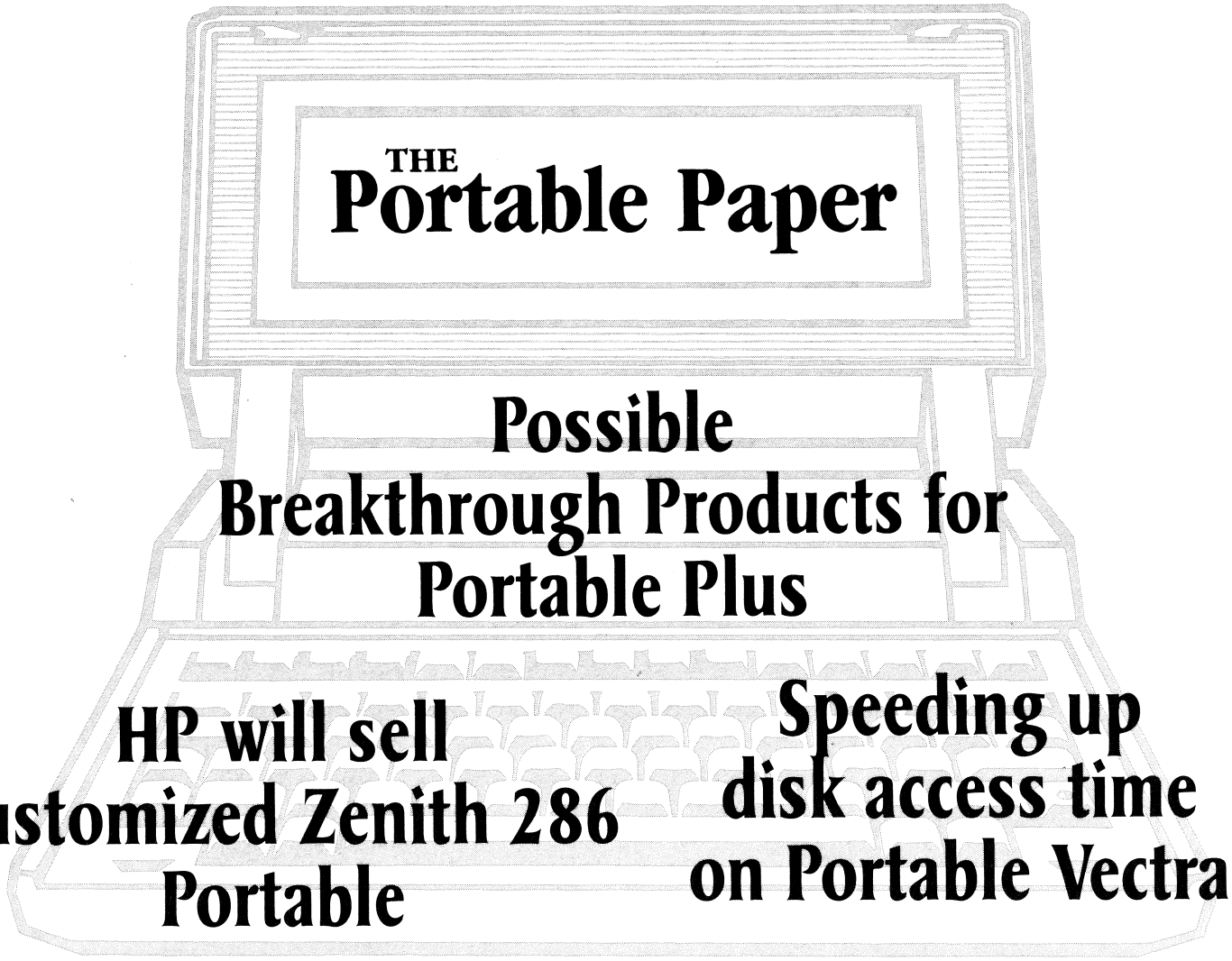

THE Portable Paper

Possible Breakthrough Products for Portable Plus

HP will sell customized Zenith 286 Portable

Speeding up disk access time on Portable Vectra

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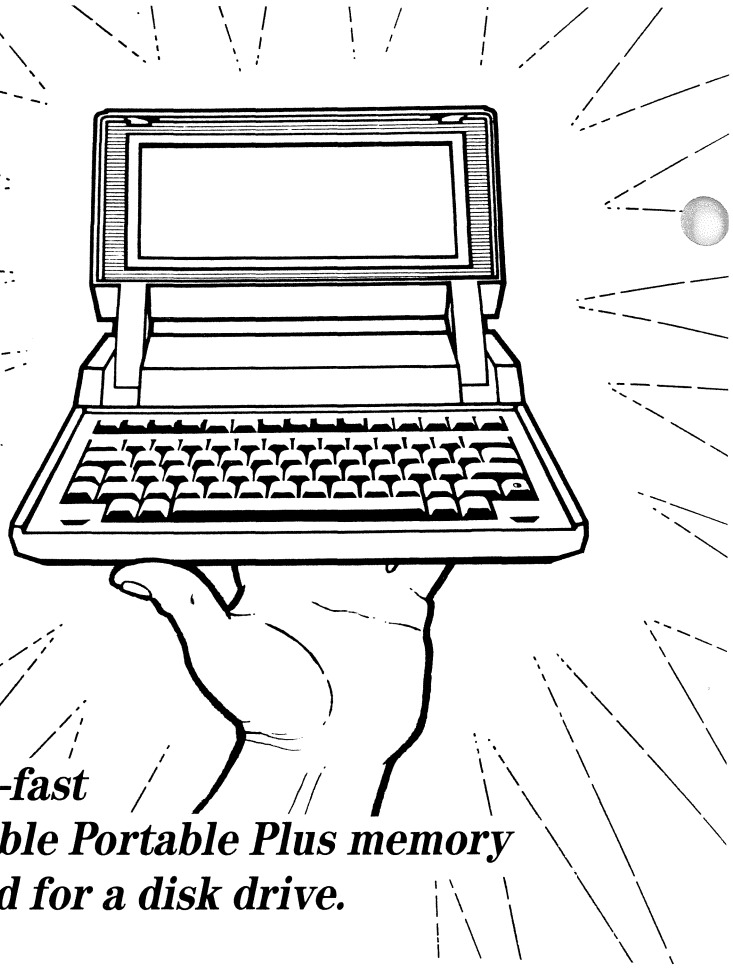
MAXIMUM POWER FOR YOUR PORTABLE PLUS



Easy-to-use, lightning-fast ROM chips save valuable Portable Plus memory and eliminate the need for a disk drive.

The most powerful and unique feature of your Portable Plus is that it lets you store programs on ROM (**R**ead-**O**nly **M**emory) chips for instant access.

Almost all other portable computers require a disk drive in order to function. A disk drive—even a portable one—is a bulky piece of equipment, easily breakable, and slow in loading programs.

By contrast, a ROM chip weighs next to nothing, is virtually indestructible, and lets you load programs instantly. (Programs on ROM chips don't take up any space on your Edisc.)

All of which means that your 9-pound Portable Plus is **the fastest, most portable, and most reliable computer you can own**—provided, of course, you take full advantage of its ROM technology.

YOUR SOFTWARE DRAWER WAS MEANT TO BE FULL

The engineers at Hewlett-Packard designed the Portable Plus so it could accommodate an optional "software drawer" containing 12 ROM sockets. Clearly, their intention was that those sockets be filled with useful programs.

But if you're like most Portable Plus users, you probably are using just a few of the sockets for ROM-based programs like Lotus 1-2-3 or MemoMaker.

That's fine as far as it goes, but if you aren't using *all* the ROM sockets—or if you have to carry around an HP9114 disk drive wherever you go—*then you are not using your Portable Plus to full advantage.*

To start using the *full* potential of your Portable Plus, look over the chart at the far right. It contains more than 50 programs and utilities available on ROM chips from Personalized Software.

Taken together, these ROMs cover *every application you're likely to need*—from word processing to spreadsheets to data communications, graphics, programming languages, and more. Which means once you install these ROMs, you'll have everything you need right inside your Portable Plus. *You'll never have to carry a disk drive again.*

We invite you to browse through the chart, read the information at the right, and then order one or more ROMs today. You'll find them to be fast, reliable, and an incredible boost to your productivity.

Whatever your reason: to free up valuable memory space. . .to eliminate the need for an external disk drive. . .or just for the convenience of lightning-fast program loading, *fill your software drawer with ROMs* and you'll turn your Portable Plus into the powerhouse its designers intended it to be.

With our exclusive Double Guarantee, the risk is all ours. Why not order right now?

OUR EXCLUSIVE DOUBLE GUARANTEE ON ROMS

60-DAY GUARANTEE OF SATISFACTION

If, within 60 days, you are dissatisfied with a ROM product for any reason, you may return it for a full refund.

2-YEAR GUARANTEE AGAINST DEFECTS:

If a ROM proves defective at any time within 2 years, we will replace it at no charge.

P.S. If you have questions about any of the ROMs, give us a call. Brian or David will be happy to make some recommendations as to which ROMs might best meet your needs for word processing, spreadsheets, or whatever applications you're interested in.

EASY TO INSTALL

We supply clear instructions and diagrams with every ROM order. If you prefer, send us your software drawer and we will install your ROMs for you—and test them—at no charge.

To remove your software drawer, first back up your A drive (so you won't lose your data), then use an ordinary screwdriver to remove the two outside screws on the drawer.

You won't be able to use your Portable Plus without the software drawer, so we recommend you call us first to make sure the ROMs you want are in stock, and to set an appointment for installation.

That way, we can install and test your new ROMs the day we receive your software drawer, then ship your drawer back that same evening. Return shipping within the Continental U.S. via UPS Second-Day Air is free for all orders over $200. Please add $15 to your order if you want overnight return shipping.

(In most cases, if you set an appointment in advance and use overnight shipping both ways, you'll only be without your software drawer for less than two business days. We'll ship the manuals and other materials in advance by surface carrier so you'll have them by the time you receive back your software drawer.)

HOW TO ORDER ROMS

To order, use the postage-paid order form inside the back cover. For even faster service—or if you have questions about any of our ROMs—give us a call.

IMPORTANT INFORMATION ABOUT OUR ROMS

We offer two kinds of ROM chips. One kind we produce ourselves; these are offered as part of our "ROM Backup Packages" (see below). The other kind are manufactured by Hewlett-Packard; we call these simply "HP ROMs."

ROM Backup Packages

A ROM Backup Package includes both the disk version of a program and the ROM version—plus the standard User's Manual and additional instructions for installing and using the ROM. (In the chart, prices of products marked "PS" are for entire ROM Backup Package.)

According to the agreements we have with the original software vendors, our ROM version is considered a backup copy of the disk version. Unless you already own the disk version, we cannot sell you the ROM Backup by itself.

Please note:

1. If you purchased the disk version of a program from us, we have that in our records. If you purchased the disk version elsewhere, you will need to show us proof of purchase before we can sell you just the ROM Backup.

2. Prices for ROM Backups alone are as follows:

Best of DOS Tools	$129.
The Editor	$95.
HPDuette	$95.
HPrint	$95.
Shelp	$55.
SideWinder	$55.
Shelp + SideWinder	$95.
Sketch	$95.
SuperROM	~~$149.~~
TermPlus	$95.
Turbo Pascal	$95.
Typing Whiz	$95.
Webster's Spelling Checker	$179.

Special sale price: $49.

3. It is important that you read and adhere to the licensing agreement that comes with the disk version of any software you buy, because the same agreement applies to the corresponding ROM Backup. In most cases, this means you can use only one version of the software at a time on only one computer system at a time. Remember, the ROM is a *backup* copy of the software, not an independent second copy.

HP ROMs

The HP ROMs that we sell do not include (or require) the corresponding disk versions. They are the same ROMs that HP sells, except ours are used—which turns out to be *better* than buying them new. Here's why:

Unlike other used products you can buy, there are no moving parts on a ROM, and nothing that can wear out. Because of this, our two-year guarantee against defects applies to used HP ROMs as well as to our own ROM Backups. (Two years is twice the guarantee against defects that Hewlett-Packard offers.)

Our used HP ROMs are also covered by our unique 60-day guarantee of satisfaction.

Best of all, our used HP ROMs are priced as much as 50% below retail. Look at the chart at the right and compare! (In the chart, "Retail price" of HP ROMs is HP's price new. "Subscriber price" is our price used.)

SOFTWARE AVAILABLE ON ROM

For product details, see individual ads elsewhere in this issue or in our catalog, or refer to articles in past issues. Note that in many cases you can save space in your software drawer by buying two or more programs on the same chip. (See last portion of chart—"Combined ROMs.")

Product	*Notes*	*Type*[1]	*No. of chips*	*Retail Price*	*Subscriber Price*
WORD PROCESSORS					
The Editor	Also available as part of our SuperROM chip (see "Combined ROMs," below).	PS	1	$194.95	$174.95
MemoMaker	Comes on same chip as Time Manager (see "Combined ROMs," below).	HP	—	—	—
MS Word		HP	1	$375.00	$199.00
Multimate		HP	1	$495.00	$275.00
WORD PROCESSING UTILITIES					
Format 110	Comes as part of SuperROM (see "Combined ROMS," below).	PS	—	—	—
HPrint		PS	1	$175.00	$170.95
Mini PrinterTalk	Comes as part of SuperROM (see "Combined ROMs," below).	PS	—	—	—
Webster's Spelling Checker			2	$258.95	$248.95
SPREADSHEETS					
Lotus 1-2-3, Version 1A		HP	2	$495.00	$295.00
Lotus 1-2-3, Version 2.01		HP	3[2]	$495.00	$399.00
SPREADSHEET UTILITY					
SideWinder	Also available on a ROM with Shelp, and on our SuperROM chip (see "Combined ROMs," below).	PS	1	$134.95	$124.95
DATABASE PROGRAMS					
Executive Card Manager (ECM)	(Lotus 1-2-3 can also be used as a database manager).	HP	1	$295.00	$259.00
COMMUNICATIONS SOFTWARE					
PC2622	VT100 and HP Terminal emulator.	HP	1	$395.00	$239.00
Reflection	Minor upgrade of PC2622.	HP	1	$395.00	$325.00
TermPlus	Also includes FormIBM, Jetctrl, and other great utilities.	PS	1	$194.95	$174.95
PRODUCTIVITY BOOSTERS					
Best of DOS Tools	Contains selected utilities from Portable Utilities Disk, Vol. 1: DOS Tools[3].	PS	2	$178.95	$168.95
HP Calculator	From our 1987 Subscriber Disk.	PS	1	$104.50	$104.50
HP Duette	Contains Portable Plus half of software.	PS	1	$194.95	$184.95
Shelp	Includes note extraction program. Shelp is also available on a ROM with SideWinder, and as part of our SuperROM chip (see "Combined ROMs," below).	PS	1	$110.00	$104.95
Time Manager	Comes on same ROM as MemoMaker (see "Combined ROMs," below).	HP	—	—	—
Typing Whiz		PS	1	$144.95	$134.95
GRAPHICS					
Sketch	(Lotus 1-2-3 can also be used for graphics).	PS	1	$175.00	$170.95
PROGRAMMING LANGUAGES					
MS BASIC	This is not GWBASIC.	HP	1	$300.00	$150.00
Turbo BASIC	Includes RUN.COM, which can save you 10K of disk space from any program you compile with Turbo.	PS	1	$194.35	$184.95
COMBINED ROMS					
MemoMaker + Time Manager		HP	1	$195.00	$119.00
Shelp + SideWinder	Also includes SideWinder enhancement utility.	PS	1	$229.95	$214.90
SuperROM (5 programs on one chip): The Editor, Format 110, Mini PrinterTalk, Shelp, SideWinder	Mini PrinterTalk is the abbreviated version included on the PrinterTalk disk; it is functionally equivalent to PrinterTalk for most applications. Shelp and SideWinder are the same versions as on the individual ROMs described above.	PS	1	$473.80	~~$399.00~~

Special sale price: $299.

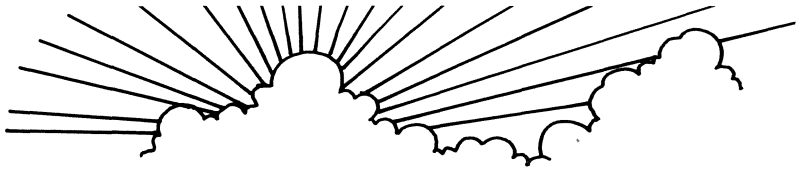
[1] HP = Used HP ROM; PS = Personalized Software ROM Backup Package

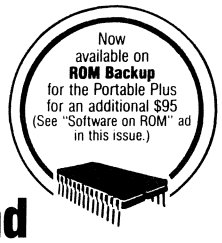
[2] Two of the three ROM chips for Lotus 2.01 are required. The third contains the "Help" screens, and can be omitted.

[3] Utilities included in the ***Best of DOS Tools*** ROM Backup Package are as follows. For program details, see Portable Utilities ad in this issue.

PACK	DUMP	TY	CYPHER	RENDIR	WHEREIS	TEE	SDL	FDATE	LABEL	DIRS	TRANSLIT
CLEAN	DIRALL	ARCE	MOVE	OFF	CHANGE	ARC520	MOVEALL	TRIM	BEEP	SQPC	SM
COPYNEW	VDL	TMA	TJETA	FCOPY	ASK	PRNCONF	WAIT	FGREP	XCOPY	FDUMP	

Note: ARC520 is shareware; the author normally requests a $35 contribution. However, you do not need to send any money. We've already paid your user fee.





The Editor It's way beyond MemoMaker!

You won't believe all the word-processing features this $99.95* program contains—and it takes up less than 40K of memory!

***(only $79.95 for Portable Paper subscribers)**

by Hal Goldstein

Let's face it: MemoMaker is an adequate word-processor, but it has its limits. No search and replace. No simple way to merge files. No destructive backspace key. (To delete the last character, you have to use the left arrow key and the deletion key[s].) No compressed or expanded printing. No. . .—but why go on? If you use MemoMaker, you probably have your own list of things you wish it could do.

Well we have good news! Now there's an easy-to-use text editor that runs on the Portable and Portable Plus that will satisfy almost every item on your wish list. And the program comes with a built-in bonus: It also runs on the HP 150, IBM PC, and HP Vectra, which means that **now you can use the same program and files on your desktop that you use on your Portable.**

The program is called THE EDITOR. It does everything MemoMaker does plus a heck of a lot more. And you don't have to go to the expense of buying WordStar (for the Portable) or MS Word (for the Plus) to go beyond MemoMaker's capabilities.

THE EDITOR's most valuable features are listed on the chart to the right. It's quite a list, isn't it? To me, THE EDITOR is a real blessing. I use it daily instead of MemoMaker, and I've silently given thanks to its author, Ed Gilbert, many, many times. Just a few minutes with THE EDITOR (that's all it takes to be up and running) and I think you'll be a fan of his too.

In addition to the many great features listed to the right, there are five more I especially want to emphasize:

1. THE EDITOR's Lotus-like menus make it incredibly easy to use.

2. THE EDITOR creates ASCII files, which means you can send your files to and from almost any other program or computer without special formats or codes.

3. THE EDITOR will automatically back up your files to protect you against mistakes: When you save a file, THE EDITOR saves not just the current version, but the previous one as well.

4. THE EDITOR takes up less than 40K of memory.

5. THE EDITOR loads and saves files and executes commands exceptionally fast.

RECOMMENDED FOR:	
HP110 Portable	●
Portable Plus	●
Portable Vectra	●
HP150	●
IBM PC and compat.	●
Available on ROM Backup for the Portable Plus	

Even in the desktop market, **it is difficult to find a word processor with this many useful features at this low a price.** For the Portables, THE EDITOR simply can't be beat. See for yourself: Order your copy, risk-free, today.

THE EDITOR $99.95
$79.95 for Portable Paper subscribers.

60-DAY MONEY BACK GUARANTEE
See order form for details.

TO ORDER

Use postage-paid order form inside back cover or send check or credit card information (#, exp. date, signature) to:
Personalized Software
P.O. Box 869, Fairfield, IA 52556 515/472-6330

Special combined offer—
SAVE $30:
THE EDITOR and THE FORMATTER together—
Only $99.95 total (Portable Paper subscribers only

The Formatter

THE FORMATTER gives you advanced formatting capabilities that even THE EDITOR can't handle—like: multi-line headers and footers•automatic hyphenation (you can even add your own words to the built-in dictionary)•user-specified page length and line length•automatic page numbering•tables and charts•table of contents generation•and more.

THE FORMATTER works by imbedding special formatting codes into your EDITOR, MemoMaker, or other ASCII text files. You can customize THE FORMATTER for almost any printer .

Note: The user manual itself is a challenge, and no technical support is available. We therefore recommend THE FORMATTER for strong computer users or those already familiar with text formatters.

If you need any of the features listed above, and if you're willing to spend the time it takes to learn the commands, THE FORMATTER is for you. Order your copy, risk-free, today.

THE FORMATTER $59.95
$49.95 for Portable Paper subscribers

THE EDITOR gives you all these great text-editing features and more:

- **Search and replace.**
  Just tell THE EDITOR what word or phrase to look for, and it will find every place you've used it. At your option, it will display each occurrence, or replace the occurrences either selectively or globally.
- **Edit two files at once.**
  THE EDITOR will display two separate portions of text at the same time, one above the other. You can view and edit two parts of the same file—or even two different files—simultaneously.
- **Backspace delete.**
  You can erase the last character with a single keystroke.
- **No limit on file size.**
  If you're an HP110 Portable user, you're no longer confined by MemoMaker's 819-Line limit. You can have as large a file as internal memory allows.
- **File merge.**
  You can merge two or more files together with ease.
- Compressed and **expanded.**
  You're no longer restricted to bold and underline. You can imbed control characters in your text to tell your printer to print all or part of your text compressed, expanded, bold, underlined, or whatever else your printer can handle.
- **Unlimited line length.**
  Your files are no longer limited to 80 characters per line. This means, for example, you can print 132-character lines on your ThinkJet printer in compressed mode.
- **Lines per page.**
  You can specify the number of lines per page, using the control codes required by your printer.
- **Easy in, easy out.**
  You can exit from THE EDITOR, run another program, then type a one-word command and be back in THE EDITOR in a flash, exactly where you left off. This includes exiting and returning from DOS—which means you can delete, copy, and rename files while running THE EDITOR.
- **Right justification and automatic paragraph indent.**
  A simple command right-justifies your text, and at the same time automatically indents your paragraphs however many spaces you wish.
- **Undelete.**
  Erased something you want back? No problem. A simple command will undelete the last line or block of text deleted.
- **Upper/lower case conversion.**
  Another simple command lets you change upper case to lower case and vice-versa without having to retype anything.

In terms of useful features per dollar, and in terms of the convenience and increased productivity you gain, I feel that THE EDITOR is a truly exceptional buy. I urge you to try it. Order yours today.

Hal Goldstein

© Copyright 1987 Personalized Software

PV PV users: Be sure to indicate "PORTABLE VECTRA" on your order so we can send you proper disk format

FOR HANDY REFERENCE: Items *directly* relevant to the three HP Portables are denoted in this issue as follows:
110 110 Portable P+ Portable Plus PV Portable Vectra
When items are *partly* or *indirectly* relevant they are denoted as:
110 110 Portable P+ Portable Plus PV Portable Vectra

PUBLISHER'S MESSAGE

Hal Goldstein

There is much goodness in our world. When we acknowledge that goodness in others, the goodness in ourselves and in our world grows.

David Packard, the co-founder of the Hewlett Packard Corporation, has made the world a better place. He recently announced that he'll give $2 billion worth of HP stock that he has accumulated during the past 49 years to the David and Lucille Packard Foundation, which bears the name of his late wife. The foundation will fund fellowships and research and will support programs designed to alleviate problems relating to education, families, and young people.

This act is the culmination and the fruit of many years of contribution to society. At Stanford in the 1930's, David Packard and Bill Hewlett founded HP out of a garage. Through the years Hewlett and Packard have attracted the brightest and most enthusiastic young engineers to share the joy of creating and distributing state-of-the-art, high-quality products. Hewlett and Packard created an internal work environment based on ethics, mutual respect, and personal freedom that has served as a model for many other companies throughout the world.

In fact HP could be said to be the father of silicon valley companies. Hundreds of companies, such as Apple Computer (and Personalized Software) have among their founders former HP engineers.

HP has never laid off an employee. When times have been tough HP has moved employees, offered them early retirement, or shortened the work week. HP is strongly committed to offering its employees security and a lifetime position. In fact this philosophy even extends to HP alumni who want to rejoin HP: HP readily accepts former employees back into the fold.

In creating the Packard Foundation, the generosity of David Packard will not surprise HP employees. HP employees not only enjoy liberal benefits and a profit-sharing plan, but are encouraged to share their own good fortune with educational institutions. HP matches the donation any HP employee gives to an educational institution and lets employees donate equipment to universities at a greatly reduced price.

David Packard created a foundation, served in government, structured a model work environment, and helped spawn an industry. However, the greatest contribution David Packard has made to society is the vast range of products his company has produced. The first calculator, advanced life-saving medical equipment, laser printing, . . . the list goes on and on. You experience the legacy of David Packard every day when you use your HP110, Portable Plus, or Portable Vectra to make you more productive in your daily occupation.

David Packard is one man who has made a difference. He has affected each of our lives in a positive way. Through the company and foundation bearing the Packard name, David Packard will continue to produce a positive influence for generations to come.

Hal Goldstein

Letters

P+ Re-Configuring ThinkJet From DOS?

I appreciate the excellent service that your company provides in helping to make our HP equipment better. In particular, the 1988 Subscribers' Disk has many excellent utilities that I am using now. The **mm.com** utility (renders the **Backspace** key destructive) makes my MemoMaker word processing much faster.

I have a problem that I hope you can solve. Occasionally, the paper in the ThinkJet printer jams, and I have to reset it at the power switch. Other times, when printing a large proposal for editing, I want a large part of the document to be printed by auto-feed—but not the entire document. I shut off the printer to avoid wasting paper. Because I print on expanded/compressed configuration for better readability, I have to go back to PAM to reconfigure the printer.

I would like to know if one of your readers or your staff knows a way to reconfigure the printer from DOS. I use a 1-2-3 worksheet with a macro, which prints one page, and changes to expanded/compressed from my **3.cnf** file. Unfortunately, this wastes one sheet of paper.

I love my Portable Plus, and I don't know how I would live without it. Your company makes my equipment faster, smarter, and better. Keep up the outstanding service.

Richard Alvidrez, MESA Director, California State University, Los Angeles, CA

[See "News From Personalized Software." Paul Grimmer has recently sent us an updated version of his pop-up printer control program. You can now control the ThinkJet (change fonts, mode, and so on) from the middle of any application, by popping up his program. It is free on the latest version of the 1988 Subscribers' disk.—Hal]

110 P+ PV New Format Comments, Circulation Questions

I would like to compliment you on (what I feel is) the best edition yet of *The Portable Paper*—the May/June issue. I found the format enhancements most beneficial, enabling me to pick out the articles pertaining to the Portable Plus at a glance.

The article "Transferring TM Name And Address Files Into Lotus" was a real eye-opener. I've been trying to accomplish the same thing for a year, and had given up. Thank you, Dr. Alvidrez, and Hal for your insight. One question—Once I've done my editing in Lotus, I would like to re-load the data back into Time Manager. Is there a "re-convert" utility available, and is one even necessary?

I would be most interested in a utilities ROM for Time Manager. Besides the utilities mentioned in the article (page 22) and the "re-convert" utility, I would also like to see a "switch" batch file that permits switching between three or more Name & Address files. The original file (*The Portable Paper* Vol. 2, No. 1, p. 9) only switches between two Time Manager Name & Address Files.

I would like to add my voice to those who seek your service in upgrading the Portable Plus' CPU. I also feel that it would be worth a reasonable fee for a trained technician to do the upgrade, and so that I

could continue my maintenance agreement with HP.

I am also very interested in Symphony for the Portable Plus, but would prefer if it could be offered on ROM. After your review of the program in an upcoming issue of *The Portable Paper*, I will make my decision.

Finally, some small suggestions. First, I think it would be interesting to all of us subscribers if you could occasionally list your current circulation figures. Second, if your contributors/letter writers could make themselves available to answer questions or share information, either by phone or mail, this would be a very helpful way to exchange ideas. (For example, I would like to communicate directly with Dr. Alvidrez, as he has contributed some excellent ideas in the past.) Your Subscribers' Disks have been very useful also, but I would be willing to pay more for better documentation and some technical support. Perhaps you could determine if it is cost-effective for you to offer this.

Once again, my sincerest admiration and thanks to all of you at *The Portable Paper*.

Ira Siegel, Santa Monica, CA

[If any reader wants us to publish his address and phone number, just tell us, and we'll do so. We'll also forward any mail you want sent to another customer. We currently have approximately 1700 paid subscribers. This does not include the 300 or 400 promotional copies we send of each issue to those requesting a sample issue. Also, the survey we took at the end of last year indicates that The Portable Paper *is passed around; many corporate* Portable Paper *readers share their copies with co-workers.*

Frankly, we have been fortunate not only to survive, but to be able to continue to expand on such a relatively small customer base. Reader support in purchasing our products (and paying bills on time) has been a great help. So many of you contribute to the Paper and our company in so many ways, it is like having two or three extra staff.

I really think the main reason for our success is the quality and enthusiasm of our readership. Brian Teitzman, who handles most of our used Portable equipment sales, confirms my thinking. Brian has held a number of sales positions in his career. He tells me has never enjoyed working with a group of customers as much as with ours. Brian tells me that you appreciate our genuine desire to serve your Portable needs and that you are understanding when we do make mistakes. You are intelligent and pleasant to work with. We feel that the greatest asset we have at Personalized Software is the quality of our customer base.—Hal]

P+ DeskJet Printer Questions

I read your excellent article on the new HP DeskJet printer, and would like to acquire one to use with my Portable Plus. There seems to be a problem, however, that causes me to hesitate. The "Software Reference Guide" indicates that the new printer is compatible only with MS Word versions 3.X and 4. I have the MS Word version 1.10. So far as I know, versions 3.X and 4 are not and will not be available for the Portable Plus. On the other hand, it states in your article that users of the HP110, Portable Plus, and Portable Vectra can use the DeskJet with no difficulty. Is there something I don't know, which I should? If so, would you kindly advise me whether or not my equipment can be made compatible with the DeskJet.

Martin C. Koenig, M.D., Sun City, AZ

[I have the answer, but since I am not an MS Word user, I am not sure of its implications. You will have to create your own **.prd** *files or soft fonts for the DeskJet. I understand that this is not difficult. Perhaps a reader who has done so can send us these files, and we'll make them available to our readership at no or minimal charge—Hal]*

P+ Comments And Questions From Portuguese Plus User

I would like to offer congratulations on your fine publication, and say thank you for all you have done for portable users. Without you, I would feel as if I was using my Portable Plus in darkness. In my quest for products and information for use with my Portable Plus, I have experienced nothing but frustration with HP's Portuguese dealers and sales representatives, so it is quite a relief to deal with Personalized Software!

