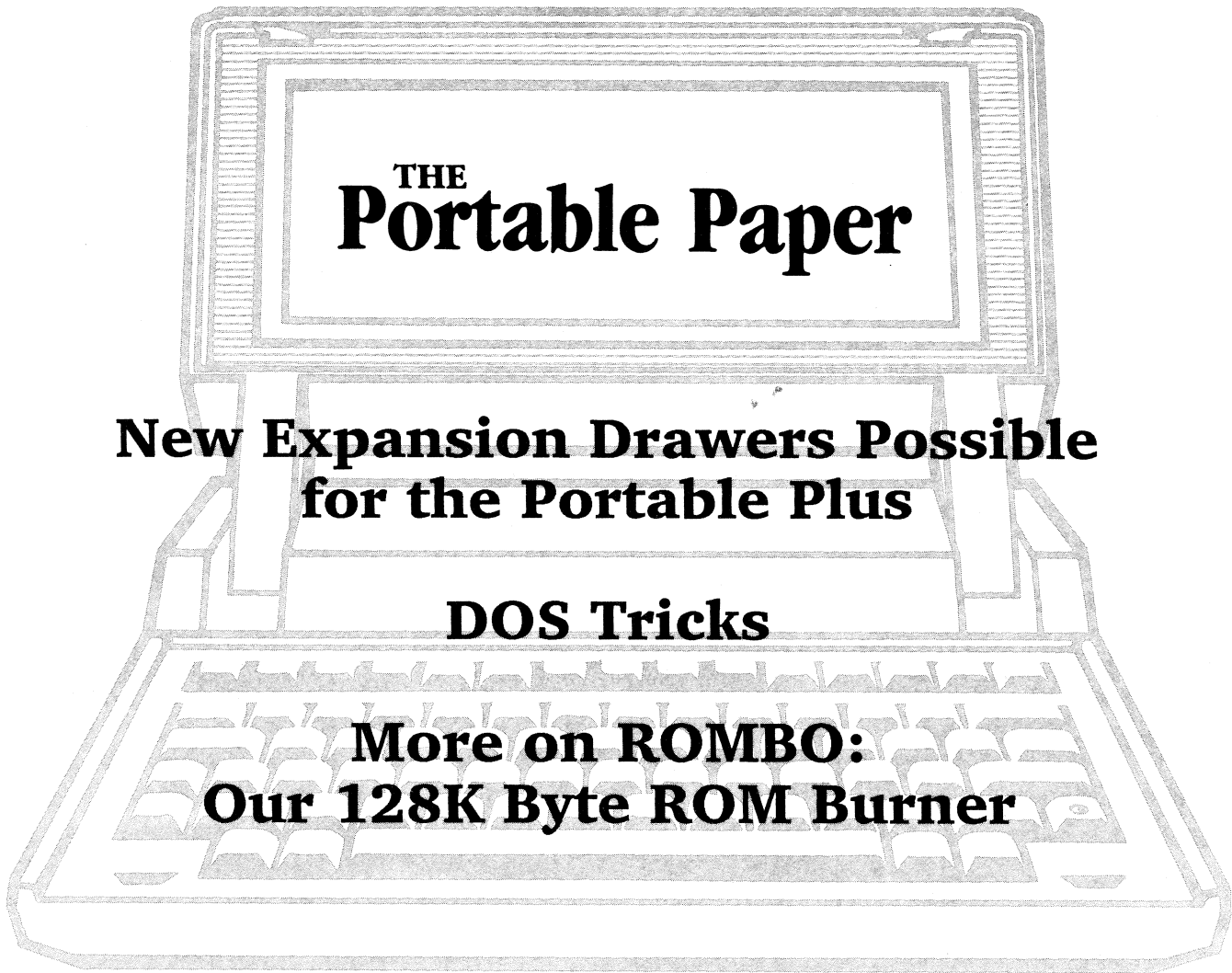




THE Portable Paper

New Expansion Drawers Possible for the Portable Plus

DOS Tricks

More on ROMBO: Our 128K Byte ROM Burner

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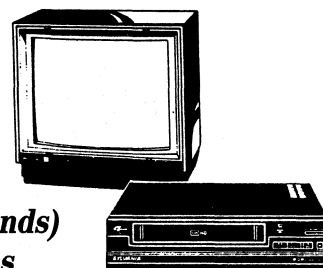
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Italian localization ROM
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How to Use the HP Portables

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Now you can learn how to use the full potential of your HP Portable computer directly from Hal Goldstein, president of Personalized Software and leading HP Portable expert. (Even HP engineers call him for advice on using their Portables.)

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This 5-hour set of three VHS video tapes gives all the fundamentals of using both the HP 110 Portable and the Portable Plus. HOW TO USE THE HP PORTABLES will save you countless hours of learning on your own. It will also save time and effort in training an employee, spouse, child, or friend.

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In this set of videotapes, Hal doesn't just tell you how to use the HP Portables. He actually shows you, step-by-step, what keys to press, while the camera shows you what appears on the computer display.

Watching Hal demonstrate everything in a logical sequence right on your TV screen is a far better way to learn than wading through the HP Portable user's manuals—especially since the tapes include many important details that are either obscure or simply not covered in the manuals.

(Once you've seen the tapes, you'll find that the user's manuals make excellent reference sources.)

HOW TO USE THE HP PORTABLES is a highly cost-effective way to learn how to use an HP Portable to full advantage. It saves time and effort in getting up to speed and it saves time and effort in training others.

Order HOW TO USE THE HP PORTABLES at our risk today.

HOW TO USE

THE HP PORTABLES videotape\$150.
Portable Paper subscriber price\$119.

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The regular price of HOW TO USE THE HP PORTABLES is \$150, or \$119 if you subscribe to *The Portable Paper*.

However, HOW TO USE THE HP PORTABLES is only \$45 if purchased along with any used HP110 or Portable Plus system from The Portable Equipment Exchange (a division of Personalized Software).

Used HP Portables make great gifts. HOW TO USE THE HP PORTABLES makes them even greater—because the tapes eliminate much of the struggle and time spent in learning how to use the machines.

See the latest Portable Equipment Exchange brochure for current prices on used Portables. Or call (515) 472-6330. We'll help you select a used HP Portable system that best meets your needs.

