages on the screen. In the reduced and facing pages views, small type is *greeked* (shown as lines instead of actual characters). The reduced and facing pages views are best for arranging text and graphics on the page, while the normal and enlarged views are best for editing text and choosing type. All four views allow you to use all the program's major commands.

Ventura Publisher has many other features to make page layout easier. It controls widows and orphans (isolated lines at the top or bottom of a page). It immediately rewrites the screen to show any changes in margins, columns, frame placement, etc. It has a *snap-to* feature, which forces a frame to align with a column, line, or specified grid. It lets you give measurements in picas and points (as typesetters do) or in inches or centimeters (as normal people do). It can automatically add ruled boxes around frames and vertical rules between columns. And there's more—a lot of thought went into this program.

Typography

Once you have text on a page, you have to deal with the title, headings, captions, body text, and other text elements. Ventura Publisher handles these by means of *tags*—descriptions, saved in a style sheet, of how to set specific sections of text (type style, type size, indentation, space above and below, and so forth). A tag can be attached to a *paragraph*—any string of text ending with a hard carriage return.

When you select the tagging function, the left side of the screen lists all the tags in the current style sheet. Highlight a paragraph by clicking the mouse anywhere within it, and then

click the mouse on a tag. The highlighted paragraph will immediately be reformatted to match the tag's specifications.

Ventura's 21 sample style sheets contain a variety of tags, and you can create new tags or modify existing ones easily. For each tag, you can set the *font*, which includes the type size and typeface (Times, Helvetica, Courier, and Symbol are standard, but you can add others depending on your printer). You can set the *alignment*, which includes line treatment (flush left, flush right, centered, justified), hyphenation (on or off), word spacing range, and indents. You can set the *spacing*, which includes inter-line spacing, spacing between paragraphs of the same type, and spacing above and below if paragraphs are of different types. You can set line, page, and column breaks, tabs, temporary indents, and special effects such as bullets and dropped initial caps. And you can set up to three ruling lines above, below, or around the inside of a box.

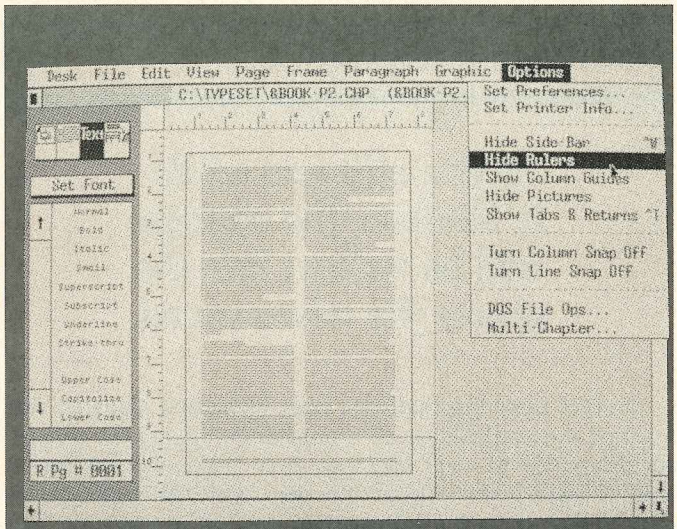

Figure 3: VP screen showing reduced view with empty frame defined on page filled with text

It takes time to set up a new tag. But the beauty of tags (and style sheets) is that once you've created them, people who know nothing about typography can do the actual type marking because the hard work is done. They can set bulleted lists, numbered lists, and even tables just by pointing and clicking.

Through the text editing function, you can also mark sections smaller than a paragraph for boldface, italics, underline, strikethrough, and small caps. You can even set the marked section to a different font, if you wish.

Ventura Publisher also has features common in professional typesetting but missing from many desktop publishing programs, including automatic hyphenation. Ventura Publisher hyphenates according to a set of rules supplemented by a dictionary of exceptions and a user-built dictionary. It doesn't insert hyphens into the text file but instead hyphenates the file each time it is loaded (it's very quick).

Ventura Publisher can also *kern* pairs of letters (reduce the space between them) that would otherwise appear too far apart. Unfortunately, at the moment this kerning is restricted to individual pairs of letters—you can't automatically kern a letter-pair throughout an entire document.

In addition, the program can set leading (spacing between lines) in fractional points, though it won't allow type sizes in fractional points.

Graphics

Most publications involve some art, even if it's only a box with some text in it. With Ventura Publisher, you have two options.

Ventura lets you import graphics files, both bit-mapped art and line art.

First, you can use the program's drawing function to create boxes, circles, lines, and arrows. You can also use the *box text* function to create a box, enter text in it, and attach the box text to a frame (to label a picture, for example). If you move the frame, all the box text and other graphics attached to it move with it.

Second, you can import graphics files—both bit-mapped art and line art. (When art is "bit mapped," every dot in the screen display is stored as graphics data. Many drawing and graphics programs generate bit-mapped art, as does GEM itself. Line art consists of a series of vectors—coordinates and formulas—that define a series of lines and curves. Popular programs such as Lotus 1-2-3, AutoCAD, GEM, and Mentor Graphics all create line art images.)

Ventura Publisher can read bit-mapped art in GEM's IMG format or PC Paintbrush's PCX format and line art in GEM's GEM format, Lotus' PIC format, AutoCAD's SLD format, or Mentor Graphics' P* format. It also includes utilities to convert text files to PCX files and line art from DXF files to GEM files.

When you load a bit-mapped image into a frame, you can have the picture stretch to fit (expand to fill the frame in both directions), or you can specify scaling factors for both the x axis and the y axis. If you scale the image so that it's larger than the frame, you can crop it by "grabbing" it with the mouse and sliding it around in the frame until it's placed as you want.

You can also resize the frame and image together. If you selected stretch-to-fit, the image will stretch when you resize the frame. If you selected scale factors, you'll truncate the picture if you make the frame smaller and leave white space if you make it larger.

With line art, you also have two sizing and scaling options—stretch-to-fit, which works just as with bit-mapped art, and maintain-aspect-ratio. If you choose maintain-aspect-ratio, then the aspect ratio of the line art remains constant if you resize the frame. Unfortunately, you can't crop line art in Ventura Publisher—crop your art before importing it.

When you have line art or bit-mapped art displayed on the screen, it takes longer to redraw the screen. Ventura Publisher offers a *hide pictures* option that replaces the art with gray

areas, allowing the screen to be redrawn at top speed.

If you want to create an irregular run-around (so that the text follows the contour of the art itself rather than the frame) you can do it by following an easy three-step process explained in the Ventura Publisher reference manual. This method takes more time than an automatic run-around, of course, but it's better than nothing at all.

Graphics are a problem in MS-DOS because there are no standards, though some formats (such as the DXF format for line art and the PCX format for bit-mapped art) are near-standards. Ventura Publisher handles the most common formats, but if graphics are essential to your work, make sure that it can handle the formats you use.

Alterations

Changes, especially last minute changes, are part of publishing, and Ventura Publisher handles changes very gracefully.

With style sheets, you can completely change the look of a publication simply by using a new style sheet. If the new style sheet uses the same tag names as the old one, the publication will be reformatted to the new specifications immediately—three-column layout to two-column, 9/11 Helvetica type to 10/12 Times Roman, landscape layout to portrait. All you need to do is to scan the results for proper placement of graphics and so forth. If you've never been involved in print production before, you can't imagine how wonderful this feature is.

You can make smaller changes by modifying the current style sheet or retagging the paragraphs, changing a numbered list to a bulleted list with a few clicks of the mouse. And you can make text changes through Ventura Publishers's text editor, adding or deleting text and making block moves or copies. It won't replace your word processor, but it's handy for last-minute editorial changes and copy-fitting.

File handling

In Ventura Publisher, your source files of text and graphics always remain separate and intact. Instead, the program builds a chapter file containing information about which source files to use and how to arrange them. Then, each time you load the chapter file, it automatically loads the proper style sheet, graphics files, and text files. When you save a chapter, the chapter, style sheet, and text files are saved separately (graphics files are never altered by the program).

This system has two advantages if you have to make revisions. First, if you edit a text file with your word processor or a graphics file with your paint or draw program, the changes will appear in your publication the next time you load it into Ventura Publisher. Second, if you edit a text while in Ventura Publisher, the changes will be written into the source file when you save the chapter. That way, your source file is always up to date. (But when you size or crop graphics in Ventura Publisher, the source files are not affected.)

Ventura Publisher can import text files in several formats, including WordStar, MultiMate, Microsoft Word, Xerox Writer, and Word Perfect, as well as standard ASCII. The program will retain some formatting information from these files, mainly markings for boldface, underline, italics, and strikethrough. And you can insert tags directly into text files with your word processor.

Ventura Publisher also remembers where files are stored. If you store your PC Paintbrush files in a particular directory, the program will look in that directory when you start to load a PC Paintbrush file. Considering the number of files in any reasonably complex publication, you'll find this feature a great help.

Printing

Ventura Publisher can control a number of different printers, including, as mentioned, the HP Laserjet and Laserjet Plus, any PostScript laser printer or typesetter (including the Apple Laserwriter), and Epson MX or FX-series dot-matrix printers (for drafts). You can install up to five different printers—the first one installed becomes the default printer—and then select the one you want at printing time.

If you edit text while in Ventura, the changes will be written into the source file when saved.

The four basic type styles (Times, Helvetica, Courier, and Symbol) are available on all the printers, though the precise specifications of each typeface vary from one printer to another. Each printer installation has a width table associated with it that gives the information needed to compute line breaks, etc. If you're going to use the Laserjet or a PostScript printer for your final output but want to print a draft on an Epson, you should use the width table associated with the final output printer—the word spacing will be wrong on the Epson, but the line breaks will be correct.

HP Laserjet Plus and JLaser owners will be glad to know that Ventura Publisher comes complete with the downloadable fonts necessary for the Times, Helvetica, Courier, and Symbol typefaces. In addition, the program comes with utilities for adding extra downloadable fonts to the printers that can accept them.

Ventura Publisher—summing up

Ventura Publisher is a complex program. It includes numerous things I haven't had space to mention, like index and table of contents generation, captions, running headers and footers, and color printing (limited to people with the Xerox color inkjet printer, at the moment). And it includes thoughtful touches, like control-key shortcuts for important commands and the ability to define function keys with paragraph tags.

The program is very intuitive in use, and unlike many MS-DOS page makeup programs, it doesn't require that you have an AT-class machine. It's very responsive on a Kaypro PC running at 8 MHz and quite usable at the standard 4.77 MHz (though it drags some).

I like the way the program handles files—keeping the pieces separate and saving changes in the original files. I like the fact that you can use all its editing commands in the reduced and enlarged views as well as the normal view. And I love the style sheets, which make formatting or reformatting a document extremely easy. Ventura Publisher can handle book length

documents without trouble and contains many features made for just such publications.

The documentation is as thorough as the program itself. There's a good tutorial and some sample files to get you started, a quick reference guide, and an excellent reference manual that contains complete descriptions of all parts of the program and all commands. The command descriptions explain not only what each command does and how it works but also what you might use it for (complete with examples). The manual is very clearly written and full of useful tips, and it has appendices with information on installation, error messages, word processor files, printers (including cable diagrams and switch settings!), and descriptions of the sample style sheets.

Ventura Publisher is not perfect. Though the installation is menu-driven and very easy, you must completely reinstall the program (which comes on 11 disks) to change your video card, add a new printer, or make any other hardware change.

The program has no undo command, so the only way to recover an accidental deletion or unwanted alteration is either to rebuild the affected part or to abandon your work and return to the version you loaded at the start of the most recent session. And though you can have ruler lines on the left and upper sides of your work space, these rulers have no sliding marker to indicate exactly where your cursor is at the moment, which makes them less than useful for precise placement of frames (the line, column, and grid snaps help, though).

Also, as I mentioned earlier, you can only kern individual pairs of letters and you can't crop line art (only bit-mapped), limitations you don't expect in a program of this quality.

There are minor annoyances, too. Ventura Publisher won't use expanded or extended memory. It takes up from one to three megabytes of disk space, depending on which printers you install (the Laserjet Plus takes the most space because of its fonts). The program also uses only generic typefaces on the screen (one serif face and one sans serif), so you don't get true representations of Palatino, Times, and so on. (I don't find this a problem as long as the spacing is accurate, but some people might.) And, oddly enough, there's no way to see all the settings of a particular style sheet at once—you have to load the style sheet itself and go through the whole series of menus and dialog boxes.

On the whole, Ventura Publisher is a wonderful program. It is quick and capable, with a truly professional array of features. It is also elegant, with a polish and attention to detail that we see too seldom in the first release of such a complex program. I'm impressed.

Ted Silveira is a contributing editor for PROFILES *and a freelance writer and editor based in Santa Cruz, California.*

Quick Reference Summary

Product: Ventura Publisher
Manufacturer: Xerox Corporation
101 Continental Blvd.
El Segundo, CA 90245
Phone: (408) TEAM XRX
Sugg. List Price: $895.

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Sorting It Out

List management using SORT with MailMerge

by J. Michael Butler

Few MS-DOS computers these days come with as many software goodies as CP/M models had (and in some cases, still have). In particular, without a bundled data base program, there's no simple way to maintain a mailing list. You can use WordStar and MailMerge, of course, but neither program can sort lists, and the ability to sort is pretty important for keepers of lists of any size.