I hope you can answer the following questions:

1) Could the graphics program SKETCH be called by another program (as a macro, for instance) i.e., is it possible to link it with a Pascal, C, Fortran, Basic or Cobol-compiled program?

[Only indirectly, i.e., in the same way you would execute any program using a programming language—Hal]

2) Is it possible to use the Logitech Mouse with GWBasic?

[The Logitech mouse does not work well with non-US keyboards. You can use the mouse with any application, including GWBasic, as follows: You can roll the mouse to move the cursor instead of using the cursor keys (not much value in GWBasic). You can also assign any number of keystrokes (such as a GWBASIC statement) to each of the three mouse buttons.—Hal]

3) What is the difference between the Logitech Mouse and the IBM Mouse? What kind of IBM software could I use in my Portable Plus?

[The Logitech Mouse and MicroSoft Mouse are the only mice that will work properly with the proprietary Portable Plus Mouse software that we sell. All software that works on the Plus will work with the mouse as I described in the last answer.—Hal]

4) Because I don't have MemoMaker, would I be able to use HPrint?

[You can use HPrint with MemoMaker, The Editor, Edlin, or any ASCII or WordStar-type editor. You can use HPrint with other word processors such as MS Word if you first save the file as an ASCII (print) file.—Hal]

THE PORTABLE PAPER

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2400 baud portable modem for your HP Portable

The 4″×2″×1″ WorldPort 2400 costs less than HP's internal modems, is faster, and can be used with more than one computer.

Weighs only 6½ ounces!

If you do data comunications with an HP Portable or Portable Plus, you've probably found the internal 300- or 1200-baud modem to be too slow. Until now, the only solution was to buy a bulky external modem and lug it around wherever you go.

A better solution is the Worldport 2400. It measures a trim 4″×2″×1″, it's rugged, it weighs only 6½ ounces including the battery, and it sends and receives at 300, 1200, and 2400 baud.

A MYRIAD OF FEATURES

The Worldport 2400 has a wealth of features you would expect to find in a desktop modem several times its size.

EXTRA BONUS FOR USERS OF THE IBM PC AND NEW HP PORTABLE VECTRA

Included with the WorldPort 2400 at no charge is the acclaimed communications and remote control software package, Carbon Copy PLUS (retail value: $195). The program also comes free with the WorldPort1200—WorldPort2400 Upgrade Kit. (Carbon Copy PLUS will not run on the HP110 or Portable Plus, but both WorldPort modems will run with HP's communications software, namely the Terminal program for the HP110, and TERM and Reflection for the Portable Plus.)

For example, the WorldPort 2400 has auto-dial, auto-answer, and both pulse and tone operation. It comes with a standard modular phone plug for connecting with the telephone line. It offers nonvolatile storage of up to 20 commands. And it is fully compatible with the industry-standard Hayes AT Command Set, and with the HP110's Terminal software and the Portable Plus's TERM and Reflection software.

Since a modular plug is not always available, the WorldPort 2400 also has a built-in interface for an acoustic coupler. (The coupler, an optional extra, runs at 300 and 1200 baud.) The unit is compatible with both the internationally accepted CCITT communications standards and the Bell communications standards recognized in the U.S..

The WorldPort 2400 uses a standard 9-volt transistor radio battery (it's included with the unit). A fresh battery will keep the WorldPort humming for 8-10 hours. You can extend battery life by operating the unit from a wall outlet whenever possible, using the optional AC adapter. The WorldPort 2400 draws no power from your Portable's battery.

DOUBLE GUARANTEE

In addition to our standard 60-day money-back guarantee, the WorldPort 2400 comes with a 2-year manufacturer's warranty covering defects in materials and workmanship.

The WorldPort 2400 offers portablility, reliability, well-designed features, and ease of use. Order yours, risk-free, today.

	Retail Price	Subscriber Price
WorldPort 2400 modem (with Carbon Copy PLUS software)	$359.00	$319.00
WorldPort 1200 modem (without software)	199.00	179.00
Cable to connect modem to HP Portables	30.00	20.00
Acoustic coupler (300/1200 baud)	59.95	56.95
9-volt AC adapter	~~7.95~~	~~7.95~~ FREE with modem
Upgrade kit: WorldPort1200—WorldPort2400 (includes Carbon Copy PLUS software)	199.00	179.00

RECOMMENDED FOR:			
HP110 Portable	•	Portable Vectra	•
Portable Plus	•	HP150	•
IBM PC and compatibles			•

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WorldPort 2400 and WorldPort 1200 are trademarks of Touchbase Systems, Inc. Hayes is a trademark of Hayes Microcomputer Products, Inc. Carbon Copy PLUS is a trademark of Meridian Technology, Inc.

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5) Does the 1 Meg RAM card from HP have sockets such as SoftWord's cards? Is it a simple card, or is it a drawer?

[The HP 1 Meg RAM card has no ROM sockets like the SoftWord RAM/ROM card. Unfortunately, the language commonly used to describe extra memory for the Plus is inconsistent and ambiguous. The HP 1 Meg RAM card and the SoftWord products are drawers. That is, to use an HP 1 Meg RAM card, you would remove your old RAM drawer and substitute the HP 1 Meg card.—Hal]

6) How does the monitor work with the video interface (HP 82985A) and my Portable Plus? Is it linked with HP-IL or with the 9-pin RS232-C?

[It is its own interface. You remove the back of the Plus (it's not difficult) and substitute the video interface port. This port is on the back along with the serial and HP-IL ports. You connect the port to the video interface—a box about one-quarter the size of the Plus—and then connect that to a monitor. The monitor should accept a composite video signal from a phono jack connector. Essentially any low-cost monitor which can be used with an Apple II is acceptable. The only such monitor currently sold by HP is the HP 82913A. Further specifications include: Signal: 1.24 pp negative synchronous into 75 ohms Scanning; Frequency: 15.7 KHz; Compatibility: RS-170. You cannot use a television or RGB monitor. We usually have several used video interfaces and monitors in stock.—Hal]

7) In order to communicate with a Portable Vectra or IBM PC do I need a card installed, or a software program? Once installed, is it possible to change programs or just data?

[You use both software and an interface card for the PC. By the next issue there should be an HP-IL card for the Portable Vectra. You can transfer both programs and data. However, there is no guarantee that the programs will run on the Plus. (In this issue, see the "Foundations" column for a discussion of transferring files and "Vectra Views" for information about an upcoming HP-IL card)—Hal]

8) Can I use KERMIT to transfer ASCII software from the Portable Plus to another machine? What commands come with KERMIT? Do you sell it?

[You can use the built-in TERM program to transfer ASCII files from the Portable Plus to other machines. (See Vol 2, No. 6, p. 10). You can also use KERMIT to transfer an ASCII or any other (8-bit) file. For $19 we sell KERMIT on disks which contain versions for the HP110, Portable Plus, IBM PC, and HP150. These disks contain special documentation for the HP110 and Portable Plus, contributed by reader Gary Goodman.—Hal]

9) What functions does the resident HP-Link perform?

[See this issue's "Foundations" column—Hal]

10) Is it possible to buy 1-2-3, MemoMaker, MS Word and other programs on 3 1/2-inch disks, to run from the 9114 disk drive?

[It is now possible to buy 1-2-3. See this issue's "News From Personalized Software." With the exception of MS BASIC it is not possible to buy other HP ROMware on disk. You can buy any Personalized Software ROMware on disk only.—Hal]

11) The percentage shown on my Portable Plus for battery level seems to be inaccurate. Through an oversight, I once allowed the level to drop to 0%, but the machine kept running and I did not lose any data. Why not?

[See most frequently-asked questions in "110%" column.—Hal]

12) Sometimes while I am working I plug in the recharger, but the system still reacts like nothing has happened, i.e., it still executes the display time out. Even if I return to the main menu, enter System Config., exit and go back to work, it still shuts off. Why?

[I have not heard of this before. The display time out normally does not take place if the battery is being recharged. —Hal]

(continued on page 42)

Erased your files? Get them back with The Norton Utilities!

Version 4.0 and Advanced Edition

"THE NORTON UTILITIES are among the most helpful utilities I've run across. I use them myself every day, and in my opinion, they're a must. Here's why."

By Hal Goldstein, Publisher
The Portable Paper

It happens to the best of us. One slip of a finger and a whole week's worth of text or data is past history. *But not if you have THE NORTON UTILITIES*!

Just type **qu** (for quick unerase), give the first letter of the name of the file you erased, and *the file gets restored.* Miraculous as it sounds, in many cases that's all there is to it!

How can a deleted file get unerased?

Simple. The file isn't really deleted in the first place. When you delete a file, all that actually gets erased is part of the file's directory entry. (That's why it only takes an instant to delete an entire file.) Without a directory entry, DOS can't find the file, but THE NORTON UTILITIES can.

Now, what about those cases where you can't possibly recover a file because you've already partially overwritten it with other files? Surely THE NORTON UTILITIES can't help you then?

Wrong—they can! THE NORTON UTILITIES won't recover the entire file, of course, but they *can* help you restore the portions of the file that still remain on the disk.

It's done with a powerful utility called **nu** that lets you display, change, and capture to a file any information on any disk. In complex cases you may need to do some detective work, but **nu** will help you find whatever remains on the disk, thereby saving you from countless hours of retyping lost data.

In my opinion, *the ability to recover lost files alone makes THE NORTON UTILITIES well worth the price.* But there's even more to the pachage: THE NORTON UTILITIES are also an excellent *disk management system*. Here are some examples of what you can do:

RECOMMENDED FOR:	
HP110 Portable	●
Portable Plus	●
Portable Vectra	●
HP150	●
IBM PC and compat.	●

Let's say you want to sort directories and files physically on disk—either by name, extension, size, date, time, or by any combination of these. Just use the **ds** (disk sort) command. I use this one to sort my electronic disk files by size all the time. Then when I display the directory, the larger files come at the end of the list, and I can see at a glance which ones to move elsewhere to free up any needed amount of disk space.

Or let's say you remember putting the phrase "a penny saved is a penny earned" into a text file on your electronic, floppy, or hard disk but you can't remember which file it was—or even which directory. How to find it? *No problem.* Just type **ts** (for text search), specify the phrase, and the program will display every occurrence of the phrase, identifying each occurrence by directory and file.

Or let's say you can't remember which subdirectory you put a given file into. Instead of hunting for the file manually, just type **ff** (find file) and specify the name of the file and the directories to search through. The program does the rest.

Other useful features include the **fa** command, which lets you change file attributes (for example, to make erasable files unerasable or vice-versa), and the **fs** command, which tells you the total file size of a group of files (I often use it to find out the total disk space occupied by my Lotus worksheet ".WKS" files or by all my text files from a given project).

"Indispensible."
PC Magazine

"Don't compute without it."
The New York Times

"You'll bless this disk."
Peter McWilliams
(The Personal Computer Book)

Personalized Software is authorized to distribute THE NORTON UTILITIES on 3½" disk customized for users of the HP110 Portable, Portable Plus, and HP150.

Because of their great helpfulness and ease of use, THE NORTON UTILITIES are already a best-seller in the IBM PC market. Personalized Software is authorized to distribute them on 3 1/2" disk for users of the HP110 Portable, Portable Plus, and HP150. (All it takes is a few keystrokes to customize THE NORTON UTILITIES to your machine; just follow the simple customization instructions included on the disk.) Also included in our package are the standard 5 1/4" disk sold by Peter Norton for IBM PCs.

We recommend Version 4.0 for HP110 users and HP150 users. We recommend the Advanced Edition of THE NORTON UTILITIES for users who might need to retrieve blocks of text from disks that have become "corrupted" (unreadable by DOS).

THE NORTON UTILITIES are a time-saver for you and a life-saver for your data. Use them just once and you'll wonder how you ever did without them. Order your copy at no risk today.

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DISK MANAGEMENT

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PV PV users: Please subtract $10 from subscriber price (since we don't have to send you additional customized disks or extra documentation). Be sure to indicate "PORTABLE VECTRA" on your order.

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110% Making More of Your HP Portable

by Hal Goldstein

HP To Sell Customized Zenith 286 Laptop

110 P+ PV

THE ANNOUNCEMENT

HP has announced that it will sell (OEM under its HP label) customized versions of the new Zenith SuperSport 80286-based portable. This portable is a state-of-the-art, lightweight, battery or AC powered, IBM compatible, portable computer with backlit display. According to HP this portable will meet the needs of most marketing, sales, and service (MSS) applications.

The customized HP versions of the product will have a few changes to make it fit better in the overall Vectra PC product line and MSS marketplace. Most of the differences will be in the areas of its physical appearance and software configuration, and the addition of HP systems integration and support. All of the specifications, including the differences between the Zenith and HP systems, will be defined by the 3rd quarter, 1988.

The products will be available through the HP direct sales force and third-party distribution channels (HP dealers and VAR's) as part of the HP Vectra PC family.

No price information is available at this time. However, HP recognizes the need to provide a strong price/performance position in the market with respect to Zenith. The 20M Zenith version retails at $4999, and the 40M version retails for $5599.

HP is planning to start shipping the unit in the 4th quarter, 1988. HP made the announcement with such a long lead time to keep its accounts informed. HP recognizes that many of its accounts are engaging in pilot studies and testing of portable units.

THE ZENITH/HP RELATIONSHIP

HP's remarketing of a custom version of the Zenith Data Systems' new SuperSport 286 is an expansion of an ongoing business alliance between HP and Zenith. The agreement follows a number of cooperative efforts in which HP has provided peripherals and support of Zenith contracts with major commercial accounts and government agencies. In particular, Zenith and HP sold Zenith portables and HP battery-powered Centronix ThinkJet printers to the U.S. Internal Revenue Service.

Bob Puette, HP Personal Computer Group General Manager stated: "By integrating this new portable computer with our other PC's and the HP3000 business computer, we are significantly strengthening our leadership in providing complete solutions for marketing, sales, and service applications, one of our strategic businesses. Zenith's PC meets our strict standards for quality and reliability, and complements our existing line of portable computers with higher performance and more features."

Zenith Systems president, John P. Frank, said, "Our relationship with HP allows our companies to bring their respective strengths together in an increasingly competitive market. What was once a relationship based on peripherals support has now strengthened and grown to a business alliance in systems integration."

THE PORTABLE PLUS AND PORTABLE VECTRA

An HP spokesperson told me that HP feels that each of the three HP Portable offerings serves three different market needs. There are no current plans to render either the Portable Plus or Portable Vectra obsolete.

Specifications Of The Zenith SuperSport

110 P+ PV

What follows are the specifications for the Zenith SuperSport. Differences between the Zenith portable and the HP portable will be fully defined by the third quarter, 1988.

CPU AND MEMORY

Processor

80286 16 bit processor—12/6 MHz (switchable), 0 wait states, socket for 80C287 numeric coprocessor. (CMOS coprocessor required).

Operating System

MS-DOS 3.21. Supports MS OS/2 Version 1.0.

Memory

1 MB RAM standard (0 Wait states) expandable to 2MB RAM. EMS and extended memory addressable. Meets LIM 4.0 specification.

Drives

One 3 1/2-inch 20 MB or 40MB (28ms) fixed disk drive and one 3 1/2-inch 1.4 MB floppy disk drive.

VIDEO

Display

Electro-luminescent backlit LCD; 25 line × 80 characters. 10 1/2 inches diagonal viewing area with CRT aspect ratio. Adjustable contrast and brightness. 180 degree adjustable tilt. Adjustable backlight time-out feature.

Graphics

640 × 400 pixel resolution, scan-double CGA, Attributes: expanded 256-character ASCII set, full descenders on lower-case characters, 8 grey levels, embedded international RAM fonts, reverse video.

Video

RGB (with intensity) video support standard with 9-pin D connector. "Color" displays are represented by 8 corresponding grey levels.

Keyboard

Full function keyboard, 79 key logical layout. QWERTY typewriter style with 4 cursor control keys; full ASCII character set; auto repeat; twelve user-programmable function keys; calculator keypad overlaid onto keyboard and numeric lock key, plus port for use of separate numeric keypad. LED indicators for CAPS LOCK, NUM LOCK, PAD LOCK and SCROLL LOCK modes.

Clock

Real time clock and calendar.

I/O PORTS

Serial

9-pin male D connector; asynchronous RS232C compatible. Configurable for COM1 or COM2. Supports 12V peripherals such as mouse devices.

Parallel

25-pin female D connector, IBM compatible.

Video

9-pin female D connector for RGB color.

Keypad

Sub-miniature 5-pin male DIN Connector.

Power

Connector for AC adapter/charger.

POWER

AC

110/220 VAC (50/60 Hz) auto-sensing adapter/charger

Battery

48 Watt-Hour NiCad battery pack (adapter/charger and battery included with system); 12-hour recharge, trickle charge while functioning, red flashing low power LED indicator, overcharge and cycling protection. The battery clips onto the back, which leaves open the possibility of a multiple-style battery. No information was given on battery life.

Intelligent Power Management

Power control of backlight mass storage, internal modem, expansion bus, and processor speed.

Operational Range

41-95 Degrees F (5-35 degrees C) @ 20-80% humidity (non- condensing).

Storage Range

-4 to +110 Degrees F (-20 to +60 Degrees C) @ 20-80% humidity (non-condensing) with 90 minute recovery from extremes.

PHYSICAL

Size

12.2 inches W × 3.07 inches H × 12.2 inches D without battery (310mm × 78mm × 309mm) 12.2 inches W × 3.07 inches H × 15.4 inches D with battery (310mm × 78mm × 382mm)

Weight

10.5 lbs. without battery (4.9 kg), 14.6 lbs. with 48 Watt-Hour NiCad Battery Pack (6.75 kg)

OPTIONS

Carrying Case with pocket, 48 Watt-Hour NiCad battery pack, External battery charger, Automobile cigarette lighter adapter, 1200/300 bps internal modem—Hayes compatible. It will be possible to connect an external expansion chassis to the machine.

P+ On The Portable Plus Horizon

I don't normally like to write about rumors or products that I have not seen. However, there are a number of interesting developments on the Portable Plus front, mostly from third parties. Nothing is fully realized yet, but I thought you'd like to hear what is happening. Keep following *The Portable Paper* for more information. I am pretty sure we will have more to report by next issue on most of these items.

There has reportedly been some testing of a Portable Plus with a backlit screen. It can operate from 3 to 5 hours on the existing battery (the Portable Plus with its current system can last 20 hours).

There is also a company working on an internal 2400-baud modem for the Plus. Another company is testing a portable numeric keypad that connects to the Plus via the serial port, for data entry.

Finally, a Florida company is involved in a fascinating project—developing a special drawer for the Plus. This drawer can replace either the RAM or ROM drawer. Using the hardware in the drawer, and the software being developed, the Portable Plus will be able to monitor a heart Pacemaker.

The technology involved in designing the Pacemaker monitor can be used to open up the Portable Plus. In talking with one of the engineers involved, I was told that it would be a simple matter to create a bus extender card. That way the Portable Plus could easily be connected to a hard disk or a faster, more convenient floppy drive. It might even be possible to design a drawer containing a hard disk. We'll follow the development of this technology and comment on its usefulness for Plus users.

I also spoke to a Corvallis engineer who told me that Toshiba has just introduced a pin-for-pin compatible 1 Megabit (128K Byte) EPROM that should work in the Portable Plus. The part is TC57 1001D-20. Corvallis has not yet tested the chip. However, prospects are promising, since Toshiba manufactured HP's ROM's as well as our Webster and Super ROM's.

Finally, we've heard that some of the HP field automation engineers are using a week-at-a-glance type time manager program that is supposed to be better than the existing Time Manager ROM. I've also heard of a good graphics program and some other utilities that are being used. I do not have a good contact yet in the HP field automation program, so someone should give me a call and bring our readership up to date.

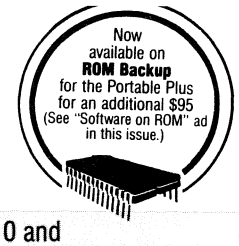
Some Frequently Asked Questions

The following are among the most common HP110- and Portable Plus-related questions that we receive at Personalized Software. As you will see, the solutions to many of these questions may not be immediately apparent but should make sense when you read the accompanying explanation.

110 **P+** I HAVE MEMORY LEFT ON MY ELECTRONIC DISK, WHICH I WANT TO RECONFIGURE AS INTERNAL SYSTEM MEMORY. HOWEVER, WHEN I TRY TO CHANGE THE MAIN MEMORY / EDISC RATIO USING PAM, (F6), SYSTEM CONFIG, THE SYSTEM WON'T LET ME HAVE MORE MAIN MEMORY. WHY?

After files have been created and deleted on a disk, the disk becomes fragmented. That is, parts of files are spread out all over the disk, resulting in gaps of free space. Even though there should be enough free Edisc memory to reconfigure as internal memory, the Portable is unable to convert those gaps into internal memory.

The solution is to "pack" the disk, and create one large gap of free space rather than many small gaps. Portable Plus owners can simply type **pack** from PAM or DOS and in a second the packing is done. Portable Plus users with ROM AAAAAA (the letters appear in the upper left



Whether you want to learn programming or you're a seasoned programmer, the best programming language for your HP Portable or Portable Plus is

Turbo Pascal

Version 3.0 is for the HP110 and Portable Plus. **It is available in limited quantity. When we run out, it will not be available again. Please order now.**
Version 4.0 is for the Portable Vectra.

—and our Turbo Pascal Starter Kit is the best way to buy it

Here's why.

The Pascal programming language was originally designed for use at the college level in teaching the fundamentals of computer programming. Borland International enhanced the language, making it practical for actual programming use. Their version is called Turbo Pascal.

Today, Turbo Pascal is the programming language taught at most universities. The reason is that its underlying structure fosters good programming habits. It forces you to think in a modular way: You create self-contained, well-defined units and put them together to make a full working program.

GREAT WORKING ENVIRONMENT

Turbo provides you with an exceptionally good programmer's environment.

One aspect of this is Turbo's built-in text editor. It's a sophisticated WordStar work-alike that in itself is worth the price of the program.

Another aspect is Turbo's compiler*. In addition to being uncommonly fast (an amazing 80-100 lines per second), it is also uncommonly helpful: If the compiler encounters a mistake in a program, it stops compiling, gives you an error message, returns you to the editor, and takes you to the place in your program where the error occured.

The *external* environment for Turbo is also excellent: There are numerous books, articles, public domain programs, and even a CompuServe forum devoted to helping people use Turbo to full advantage.

With all these advantages and more, it's no wonder that Turbo Pascal is today's best-selling programming language for the IBM PC.

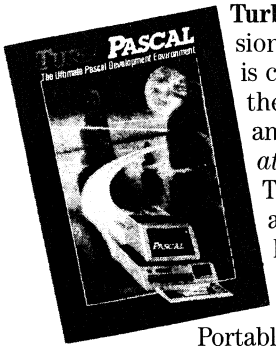
THREE-PIECE STARTER KIT CUSTOMIZED FOR THE PORTABLES

For Portable and Portable Plus users, there's yet another enormous benefit: *Turbo Pascal takes up less than 40K of memory*—and that includes its powerful built-in text editor.

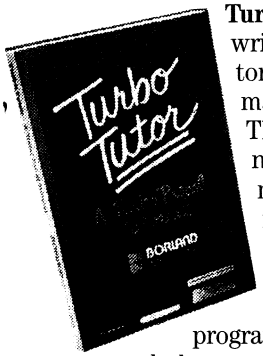
We are now offering Turbo Pascal in a special 3½″ disk version for your Portable or Portable Plus, ready to install from PAM.

Although you may purchase Turbo all by itself, we recommend our **Turbo Pascal Starter Kit.** It's ideal for novice and intermediate programmers alike.

The Starter Kit inludes **Turbo Pascal,** Borland's **Turbo Tutor,** and our own special disk, **Turbo Pascal Programs for the Portables.** Here's a rundown on each:

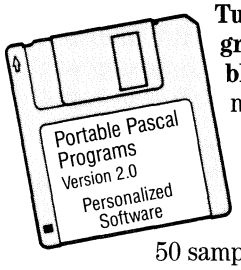


Turbo Pascal: Our version of Turbo Pascal is customized to both the HP110 Portable and the Portable Plus *at no extra charge.* The customization, authorized by Borland, allows the Turbo editor to use all the normal Portable editing keys (Extend Char—Delete Line, etc.). This saves you from having to learn many of the commands particular to WordStar.



Turbo Tutor is a well-written, interactive tutorial that includes a manual and a disk. The manual covers not just the fundamentals, but many fine points of Pascal programming as well; it is of value even to advanced programmers. The disk includes every example covered in the manual, already keyed in and ready to use. (Note: neither the IBM version nor the HP150 version of Turbo Tutor will run on the Portables; only our 3½″ disk version will.)

RECOMMENDED FOR:			
HP110 Portable	•	Portable Vectra	•
Portable Plus	•	HP150	•
IBM PC and compatibles			•



Turbo Pascal Programs for the Portables is a great supplement to Turbo Tutor. Based on the principle of *learning by example,* the disk contains more than 50 sample Turbo Pascal programs, and every one of them runs on the HP110 or the Portable Plus. The programs range in length from ten lines of code to hundreds, and from simple (temperature conversion, games, arithmetic) to advanced (input/output, graphics, and more). Every program is included on the disk so you don't have to key in any of them—they're ready to run or to be incorporated into your own larger Pascal programs.

If you're into—or getting into—the highly productive world of programming, our Turbo Pascal Starter Kit will help you become an expert. Order your copy of this dynamite programming package at no risk today.

NEW

TURBO OPTIMIZER

Saves run time and storage space by making your Turbo Pascal programs 10-30% faster and 15-50% smaller. Works with Turbo Pascal Version 3.0. Customized to the HP110, Portable Plus, and HP150.

Portable Paper Subscribers:
The Turbo Pascal Starter Kit **saves you $50** off the price of the three products purchased separately.

	Retail price	*Subscriber price*
Turbo Pascal Starter Kit (3.0) (includes Turbo Pascal, Turbo Tutor, Turbo Pascal Programs for the Portables)	**$189.85**	**159.95**
Turbo Pascal (3.0 or 4.0)	**99.95**	**89.95**
Turbo Tutor (3.0 or 4.0)	**59.95**	**53.95**
***New* Turbo Optimizer**	**125.00**	**119.00**
Pascal Programs for the Portables	**49.95**	**44.95**
Turbo Pascal on ROM Backup for the Portable Plus (3.0)**	**95.00**	**95.00**

**ROM Backup version includes RUN.COM, a utility program that can save 10K of disk space from any program you compile with Turbo. Note: *You must own (or order) the disk version of Turbo in order to purchase the ROM Backup version.* See ROM Backup ad in this issue for details.

TO ORDER: See inside back cover.
Be sure to specify Version 3.0 or 4.0.

PV PV users: Be sure to indicate "PORTABLE VECTRA" on your order so we can send you proper disk format.

Compiling a program means getting it to meet the rules of syntax imposed by the programming language. A program will not run until it can be compiled.

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portion of the screen when you reboot by holding down **CTRL Shift** and then pressing **Break**) have a "buggy" **pack**. This **pack** will destroy files if there are subdirectories on the Plus. The ROM BBBBBB **pack** is fine.

If you have an HP110 or a ROM AAAAAA Plus, you can obtain the **pack** program from us at a minimal charge. You can send us a formatted disk with a self-addressed stamped envelope, and we'll put the **pack** program on the disk. Otherwise, you can purchase the Pack (and the HP110 Time Manager) disk from us for $9.50. You'll also find **pack** on our DOS Tools disk and ROM.

Alternatively, you can use the larger and more robust **diskpack** program found on the 1987 *The Portable Paper* Subscribers' disk and on the Webster Spelling Checker ROM. (The most recent discussion of the two **pack** programs can be found in Vol. 2., No. 6, p. 40. of *The Portable Paper*.)

I GET A "MEMORY FULL" ERROR READING IN LOTUS BUT THERE IS PLENTY OF ROOM ON MY ELECTRONIC DISK.

The "memory full" message means there is not enough internal memory for your spreadsheet. Save what you can of your spreadsheet, exit, and enter PAM **f6 System Config**. Increase the amount of **Main Memory** (decreasing **Edisc** space). If the system does not let you make the change, see the answer to the last question about packing your Edisc.

In this instance, The best way to save the file is by using the **/file xtract formulas** command. Choose the name of the file you were trying to save it to. Define a range in the file that you want to save. (Alternatively, exit without saving. Then you'll have your previous version of the worksheet.)

WHENEVER I GET INTO LOTUS ON MY HP110, I ALWAYS GET AN ERROR MESSAGE: "MISSING OR ILLEGAL CONFIGURATION FILE."

To get rid of the message save a default configuration file by issuing the command **/worksheet global default update**.

I HAVE A DIFFICULT TIME FINDING AND READING THE CURSOR.

The underscore cursor is more difficult to read and find than the box cursor. In PAM **f6 System Config** change **Cursor Type** from **Underscore** to **Box**. Alternatively, to change the cursor from underscore to box during almost any application hold down the **Extend char** key and press **f1**. If that does not work, it means you are probably in **alternate** rather than **HP** mode, so hold **CTRL** and press **Select** to get the box cursor.

I THINK THERE IS SOMETHING WRONG WITH MY PORTABLE OR NEW 1 MEG MEMORY CARD. I TRY TO SAVE A FILE TO THE ELECTRONIC DISK AND SOMETIMES I GET "FILE CREATION ERROR" AND I CANNOT SAVE THE FILE.

You are only allowed 64 files in the root (main) directory. If you have an abundance of files in your HP110 or Portable Plus, save them to subdirectories.

SHOULD I KEEP MY BATTERY CHARGING WHEN NOT IN USE?

If you can, keep the HP110, Portable Plus, and HP9114 charging when not in use. Do not charge the ThinkJet until the power light starts to flash. See *The Portable Paper* Vol. 2, No. 4, p. 5, and Vol. 2, No. 6, p. 8 for further discussion.

THE BATTERY GAUGE ON THE PAM SCREEN SOMETIMES TELLS ME I HAVE PLENTY OF CHARGE, BUT THE "LOW BATTERY" MESSAGE APPEARS AT THE BOTTOM OF MY SCREEN. WHICH SHOULD I BELIEVE?

The battery indicator (percentage figure) on the PAM screen is only a "guess" computed by software. It does not indicate the actual level of charge in the battery. The "Low Battery" message is for real. Back up your files and recharge your Portable when you see that message.

There are a number of ways to cause the PAM battery indicator and the actual level of charge to get "out of synch." A bad battery will certainly cause the "Low Battery" message. The HP110 and Portable Plus battery is supposed to be dealer-installed and is not a part listed in the HP Direct catalog. However, installation is easy (see Vol. 1, No. 4, p. 22 of *The Portable Paper*) and most dealers will sell you a battery, or you can order one through us at (515) 472-6330.

Unfortunately, changing the battery is not always the solution to poor battery life. I do not know why, but on some Portables, the battery indicator will never drop to less than 70% before needing a recharge. However, that still means four or five hours of continuous use before recharging so this should not represent a serious inconvenience for most users.