HOW TO USE THE HP PORTABLES videotape

Partial list of contents

Part 1: Overview

- Brief demonstration of what an HP Portable can do: word processing, spreadsheet, database management, communications, time management

Part 2: Fundamentals of Using the HP110 and Portable Plus

- Understanding the value of the HP Portables' RAM and ROM technology—Includes demonstration of how to install ROM chips in the Portable Plus
- Maximizing screen readability
- Maximizing battery life
- Making full use of the HP Portable keyboard
- The back of the HP Portables: interfacing with other devices
- PAM, the home screen
 - Managing files and starting programs
 - Using PAM's System Config to

best meet your needs

- Partitioning RAM into main memory and "Edisc" storage

Part 3: Using ROM-based software

- Tutorials on DOS, MemoMaker, Lotus 1-2-3 as a spreadsheet, Lotus 1-2-3 as a database, and data communications using the Terminal or TERM program.
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- Connecting to IBM compatible computers with HPLink
- Connecting to HP DeskJet and other serial printers

Part 5: Demonstrations of Products That Enhance the HP Portables

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- Shelp (pop-up notepad, calculator, etc.)
- Webster's Spelling Checker
- The Editor (word processor)
- The Norton Utilities (quick unerase, disk sort)
- Portable modems

All this and more in an information-packed 5-hour presentation by Hal Goldstein, president of Personalized Software and leading expert on the HP Portables.

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P.O. Box 869, Fairfield, IA 52556 515/472-6330

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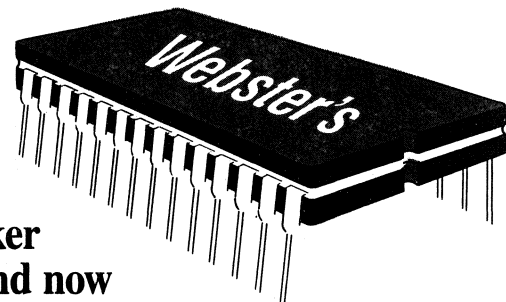
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PRICE LIST center

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

RECOMMENDED FOR:		
HP110 Portable	Portable Vectra	•
Portable Plus	HP150	•
IBM PC and compatibles		•
Available on ROM Backup for the Portable Plus		

- 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 ("spelling" 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.

PRODUCT NO. WB11NS

Webster's is available on ROM backup for an additional \$179. See ROM ad in this issue for important details.

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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Attention HP110 Users:
Order WordPlus for your
Spell-checking needs!

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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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.

PUBLISHER'S MESSAGE

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 **LS** Vectra LS/12

When items are *partly* or *indirectly* relevant they are denoted as:

110 110 Portable **P+** Portable Plus **PV** Portable Vectra **LS** Vectra LS/12



Hal Goldstein

Last issue I shared with you my thinking about the future of Personalized Software. Your written and phoned-in responses made me glad I did.

As you will see in the Letters section, many of you responded thoughtfully about the future of Personalized Software. You will see that these letters are not just about Personalized Software but about the future of the portable computer industry.

I am going to continue my discussion of possible directions of the company in

this message. I do so because it helps me clarify my thinking, because I can use more of your input, and because the direction we choose may be important to you.

MANUFACTURE OUR OWN PORTABLE

Many of you phoned or wrote to me to discuss variations on a similar idea. Larry Baldozier, our director of operations, and Brian Teitzman, our director of sales, espouse this same thought. You tell me, think big -- build portable computers yourself. Evolve the HP Portable concept the way HP should have done. Create a rugged, PC-compatible portable computer with long battery life and making use of RAM and ROM technology. Use a faster processor, increase storage capacity, and make the screen more readable (perhaps using the Portable Macintosh technology rather than backlighting to preserve long battery life).

Some of you tell me that competent third parties can work with us on the specifications, design, and manufacturing of such a new portable. It was even suggested that I negotiate with HP to obtain the basic design and tooling of the Portable Plus and use that as the basis of a machine with new innards, screen, and drawers.

However, whenever I think about the idea of Personalized Software manufacturing a portable computer one hundred red flags go up. Raising capital, developing or acquiring the necessary expertise in hardware and manufacturing, quality control, competition, and marketing are all issues that concern me. I view myself as a teacher, writer, and software expert with some business ability: not a hardware/manufacturing expert. I am wary of building computers. However, I am open to be convinced otherwise. Maybe there are readers with the knowledge, capital, and experience who would be interested in some joint venture. The rest of you keep sending us your conception of an ideal portable computer and who knows, maybe we will build it?

STAY IN THE HP PORTABLE BUSINESS

My own thinking about Personalized Software has recently gone full circle. I believe our primary business can revolve around the HP-110 and Portable Plus for at least the next two to three years!

These HP Portables offer ruggedness, battery life, customizability, and now a price that should make them the best buy for a number of segments of the portable computer market place.

My idea is twofold. First, there must be a number of

niches for which the HP Portable Plus (or even the HP-110) is absolutely the best system. Past Portable Papers have chronicled possible such niches: navigation, emergency services, scientific field work, education, third world and Eastern European countries, the Soviet Union, etc.

Furthermore, thanks to ROMBO, our new 128K byte ROM burner, we can now fill a ROM drawer with up to 1.5 Megabytes of software. This means we can create "new machines" dedicated to specific functions. For example, we could create a navigational portable, a financial forecasting computer, or a database portable customized for use in specific emergency situations. All this can be accomplished by putting the right software in ROM.

We can also put non-changing information into ROM. Engineering data, geographical data, marketing data, astronomical/astrological data, legal data, even the Bible, can be permanently burned into ROM. (For example, we could create a biblical studies portable.) Similarly, we can continue to sell these units to HP-3000 or IBM main frame customers who need a terminal on the road for their office computer. Our challenge will be to find the markets where the HP Portable is really the best solution. Then we must find the appropriate entry points into these markets.

Here some of you can be of great service. You can write or phone us and let us know where these markets exist and how to tap them. You can even represent us in these markets and supplement your income.

The second related idea is to offer lease arrangements for HP Portables. That way a company is not tied into the HP Portable technology indefinitely. Students could rent computers by the semester. Companies could sign a year lease. Such an approach eliminates the "used" computer stigma and makes it easier for companies or individuals to justify the use of these systems as technology continues to evolve. At the same time it would provide Personalized Software with a steady income and allow us to continually recycle these indestructible wonders. If you can help us with this plan or further my thinking please call or write.

Both the advantage and disadvantage of this whole strategy has to do with supply. We anticipate that we will be able to continue to purchase used HP Portables at a reasonable cost in the coming years. That means our "manufacturing" costs (and hence our selling price) will stay relatively low. However, that also means our supply is limited to how many HP Portables are available and how many we are willing to stockpile in inventory. Hopefully, as supply becomes a problem we will be able to replicate this idea with other portable computers or switch to a different market.

ADVANTAGES OF THIS PLAN TO YOU

If we aggressively continue to market HP Portables in the coming years, current owners will be obvious beneficiaries. It would mean that we would continue producing The Portable Paper and Subscribers Disks. Products discussed in this issue such as 2 and 4 Megabyte RAM cards, a 2 Meg Flash ROM / half Meg RAM drawer, and a drawer containing a 20 Meg hard disk could come to fruition. Capabilities of our ROMBO 128K byte ROM burner would expand. New products such as the Portable Plus outline program and LetterPerfect discussed in this issue would become available.