Enter the MS-DOS utility known as SORT. If you follow some simple conventions in building your MailMerge data files with WordStar, you can do all sorts of sorts without buying anything extra! This article will show you how.

First I'll cover the rules and options for using SORT. Then I'll review the basic rules for MailMerge data files, and finally, I'll mention the special conventions you'll have to follow to use SORT with them.

In this article, the command instructions will assume a two-floppy computer. To use them on a hard disk, simply Escape from your Master Menu program (if you have one), go to the appropriate directory by typing **CD directoryname**, press the Enter key, and ignore drive references like "A:" or "B:" in command instructions.

The DOS SORT utility

SORT is a utility program that comes with your MS-DOS system disk. As the name implies, it sorts things. To work with it, it has to be on one of the disks in your machine. If you have a hard drive then set the path for the directory where SORT.EXE is located. If, for example, it's in the utility directory, change the path with the command

```
PATH=C:\UTILITY
```

If you're working with two floppy drives, it's a good idea to copy it onto your WordStar program disk. To do this, follow these simple steps:

1. Start the computer with the MS-DOS system disk in drive A and the WordStar program disk in drive B.
2. Type: **COPY A:SORT.EXE B:**. That will copy SORT.EXE (the SORT program from the A drive to the B drive.
3. Once the message "1 file copied" appears, you're done.

SORT's most common use is probably to generate an alphabetized directory listing. As you may know DOS's DIR command by itself does not display things in alphabetical order, but if you type

```
DIR | SORT
```

instead with the DOS disk in drive A, it will.

That vertical bar in the command is used by DOS to "pipe" input or output in some particular way. In this case, the output of the DIR command (the directory listing) is piped through the SORT program where it is sorted before being sent on to the screen. (MORE is another example of a program through which something can be piped. See your DOS manual for additional information on pipes, including MORE.)

We'll be using SORT to rearrange the contents of data files with a command like this:

```
SORT <B:NONSORT.DTA >B:SORTED.DTA
```

In this case, the NONSORT.DTA file will be read, sorted, and saved in the SORTED.DTA file.

Note that the less-than and greater-than signs are very significant to DOS. Don't *ever* use either of them in a command line or in a batch file, unless you wish to get information from or write information to a file.

A less-than sign (<) causes the command you give to take its input from a file, rather than from the keyboard. For example, the command

```
FORMAT A:<COMMAND.FMT
```

would execute the FORMAT program and look for the answers to all the program's prompts in the file COMMAND.FMT, rather than asking for and waiting for an operator response. (By the way, this is the way that the early Kaypro Autoload disks work on the MS-DOS machines.)

The greater-than sign (>) indicates that the results of the command should be written to a file name following that sign.

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For example

```
DIR >DISK.FIL
```

would write a copy of the current directory in a disk file called DISK.FIL. If that file already exists, it will be replaced unless

SORT's most common use is to generate an alphabetized directory listing.

the command has two greater than signs. The command

```
DIR >>DISK.FIL
```

would add the current directory to whatever is already in the file DISK.FIL. (No, you don't have to put three greater-than signs if you are adding a file to a file that has been added to a file. Come on, now . . .)

Getting back to the SORT command, the greater-than and less-than signs tell SORT to use the file NONSORT.DTA as input and to put the results of the sort into a file called SORTED.DTA. SORT sorts each line "alphabetically" beginning with the first character (or column) on the line. (See Figure 1 below for an example of NONSORT.DTA and the resulting SORTED.DTA.) Notice how everything is sorted by the first characters (in this case numbers) on each line.

Figure 1

NONSORT.DTA:

```
71913,"Butler",J. Michael,509 Springwood Dr.,Hot Springs,AR
12345,"Hermosa",Charles,444 Main St.,Toad Suck Ferry,AR
94436,"Beligosa",Herman,123 First St.,Jamestown,WA
45678,"Smith, Jr.",John W.,222 Second St.,Jamestown,VA
22456,"Zapata",Manuel,521 Third St.,Hermantown,MS
64532,"Abercrombie",Emerson,623 Fourth St.,Chicago,IL
53344,"Mouse",Mickey,712 Fifth St.,Disneyland,CA
```

SORTED.DTA:

```
12345,"Hermosa",Charles,444 Main St.,Toad Suck Ferry,AR
22456,"Zapata",Manuel,521 Third St.,Hermantown,MS
45678,"Smith, Jr.",John W.,222 Second St.,Jamestown,VA
53344,"Mouse",Mickey,712 Fifth St.,Disneyland,CA
64532,"Abercrombie",Emerson,623 Fourth St.,Chicago,IL
71913,"Butler",J. Michael,509 Springwood Dr.,Hot Springs,AR
94436,"Beligosa",Herman,123 First St.,Jamestown,WA
```

What makes SORT powerful, though, are its two parameters, /R and /+n. /R lets us sort in reverse order. We can do the same sort in reverse order by issuing the command:

```
SORT /R <B:NONSORT.DTA >B:SORTED.DTA
```

(See the results of that sort in Figure 2 below.)

Even more helpful is the /+n parameter. It lets you specify

Figure 2

```
94436,"Beligosa",Herman,123 First St.,Jamestown,WA
71913,"Butler",J. Michael,509 Springwood Dr.,Hot Springs,AR
64532,"Abercrombie",Emerson,623 Fourth St.,Chicago,IL
53344,"Mouse",Mickey,712 Fifth St.,Disneyland,CA
45678,"Smith, Jr.",John W.,222 Second St.,Jamestown,VA
22456,"Zapata",Manuel,521 Third St.,Hermantown,MS
12345,"Hermosa",Charles,444 Main St.,Toad Suck Ferry,AR
```

which character (or column) you want SORT to start with. In Figure 3, below, we begin each line (or record) with a four-digit customer number followed by a five-digit zip code. If I want my file sorted by customer number, I simply use the SORT command without any option.

Figure 3

NONSORT.DTA:

```
0005,71913,"Butler",J. Michael,509 Springwood Dr.,Hot Springs,AR
0001,12345,"Hermosa",Charles,444 Main St.,Toad Suck Ferry,AR
0004,94436,"Beligosa",Herman,123 First St.,Jamestown,WA
0007,45678,"Smith, Jr.",John W.,222 Second St.,Jamestown,VA
0002,22456,"Zapata",Manuel,521 Third St.,Hermantown,MS
0003,64532,"Abercrombie",Emerson,623 Fourth St.,Chicago,IL
0006,53344,"Mouse",Mickey,712 Fifth St.,Disneyland,CA
```

SORTED.DTA:

```
0001,12345,"Hermosa",Charles,444 Main St.,Toad Suck Ferry,AR
0002,22456,"Zapata",Manuel,521 Third St.,Hermantown,MS
0003,64532,"Abercrombie",Emerson,623 Fourth St.,Chicago,IL
0004,94436,"Beligosa",Herman,123 First St.,Jamestown,WA
0005,71913,"Butler",J. Michael,509 Springwood Dr.,Hot Springs,AR
0006,53344,"Mouse",Mickey,712 Fifth St.,Disneyland,CA
0007,45678,"Smith, Jr.",John W.,222 Second St.,Jamestown,VA
```

If, however, I wish to sort by the zip codes, I will have to specify that SORT begin with column 5, (i.e., ignore the first four characters). In that case, my command line would look like this:

```
SORT /+5 <B:NONSORT.DTA >B:SORTED.DTA
```

The sorting will start with zip codes (column 5 and beyond) and will ignore the four-digit customer code (see Figure 4 below).

Figure 4

```
0001,12345,"Hermosa",Charles,444 Main St.,Toad Suck Ferry,AR
0002,22456,"Zapata",Manuel,521 Third St.,Hermantown,MS
0007,45678,"Smith, Jr.",John W.,222 Second St.,Jamestown,VA
0006,53344,"Mouse",Mickey,712 Fifth St.,Disneyland,CA
0003,64532,"Abercrombie",Emerson,623 Fourth St.,Chicago,IL
0005,71913,"Butler",J. Michael,509 Springwood Dr.,Hot Springs,AR
0004,94436,"Beligosa",Herman,123 First St.,Jamestown,WA
```

Similarly, if we want the list sorted by last name, we simply type:

```
SORT /+11 <B:NONSORT.DTA >B:SORTED.DTA
```

You can see the results in Figure 5 below.

Figure 5

```
0003,64532,"Abercrombie",Emerson,623 Fourth St.,Chicago,IL
0004,94436,"Beligosa",Herman,123 First St.,Jamestown,WA
0005,71913,"Butler",J. Michael,509 Springwood Dr.,Hot Springs,AR
0001,12345,"Hermosa",Charles,444 Main St.,Toad Suck Ferry,AR
0006,53344,"Mouse",Mickey,712 Fifth St.,Disneyland,CA
0007,45678,"Smith, Jr.",John W.,222 Second St.,Jamestown,VA
0002,22456,"Zapata",Manuel,521 Third St.,Hermantown,MS
```

A warning about garbage

SORT likes to throw in a line of garbage characters at the end of a file. But don't panic! It doesn't lose any data, it just adds some junk you can't use. The garbage usually consists of a string of null characters () with an occasional sprinkling of normal characters thrown in for good measure. You will need to delete those garbage characters before using the sorted file with MailMerge, because nulls do strange things to MailMerge!

They're easy to delete. Just open the sorted file with WordStar using the **N** (non-document) mode. Then go to the end of the file (**^QC**). Once positioned on that line, simply press **^Y** (delete line), **^KD** (save and done) and voilà . . . the garbage has been tossed out.

What makes SORT powerful, though, are its two parameters, /R and /+n.

MailMerge data file rules

Before we discuss the special conventions you'll need to follow for MailMerge data files to work properly with SORT, let's review the basic rules that apply to *all* MailMerge data files.

1. MailMerge data files should be created using WordStar's non-document mode. This turns off word wrap and avoids putting special WordStar characters in the file.
2. Each name-and-address constitutes one record and should be on its own separate line. Each line, including the last one, should end with a "hard" carriage return indicated by a < in the rightmost column on the screen.

If a record is longer than 79 characters, there will be a + in the right column instead of a <. If you move to the end of the line you'll see the <. However, if you hit the Enter key at the end of each line, it won't be necessary to check—the < will be there.

3. Each category of information—like the zip code or the last name—constitutes a field and must be separated from other fields in a record by a comma.
4. Any field that includes a comma as part of the information must be enclosed in quotes.

Example: 93506,"Smith, Jr.",Wesley H.

5. Every record in a data file must have the same number of fields. If there is no information for a particular field in a record, leave a comma there to mark its position so the field count still comes out right.

Example: 123 Palm Drive,Suite 245,San Jose,CA
444 Main Street,,Phoenix,AZ

6. The fields must be in the same order in all records of a file.

Special conventions for working with SORT

You should put the fields you wish to use for sorting purposes at the beginning of each record.

Each of the sort fields should be a uniform length. For example, zip codes can be either five or nine digits, but not both. Customer numbers should be padded with leading zeroes to make them the same length (0010 instead of 10). The only exception to this is the very last field by which you intend to sort. It, and the fields that follow it, do not have to be uniform in length, unless that last field is numerical, in which case it should also be padded with zeros.

You should be very careful about choosing the order of your fields. Whatever field is first will be used for the primary sort, while other fields will be sorted *within* that primary sort. For example, if you have the zip code first and follow it with the last name followed by the first name, then you can easily sort alphabetically within zip codes, or just alphabetically.

SORT is no substitute for a full-featured data base program, but it could save you from buying one.

If you have identification numbers for the people on your list and you wish to be able to print out a list by I.D. number, you need to place it before the other information. That way, you can get a numerical sort by I.D. by specifying no starting column (Figure 3 on page 51). And when you want a zip code sort for mailing, you can specify a column number that will cause SORT to ignore the I.D. number at the beginning and skip over to the zip code field to do its sorting (Figure 4 on page 51).

In conclusion

By following these simple rules, you can use your imagination to do virtually any sort possible on your data without having to buy additional software. The sorted data file can be used in all the normal ways you use MailMerge data with WordStar—like printing labels (sorted by zip code for bulk mailing) or merge printing personalized form letters.

Of course, SORT is no substitute for a full-featured data base program, but it may save you from having to buy one if all you need is a way to sort and print out your data. In fact, using MailMerge's conditional commands .IF and .EX, you even could selectively print records that meet certain criteria.

Have fun SORTing it all out.

Mike Butler is a systems analyst for a business machines company in Hot Springs, Arkansas, an independent consultant, and a freelance writer.