The battery charge level and PAM battery indicator can get out of synch for other reasons. If you have the serial port "open" by choosing a serial printer or plotter in PAM's **f6 System Config**, you will run the battery down more quickly than normal. The PAM battery indicator does not know about the serial port. Finally, if you have a Portable Plus, and remove and replace a RAM or ROM drawer, the battery indicator will register 0% despite the actual battery charge.

To synchronize the battery indicator with the actual battery charge level, charge the battery overnight.

WHEN I PRINT IN MEMOMAKER SOMETIMES ONLY THE END OF MY FILE GETS PRINTED. WHY?

MemoMaker prints from the cursor position to the end of the file. Put your cursor at the beginning of the file (**Extend char Left Arrow**) before printing the file.

110 P+ PV I WOULD LIKE TO BE ABLE TO USE MY MEMOMAKER FILES IN LOTUS, SEND THEM ACROSS DATA COMMUNICATIONS LINES AS SIMPLE TEXT FILES, AND IMPORT THEM INTO OTHER WORD PROCESSORS. HOW?

When you save your memo in MemoMaker, press **f2** to **Save Memo** (from **File Keys**). Now press the **f2** key again and **Document File** will change to **ASCII File**. Now save the file as normal.

You can now import the MemoMaker file into almost any program, since most programs have a facility to import ASCII files. (In Lotus save it with a **.prn** extension. Then use the **/file import text** command.) You will be able to send ASCII files across phone lines with the Plus' built-in TERM program or the HP110 Terminal program.

HOW DO I MERGE FILES OR PARTS OF FILES USING MEMOMAKER?

Get the first file. Press **f2 Block Keys** and move the cursor

(continued on page 40)

Knowledge at a Discount

Back issues of The Portable Paper - only $7.50 each! ($45/year)

(Regular price: $9.20 each, $55/year)

Now's your chance to gain the valuable knowledge contained in those back issues of *The Portable Paper* you may have missed - at nearly 20% below the regular subscription price!

The first two years of *The Portable Paper* contained over 500 pages; 600 valuable tips on getting the most out of MemoMaker, Time Manager, Lotus 1-2-3, built-in communications software, DOS, ThinkJet, HP9114; and over 60 reviews and descriptions of disk and ROM based products.

We urge you not to miss out on even one back issue. A single tip, technique, or new product that you learn about could mean a big boost to your productivity with your HP Portable.

Highlights of past issues of The Portable Paper*

1986

Vol.1, No.1 - Jan/Feb 1986: All about Time Manager, Turbo Pascal; creating Memomaker destructive backspace; CompuServe: getting started; HP110 tips; much more.

Vol.1, No.2 - Mar/Apr 1986: SPECIAL DOS ISSUE. In-depth tutorial including tricks for using DOS. Improving the Portable's readability; solutions for HP9114 battery problems; using the Norton Utilities; much more.

Vol.1, No.3 - May/June 1986: WORD PROCESSING ISSUE. Reviews and info about wordprocessors, printer enhancers, and spelling checkers - including MS Word, MultiMate, MemoMaker, WordStar, The Writer, PrinterTalk, Format110, The Speller, and The Word Plus; much more.

Vol.1, No.4 - July/Aug 1986: DATA COMMUNICATIONS ISSUE. Hints and discussion about Terminal, TERM, Reflection/-PC2622, and other communications software. Also: ThinkJet hints, building your own HP9114 power supply; much more.

Vol.1, No.5 - Sept/Oct 1986: LOTUS ISSUE. Lotus memory considerations, printing tricks; macros; sideways printing of spreadsheets; Lotus templates. Also: HP110 and Portable Plus compared; much more.

Vol.1, No.6 - Nov/Dec 1986: PROJECT MANAGER SOFTWARE. Review of 3 Portable project managers: Milestone, Pertmaster, Project 8-9-10. Also: public bulletin boards; more on ThinkJet; MemoMaker hints; info about free software on our 1987 Subscriber Disk; much more.

1987

Vol.2, No.1 - Jan/Feb 1987: PRODUCTS THAT WORK WITH THE PORTABLES. Overview of all known products that work on HP Portables, including those sold by HP plus new discoveries. Also: Speeding up disk copy; info about Shelp, the pop-up productivity booster for the Portable Plus; much more.

Vol.2, No.2 - Mar/Apr 1987: DATABASE MANAGEMENT SOFTWARE. Review of 6 database management programs for the Portables. Also: HP-IL Link program; Portable-to-Macintosh connection; 6 ways to restart your Portable; much more.

Vol.2, No.3 - May/June 1987: PERIPHERALS. Articles on 12 Portable peripherals, including printers, modems, mouse, padded cases, rechargers. Also: backup routines; critical bug if bypassing PAM; much more.

Vol.2, No.4 - July/Aug 1987: 1- and 2-megabyte RAM cards for the Plus. Brainstorming with the aid of your Portable; graphics software for the Portables; info on T/Master - a full-featured integrated software package; much more.

Vol.2, No.5 - Sept/Oct 1987: WORD PROCESSING ADD-ONS. Review of spelling checkers, grammar/style checker, text enhancers and formatters. Also: IBM compatibility; new HP Portable Vectra announced; much more.

Vol.2, No.6 - Nov/Dec 1987: More on Portable Vectra; memory upgrade for HP110; HPDuette, a fast serial transfer program for the Plus; HP110 at North Pole; much more.

1988

Vol.3, No.1 - Jan/Feb 1988: Comparison of HP110/Portable Plus with the Portable Vectra; what's on Portable Vectra horizon; a hardware fix that speeds up the Portable Plus; using the CompuServe HP Forum; Lotus tips for the Portables; much more.

Vol.3, No.2 - Mar/Apr 1988: Getting your computer organized; dBXL: dBase III workalike that runs on Portable Plus; new HP DeskJet printer; Direc-Link, best Portable Vectra file transfer program; much more.

Vol.3, No.3 - May/June 1988: Tips and tricks on MemoMaker, MS Word, Time Manager, Lotus 2.01; how to maximize screen readablity on the Portable Vectra; easy-to-use communications software for the HP110 and Portable Plus; much more.

*Remember -- These are only highlights. Each issue contains dozens of articles, reviews, tips, and tutorials. See our INDEX TO 1986 AND 1987 ISSUES for a detailed listing of topics.

RECOMMENDATIONS

HP110 users:
You'll find our first year's issues (1986) to be especially rich in knowledge about the HP110 Portable. We therefore recommend that you order all back issues starting with Vol.1, No.1.

Portable Plus users:
A major share of all the information we've published applies to the Portable Plus. To not to miss out on any of it, we recommend that you order all back issues beginning with Vol.1, No.1.

Portable Vectra users:
We began covering the Portable Vectra with the Jan/Feb 1988 issue. Although many of the articles we published before then apply to the Portable Vectra, you'll receive the most value if you order all back issues beginning with Vol.3, No.1.

TO ORDER: Simply select the years (or individual issues) you want, then enter your order in the blank spaces on the order form in this issue. BONUS: A copy of our comprehensive INDEX TO 1986 AND 1987 ISSUES absolutely free when you order one or more years.

PORTABLE VECTRA VIEWS

By Hal Goldstein

*[*Vectra Views *contains information which specifically pertains to the Portable Vectra. In this column we note the latest developments on Portable Vectra products from Hewlett Packard, Personalized Software, and other third parties, and include specific tips for the Portable Vectra. Please feel free to contribute on disk or letter to Personalized Software, PO Box 869, Fairfield, IA 52556, or call (515) 472-6330. At the end of this column you will find a complete listing of products discussed.]*

PV My New System

HP has been kind enough to lend Personalized Software a new Portable Vectra CS 20 megabyte hard disk system for review, which I've promptly appropriated for myself. My dual floppy Portable Vectra has already found a great many uses around our office. It is easy and convenient to pass the dual floppy system around to different Personalized Software employees as they work on various projects.

My new Portable Vectra loaner has a 2400-baud modem and serial card. HP will be sending me 1 Megabyte of EMS expanded memory soon. I am really looking forward to having the extra memory so that I can use a full arsenal of software, pop-up utilities, and speedup disk utilities (discussed in the article below). The built-in 640K of system memory is just not enough any more to satisfy my growing appetite for productivity-boosting software.

I plan to use the Portable Vectra as the center of my activity and the hub of a mini-network. Here is what I use now and what I envision:

My base system at the office consists of my Portable Vectra hooked up to a color EGA GoldStar monitor and to an HP DeskJet printer. I often work at home in the evenings and on weekends. When I come home, I bring my Portable Vectra and connect it to my battery-powered centronix (parallel) ThinkJet printer and my GoldStar monochrome monitor.

P+ PV I use my Portable Plus at work and when I travel away from Fairfield. At work I use it for testing new products. I also find that I use it for occasional spreadsheets and memos since it is so quick to load applications and store the results. Also, since most of our employees use the HP110 or Portable Plus, transferring files between Portables (using built-in HPLink software) couldn't be simpler.

I use the HPDuette software and serial cable to transfer data between my Plus and Portable Vectra. I plan to use DeskLink from Traveling Software *(Bothell, WA (206) 483-8088)* to connect my Portable Vectra to our other desktop Vectra hard disk system (forty feet away). The connection is made with serial cables on both computers and a long telephone cord. The desktop Vectra currently prints to an HP LaserJet.

PV The desktop Vectra is shared company-wide and is for use by any of our employees who need Laser printing or need to use a PC compatible. I use a number of files which reside on that computer, so DeskLink will allow me to access those files from the Portable Vectra to the desktop Vectra. If I have a lot of printing to do, I can print to the LaserJet rather than the slower DeskJet. DeskLink can be ordered from Traveling Software or Personalized Software for $169.95. Subscribers can purchase it from us for $149.95.

If I have to transfer files to other in-house computers with 5 1/4-inch disks, I use Direc-Link (discussed in Vol. 3, No. 2, p. 18 of *The Portable Paper*).

We will report more about the development of this "mini-network" in future issues of *The Portable Paper*.

PV Disk Speed-Up: FloppyDRIVER, RAM Disk, Hard Disk Cache

It is now possible to increase the Portable Vectra's relatively slow floppy disk and hard disk access time. The Portable Vectra comes standard with two software remedies: a disk cache program to speed up the hard disk, and a DOS utility to create a temporary RAM disk. A commercial product called FloppyDRIVER provides an excellent solution to speed up the Portable Vectra's floppy drive(s).

FLOPPYDRIVER

I confess that patience is not one of my virtues. The 1.44 Megabyte memory capacity of the Portable Vectra floppy disk is wonderful to use. However, I do not like to wait when loading, copying, formatting, or accessing the Portable Vectra floppy disk—especially after being spoiled by the instant access of files from the HP110 and Portable Plus electronic disks.

In the last issue I wrote briefly of FloppyDRIVER. True to form, I did not read the manual (no patience, wanted to get started). Rather, I read the page for quick installation for expert users. However, to deliver the more complete discussion of the program that I promised last issue, I was forced to read the entire (short, 25 page, well-written) manual. It turns out that the program is even better than I thought for Portable Vectra users.

Once installed, FloppyDRIVER manages all floppy disk activity. It improves floppy drive performance by using specialized file allocation and directory management techniques. These special techniques improve performance by helping DOS (the operating system) intelligently control movement of the disk drive read/write heads. The end result is a speed increase ranging from 2 to 20 times for most floppy disk accesses.

FloppyDRIVER also offers automatic disk formatting. That means FloppyDRIVER automatically senses whether a disk needs formatting. For example, you can use PAM's File Manager, DOS, or any other application to save or copy a file to a floppy disk. With FloppyDRIVER installed, the Portable Vectra will format the disk and save the file at the same time. (Previously formatted disks will not be reformatted.)

Once installed, the operation of FloppyDRIVER is invisible to the user and is automatic. If you get a "disk full" message when trying to save a Lotus file, for example, you can insert an unformatted disk and the Lotus file will be saved and the disk formatted. If the disk isn't full, the time

More than 50 time-saving utilities for your HP Portable or HP150—all on a single disk

Read this list.
It may look long and boring, but it can save you an incredible amount of daily effort.

It's a list of the more than 50 programs on *Portable Utilities Disk, Volume 1: DOS Tools.* Each program performs a specific task to make life with your Portable more enjoyable and productive.

The programs are all in the public domain, which means that if you searched long enough you could find them for free on various electronic bulletin boards, in magazines, and in the archives of local user groups. But consider this: Even if you had the time to track this many programs down, what about evaluating them and making sense of the documentation? It would be a formidable task, but we have good news: You don't have to do it—we've already done it for you!

That's right—we've combed through hundreds of public domain utility programs that run on the Portables and HP150, and have selected only the best ones for inclusion in *Portable Utilities Disk, Volume 1: DOS Tools.* We've not only made sense of the documentation, but in many cases we've actually rewritten it. **(A printed, 65-page user manual containing program documentation and plenty of examples are included with the disk.** The manual is *conveniently indexed by subject*, so all you have to do is look up the name of the task you want done. You don't have to remember the names of the programs.)

And we've even changed some of the programs themselves so they work better and so their message displays are easier to understand. (Given the state of the art in writing and testing software, there's no guarantee that every item of software works as documented without a hitch. However, most of the testing and evaluating was done by Hal Goldstein, publisher of The Portable Paper, and by Gary Goodman and Thomas Page. Anyone who has read Gary's and Tom's articles in past issues of The Portable Paper already knows of their conscientiousness and thoroughness.)

So look through the list. If even *one* program proves useful, *DOS Tools* could pay for itself immediately. With more than 50 documented and tested programs to try out and use, it's the bargain of the century. Order yours today.

Portable Utilities Disk, Volume 1:
DOS Tools $49.95
($39.95 for Portable Paper subscribers)

Contents of Portable Utilities Disk Vol. 1: DOS Tools

ADDCOL.COM Joins two files horizontally by appending corresponding lines.

ARC512.ARC Archived ARC file compression and library utility.

ARCE.COM Extracts ARChive files from ARC 5.12 and previous versions.

ASK.COM Adds interactive capability to batch files. Prompts user with message and waits for yes/no response.

BEEP.COM Makes a beep sound.

CHANGE.COM Changes or displays file attributes (read-only, archive, system, hidden).

CLEAN.COM Converts WordStar HP150 or Portable Plus MemoMaker document files to ASCII and removes control codes.

COPYNEW.COM Backs up files if no identical file on the destination disk. Also backs up whole directory structure creating matching subdirectories.

CPU.COM Displays computer's clock speed.

CVTBIN.COM Converts files from ASCII to binary when downloaded with CompuServe READ command.

CYPHER.COM Enciphers and deciphers a file to keep it confidential.

DIRALL.COM Displays attributes and pathnames for ALL files on a disk.

DIRS.COM Gives total disk space occupied by a set of files.

DUMP.COM Dumps and edits a disk or file in hexadecimal and ASCII.

FDATE.COM Changes the time-date stamp on a file.

FDUMP.COM Lists a file in hexadecimal and ASCII.

FF.COM Sends a form feed to the printer.

FGREP.COM Searches a group of files for a specified string.

HC.COM Converts binary files to/from hexadecimal ASCII files.

HP IBM.COM Does a "best fit" translation from HP ROMAN 8 character set to IBM PC Line Draw character set.

IBM HP.COM Does a "best fit" translation from IBM PC Line Draw character set to HP ROMAN 8 character set.

INSTALLP.COM Automates installing an application program on RAM disk—the HP Portable/Portable Plus Install Utility Program.

LABEL.COM Labels or changes the label name on a disk.

LC.COM Counts lines in each file; useful in determining amount of paper needed to print.

LF.COM Sends a line feed to the printer.

LJET.COM LaserJet pronter configuration program for the HP Portable. Makes selection LaserJet format easier.

MMTOP.COM Causes Portable Plus MemoMaker to print without usual 5-line top margin.

MOVE.COM Moves one file to another directory without copying.

MOVEALL.COM Moves a set of files to another directory without copying.

OFF.COM Shuts off the HP Portable from DOS.

PACK.COM Packs a disk. Does not have subdirectories bug of earlier version.

PC.EXE Allows some IBM programs to be run on HP150.

PCBOSS.COM File manager for IBM PC and compatibles only.

PRINTIT.COM Print formatting program, simple but effective.

PRNCONF.COM Allows ThinkJet printer to function as Epson printer; also sends escape sequences to the PRN device.

RAMDSK.ARC Archived utility for HP150 only; creates internal RAM disk.

RENDIR.COM Renames subdirectories.

RNGNAME.COM Displays and restores range names for Lotus worksheet.

ROMAN8.WKS Provides ability to enter any Roman8 character into Lotus worksheet.

SDL.COM Produces directory listings sorted by name, size, date, or extension.

SEPARATE.COM Breaks large text files into smaller files for MemoMaker.

SM.COM SpaceMaker. Converts. EXE files to .COM files and thus saves disk storage space and disk access time.

SQPC.COM Squeezes files to make them take up less space. Unsqueeze with TY.

TEE.COM Causes a program or file to be output to both the screen and a file or printer.

TJETA.COM Configures ThinkJet printer easily from the HP Portable.

TOWS.COM Converts ASCII document files to WordStar and Portable Plus MemoMaker format for editing and reformatting.

TRANSLIT.COM Converts one or more characters of one file to different character(s) and copies result to second file.

TREEDIR.COM Displays names of all files in each directory along with date, time and file size.

TRIM.COM Extracts selected columns from a file.

TY.COM Unsqueezes files squeezed by SQPC.

VDL.COM Allows user to selectively delete files from a group of files. Program lists files one by one and asks user whether to delete.

WAIT.COM Delays execution of a batch file until specified time.

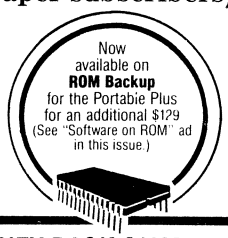
WD.COM Saves and restores the working directory.

WHEAROUT.COM Gives percent of wear on disk in HP 9114 disk drive.

WHEREIS.COM Searches disk to find the specified file.

APPENDIX A Describes the contents of subdirectories/HP110,/SOURCE,/123DEMO found on the *DOS Tools* disk.

UTILS.DOC Reprints on disk *The Portable Paper* Vol 1, Issue 4, "Utilities" article. Gives practical examples of many of the files on the DOSTools disk.



RECOMMENDED FOR:	
HP110 Portable	●
Portable Plus	●
Portable Vectra	●
HP150	●
IBM PC and compat.	●
Available on ROM Backup for the Portable Plus	

60-DAY MONEY BACK GUARANTEE
See order form for details.

TO ORDER

Use postage-paid order form inside back cover or send check or credit card information (#, exp. date, signature) to:
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P.O. Box 869, Fairfield, IA 52556 515/472-6330

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it takes to save the file from Lotus will be considerably faster with FloppyDRIVER installed.

FloppyDRIVER is of a special class of software called a **device driver**. Normally DOS knows about "devices" such as the keyboard, screen, disk drives, printer port, serial ports and so on. By adding one line in the file **config.sys** beginning with **device=**, you can add new device drivers. Installing FloppyDRIVER means adding such a line. Once the line is added and the system reboots (or is turned on) DOS adds FloppyDRIVER as a device. FloppyDRIVER is a "device" that takes over floppy drive activity.

What FloppyDRIVER Cannot Do

Floppy driver cannot change the maximum data transfer rate of the Portable Vectra disk drive. This is determined by the Portable Vectra controller. The DOS **format** and **diskcopy** commands are already optimized by DOS. Their speed is a function of the Portable Vectra disk drive and the data transfer rate. FloppyDRIVER will not speed up these commands.

What FloppyDRIVER Can Do

FloppyDRIVER will improve program loading by about 30% to 50%. All other DOS and application file access activities will improve even more dramatically. DOS commands like **copy** and **xcopy** will show noticeable performance gains. Performance of some operations can increase by 10 times.

You cannot help but notice the difference on a dual floppy system. If you have the dual floppy Portable Vectra, FloppyDRIVER is a must. You'll save time when using almost any type of application.

If you have the 20 Megabyte Portable Vectra, you'll save lots of time when copying files to floppies for data archiving using the **copy**, **xcopy**, **backup**, or **restore** commands.

Whether you have a hard disk or dual floppy system, you'll significantly save on battery time. The battery discharges most when doing disk-intensive activities. By reducing disk access time, you increase battery life.

Installing FloppyDRIVER

If you are knowledgeable about the **config.sys** file and understand DOS syntax definitions, you will be able to install FloppyDRIVER without reading the manual—just read "Quick Start For Experts." Actually, you don't even have to read that. Just add one of the following lines to your **config.sys** file.

Dual floppy Portable Vectra:

device=\utils\fd.sys /A=1.44:1.44 /B=1.44:1.44

20 Megabyte Portable Vectra:

device=c:\utils\fd.sys /a=1440:1440 /b=none

I entered the dual floppy Vectra line myself, based upon the syntax given in the manual. It turns out that running the FloppyDRIVER install program was even easier than figuring out the syntax myself. I ran the install program to set up my 20 Megabyte Portable Vectra. I made a couple of selections as to the size of the disk drive by moving the cursor, and FloppyDriver automatically added the correct **device** line to my **config.sys** file.

Note that in the example above, both **440** and **.44** seem to indicate the Portable Vectra 1.44 Meg floppy. The actual FloppyDRIVER file is **fd.sys**. I store my **fd.sys** in a subdirectory named **utils**.

Controlling FloppyDRIVER

If I had read or at least skimmed the manual, I would have saved myself some time and annoyance, and tempered a criticism of the program that I mentioned last issue.

It turns out that included on the FloppyDRIVER master is a program called **fdctrl.com** that allows you to control the functioning of FloppyDRIVER.

My main criticism of the program last issue had not so much to do with the program as with the nature of the HP world of disk formats. When FloppyDRIVER is installed, the HP Portable Vectra can no longer read HP110/Portable Plus/HP150 dual-sided formatted disks. What I had to do every time I wanted to read a disk formatted by my Portable Plus was to copy my **config.hp** file to **config.sys** and reboot the system (holding down the **Ctrl**, **Alt**, keys and pressing **Del**). The **config.hp** file does not contain the FloppyDRIVER **device** line. When I finished my work, I copied a file I named **config.fd** to **config.sys** and rebooted. **config.fd** contains the FloppyDRIVER device line. What a bother.

It turns out that all I had to do is type the command **fdctrl /off** and FloppyDRIVER is disabled. To reinstate FloppyDRIVER, I type **fdctrl /on**. If I am really lazy and know that I want FloppyDRIVER off for two minutes just to copy over a couple of files, I can give the command **fdctrl /off 120**. After 120 seconds FloppyDRIVER turns itself on.

There are also **fdctrl** options including changing the density of the disk you want formatted. In the **config.sys** examples above, the second **.44** after the colon stands for formatting 1.44 Megabyte disks. You can format a 720K disk by typing **fdctrl /format a 720**. The nice thing about this command is that FloppyDRIVER will let you run an application or do another DOS task while the disk is being formatted.

Memory Requirements

FloppyDRIVER uses 40K of RAM to support the Portable Vectra 1.44 Meg drives. Since FloppyDRIVER does its own buffering, some of that memory can be saved on a dual floppy system by reducing the **buffers** statement to **buffers=3** in the **config.sys** file. You can reduce the amount of RAM FloppyDRIVER uses, but naturally, you then reduce some of its effectiveness.

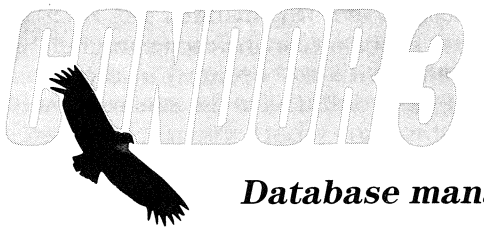
Conclusion

FloppyDRIVER significantly reduces floppy disk access time and increases battery life. Dual floppy Portable Vectra owners will find it a necessity for normal daily functioning. Hard disk owners will find it most valuable when backing up the hard disk. I think it is a must for every Portable Vectra owner.

I can think of only a few reasons not to get FloppyDRIVER. Here they are. (1) You have the patience of a saint. (2) Your life is simple, with plenty of time and you enjoy watching the green floppy disk light. (3) You don't back up your hard disk because your data is not important. (4) Actual reason—you have a hard disk system and you already have optimizing backup software, or you have another means of backing up your system.

FloppyDRIVER comes from *Concept Technologies, 7151 W. Hwy. 98, Suite 402, Panama City Beach, FL 32407, (800) 852-1177.* The retail price is $79. You can order the product through us, *Personalized Software, Inc.,*

PV PV users: Please subtract $10 from subscriber price (since we don't have to send you additional customized disks or extra documentation). Be sure to indicate "PORTABLE VECTRA" on your order.



and

CONDOR, JR.

Database management made easy!

If you have customer files, sales records, inventory, or lots of *anything* that you need to keep track of, you need a database management system (DBMS).

If you want a sophisticated DBMS that even a beginner can use, try Condor 3 or Condor, Jr.

Condor 3 runs on the Portable Plus, Portable Vectra, and HP150. Its smaller cousin, Condor, Jr., runs on the HP110 and Portable Vectra only. Both versions let you **set up a database in a single step**, simply by typing a picture of the input form right on your screen. You enter and modify data—or even revise the database structure—simply by typing right on the same form.

Unlike other database systems, you simply tell Condor **what** to do, not how to do it—and you tell it using simple, English-like statements such as LIST CUSTOMER BY NUMBER NAME STATE AND COMPUTE TOT SALES.TO.DATE.

As a result, it takes only one fifth the time to compute, display, sort, search, or report on your data using Condor as compared with other database systems such as dBASE III. Most users find they can create and begin to use their first database within minutes after opening the package.

Condor 3 (but not Condor, Jr.) is a fully **relational** DBMS. That means you can use Condor 3 to compare, select, and combine data from two or more files. Condor 3 also lets you create your own custom report formats. (Condor, Jr. includes a LIST command for limited report writing.)

You can transfer data back and forth from Condor 3 to Lotus 1-2-3 print files and other files not created by Condor.

Over 150,000 Condor programs are currently in use. We think the Condor people have done a fabulous job of packing an enormous amount of database power into an incredibly easy-to-use system. We urge you to try Condor 3 or Condor, Jr. at our risk today.

Condor 3 . . . . . $495.00
$379.00 for Portable Paper subscribers
Condor, Jr. $99.00
$89.95 for Portable Paper subscribers.

RECOMMENDED FOR:	Condor 3	Condor, Jr.
HP110 Portable		●
Portable Plus	●	
Portable Vectra	●	●
HP150	●	
IBM PC and compat.	●	●

MEMORY REQUIREMENTS

Condor 3 requires only 128K of memory to run. The entire program, including the report writer, fits in less than 360K. Since each command is in its own file, you can save memory space by deleting any commands you don't need.

Condor, Jr. is even more memory-efficient: the main program is only 25K, and you add individual 10K programs for each function you wish to use.

WHAT THE EXPERTS SAY:

"If you want a database you can use immediately (without even opening the manual). . .Condor 3 is the DBMS to buy."
—Jim Morgan, Data Base Advisor

". . .a textbook example of what a database management system should be."
—James Perotti, PC Magazine

". . .for a straight database, I'll take Condor."
—Jerry Pournelle, InfoWorld

PO BOX 869, Fairfield, IA 52556, (515) 472-6330. The subscriber price is $69.95.

110 P+ PV CREATING A RAM DISK

Those of you who migrated to the Portable Vectra from the Portable Plus know the value of a RAM disk. A RAM disk is an electronic simulation of a disk. When you create a RAM disk, it is as if you have a new disk drive. The RAM disk is like a hard drive rather than a floppy disk since it cannot be removed.

The **vdisk.sys** file on your system MS DOS disk allows a portion of the Portable Vectra's RAM to be used as a virtual RAM disk drive. This RAM disk can be used in the same manner as an actual disk drive, with the exception of a few MS-DOS commands such as **diskcopy** and **format**. **vdisk.sys** allows either RAM memory or extended memory to be used as a RAM disk. You can install more than one RAM disk at a time.

The advantage of using a RAM disk is speed. Disk operations on a RAM disk are significantly faster than on a hard disk and even more dramatic than on a floppy disk. Disk-intensive applications are ideal for a RAM disk. Use the DOS **copy** or **xcopy** command to copy program files from your floppy or hard disk to the RAM disk. Alternatively, you can put the **copy** commands in a batch file or in the startup **autoexec.bat** file, to copy files from your mechanical disk to the electronic disk.

HP110 and Portable Plus users do not experience the disadvantage of using a RAM disk on the Portable Vectra. The RAM disk on the HP110 and Portable Plus is nonvolatile. That is, a trickle charge keeps the HP110/Portable Plus RAM disk files alive even when the system is turned off. The RAM disk on the Portable Vectra (and most other IBM-compatible computers) dies when the Portable Vectra is turned off. The contents of the Portable Vectra RAM disk are lost when the system is rebooted or turned off.

It is therefore a risky practice to store data files that you are creating or modifying (e.g., Lotus worksheets, reports, names and addresses) on a RAM disk. If you forget to save your work to the floppy or hard disk, or the system locks up, or your battery dies, you have lost any changes you have made to the file since the last save.

To create a RAM disk is simple. Use your word processor to get (or create) the **config.sys** file. Like FloppyDRIVER, the RAM disk program is a device driver. Therefore, you must add a line to your **config.sys** file similar to the following:

device=c:\utils\vdisk.sys 200

The RAM disk program **vdisk.sys** in this example is found in subdirectory **utils**. The **200** here gives the RAM disk a size of 200K. If you do not put in a number, the RAM disk created will be 64K.

If you have EMS (expanded) memory on your serial adapter I believe you can add a **/E** option. I don't yet have expanded EMS memory to test the option. The manual defines the **/E** option for extended memory, but the Portable Vectra has expanded memory. There is no **vdisk** option listed for expanded memory. If the **/E** works, your RAM disk gets created in expanded memory rather than in the base 640K system memory. For other optional parameters for the **vdisk.sys** driver, see your MS-DOS manual. (Any reader who knows for sure about how to use Portable Vectra expanded memory for the electronic disk, please drop me a line or give me a call.)

PV SPEEDING UP THE HARD DISK: HPCACHE

HP provides a disk cache program, named **hpcache.sys**, with all of its Vectra hard disk systems. Portable Vectra hard disk users will find the file on their "Setup Disk." Disk caching is a procedure to speed up the reading and writing of files to the hard disk.

How Does Disk Caching Work?

When disk caching is implemented, the cache program borrows some of the system RAM. Data is temporarily stored from the hard disk into cache (RAM) memory in anticipation of future use. That data can then be retrieved from cache memory more quickly than from slower hard disk drives. It is much quicker to access data already residing in (RAM) cache memory than from the mechanical disk drive.

Most cache systems use the **locality** theory. That is, data once used is likely to be re-used, and data stored near recently accessed information is likely to be required next. When accessing a hard disk, an efficient cache program reads surrounding data with the data required and stores it in cache memory.