We will see. Your input in all this will help us make our turn at the correct corner.

LETTERS

1990 Subscribers Disk Comments

P+

110

PV

LS/12

I found the '90 disk to contain some very useful programs and utilities, and wanted to pass along some observations to other readers who, like myself, wonder how to tailor them to suit our own needs. In particular there is an application called MJOG. I have already talked to Larry at Personalized Software regarding this program, but I wanted to pass along some of the details of what we discussed.

MJOG is a handy 'memory jogger' program, that allows a user to quickly access up to seven tables of reference information (6 are user-definable), of up to 500 lines each. The first table has been pre-defined, and is a trusty ASCII code table that you can never find when you need it. When at first I tried the program some of its potential was not initially appreciated, because it seemed of little value if it could not be located when needed, or if I forgot how to access it!

And then a thought occurred to me that almost completely solves the problem (almost, more later). If you return the Portable Plus to the PAM screen, chances are that the label defining the f7 function key is blank. And even if it is not, when was the last time you used it anyway? It turns out that PAM looks in the current directory or ROM for a file named PAMHELP.COM and if found, labels the f7 key as 'Help'. If not, it is left blank. Terrific...just rename the MJOG program "PAMHELP.COM" and now at the touch of a button, up pops your personal handy-dandy lists. If you are a programmer, you could keep a list of printer escape codes, or Wordstar-like key codes, maybe some of the 'hidden' key codes that are published in the Portable Paper from time-to-time, or perhaps under REWARD you could keep your personal data in case your computer ever went astray. For myself, since programming is less of a requirement, I prefer to keep lists of various hotels and restaurants used when travelling, airline reservation numbers, and another for some key contacts and phone numbers. These are simple lists of information that don't require the setting up of a complete database such as Condor or ECM, and are very fast in appearing on the screen. And they appear as HELP, just where I need them. You may even use it as a true Help function to

describe in better detail the programs that are accessed by PAM's somewhat short descriptions. Once you determine why you are going to use it, the how comes next, but it is definitely worth a try.

Small tip...ever notice how when you uncompress a file from the subscriber disk, that out pop a whole bunch of files, whose names you can never remember, and they all kind of merge in with your existing files, to be lost forever?? Then save yourself the chore of sifting through the directory, by setting up a temporary directory TEMP. By working on only one program or utility at a time, they will be much easier to delete or move around. And certainly a lot easier to find!

From the A: prompt, type C:MJOGC to uncompress the memory jogger program. Out will pop 10 files. The program itself is called MJOGX.EXE. If you have enough memory space for now, make another copy of this file and call it A:PAMHELP.COM, or if memory is tight, just change it by using the RENAME command.

Basically that's it! Enough to try it out at least. What you should see if you return to PAM, is f7 now labelled 'Help'. If you press f7, the main menu of the Memory Jogger program should appear, with f1 providing an Ascii Table sub-menu, and f8 as the Exit program key. The six keys f2 to f7 will be blank, and these are the areas where you can store your own reference material, or use the ones supplied as examples.

To use the examples (zip codes, telephone area codes, terminal escape codes, etc.), you need to go back to DOS and locate one of the files you uncompressed called MJOG.ZIP. It contains six further files, to match the f2 to f7 keys mentioned above, but you must use the PKUNZIP program from the PKZIP file (also on the '90 disk). Or, if you prefer to compose your own memory jogger tables, you can read the file named MJOG.DOC for all the details. Don't be overwhelmed with some of the trivia, print it out if you are able, and it will be easier to scan. I'm sure that if you have gotten this far, you will have no trouble at all. One thing to remember is that the lists you use or create will be called MJOG2.LST to MJOG7.LST where the number in the file name will become the function key later in the MJOG program. Store these lists along with the main program (now PAMHELP.COM) in the root directory (A:\) if that's where you normally operate when you return to PAM. Once you are happy, you can delete all of the other files you uncompressed, unless you are into Pascal programming, or other forms of self-abuse, in which case you probably already have so many post-it notes all over your work area that you really didn't need this program in the first place.

Minor problem: Everything seems to work fine, except for one glitch...when the program exits back to PAM, you can still use the TAB key to select an application, but the cursor arrow keys will not do this. If you type any character and 'Return' which calls up DOS (with an "unknown command"), then return once more to PAM, and all is fine. Perhaps there is a guru out there who can offer some advice as to how to overcome this quirk, which would make this truly a 100% useful program for anyone. Right now it's at 95%, but I'm still happy. And I hope you find it useful too. Thanks for on-going support.

Norm Lang

10688 Glenwood Crescent
E. Surrey, BC V3R 0B4 Canada

[Neat! I checked out information on PAMHELP.COM in the Portable Plus technical reference manual and sure enough 10.8 describes the PAMHELP.COM file. If one exists, HELP automatically gets written on the PAM f7 key. I don't know why the oddity with MJOG exists. I tried renaming COM files and even EXE files such as our FILEPLUS.EXE to PAMHELP.COM with a fair amount of success. It would be nice if someone explores possibilities or figures out a ways of utilizing keys such as f1 Start Application and f2 File Manager in ways other than their original assignment.]

FastPlus CPU Upgrade, Comments on LZEXE

P+

It's been some time since my last letter to the editor of the Portable Paper. This pause has been due to other commitments, not loss of interest .. and it is time to chime in. Your last couple of issues argue effectively that our HP Portables ... particularly the PLUS ... still have a lot going for them; David Hughes makes excellent sense in his commentary.

In recent days I have received back from Personalized Software my PLUS with the CPU FastPlus upgrade. I am most impressed with the performance improvement. Everything happens noticeably faster, be that a reboot, an application loading, or a search and replace in my word processor. With little time but much curiosity, I ran PC Magazine Labs Benchmark Series tests; my PLUS's CPU now hums along at 80% of an 8Mh PC AT, or at just over twice as fast as the old Harris 80C86 delivered. The RAM disk performance (I am not sure that the CPU upgrade affected this) reports an average 1 millisecond access time, based on 5000 random sector (512 byte) access and read cycles. With my 2-meg RAM disk, my PLUS is really a solid performer now .. especially in I/O intensive applications.

And now I am looking for additional enhancements ... like maybe a 4Meg RAM disk.

Based on the recent PP item on MS-Word printer drivers by Craig Fullman from HP (Vol 5, No.2, Pg.12), I have successfully adapted some scaleable font .PRD files to my MS-Word1.1 on ROM; now I can print via the LaserJET-II directly from my PLUS in a variety of font sizes in portrait or landscape modes. I certainly hope that adapting Word5 to the PLUS will turn out to be a successful undertaking ... so I can avoid having to wrestle with the alternative ... WordPerfect-5.