Kaypro CP/M
Software and Supplies

Description	Price
Accounting	
Checks & Balances	$ 64
Financial Calculator	$ 34
Home Inventory Plus	$ 37
Business	
Bottomline V	$199
Decision Analyst	$ 79
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MarketFax	$395
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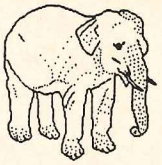

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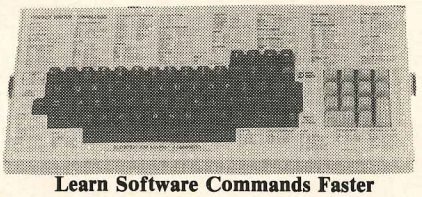

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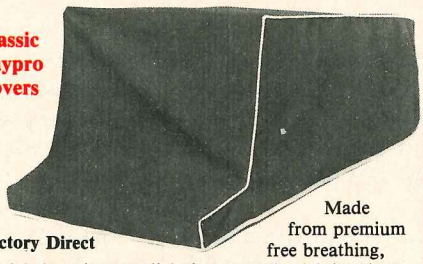

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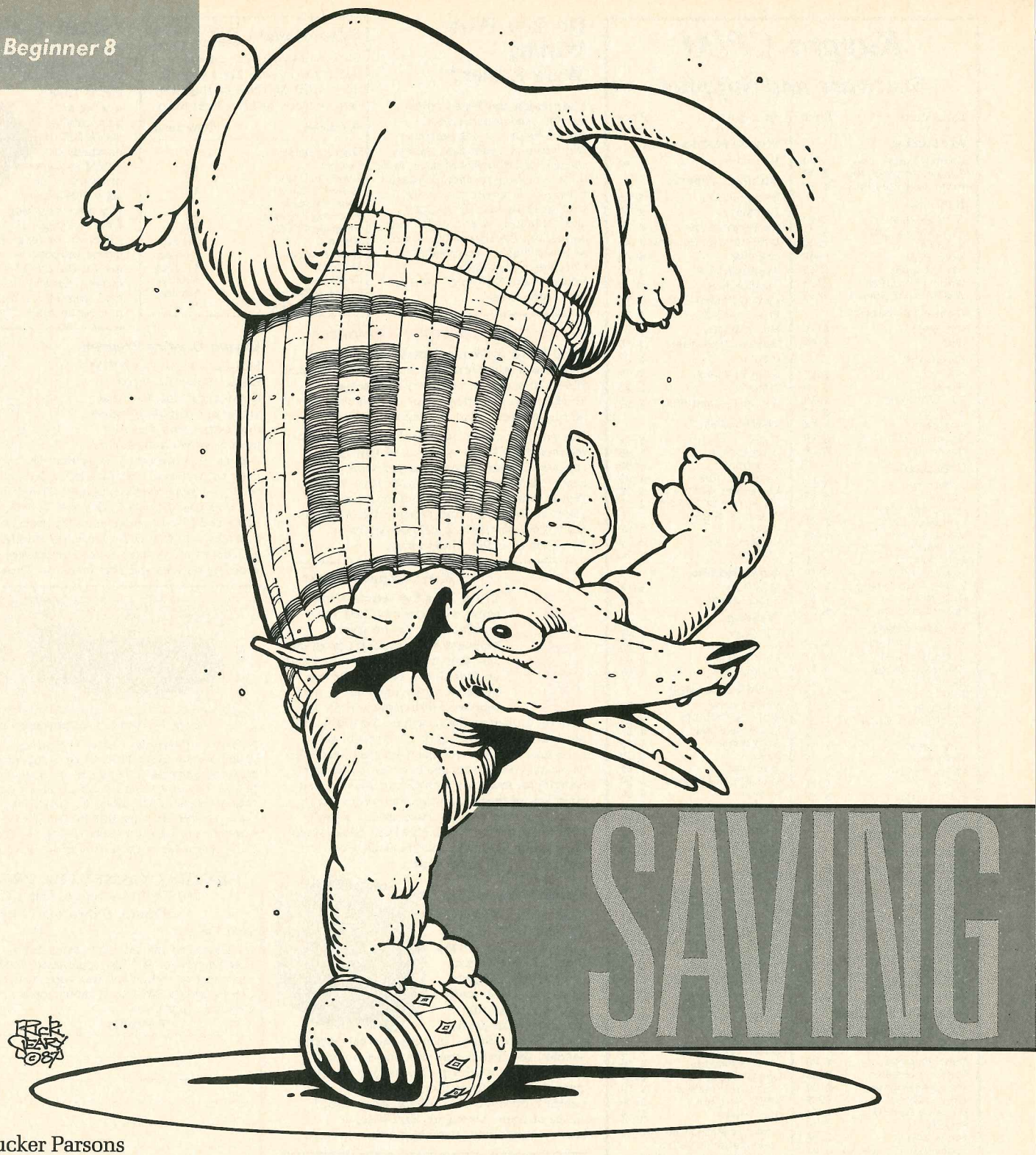

by Tucker Parsons

You would be amazed at how many computer owners will carefully word process their letter or document, sweating over every detail of design and format, only to fold it up and shove it into a handwritten envelope. I know this because I used to be one.

I tried everything. I bought a public domain program to do my envelopes, only to discover that it worked solely with WordStar. I tried the TYPER public domain program (which essentially turns your computer keyboard into a typewriter) and wound up wasting many envelopes (not to mention time) in aborted printing attempts. No matter what I did, it just seemed easier to address envelopes either on my old typewriter or by hand. Then I discovered two magical little parts of Perfect Writer: the MESSAGE and INCLUDE commands. As I got to know them better, a new universe of time-saving tricks opened up for me.

These days, when I want to print an envelope, I simply put one into the printer, whack out a command string of a dozen or so characters and Perfect Writer pretty much does the rest. (Actually, Perfect Formatter does most of the work.) It automatically slaps my return address onto the upper left corner, and

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ILLUSTRATION BY RICK GEARY

then it either prompts for a destination address to be typed in at the keyboard, or it prints an address stored in a separate file. The result is invariably perfect.

But that's not all. Once I got the hang of the MESSAGE and INCLUDE commands, I learned to create routines to print other forms. As a freelance writer, I send out a lot of invoices—when things are going well, that is. It used to be a laborious, repetitive process at the typewriter. Now, it's a snap. Once you know the tricks, you will start looking around for any excuse to use them.

MESSAGE and INCLUDE are commands that essentially allow you to make a Perfect Writer format command string interactive. Using other format commands, you can design your document, permanently save all information that stays constant, and then (using MESSAGE and INCLUDE) you can be prompted for any information that is variable. Whatever you type in from the keyboard or include from a different file is then automatically formatted into its previously designed place in your document and duly printed. There's no need to create a space-eating FIN file, and the command string is left intact for future use. This is one of the features of Perfect Writer that makes it worthwhile to put up with its idiosyncrasies.

Quick-print envelope

At the heart of all this labor saving is the string of format commands understood by Perfect Writer. Here is a simple example that prints a return address on an evelope and prompts you to type in the destination address from the keyboard. I call it ENV.PGM.

```
@STYLE(PAPERWIDTH=9 INCHES, PAPERLENGTH=4
        INCHES)
@STYLE(TOPMARGIN=Ø LINES, BOTTOMMARGIN=Ø
        LINES)
@STYLE(HEADERSPACING=Ø LINES, FOOTERSPAC-
        ING=Ø LINES)
@PAGEFOOTING()
@FLUSHLEFT(YOUR NAME
YOUR STREET
CITY, STATE ZIP)
@BLANKSPACE(4 LINES)
@MESSAGE(ADDRESS TO:)
@ADDRESS[@INCLUDE(CON:)]
@BLANKSPACE(3 LINES)
@MESSAGE(REGARDING?)
@FLUSHLEFT(@INCLUDE[CON:])
```

With Perfect Writer in drive A, put ENV.PGM on a disk in drive B. Now you're ready to roll. Put a regular letter-sized envelope into your printer, positioning it so that the carriage line is also the line you'd like your return address to start on.

To run the routine, at your system's A> prompt type

```
PF -P B:ENV.PGM
```

(If you're still running from Perfect Writer's Menu, now is a good time to start breaking the habit. See the related article "Breaking the Menu Habit" on page 56.) This is the "quick print" option, and you will see a message saying "Sending output directly to printer." Perfect Writer then displays the message: "ADDRESS TO:", at which point you type in the destination address as you would on an envelope. At the end of the address, type a ^Z (Ctrl-Z) to tell Perfect Writer to resume running. If you want a line at the bottom of the envelope (such as ATTN: ACCOUNTS PAYABLE), type it in at the "REGARDING?" message. Finish with a final ^Z. Your printer should now come to life and print out your first automated envelope. What could be simpler?

Double-duty address

Try a different approach. Call up PW and get B:ENV.PGM on your screen. Replace the two lines—

```
@MESSAGE(ADDRESS TO:)
@ADDRESS(@INCLUDE[CON:]),
```

with the single line—

```
@ADDRESS(@INCLUDE[B:1.AD])
```

Save this new variation under the file name B:ENV1.PGM.

Now say you're typing a business letter. You usually want the name and address of the person to whom you're writing to appear in the heading, so type it first. Then save it, *and it only*, under the file name B:1.AD. Then continue typing your letter, saving it under a *different* file name and making sure not to write over B:1.AD.

TIME WITH PERFECT WRITER

Teach your "old PW" new print-time tricks

Having finished writing and printing your letter, you are now ready to print an envelope. Put one in the printer as before and at the A> prompt type

```
PF -P B:ENV1.PGM
```

Hit ^Z at the "REGARDING?" message, and voilà! Perfect Writer prints your destination address from the file you've already saved. This means you only have to type it once, even though it's being printed twice. If you use this address frequently, then put it right into the routine and save it under a different name instead of using the INCLUDE command to get the address out of B:1.AD. On my "Letters" disk, I have four frequently used addresses with their own routines, and the generic routines above for everyone else.

Once you get the hang of these commands, you can customize the routines to suit your own needs. If you have stationery envelopes you can do away with the return address. You can

make the routine run faster by eliminating the "REGARDING?" message and its response. If you use a few different return addresses (as I do), they're easier to change if you use an INCLUDE command and a separate address file. That way you can just write over an old address with a new one, instead of re-editing the command file every time you want to change that one part.

```
@BLANKSPACE(1 LINES)
@MESSAGE(WHO'S THIS BILL GOING TO?)
@FLUSHLEFT(@INCLUDE[CON:])
@MESSAGE(INVOICE NUMBER..?)
@FLUSHRIGHT(INV.  @INCLUDE[CON:])
@BLANKSPACE(2 lines)
@CENTER(-INVOICE-)
```

MESSAGE and INCLUDE are commands that allow you to make a format command string interactive.

An invoice printing routine

Once you've experimented a little, you're ready for routines that are a bit more involved. The following is a command file I use to write my invoices for me. Like ENV.PGM it is used with the "quick print" option. I call it INV.PGM.

```
@PAGEFOOTING()
@MESSAGE(DATE:)
@INCLUDE(CON:)
@BLANKSPACE(2 LINES)
@MESSAGE(WHAT'S YOUR TITLE, DUMMY..?)
@FLUSHLEFT(For services rendered as @INCLUDE[CON:]
      on the job:)

@BLANKSPACE(2 LINES)
@MESSAGE(HOW ABOUT THE JOB'S NAME..?)
@BEGIN(CENTER)@INCLUDE(CON:)@END(CENTER)
@BLANKSPACE(1 LINES)
```

BREAKING THE MENU HABIT

If you haven't already done so, now is the time to free yourself from Perfect Writer's menu. As long as you operate from the menu, the deeper joys of Perfect Writer will forever be a mystery to you. Getting rid of it saves you a great deal of time—the time you now spend waiting for MENU.COM to load, or punching through incessant "Are You Sure?" prompts. As a bonus, you also get an extra 20K of storage space when you erase it from your disk. All you need to know is a few simple commands that, for some reason, are not mentioned in Perfect Writer's manual (at least not in mine).

To get into Perfect Writer from the A> prompt, simply type

```
PW D:FILENAME.EXT
```

where "D" is the disk drive from which the file should be loaded. (Usually I have my text files on drive B.) If you call for a file that doesn't already exist on the drive you designated, Perfect Writer will open a new one.

The real fun starts when you begin fooling around with the formatting and print commands. You have probably noticed the weird letters and dashes that appear next to your file name on the bottom of the screen when you use the menu to format or print a file. Those are the command forms. The menu is really just translating the options you select into the codes that Perfect Formatter and Perfect Printer understand.

In Perfect Formatter, the essential commands are -VERBATIM, -P, and -DEV. (Notice that all command options are preceded by a hyphen.) -VERBATIM formats your document as it appears on your screen, -P sends the formatted output directly to the printer without creating an intermediary FIN file, and -DEV formats the file for a device other than the default. For example

```
PF -VERBATIM -DEV DIABLO12 -P -PAUSE B:SIDE-
BAR.MSS
```

would format this file in verbatim mode for a Diablo 12 printer and send the output right to the printer, pausing between pages to load paper. PF, the program name, always comes first. Your file name to print out always goes last.

Using the quick print option is faster than creating the FIN file, but there's a price. To print underlines, subscripts and other such type options, you have to create a FIN file (by not giving the -P command) and then use Perfect Printer to print the "FINished" file. For instance

```
PP -PAUSE -2 B:SIDEBAR
```

would print two copies of B:SIDEBAR.FIN, pausing between pages.