If an application requests data already residing in cache, this is called a **cache hit**. The more cache hits, the better the overall response time. If cache hits are extremely low, the processing time to manage the cache can outweigh the benefits gained.

DOS versions 2.0 and higher offer a simple disk-caching scheme. Users are allowed to define in the **config.sys** file how many buffers should be set aside for disk caching. Most dedicated cache programs, such as the **hpcache.sys** program included on the setup disk, should be more effective then the DOS caching scheme. However, for most Portable Vectra dual floppy or hard disk applications, it is good to have the line **buffers=20** in the **config.sys** file, especially if you do not use **hpcache.sys** and you run disk-intensive applications.

Disk Caching Vs. RAM Disks

As discussed in the article above, Portable Vectra users can easily create a RAM disk using **vdisk.sys** from the DOS disk. If you know what files or data should be in RAM disk ahead of time, and you have enough RAM space, RAM disks are an excellent way to reduce hard disk access time. However, there are several disadvantages to the RAM disk approach.

First, the user must anticipate which files are going to be used. Second, if a file is too large for the RAM disk, there can be no performance benefit. Finally, updated files must be copied back to the mechanical disk at the end of the session, otherwise updates will be lost.

By comparison, disk caching does not require the user to anticipate file and program use. It is not necessary to have a disk cache as large as the largest file, as only portions of files are kept cached at any one time. Finally, changes to the data are automatically written to disk, without the danger of data loss.

Running The Cache Program

To run the program simply type **hpcache** from PAM or DOS. Doing so means that a cache in regular memory is set up and occupies 96K of system RAM. If you have EMS (expanded) memory on your serial card then you can type **hpcache /A**. The **/A** parameter sets up 256K of cache space in expanded memory. If you wish to use another memory size for cache, or look at other options, consult the HP Vectra Disk Cache section of the manual.

If you want to always run the cache program, include the line **hpcache** (with any options) in the file named **autoexec.bat**. Every command in the **autoexec.bat** file gets executed each time you reboot (restart) your system.

Is HPCache Effective?

Tim Cullis of HP World, a magazine for HP users published in Harrow Weald, England, did some benchmark tests on the Vectra ES/12 (a much faster system than the Portable Vectra). He was surprised to find a 30% improvement using the default 96K cache size in base memory when running the disk-intensive HP program Executive Card Manager. Of course, that test may not mirror your application in the Portable Vectra environment. You'll have to experiment.

If you use memory-resident programs like I do and don't have EMS memory, the **hpcache** program is probably not worth installing. On the other hand if you regularly run a disk-intensive data base program and have EMS, you will probably benefit from the disk cache program.

PV On The Portable Vectra Horizon

Joe Wilhelm of Sejus Corp. has promised to send me their new HP-IL card (for the Portable Vectra) for review for the next issue of *The Portable Paper*. Users can then use the Portable Vectra with HP-IL devices such as the HP110, Portable Plus, and HP9114. Most likely they will also be able to use the Portable Vectra with the HP 41, 70 or 80 series of products using Paul Grimmer's Link software.

Another possible new product is a bus extender card for one of the Portable Vectra slots. This will allow Portable Vectra users to connect to portable hard disks, tape backup units, networks, and 5 1/4-inch disk drives. As soon as I know, I'll report it.

110 P+ PV Deduct $10 Off The Subscriber Price Of Many Of Our Products

We spent much of our first two years of operation listening to readers and experimenting with products to see if they could be made to run with the HP110, Portable Plus, and HP150. Our ads for such products as the Norton Utilities, RightWriter, Webster Spelling Checker, and WordPerfect reflect the extra work we have done for original HP Portable and HP150 users. When we ship these products for those machines, we add documentation and (usually) extra disks.

HP Portable Vectra users do not need the extra disks or documentation. In fact, when Vectra users receive the programs with extra documentation, it can be confusing. Therefore, if you do not require the extra disks and documentation, you may deduct $10 from the already-discounted subscriber price. These products include the four mentioned above. Check our order form and ads as to which other products this additional discount applies.

PV Battery Indicator Arrow

The other day I thought I had my battery charger plugged in. After my battery had almost completely discharged, I found the mistake. When I pushed the plug all the way in, the up arrow appeared on the top of the indicator. Always check that the up arrow is on when you think you are recharging the battery.

Can't Read HP150 Single-Sided Disks

Despite HP literature to the contrary, the Portable Vectra cannot read all HP-formatted DOS disks. The Portable Vectra can read any double-sided disk formatted from an HP110, Portable Plus, or HP150. However, it cannot read a disk with the original HP150 single-sided format.

Until we learned of this, we always tried to ship our disks in single-sided HP format, since it was the one format all HP150's, the HP110, and the Portable Plus can read. When you order software from us, (such as the Norton Utilities, The Editor, or RightWriter) be sure to indicate if you have a Portable Vectra so we can send you the product on a proper disk.

DOS Trick For Retyping Last DOS Command

If you are using the Portable Vectra (and not the HP110 or Portable Plus), here is a nice DOS trick. You can use the right (and left) arrow keys to retype the last DOS command. Move the right arrow key and the letter (in its same position) from the last DOS command appears on the screen. Move the left arrow key and the letter disappears.

NEWS FROM

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By Hal Goldstein

P+ Condor 3 Update

PV

NEW VERSION 2.20

At the end of 1987 Condor upgraded its IBM version of Condor 3. Condor has just announced an upgrade for the HP150. The HP150 version of the new release works fine (in alternate mode) on the Portable Plus. When you purchase Condor 3 version 2.20, Personalized Software includes an extra disk customized for automatic installation and execution on the Portable Plus. Condor 3 is a fully relational database management system designed so that novice computer users can use the product easily. The new release features dozens of enhancements, including speed increases of 200% or greater, improved subdirectory support, and expanded indexing capabilities. In addition, it comes with a totally rewritten, award-winning user's manual and reference guide.

Owners of previous Condor 3 versions can upgrade to the new release for $95. For new purchasers the retail price is $495, $379 for *The Portable Paper* subscribers. You may upgrade directly through Condor: *Condor Computer Corporation, 1490 Eisenhower Place, Ann Arbor, MI 48108, (313) 971-8880* or through Personalized Software.

To upgrade, send the original Condor master disk (not the Personalized Software master). Be sure to request the HP150 version. If you upgrade through Personalized Software, you will get the additional Portable Plus disks. If you purchased Condor after April 1, 1988, follow the same procedure, and you will get the upgrade at no charge. Include a copy of the invoice.

A USER'S VIEW OF CONDOR 3 VERSION 2.20

By Paul Slawson, M.D., UCLA Neuropsychiatric Hospital

I'd like to comment on my experience with Condor 3, and the new version of the program, which I have installed on the 2 Megabyte SoftWord RAM drawer. (The 2 Megabyte SoftWord RAM drawer is a wonderful convenience but not necessary to run Condor 3.)

Condor 3 is a fine relational database system designed by Condor Computing Corporation of Ann Arbor, Michigan. It is configured by Condor for the HP150, but runs on the Portable Plus and is easily installed with a customized disk supplied by Personalized Software.

The first version I used was 2.11.11. It worked well, but the documentation was ancient. A new version, 2.20, has just been released and it is superb. The manual has been completely rewritten and expanded. The program is easy to use, either from the menu or the command line. Help is always available. The help screens—complete with both syntax and examples—are the best I have seen.

Although it runs perfectly from the Plus' Edisc, I chose to install the new version of Condor 3 on my SoftWord 2 Megabyte E-drive drawer (for my system, drives C and D are HP9114's).

To do this, I copied the first and third files, **condor.bat** and **instcdr.bat**, from the Personalized Software customized disk that came with version 2.11.11. I then simply added the 60 files that are on the HP150 version 2.20 single-sided disks supplied by Condor. If you purchase version 2.20 from Personalized Software, the additional Personalized Software disk contains the installation and 60 files.

Condor 3 runs very quickly when on an Edisc, and there is plenty of room left over for the data files, which store data most economically. I am currently involved in a research project which includes storing and manipulating a large number of clinical records on Condor. In the past, (using other databases), I often had to struggle to obtain detailed, complex information. Now I can get it from Condor by simply asking the right questions in plain English.

MORE ON CONDOR NEXT ISSUE

Rod Sharp of New Mexico, another Condor fan, has promised us more information next issue concerning Condor's memory use. The main program comes on two single-sided disks (about 500K) and not all of the 500K of files have to be used.

P+ Lotus 2.01 And Symphony 2.0 In RAM

CompuServe Forum system operator Mark Horvatich has written software drivers that will allow Lotus 1-2-3 2.01 and Symphony to be run from the Edisc or HP9114. For Lotus 2.01 users that means you can use any Lotus add-in including HAL.

We have not yet received the drivers from Mark so we cannot promise a shipping date. The Lotus driver package

At last!
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HP110 users: Tired of struggling with the built-in Terminal program?

Portable Plus users: Is PC2622 or Reflection too complex for your needs?

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Term110 was developed by Cliff Looyenga, who writes the "Wizardry" column for The Portable Paper. It runs on the HP110.

TermPlus was developed by Portable Paper contributer David Hughes from an earlier prototype. It runs on the Portable Plus.

Both programs allow you to:

- Send and capture ASCII information;
- Quickly send programs, Lotus worksheets, and archive files via the XMODEM protocol;
- Log onto electronic bulletin boards and remote computers automatically;
- Store and access directories of phone numbers;
- Run other programs without severing the phone connection.

Both programs have on-line help, and use around 25K of electronic disk space.

Most importantly, both programs make efficient, logical use of function keys and menus to make the job of transferring files and programs ***easy***.

You won't appreciate ***how*** easy until you try Term110 or TermPlus for yourself. We invite you to do so today at our risk.

Term110 (for HP110) or
TermPlus (for Portable Plus).....$99.95
(Specify which program when you order)
Portable Paper subscriber price.....$79.95

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***ROM backup of TermPlus includes IBM disk formatting utility, ThinkJet control pop-up, and more.**

will include instructions as to how to run 1-2-3 or Symphony from disk. If you wish to purchase the drivers without the software, the list price will be $69.95, $59.95 for *The Portable Paper* subscribers.

Fortunately, Lotus Corp. recently announced that they were removing the Lotus 1-2-3 copy protection scheme and would provide a program to remove copy protection from the current version. That means you won't have difficulty installing Lotus 1-2-3 on the Plus.

If you wish to order Symphony or Lotus from us you may do so. (Availability dates are not known.) The following prices include the driver. Lotus 1-2-3 retail: $565, subscriber: $435. Lotus 1-2-3 With HAL, retail: $715, subscriber: $545. (Give us a call if you want to trade in your Lotus ROM.) For Symphony, retail: $765, subscriber: $595.

P+ ThinkJet Control Update

On the 1988 Subscribers' disk we included a memory resident pop-up utility by Paul Grimmer that allowed you to configure your ThinkJet, PaintJet, or QuietJet printer. Unfortunately, the ThinkJet commands were somewhat limited. The program was more intended for users of the other two printers.

I wanted to include a more ThinkJet-oriented version of Paul's program on the TermPlus ROM. Paul agreed to spend a few hours and change the program. Now the program fully supports the ThinkJet.

To install the program simply type **tjctrl**. Then you can enter any application, (for example, Lotus). In the middle of Lotus you can hold down the **Extend char** key and press the space bar. Up will pop the ThinkJet control menu. Suppose you want to print in compressed print. Just toggle the **Print Pitch** choice until you get to compressed. Move down to **Line Spacing** to change from 6 lines per inch to 8 or vice versa.

Paul even included in the program the capability to put the ThinkJet into Epson mode. That means you no longer have to use the **prnconf.com** program included with The Editor to change modes. Once you use it, I think you'll agree it is one of our best "freebees." To get the update, send your 1988 Subscribers' Disk (or other double-sided formatted disk) with a self-addressed stamped envelope. Otherwise, send us $9.50 for a new 1988 Subscribers' Disk. (Offers only good for *The Portable Paper* subscribers.) The program will be found on the TermPlus ROM along with the IBM format program from the 1988 Subscribers' disk.

110 P+ PV Kermit

Kermit is a public domain data communications program supported by Columbia University. If two computers both run Kermit, they can transfer files easily across phone lines. Many mainframe computers as well as personal computers can run Kermit.

Gary Goodman of Fredericksburg, Virginia, who has served as our HP110 communications expert these past few years, has sent me versions of Kermit that will run on the HP110, Portable Plus, HP150, Portable Vectra, and IBM PC. Gary has included documentation for the HP110 and Portable Plus versions. We will make Kermit available to our readership in the following manner: We supply all four versions on two disks—a 3 1/2-inch disk and a 5 1/4-inch disk for $19. Personalized Software cannot offer technical support for the software. We have had no complaints, but if you get desperate, you can probably give Gary Goodman a call.

110 P+ PV We Have A Fax Number

Many of you have requested a Fax number. You may send your Fax correspondence to (515) 472-8470. Be sure to indicate "Personalized Software" somewhere in your transmission since we are sharing the Fax service with other companies in town.

P+ SoftWord Meg Cards And European Ordering

European customers will not be able to order Personalized Software products from SoftWord until late Summer or early Fall. Instead they may order from Personalized Soft-

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ware directly.

If you want to order SoftWord 2 Meg RAM or 1 Meg RAM/ROM Cards, you may have to wait until Fall for delivery. We may have some in stock, so you are best off calling us.

Save Lotus Files, We Hope

110 P+ PV

I have long advocated that the Norton Utilities is the single most important product every Portable, HP150, or IBM PC user should have in his arsenal. You have only to recover a lost file once to reap its value. The one limitation in The Norton Utilities is that it includes no direct way of rescuing a corrupted Lotus 1-2-3 file.

I brought this point up at a class I was giving our staff. Michael Sugarman, managing editor of *The Portable Paper*, told me about a program called RESCUE from Spectrum Computer Services, Inc, Reading, MA, (617) 664-0337. RESCUE apparently uncorrupts Lotus 1A and 2.01 files. I am waiting to receive a copy of the product. I'll report my results next issue.

If any reader has been successful using this or any similar product on the HP110 or Portable Plus, be sure to give me a call or drop me a note.

Introducing Some Of Our Staff

110 P+ PV

Those of you who have dealt with our company by phone will probably agree that we have an exceptionally conscientious, courteous and intelligent staff, with a strong orientation to service. Brian Teitzman and David Seagull are ready to take your orders or discuss your Portable needs on the phone. Brian specializes in new and used HP equipment. David is especially familiar with our product line and can usually help you out if you have problems with any of the software you purchased from us.

If there is some problem with your product order, talk to James Needham. For subscription questions or problems, speak with Michael Sugarman. Finally, Larry Baldozier has been the driving force in making our overall internal operation a success. If you have any suggestions or complaints, Larry will be glad to listen.

SPECIAL FEATURE:
Communication with the Portables

Guide To Using The Portable Plus And Portable Vectra Internal Modem

P+ PV

INTRODUCTION

by David Hughes

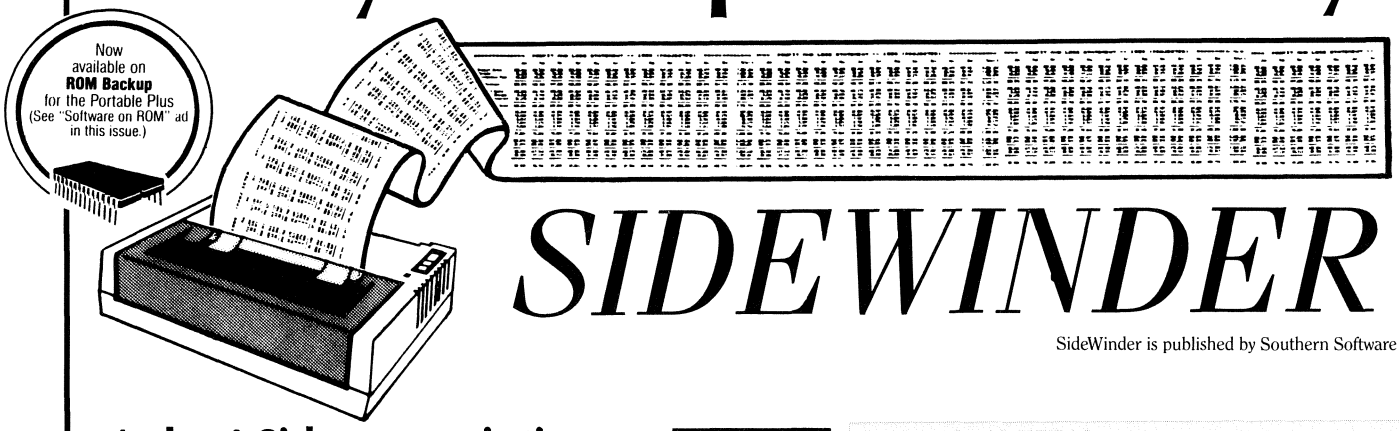
The internal Portable Plus and Portable Vectra modems—as well as most external modems including the WorldPort modems—understand a language known as the Hayes command set. (The industry has standardized on the language understood by Hayes modems.) You tell the modem what to do by giving it simple commands in this modem language. You give the modem the commands from within the communications software program that you are running.

The most sophisticated IBM PC programs (such as CrossTalk) issue these commands for you. You just follow a menu or type in an English-like script. Even if your software hides modem commands, you'll find it useful to know about the language.

TermPlus (for the Portable Plus) also hides the basic dial command from the user. TermPlus stores phone numbers that you may want to call and lets you dial automatically.

You can issue any modem command from the main blank screen using any of the Portable Plus communication packages. (Always start from column 1). These packages include the built-in TERM program, HP's PC2622 and Reflection, and Personalized Software's TermPlus.

No more cutting and pasting- Now you can print it sideways!



SIDEWINDER

SideWinder is published by Southern Software

At last! Sideways printing for the HP Portable, Portable PLUS, and ThinkJet!

(And the HP150, Vectra, IBM PC, MS-DOS computers, and most HP graphics printers.)

RECOMMENDED FOR:	
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Portable Plus	●
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IBM PC and compat.	●
Available on ROM Backup for the Portable Plus	

It's called SideWinder, and it's perfect for Lotus 1-2-3 print files, MemoMaker files, or any other text (ASCII) file that's too wide for a normal page.

Just type in the file name, and SideWinder does the rest, printing up to 53*rows *sideways* - for as long as your paper supply lasts. You'll never need to cut and paste again!

SideWinder's high-quality graphics characters are indistinguishable from ordinary characters, and SideWinder prints just as fast as your ThinkJet can.

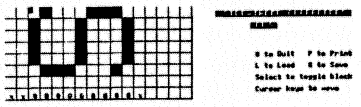
In addition, a built-in mini text editor lets you get inside your print files and easily create **double-width** characters and underlines.

SideWinder $69.95
$59.95 for Portable Paper subscribers

SideWinder 1.01 owners may upgrade to current version 2.01, which supports 8 chars/inch, by sending Personalized Software $7.50 or by mailing a self-addressed $.39 stamped envelope and the SideWinder master disk.

OPTIONAL EXTRAS: Southern Software of New Orleans, creators of SideWinder, have also created two companion utilities that work only on The HP Portables:

SideChar lets you create your own sideways characters.



Simply fill in a grid on your Portable to modify SideWinder's built-in characters. . .create italics. . .Hebrew letters. . .integral signs. . . whatever sideways characters you wish.

Sketch & Print lets you make line drawings on your screen using the cursor and function keys.

It's a lot like those Etch/Sketch toys you played with as a child. (Actually, it's even better because you can draw not just horizontal and vertical lines, but also *diagonals* with a single key.) Sketch & Print also lets you print - and save - anything you draw on the screen.

$10 for both utilities when purchased with SideWinder

For a *complete* graphics software program, see ad for "Sketch" in this issue.

Order form and guarantee are on inside back cover or send check or credit card number to Personalized Software, PO Box 869, Fairfield IA 52556 (515) 472-6330.

*105 rows for QuietJet Printer

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What follows is a condensed guide to many of the Portable Plus internal modem's features, including the Hayes command set language. This article ends with a simple example.

DATA AND COMMAND MODES

The internal Portable Plus and Portable Vectra (and all Hayes compatible) modems feature a **command** and **data** mode. While the modem is in **command** mode, the user can type in commands directed to the modem. In the **data** mode, the modem passes data (files) between the two computers.

The modem switches from **command** mode to **data** mode after a valid "handshake" (recognition by both computers that they are communicating in the same way).

The modem can be commanded to return to **command** mode from **data** mode by typing the stop action sequence, + + + . The modem will also return to **command** mode if it loses connection, or if it has been reset by the user.

MODEM COMMANDS

What follows is a list of modem commands. You start from column 1 on the screen within your communications software package. You must press the **Return** key to enter the command.

The modem is capable of executing multiple commands on the same command line.

IMPORTANT: All commands must be UPPER-CASE. All commands must be in this format: **AT**command **Return**, where "command" is replaced by a command (one to three characters) from the list below.

The command line consists of the letters "AT," the command, up to forty (40) additional characters, and a car-

riage return. If more than 43 characters are entered on the command line, the modem returns an error message and does not execute the command.

The following chart defines the superset of the Hayes modem set as implemented by the Portable Plus internal modem. Portable Vectra users and Plus users with an external modem will find almost all of this material valid. This list does not include additional commands supported by the Portable Vectra internal 2400-Baud modem.

Command	Action taken by the Modem
A	Auto answer mode. This command is used to answer an incoming phone call. When the call has been established and the communication has been validated, the modem responds with "CONNECT" or "CONNECT 1200" and enters DATA mode.
A/	Repeat command. Executes previous command again.
D[R]	Dial Command. This command permits the user to dial a telephone number. Note: if you are dialing an originate-only modem, append "R" to the D command. Following the D[R] command, enter the number (parentheses and dashes are optional; commas—see below—may be used to pause the dialing).
E0	Echo Off
E1	Echo On Echo Mode. This feature determines whether or not the modem will display on the Portable Plus what it is transmitting to the host system.
H0	Hang Up
H1	Pick Up the phone Hook Mode. The H0 command directs the modem to hang up the phone. The H1 command directs the modem to remain in command mode, ready to initiate or respond to calls.
I	Interrogate modem. Causes modem to describe its status.
O	Originate Command. This command places the modem into DATA mode (To return to COMMAND mode, enter **+++**). The modem first tests for a good phone line, and then goes off hook.
P	Pulse command. Sets the modem to dial pulse (rather than tone) output.
Q0	Enables responses (default)
Q1	Disables responses Quiet Mode. The Q or Q0 feature directs the modem to send responses to the user. Q1 disables the modem from sending responses to the user.
T	Tone mode. Sets the modem to dial tone (rather than pulse) output.
V0	Terse Mode
V1	Verbose Mode (default) Verbosity Mode Select. The V0 mode directs the modem to send terse responses to the user. The V1 mode directs the modem to send english-like responses.
X0	Minimum Response Set
X1	Extended Response Set
X2	Full Response Set (default) Response Mode Select. The X0 mode directs the modem to provide Hayes Smartmodem 300 compatibility. X1 limits the modem to the extended response set, providing Hayes Smartmodem 1200 compatibility. The X2 command enables the full response set, which includes tone direction, call progression, and baud rate compatibility responses. X2 supports transmission at both 300 and 1200 baud.
	Pause 2 seconds. Used in a dialing string (for example, to allow the other computer to respond).

MODEM RESPONSES

The modem responds to the user in three different modes: X0, X1, and X2. All of the responses of the X0 and X1 modes are available in the X2 mode; all of the responses of the X0 mode are available in the X1 mode. Here is a table showing both terse (V0) and verbose (V1) responses in each of the three modes:

Terse Response (V0)	Verbose Response (V1)	Modem Condition When Response Issued
MODE X0:		
0	OK	Modem responds normally after executing the command line.
1	CONNECT	The modem has successfully connected to the host system, has switched to DATA mode, and is ready to communicate at 300 baud.
2	RING	The modem has detected an incoming phone call.
3	NO CARRIER	The modem has lost or terminated the phone connection.
4	ERROR	The modem encountered an error executing a command. Check the command specification.
MODE X1:		
5	CONNECT 1200	The modem has successfully connected to the other system at 1200 baud, and has switched to DATA mode.
MODE X2: [default]		
6	SET 1200	Modem speed set too slow, change to 1200 bps.
7	SET 300	Modem speed set too fast, change to 300 bps.
8	TONE	An unrecognized tone has been detected on the telephone line.
9	NO TONE	The expected tone has not been received.
:	BUSY	A busy signal has been detected.
;	VOICE	Broadband frequencies (i.e., voice) have been detected on the telephone line.
<	RR	The modem has detected a remote ringing on the called telephone. (The call is not being answered.)
?	LINE?	The modem has detected that the telephone line is not working, or is no longer connected.

COMMON EXAMPLE

The following is a simple example of a modem dialogue using TermPlus and the internal Portable Plus modem. You could execute the same dialogue from TERM, TermPlus, Reflection, or PC2622. In the dialogue below, user commands are in bold print, the response from the modem or connecting computer is in italic print, and our comments are in regular print.

ATDT18164743770 Dialing Kansas City CompuServe Node
LINE? Forget to plug phone line to Plus
ATDT18164743770 Dialing Kansas City CompuServe Node
VOICE Modem thinks voice on phone line
ATX1 Invoke mode X1 to disable mode X2 VOICE
o k Command accepted
ATDT18164743770 Dialing Kansas City CompuServe Node
B U S Y Line busy
ATDT18164743770 Dialing Kansas City CompuServe Node
CONNECT 1200 Modem connected at 1200 Baud, Now In Data mode

110 P+ Portable Plus Serial Connections

by David Morris

INTRODUCTION

In this article we will discuss the HP110 and Portable Plus 9-pin serial port and appropriate cabling. We will discuss both technical and practical information on modem, printer, mouse, and computer-to-computer serial cabling. There

Portable Vectra users:

Make your floppy drives work 10 times faster!

(Save battery life too!)

FloppyDRIVER speeds up your 3½" disk drive(s); it saves you time loading, copying, and backing up files; and it even formats your blank disks automatically.

Impatient with slow floppy disk access on your Portable Vectra? FloppyDRIVER makes a big difference.

It's a software program that speeds up movement of the disk drive's read-write heads, *allowing your programs to load 30% to 50% faster.* Other disk access operations (copy, save, backup, etc.) are as much as *10 times faster.*

And since disk access is the biggest drain on your Portable Vectra's batteries, FloppyDRIVER also extends battery life significantly.

Installing FloppyDRIVER is easy, and once installed it works automatically—you don't have to do a thing.

Bonus feature: Whenever you access a floppy disk, FloppyDRIVER will format the disk automatically, but ONLY if it isn't already formatted. No need to type the DOS "Format" command ever again!

If you use a dual-floppy Portable Vectra, FloppyDRIVER will save time with almost every program you run.

If you use the hard disk system, you'll be grateful for FloppyDRIVER whenever you back up your files.

Either way, FloppyDRIVER is an absolute must for every Portable Vectra owner. Order a copy at our risk today.

FloppyDRIVER **$79.00**
Portable Paper subscriber price **$69.95**
For ordering information, see inside back cover.

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are two serial (RS-232) cables that HP sells for the HP110/Portable Plus. 92221P is ONLY for printers and plotters. 92221M is for external modems. Interested users should consult their owner's documentation, HP110 appendix B and Portable Plus appendix D for serial cabling information and diagrams.

THE PORTABLE SERIAL PORT

The 9-pin (D-subminiature) serial port connector on the HP110 and Portable Plus is mounted above a projecting lip of the Portable's casing. Most commercially-available cable connectors have plastic or metal hoods with wrap-around lips to hold the cable connector body in the hood. When such a cable connector is inserted in the Portable Plus' connector, the hood lip hits the casing bottom, preventing straight line full-depth insertion. At best the connection is unreliable, at worst the connectors are damaged.

Most cables made for use with the Portable Plus by manufacturers other than HP use these offending connectors and also omit one or more of the ten lines in the cable (specified in the HP implementation of the RS-232-C/V.24 standard as described in appendices B and D of the HP110 and Portable Plus owner's manual). Such omissions result in either the failure of peripherals or file transfer utilities, or require the use of special adapters to untwist the pretzel created by the use of an inappropriate cable.

LOGITECH MOUSE AND HPDUETTE

Two cases in point are the Logitech C7 Mouse and HPDuette from Personalized Software, both of which are furnished with adapters made with the offending connectors. In order to use my mouse I had to have somebody firmly hold the computer while pressing the connector into place. By using a genuine HP 92221M modem cable, I was able to dispense with the special Portable Plus adapter. By using only the mouse, mouse software, and the furnished Logitech 500066 9-pin to 25-pin adapter, I was able to use the Mouse with SKETCH, the Personalized Software graphics product.

In like fashion, HPDuette can be made to work without the special Portable Plus adapter and the two 9- to 25-pin adapter cables furnished with Duette. You'll need the HP 92221M modem cable connected to the Portable Plus, as well as the cable (furnished with Duette) which has 25-pin connectors at each end. Finally, an IBM-type null modem gender changer connected between the HP cable and an IBM-PC or clone is also needed.

THE HP92221M MODEM CABLE TRICKS

There are few, if any, accessories such as data line monitors, breakout boxes, and null modems available in 9-pin format, while a bountiful harvest of such goodies in 25-pin format is on the market. Using the HP modem cable opens the door to painless implementation of all sorts of useful tricks; I use the modem cable plus a null modem (configured like the HP 92221P printer cable) to connect to HP-style printers (and several others, such as the C. Itoh LIPS 10 laser printer). I am also able to use the modem cable plus a Datatracker (gender changers as needed) to hook up to a variety of printers sporting imaginative RS-232-C implementations, with no pain or wasted time.

It would be possible of course, (if a suitable lipless plug could be found), to construct a functionally equivalent cable in the field, but I doubt that much money would be saved. Also, the pleasing aesthetics of the HP product, with its sleek lines and highly functional large-knobbed thumbscrews, would be hard to match.

TECHNICAL DETAILS: CONNECTING THE HP110/PLUS TO A DESKTOP

The HP printer cable, HP9221P, is a null modem cable in which certain of the handshaking lines are implemented so as to allow a printer to control the output of the computer, thus preventing printer buffer overflow. These handshaking lines are not needed for computer-to-computer connection, but in most cases their presence does not create any problems. The only lines needed for machine-to-machine communication are TxD (pin 2), RxD (pin 3), and SIGNAL GND (pin 7), on both cable ends for both DB25 and HP DB9. They are NOT needed for IBM DB9 connectors (pin 2 on each end to pin 3 on the opposite end, pin 7 to pin 7).

In addition to these signal lines, FRAME GND (the shell of both plugs, the cable shield, and the shield drain wire connected to pin 1 of the DB25 plug) should be maintained.

Proper grounding is not only necessary to meet FCC requirements for RF interference control but also to minimize data contamination by environmental electrical noise. If FRAME GND is missing, the only path-to-earth ground for voltage applied to the keyboard or display is through the innards of the portable. It is therefore highly probable that should someone in rubber-soled shoes walk across a nylon carpet on a low humidity day, the next stop for the machine would be the microchip boneyard.