On another subject, I just tested the LZEXE utility for compressing executable files. Let me share briefly how this went; LZEXE runs very fast but only on a genuine PC or clone. LZEXE'd files then run from the PLUS as has been reported in the last issue (Vol.5, No.3, Pgs. 6, 29, 34).

I proceeded to LZEXE most DOS utilities and several application files in my PLUS, with generally excellent results. I limited my conversion to files where I could save at least one sector, e.g. DIRALL.COM is a 1792 byte file using 4 sectors of file space; the LZEXE'd DIRALL.EXE at 1307 bytes uses 3 sectors ... freeing up 1 sector of RAM disc space. Since the PLUS' disc storage is managed in sector increments (at 512 bytes per), I think this approach makes sense to evaluate the value of LZEXE. To date I have LZEXE'd 13 executable files totaling some 409 sectors before, and 281 sectors after ... resulting in 31 percent saving of disk space ... in other words 128 sectors or 64K is now available for other uses.

The individual .COM or .EXE files had greatly varying compressibility. For example the DOS utility named FORMIBM compressed from 9 sectors to 3; DISK-PACK from 46 to 28; PKZIP from 62 to 48. On the other hand COPYNEW only went from 6 sectors to 5.

All these compressed files loaded and functioned flawlessly in my tests. My experience with XCOPY, however, proves the exception to the rule; my LZEXE'd XCOPY, when I loaded it, proceeded to reset the Edisc/Memory and the TIME/DATE settings of the PLUS ... but it did not perform its intended function. The LZEXE'd CHANGE utility for controlling a file's attributes returned an error message and quit without inflicting any noticeable additional pain. So, in spite of these exceptions, my conclusion is that LZEXE is every bit as good as described in *The Portable Paper*; however, a prudent user will test-drive each converted file before jettisoning the old version. Now I'll proceed to look into SCRUNCH, the compressor that runs on the PLUS. A note of appreciation to Ed Keefe for evaluating and distributing these shareware files; it's

nice to see Ed's column again.

The last item that I'd like to comment is about the ROM kit announcement. This is very good news. It would have been just as welcome a year ago ... but perhaps the 1Mbit ROM chips were not yet available then. Now if we are able to break out of the 256K directory limitation ... and combine this with compressed executable files where applicable, this should give us for the first time a full measure of the ROM disc's potential.

In closing, Hal, my recent contacts with your staff compel me to echo other letters ... prompt, informed and courteous service that is much appreciated.

Frank Keresztes-Fischer
5859 Griffith Drive
Brighton, MI 48116

Plus Still Tops; Manufacturer Your Own

110 As you will recognize from the appearance of this letter, it has been done on an HP **P+** Portable Plus and printed on an HP ThinkJet. I was one of the early purchasers of the HP-110 shortly after it was introduced at the Atlanta Spring Comdex some years ago. I graduated to the Portable Plus shortly after it came out and have been a devotee of both machines since they started. We now own about a half dozen **PV** 110's and three Portable Pluses.

And, we've been a subscriber to *The Portable Paper* for most of your existence. I have purchased material for your company under my company names of Montgomery Marketing, Inc. and M. E. Inc.

And, I agree with you and most of your subscribers—the HP Portables are still the best machines on the market.

Your request for ideas for the progressive future of Personalized Software got the right side of my brain going full tilt. (My role at M. E., Inc. is a business consultant with creative solutions.) Please consider some of the following—reported in the sequence of their birth!

1. Even though my offices use our HP's, we have also had to join the MS-DOS world. So that you and we can perpetuate the use of our favorite computers, how about focusing some of your software and hardware experts to more and better ways of getting our HP Portable-generated outputs to be communicated to our AT-type office equipment.
2. HP has designed a piece of equipment that is virtually indestructible so we should keep thinking of ways to keep the equipment as up-dated as possible.

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Editor/Publisher
Hal Goldstein

Managing Editor
Richard Hall

Department Editors
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Glen Frank

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George Foster

Circulation
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Executive Advisor
Rita Goldstein

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Aside from the DOS incompatibility the only thing these machines need to keep improving is memory capacity!

(Continued on page 40.)

110%

Making More of Your HP Portable

by Hal Goldstein

Visit us in Boston At Interex, Booth 720

110 Few of you make it to Fairfield, Iowa to visit us. (We have **P+** had 7 subscribers visit us in the past 5 years - we always give a warm welcome and a tour of our facility.) However, **PV** each year we venture out and sponsor a booth at the HP **LS/12** Interex conference. Interex is the "official" HP users group. Most members are HP-3000 users but microcomputer users also avail of their services.

The 4 day show consists of over 200 technical conferences and discussions with HP management. The show also includes over 100 vendors exhibiting their wares including a large centrally located HP booth. Details:

Host: Interex, 585 Maude Court, Sunnyvale, CA 94086, (408) 738-4848
 Dates: August 20-23, 1990
 Location: Hynes Convention Center, Boston
 Exhibitions Only: \$20 (We will have some free passes. Get word to our booth inside and we'll come out and give you one.)
 Conference Fee: Full attendance of meetings and exhibitions \$225 to \$750 depending on whether you are an Interex Member, how many days you register for, and whether you register before July 27.

Forgot my charger

110 When my wife, Rita, and I travel some distance by car, I **P+** usually bring my HP Portable Plus along. (We live in a town of 10,000 -- Iowa City an hour to the north offers us a chance to get away to the "big city".) Fortunately, Rita likes to drive and doesn't mind me typing away on my Portable as we traverse the miles of midwest farm land.

Recently, we took a five hour trip to Madison, Wisconsin. On the way I wrote the ROMBO article and some short pieces that appear in this issue. However, when we got to our hotel room, I realized to my dismay that I forgot my recharger. I had planned to do some work in the room, so even with the Plus' exceptional battery life, I feared it would run low. Also, as mentioned in past issues of The Portable Paper, draining the battery a few times can reduce the life expectancy and power of the HP110 and Portable battery.

Fortunately, I remembered that the University Book Store near the University of Wisconsin campus sold HP calculators. The HP41 series use the same HP82059D (and same HP-IL cables) as the HP Portables. Sure enough they sold

the \$20 charger and I was back in business.

If you're ever stranded in a city without charger or cables, make a few calls to office supply stores or university book stores, and you'll probably find what you need.

SafeSkin -- Keyboard Protection for Hewlett-Packard Portables

110 *SafeSkin is a clear, flexible cover that permanently **P+** protects the HP-110, Portable Plus, and LS/12 **LS/12** keyboards from dust, dirt, and liquid spills.*

By Richard Hall and Hal Goldstein

SafeSkin is a thin, clear polymer keyboard cover that is custom-molded to exactly fit the individual keyboard. Models are available for the HP-110/Portable Plus and the LS/12 Vectra. Self-adhesive strips along SafeSkin's outer edges securely attach it to the computer.