—T. Parsons

```
@MESSAGE(AND THE JOB'S NUMBER..?)
@BEGIN(CENTER)YOUR JOB OR P.O. NUMBER: @IN-
     CLUDE[CON:]@END(CENTER)
@BLANKSPACE(1 LINES)
@MESSAGE(HOW MUCH DO YOU GET, MONEY-WISE)
@BEGIN(CENTER)MY FEE: @INCLUDE[CON:]
     @END(CENTER)
@BLANKSPACE(2 LINES)
@CENTER(Social Security  : 193-46-6482)
@BLANKSPACE(3 LINES)
@CLOSING(Thank you,

Nathaniel T. Parsons
543 West 49th St.
New York, N.Y. 10019)
```

This routine, unlike the one for envelopes, uses Perfect Writer's defaults for page size, header- and footer-spacing parameters. But don't let that fool you. Anything can be changed. If you don't like it, customize it. I've used routines like these to do form letters, article queries, and resumes. They can also be used for purchase orders, packing slips, standard legal forms (like model releases), and who knows what else—let your needs dictate the possibilities.

Interactive routines like these can save you all the time you used to spend typing out repetitive forms or form letters. But for the imaginative beginner, they also serve as an introduction to programming. The above command routines are Perfect Writer's imitation of high-level programming lanuguages. The satisfaction I experienced after working on these little routines led me to look into languages like MBASIC and C. In Perfect Writer's case, of course, all the hard stuff has already been taken care of for you by the nice folks who developed the program. But that doesn't detract from the thrill you get when you hit a couple of keys, and something you designed and wrote starts running and, lo and behold, works.

Interactive routines like these can save you a lot of time.

Tucker Parsons is a copywriter and playwright based in New York City. His satirical series of radioplays, Radioarcade, *is about computer games that "go out of control." They will air on public radio stations this spring.*

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Reviews

This month: Reflex and ALPHA/three

by Richard T. McMillan and Rich Hovey

Products reviewed this month by the Professional Software Programmers Association include two data base managers for different audiences.

REFLEX, The Analyst

In print it's REFLEX (large type)—The Analyst (small type). They have it backward. Analysis is where this data base management program from Borland International earns its keep. Reflex goes a long way in making sense of the varied information available to a business.

Reflex is for that group of users in the middle ground of desktop computing—neither novices who use ready-made, lead-'em-down-the-path software nor semi-hackers who are expert at both their business and their computers. The Reflex user must be familiar with computers, knowledgeable about files and records, and have some understanding of data bases. The hacker, wanting to include it in an automated business system, will find Reflex short of power features such as a key stroke recording system or an application language. But the middle-of-the-road user will find Reflex to be strong, fast, easy to learn and very useful.

Reflex runs on the IBM PC/XT/AT and compatibles with DOS 2.0 or higher, a graphics capability, and a minimum of 384K of RAM. Version 1.1 allows an expanded range of graphics cards to be used, including IBM EGA, Hercules MDA, IBM 3270, and AT&T 6300, in addition to the default IBM CGA. Expanded memory cards are now supported with the Lotus/Intel Microsoft Expanded Memory Specification. The use of a hard disk is optional but desirable, and Reflex supports a mouse as well. A graphics output device such as a graphics printer or a plotter, while optional for most applications, is required for hardcopy output of the analytical graphics provided by Reflex.

Features and Performance. Reflex has the requisite assortment of utility routines for finding particular files, sorting files, and filtering to include or exclude particular families of data. And it can write the usual collection of reports, mailing lists and labels, as well as fill-in form letters. With 250 fields per record and an allowance of 32,500 records in memory and 65,500 records on a disk, Reflex Version 1.1 has the size needed for most small business users.

Reflex's Crosstab View is useful in finding significant relationships hidden in the data.

This program excels in three features, the List View, the Graph View, and the Crosstab View. It's the last two features that really earn it the moniker, The Analyst.

Just as many spreadsheet programs have some data base management capability, this data base program provides a spreadsheet-like capability with the List View. This view allows the user to look at data in a row-column format where each cell can contain input or calculated data. Mathematical, financial, statistical, and date functions can be entered into any field, with the calculated values becoming part of the stored data base. If, for example, individual customer clothing sizes have been entered in a store's data base, Reflex can calculate average quantities of each size to order. With the calculation and display capabilities of the List View, many business questions can be answered with no further analysis or report preparation.

Reflex's second-strongest feature is the Graph View. Information in the data base can be displayed in the most commonly used business graphics formats: scatter plots, line charts, bar graphs (both cumulative and multiple) and pie charts. Additional summary calculations can be accomplished as part of the Graph View. An appropriate selection of grids, titles, and scaling features are included, allowing Reflex to satisfy the aesthetic needs of most business uses. The quality of the hard copy of the graphics depends, of course, partly on the plotting equipment. Reflex will provide a presentation-quality graphic when coupled with a quality graphics output device.

The Crosstab View is arguably the best analytical tool in the package. Starting with the raw data, an endless series of studies can be made by combining appropriate subsets and using elementary statistical functions, counts, sums, maximums, and minimum finding functions. Given sales data on who sold what products to which clients and the type of industry the clients are in, the sales manager can quickly determine which salesman does best selling which products to which industries. Users will find the Crosstab View useful in finding significant relationships that lie hidden in the volumes of data available to the average business person.

A window function allows the user to look at up to three views of the same data base simultaneously. This makes it easy to read the detailed data from the form or list views while viewing a graph on the other side of the screen.

Reflex has a what-you-see-is-almost-what-you-get method of developing

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layout forms and formats with the Report View section. However, getting to the Report View is a major irritation requiring the user to actually leave Reflex, return to the operating system, call Reflex2, and then develop the report format. With the format established the user must return through the operating system to Reflex to print the data. Programmers long ago mastered coupling programs together, even programs that reside on separate disks. This is an almost inexcusable imposition that substantially slows down report preparation, modification and printing.

Reflex can be used as a report writer for Lotus 1-2-3, Symphony, DIF, and ASCII files when they are brought into Reflex with the Translate function. The translation of Lotus and ASCII files is easy enough to make Reflex an effective extension of Lotus' data base manager as well as a report writer.

Reflex does limit the user to dealing with one data base at a time. So with data on each sales region in a separate file the sales manager is not going to be able to compare and contrast the performance of the entire sales staff without combining several data bases into one.

Another limitation is that Reflex does not have a mechanism to record keystrokes or store repetitious procedures, such as periodic report preparation. Every step of every procedure must be repeated. This situation can be circumvented by using Borland's key redefinition program SuperKey, as suggested by the telephone support people. Some will see this as a serious limitation in Reflex's effectiveness as a business tool. Users will not be able to have Reflex routinely lead someone else through a data input cycle; the staff will have to be thoroughly conversant with the program in order to use it. The only other way around this is to keep a paper and pencil record of the key sequences and steps needed. The lack of a program mode gives the impression that the user is being nickeled and dimed into purchasing a full-featured data base manager one piece at a time.

In summary, Borland's Reflex—The Analyst is a solid data manager program with many quality features and sound performance. While it lacks top-end features that experienced programmers and power users may want, it has the analytical and reporting features that many business users will find well worth the price.

Documentation and Support. Borland's 511-page users' guide for Reflex is written in a friendly tone that eases the new user into the program while not offending the intellect of the experienced user. The system of marking the edge of the pages with black bars matching the location of each topic in the table of contents makes finding information quite easy. Borland provides 150 pages of good, example-based tutorial with sample data on the disks. Two reference sections, one for the system and one for the reports, utilities, and appendices round out the manual. In addition to the three-page addendum, some of the latest information on the program is in a README file on the disk.

The cutout paper template provided for the special function keys is too flimsy to be taken seriously. In the heat and sweat of the commerce wars to be fought with Reflex a paper template just won't last. At the least Borland should try laminating the template to make it coffee proof.

At first glance it appears that Borland leaves the user with only the manual for support. In fact Borland provides for both company support and a forum of users through the CompuServe network with a complimentary membership and a nominal credit included. But Borland does not provide even a clue as to how to obtain person-to-person technical assistance. And that's too bad—they're capable of doing a good job of it. A call to the corporate office main number quickly gained access (two minutes) to the technical support personnel. Each time a competent and pleasant operator worked through the problem to a solution without making this reviewer feel rushed. There was no feeling of being processed on a calls-per-minute-quota basis. —*R.T.M*

SCORECARD	
Features:	*Very Good*
Performance:	*Good*
Documentation:	*Very Good*
Ease of Use:	*Very Good*
Error Handling:	*Excellent*
Support:	*Very Good*

ALPHA/three Database Manager

If you're looking for a data base that performs like an electronic cousin to your faithful filing cabinet and don't want to invest long hours training yourself how to use it, ALPHA/three from Alpha Software Corporation is just the ticket. This non-copy protected program simplifies mundane and exotic data management tasks with menu-driven screens and easy-to-use commands. Touted as a DBMS that can use and create dBASE III files, it requires an IBM PC (or 100 percent compatible), DOS 2.0 or above, and 320K of RAM. It can handle up to 65,536 records in a data base, 4,000 characters and/or 128 fields per record, and 256 characters per field—more than enough to handle most business applications.

Features and Performance. ALPHA/three's strength lies in its user interface: it gives the user direct (and close to instantaneous) access to individual records and groups of data base records via a menu system. The ALPHA/three menus have a "tree-like" structure: the Main Menu choices have sub-options and the sub-options, in turn, may have further sub-options. To select a menu option, the user can point-and-select with the direction keys, or press the lettered key that equals the command's first letter.

ALPHA/three's Main Menu displays the data base in use, the records on file, and the primary index in use, along with ALPHA/three's command options.

Checking the contents of a data base is effortless. Selecting the "View/Change Data" option displays an entire record in a default, template-like "form" (which can be customized)—no complex commands, it's just there. Selecting the "Browse" option from the View menu displays a screen of up to 20 records that can be reorganized to meet the user's viewing needs. Again, no search commands are needed. From this same View menu, using the same standard form, and without learning any commands, a user can change, enter, find, and delete data base records.

The "Databases" option from the Main Menu presents a sub-menu from which a user can select, create, reconfigure, erase, rename, duplicate, or define rules

for a data base. Creating a new data base is a snap. Using the "Create Database" menu, the field names, their types, and lengths that comprise the file are listed, and all the while the user is prompted with helpful messages and the available choices in context.

ALPHA/three supports character, numeric, date, logical, and memo types. The memo type, which can be up to 5,000 characters, employs an efficient pointer system to reduce needless memory use. ALPHA/three sets aside memory for the memo field only if the field contains data. This keeps the unused memory and data base size to a minimum. It also comes with several tools to help ensure data base integrity during input: field rules for case sensitivity, default values, field masks and templates, and table lookups.

ALPHA/three's star feature, dBASE III compatibility, proved as easy as the advertising literature promised. The reviewer tested this claim by directly reading one of the sample data bases from the Sample Program Utilities disk that accompanies the dBASE III Plus package. It read the file without a hitch. (The user should take care, however, not to try to read a dBASE file larger than ALPHA/three's 65,536-record limit. If this is attempted, the program will crash and require a system reset.)

In addition, an ALPHA/ three data base proved quite palatable when read by dBASE III. The reviewer also imported with little difficulty both a dBASE II data base and a fixed-form ASCII file using the "Transfer/Import" option. Although not tested, Alpha/ three claims it can also import Lotus/ Symphony, MultiPlan (SYLK), VisiCalc (DIF), character delimited ASCII, or PFS:File files.

Up to six indices can be built for a data base. Creating one is a matter of choosing the field (or fields) on which to index and pressing the Enter key. In order to activate an index, the user employs the same point-and-select method described above. Multiple field indices are also supported by ALPHA/three. For example, if the user wants to use a data base alphabetically by company and zip code, an index combining company name and zip code can be readily defined.

ALPHA/three has commands to smoothly and logically design customized reports, mailing labels, forms, and letters. A Quick Setup command will produce a generic report that can be altered for cosmetics and presentation contents using a Custom Report command. A slick utility produces mailing labels by automatically merging data base contents into a user-defined layout. The user can even select from four predefined label sizes. Another knockout feature is the ability to look at records in up to 26 different onscreen form styles. Using forms with different fields, the shipping manager and the CEO can view the same data base and see only the fields that relate to their needs.

A knockout feature is the ability to look at records in up to 26 onscreen form styles.

All this comes at a price, however. The Achilles heel of this program is a very lethargic Forms editor. At a snail's pace, it painstakingly repaints the screen with each keystroke, and an average typist can outrun it. The watchword when using it is patience, patience, patience. However, once a form is in place, the annoyance can be avoided.

Other features worth noting are simple accounting by transaction posting without the need for identically named fields; data base creation using relational operations such as "Join" or "Intersect"; a wide variety of functions and expressions for both character and numeric fields (e.g., date arithmetic, modulus division); and support for roughly 150 different printers.

Documentation and Support. ALPHA/ three's manual (contained in a sturdy three-ring binder) is understandable to the computer novice, well-illustrated with actual program screens, and mercifully organized so that each Main Menu item is a chapter in the reference section, appearing in the same order as on the screen. The only thing it lacks is one of those handy reference cards.

The sole glitch encountered during installation was a reference to ALPHA/three being able to run on a floppy-based PC with 256K RAM: not true—it requires 320K. Otherwise, the installation worked flawlessly. The tutorial section is clear and informative and peppered with helpful tips for taking shortcuts and avoiding pitfalls.