SUCCESS: CONNECTING HP110/PLUS AND IBM PC WITH HP92221P

The survey results? The printer cable can be used to directly transfer data between the HP110 or Portable Plus and all the honest-to-gosh IBM's and most of the clones. It failed only on two "assemble-it-yourself-and-save-$" desktop machines. Since IBM and most cloners use male connecters on their serial cards, and the HP printer cable is also male, a gender changer is needed. When I used a customized gender changer in which the handshaking lines were omitted, even the two bashful desktops performed.

To sum up, if you own an HP printer cable but not a modem cable, it would be silly to buy one just for machine-to-machine data transfers. If you own both, use a null modem gender changer with a modem cable, or a straight-through gender changer with a printer cable. In either case, if it still doesn't work, try a gender changer with the through connections of the handshaking lines omitted. In the latter case, it is considered good practice to strap pin 4 to pin 5 and pins 6, 8, and 20 together on the IBM/ clone side of the gender changer.

110 P+ PV Office Phones And The Portable Plus

by Bill Hassle

The Portable Plus sometimes goes a little wacko when it is plugged into some office phone systems. The most common complaint is that the Plus starts beeping continually when the phone line is plugged into the Portable. This is usually caused by signals sent by the local phone system, such as message waiting. There is no fix for this. The portable detects small changes in energy such as a ring indicator, and continues beeping as well as looking around for a copy of **autoansr.bat** to schedule. The solution is to use an external modem, or eliminate the message-waiting capability or get a dedicated line if possible.

CALL WAITING?

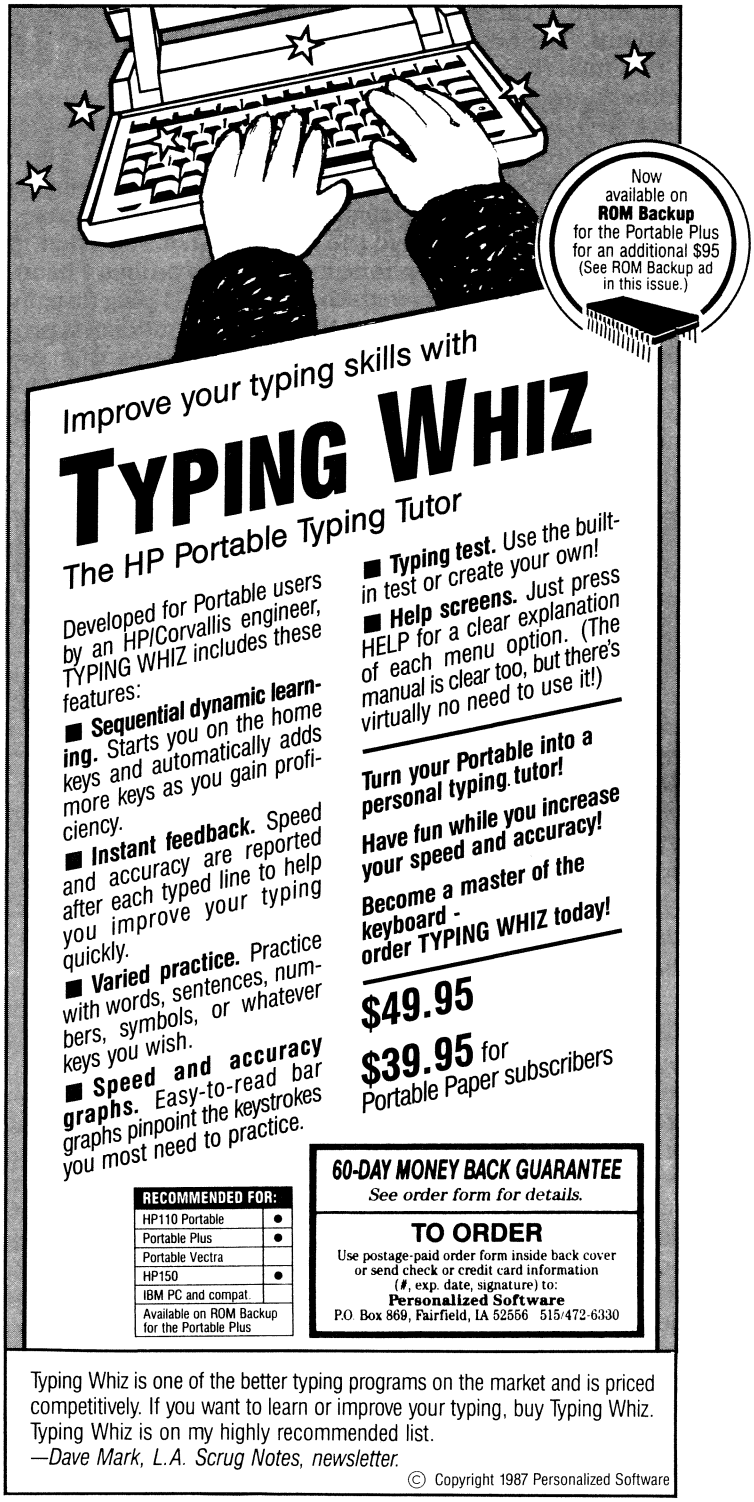
Do you have a call-waiting feature on your phone? Ever been on the modem when a call-waiting signal beeps thru? Blooey! Off the air you go. This is because the tone causes the modem to think it has lost the carrier signal, so it naturally hangs up. Well, there is hope. On most phone systems that have call-waiting, you can press ***70** (that's the star, not the **#** or pound key) and you will hear a new dial tone. Don't hang up; dial the computer. The phone system will disable call-waiting for the duration of the current call only. After the call is completed, call-waiting turns back on again. This works for Pac-Bell and most home phone systems. When you are working with a non-Bell phone system or (possibly) an office phone system, this may not work. Contact your office phone specialist for help in these particular cases.

CREDIT CARD CALLS

When you set up the Portables to enter credit card numbers, there may be a delay after dialing the number. Pay phones seem to have more pops and bleeps than home phones, and these will cause the portable to frequently ring its internal bell. What I like to do is to monitor the line on another phone while the portable is dialing, just to hear what is happening. That makes it easy to determine the number of commas (for pauses) to the credit card number. In some cases, the number of commas, telephone digits, and credit card numbers may be too long for the screen. In that case, the comma count can be reduced by changing the length of time which a comma represents. The default is 2 seconds and is found in register 8 of the internal modem. To look at this value, set Reflection to use **com2** (which is the internal modem) and then type **ats8?** and the value 002 is returned. To change the comma length, type **ats8=n** where n is anything from 0 to 255. A good value is 3 to 6. Thus, **ats8=5** will make each comma wait for 5 seconds.

MORE ON OFFICE PHONES

As more portables are being used in business offices, there



Typing Whiz is one of the better typing programs on the market and is priced competitively. If you want to learn or improve your typing, buy Typing Whiz. Typing Whiz is on my highly recommended list.
—Dave Mark, L.A. Scrug Notes, newsletter.

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are more chances for problems due to private phone systems. The first is with digital telephone systems.

Often the cable in the back of a digital system phone either doesn't come off, or it uses a much larger modular jack. Here's a big caution: even though a smaller modular plug will fit (inexactly) into the larger jack, don't try it! Many of the newer phone systems are digital and plugging the portable into these systems won't work; in some cases, the portable may damage the phone system. So what to do? Check to see if the phone looks like an ordinary handset. If the modular plug in the back is an RJ-11 plug (usually has 2 or 4 gold contacts) then the portable's modem is probably OK. If not, there are external modems that use acoustic coupling rather than wires. Also, the "Blackjack" product sold by HP will work as long as the phone mouthpiece is round and about 2 1/4" in diameter.

·PORTABLE· PROFILES

Let us profile your or your company's use of the Portable. Tell us about your interesting or unusual application of The Portable. Or share a description of how you use The Portable: let other readers benefit from your experience. Give us a call (ask for Hal), or send us a draft on paper, disk, or via CompuServe. (Personalized Software, P.O. Box 869, Fairfield, IA 52256, 515-472-6330).

110 P+

Cruising With My Portable

by David Hadley

In past issues of *The Portable Paper* readers have contributed some unusual applications for the HP Portables, and I would like to offer another. My Portable Plus (along with my 9114 and ThinkJet) is installed in the navigation station of my cruising sailboat, an Amel 53. I use three of your Mobile Rechargers to charge the equipment from the boat's batteries. They have worked very well, although I wish they were available in a different package as they do not plug into a cigarette lighter socket but are directly wired into the navigation station circuit breaker board. I did not open the plug-in plastic packet as I was afraid of destroying the circuit.

I first became interested in portable computers in 1984. I had not used computers prior to my retirement in 1978 and until battery-operated portables became available, a fixed, AC-operated computer was of little value to me as I was not in a permanent location long enough to make one worthwhile. Our home is in Grenada, where we live from October to May, and during that time we cruise extensively among the islands. During the other five months we normally cruise two months on the coast of British Columbia and Alaska, two months on the northeast coast of the U.S., and travel visiting friends the remaining time. The portable computer was obviously the answer to this situation considering that even in Grenada the power is not reliable as we have unexpected outages as well as scheduled cuts for four to eight hours per day.

I use the MemoMaker for writing reports and letters and Lotus 1-2-3 for keeping track of a lot of statistical data. Using the computer on the boat was initially difficult as it had to be set up each time that I wanted to use it. I was finally able last summer to arrange my navigation station to mount the three units permanently so they could be accessed under all conditions. The shelf holding the Portable Plus folds down against the wall when not in use. The printer and disk drive are mounted vertically, something that I have not checked out with HP. So far they work well and the only problem I can foresee is ventilation. I do not leave the printer or disk drive on for extended periods, and so far there are no problems.

The spreadsheets that I have made up which are especially useful are:

1. Maintenance log containing daily readings of engine time, motor generator time, fuel, water, and cooking gas consumption, and any operating problems encountered. This information is normally recorded in a written log and requires re-copying to another book for analysis. Having this information available on a well-designed spreadsheet allows me to check averages to assist in identifying problems before they become serious, and to help planning long trips or ocean passages.

2. Part lists, showing the type, part number, and supplier of all spare parts, as well as location of storage on the boat—allows for control of routine maintenance.

3. Navigation log, containing course, speed, time and distance information on planned trips. These figures can easily be altered in a spreadsheet as conditions change, and the actual completed figures can be entered for comparison purposes. All changes affect the overall plan, and being able to enter this information under weigh makes it easier to make decisions. Information is also available from the Loran C and Satnav equipment, and can be coupled directly into the computer for record purposes.

4. Master lists have been made up so that quantities of food and other basic supplies can be calculated by entering the number of people and number of days of the trip. These lists can also be used to keep track of inventory.

5. Schedules for coordination of guest visits and pick-up and drop-off information. This is especially useful as it is a constant reminder of what you have said to people months earlier, and allows changes to be made and information to be disseminated as things change.

The above spreadsheets have been extremely useful in planning the trips this year from Scotland to France, Spain, the Canary Islands and Grenada.

In talking to other people who use their non-portable PC's extensively, I've become aware that their orientation is quite different from mine. Having made use of the portability of the Portable Plus from the start I use it (I think) much more than the average. Portability allows me to take a lot of personal information with me so that I can keep up to date during the extensive periods away from home. In addition to using it when living on boats I find it an excellent air-travelling companion as I can make use of the many waiting periods associated with air travel.

I have also used a number of your software programs—I have found Webster's Spelling Checker and some of the Norton Utilities especially useful. The information in *The Portable Paper* is also very helpful as I have had to learn to use the system totally on my own. (There are no other users or user groups on the island.)

WordPerfect customized for the Portable Plus and HP150

WordPerfect. It's the best-selling word processor for the IBM PC. According to many reviewers, it's the best word processor on the market.

WordPerfect is a word-processing powerhouse. Its advanced features include creation of text in columns, automatic footnote formatting and numbering, mail merging, and text sorting.

Now there are versions of WordPerfect for the HP Portable Plus and the HP150 touchscreen. In either case, it's the full-blown Version 4.2, complete with comprehensive thesaurus and 115,000-word spelling checker.

Not only can you use WordPerfect on your HP computer, but if you already have WordPerfect for your PC, you now can transfer files back and forth between your PC and your Portable Plus or HP150. The same WordPerfect features and commands work on all three machines. (The function key layout is different on the HP machines, but this is a simple matter for most PC users to adjust to.)

WordPerfect's powerful yet easy-to-use features have made it a best-seller. It's perfect for the Portable Plus or the HP150... and it just may be perfect for you. Order a copy today and use it at our risk. If, within 60 days, you are dissatisfied for any reason, simply return it for a full refund.

WordPerfect . . . . . $495.
$299 for Portable Paper subscribers.

IMPORTANT: Be sure to specify whether you want the Portable Plus version or the HP150 version.

Note to Portable Plus users: As always, you have to plan memory space in the Portable Plus. You'll need 512K of RAM to allow space for the basic WordPerfect program and still leave room for other files on your electronic disk. To fit *everything* on your A drive, you'll need an additional 340K for the spelling checker, and 360K for the thesaurus. (The speller and thesaurus can be run from your HP9114 if you wish.)

Our version of WordPerfect includes an 8-page supplement to the manual that tells you how to run WordPerfect on the Portable Plus.

Note to HP150 users: By special arrangement with WordPerfect Corporation, our version of WordPerfect includes the standard 5¼" disk plus our supplementary *double-sided* 3½" disk that customizes the program for HP150 users. The disk includes a special utility that allows WordPerfect to run on the 150. (If your HP150 requires *single-sided* disks and also has a hard disk drive, a version of WordPerfect is available that will run on your machine. Specify "single-sided on your orders.)

RECOMMENDED FOR:	
HP110 Portable	
Portable Plus	●
Portable Vectra	●
HP150	●
IBM PC and compat.	●

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We ship Wordperfect with keyboard templates for the HP150 and Portable Plus.

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110 P+ PV

Taking My Friend To Market

By Molly Glen

After all these many years, after much self-analysis, I have come to the conclusion that I am more comfortable with my "shaded" friends, meaning those who instinctively regard things three-dimensionally. I would say these are sensitive, sympathetic, diplomatic people, so attuned to others that they can finish one's sentences verbally or mentally, forget and forgive easily, and (above all) never, never "bleep" you as a dummy.

Delightful, friendly people like this can see all sides of an issue, figure all possible angles in a given situation and are "shaded" or "angled" or "grey" in nature, not straight-line, straight-ahead, or "black and white" (B&W). I came to the conclusion that it's really OK that I am that kind of multi-faceted, shaded type of person, too. I'm OK, you're OK, right?

Now about the Portable Plus.

Hooked at once, I thought that the Portable Plus was going to become my sympathetic, diplomatic, mind-reading friend. I even dubbed her (him?) Twinkle. Wrong. As hour after hour, month after month of back-breaking, mind-boggling work has gone on, as I sincerely try to communicate with Twinkle, I now begin to doubt just how much of a friend Twinkle really is. She is not "shaded," and certainly is not a mind reader, is not diplomatic and thinks strictly in a straight line. Twinkle is B&W.

My mind is so angled I can even persuade myself to believe that 2 × 2 = 5, upon occasion. And black could very possibly be not only grey, but white. This is causing the most traumatic problems with Twinkle, who doesn't understand my mental bent at all.

Consider, for example, formatting an HP9114 disk in drive D, from my Vectra desktop. There is NO SPACE within **hpilfor**. By the same token, in DOS, there IS a space in **diskcopy a: a:**; there is NO space in **c:chkdsk**; there IS a space in **dir *.com**; but why none in **copy a:*.* b:**? No rhyme or reason that I can see. In my angled mind I would think Twinkle could figure out where spaces should or should not be or whether I've typed a **1** (one) or **l** (little L). Very small, insignificant differences, to me. For years, on a typewriter, I have habitually used **l** (little L) for a **1** (one), especially in dates. Anyone with half a brain knew that **l** (little L) was a **1** (one). No one questioned it.

On a stock market application on CompuServe I tried to edit a file. Unfortunately, Twinkle and I were not on the same wave length at all in this endeavor. Mike Pietruk (HP CompuServe Forum) donated extreme patience, hours of work, and sent day after day of EasyPlex messages to set me straight on this exacting operation-in-the-dark.

The Plus didn't understand at all what I was trying to do, hadn't the subtlety, wit or even tact to know and make allowances for the fact that I didn't accept the cruciality of the difference between a **1** (one) and an **l** (little L). Twinkle was, in short, being a B&W pain.

I've got to tell you this has been the source of the greatest disagreement Twinkle and I have had to date. It has almost ruined our budding friendship. Either Twinkle has got to switch from B&W to grey or I have to change. I suspect it's going to be me.

Foundations

By Hal Goldstein
[The Foundations column contains material that we feel every Portable user should know. We assume the reader is a novice computer user; however, readers novice through expert should find at least some of the material covered here useful. If you would like to write articles for this column or want us cover some topic in this space, please contact us.]

Using Subdirectories

110 P+ PV

WHY USE THEM?

Subdirectories are an important tool for organizing your files on disks. Like most computer-related subjects, the idea of subdirectories is not difficult to learn and use once you master a little vocabulary and a few concepts.

HP110, Portable Plus, and Portable Vectra users all have good reasons to learn about subdirectories.

Subdirectories enable portable users to organize and systematically store files on disks. This need for organization is critical for Portable Vectra users who may have hundreds of files on their 1.44 Megabyte (1440K) floppy disks and 20 Megabyte hard disks. HP110 and Portable Plus users who back up files to 710K floppy disks will also find a disk organization scheme invaluable. Portable Plus users whose electronic disks can now store several Megabytes must also be careful to have an orderly structure to their file creation and manipulation activities. Users of the HP110 as well as those who have a Portable Plus with a smaller electronic disk will find value in creating a subdirectory structure.

Those HP110 and Portable Plus users not convinced of the value of good electronic disk organization may suddenly find subdirectories a necessity when they try to exceed the HP110/Portable Plus' main (root) directory limit of 64 files. When an HP110 or Portable Plus user attempts to exceed the limit, an error message such as, "Unable to write file," or "File creation error" appears. Saving a new (Lotus or MemoMaker) file becomes an impossibility.

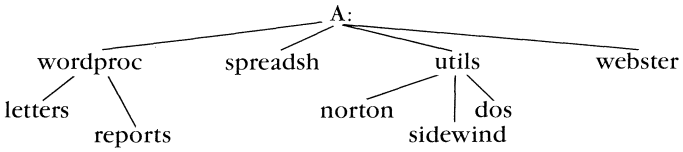
WHAT ARE SUBDIRECTORIES?

A directory contains zero or more files and subdirectories. The initial or main directory is called the root directory. If you do not inform the system otherwise, all files created in your word processor, spreadsheet, or other application will be saved in this root or main directory.

Problems quickly arise when your root directory gets cluttered with all sorts of files. Your word processing memos, spreadsheets, data communications files, and data bases all get mixed together. Further, if you are running applications (programs) from that same disk, the files connected with running the program also get mixed up with each other. So, for example, Portable Plus users might find the WordPerfect program files, the files (letters, reports, etc.) created within WordPerfect, Lotus worksheets, and several Norton Utilities all mixed together in the root directory of the electronic disk.

Any directory may contain any number of subdirectories. A subdirectory is a directory. Subdirectories may contain other subdirectories along with files.

A good way to understand subdirectories is to view a subdirectory structure graphically as an upside-down "tree" diagram with the root directory on the top.



This diagram does not show the files that any of the directories may contain. Note, however, that your subdirectory disk organization schemes are cleanest when you put all the files in the outermost branches (as opposed to storing files in a directory which also holds subdirectories).

In this structure, subdirectory **spreadsh** will hold all of our Lotus spreadsheet files. Subdirectory **wordproc** has two subdirectories. **letters** will hold all memos and letters. **reports** will hold all reports and other documentation.

These first two subdirectory structures contain **data**, that is, files created by a word processor and a spreadsheet program. The other two main subdirectories, **utils** and **webster**, contain applications, that is, program files. All program files (dictionaries, configuration files, the actual program itself) pertaining to **webster** will be found in subdirectory **webster**. **utils** contains three subdirectories. **norton** contains the Norton Utility programs. **sidewind** contains the SideWinder files necessary for sideways printing. **dos** contains DOS programs or other tools facilitating operating system activities.

CREATING A SUBDIRECTORY STRUCTURE

Hewlett Packard Portable users can use PAM's **File Manager** to create and remove subdirectories. (Portable Vectra users should select **File Manager** as one of the PAM applications. HP110 and Portable Plus users, press **f2**.) If you press function keys **f2**, **f3**, or **f4** within File Manager, you can delete, create, or choose (move to) a directory. Just follow the instructions when you press the key.

If you prefer, you may create, delete, or change the current directory from DOS. Once you learn the commands it is quicker and more convenient to work from DOS, rather than PAM. Besides, if you ever work on a non-HP MS-DOS machine such as an IBM PC, you will probably be forced to work in DOS directly. From DOS, let's create the subdirectory structure as it is shown in the diagram above. First enter DOS from PAM. At the **[A:\]** prompt type: **md wordproc**. **md** stands for "Make Directory." Now do the same and from DOS type **md spreadsh**, **md utils**, and **md webster**. Press **Return** after each **md** command. Note that subdirectory names follow the same rules as file names: you are allowed up to 8 characters in a name containing no spaces. If you choose, you can add a period followed by up to 3 more characters.

Now let's create the other subdirectories. From DOS issue a **cd wordproc** command. **cd** here stands for "Change Directory." We are now in subdirectory **wordproc**. On the HP110 and Plus (and on the Portable Vectra, if the prompt is set up properly), the DOS prompt will change and will

indicate that you are in the subdirectory. The prompt will be **[A:\wordproc]:**, meaning that you are in the **wordproc** subdirectory. Note that the **[A:\]** prompt indicated that you were in the root directory. The backslash \ symbol represents the root directory.

Now that we are in subdirectory **wordproc**, we can make its two subdirectories by issuing the **md letters** and **md reports** from DOS.

Let us complete the structure by going to subdirectory **utils**. We can do so directly by typing **cd \utils**. Note that the \ is important, since it tells DOS that subdirectory **utils** is a branch from the root directory. Typing **cd utils** without the \ would have resulted in an error message since directory **wordproc** does not have a subdirectory **utils**. (To jump back to the top of the directory tree to the root directory type **cd**.)

Now that we are in subdirectory **\utils** we can create its three subdirectories. We type **md norton**, **md dos**, and **md sidewind**. (If we wanted to create those same subdirectories from the root directory or from anywhere else, we would have had to type: **md \utils\norton**, **md \utils\dos**, and **md \utils\sidewind**.

Suppose we decided we really did not want subdirectory **sidewind**. From the **utils** subdirectory, we would type the command **rd sidewind**. **rd** stands for "Remove Directory."

ACCESSING FILES IN SUBDIRECTORIES

Every file on a disk has a file name which consists of a disk drive, a path, the file name, and the extension. If you do not give the file a disk drive or path, DOS assumes that you are referring to a file in the current directory on the current disk. Therefore, if you save a MemoMaker file and give it the name: **kramer.let**, DOS will automatically save it to the current directory. Normally, that is the root directory on the A drive for HP110 and Portable Plus users. The full correct name of that file is actually: **a:\kramer.let**. The \ stands for the root directory.

If you want to save **kramer.let** to the **letters** subdirectory in our subdirectory structure, you would save it to: **a:\wordproc\letters\kramer.let**. The \ separates each subdirectory level.

CONCLUSION

If this is the first time you have read about subdirectories, you probably will have a little more studying to do. Read this over a couple of times. Try the example. Read over the subdirectory discussion in your DOS manual, or go to the book store and pick up one of the many DOS tutorials in the computer section. With a little effort you should be able to master the subject. Once understood, you will find subdirectories an invaluable method for organizing your work on the computer.

How To Use The Portables' Built-In HPLink Program

You can use the **hplink** program (as built into the HP110 and Portable Plus) to easily transfer data from one Portable to another, or from an IBM PC compatible to a Portable. To run the program on a Portable, simply type **hplink** from PAM or DOS. The program turns your Portable into a disk drive that acts very much like the external HP9114 disk drive.

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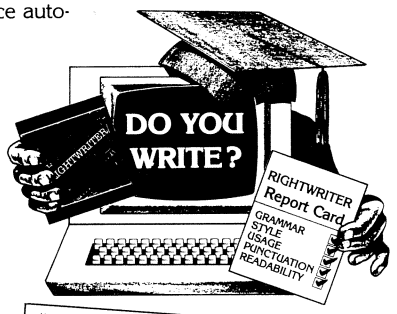
RightWriter is a new tool to help you produce lean, powerful BUSINESS WRITING. RightWriter uses advanced artificial intelligence technology to flag errors in GRAMMAR, STYLE, USAGE, and PUNCTUATION. RightWriter is the first office automation package aimed at producing better writing, not more writing.



- **Messages are Inserted** directly into text to point out possible errors and problem areas.
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- **Works with Leading Word Processors** — including MemoMaker, The Editor, MS Word, WordPerfect, MultiMate, and WordStar.
- **Readability Index** — measures the reading grade level of the document using the D.O.D. standard Flesch-Kincaid formula.
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Inside Word Management

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RightWriter $95.00
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RightWords Dictionary Extension for RightWriter.....$29.95

RECOMMENDED FOR:	
HP110 Portable	●
Portable Plus	●
Portable Vectra	●
HP150	●
IBM PC and compat.	●

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PV users: Please subtract $10 from subscriber price (since we don't have to send you additional customized disks or extra documentation). Be sure to indicate "PORTABLE VECTRA" on your order.

LINKING TWO PORTABLES

For example, connect two Portables together with two (thin, black) HP-IL cables. Type **hplink** on one Portable (the "slave"). The other Portable (the "master") sees the electronic A drive of the slave as its own C drive. The master can now run programs or transfer files to or from the slave's A drive (the master's new C drive) as easily as it runs programs or transfers files to and from the HP9114 disk drive.

LINKING AN IBM PC COMPATIBLE TO A PORTABLE

Normally, the IBM PC compatible knows nothing about HP Portables. Therefore, you must install (or have your dealer install) hardware called an HP-IL interface card, part 82973A, into the IBM PC compatible. You must also install software called a "**device driver**" that "educates" your PC about a device—in this case, the HP Portable. The instructions and software that come with the HP-IL interface card make this **device driver** installation relatively easy. Just be sure the **config.sys** file on the PC includes the line **device=hpil.sys**. Also, the file **hpil.sys** must reside on the PC. Once you have installed the hardware and software,

you are ready to use The Portable as a "slave" to the PC. Connect the Portable and the PC using two HP-IL cable wires. Then run **hplink** on the Portable. The PC compatible becomes the master, and the Portable the slave. If the PC has a hard disk and **hplink** is run on the Portable, the electronic disk of the Portable becomes the PC's D drive. You can easily transfer files back and forth using the DOS **copy** command from the PC. If you prefer, you can substitute the HP9114 disk drive for The Portable. The disk drive, when connected to the PC using HP-IL wires, becomes an additional PC disk drive. No other hardware or software manipulation is required to use the HP9114 directly from the PC.

Sketch

By Rick Finnell
[One of the nice things about buying and selling used HP Portables is that we at Personalized Software usually have HP110's and Portable Pluses for our staff to use. Rick Finnell of our shipping department is responsible for making sure your orders are packaged and shipped correctly. Rick also has a background in graphic art, and he decided that SKETCH would be the first program he would learn on the Portable. The diagrams printed in this article (reproduced exactly from ThinkJet output) illustrate the success of Ricks's first endeavor.

SKETCH is a freeform graphics product from Paul Grimmer's Southern Software that retails for $80. Subscribers can obtain it from Personalized Software for $75.95.—Hal]

110 P+

What Is SKETCH?

SKETCH is a surprisingly sophisticated graphics program that comes in a rather humble-looking package. With SKETCH you can draw free-form shapes. With a single keystroke you can draw circles, boxes and even arches. SKETCH will also (again, with a single keystroke), "fill" your shapes with solid black or solid white. Unfortunately, in SKETCH's binary world of black and white, there are no "half-tones."

Half-Tones

What is a half-tone? For our purposes, a half-tone is simply a tone or shade halfway between black and white, or, in other words, grey.

In the following article I would like to show you how to create and use a half-tone file. With SKETCH commands we'll first create a "transparent sheet" covered with evenly spaced dots. We'll then overlay this sheet on a working (master) drawing. Then it will be a simple matter to "cut out" any area we want to be grey.

Why grey? In this discussion, we'll see that humble grey does two spectacular things. First it helps to enhance and solidify a 3-D shape, and second it will add an eye-pleasing bit of texture.

So, friends, open up your trusty portables and hook up your printers, and we'll outline the process of creating and using a half-tone file.

Making Half-Tones In SKETCH

I'll assume that you have some familiarity with SKETCH's basic tools and rules. I have written step-by-step instructions for creating and using half-tones along with half-tone styles, which you can obtain from Personalized Software for the cost of the disk (details below). What I'll do here is outline the steps in SKETCH which you need to follow to create and use half-tones.

Creating A "Transparent" Half-Tone Overlay

I originally tried to create half-tones by typing lines of evenly-spaced dots. This was very tedious, and I soon found a more efficient approach. To create a half-tone overlay I started with an empty screen. Then, using SKETCH commands that generate lines, I filled the sheet with a dense grid of horizontal and vertical lines. The denser the grid, the darker the half-tone.

Once I created several greys (using different dot spacing between lines), I realized that I could use several SKETCH features to instantly create more greys. For example, pressing the space bar makes all the black dots blank and converts the blank spaces into black dots. In the diagram below you can see Greys 1, 2 and 6 and the inverse of each.

Also, you can create more greys using the screen height and width multiplier function. For example, the dot length of Grey 5's height and width is multiplied by 2 to create Grey 4. Grey 4 seems like more of a checkerboard pattern with its "checkers" four dots (2x2) as opposed to the 1-dot pattern of Grey 5.

Another way of creating greys from existing greys is to combine patterns, superimposing one on another. Grey 1 plus Grey 4 yielded Grey 6.

I have saved each individual grey in the diagram below to a SKETCH "partial screen file." That way any grey of my choosing can easily be overlaid over another SKETCH. You need to define only a memory point and the pen position to define the area of the drawing we want to save (the mask).

Please note that the diagram below was printed using normal rather than high density print since the results looked better.

Placing The Overlay On A Working Drawing

We are now ready to add half-tones to our working SKETCH drawing. In the diagram below, Step 1 represents a cube drawing created with simple SKETCH line drawing and erasing functions. A keystroke executing the SKETCH fill command creates the black side illustrated in Step 2.

In Step 3 we use the SKETCH file manager to overlay (rather than overwrite) our half tone. It is the current pen (cursor) position that determines where the retrieved partial screen will be displayed.

In Step 4 we erase the unwanted grey area.

Now available on **ROM Backup** for the Portable Plus for an additional $95 (See "Software on ROM" ad in this issue.)