ADVANTAGES

- **Protection** -- People who drink coffee or cola around any computer are risking serious damage if (when) they spill their beverage of choice on the keyboard. The potential damage is even worse with portables because the keyboard sits right on top of the CPU. When you spill your drink, you soak everything!

A keyboard cover is probably a good idea for people on the road, or for people who must expose their HP portables to a less-than-ideal environment. Accumulated dirt, dust, or humidity can cause the portables to malfunction.

- **Permanence** -- Once attached, SafeSkin stays where it is. You don't have to put it on and take it off. SafeSkin doesn't get in the way of the cover closing.

USING SAFESKIN

We liked the protection SafeSkin affords. Frankly, we were surprised that it did not get in the way of normal use of the Portable Plus. However, some very particular typists might not like the "feel" of the keys with a thin layer of plastic covering them. Also, on occasion a letter printed out twice on the screen when the finger wasn't removed quickly enough. In addition, there are some very competent people out there who don't drink near their portables, never spill their beverages, and work in a relatively dirt- and dust-free environment. For those fortunate souls SafeSkin may not be necessary. (I just hope they don't have children or clumsy coffee-drinking associates.)

New software breakthrough!

50% more file space for as little as \$89.95!

- **Easy to use**—if you can save a file, you already know how to use **SQUISH PLUS**!
- **A must for every HP Portable owner—ROM Backup version especially valuable if you use a Portable Plus!** (Sorry, **SQUISH PLUS** doesn't run on the HP110.)

It isn't often we find a program that's a must for every portable user, but Squish Plus is just such a program.

Squish Plus lets you increase your disk storage space by 50% or more for as little as \$89.95—without having to install any hardware or learn any new commands.

Squish Plus compresses files, saving them much more efficiently than DOS. For example, a word processing file of 50K might only take 30K using Squish Plus.

COULDN'T BE EASIER!

To use Squish Plus, you simply add a new drive letter to your system (for example, e:). If you wish, the new "drive" can be password protected.

Then, whenever you save files to the new "drive," Squish Plus compresses them automatically. When you retrieve a compressed file, Squish Plus automatically expands it to its normal size.

The saving in disk space is enormous: Squish Plus compresses data files (spreadsheets, text documents, databases) by 30-70%, and compresses program files by 5-25%. On the average, *you will increase the amount of data you can store on a disk by 50% or more!*

Note: All your other software can use the compressed data *as is*. There are no new commands to learn. You set up directories and perform all file operations—save, retrieve, copy, rename, backup, etc.—the same way you always do. (File backup takes up fewer disks, of course, and is significantly faster.) You can even use the Norton Utilities "Undelete" program to re-

cover compressed files that have been deleted!

Initial set up is easy too. There is no need to reformat or repartition your present disk. All you do is install Squish Plus as a "device driver." (You don't even have to know what that means. The manual—one of the best we've seen—walks you through the procedure in 5 minutes.)

ANY DRAWBACKS?

Other file compression programs impose a speed penalty. But Squish Plus is so efficient *there's virtually no loss of speed*—especially on the Portable Plus—except perhaps for a slight additional wait with some of your program files and largest data files.

Other file compression programs also set aside a significant amount of internal memory space for file decompression. But Squish Plus uses only 36K of memory for everything.

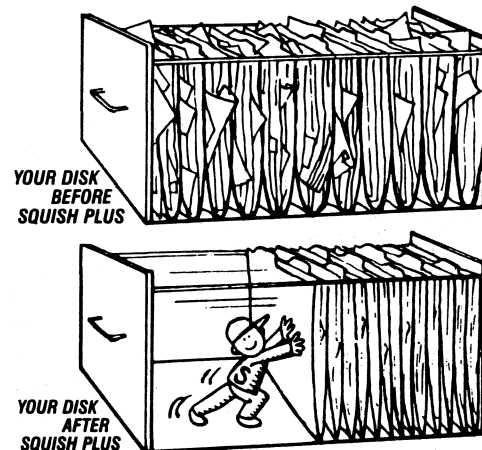
(Portable Plus users may need to increase internal [main] memory by as much as 36K. On the Portable Vectra and LS/12 Laptop, Squish Plus simply borrows 36K from the 640K of memory that's built in.)

WHAT ABOUT DISK SPACE FOR THE PROGRAM ITSELF?

The files on the Squish Plus disk total 139K, including several Squish Plus utilities.

Portable Plus users can get by with just 54K by eliminating all but two essential Squish Plus program files. (You can even reduce your Edisk space requirement to zero if you're willing to disable PAM and load Squish Plus from an HP9114 each

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



SQUISH PLUS "compresses" your files so they take up less disk space!

time you reboot).

A better alternative—and the one we recommend—is to purchase Squish Plus on ROM Backup (see box below).

Whatever computer you use, *there is no other way to expand your file storage space that is as easy or economical as Squish Plus*. Order your copy at no risk today.

Retail Price	Subscriber Price
--------------	------------------

Squish Plus for IBM PC compatibles

\$99.95	\$89.95
PRODUCT NO. SQ12NS	

Squish Plus for Portable Plus

\$129.00	\$99.95
PRODUCT NO. SQ11NS	

Rom Backup Package (includes Squish Plus for Portable Plus on disk and two 64K Backup ROMs)

\$264.00	\$234.95
PRODUCT NO. SQ11NK	

Squish ROMs (Must own Squish Plus for Portable Plus for each ROM set purchased)

\$135.00	\$135.00
PRODUCT NO. SQ12NR	

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

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Personalized Software
P.O. Box 869, Fairfield, IA 52556 515/472-6330

IMPORTANT MESSAGE FOR PORTABLE PLUS USERS

Special Portable Plus version

The authors of Squish Plus have worked with Personalized Software to create a customized version that runs on the Portable Plus. *This version is available only from us.* Be sure you specify "PORTABLE PLUS VERSION" when you order.

Buy Squish Plus on ROM!

With disk space at a premium in the Portable Plus, the best way to buy Squish Plus is on ROM Backup.

Our exclusive ROM Backup package includes the Squish Plus disk, and two ROMs—128K total—that contain all the Squish Plus files (except for one that you'll never need).

With Squish Plus on ROM, all the useful Squish Plus utilities will always be available, and you won't have to give up any disk space at all.

CALL NOW!

515-472-6330

INSTALLATION

SafeSkin comes in many different models. The ones designed for the HP-110/Portable Plus and the LS/12 FIT ONLY THOSE PORTABLES. Position the SafeSkin over the keyboard and gently work it into place. Pull gently on the outer edges if some of the areas of the SafeSkin are "puckered" or stick out a little. Don't stretch or place too much tension on the SafeSkin as it will adversely affect the fit. We found that the plastic covering a couple of the keys stuck out a little when I first installed the SafeSkin. Pulling on the outer edge didn't seem to do much so I put the Portable Plus off to the side and let it sit for an hour and the SafeSkin seemed to settle in better. The SafeSkin can be easily removed if necessary, but this should not be done too many times because it decreases the adhesive on the edge of the cover and makes a secure fit less likely.