ALPHA/three offers a Technical Support Department available from 9 a.m. to 5 p.m. (EST). When you make the toll call, be prepared to wait to speak to a technician. The reviewer tried twice to resolve a recurring error, but with no definitive help from the support staff. The technician the reviewer spoke to was courteous, but a definitive answer wasn't offered. A bulletin board (via a toll number) is also available 24 hours a day, seven days a week, to get product information, share usage tips, or leave messages for the support staff. —*R.H.*

SCORECARD

Features:	*Very Good*
Performance:	*Satisfactory*
Documentation:	*Very Good*
Ease of Use:	*Excellent*
Error Handling:	*Satisfactory*
Support:	*Fair*

Richard T. McMillan is a professional management consultant with a practice in Pleasanton, California. He holds MBA and BS degrees from the University of California at Berkeley.

Rich Hovey is the managing principal of Resource Engineering Associates of Bozeman, Montana, a civil engineering consulting firm. Hovey has taught and consulted on computer applications for small business.

Quick Reference Summary

Product: REFLEX, The Analyst, ver.1.1
Manufacturer: Borland International
4585 Scotts Valley Dr.
Scotts Valley, CA 95066
Phone: (408) 438-8400
Sugg. List Price: $149.95

Product: ALPHA/three Database Manager
Manufacturer: Alpha Software Corporation
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Burlington, MA 01803
Phone: (800) 451-1018, in MA (800) 462-2016
Sugg. List Price: $395

Tip Trader

edited by Marshall L. Moseley

If you have a tip you'd like to share with other readers, please send it to Marshall Moseley, "Tip Trader" editor, PROFILES *Magazine, 533 Stevens Avenue, Solana Beach, CA 92075.*

Key reassignment is not the domain of applications software only. This month I will tell MS-DOS users how they can assign sequences of keystrokes to any key using simple operating system commands. I'll also offer some tips on buying software for Kaypro's half-length multi-video board (actually it's the Graphics Solution board from Array Technologies Inc.).

Tips from *PROFILES*' readers include instructions on auto-booting into dBASE, yet another method for making Kaypro Letter Quality printers (Juki 6100s) behave, a switch setting chart for the Kaypro PC, and more tips concerning The Word Plus.

The last Word?

I have a few suggestions concerning the running discussion of patching WordStar to run The Word Plus.

If you patch WSOVLY1.OVR to run TW.COM, you may want to use a disk editor to change the onscreen menus in WSMSGS.OVR. Change it to "The Word," or "WordPlus," or any ten character string.

You can also change the marking character of TW.COM to ^@, which is SpellStar's marking character. WordStar's own ^QL command will search for and find the marking character and display the marked word in inverse video.

There are two good reasons to patch WordStar to run TW.COM rather than renaming TW.COM to SPELSTAR.OVR: One is that Oasis [makers of The Word Plus] does not support a tool that has been renamed. The second is that you can use the R option to run TW and do the complex spelling checks that require SPECIALS.CMP.

Jeffery Beard
Bowling Green, Kentucky

Auto-booting into dBASE

Recently I wrote a mailing list manager in dBASE II, and ran into a problem because I wanted it to [automatically load and] run on my Kaypro 10 whenever I turned the comptuter on. Renaming DBASE.COM to MASMENU.COM didn't work because that only brought up dBASE's dot prompt.

I solved the problem by first writing a SUBMIT file called TEMP.SUB. In it I placed the command **DBASE START**. Then using the CP/M command REN I renamed it to <space>.SUB (a blank space and a period followed by the letters SUB). I finished by RENaming SUBMIT.COM to MASMENU.COM. Now whenever the computer starts or is reset, it goes directly into my application.

George Slaydic
Grayslake, Illinois

Another tractor feed

Several times I have read about the inability of the Kaypro Letter Quality Printer (actually a Juki 6100) to use fanfold paper effectively.

Here is a 15 cent solution that works well. Make a paper guide consisting of two one-inch right angle brackets placed on the printer behind the platen. Use double-faced adhesive tape to affix them to the plastic housing. To insure that the paper moves smoothly, mount the brackets like this:

If you mount them the other way the paper will drag as it is pulled through.

Paul C. Heckert
LaVale, Maryland

PC RAM expansion

Prompted by Tom Enright's column on RAM expansion I decided to add an additional 256 kilobytes of RAM to my Kaypro PC. A price quote from a local dealer convinced me that I could save a bundle by doing it at home.

Installing the chips was easy; the hard part was getting the computer to recognize that the new memory was there. After much research I discovered that the multi-function board (the one with the serial and parallel ports on it) has a block of four switches, the configuration of which designates the amount of memory installed. This switch block is at SW1.

Switch 1 should not be touched, but the following chart shows the different settings of the other switches for various RAM configurations.

	Switches		
RAM	2	3	4
256K	ON	OFF	OFF
512K	OFF	ON	OFF
640K	ON	ON	OFF
768K	ON	ON	ON

If your switch block reads OPEN and CLOSED rather than ON and OFF, remember that OPEN = OFF, and CLOSED = ON. Once you set your switches according to this diagram, your computer should recognize your new RAM with no problem.

Tom Beatty
Rantoul, Illinois

The keys to success

You can reassign keys using the MS-DOS utility file ANSI.SYS, which is a device driver that makes your video display behave just like the way terminals specified by the American National Standards Institute (ANSI) do.

To make your display imitate an ANSI terminal you must have two files on your boot disk: CONFIG.SYS and ANSI.SYS. If you have a hard disk then both files must be in the root directory. CONFIG.SYS is an ASCII text file that you can use WordStar in non-document mode to create. In it place the command

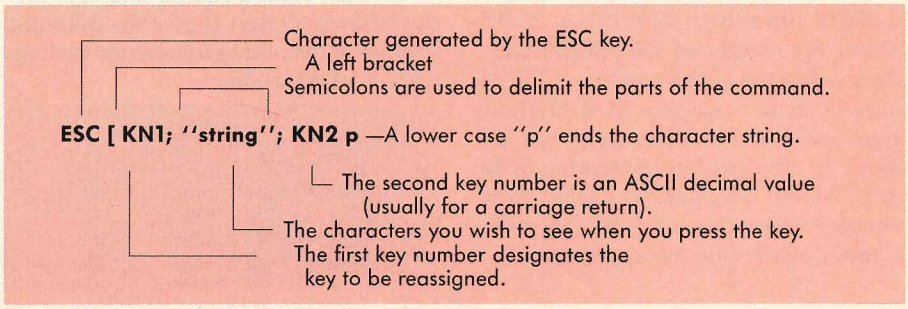
```
DEVICE=ANSI.SYS
```

You may already have a CONFIG.SYS file (some applications software requires it). If you do, then simply add the above command to it.

Once you have edited or created CONFIG.SYS, reboot your computer. Your

display will now function just like an ANSI terminal. You won't *see* a difference, but there is one.

Keys are reassigned using the MS-DOS PROMPT command in conjunction with a special string of characters called an *ANSI Escape sequence*. This sequence must begin with the Escape character, followed by a left square bracket, a number designating the key to be defined, a semicolon, the character string you wish to the key to generate, another semicolon, another number to designate a key, and finally a lower case "p." The syntax is:



As an example, suppose you want to assign the characters "Sincerely yours," followed by a carriage return to the F10 key. The following command will do it:

```
PROMPT $E[0;68;"Sincerely yours,";13p
```

The $E is the PROMPT command symbol for the Escape character, 0;68 is the ASCII decimal value for the F10 key, and 13 is the ASCII value for a carriage return. There can be no spaces separating the characters, except in the character string enclosed within quote marks.

Once a key definition command is issued, your system prompt becomes a blank. To return it to normal, type

```
PROMPT $P
```

The *User's Guide* that came with your computer should contain an ASCII chart listing every keystroke and its ASCII decimal value, with the exception of function key values. They are listed below.

ASCII Values	Key-strokes
0;59	F1
0;60	F2
0;61	F3
0;62	F4
0;63	F5
0;64	F6
0;65	F7
0;66	F8
0;67	F9
0;68	F10

Video considerations

The Kaypro half-length multi-video (HLMV) board is a very powerful graphics device. You should, however, be careful when buying software to use with it. Some software communicates with the video controller chip directly, bypassing the default settings of the board.

For example, you may be using a monochrome monitor and the HLMV board in emulation mode. When you attempt to run your new WhizBow Paint program, it tells the video controller "if you are not in CGA mode, go into it NOW!" The HLMV dutifully switches from emulation to CGA mode and your display is rendered useless.

Before buying software, insist on seeing it run on your computer. If the software dealer will not let you take the program home over night, or accommodate you in some way, go somewhere else. There are plenty of software stores eager for your business.

When testing software, don't write it off it does not work right away. Programs often have parameters wherein you designate the type of video you have. Microsoft Word, for example, can be forced into character only mode by invoking the program with **WORD /C**. Remember, caveat emptor.

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Q&A

by Marshall L. Moseley

Boards and switches

I work in computer applications in a small school, with my Kaypro 16E. I used to use a composite monitor plugged into the computer's RCA jack, but recently treated myself to a high resolution monochrome monitor. Unfortunately, I cannot cause the computer to power up in monochrome mode. I must use VSWITCH or MODE in a batch file to make it work.

Also, though I have upgraded my RAM, the computer still only recognizes 512K during its RAM test.

Phone calls to Kaypro software support steered me to hardware support—but they would not talk to me! They did tell me it was a DIP switch problem, and then referred me to my dealer, who is still trying to get solid information. Can you help?

Brother James Murphy
Los Angles, California

Tricia Crabtree, manager of both hardware and software technical support replies concerning support policy: "Kaypro software support is available for both Kaypro dealers, and the purchasers of Kaypro computers. Kaypro hardware support, however, is a support network for dealers only. It would be physically impossible, considering the millions of Kaypros sold, to provide adequate hardware support for every Kaypro computer owner. For that Kaypro relies on their dealer network.

"If a Kaypro computer owner has problems with their dealer, and feels they are not being treated fairly, we encourage them to write to the Solana Beach facility and report the problem to our customer service department." (That address is: Kaypro Corporation, 533 Stevens Avenue, Solana Beach, CA 92075, Attn: Customer Service.)

Now here's some information on video and memory. The switch block that designates default video on power up is on your processor board (the board with the reset switch on it), at position SW1. For monochrome video set switches 2 and 3 off, that is, the rocker switch should be flush with the bottom of the switch block.

The switch block that designates the amount of memory installed in the computer is at position SW1 on the multifunction board (the one with the parallel and serial ports coming out of it). To designate 768K of memory, set switches 2, 3, and 4 on—flush with the top of the switch block. If you have 640K installed, set 2 and 3 on, and 4 off.

As the Kaypro turns

I feel that the noise level of the fan in my Kaypro PC is objectionable, as did James Leach whose letter concerning fan noise appeared in the March "Q & A" column. You recommended placing the computer on its side on the floor. I had thought of this and asked my dealer about it. He said this was not advisable for two reasons: first, cooling is facilitated by the horizontal placement of the computer. Second, he said the drives (particularly the hard drive) are not designed for vertical operation, and that placing them that way would lead to problems. I would like a "second opinion" as to how safe it is.

Ray Vasser
Gross Pointe Park, Minnesota

By all means, get as many opinions as you can. Opinions are like public domain programs; the good ones you keep and use, the bad ones you throw out and forget.

Bill Ruderman of the Kaypro Engineering staff has this to say about using your computer vertically:

"You can place any Kaypro computer with an IBM PC/XT/AT-type chassis on its side and use it that way indefinitely. There is nothing in the design of the computers or any of their component parts to indicate that vertical operation would harm them in any way.

"As for cooling, if you turn the system unit on its side so that the drives and power switch (hence the power supply) are on top, the computer is cooled more effectively than if it were placed horizontally. This is because heat emanating from the various expansion and system boards rises toward the fan in the power supply and is dissipated immediately."

I have never heard of any hardware or software failures resulting from the vertical orientation of any PC compatible. In fact, you can buy computer stands designed to hold your computer in just such a manner (Curtis Manufacturing Company, of Peterborough, New Hampshire makes a good one).

The serial story

I have had a great deal of trouble with the serial ports on my Kaypro 10. I cannot get my software to recognize one of them, and the other seems to have nonstandard pin assignments. Are these ports standard RS-232C?

William Nesmith
Chicago, Illinois

Yes they are. This subject is complicated, but let me try to explain it.

The connector on the rear panel labeled "Serial Printer" is a standard RS-232C serial port. Your computer's BIOS (basic input/output system) recognizes it as the CP/M device TTY. Off the shelf software (your software, probably) that reads and writes to TTY communicates with this port. Unfortunately, this connector's pins are set up in a data communications equipment (DCE) configuration where pin 2 receives and pin 3 transmits. The usual configuration is as a modem port—DTE (data terminal equipment)—where pin 3 receives and pin 2 transmits.

The connector labeled "Modem I/O" is also standard RS-232C and is a DTE serial port. However, it is not recognized by the BIOS. You cannot use STAT to change its baud rate, and device reassignments do not work.

The only programs that really work with the Kaypro modem port are CP/M telecommunications packages, because they contain provisions specially for it. Of these, public domain packages usually use overlay files containing computer-specific information (which sometimes aren't even on the same bulletin board as the program itself—you have to hunt them down). Commercial programs have

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installation procedures used to recognize the modem port.