AMAZING!!
THE ANSWER

At last! Graphics

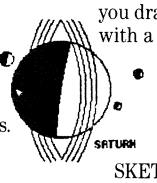
for the Portable and Portable Plus

by Hal Goldstein
President, Personalized Software

Paul Grimmer has done it again.

He's the author of two of our best-selling programs: SideWinder (the sideways printng program for the HP Portables) and LINK (the program that lets you transfer data back and forth between HP hand-helds and Portables, printers, and other peripherals).

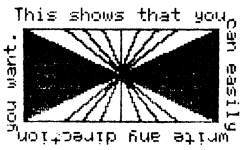
Now he's developed SKETCH, a fabulous graphics program designed for both the HP110 Portable and Portable Plus.



CURSOR BECOMES DRAWING PEN

Using SKETCH couldn't be simpler:

Put SKETCH in *draw* mode, and your cursor becomes a "pen". The pen can either be "up" or "down." When it is "down," it draws wherever you move it. When it is up, you can move it around the screen without affecting the drawing. (You set the cursor up or down simply by pressing "U" or "D." You also can set the cursor speed, and can toggle between a faster speed and a slower speed in an instant.)



The pen also has an "eraser": Just press "E," and when the cursor is down it will erase whatever it encounters.

DOZENS OF HANDY FEATURES

But that's just the beginning. SKETCH also lets you draw diagonals, boxes, circles, and arcs—each with a single key.

(If you have a mouse, you gain even more convenience: Move the mouse in any way you want, and the cursor follows instantly. See ad on the Logitech Mouse for the Portable Plus in this issue.)

SKETCH also lets you fill closed shapes with light or dark solid—or even invert the entire screen (light areas become dark and vice-versa)—with a single keystroke.

With SKETCH, you can create text in any of 5 different character sets and place the text anywhere in your drawing—including sideways or even upside-down.

SKETCH lets you save part or all of any drawing for future use, or you can print directly from the screen onto your ThinkJet or QuietJet pages.

RECOMMENDED FOR:	
HP110 Portable	●
Portable Plus	●
Portable Vectra	
HP150	
IBM PC and compat.	
Available on ROM Backup for the Portable Plus	

You can also import graphics screens into SKETCH from Lotus or any other graphics program.

SKETCH doesn't limit the size of your dreawing area to the size of your screen. The total drawing area is 70% bigger than the screen on the Portable Plus, and more than 150% bigger than the screen on the Portable. As you move the cursor past your screen's borders, SKETCH automatically shifts you into the areas that were off-screen.

Now you might be expecting that all these great features come at a high price in terms of memory space. But they don't. The entire program takes up only 44K! (As I said, Paul Grimmer of Southern Software has done it again.)

USING IS BELIEVING

No matter how fired up you might get by reading about SKETCH or looking at the few samples we've shown of what it can do, there is no substitute for actually getting your hands on this wonderful program and trying it out for yourself.

Remember, with our money-back guarantee, if you are not completely satisfied with SKETCH within 60 days, you can return it for a full refund. Why not order a copy today?

SKETCH graphics program . . . . . $80.
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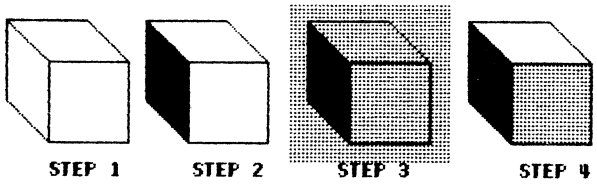


Defining The Half-Tone Area

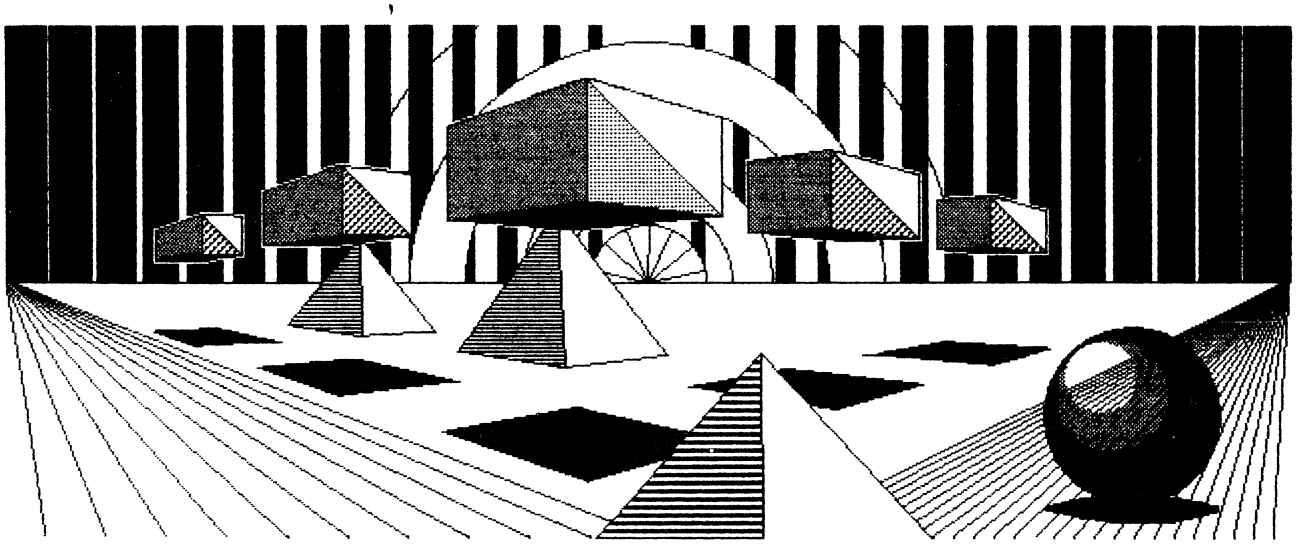
Once we overlay a partial screen half-tone file on an existing file, we are going to have unwanted grey. Step 3 above gives an example. To delete the unwanted area we use one or more of the erase functions to erase dots, lines, or areas.

Conclusion

You'll quickly discover, as I did, that the SKETCH program is easier to operate than to explain.

If you'd like to obtain a set of more detailed instructions for creating half-tones, and a library of 8 different half-tones ranging from lighter than our example to nearly black (this will save you hours of tedious labor) send $9.50 (for the cost of the disk, shipping, and handling) to Personalized Software. Request the "SKETCH half-tone disk." We'll include all the diagrams in this article. You will be able to access this library from the disk or your HP110 or Portable Plus Edisc.

To illustrate the potential of SKETCH, I made use of half-tones to create the following graphic, and printed it with the ThinkJet.



DOS

Shortcuts In MS-DOS

110 P+ PV

by Bill Hassle

TIPS ON SUBDIRECTORY AND DIR COMMANDS

Many portable users like to work from MS-DOS rather than PAM because it is faster. Here are a few tips on the **cd** and **dir** commands:

From within a subdirectory, **cd** (or **chdir**) permits the user to specify the next higher directory by using 2 periods (..). For instance, with the directory set to **\A\B\C** the following can be done:

To back up one level, just type: **cd ..** (brings you to **\A\B**) and to back up two levels, you can type: **cd ..\..** (brings you to **\A**) (In both cases, be sure to leave a space after **cd**). Some other idiosyncrasies: **cd..** (no space after **cd**) will not back up, but **cd..\..** will back up just one level. To jump back to the root directory, just type **cd** (space after **cd** is optional).

dir also has some abbreviations:

The two "masking" characters are **?** and *, where **?** means any one character will match in that position, while * is an indefinite match (matches any number of characters—zero or more).

For example, to find all one-character file names, use **dir ?**, and use **dir ??** to find all one- and two-character file names.

You can also imply * by leaving it out of a file mask as in **dir .cnf** (space after **dir**), which is the same as **dir *.cnf**. To see all files with no extension, just use the period (**dir .** with a space after **dir**). Note that **dir.** (no space after **dir**) is the same as **dir** with no mask at all.

The rules for **dir** abbreviations are unique to **dir** and do not work the same way for **del** or other commands, so be careful! I avoid using **del** with masks unless I am really sure of the names that will disappear.

ABOUT PRINT SPOOLING

Did you know you can spool print files on the portable? Who cares? What's a spooler? Well, here's the interesting story of spooling. The term spooling dates back to the early days of computing when programmers carried slide rules and boxes of cards (don't ask what's a slide rule). In the old days, printers were "state of the art" if they rattled out 500 to 900 lines per minute, yet even then computers could generally compute and prepare the printer data much faster. What was needed was a way to run the computer at full speed and run the printer off-line. After all, most computers 30 years ago ran in batches—one program at a time.

Some computer centers had a dedicated computer-printer combination that used magtapes from the faster batch machines. So the printer output was "spooled" to a reel of tape and shuffled off to the printer center.

SPOOLING ON THE PORTABLE

Can the portable spool printer files? Yes, and it accomplishes this by doing two things at the same time—something that many big mainframes couldn't do in the early days of computing. And talk about easy! Just issue the **print** command from MS-DOS. (The **print** command does not work from PAM.)

print works on all the portables. The syntax for the **print** command is:

print [filename] [more filenames up to 10 total]

If you type **print** and nothing else, the spooler will give you a status reading (what's in the queue, and what's currently being printed). File names can contain masking characters, just like the **dir** command.

For instance, say you want to print all files ending with **.hlp**. You type:

print *.hlp

and all the **.hlp** files will be printed. Which printer, you ask? Well, the first time **print** runs, it asks the name of the **prn** device. The default is **prn**, but you can change it to **com1**, the serial printer, or any other MS-DOS device. **prn** is the standard printer that you configure in the System Config menu in PAM.

Once **print** starts, you will see the MS-DOS prompt again. Now you can continue doing other things while **print** continues to print the files—tricky! To see this dual activity, type in **dir** and notice that printing continues while MS-DOS displays a file directory. You may also run other programs such as MemoMaker or Reflection; however, there will tend to be small pauses while you run the program, as the **print** program grabs control momentarily. (See also the column Through the Looking Glass by Ed Keefe, in *The Portable Paper* Vol. 1, No. 1.)

DISKCOPY

The **diskcopy** program, which is built into the Portables, will copy one disk to another. However, because it "image-copies," i.e., copies tracks rather than individual files, it cannot copy the Edisc (drive A:) to an external disk. This "track copy" copies hidden files and file allocation tables directly.

diskcopy uses all available RAM memory (not including the Edisc) to read as many tracks as possible into memory. Then, all the stored tracks are written to the destination disk. This means it is possible to duplicate a disk with only one disk drive. To copy a disk with only one drive, type the following: **diskcopy c: c:**

The program will prompt you for the source and target (destination) disks several times, depending upon the amount of memory available to the **diskcopy** program. If two disk drives are available, type: **diskcopy c: d:**

You must copy the disks in the same format: double-sided to double-sided (or single to single). Since the copy function is not sensitive to the contents of the disks, an empty disk requires the same amount of time to copy as a full disk.

Creating Personalized Help Files

110 P+ PV

by Neil Henderson

I have been an HP hardware repair technician for the past seven years and bought the Portable Plus to use as a hobby. I originally intended to use the Plus to program in Pascal. I took BASIC and Pascal in school, but my software skills have long ago vanished. I have yet to do any programming, even though I have both BASIC and Turbo Pascal, but what I am doing may be of interest.

I am using the Plus essentially as a word processor. I

T/Master—it may be the only program you'll ever need.

And it may be the most "comfortable" program you've ever used!

It may sound strange to call a computer program "comfortable", but that's the best way we've found to describe T/Master. And the other part is true also: T/Master may be the only program you'll ever need.

That's because T/Master has within it virtually every business application you can think of, including word processor, spelling checker, file manager, spreadsheet, database manager, numerical scratchpad, graph making, data communications, desktop publishing, and even more.

There are, of course, other "integrated" programs on the market that combine a number of applications in one. T/Master, however, is the only integrated program that runs on an HP Portable. In terms of capabilities, T/Master also happens to be one of the best. But that isn't what makes it so special.

You see, T/Master isn't just a very good program. It is an entirely *unique* program. It's one you simply must get your hands on before you can appreciate its incredible richness and elegance—and the sheer thoughtfulness that went into its creation.

THE HEART OF THE SYSTEM

As with most integrated programs, T/Master lets you share data between applications—for example, you can insert a spreadsheet into a report you're typing, or can take information from a database and move it into a spreadsheet—all without leaving the program.

However, with most other integrated programs, you have to exit the module you're in (e.g., word processor), load another module (e.g., spreadsheet), work in the second module, then "import" the result back into the first module. In addition, each module presents you with different commands, a different environment, and often a different "feel".

Not so with T/Master.

T/Master doesn't have modules in the usual sense. Instead, *almost everything is done using the word processor*; it's the heart of the system. T/Master's different functions (spreadsheet, database, etc.) are, in effect, *aspects* of the word processor that have special powers. Instead of leaving the word processor to create a spreadsheet that you then have to import, you simply create a spreadsheet (with all the computational power you need) right where you are.

Same for a database. Using virtually the same commands as for typing ordinary text, you can set up the structure of the database, enter data, sort, search, generate a report, and insert that report into your document.

And that's why T/Master is so *comfortable*. You always interact with it in the *same* mode, which is basically just to type. And what you type is ordinary text, or numbers, or simple English-like instructions. With T/Master, you're always on familiar territory.

SPECIAL FEATURES

Here are just a few of T/Master's most special features:

The **word processor** includes over 100 different functions. You activate these either from menus or by means of simple typed commands. On-line help is available at all times. *Highly suitable for desktop publishing*, T/Master's word processor handles text in columns, and lets you view reduced-size layouts of entire pages.

The **spreadsheet** is different from any other. With most spreadsheets, the columns are of a fixed, predetermined width, and the formulas for calculating each "cell" can only be viewed one cell at a time.

With T/Master, *you* specify the column widths and locations, and you type the formulas at the edges of the spreadsheet where you can see them at all times. (Very helpful in getting your spreadsheets to work!)

"No other application that I know of matches the power, thoroughness, and simple elegance of T/Master."

-David Hughes, Contributing Editor, The Portable Paper

Also, unlike other spreadsheets, you can imbed explanatory text anywhere you like—another benefit of T/Master's text-oriented approach to program integration.

T/Master's relational **database manager** competes with database-only products like dBase III. It's easy to select and combine data from two or more files, set up cross-tabulations from data on disk, and generate ad hoc reports.

T/Master's **data communications** capabilities include many you would expect to find in sophisticated stand-alone communications programs. Yet they're easy to use even if you've never done data communications before. (Note: our version of T/Master has its data communications portion customized to the Portable Plus.)

T/Master includes a **"DO" command** that lets you string other commands together and execute them sequentially (in "batch" mode) without intervention.

It is surprisingly simple, for example, to set up a DO command that will perform the following functions at the end of every month: Compile data from selected databases, construct a bar graph, insert the bar graph into a monthly report, and address copies of the report to a selected list of recipients.

When you realize that you can orchestrate all this by means of a single DO command *entirely automatically*, you begin to see the incredible productivity and power that T/Master offers. At only $295 for the entire package (or even less if you're a Portable Paper subscriber), T/Master is easily the best software value available.

HOW COME I HAVEN'T HEARD OF IT?

The T/Maker Company, developer of T/Master, chooses to remain small. They do not advertise, but prefer to let T/Master be known by word of mouth. This has worked well because of the high level of user satisfaction: According to a recent survey, 12 out of every 13 T/Master users "highly prefer" the program over other integrated packages they're familiar with.

T/Master is widely distributed in Europe and the Far East, where it is bundled with IBM PC compatible computer systems.

NOT FOR EVERYONE

T/Master is not for everyone. The T/Maker Company has told us that their most satisfied users are computer-oriented people for whom increased productivity is important (as opposed to casual computer users who might not appreciate the time and effort T/Master can save them, let alone its elegance).

If your computer is an important part of your work life, and if you're willing to learn a new—and much easier—way of functioning, then we urge you to try T/Master for yourself. If, within 60 days, you feel T/Master is not for you, simply return it for a full refund.

But remember, T/Master must be *experienced*. It has a unique way of doing things and a "feel" that's all its own. Order T/Master today. It may change the way you use your computer.

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(For Portable Plus, Portable Vectra, HP150).....$295.00
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PV users: Please subtract $10 from subscriber price (since we don't have to send you additional customized disks or extra documentation). Be sure to indicate "PORTABLE VECTRA" on your order.

PORTABLE PLUS USERS
You'll need 296K of main memory to run T/Master, plus 135K Edisc space for the core system, plus the following amounts for storage of the various parts: word processor: 53K; speller: 151K; database and spreadsheet: 135K; data communications: 35K; chart making: 52K; misc. utilities: 60K. You can, if you wish, run the various parts of T/Master off your external disk drive.

HP110 USERS
T/Maker, an earlier version of T/Master, runs on the HP110 Portable with an external disk drive. The program runs beautifully. T/Maker doesn't support data communications, but it does include word processor, spelling checker, database, spreadsheet, scratchpad, and simple bar charts. It is easily the most comprehensive program available for the HP110.

RECOMMENDED FOR:	T/Master ↓	T/Maker ↓
HP110 Portable		●
Portable Plus	●	●
Portable Vectra	●	
HP150	●	
IBM PC and compat.	●	

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do test procedures at work, write letters, make labels for envelopes and disks, keep files on my income and programs for my 15C calculator, and more. The loan payment program from the Portable Pascal Program Disk from Personalized Software has been very useful and timely, because I am buying a house and the interest rates are changing. Games such as the Memory game (from the 1987 Subscribers' Disk) and TigerFox have been a source of amusement. I have spent the rest of my time on the Plus learning DOS and writing batch files. I have developed some intermediate skills at this, and want to share one batch file with the readers.

I have many batch file utilities and use many MS-DOS commands, Norton Utilities, and other programs such as **move**,**rendir**, **diskpack**, etc. It's become hard to keep track of them all! I spend a lot of time searching manuals and disks for user information. How nice it would be, I thought, if this information were on the computer! So I promptly went to work on **help.bat**.

help.bat gives a short summary of what a batch file does and how to use a command by typing **help** and the batch or command name. Here it is:

```
echo off ^[M
cd \utility
cls
if exist %1.doc type %1.doc
if not exist %1.doc type help.doc
cd \
```

echo off reduces the screen dialog. ^[in the optional **^[M** part of the command stands for the **escape** character and deletes the echo off message line from the screen.

(**^[M** is an example of how to use the escape sequence codes found in the Portable Plus Technical Reference Manual. These codes are recognized by the Portable Plus screen **con**sole driver when used with the **echo** command within a batch file. You can use these escape sequences to move the cursor, insert or delete lines to format the batch file's output screen, change fonts, create inverse video characters, and do graphics.)

utility is the subdirectory containing the document files used by **help**. **%1** is the replaceable parameter (command name) typed in with **help**. (Therefore, typing **help sdl** would type the file **sdl.doc**. **sdl.doc** contains a description of the DOS Tools **sdl** command for sorting directories.) Typing **help** from PAM or DOS puts the **help.doc** on the screen. Could this type of **help** utility be useful to others? Am I the only one dumb enough to need it, or are copyright laws keeping this type of software off the market? Of course much work would have to be done to "uncustomize" it for general application. References to my personal batch files have to be eliminated. However, **help** could be expanded to include all MS-DOS commands, Norton Utilities, and all the utilities offered by your company (including the DOS TOOLS disk).

110 P+ PV Some Notes On Configuring DOS And Setting The DOS Environment

By Gary Goodman

The HP Owner's Manual and the MS-DOS manual say next to nothing about configuring DOS and setting the DOS environment. I guess HP assumes that buyers of laptop computers are all busy, traveling executives without time to learn the more esoteric features of their computers. Here are some features of which you may not have previously been aware.

THE CONFIG.SYS FILE

The **config.sys** file allows you to specify certain parameters and names of device drivers which are activated when the computer is rebooted.

The most common parameters in this file are **buffers** and **files**. **buffers** specifies the number of buffers to use for disk I/O. **files** specifies the number of files which may be open at any one time. The default is 2 buffers and 8 files. These values are ridiculously small for a full-fledged PC (XT or AT) but are quite reasonable for the HP Portables.

You will find that lengthy batch files and long directory listings on an external disk will run significantly faster if you include the following line in a **config.sys** file:

buffers=4

The **buffers**=4 setting will reserve an additional 2k of memory for buffers; the **config.sys** file will use 512 bytes on the Edisc. This setting will not decrease the time it takes to copy, type a file, or load a program from an external disk on the HP Portables.

THE PAM.ENV FILE

The DOS environment is a small area of memory used by DOS to hold the values of user-resettable parameters. The **path**, **prompt**, and **set** commands set the values of these parameters. On most PC's, they are usually set in an **autoexec.bat** file, which is executed when the computer is booted. On the HP Portables, these variables are set in a file named **pam.env**. However, they may be reset interactively at any time while in DOS.

Here is an example of a **pam.env** file:

```
COMSPEC=B:\BIN\COMMAND.COM
PATH=B:\BIN;B:\;A:\;C:\
PROMPT=$e[s$e&a60x0Y$e&dB$t$e[6D  $d$e&d@$e[u$p$g
EDCONFIG=\
```

The first line is necessary and must be entered EXACTLY as shown.

The second line must have **PATH=B:\BIN;B:** as a minimum for the HP110; otherwise, you will not be able to run the built-in programs. The **path** shown above works well when the HP110 is connected to a disk drive. The only disadvantage is if you misspell a command when the C drive is not connected; then DOS looks for the command, following the path to the nonexistent C disk. You get the message:

Not ready error reading drive C Abort, Retry, Ignore?

Typing **a** (for abort) pulls you out. The third line is purely optional. The one shown is rather neat. **PROMPT=pg** is a good, basic prompt which shows the default drive and current subdirectory. There is only one major problem, which is really a problem with DOS itself. If you set the default drive to one which has no disk in it, DOS will not be able to read the name of the current directory. You will receive the **Not ready error reading drive C** message. The only recovery is to either put a disk in the drive or reboot the computer. Even with this problem, the "current subdirectory" prompt is so useful that many users accept the occasional inconvenience of having to re-insert the disk.

The fourth line shows the use of the **set** command. Some programs make use of the **set** variables. The instructions for installing these programs tell you to put a certain set command in the **autoexec.bat** file. On the HP Portables,

you would put these same commands in the **pam.env** file.

PAM has a serious shortcoming: if you use a **pam.env** file, PAM allows only enough environment space as is needed by this file. If you then try to create new **set** variables or add to the **path**, the inconvenient error message "Out of environment space" will appear. An easy way around this is to initially set a large **prompt** string such as the one in the **pam.env** example file above. Then, if you need to enlarge one of the other environment strings, you can first free up some space by typing **PROMPT=pg**.

See the article "Through the Looking Glass" in *The Portable Paper* Vol. 2, No. 4.

ENVIRONMENT VARIABLES

DOS saves the values of the environment settings in "system variables" (whose set name is enclosed in percent signs). The following batch file (named **display.bat**) example shows one way to use these variables:

```
echo off
echo
echo This is the path: %PATH%
echo This is the prompt: %PROMPT%
echo This is the set value of EDCONFIG: %EDCONFIG%
```

Here is a practical example of the use of environment variables. Suppose you have used the **pam.env** file shown above and want to temporarily add another directory to the path. You can use the following batch file (named **addpath.bat**) to add any directory to the path:

```
echo off
rem ADDPATH <path> adds a new path to the end of an existing path.
rem prompt=$p$g
path=%PATH%;%1
echo the path is now %PATH%
```

Note that these environment variables work only in batch files. You cannot use them in an interactive mode.

IN CONCLUSION

Most users of the HP Portables will not significantly improve their machines' performance by using a **config.sys** file to set the number of buffers. However, anyone who regularly uses lengthy batch files should consider it. The **pam.env** file is a real benefit to anyone who regularly uses DOS commands. You can have the path set automatically to find programs on the C disk. The **set** parameter is useful for running The Editor. Give it a try.

Through the Looking Glass

110 Batch Files That Really Count

P+ PV

by Ed Keefe

Many intermediate users of DOS have learned how to create batch programs which loop and repeat commands. Suppose you wanted to copy a text file to the printer several times. A simple batch file would do the trick:

```
:loop
copy myfilxe.doc prn
goto loop
```

The **:loop** statement is a label. When DOS executes this file it remembers where the **:loop** begins and cycles back to it when it reaches the **goto loop** statement.

Of course, this simple batch file would produce an endless loop. You would have to count the number of copies and stop the batch program when you had enough. To stop a running batch file, press the **Ctrl c** keys and then press the **y** key.

There are other problems with this method of printing multiple copies of a text file. For instance, if your text file is a short, ten-line memo, you will wind up with five or six copies of the memo on one page. To generate a form feed at the end of each copy, just insert the following command before the **goto loop** command:

```
echo ^l > prn
```

To get **^l** (Ctrl L) into the batch file, you could use Edlin and press **Ctrl vl**. This will produce the **^l** symbol after the word **echo**. The **> prn** part of the command will send **^l** to the printer, which will respond by producing a form feed (page eject). If you are using the command **copy con manycopy.bat** to enter the short batch file, then you can generate **^l** by simply pressing the **Ctrl** and **l** keys. (See Vol 1., No. 1, p. 6).

MAKING DOS DO THE COUNTING

If you know how many printed copies you need, you can get DOS to do the counting for you.

How?

Just add a **shift** command to your batch program and add some characters to the command line. The batch file might look like this: (You may enter this batch file with MemoMaker or The Editor or even the clumsy **copy con manycopy.bat** command. I will use the **~** character to represent a blank space in the batch file. Wherever you see a **~**, just press the space bar.)

```
rem manycopy.bat
echo off
cls
:loop
if %1/==/~ goto end
copy myfile.doc prn
shift
goto loop
:end
```

Before running the program be sure to edit the **manycopy.bat** file and replace **myfile.doc** with the name of your file.

To run the program, issue the command **manycopy~1~2~3~4** at the DOS prompt. The number of characters after **manycopy** should be equal to the number of copies that you wish to print. You can use any characters. Just put a space between each.

The **%1** in the **if %1/==/~ goto end** command is a variable. The first character (parameter) following the **manycopy** batch command replaces the **%1** each time

through the loop. Each time through the loop, the **shift** command will remove the right-most character until there are no more. The program will end when it runs out of command-line characters.

Now, for some finesse. Try the following batch file (below). It will do everything the above batch file does. However, this new file will display a count of the number of files printed. You would run it the same way as you would the batch file above.

For those of you who are using the Vectra CS, you will need to add the **ansi.sys** file to your operating system. Just make sure that the file called **ansi.sys** is on the disk with which you start your Vectra CS. Use your text editor and add the line **device=ansi.sys** to your **config.sys** file. Then restart the computer.

For those who are using the HP110, you will need to copy the **find.exe** file from your utility disk to the Edisc.

Here is the new batch file:

```
rem manycopy.bat
echo off
cls
:loop
if %1/==/~ goto end
copy myfile.doc prn~>>~count
find~/c~"copied"~<~count
echo {esc}[a{esc}[4c copies printed
shift
goto loop
:end
del count
```

In this new file, {esc} denotes the escape character **asc(27)**. If you use Edlin, just press and hold the **Ctrl** key while tapping the **v** and **[** keys. Be sure to release the **Ctrl** key before typing **[a** and **[4c**.

To get **manycopy** to print a file 3 times you would enter the command:

manycopy a b c

The printer will start and the machine will display:

```
1 copies printed
2 copies printed
3 copies printed
A:\>
```

This batch file sends the usual DOS message **file(s) copied** to a file called **count**. Then the **find** program counts the number of lines in **count** which contain the word "copied" and displays that number. If you want to run the batch file again, just press the F3 key. If you want to keep a running total of the number of copies printed, just delete the last line from the batch file.

Now suppose that you have two different files which you want to print. The second file must follow the first in the copy sequence and the two files must be printed four times. Here is a batch file that will get the job done:

```
REM MANYCOPY.BAT
echo off
cls
if %3/==/ goto end
SET first=%1
SET second=%2
shift
shift
:loop
if %1/==/ goto end
FOR %%f in (%first% + %second%) do copy %%f prn
    > nul
echo * >> count
find /c "*" < count
echo {ESC}[A{ESC}[4C copies printed
shift
goto loop
:end
set first=
set second=
del count
```

To run this batch file, you would enter this command at the DOS prompt:

manycopy file1~file2~a~b~c~d

This batch file uses the **set** command to place the names of the files in the environment space. The two shift commands remove the file names from the command line and move the "counter-characters" (a b c d) to the right.

Notice that this batch file sends a simple * to the count file. This keeps the counter file small. It also shows how to keep a count when a DOS command does not generate a message that can be counted.

At the end of this batch file we use the commands **set first=** and **set second=** to eliminate these variables from the environment space.

For those who are using the HP110 or Portable Plus, you may get the message "out of environment space." If this happens, try eliminating some of the variables, such as **prompt**, from your environment space.

To get really fancy and implement a **for-next**-type counter in DOS, we would have to write a program that would increment and test a counter (there is no such function in DOS). With such a capability we could tell the computer how many times we want to repeat a loop and let the computer figure out when to stop.

Here is such a batch file. And here is the catch: This batch file will work only on the Vectra CS (or other computer that can use MS-DOS 3.0 or greater). MS-DOS 2.1 limits the number of items in a **for %%i in ( ) do** statement to three.

```
echo off
cls
REM USAGE: INC n where n is less than or equal to
    10
REM screen out unacceptable "n"
for %%i in (1 2 3 4 5 6 7 8 9 10) do if %%i/==%1/ goto
    begin
goto end
:begin
REM initialize an environment variable
set cntr=0
rem enter the loop
:loop
rem perform the following command %2 %3 %4
rem test and increment the counter
%2 %3 %4
REM Where %2="copy", %3="myfile.doc",%4=
    "prn"
incr %cntr%
for %%f in (1 2 3 4 5 6 7 8 9 10) do if errorlevel==%%f
    set cntr=%%f
echo %cntr% loops done
REM The two above lines make up the test and
```

Shelp

Instant Access Pop-ups for the Portable Plus: Calculator • notepad • macros • and more

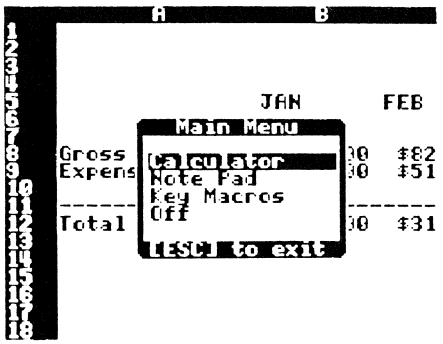
Now available on **ROM Backup** for the Portable Plus (See "Software on ROM" ad in this issue.)

"A great, easy-to-use productivity booster. If there's one program every Portable Plus owner should have, it's Shelp."—Hal Goldstein, Publisher, The Portable Paper

Recommended by Hewlett-Packard, and used by more than 1,000 of their employees.