The SafeSkin that we received for the HP110 and Portable Plus blocked the two latch holes that the cover latches go into when closing the screen. You have to use a pocket knife to cut two holes in the SafeSkin above the latch holes to allow the Portable Plus cover to close -- a very minor operation. We'll probably take care of it for you if you order through us.

ORDERING INFORMATION

SafeSkin can be ordered from Personalized Software at its retail price of \$29.95. Be sure to specify which computer you will be using the SafeSkin on: our part number SA11NM for the HP110 or Portable Plus or SA12NM for the LS/12. ■

Book Reviews

110 We've looked at a few new books recently and here
P+ are our impressions of some of them.

PV By Richard Hall

LS/12

THE WINN ROSCH HARDWARE BIBLE

This book is a thorough encyclopedia of hardware terminology which I refer to all the time when writing *Portable Paper* articles. *The Winn Rosch Hardware Bible* contains accurate, yet easy-to-understand descriptions of everything from Motherboards, Microprocessors, Monitors and Modems, to Floppy Disks, Hard Disks, and Tape storage devices. The Hardware Bible is an excellent resource for anyone who must understand and/or communicate intelligently about computers and related hardware. It's written simply enough for the relative novice to understand, and yet thoroughly enough for all but the most sophisticated computer professional. We like it!

WORDPERFECT MACRO LIBRARY

Many of our subscribers use WordPerfect on their HP Portables. We use WordPerfect to publish *The Portable Paper* and use its sophisticated MACRO abilities to automate repetitive tasks. *The WordPerfect Macro Library*, by

Que, is a well-laid-out and complete description of the subject. The book is useful to almost any level of user. It begins with the fundamentals of creating macros and gives step-by-step instructions for each topic covered. In addition to the fundamentals, the book covers the Macro Command Language and walks you through the creation of specific macros (numerous, useful examples are given). The book ends with four chapters on more sophisticated use of macros. This book has one of the most clearly-laid-out indexes I've seen.

LASERJET UNLIMITED VERSION II

Many HP Portable owners use an HP LaserJet printer. This book published by PeachPit Press should be very popular with HP LaserJet users for three reasons:

1. It covers the basics of the LaserJet in a simple, understandable manner;
2. It describes some of the more popular setup utilities;
3. It includes sections devoted to the use of the LaserJet with specific, popular applications including:

MS-Word
WordPerfect
WordStar
DisplayWrite
Lotus 123

In addition, *LaserJet Unlimited* has a thorough discussion of Fonts, including basic information and profiles of some popular fontware, font utility programs, and font editors and enhancers. There's more on Special Topics, and Enhancements and Upgrades. Appendices include: Answers to Common Questions; Tips, Tricks, and Troubleshooting; and more.

DESKJET UNLIMITED

A very thorough look at Hewlett-Packard's high-quality inkjet printer. (The Deskjet offers 300 DPI LaserJet quality at a fraction of laser printing cost. Personalized Software sells used DeskJets for use with all four HP Portables. See price list, center spread of this issue.)

The book covers all the necessary topics, from the basics through PCL (printer control language). It spends over 130 pages describing the different software applications used in conjunction with the DeskJet (including a thorough discussion of the use of WordPerfect 5.0 and MS-Word 5.0). Word processing, desktop publishing, graphics, charting, spreadsheet, database, and forms generation applications are discussed. There is a description of the use and installation of MS-Windows with the DeskJet.

Power users will enjoy the 70-page discussion on DeskJet programming and PCL. The brief troubleshooting section covers the common problems one may encounter printing with the DeskJet.

ORDERING INFORMATION

You should be able to find any of these books through a good university or computer-oriented bookstore.

The Editor II

It's way beyond MemoMaker!

You won't believe all the word-processing features this \$129* program contains—and it takes up less than 40K of memory!

*(only \$99.95 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 II. 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 II's most valuable features are listed on the chart to the right. It's quite a list, isn't it? To me, THE EDITOR II 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 II (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 great features listed to the right, there are six more I especially want to emphasize:

1. THE EDITOR II's Lotus-like menus make it incredibly easy to use.
2. THE EDITOR II 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 II will automatically back up your files to protect you against mistakes: When you save a file, THE EDITOR II saves not just the current version, but the previous one as well.

The Formatter

THE FORMATTER gives you advanced formatting capabilities that even THE EDITOR II 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 II, MemoMaker, or other ASCII text files. You can customize THE FORMATTER for almost any printer.

4. THE EDITOR II takes up less than 40K of memory.
5. THE EDITOR II loads and saves files and executes commands exceptionally fast.
6. THE EDITOR II comes with a well-written reference manual and a step-by-step tutorial.

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 II simply can't be beat. See for yourself: Order your copy, risk-free, today.

THE EDITOR II on disk \$99.95
Portable Paper subscriber price . . \$79.95

PRODUCT NO. ED11NS

ROM BACKUP version \$194.95
(THE EDITOR II on ROM and disks)

PRODUCT NO. ED12PP

For users of Version I or SuperROM:

EDITOR II Upgrade Kit on disk . . . \$35.00
PRODUCT NO. ED14NS

Upgrade Kit on ROM and disk . . . \$58.00
PRODUCT NO. ED15NR

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

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form 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 \$119.95 total (Portable Paper subscribers only)

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
Portable Paper Subscriber price \$49.95

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



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

- **Search and replace.**
Just tell THE EDITOR II what word or phrase to look for, and it will display each occurrence and/or replace the occurrences either selectively or globally.
 - **Edit two files at once.**
THE EDITOR II 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.
 - **Block and line centering.**
THE EDITOR II lets you center blocks and lines of text with a few simple keystrokes.
 - **Powerful macros.**
Store any sequence of keystrokes and play it back at the touch of a single key. Macros can be edited, deleted, stored in files—even autoloaded on startup. THE EDITOR II comes with over two dozen macros to get you started.
 - **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 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 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 II, run another program, then type a one-word command and be back in THE EDITOR II exactly where you left off. This includes exiting DOS—which means you can delete, copy, and rename files while running THE EDITOR II.
 - **Right justification and automatic paragraph indent.**
A simple command right-justifies your text and automatically indents your paragraphs however many spaces you wish.
 - **Undelete.**
A simple command will undelete the last line or block of text deleted.
 - **Upper/lower case conversion.**
Another simple command lets you change between upper case and lower case without having to retype anything.
- In terms of useful features per dollar, THE EDITOR II is a truly exceptional buy. I urge you to try it. Order yours today.