Whose default is it?

I recently purchased a Kaypro PC-10, which I use mostly for word processing. The trouble is that I can't get WordStar to log onto the disk in the A drive. I keep getting the following message:

"ERROR E46: Press ESCAPE Key"

I know I am following the instructions correctly. Do I have a bad copy of WordStar? What's the problem?

Steve Jackson
Chattanooga, Tennessee

That message indicates that the WordStar overlay files are not on the drive WordStar is expecting.

At times WordStar needs to retrieve data or text from its overlay files WSMSGS.OVR and WSOVLY1.OVR. To do this the program must know which drive the overlays are on. If they're on drive C, for example, but the program expects to find them on drive A, you'll see the above error message when you try to open a file.

Use the installation program WINSTALL to tell WordStar what drive the overlays are on. (See "Custom-tailored WordStar" in the MS-DOS version of the March 1987 PROFILES for complete instructions on WINSTALL.)

From the main installation menu choose option **C**, *"Menu of WordStar Features." Then from the Features menu choose* **R**, *"Default disk drive."*

WINSTALL will prompt you to enter the drive designation in ASCII, decimal, or hexadecimal format. The following instructions are for decimal (my personal preference). If the overlays are on drive A, type **#1**, *if on drive B, type* **#2**, *if on drive C, type* **#3**, *etc. When finished, follow the prompts to exit the program normally.*

Memory confusion

Here's something I don't understand. If my CP/M computer has 64K of memory, why does it have eight 64K memory chips instead of one?

Joanne Tarnowski
Las Vegas, Nevada

The two "K"s mean two different things. One means kilobits, the other means kilobytes. To understand this you must know a little about bits and bytes.

A bit is a binary digit, either 1 or 0, and it is the smallest piece of information your computer can use. All data your computer works with is stored in the form of bits. Bits are often manipulated, however, in groups of eight, called bytes. Eight bits comprise one byte.

A "64K" chip is one that can hold 64 kilobits, or 64,000 bits. Eight of these chips together hold 64,000 kilobytes, which is the amount of memory in your computer.

Modem compatibility

I recently took my Kaypro 16 to my dealer for the installation of a modem. He ordered one for me but could not install it, saying it was not compatible. Can you advise me what modem would be compatible with the Kaypro 16 computer?

Della W. Tenney
Claremont, New Hampshire

If your Kaypro 16 is a new one then the problem isn't compatibility—it's room. The new Kaypro 16s have no expansion slots available. The three that exist are taken up by the processor board, the multi-function board, and the hard disk controller.

If you have an old Kaypro 16 (made before December, 1986) then you do have one expansion slot available. I suggest, however, that you use an external modem rather than an internal one. This leaves room for future equipment that may require an expansion slot, like a memory board.

As for modems, any Hayes or Hayes-compatible modem should work well with your Kaypro 16. There are many modems on the market of very high quality, and I have not used all of them. Of the modems I have used I personally feel these are of good quality: The Hayes SmartModem 1200, the Prometheus ProModem 1200, and the Okidata Okitel 1200. This list reflects my personal opinion, and is not the result of any exhaustive testing or research.

FORMATION

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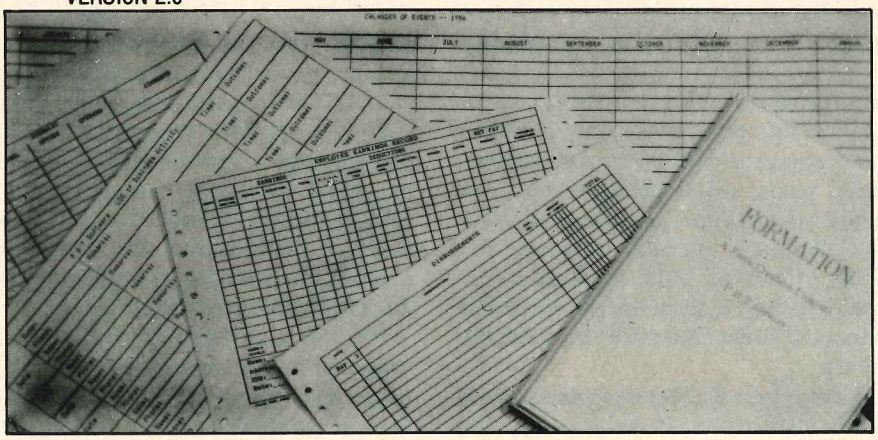

Using FORMATION is as simple as typing in the number of blocks per line, and the width of each block. You no longer need to draw lines. If you need text information within a block, you just type it in, or the blocks can be filled in while the forms are printing, either from a data base, or from the keyboard. You have the option of selecting the number of characters per inch and other attributes including: shading, italic, subscript and superscript. FORMATION also includes OnSide which enables you to print forms & text files sideways.

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Technical Forum

A DOS program to cure "odd configuration" blues

by Tom Enright

Last month we took a look at the region of low memory that DOS uses to store system configuration information. Information contained in this portion of RAM can help you make your software functional on a variety of systems regardless of how they are configured. There was not enough space last month to get into decoding the "equipment list," located at 0040:0010h and 0040:0011h. Decoding those two bytes of information is our subject for this month.

The final goal of this column is to provide you with a stand-alone program of value. It will examine any DOS system and recognize what harware it's configured with.

The Turbo Pascal listing from last month's "Technical Forum" allows you to extract raw data from low memory. Calling the procedure gettwo with the argument $10 puts the value of the equipment list into the variable i. You now have a 16-bit number that isn't much use until you decode its meaning.

Equipment list information

The 16-bit equipment list contains information on disk drives, video mode, serial ports, serial printers, and how many printers are installed. All that information is encoded in several *bit-fields* within the 16-bit equipment list. Each bit-field is from one- to three-bits wide and independent of the other bit-fields.

It helps to look at the equipment list as if it were a record in a data base. The entire record (equipment list) has several data fields, each of which contains discrete information relating to the record as a whole. As you'll see, extracting individual bit-fields from the equipment list tells you how the total system is configured.

When we decode the bit-fields in the equipment list, we have to get into binary numbers. The equipment list has 16 bits and individual bits are referenced by counting from left to right starting with zero. Therefore, the right-most bit is bit zero, and the left-most bit is bit 15 (0Fh).

Bit 00h (the right-most bit) tells you if any disk drives are installed in the system. It will be a 1 if disk drives are installed, otherwise it will be zero. It only tells you if disk drives are installed, not how many.

Bit 01h is not used and should always be a zero.

Bits 02h and 03h tell you how much memory is installed on the system board. This bit-field is a holdover from original IBM PC mother board that would only hold a maximum of 64K. A value of 00h means 16K, 01h means 32K, and 11h (3 decimal) means 64K. (On Kaypros it should always be 11h, but it isn't. Every 286i I've tested gives a value of 00h in this field. There are other ways of determining the amount of memory available for your programs, so don't depend on this field.)

Bits 04h and 05h tell you the initial video mode on power up or reset. A value of 10h means 80-column color and 11h is monochrome. The value 01h means 40-column color and is usually found only on the IBM PCjr or other systems using a television set for a monitor. Note that this bit patern designates the default video mode, not the currently active one.

Bits 06h and 07h let you know how many disk drives are installed. A value of 00h means one drive, so you can think of this value as the number of drives minus one. Also, this bit-field is valid only if bit zero of the equipment list is 1.

Bits 06h and 07h let you know how many disk drives are installed.

Bit 08h will be a zero if a DMA chip is present in the system. DMA chips are used in all PC-family DOS computers (including all of Kaypro's). The exception to this is the IBM PCjr and possibly some of the cheapest PC clones from overseas manufacturers.

Bits 09h through 0Bh are the number of serial ports present. Why three bits were reserved for this function is a mystery. DOS only supports two serial ports, but three bits can hold any number between zero and seven.

Bit 0Ch will be a 1 if a game adapter card is installed. Or rather, it is *supposed* to be a 1 if this card is installed. On Kaypro 16s and Kaypro PCs this bit is set regardless of whether a game card is installed or not. Kaypro 286i and 386 machines give a correct status in this position. The culprit is a test routine in the ROM for the 16s and PCs. The ROM test simply looks for any input at the memory address where the game port is supposed to be. If there is anything other than zeros at that address, the game port bit is set. Do not depend on this status bit in a Kaypro 16 or PC.

Bit 0Dh will be 1 if a serial printer is present.

Bits 0Eh and 0Fh hold the total number of printers installed in the system.

Masking unwanted bits

Our next task is extracting the individual bit-fields from the equipment list value. We can perform this operation using Boolean logic. By logically ANDing the equipment list value with a

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number that has ones only in the bit positions that we want to see, all other bits are reset to zero. Our mask number must also be a 16-bit value, just as the equipment list is a 16-bit number.

Here are the mask values we need:

- 0001h (1) for the presence of disk drives
- 0030h (48) for the default video mode
- 00C0h (192) for how many disk drives
- 0E00h (3584) for how many serial ports
- 1000h (4096) for the presence of a game card
- 2000h (8192) for the presence of a serial printer
- C000h (49152) for the number of printers installed

Masks for on-main board memory and presence of a DMA chip are not given because that knowledge is of little use. Few, if any, programs make any attempt to directly manipulate the DMA registers. Those operations are taken care of by DOS and the BIOS. Also, unless you have an IBM PCjr or a $49.95 IBM clone from Taiwan, your system has DMA.

At this point an example of how logically ANDing extracts the bits of value to us would probably help. Let's assume that you have gotten the value 4261h (16993) from the equipment list address. This is 0100001001100001 in binary. You want to know the default video mode. The mask value for default video mode is 30h. So, we AND 4261h with 0030h and are left with 20h, which translates to 0000000000100000 in binary. All bits *except* those in the video mode bit-field have been reset to zero.

Shifting the bits

We have gotten to the bits of interest to us, but now we need to interpret those bits. What we have is a binary number with a whole bunch of zeros and a single one. The bit-field we want to see is in the middle of several other bit-fields that have been reset to zeros. We now have to move the bits that we are interested in all the way to the right-most side of the number. That way the resulting number is made up of only the bits we want to evaluate. In this case we have to shift the bits four places to the right.

Luckily Turbo Pascal has an instruction to perform precisely this operation. The instruction is SHR X, where "X" is the number of bits we want to shift. If the result of the masking operation has been assigned to the variable vid_mode, the Pascal statement to shift the bits is:

```
vid_mode := vid_mode shr 4
```

Performing this operation on our example value leave us with the number 02h (00000010 binary). The value is now simple to evaluate. Your default video mode is 80-column color text.

The listing puts everything together in a stand-alone program.

That takes care of the default video mode, but what about the other bit-fields? The first field, whether disk drives exist or not, is already all the way to the right, so there is no need to shift it. Shift values for the remaining fields are:

- 6 for number of disk drives
- 9 for number of serial ports
- 12 for game card status
- 13 for serial printer
- 14 for total number of printers

The program that puts it all together

The Pascal listing at the end of this column puts everything that we have been talking about together into a stand-alone program. Once the program is compiled and run, it lists on the screen the status of each item from the equipment list that will be of some use to you. In a real-world program the operations performed by this would be part of the initialization section of your program. You would read the equipment list and set your output devices accordingly.