It's a program called **Shelp** *(shell + help)*, and it runs on the Portable Plus from within any non-graphics program. Here's all you do:

Press [Ctrl] [Shift] [Extend char] and up pops the Shelp menu, right in the middle of your application (Lotus in this example):



The menu gives you 4 choices: Calculator, Notepad, Key Macros, and Off.

Choose **Calculator** and get a 4-function calculator that works just like a pocket calculator with memory. You can:

- save results in ten different storage registers and retrieve them again with two quick keystrokes
- "paste" results at the cursor location in whatever application you were using when you invoked Shelp.

Choose **Notepad** and a "scratch pad" pops up on your screen. Type whatever you want into it, exit to your application, and then recall the notepad whenever you want.

No more having to scribble notes on paper to remind you of phone numbers, things to do, or bright ideas!

Choose **Key Macros** and you can assign "strips" of up to 31 typewriter characters to any of the 26 letters in the alphabet. This saves you having to type the same phrase over and over again.

Example: If you type "United States" a lot, you could assign the entire phrase to the "U" key. Just move the cursor to "U:" in the Keyboard Macros menu and type "United States."

To recall "United States," simply press [Ctrl] [Extend char], then [U]. Presto—"United States" appears at the cursor location in your application!

Choose **Off** and your Portable Plus turns off without having to return to P.A.M., and without having to save your application file. When you turn your computer back on, you'll be in the same place in the same application, with no data lost.

All the capabilities of IBM-PC programs like Borland's SideKick and SuperKey? Certainly not, but Shelp's the only such program for the Portable Plus. It's a clean, easy-to-use, and highly useful helper you'll want at your fingertips always.

Shelp runs on the Portable Plus only. It works with Time-Manager, MemoMaker, Reflection 1, Lotus, and any other non-graphics program. (Shelp does not run with MS Word.)

Shelp was written by Randy Salo, the former HP engineer who authored MemoMaker on the original HP Portable.

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increment function.

```
REM not very elegant but it works—up to 10 loops.
if not errorlevel = = %1 goto loop
:end
set cntr =
```

To run this batch file, you would enter a command such as

do-loop 7 copy myfile.doc prn

The batch file will check to see if "7" is in the range between 1 and 10. Then, inside the loop, it performs the command **copy myfile.doc prn** (i.e., %2 %3 %4) seven times. It uses the **incr.exe** file to increment a counter in the environment space.

If you need more than 10 copies, just add more digits between the parentheses in the batch file.

The **incr.exe** program is very simple. It takes the value of the environment variable from the command line and increments it. The line **for %%f in...** puts the incremented value in the environment. The source code for the **incr.pas** program is as follows:

```
program increment_env_var;
var i,j : integer;
begin
    val(paramstr(1),i,j);
    if j < > 0 then halt(1);
    i := succ(i);
    halt(i); {HALT() will set DOS errorlevel to
        value in parens.}
end.
```

If you use Turbo Pascal version 3.01a to compile this program, you will get a file called **incr.com**. Turbo Pascal Version 4.0 produces **.exe** files which are much smaller than the corresponding **.com** files.

If you have read this article about doing loops in batch files, your brain is probably doing its own loop. If so press CTRL-BREAK and STOP.

You may obtain the batch files and a compiled version of the **incr.exe** file by sending a blank, formatted disk along with a self-addressed, stamped envelope or disk mailer (or $9.50) to Personalized Software.

110 P+ PV MuMath And MuSimp

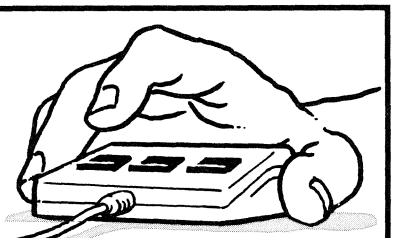
Within limitations this package works on the HP110. It should work fine on the Portable Plus and Portable Vectra.

What does it do? The MuMath portion of the program does two things that are of interest to mathematicians and number theoreticians. It gives "extended range" and "extended precision" values of computations, e.g., all 158 digits for 100! (the factorial of 100). It also does symbolic math. That is, it will solve problems such as **what is the derivative of x^5—3x^3 + x ?**. The program answers **5x^4-9x^2+1**. The MuMath program also does symbolic math at the level of algebra, trigonometry, and elementary differential equations.

Since the program is menu-driven, there is a slight problem. The menus are designed for a 24-line screen, so they get scrambled on the HP110's 16-line display. The rest of the program works fine, however. The program should work "out of the box" on the Portable Plus.

The MuSimp portion of the program is a computer language that will let you write programs in the language of MuMath. It is fairly well documented, but some of the

Top-rated mouse adds convenience (and fun!) for Portable Plus users



Move a mouse around on your desk and the cursor moves around the screen. It's easier than cramping your fingers on the arrow keys—especially if you move the cursor around a lot (with Lotus, say, or with your word processor). For creating freeform graphics, a mouse is a must.*

The best mouse we know of is also one of the least expensive.

EDITOR'S CHOICE

It's the LOGITECH MOUSE (model C7 from Logitech, Inc.), and it runs beautifully on the Portable Plus when coupled with a PORTABLE MOUSE SOFTWARE program developed exclusively for us by Bill Saltzstein. The LOGITECH MOUSE was rated Editor's Choice by *PC Magazine* (January 27, 1987).

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The LOGITECH MOUSE offers high resolution, precision tracking, and a convenient 3-button design. (The Microsoft mouse, which sells for $100 more, only has two buttons.)

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Not sure you'll like using a mouse with your Portable? The only way to find out is to try one. Remember, you can order any product from us, use it for 60 days, and then return it for a full refund if you are not completely satisfied.

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Portable Plus Mouse Systems (Logitech Mouse, Portable Mouse Software, Cable) . . . . . $219.00. $179.95 for Portable Paper subscribers.

For pricing of individual components and Microsoft Mouse, see "Additional Products" opposite the order form in this issue.

A WORD ABOUT THE MICROSOFT MOUSE

The Microsoft mouse has only 2 buttons, but costs $100 more than the 3-button Logitech mouse. Nevertheless, the Microsoft mouse may be your best bet if you want the IBM PC-compatible graphics software it comes with.

If you already own a serial Microsoft mouse—or would like to buy one—there's no need to buy the Logitech Mouse as well; to use the Microsoft mouse with your Portable Plus, all you need is our Portable Mouse Software and a cable to connect the mouse to your Plus.

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RECOMMENDED FOR:			
HP110 Portable		Portable Vectra	•
Portable Plus	•	HP150	
IBM PC and compatibles			•

*See ad for Sketch, the graphics program for the Portable Plus, in this issue.

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examples are beyond my mathematical talents. (My diffEQ is 20 years old.) The program is no speed-demon. It runs about as fast as a comparable BASIC program that would get the same results. The program comes from MicroSoft and can be ordered from EduCALC, 27953 Cabot Road, Laguna Niguel, CA 92677 for $229.95, (714) 582-2637.

110 P+ PV Recent Findings Of A Turbo Shopper: PCVIEW

ON THE BOARDS

Lately, I have been haunting local computer bulletin boards looking for good public domain programs that will work on the HP Portables. In particular, I've been looking for programs written in Turbo Pascal. What got me started on this quest was the need for a particular kind of Turbo Pascal Program: a screen generator.

SCREEN GENERATORS

A screen generator program is a collection of routines that lets a programmer design elegant-looking programs.

Help screens and menus pop up on the computer screen to give an illusion of speed; multiple windows (overlapping boxes of information) create a professional appearance; attractive input screens make database management programs more appealing; and error messages which prevent the user from keying in alphabetic data when numeric input is required, (such as a phone number or social security number) instill a sense of user confidence.

My guess is that 80 percent of such professional-looking programs are created by programmers using someone else's screen generator program. Screen generators manage all the nitty-gritty work of displaying windows, menus, help screens, and input error trapping. Screen generators speed up the programming process and help create a good-looking product. If you're a programmer, you'll eventually have need of such a tool.

I recently did. I was in a hurry to get a prototype Pascal program ready for classroom use. I found myself spending 90 percent of my time designing the input and output screens rather than developing and refining the logic of the program. That's what got me started looking for a good screen generator program. I found several and tried them all.

I discovered a couple of things. First, screen generators are fine for prototyping, but they can take over your own program with their excessive code. Second, none of the commercial or public domain screen generators will work on the HP Portables. This is because screen generator programs all employ a technique of putting information directly in the screen's memory location in the computer. This works fine for a PC compatible computer; however, HP Portables use a different location in the computer for the screen's memory. If you try to use such a program on your HP Portable, you often wind up having to reset your computer. You may even have to reformat your electronic disk to get your computer to work again.

ENTER THE WIZ

Finally, I ran across an offer from Cliff Looyenga, The Wiz, for a program that would work on the HP Portables.

In a past issue of *The Portable Paper*, the Wiz mentioned that he had written a Turbo Pascal program called PCVIEW that would generate screens on both the HP Port-

ables and on PC compatible computers as well. I sent for the program and tried it out.

PCVIEW can be described as a FORMS SYSTEM rather than a screen generator. PCVIEW will let you create data input forms complete with error trapping and blinking and highlighted fields. And if you follow the guidelines in the user manual, you can use your finished program on either an HP Portable, an HP150, or an IBM PC compatible computer.

For instance, if you design an input form on your HP110, you can run your compiled program on any of these machines. In this regard PCVIEW exceeded my expectations. I thought I would have to recompile the program with IBM PC Turbo Pascal to make the program run on my computer at work. I didn't need to.

I also discovered that I could use PCVIEW to develop input screens on the IBM PC at work and have them run on my HP110. PCVIEW even addressed different screen sizes. A form developed on a full-sized screen will work on the 16-line display of the HP110. The bottom part of an input form will pop up on the HP110 only when it is needed.

The PCVIEW program is very easy to learn, especially for anyone familiar with Turbo Pascal. The PCVIEW user manual is well written and even contains a program that produces mailing labels.

Of course, like most forms systems, PCVIEW brings a lot of code into your own program. This can be a problem for owners of the HP110, since we like our 110 programs to be lean and mean and fit on our Edisc. Here, too, PCVIEW exceeded my expectations. The Wiz included a set of routines that minimize the necessary code for programs that will work only on the HP110. (Only an HP110 user would have thought of that nice touch.)

I was hoping that PCVIEW would supply some window management routines for the HP Portables. I also wished for some routines that would let me design sliding menus like those in Lotus 1-2-3. I was disappointed. PCVIEW supplies neither of these design tools.

However, The Wiz must be commended for his honesty in advertising: he promised a FORMS system, and that is exactly what he has produced. Turbo Pascal programmers would do well to latch on to the PCVIEW program. It's an enjoyable program to play with and provides a wealth of Pascal code to explore. The PCVIEW user manual presents a good example of how to write technically correct and readable instructions.

PCVIEW is one of those programs that you may only use a few times. However, when you need to use it, you'll be glad you had it.

PCVIEW is a substantial showpiece of Cliff Looyenga's expertise and is available for the bargain price of $24.95 plus $2 shipping and handling from *Advanced Solutions, PO Box 567, Veradale, WA 99037.*

Until next time, Happy Porting.

[Ed Keefe is an author, programmer, and computer science instructor. He is the president of the FastAid Company, 314 SW Logan, Ankeny, IA 50021. Ed's CompuServe ID is 73277,1064.]

GRIMMER'S *Portable Tales*

By Paul Grimmer

110 P+ PV

The Creation Of A Safe, Successful Plus Pop-Up

In this column we will cover a key element in designing a successful pop-up, knowing when it is "safe" to pop-up. The first step involves a conceptual design parameter which has become somewhat standard in the IBM PC world but has not yet appeared in any of the Portable pop-ups to date (including those I have written).

It is important that all interrupts are "chained," rather than totally taken over. The two positive effects of this are that: 1) all memory-resident programs have access to everything in the machine at all times (including when one or more TSR's are popped-up), and 2) all hardware interrupts are cleared before we pop-up. This allows further interrupts to occur normally. The method of clearing the hardware interrupt is to call the old interrupt first and then proceed as we need to do.

Now we come to the hard part. We really want to be able to access DOS during the time when we are popped-up, but DOS is supposedly "non-reentrant." One of the key components of our pop-up is a File Manager which will enable us to copy, rename, delete and move files and directories, and to view, print and edit files. We also want access to the time of day, the date, etc. If we have access to DOS, these can be done with normal Pascal and we won't have to resort to any machine language or assembly within the program.

It so happens that DOS is re-entrant, but the techniques to determine when this occurs are not documented. There are times when DOS is busy reading from the keyboard, writing to disk, etc., and we do not want to interrupt these processes to pop-up until they are finished. DOS maintains two status bytes that we can check (once we have deduced their location) before we pop up. These status bytes will indicate whether DOS is busy at that point. In addition, there is an undocumented function-call (28h). DOS uses this function-call to tell other TSR's that it is idle (such as at the normal DOS prompt) and that it can be safely interrupted and re-entered. Without this feature, a DOS utility such as **print.com** would not be able to function properly. At the DOS prompt, DOS sits in a loop that checks for a keypress. If a key has not been pressed, it then calls interrupt 28h before re-checking the keyboard. Normally this interrupt 28h does nothing, but we will intercept this interrupt and set a flag in our program when it is called to indicate that DOS is idle and can be interrupted.

If DOS is busy executing a function-call (the details of DOS function-calls are beyond the scope of this column but information can be found in the DOS Technical Reference Manual), we must be careful. Some of the function-calls can be interrupted but others cannot; we will cause a crash if we halt what is going on and later make another

DOS call. To account for this, we will also intercept all DOS calls, and set a flag that indicates that we cannot interrupt DOS and pop up until that particular call is finished. The logic is as follows for our DOS interrupt handler (note that all DOS calls will go through our handler first, since our interrupt handler is installed after DOS is installed):

Check the function-call.
Is it one that can be interrupted?
    Yes -> jump to the old DOS handler
    No -> set a flag to indicate DOS is not interruptable
        call the old DOS handler
        clear the "DOS busy flag"
        return to the caller

DOS 2.11 interrupt 21h has 88 function-calls, only 32 of which are interruptable.

Now that we have a method of determining when DOS is interruptable and can allow re-entry, how do we reconcile that with a keyboard interrupt which can occur at any point in time? What we really want to do is sense when our "hot key" has been pressed, make it look like it was not pressed (so it doesn't go to the underlying program that is running), and then wait until it is safe to pop-up. Since the keyboard interrupt can occur at any time, just checking DOS for when the keypress occurs is not enough. In fact, we will never pop up when the keypress is detected in our TSR.

What we will do is set a flag (i.e., set a variable in our program to a certain value that we can check later). We will then chain into the DOS idle interrupt (interrupt 28h, discussed above) and also the timer interrupt, which will allow us to access 18 times per second. In both the idle and timer interrupts, we will check to see if the "hot key" has been pressed. If it has, we will then check the state of DOS. If the hot key has been pressed and DOS is interruptable we will then begin to pop up. This sounds cumbersome and complex and you might think that all of this checking will slow down your program. In fact, the machine is much faster than you may realize. This code will positively not cause any noticeable slowdown in your other programs which run after the TSR is loaded.

The last thing we must check before popping up is to see if we are already popped up, in which case we will not pop up over ourselves. Provision for this would cause extreme complications in our program and provides no benefits, so we will prevent it from occurring. If we are not already popped up, we will set a flag in our program to indicate that we are now popped up (we will clear the flag when we pop back down).

Now that we have determined that our "hot key" has been pressed and that it is safe to pop up, we must first save our current machine state. This is so that when we return control to the underlying program (when we pop back down), the program that we popped up over is totally unaware that anything has been done since the last time it had control.

We must also restore access to our Turbo Pascal program so that we can use the built-in library (and our own), and so that we can get away from programming in assembly language.

Current State Of The Popup Program

I am pleased to report that all of the above requirements for a safe TSR have been implemented and the pop-up works. It doesn't do much that is useful yet, but it does pop up/down over every program we have tested it against, including graphics programs such as SKETCH and 1-2-3 graphics. The libraries that all of the applications will call for file functions, screen windowing, error handling, etc. are in place and functional. By the time you read this, development of the applications themselves will be well underway. The list of applications continues to grow. Here is its current status:

File Manager
Time Planner (possibly duplicate the Time Manager program)
PAM settings replacement (time, serial parameters, etc.)
Phonebook and dialer (possibly with communications support)
Notepad (as large as 40k file)
Off
Keyboard macros (any keys defined as other keys, including cursor and function keys)
Calculator (undecided whether algebraic or RPN)
Cut-and-paste clipboard (move data between pop-up and underlying program)
Printer control (set pitch, perf skip, Alt mode, etc.)
Outliner

FINAL DESIGN

My current thinking on the final design is to have this on a ROM in an overlay fashion. When you use an overlay design, not all of the program is in memory at one time. A certain amount is always resident, but the majority of applications are swapped in and out of the same memory locations, as needed. In this fashion, the amount of RAM used by the pop-up is held to a minimum.

This is one area where the Edisc is extremely useful. On a "typical" IBM compatible PC with floppies only and/or a slow hard disk, the use of overlays is of questionable worth; it takes a relatively long time for the desired section of program code to load. As you have undoubtedly noticed, loading from either the A: or B: drives on the Portables is not instantaneous, but close.

Another goal of the program is to make the overlay system sufficiently flexible to allow applications to be added later. In general, the main disadvantage of using ROM's or EPROM's is that a change or addition to the program requires either a new chip or a reprogrammed EPROM. I will keep you advised on the success of this.

I have made a non-resident version of the pop-up which uses the same library of routines that enables us to develop applications in a non-resident mode. This will speed development of individual applications, since the tremendous complications of the pop-up portion can be avoided until the code is de-bugged (I am not really sure that any large program is really ever totally de-bugged . . .)

ANY SUGGESTIONS FOR A NAME?

We are still in search of a name for the program. The two "best" to date are "Porta-Poppy" and "HPop." I will give a free copy of the program to the person whose idea we ultimately use. If you have a suggestion, leave me a note on CompuServe or mail it to me.

In the next article we will cover programming use of the screen and keyboard from various levels of complexity including DOS, BIOS, and hardware control. Following

that, the program will be ready to test. We will discuss how a small company such as ours determines a marketing strategy for a product like our TSR. We'll consider prices, advertising, etc. as we get closer to bringing our product to market.

Without a doubt, this is the most complex programming task I have undertaken for the Portables. I am pleased with the progress and I hope you will be pleasantly surprised at how much productivity this instant-access will give you. Watch out SHELP, here we come!

[Paul Grimmer, president of Southern Software, writes commercial and public domain software for the HP110 and Portable Plus. His credits include SideWinder *for sideways printing of spreadsheets to the ThinkJet printer;* Sketch *for free-form graphics on the Portables and ThinkJet,* HPrint *for fully exploiting the text, font, and graphics capabilities of the ThinkJet and QuietJet printers; and* Link, *which enables the transfer of data between all HP-IL devices. "On the side" he works as an engineer for Conoco.*

You can write Paul at 12501 Clippership Dr., Anchorage, AK 99515 or send E-mail on CompuServe to: 71370,1303.]

by The Wizard, Cliff Looyenga

WordPerfect 5.0

P+ PV

Over the past couple of months I've had the opportunity to test a pre-release version of WordPerfect 5.0. In this column I'd like to tell you a little about WordPerfect and my experiences in attempting to get it to run on the Portable Plus and the HP150.

WordPerfect is made by the WordPerfect Corporation in Orem, Utah. As of WordPerfect release 4.2 they held approximately 30% of the world's word processing market; they are the market leaders. Now they have released version 5.0 which has significant enhancements over release 4.2. WordPerfect 5.0 is a full-featured word processor, and more. Some of the features of WordPerfect 5.0:

• Integrated text and graphics:

WordPerfect 5.0 can integrate graphics from most graphics programs. Limited graphics editing (scaling, moving, rotating, and inverting) is also possible.

• Fonts/Printing:

WordPerfect 5.0 uses inches, centimeters, or points for setting margins, tabs, etc. Fonts may be freely mixed and changed without affecting margins, tabs, or column definitions. It supports cartridges, down-loadable fonts, and a large number of printers.

• Preview:

WordPerfect's preview feature allows display of an entire page showing text (including fonts), and graphics. It also includes an option which shows facing pages at the same time, and can "zoom" in (magnified up to 200%) to get a close look.

• Columns:

WordPerfect 5.0 supports up to 24 side-by-side columns.

• Speller/Thesaurus: Contains 115,000 words.

Other features include: • Footnotes/Endnotes, • Headers/Footers, • Dictionary-based hyphenation, • Index generation, • Table of contents and table of authorities generation, • Kerning, • Macros, • Math calculations and math character support, • Mail-merge functions, • Sorting, • Outliner, • Styles, • Timed backup, • Widow/Orphan protection, • Line draw, and adjustable grey-shaded boxes.

I have concluded that with this version of WordPerfect, I can pretty much throw away my desktop publisher. I can now create newsletters that had been previously created in desktop publishing in less time using WordPerfect 5.0. It compares well to other word processors, and if you want to integrate graphics and text, WordPerfect 5.0 has no competition.

In my opinion, WordPerfect 5.0 is the best the industry has to offer, but it isn't perfect either. It employs all levels of function keys (shift, alt, and control) and this can cause headaches if you use any memory-resident programs. Some of the features require more keystrokes to activate than those of some other word processors, although macros can help here. The integration of text and graphics isn't supported on the ThinkJet. My biggest complaint is that when I'm using a smaller font, a line becomes longer than my screen is wide and therefore forces WordPerfect to scroll horizontally. This works fine except that I cannot look at my screen and read what I have written so far.

WordPerfect 5.0 requires 384k of memory to run, and occupies a minimum of 600k disk space. Actually, since you can't display graphics on the Portable Plus and the HP150 you can get away with less memory (about 256k). This disk space is basically taken up by two files: the **.exe** file and another file which I assume is an overlay file. This does not include the thesaurus or spelling dictionaries (the thesaurus uses 362k and the speller 330k). If you want everything, it takes up about 4.0 megabytes. If WordPerfect 5.0 can't find the files it needs it will ask you what drive contains the files. This (for example) would allow you to insert a disk when you need to use the speller.

I was able to get WordPerfect 5.0 running on an HP150 by using the PC emulator that's in the public domain. For some users this could extend the life of the HP150, for almost all of WordPerfect 5.0 runs fine on it. Here are some of my observations concerning using WordPerfect on the HP150.

• You cannot use the DOS commands feature of WordPerfect. This feature brings you into DOS. When you are done you type **exit** to return to WordPerfect. However, when you type **exit** on the HP150 the screen goes crazy and you're pretty much hung.

• When you start up WordPerfect you must use the **/NC** option. This option tells WordPerfect not to do some hardware-specific things with the keyboard.

• Highlighting is reversed. Anything that is supposed to be bright is dim on the HP150.

• You cannot use the Preview feature. This feature uses graphics mode on the IBM PC and this is not compatible with the HP150. WordPerfect knows this so it won't even let you if you try.

• When in reveal codes, the cursor is very difficult to find and follow (due to highlighting differences).

• When editing graphics, the graph is not shown—just little O's.

Up to this point my efforts in getting WordPerfect 5.0 to run on a Portable Plus have been unsuccessful. Since version 4.2 runs on the Portable Plus, I suspect it would be possible to get 5.0 running with a simple patch to WordPerfect, or by creating a memory-resident PC program. I'll continue to work on it, and report any successes in the next issue.

Version 4.2 of WordPerfect is available from Personalized Software for the HP150 and Portable Plus. Version 5.0 for the Portable Vectra is available from us now, and in August we will have the HP150 version. The retail price for all versions (except HP150 5.0) is $495. Subscribers may purchase either 4.2 or 5.0 for $299 (Subscriber price for the HP150 5.0 version is $350—retail is $595).

The Wizard Responds

The following questions are from Michael Felsenstein, San Francisco.

110 **Q** Is it possible to create the telephone symbols - and * on the 110?

A Yes, I believe so. The letter E in the phone number field will dial a * and the letter F will dial a -.

110 P+ **Q** Is it possible to create and print the special characters shown on the template included in the back of the manual?

A I think the characters to which you refer are the extended character set of the HP110. Since the ASCII character set uses only 128 of 255 possible values for a character, HP designed other characters to fill up the last 127. You can enter many of these into a file from the keyboard.

You may do this by typing **copy con filename**. Now hold the **Extend Char** key down and press other keys on the keyboard. These other characters will appear. When you are done, press a **Control Z** and return. You will now have all the characters you typed in a file called **filename**.

Printing these characters is another story. Since the values above ASCII 128 are not standardized, it is up to the manufacturer of the printer to do whatever they want with those characters. On the ThinkJet, the characters above 128 are characters that support different languages and are different than the extended characters on the HP110. Therefore, the only way to print the extended characters from your HP110 would be to do a graphics screen dump (**Shift Print** with **System Config** set to **graphics only**) with the characters on your screen.

[Cliff Looyenga provides technical support for HP PC's and HP 3000's, and in those circles he is known as "The Wizard." He has developed a number of HP110 Portable and Portable Plus utilities. Cliff's CompuServe ID # is 75106,2130.]

(110% continued from page 10)

to the start of the block that you intend to merge. Press **f2 Copy Block** and move the cursor to the end of the block of text that you want to merge into a second file. This block might be the entire file if memory permits. Now go to **f8 MEMOMAKR Main** and press **f5 Get Memo** to retrieve the second file. Position the cursor in the second file where you want the to-be-merged text to begin. Now press **f2 Block Keys** and **f3 Paste Block**, and you are done.

If you can spare 40K on your Edisc or an extra ROM slot, I strongly suggest you purchase The Editor from Personalized Software. The Editor lets you keep two files at once in memory. It makes transferring blocks of text or merging files a relatively simple process. It is faster than MemoMaker, with many more features including Search and Replace. The Editor is $79.95 for subscribers, $99.95 for non-subscribers.

110 Keep Us All Informed

P+ PV Our information comes from you. Currently our R&D staff consists of me and "Looking Glass" columnist Ed Keefe, who's taking a sabbatical from his computer science faculty position and helping us out over the summer.

We get a good share of our information from you, our readers. Almost our entire product line, from Webster's Spelling Checker to SideWinder, was either discovered or created by you. Whether you are an HP engineer, a corporate professional, or in business for yourself, we appreciate you sharing your knowledge and experience with us so we can give it back to all of our other readers.

We at Personalized Software have been successful not because we invented things. Rather, thanks to you, Personalized Software has become the clearing house of knowledge and information about HP Portables. Please continue to keep us informed about your discoveries—everyone benefits.

110 HP-IL Extension Cords

P+ Did you ever notice that the small end of an HP-IL cord fits into the larger end? In fact, you can connect one or more HP-IL cords to create longer cords, and the longer cord will function properly.

P+ PertPlotter For The Plus?

Peter Piper promised that Pertmaster's PertPlotter plotted from the Portable Plus. (Actually, it was Janos Komaromi of GTE in Ft. Lauderdale who told us that he got the IBM version to work.) We called PertMaster Corporation at (408) 736-6800. There we were told that there was no Portable Plus version, and that the IBM version would not work on the Plus. If anyone has more information, give us a call.

110 More On The ThinkJet Battery

By Thomas Page

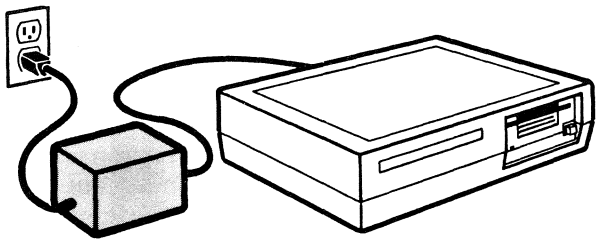
P+ REMOVING THE CELLS FROM THE BATTERY

PV After acquiring the third battery for my ThinkJet printer, I decided to perform an autopsy on my well-beyond brain-dead original battery. Amazingly, it comes apart just like it looks it would, but it was not easy to open. The insides are stuck to the top and bottom of the case with double-faced foam tape that must be torn to get the battery open. Inside I found a pack of battery cells and a small charging circuit. The battery pack was removed, and the local Radio Shack store identified the six cells in the pack as size "Sub C" rechargeables available in packs of two for $5.99 each. (Radio Shack Cat. No. 23-190.)

INSTALLING NEW CELLS IN THE HP BATTERY SHELL

Installing a set of the Radio Shack batteries in the HP shell was a relatively easy task. A replacement pack was made by connecting the cells in series with short jumper wires soldered between the positive and negative terminals of

THE HP9114 EMPOWERER



If you've been frustrated trying to use your HP9114 external disk drive only to have the battery quit before you've finished your work, then you know the problem. Now you need the solution.

THE PROBLEM:

The charge on your HP9114 battery doesn't last long enough for you to do all you'd like to. For that matter, in some cases it doesn't last long enough to do *half* of what you'd like to.

According to Hewlett-Packard, you get up to 40 minutes of continuous usage before the battery dies. We've never gotten more than 20. Just formatting disks, transferring files, or running disk-intensive software and getting it to work can be a major triumph.

Plugging in the HP9114 doesn't help, either. That only recharges the battery—it doesn't let you keep working.

WE HAVE THE SOLUTION:

The official HP suggestion is to buy another battery pack and keep both plugged in. When one loses power, replace it with the other. This seems clumsy to us. What if you want to do several hours of disk intensive work? **At Personalized Software we have a better solution—the HP9114 Empowerer.**

The Empowerer is special power supply that will allow your HP9114 disk drive to run forever. Just remove the battery pack, and plug The Empowerer into the open slot and into your wall outlet. It's that easy!

RECOMMENDED FOR:	
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Portable Vectra	
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To run your HP9114 to your heart's content, order your HP9114 Empowerer today.

HP9114 Empowerer $99.95
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*H*ow many times have you wished you had a second external disk drive? The Portable Equipment Exchange, a division of Personalized Software, is selling HP9114A units including power supply at a substantial discount. See enclosed four-page brochure for details.

HPduette

It transfers files both ways between your Portable Plus and your desktop computer without an HP-IL card!

An HP-IL card inside your IBM PC or compatible computer lets you transfer files to and from your Portable Plus.

It's a good solution to the data transfer problem, *provided* you only use one desktop computer. But if you ever need to transfer data between your Portable Plus and someone else's desktop computer, you're stuck—or at least you were until now.

Because now there's a way to do it with software.

It's a program called HPDuette. Together with a special serial connecting cable that it comes with, HPDuette is all you need to transfer files at high speed both ways between your Portable Plus and any IBM PC compatible desktop.

RECOMMENDED FOR:			
HP110 Portable		Portable Vectra	
Portable Plus	•	HP150	
IBM PC and compatibles			•

HPDuette performs complete error checking during the transfer process to ensure data integrity. It handles multiple-file transfers, subdirectory transfers, and DOS "wild card" usage. It lets you use DOS commands such as type, list, rename, and erase without having to exit the program. And it transfers data *faster* than you can with an HP-IL card.

HPDuette is easy to use too. Simple menus and easy-to-understand help screens are available at all times.