Hal Goldstein

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

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USED HP PORTABLES AND PERIPHERALS

USED HP110 Portables
Portable Pluses
HP150s
HP9114 Disk Drives
HP-IL ThinkJets
HP-IL Converters
Video Interfaces
HP Software
HP ROMs
and more

(If you've bought a 1- or 2-megabyte RAM drawer, we'll even buy your old RAM drawer and extra memory!)

We buy them.

No longer using your HP Portable or peripherals? Turn them into cash through The Portable Equipment Exchange. Prices fluctuate, so call us for current figures.

We sell them.

Buying used HP equipment makes sense. You know HP quality! Even used HP machines can serve you well for years. Call for current prices.

We guarantee them.

Any used item you buy from us can be returned within 30 days for a full refund. In addition ↴

ONE-YEAR GUARANTEE
(parts and labor)
on all used equipment!

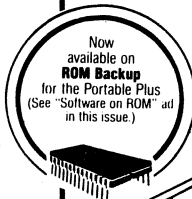
(515) 472-6330

The Portable Equipment Exchange
—a division of Personalized Software
P.O. Box 869 Fairfield, IA 52556

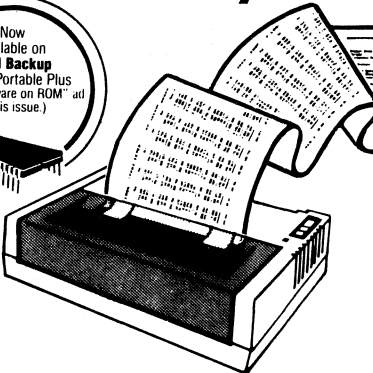
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For good buys on used—and new—HP equipment, see our 4-page brochure enclosed with this issue.

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



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



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.)

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

PRODUCT NO. SW11NS

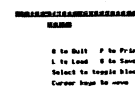
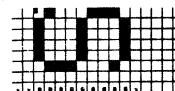
SideWinder 1.01 owners may upgrade to current version 2.01, which supports 8 chars/finch, by sending Personalized Software \$7.50 or by mailing a self-addressed \$.39 stamped envelope and the SideWinder master disk.

RECOMMENDED FOR:

HP110 Portable	•
Portable Plus	•
Portable Vectra	•
HP150	•
IBM PC and compat.	•
Available on ROM Backup for the Portable Plus	

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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The Winn Rosch Hardware Bible is published by Brady publishing, a division of Simon & Schuster, Inc., of New York, and retails for \$29.95.

WordPerfect Macro Library is published by Que Corporation of Carmel, IN, phone: 800-428-5331. It retails for \$21.95.

LaserJet Unlimited (\$24.95) and *DeskJet Unlimited* (\$21.95) are published by Peachpit Press, of Berkeley, CA, phone: 415-5278555. ■

EDLIN Made Easy

110 Use the MS-DOS line editor to create and edit small text files and modify your AUTOEXEC.BAT, CONFIG.SYS, or other simple batch or text files.

P+
PV
LS by Richard Hall

EDLIN is the MS-DOS line editor that comes built into your Portable Plus and comes with DOS for the LS/12, Vectra CS, and any other PC. HP110 users will have to borrow EDLIN from another DOS system. EDLIN lets you create and modify text and batch files. It does not replace a wordprocessor. In fact you can access your wordprocessor's non-document mode and get along without ever using EDLIN.

EDLIN is a quick and handy way of editing text files from DOS. You don't have to go through the bother of going into and exiting a wordprocessor. I use EDLIN when I create or edit the AUTOEXEC.BAT, the CONFIG.SYS, or any batch file. Below is a summary of how to use EDLIN to create a file.

CREATE A NEW FILE

1. To Start EDLIN from DOS -- Type EDLIN filename.ext, where FILENAME.EXT is the name you give the new file. Press the **return** key and EDLIN will display the following:

New file

*
_

The asterisk (*) is prompting you for the next EDLIN command.

2. To Enter Text -- Type **i** (insert mode) after the asterisk. Your screen will look like this:

New file

*i

1:*
_

The asterisk is now prompting you to enter the first line of your new file. When you finish that line and press **return**, you will be prompted by 2:*_, 3:*_ and so on. When you have entered your last line, and press **return**, type **ctrl-c** and you will exit the insert mode of EDLIN. Your screen will look something like this:



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New file

*i

1:(Line one of file)
2:(Line two of file)
3:(Line three of file)
4:(Last line of file)

*
_

3. To Save File -- Type **e** at the asterisk to end the EDLIN session. Your file will be saved to the name you gave it at the beginning of the session.

USING COPY CON TO CREATE FILES

An even quicker way to create a file is to use the MS-DOS COPY command. Type **copy con filename.ext** from MS-DOS and press **return**. Then type in your file, pressing **return** at the end of each line. When you're finished type **ctrl-z** and everything you have entered will be saved to FILENAME.EXT. If you don't want to save the file, then type **ctrl-c** and you will be returned to the DOS prompt.

While entering text in this mode you can backspace to erase the line you are working on but you cannot edit previous lines or use the arrow keys. Files created using COPY CON can be edited with EDLIN.

EDIT AN EXISTING FILE WITH EDLIN

I edit my AUTOEXEC.BAT file periodically so I'll use it in the following example.

1. To Begin Editing The AUTOEXEC.BAT File -- Type **edlin** **autoexec.bat** and press **return**. EDLIN will display the following message:

End of input file

*
_

2. To List The Contents Of The AUTOEXEC.BAT File Before Editing The File -- Type **l** (for list) after the asterisk and press **return**. The following will be displayed:

```
*l
1: PATH C:\;C:\WP51
2: PROMPT $p$g
3: CD\PP\PP27
4: WP
```

*
_

This displays the contents of the AUTOEXEC.BAT file. In the example above line 1 contains a PATH command, line 2 is a command that modifies the appearance of the DOS prompt, line 3 changes to the directory that contains the files I'm currently working with, and line 4 starts up WordPerfect. You may insert, delete, or modify the file as follows.

3. To Insert At The Beginning Of The File -- Type **i** at the asterisk. You'll be prompted by the following:

```
*i
1:*_
```

Enter additional lines as shown in the first example. Press **ctrl-c** to exit the insert mode and enter **e** at the asterisk to exit the session. You may want to look at your changes (type **l** for list at the *_ prompt) before exiting the session.

4. To Insert A Line Before Another Line -- Type **#i**, where **#** is the number of the line before which you want to insert a line. For example, if you wanted to insert a line before CD\PP\PP27 (line # 3 in the AUTOEXEC.BAT file) you would type **3i** at the asterisk. Your screen would look like this:

```
*3i
3:*_
```

Insert as many lines as you like (see first example) and then type **ctrl-c** to exit the insert mode and then type **e** to end the EDLIN session.

5. To Insert A Line At The End Of The File -- Type **#i** where **#** is the number after the last line number in the file.