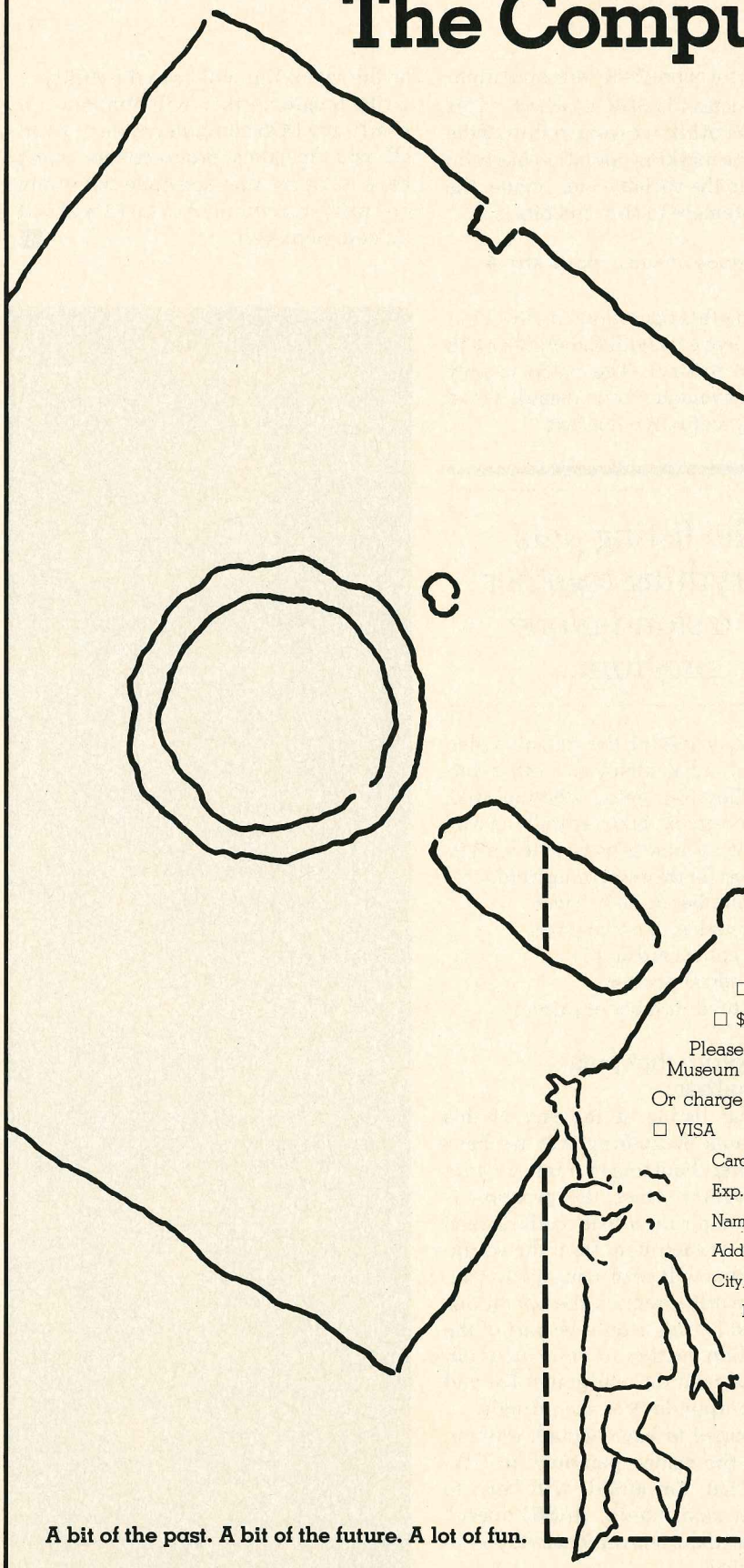
I had hoped to have enough room to illustrate the same operations in GW-BASIC. That, I'm afraid, will have to wait until next month. BASIC doesn't have some of the conveniences found in Turbo Pascal.

In either language the net result will be the same. You will have the ability to write programs that will function on nearly any DOS computer system. (And all you freelance programmers won't have to worry that someone with only one printer configured as LPT3 will call up complaining.)

PROGRAM LISTING

```
program mem_stat;
{ Program to examine and decode the DOS
  Equipment List at 0040:0010 & 0011. }

const refseg = $0040;
      mask1  = $0001;
      mask2  = $0030;
      mask3  = $00C0;
      mask4  = $0E00;
      mask5  = $1000;
      mask6  = $2000;
      mask7  = $C000;

var i: integer;

procedure gettwo(pntr:integer);
begin
  i := mem[refseg:pntr] +
    (mem[refseg:pntr + 1]* 256);
end;

procedure getone(pntr:integer);
begin
  i := mem[refseg:pntr];
end;

begin
  clrscr;
  gettwo($10); { Check Equipment list }
  { Diskette drive status }
  write('Diskette drive status: ');
  writeln(i and mask1);
  { Initial video mode }
  write('Initial video mode  : ');
  writeln((i and mask2) shr 4);
  { Number of diskette drives }
  write('Diskette drives     : ');
  writeln(((i and mask3) shr 6) +1);
  { Number of serial ports }
  write('Serial port(s)      : ');
  writeln((i and mask4) shr 9);
  { Gameport }
  write('Game card status    : ');
  writeln((i and mask5) shr 12);
  { Serial printer }
  write('Serial printer status: ');
  writeln((i and mask6) shr 13);
  { Total printers }
  write('Total printer(s)    : ');
  writeln((i and mask7) shr 14);
end.
```

A membership in The Computer Museum is a very touching experience.



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A bit of the past. A bit of the future. A lot of fun.

New Products

edited by Suzanne Kesling

The following new product listings are not reviews and should not be considered endorsements. To be considered for publication in this column, press releases should be sent to Suzanne Kesling, "New Products" Editor, c/o *PROFILES* Magazine, 533 Stevens Ave., Solana Beach, CA 92075. Releases must state prices and the operating systems the products support. Include photos if available.

Forecasting

Wisard Forecaster is a time series forecasting package primarily for Lotus users. It is designed to extract data directly from a Lotus or Symphony spreadsheet without any special file translations.

The Forecaster then places the resulting forecasts and related data directly into the same spreadsheet, or creates a new spreadsheet containing the information. The printing routines and graphics capabilities of Lotus can then be used to further examine the information.

Wisard Forecaster also works independently. Data can be entered directly into Wisard, and the system provides full editing capabilities. It can also write the results to an ASCII file that can be printed using DOS commands.

The program can determine seasonal values automatically, produce forecasts using as few as six actual values, and handle intermittent zeros.

$99. DOS systems. Wisard Software Co., P.O. Box 19730, Green Bay, WI 54307-9730; (414) 436-2341.

Print buffer

The NLQ Print Buffer from Black Box Corporation will allow any Epson FX or RX printer with a Centronics interface to produce near-letter quality type in a selection of typefaces.

The product is equipped with a 128K buffer that stores the graphic codes and can be used to hold up to 65 pages of text. It receives standard data from the computer software and converts that data into a series of graphic instructions via self-contained software.

The buffer can also perform a number of word processing functions.

$269. Black Box Corporation, P.O. Box 12800, Pittsburgh, PA 15241; (412) 746-5500.

Laser printing

The Lasersoft Printing Systems for laser printers automate the development and maintenance of electronic forms and reports. These systems provide you with the ability to create electronic forms and maintain them in a form and font library.

You can merge data generated from programs such as Lotus 1-2-3 and dBASE with electronic forms. The system allows you to produce clear, typeset quality forms and reports at up to eight pages per minute on Hewlett Packard or Xerox laser printers (or those that emulate the HP).

Lasersoft Printing Systems retrieves forms and fonts from the electronic library and prints them on plain white paper. The forms and reports can be further customized by adding your company or product logo in the appropriate position.

There are several configurations of Lasersoft products available. You can purchase the Lasersoft software by itself or with a laser printer. The laser printer package includes a laser printer; printer preparation, font management, forms design, form completion, and data entry software; five downloadable fonts in both portrait and landscape orientation; and one company or product logo, one signature, and one page form of your choice.

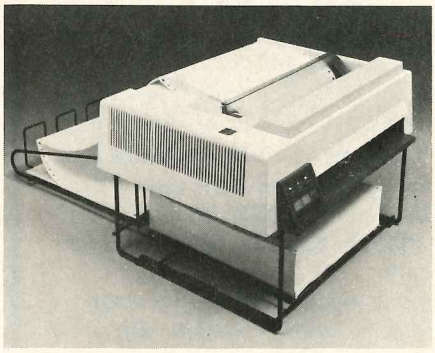
$5,495 for package described; all products and services may be purchased individually. DOS systems. Business Systems International, 20942 Osborne St., Canoga Park, CA 91304; (818) 998-7227.

Printer stands

Flatstand and Tray is a new printer stand that provides a solution to the feed and stacking problems encountered when operating most printers.

The frame is designed to route the cables and wires out of the path of the paper, allowing paper to flow smoothly into the printer and stack roughly 1,000 sheets in the tray.

The polyester-coated steel frame is equipped with non-marking, non-skid rubber feet to help absorb sound and vibration, and the stand is available for 80- or 132-column printers.



$39.95 for 80-column model, $44.95 for 132-column model. Grand Union Micro Systems, 222 Gum Tree Ln., Fallbrook, CA 92028; (800) 344-6934, in CA (619) 723-0882.

Remote communications

REMDISK is a new communications product for MS-DOS. It allows you to access remote disk drives via RS-232 links.

This product consists of a set of

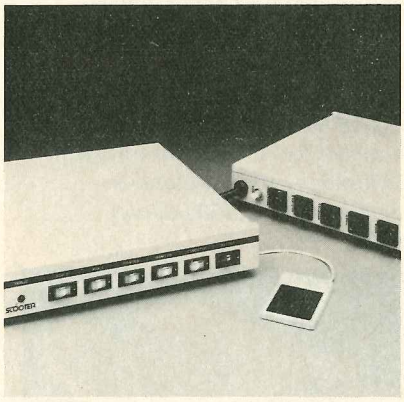
loadable device drivers for MS-DOS and a server program to run on the remote PC.

REMDISK is primarily for users of PC-compatible laptops. It allows fast transfers of files between the two different disk formats (5-1/4 and 3-1/2 inch) using normal DOS commands (DIR, COPY, etc.).

$99.95 includes both disk formats. DOS systems. Mycroft Labs, Inc., 2615 North Monroe St., Tallahassee, FL 32303; (800) MYCROFT.

Surge protector

The Scooter Model SP500DX Guard-It Control Center provides surge and noise protection for all peripherals and includes a modular outlet for modem protection.



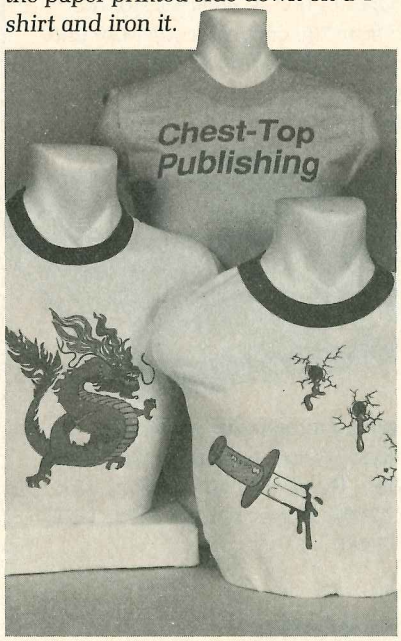
It features a built-in grounding jack for connecting anti-static products. The Model SP500DX comes with the STP10 Anti-Static Pad that retails for $12.95.

Other features include five surge and noise protected outlets with a clamping response of less than five nanoseconds and a maximum transient peak current of 4,000 amps.

$119.95. Scooter Products, Ohm/Electronics, Inc., 746 Vermont St., Palatine, IL 60067; (800) 323-2727.

Iron-on graphics

Underware Ribbons let you transfer any computer image onto a T-shirt or other type of cloth. Just draw an image on your computer, put an Underware Ribbon in your printer, and print the image on whatever paper you usually print on. Then put the paper printed side down on a T-shirt and iron it.



The Underware products are unconditionally guaranteed, and all have been tested and proven safe for use in dot-matrix or impact printers.

Transfers made on fabrics with at least 50 percent polyester content are permanent and washable.

The Underware Ribbons have a life of 20 to 100 shirts, depending on the density or complexity of the designs drawn. Ribbons are available in a variety of colors, including black, red, blue, green, yellow, brown, and purple, and multi-color ribbons are available for color printers.

Ribbon sets start at $14.95. Diversions, Inc., 505 West Olive Ave., #520, Sunnyvale, CA 94086; (408) 245-7575.

Making charts

Charts Unlimited is a program that integrates graphics and text processing into one system to allow quick and easy creation, editing and printing of flow charts, organization charts, floorplans, electrical diagrams, Gantt charts, and many more types of charts.

It uses the same command structure as Lotus 1-2-3 and treats the chart as one large worksheet with 256 columns and up to 1,000 rows. This represents a graphics area of over 12 million pixels.

A View feature allows you to view the entire worksheet by shrinking it down to one-eighth the original size and displaying it on the right half of the screen.

Editing capabilities make it possible to enter, insert, and delete characters as you would using a word processor. A symbol editor is provided to define your own symbols and objects on disk.

$295. DOS systems. Graphware, Inc., P.O. Box 373, Middletown, OH 45042; (513) 424-6733.

Tax savings

The Tax Sheltered Savings Plan Administrator is primarily designed for firms in the business of administering savings plans. This software program includes all the features necessary for complete plan administration, and an additional feature for sales development is available.

Payroll comparison worksheets show the before- and after-tax and savings effects of participation in the plan.

Other features include compliance testing, which breaks the employee group into the 1/3 - 2/3 split necessary for regulatory compliance; certificate printing for employee periodic statements; and investment mix posting, which tracks totals of insurance, stocks, mutual funds, bank accounts, bonds, etc.

$1,995. DOS systems. William M. McGuigan Enterprises, 1124 Benjamin Pl., P.O. Box 754, El Cajon, CA 92020-0754; (619) 440-9274.

Power supply

The 525 AT Emergency Uninterruptible Power Supply is a computer back-up system that allows you time to shut down your equipment without any loss of data.

This product works as a power

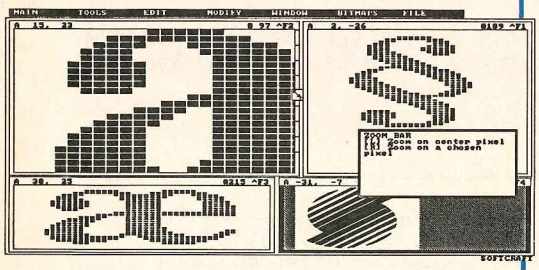
director, surge suppressor, and UPS in one unit. It is 15 inches long by 15.5 inches deep and 2.2 inches high, and has five outlets—three UPS and two conditioned. All outlets are switchable from the front panel.

"Hi" and "lo" line error, overload, and battery and load indicators are included.