For true convenience in file transfer to and from your Portable Plus, order HPDuette today.

HPDuette with cable for Portable Plus ...$99.95
$89.95 for Portable Paper subscribers.

HPDuette is a registered trademark of Platte River Associates, Inc.

HPduette comes with a serial cable and two disks; you load one disk into your Portable Plus and the other into the desktop.

HPDuette transfers data at 57,600 baud. To use HPDuette, you connect the 9-pin serial port on your Portable Plus to the serial port on your desktop computer using the serial cable that comes with the program.

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adjacent cells. The replacement pack was folded to the configuration of the original pack and taped with plastic electrical tape. The connecting wires de-soldered from the old battery pack were soldered to the new battery pack, the pack was positioned in the case and the top was snapped on. The battery rattles a bit when shook but it appears to be at least as good as the last HP battery I bought.

REPLACING THE BATTERY PACK IN THE THINKJET

Replacing the battery pack in an HP ThinkJet battery/charger unit should not be difficult for the average hardware hacker but there are a few precautions to observe.

1. Watch polarity. Be sure to note markings on the battery cells and note the colors of any wires connected to the battery pack. Also note where each wire is connected. Make a sketch. Do this before disconnecting the old battery pack. Battery cells should be connected together, + to -. If a cell is reversed, the battery's power will be significantly impaired.

A DC voltmeter is a helpful, but not required, tool for this job. If the old battery has any juice at all the voltmeter can be used to identify polarity of the terminals on the battery case as well as to check polarity and output from the new battery pack. Since each cell has an output of 1.25 volts, the output from the fully-charged battery pack should be about 7.5 volts.

2. Be sure that soldered connections are well made. The trick here is getting the solder hot. The battery terminals are fairly large pieces of metal that will absorb a lot of heat before becoming warm enough to melt solder. The solder will melt on the tip of the soldering iron long before the battery terminal becomes sufficiently hot. If the solder is not melted by the terminals the result will be a "cold" joint which is not electrically or mechanically sound. Compare your joints to the HP-soldered joints. The smooth flat appearance of the HP joints indicates a good bond. If your joint looks like a glob of chewing gum you probably have a cold joint.

3. Use low-temperature resin core solder from the electronics store, not the stuff that you buy at the plumbing warehouse.

NOTE: "Sub C" cells are used in a number of cordless tools and household appliances. If you don't have the nerve to tackle computer electronics, practice by replacing your Dust Buster's battery first.

(letters continued from page 5)

13) If I use TAB instead of the space bar in EDLIN, the results (when I read the file using the **type** command) are different than when I use **L** inside EDLIN. Those lines on which I used TABS end up on a different column. Why?

[I am not sure. It sounds like DOS and EDLIN must interpret the ASCII Tab character differently.—Hal]

14) The **delete** command in DOS sometimes doesn't prompt ARE YOU SURE? Is this normal?

[You receive the ARE YOU SURE? prompt only if you issue the command **del *.*** *—Hal]*

15) The LCD display is the most difficult aspect of my machine, not because of resolution, but because of the lack of back-lighting. I often use a 60-watt lamp placed about 10 inches above the keyboard. Am I doing anything wrong?

[Not that I know of. We hope there will soon be a backlit version and upgrade for the Portable Plus. See "On the Plus Horizon" in the "110%" column.—Hal]

16) When working in subdirectories, I occasionally receive the message: ERROR READING DRIVE A: when copying, etc. When I attempt to remove the subdirectory, I cannot, because the system answers with: DIRECTORY NOT EMPTY. When I look inside the subdirectory, it contains no files. Have I done something wrong?

[When you see the "ERROR READING DRIVE A:" error message, immediately back up your files and reformat. Your A drive is somehow corrupted. The problem may have occurred if you used the **pack** *program, and you have the ROM AAAAAA version of the Portable Plus. (See "110%—Most Frequently Asked Questions."—Hal]*

17) How can I control the clock in order to change its speed?

[As far as I know you can't.—Hal]

18) Is it possible to create a louder "beep" and change its frequency, like I do with my HP71B?

[Vol. 1 No. 1, p. 22 tells how to do this on the HP110.—Hal]

19) Why does the 45419C Programmer's Tools contain some files which already exist in ROM inside the Plus?

[The Tools were originally created for use on the HP110 and never updated for the Plus. Those files were not built into the HP110.—Hal]

20) Is it possible to re-define the entire keyboard or only the function keys?

[At present, it is only possible to reconfigure the function keys, but this may change. Watch for future issues of The Portable Paper*—probably the November/December, 1988 issue.—Hal]*

21) What kind of connection is used with the 20 Megabyte 9133h/9134H hard disk? Is it HP-IL or RS232C?

[You use the HP-IL to HP-IB interface card from HP—Hal]

I would be very grateful for any answers which you (or your readers) could provide. Thank you.

Eduardo Andrade, Oeiras, Portugal

110 P+ Least Squares And Plotting/Graphing, Note To Paul Grimmer

Response to J. B. Hadler's letter (Vol. 2, No. 6, p.43): Recently, I have had similar problems (in a business setting) trying to make sense of a set of data points on a plot where there was a mathematical relation.

I have found a set of three software routines published by DYNACOMP, Inc. (1427 Monroe Avenue, Rochester, NY 14618 (716) 442-8960/442-8731). These are in Basic, and run (via HP's series 100/Basic) on the HP Portables.

The three routines offer different approaches to a multiple regression problem; these are MULTIREG, REG-I, and REG-II. MULTIREG is a multiple regression model with an interpolation feature. With REG-I one can take a set of points on an X-Y plot and do a least-squares fit to one of several functions. The program provides a crude graphic representation of the fitted curve, along with a set of coordinates which define that curve. Further, with input assumptions, REG-I also provides a set of coefficients, enabling the user to write a formula for the curve. Finally, REG-II is a routine similar to REG-I, except that it provides for user definition of the function for modeling the data.

If readers are interested in how I used this package in conjunction with Lotus 1-2-3, send me a note in care of *The Portable Paper*.

To Paul Grimmer:

As a user (as opposed to programmer), I salute your efforts to bring us what seems to be a set of integrated pop-up utilities. Having SHELP in my PLUS, I have some appreciation for the potential.

As you proceed with this project, please try to remember those of us who have MS Word or other "graphic" applications. If your program won't work with these applications, I am afraid that they may suffer the same fate as my SHELP, that is, reduced utility.

Also, please consider minimizing the use of main memory. What is most desirable is (to have) a pop-up structure that has merely a menu resident in main

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memory, but that calls on application modules from ROM, and stores user inputs to the A drive (Edisc). This approach seems worthwhile, even if it means having to wait an extra second or two for the read and write processes.

You mentioned the term "windows." It sounds very tantalizing, especially if you are talking about pulling another application into a window. To me the term window does not have to mean two partial screens next to each other simultaneously, but can also mean a "hot-key" that toggles between full-screen displays in two applications—e.g., a 1-2-3 file and an MS Word file.

With the availability of these fantastic ink-jet graphic printers from HP, we now need some integrating utility which will merge graphics (e.g., SKETCH files) with an MS Word file for printing an integrated document, on a DeskJet or PaintJet, for example.

The idea of implementing the Time Manager functions into a pop-up is indeed welcome. HP's TM is just too slow for the in-and-out of convenient use. However, could such a pop-up have the same features that include a Things To Do section alongside Appointments? How would this mesh with the current Time Manager set up?

Other questions—

Is your short patch to increase the Portable Plus' screen speed for use in Turbo Pascal 3 programs only? Or does it have ramifications for all applications via TP3?

Finally, are you or is anyone else in the Portable world working on a utility that enables the lateral positioning of the image on the paper of a screen dump **[Shift][Print]** with the ThinkJet? I like the compactness and ready access of using 1-2-3 graphs this way; when working on a report, I can now leave a blank space between blocks of text, and then re-insert that page to dump the screen from 1-2-3. Being able to move the screen dump away from the left margin of the THINKJET would therefore be a welcome facility.

Paul, I enjoy reading your contributions to *The Portable Paper*.

Frank Keresztes-Fischer, Brighton, MI

Communicating Between 110's

I have been trying for quite some time to use the telephone for communicating with another HP110. Both have the same built-in modem, so it should be possible to trade some files and other programs over the telephone. The Terminal section of the HP110 Owner's Manual explains very carefully how to make connections to one of those commercial enterprises, but it says almost nothing about how to receive calls with the HP110. Can you help?

August J. Nechi, Stone Mountain, GA

[To use the Terminal program, I strongly suggest reviewing Gary Goodman's series of articles in the first two years of The Portable Paper *(see 1986-1987 index). Otherwise, you can purchase two copies of our new Term110 program (one for each machine) as discussed in last issue's "News From Personalized Software." Term110 is an extremely easy-to-use communications package. The Term110 subscriber price is $79.95—Hal]*

Frazzled In France

110 P+

The following happened to a friend traveling with a Portable Plus. He had a WorldPort 2400 Modem, Radio Shack acoustic coupler, and a RAM/ROM drawer from Personalized Software:

"Mission unsuccessful! I was in three different hotels—one in Paris and two in the surrounding countryside; none of the phones in the hotel rooms could be disassembled. I could not easily use alligator clip connections. Also, the phones themselves were shaped so as NOT to take an acoustic coupler. I did go to CNES (French Space Agency HQ) in Paris, but again my host's computer was intimately tied into a local-area network and the Plus' serial connector had nothing to connect with. They had a digital phone system with phones which also could not easily be disassembled.

"Another lesson. At CDG Airport/Paris, there is NO table, plus there are tight lateral side walls, at the hand-luggage X-ray area. Thus, the computer had to pass very close—inches—to both the X-ray and the metal scanner door. Result: all RAM zapped. (Fortunately I had RAM backed up.)"

Bob Kirk, Greenbelt, MD

Can't Get Utility To Run With 9114B

110 P+

I have enjoyed learning about the software I have purchased from you. I have yet to master The Editor completely, but The Formatter is brilliant.

I have a query about **wearout.com** on the Portable Utilities Vol. 1: DOS Tools disk. I have an HP 9114B disk drive but this utility doesn't work on it. All the other utilities from the DOS Tools disk seem to be functioning properly for me.

Another problem—the ThinkJet printer produces a little splodge of ink every time I switch it on. Even though it is nice to know it is working, it does detract from the overall presentation. I also have a problem with trying to unblock the cartridge ports. The paper-clip and alcohol cleaning methods don't always succeed, and it becomes too expensive to just throw the cartridge away each time. Any further suggestions?

C. J. H. Duncan, Wellington, New Zealand

***/wearout** does not work on the HP9114B. Maybe our readers can help you with the ThinkJet—Hal]*

HP110/HP110+ USER GROUPS

Thanks to so many of you who are willing to help organize local users groups. Users groups give an opportunity to share tips, answer questions, discuss other products, trade free software and Lotus templates, and meet other professionals. As you will notice some areas have more than one contact person and some major areas have none. If you are in a "missing" area and would like to organize a group, contact us. If your groups combine also tell us. We will publish this column each issue, keeping it up to date. Write *Local Users Groups, Box 869, Fairfield, IA, 515-472-6330.* **California**, *Southern California* We meet 2nd Thur 7-9 at HP sales office, 5161 Lankershim Blvd, North Hollywood. Request PORTOVEC Notes Newsletter, Dave Mark, 818-794-4969. *San Diego*, Stephen L. Eyre, 619-452-8530, Dan Butterfield, 619-470-3551. *San Mateo, Santa Clara Counties, San Francisco Bay Area*, BAYCHHU, HP Laptops & Handhelds, meet 2nd Sat of the month, Contact Jim Horn, 707-523-4890 eve., or Michael Felsenstein, 415-564-8279, eve. **Colorado**, *Colorado Springs*, Dan Ritt, 303-528-8080. *Denver*, Call Bob Pressey, 303-777-0326 **Georgia**, *Atlanta*, Call Brian Walsh D:404-394-2500 E: 404-399-6842 **Hawaii**, *Honolulu*, Rodney Y. Fukuya if interested, 808-945-3111. **Indiana**, *Indianapolis*, Bob Glass, 317-638-2326. **Iowa**, *Mid Iowa*, Ed Keefe D: 515-964-6644 E: 515-964-7064. *Southeast Iowa*, Hal Goldstein, 515-472-6330 **Minnesota** *Minneapolis/St. Paul*, John Ferman (612) 822-1372 **Maine**, *Yarmouth*, Every last Tue 6:30, US Route one, Yarmouth, ME 04096, 846-5497 **North Carolina**, *Charlotte and surrounding area*, John Jacob, 704-334-3468. **Texas**, *Houston*, Thomas R. Page, D: 713-759-4259, E: 713-528-7138. **Utah**, *Utah County*, Donna Hoover, D: 378-4421, E: 375-4812. **Washington**, *Eastern Washington, Northern Idaho, Western Montana, and possibly Western Washington* , Bob Sandberg. 509-466-4999. *Eastern Washington*, Stephen S. Warner. D: 509-534-1588, E: 509-535-3322. *Western Washington*, Portable, Plus, 150, Vectra users meet first Thursday 7-9 p., HP sales office, Bellevue. Pete Ross, 206-342-8875. Portable, 40 & 50 series: 7-9 p. second Wed., UWash. computer center, Seattle. Bob Moore, 206-543-7879. **Washington D.C.**, *Greater Washington D.C. Area*, 8:00 PM, Third Monday of Each Month, Ballston Tower #1, 800 N. Quincy St., Room 519. Call to confirm and to say, Hi. William F. Cross. D:202-696-4112, E:703-845-9508. **Australia**, 8 Avoca St, S. Yarra, Victoria, Australia. Nigel S. Ball. 03-267-8344. **Central America**, I would be happy to form a users group, either Spanish or English, Apartado Postal 1587, Tegucigalpa, Honduras. **England**, Trafalgar House, Grenville Place, Mill Hill, London, NW7 3SA England. Tim Cullis. (01) 959 4359. HP **Computer Users Association,** The Twenty-One Building, 21 Pinner Road, Harrow, Middlesex, England HA1 4LH 01-4275200, FAX: 01-4278252. **Netherlands,** Mr. R.M. Franquiner, Menthenbergseweg 13, NL-6816 PR, Arnhem, The Netherlands **Spain**, Club de usarios HP 110, Pont Reyes S.A., A la atencion de D. Enrique Serra, Ronda Universidad, 15, 08007, Espana. **Sweden**, Stockholm, first Thursday each month 6:30 p.m., call to confirm. Jens Pettersson 08-713-1710. Telex 149 70 gentel S.

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[a] This version of SideWinder does not include any of the SideWinder utilities.

[b] Mini PrinterTalk is the abbreviated version included on the PrinterTalk disk. It is functionally equivalent to PrinterTalk for most applications.

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A dBase III work-alike that runs on the Portable Plus.

Direc-Link PV

A software program for high-speed transfer of files between your Portable Vectra and IBM PC or compatible. Versatile (works with parallel *and* serial ports), easy to use (simple manual file-tagging or automatic unattended file transfer), and very affordable price.

Disk Conversion Service 110 P+ PV

We will convert your data to and from single-sided, double-sided, high-density, 3½ inch and 5¼ inch formats at a reasonable cost.

See P. 13 ### DOS Tools: Portable Utilities Disk, Vol 1 110 P+ PV

Well over 50 excellent public domain programs that enhance DOS, all tested on The Portables. Documentation has been rewritten for clarity and ease of use, and includes examples, index, and table of contents.

See P. 2 ### The Editor/The Formatter (separate packages) 110 P+ PV

The Editor: Many features not in MemoMaker, including search/replace, editing 2 files at once, embedded printer codes, up to 255 columns per line. Also does word wrap, right justify. Easy to use. Uses less than 40K. Versions for HP110, Plus, HP150, Vectra, and IBM PC all on master disk.

The Formatter: Sophisticated text formatter for large reports, program documentation, etc. Multiline headers, footers, page numbers, table of contents, glossary capabilities, and more. Works with almost all printers. (Note: Manual is in draft form: no technical support available.)

See P. 41 ### HPDuette P+

A software program that lets you transfer files back and forth at high speed between your Portable Plus and an IBM PC or compatible desktop computer—without the need for an HP-IL card. Comes with proper serial cable.

See P. 41 ### HP9114 Empowerer 110 P+

A hardware product that prevents the HP9114 disk drive from running out of juice in the middle of your work. Plug Empowerer into your HP9114 and a normal wall outlet, and you can run your HP9114 forever.

See P. 22 ### FloppyDRIVER PV

A software program for the Portable Vectra that makes all floppy disk access operations (loading and running programs, accessing and copying files, etc.) up to 10 times faster.

Flowcharting II + P+ PV

This program creates professional-looking flowcharts and organizational charts using 26 flowchart symbols in 95 sizes. Wide variety of text fonts for creating labels. Easy to add and delete lines without disturbing the rest of the flowchart. "Shrink Screen" feature lets you view up to 14″ ×11″ chart on 25-line screen. (Portable Plus only.)

HPrint 110 P+

Takes text (ASCII) files you've created with MemoMaker, The Editor, or other word processors and prints them on an HP printer. Comes with italic type font for ThinkJet. Also allows bold, underline, compressed, expanded, subscripts, superscripts, headers, footers, page numbering, double space, and much more—all of which you specify from a simple menu or by means of sensible control codes. HPrint also does mail merging, and it lets you create your own graphic characters.

LINK HP-IL Connector Software 110 P+

A software program that lets you transfer data from any HP-IL device to any other HP-IL device. Now you can access your main computer (HP Portable, HP150, or IBM PC), its unlimited storage capability, and all its peripherals from your HP41, 71, 75, or series 80 hand-held!

See P. 36 ### Logitech Mouse for the Portable Plus P+ PV

A 3-button mouse for the Portable Plus, bundled with our proprietary Portable Mouse Software and special connecting cable. Using the mouse to move the screen cursor makes using your Plus easier and more fun. The Logitech mouse was rated Editor's Choice by PC Magazine.

101 Macros for Lotus 1-2-3 110 P+ PV

Useful in themselves and also as learning tools for novices and experts alike. Includes: recalculating ranges, double spacing spreadsheet prior to printout, hiding notes next to data cells, addressing form letters, and printing labels automatically. Customized for Lotus 1A and 2.01.

Mobile Recharger 110 P+ PV

Lets you recharge your HP110, Portable Plus, Portable Vectra, ThinkJet, HP9114, HP hand-held etc. from your car's cigarette lighter.

Monitors for The Portable Vectra PV

Convert your Portable Vectra to a desktop computer—and back to a portable—in seconds. Excellent values in monochrome and high-resolution EGA color monitors from GoldStar.

See P. 6 ### The Norton Utilities —Customized For The Portables 110 P+ PV

Allow you to recover deleted Portable files and organize your electronic and external disks. Peter Norton has authorized us to include an extra 3½″disk (formerly available only on 5¼″ disk). The disk includes The Norton Utilities, and instructions for running them on the Portables and the HP150. Version 4.0 and Advanced Edition are now available.

1987 Portable Paper Subscriber's Disk 110 P+ PV

Includes (1) DISKPACK, a disk-packing utility whose commercial equivalent sells for $50. (2) Time Manager's Calendar Utility. (3) HP Calculator program. (4) C Drive Copy Utility. (5)Game and Lotus templates. Clear instructions are included right on the disk.

1988 Portable Paper Subscriber's Disk 110 P+ PV

Contains: (1) New utilities for Time Manager, including an expanded Calendar program and an automatic mail-merge utility. (2) Some of the best public domain software and "shareware" for the Portable Vectra. (3) A password program to protect usage of the HP110. (4) TERM xmodem program for the Portable Plus. (5) Lotus templates. (6) Games. (7) New DOS tools. (8) A file to toggle HP and Alternate mode from DOS. (9) Lots more. Clear instructions included on the disk.

Power Cube 110 P+

Powers and recharges up to four HP devices (HP Portable, ThinkJet, HP9114, HP hand-held, etc.) from a *single* wall outlet.

PrinterTalk and Format110: MemoMaker Enhancers 110 P+

PrinterTalk lets you change type styles in the middle of a document, change number of copies and lines per page, do automatic page numbering, and much more. **Format110** lets you format headers, footers and page numbers; chain or merge documents; compensate for "widow" and "orphan" lines and much more.

Private File 110 P+ PV

Protects your letters, documents, and data files by scrambling your file so only you can understand it.

NOTE: Products run on the machines indicated by these symbols:
110 = HP110 Portable P+ = Portable Plus PV = Portable Vectra

Personalized Software INC.

Products that make HP Portables smarter

3 Project Management Packages 110 P+ PV

All 3 work on the HP110, Plus, Vectra, HP150, and IBM PC. **Project 8-9-10**, a Lotus template, helps you manage small to medium projects. **Milestone** is also for small to medium projects. (On HP110, you need to scroll to see entire Milestone screen.) **Pertmaster** is for medium to large projects (specify which machine).

2-Megabyte RAM card P+

A giant leap in memory size for the Portable Plus. Simply remove your existing RAM drawer and replace it with this card. Works with any Portable Plus with 512K of built-in memory. We will accept your old RAM drawer and any extra memory as a trade-in towards purchase.

RAM/ROM Card P+

A megabyte of RAM plus four pairs of ROM slots. Add the RAM/ROM card to your Portable Plus and you have a megabyte of extra RAM in addition to space for Lotus, Reflection, Webster's Spelling Checker, MemoMaker/Time Manager, and SuperROM (5 products on one ROM chip). We will accept your old RAM or ROM drawer and any extra memory as a trade-in towards purchase.

ee P. 27 **RightWriter** 110 P+ PV

Flags errors in grammar, style, usage, and punctuation, inserting comments directly into your document. Also produces overall critique. Works with most word processors. Also available: **RightWords** dictionary extension utility: it has 7 auxiliary dictionaries (business, computers, engineering, etc.), and also lets you add words of your own to RightWriter's built-in dictionary.

Inside front cover **Software on ROM** P+

Many of our best-selling programs are available on ROM chips via our ROM Backup service. (Portable Plus only.) Saves valuable electronic disk space, minimizes need for disk drive. **Custom ROMs** also available.

See P. 35 **Shelp** P+

From within almost any program, Shelp gives you immediate access to a notepad and calculator and lets you define up to 26 keyboard macros—that is, assign up to 31 characters to a single keystroke. Written exclusively for the Portable Plus.

See P. 20 **SideWinder** 110 P+ PV

This program allows you to print your spreadsheets (or any other text file) sideways on your ThinkJet. This means you can print your 60 column by 53 row spreadsheet from your Portable as one long printout without cutting and pasting.

See P. 29 **Sketch** 110 P+

A graphics program for the HP Portables. Lets you draw free-form using cursor keys. Also draw lines, boxes, circles by pressing a single key. Five character sets can be displayed normally, sideways, or even upside-down. Entire screen can be printed on ThinkJet at virtually any enlargement. Screens can be saved for future use. Screens can also be imported into Sketch from Lotus and other programs. Only uses 44K of memory.

Statistix 110 P+ PV

A comprehensive statistical package that's easy to learn and use. Runs on the HP110, Portable Plus, HP150, and IBM PC compatibles. Data can be entered from keyboard or imported from spreadsheet or database files. Includes multiple regression, most standard parametric and non-parametric tests, p-values, plots, histograms, and much, much more.

See P. 18 **Term110 and TermPlus communications software** 110 P+

Exceptionally easy-to-use alternatives to Terminal for the HP110 and PC2622/Reflection for the Portable Plus. Both Term110 and TermPlus allow you to send and capture ASCII information. Both offer fast XMODEM transfer of programs, Lotus worksheets, and archive files. Both offer auto log-on, dialing directories, on-line help, and the ability to run other programs without severing the phone connnection.

Tiger Fox 110 P+ PV

A great video game of changing mazes and double pursuit. First video game designed for the Portables.

Time Manager 110

The highly acclaimed Portable Plus ROM-based **Time Manager** program in a 3½"disk version for the HP110 Portable. Does not run on Portable Plus. (Available to Portable Paper subscribers only.)

See P. 31 **T/Master and T/Maker** 110 P+ PV

T/Master is a fully integrated word processor, speller, relational database manager, spreadsheet, file manager, and communications package. Also includes graph making. Runs on Portable Plus and Portable Vectra without modification, and on HP150 with a PC emulator. **T/Maker** is an earlier version; it runs on the HP110 Portable with an external disk drive, and does not include the communications module. Both programs are more integrated than any other package. Our reviewer says, ". . .there is no other application I know of that matches the power, thoroughness, and simple elegance of T/Master."

See P. 9 **Turbo Optimizer** 110 P+

Saves run time and storage space by making your Turbo Pascal programs 10-30% faster and 15-50% smaller. Works with Turbo Pascal Version 3.0. Customized to HP110, Portable Plus, and HP150.

See P. 9 **Borland Turbo Pascal —Customized For The Portables** 110 P+ PV

Turbo Pascal, the HP Portable programming language of choice, outstrips others in price, performance, compatibility, memory consumption, and programmer environment. The WordStar-type editor alone is worth the price. Borland has authorized us to include an extra disk customizing the Turbo editor to the HP110 and Portable Plus's editing keys. The **Turbo Pascal Starter Kit** includes **Turbo Pascal, Turbo Pascal Tutor 2.0** , and **Portable Pascal Programs** (a double-sided disk with more than 50 program examples for the Portables).

See P. 23 **Typing Whiz** 110 P+

Better than almost any typing tutor program on the market—designed specifically for The Portables and the HP150. Immediate numeric and graphic feedback of your progress.

See P. 19 **Used HP Portable Equipment** 110 P+ PV

The Portable Equipment Exchange, a division of Personalized Software, buys and sells used HP110s, Portable Pluses, HP9114s, HP ROMs, and RAM drawers for the Plus. Because of HP quality, used HP products are a great buy. 30-day return policy on all used equipment, plus **one-year guarantee** (parts and labor).

Volume Discounts 110 P+ PV

Corporate buyers, users groups, and HP dealers: Order products and subscriptions from us in quantity and save.

Back cover **Webster's Spelling Checker** P+ PV

Rated Editor's Choice by PC Magazine, Webster's packs a 110,000-word dictionary into 207K of disk memory. Webster's shows you incorrect spellings in context and suggests corrections, lets you preview questionable words before you edit. Exceptionally easy to use. Customized for the Plus and HP150.

See P. 25 **WordPerfect 4.2** P+ PV

Disk-based Portable Plus, Portable Vectra, and HP150 version of the best-selling word processor. Includes spelling checker and thesaurus.

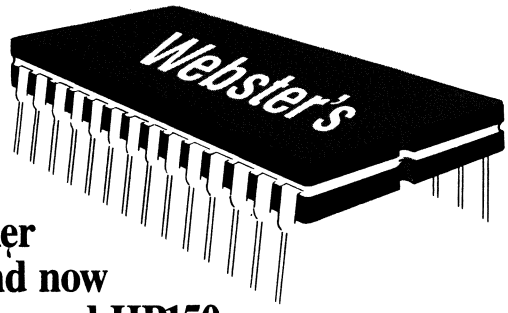
The Word Plus 110

An excellent spelling checker with a choice of two dictionaries—45,000 words and 35,000 words— plus the ability to input additional words and abbreviations of your own. Also does word counts. Customized to the HP Portables.

See P. 5 **WorldPort Portable Modems** 110 P+ PV

The **WorldPort 2400** is a battery-powered, highly compact (4" × 2" × 1"), lightweight (6.5 oz.), full-featured external modem that transmits data at 300, 1200, and 2400 baud. Faster than HP's internal modems, the WorldPort 2400 is fully compatible with the industry-standard Hays AT Command Set, and with both the CCITT and Bell communications standards. The **WorldPort 1200** modem transmits at 300 and 1200 baud.

Portable Plus users: At last! A great spelling checker available on ROM!



Webster's (web'stərs) n. The spelling checker rated Editor's Choice by *PC Magazine* (Dec. 24, 1985), and now available from Personalized Software for the Portable Plus and HP150.

—Customized on 3½" disk by special arrangement with Simon & Schuster, Inc.

PC Magazine rated eight leading spelling checkers for ease of use, flexibility, speed, overall program size, thoroughness, and accuracy. WEBSTER'S NEW WORLD SPELLING CHECKER came out on top—for a number of good reasons:

First, there's sheer size. WEBSTER'S contains over *110,000 words* in its dictionary—five times the number in Hayden's Speller, 2½ times as many as in The Word Plus—yet WEBSTER'S dictionary and main program take up only 207K of disk memory.

Second, WEBSTER'S isn't just easy to use—it's positively a *pleasure*. It reads your files at high speed, then displays every questionable word *in context*, highlighted. At the same time, in a "window" off to the side, it gives you a list of possible correct spellings. A simple menu gives you the following options:

- Accept the word as is
- Replace the word with one of the suggested spellings
- Enter the correct spelling manually
- Add the word to an auxiliary dictionary of frequently used words
- Replace all other occurrences of the word
- Look up the spelling of any other word at any time

WEBSTER'S also lets you mark in your text any spelling corrections that change length of a word; this lets you quickly locate portions of text that may need reformatting.

WEBSTER'S will automatically locate double repetitions (like "and and"). It can correct transpositions ("itme" becomes "item"), missing apostrophes ("dont" becomes "don't"), and *typos* of all kinds ("spellling" becomes "spelling," etc.).

If you're not sure of a word, you can even *spell it the way sounds*, and chances are WEBSTER'S will supply the correct spelling. ("Fenomenon" gets corrected to "phenomenon," for example.)

In addition, WEBSTER'S will let you preview a list of all questionable words *before* displaying them in context; this saves you time because it lets you eliminate words from the questionable list (or add them to your auxiliary dictionary) before you begin the editing pass.

John Dvorak, writing in the *San Francisco Examiner*, called WEBSTER'S "the best spell-checker we've seen in a long spell." Henry Kisor of the *Chicago Sun Times* has called WEBSTER'S "the best proofreading software on the market." We agree with them both—and we think you will too. Order your copy at no risk today.

Webster's Spelling Checker on 3½" disk customized for the Portable Plus and HP150 . . . . . $79.95
$69.95 for Portable Paper subscribers.

Webster's is available on ROM backup for an additional $179. See ROM ad in this issue for important details.

RECOMMENDED FOR:			
HP110 Portable		Portable Vectra	•
Portable Plus	•	HP150	•
IBM PC and compatibles			•
Available on ROM Backup for the Portable Plus			

WEBSTER'S SPELLING CHECKER works with any file produced by the Editor, WordStar, and MemoMaker. It also works with ASCII files produced by MS Word and Word Perfect.

Our version of WEBSTER'S includes a customized 3.5" disk and simple instructions for running the program on the Portable Plus and HP150. A special utility allowing WEBSTER'S to run on the HP150 is included on the disk.

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PV PV users: Please subtract $10 from subscriber price (since we don't have to send you additional customized disks or extra documentation). Be sure to indicate "PORTABLE VECTRA" on your order.

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HP Portable users: Sorry, WEBSTER'S won't run on the 110; your best bet is THE WORD PLUS, another top-rated spelling checker available from Personalized Software.

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