Energy Electronic Systems, 9486-8 Deereco Rd., Timonium, MD 21093; (301) 252-2240.

A font editor

The SoftCraft Font Editor lets you create your own fonts and modify existing ones. If you use a laser or



dot-matrix printer, you can print documents exactly as you want them to appear. Logos, letterheads, accented characters, special symbols, foreign-language characters, and many other characters can be created with this Font Editor.

In the graphics display mode, a character is loaded into two windows—one zoomed in for detail work and the other zoomed out to represent the character's actual print size. As modifications are made in one window, the other window is automatically updated.

Any character created can be saved in a font of up to 256 characters in HP or SoftCraft format. Fonts can be printed using Fancy Font or Fancy Word, downloaded to a laser printer with one of the font programs, or stored in HP Soft Font format for use with other desktop publishing programs.

$290. DOS systems. SoftCraft, Inc., 16 North Carroll St., Suite 500, Madison, WI 53703; (800) 351-0500.

Mailing system

PostWare Jr. is a mailing software program developed especially for smaller volume bulk mailers.

This program sorts addresses according to strict postal regulations and prints labels in the correct Third Class bulk mailing sequence. Bundle and bag numbers printed on each mailing label highlight the sorting breaks and make mail preparation even easier. PostWare Jr. automatically produces bag tags and mailing reports and calculates postage costs.

PostWare Jr. works directly with information stored in existing data files. Among the data bases supported are dBASE II and III, DATAEASE, and Smart. ASCII files are also supported.

$69. DOS systems. PostalSoft, Inc., 515 Division St., LaCrosse, WI 54601-4544; (800) 831-MAIL, in WI (608) 784-3500.

Diet software

MUNCH is a diet and nutrition program for anyone who wants to know more about general health and nutrition.

The menu-driven program requires no special training to operate. You just enter in your daily food intake and the program tells you how much you have consumed in carbohydrates, proteins, fats, and kilocalories.

The system then compares your intake with a reasonable diet for your specific weight, height, sex, and age and suggests which areas of food intake should be modified for a healthier nutritional balance.

$39.95. DOS systems. C.R. Smolin, Inc., 7760 Fay Ave., Suite J, La Jolla, CA 92037; (619) 454-3404.

Product Updates

Three new modules of the **HARMONY** Combined Business and Accounting Software line have been released: version 2 of the general ledger and word processor, and the new system manager. Key features of the general ledger are multiple profit centers with tracking for up to 99 stores, departments, or subsidiaries. The general ledger can be used as a stand-alone application or combined with other HARMONY applications. Open Systems, Inc., Eden Prairie, MN ☐ Version 3.1 of the **Smart Software System** features a "network ready" capability that allows the program to be used as either a single- or multi-user package. In addition it can now read/write Lotus 1-2-3 files, both Release 1A and Release 2. It can also read dBASE III and III Plus files. Innovative Software, Lenexa, KS ☐ **SPECIALIST**, the software that simulates the actions of New York Stock Exchange specialist, has been updated to version 2.0. In this version trading rules are more accurately enforced, transactions reported on the tape are saved for replay, the market opening is simulated, and the program is no longer copy protected. V WARE, Tucson, AZ ☐ **DataFlex** revision 2.2 has a new utility, dB-READ, that automatically converts dBASE II, III and III Plus data files, creates equivalent DataFlex data files, and writes an entry program to handle data base maintenance. DataAccess Corp., Miami, FL ☐ **Latin Alphabet Languages Word Processor** has been enhanced to include support for an IBM EGA card, support for a greater number of printers, a revised operations manual, and software improvements in insertion, paragraph reformatting, search functions and graphics capabilities. Computers Anyware, Inc., McLean, VA ☐ Version 2.2 of **ZyINDEX**, the search and retrieval software package, has increased speed (five to ten times faster) in its search mode, along with improvements to expedite the efficiency of the program. In addition, ZyINDEX can now access files in Norwegian and German, as well as English. ZyLAB Corp., Chicago, IL.

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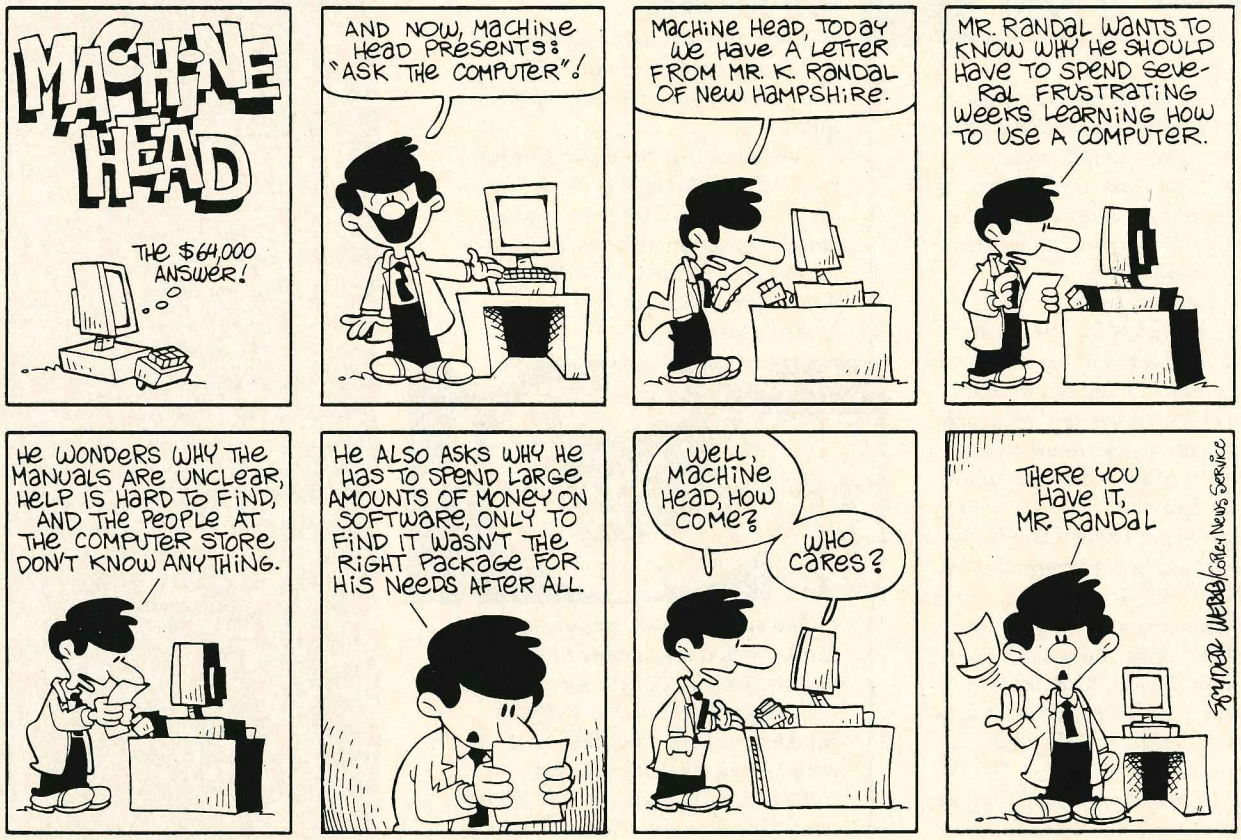
Ad Index

Advertiser	Page No.
Advanced Concepts E&C	62
Advent Products	49
CDE Software	13
Central Computer Products	36,36,53
Civil Computer Corp.	13
CLASSIFILES	63
Computer Friends	7
Computer Museum	68
Computer Professionals, Inc.	2
High Tech Research	Inside Front Cover
Hurd Computers Systems	9
Intersecting Concepts	22
James River Group	Back Cover
Kaypro Video	Inside Back Cover
Orchid Technology	1
PBT Software	65
PROFILES Magazine	11
Spectre Technologies	5
Traveling Software	18,35
U.S. Disk	15
Wall Street Journal	19
Woodsmith Software	57
Workman & Associates	9



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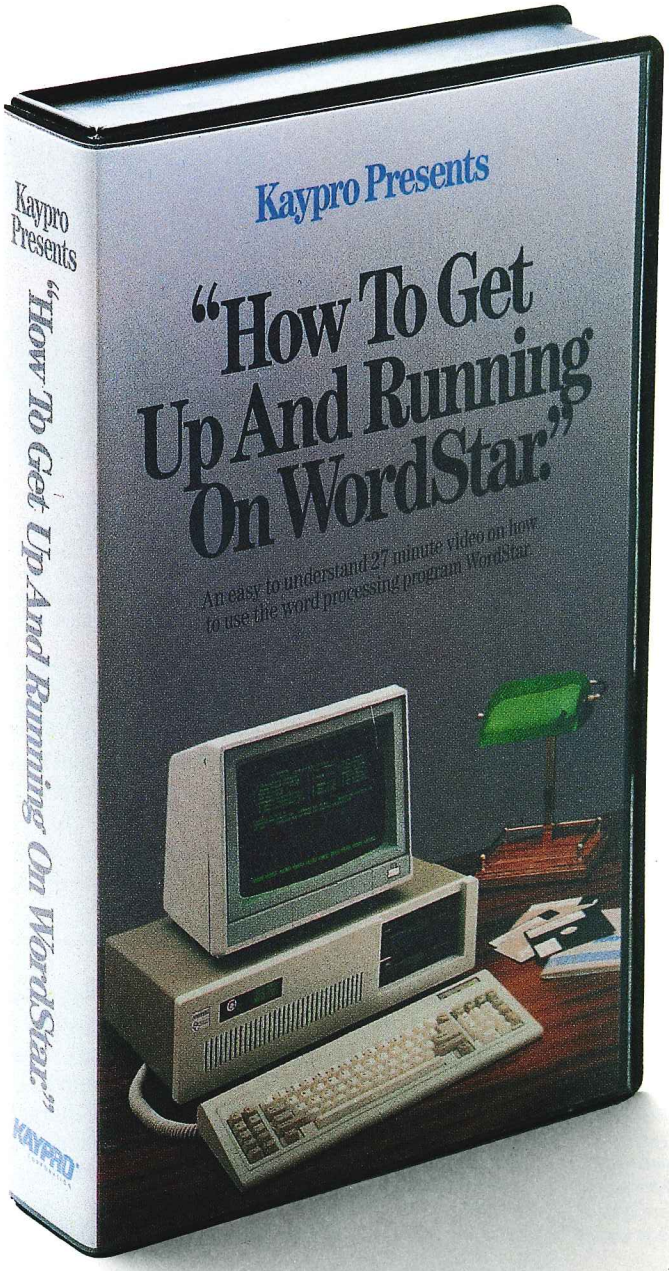

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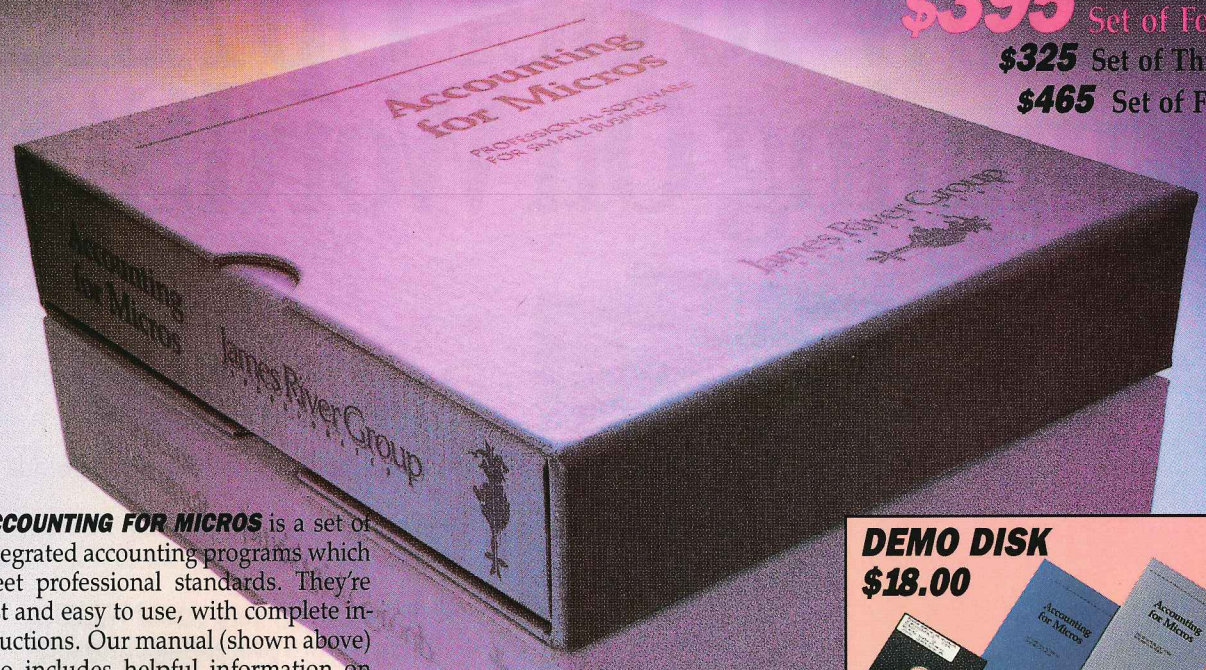

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