6. To Edit A Specific Line Number -Type **#** after the asterisk, where **#** is the line number you wish to edit. Note: You do not type **i** (insert) in this case. You just type

the line number you wish to edit. Edit line 3 and you will see the following display:

```
*3
3:*CD\PP\PP27
3:*_
```

The asterisk now prompts you to enter a new line # 3. Type in your new line and press **return** to be returned to the * prompt. You can edit additional lines or type **e** to end the EDLIN session and save your modifications.

While editing a line you can use the MS-DOS Editing Keys (F1-F6) for copying or deleting portions of the line you are editing. (Please see "DOS FUNCTION & SPECIAL KEYS" below.)

7. To Delete A Specific Line Number -- Type **#d** where **#** is the number of the line you wish to delete.

8. To End The Edit Session and Save any Changes -- Type **e** (for End and Save) at the *_ and then press **return**. Any changes made will be saved and you will return to the DOS prompt. You must be out of the insert mode in order to end the EDLIN edit session.

9. To Quit Edit Session Without Saving Changes -- Type **q** and you'll be returned to the DOS prompt, original file intact.

DOS FUNCTION & SPECIAL KEYS

While editing a line in EDLIN, or typing a command line from DOS you can use the MS-DOS Editing Keys (F1-F6, DEL, INS, ESC, CONTROL KEYS) for copying or deleting portions of the line you are editing. Not all of these keys are functional on the HP-110 and Portable Plus.

To describe the DOS editing keys I'll use the example we've been working with so far (see point # 6 above). We are in EDLIN and creating a new line 3. The existing line 3 reads CD\PP\PP27. Here are what the function keys do. (All commands are issued from the 3:*_ prompt in this example. To fully understand these commands we suggest you create a test file and try them out while in EDLIN).

[The 110 and Plus have some key assignments that differ from those of the Vectras and other PC compatible computers. These differences are indicated below.]

f1 Portable Plus & 110, Vectras, LS/12, and PC compatibles -- copies one character at a time from the existing line 3. (Press **F1** once and C appears after the 3:* prompt. Press **F1** again and D appears next to the C, and so on.)

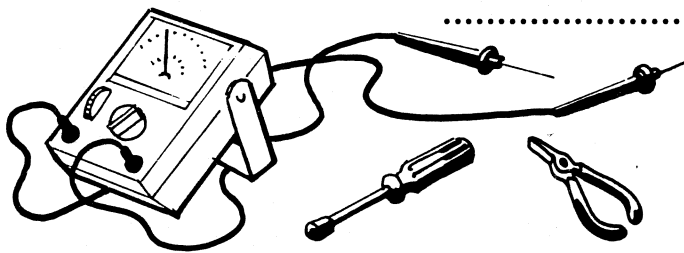
f2 Portable Plus & 110, Vectras, LS/12, and PC compatibles -- copies all characters from the existing line 3 up to a specified letter. (Press **F2** and then **P** and CD\ will appear next to the 3:* prompt (DOS seeks the first occurrence of P). NOTE: this command distinguishes between uppercase and lowercase letters. In the previous example, if you entered **p** after pressing **F2**, nothing would happen because **P** is in caps.)

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- HP110 or Portable Plus keyboard replacement: \$250

- HP110 or Portable Plus case replacement: \$175
- HP110 or Portable Plus internal modem replacement: \$195
- FastPlus upgrade (faster processor for Portable Plus) : \$250
- 256K to 512K upgrade for Portable Plus: \$395
- 128K to 512K upgrade for Portable Plus: \$495
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- HP ThinkJet repair: \$65-135

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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.

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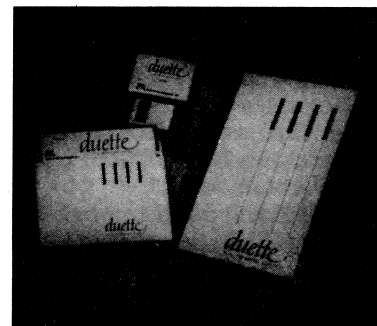
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IBM PC and compatibles	

- f3** 110 & Portable Plus, Vectras, LS/12, and PC compatibles -- copies all remaining characters from the existing line (Press **F3** from the 3:* prompt and CD\PP\PP27 appears. Type **XX** and then press **F3** and \PP\PP27 appears after the **XX** making the line now read **XX\PP\PP27**).
- f4** Vectras, LS/12, and PC compatibles only (does not work on 110 & Plus) -- Skips over characters in the existing line up to the specified character (i.e. press **F4**, type **P2**, then press **F3** and PP\PP27 will appear after the 3:* prompt.)
- f5** Vectra's, LS/12, and PC compatibles only (Press **f8** on the 110 and Plus) -- Saves the new line into the "template" or buffer memory. This feature can be used to modify lines in EDLIN.
- f6** Vectras, LS/12, and PC compatibles only -- adds an end-of-file character (ctrl-z) to the new line.
- del** Vectras, LS/12 and PC compatibles only (does not work on 110 and Portable Plus) -- skips over a character from the existing line.
- ins** Vectras, LS/12, and PC compatibles only -- enters/exits the insert mode. (This allows you to insert one or more characters into the line.)
- esc** Vectras, LS/12, and PC compatibles only -- voids the current input. If you make a mistake entering the new line, press **esc**. A \ will appear at the end of the line you're working on and the cursor will move to the next line, waiting for you to reenter your new line.

CONTROL COMMANDS

The examples above represent the basics of creating and editing files using EDLIN. In addition to the EDLIN commands and the MS-DOS function keys there are DOS control commands that can aid in the EDLIN editing process. The most commonly used are **ctrl-c**, **ctrl-p**, and **ctrl-s**, the first three listed below:

- ctrl-c** -- Aborts current command. If you are editing a line and press **ctrl-c**, you'll leave the edit mode and return to the initial * _ prompt.
- ctrl-p** -- Causes terminal output to a printer. This is a toggle switch. Once pressed, it will cause all terminal output to be sent to the printer until pressed again.
- ctrl-s** -- Suspends output display on screen. Press **ctrl-s** again and output resumes.
- ctrl-h** -- Removes the last character from a command line and erases the character from the screen. Acts like the backspace key and was originally included years ago for computers without backspace keys.
- ctrl-j** -- Inserts physical end-of-line. If you are entering or editing line # 5 (or any line #) and press **ctrl-j**, the cursor moves to the beginning of the next physical line (not the next line number) and allows you to continue entering or editing line 5.

- ctrl-v** -- "Quotation mark character" used within Edlin INSERT mode. Pressing **ctrl-v** tells DOS to recognize the next CAPITAL letter typed as a control character. Again, this was included years ago for use with computers without control key capability.
- ctrl-x** -- Cancels the current line, empties the command line, and outputs a backslash, return, and line-feed.
- ctrl-z** -- End of file marker.

MS-DOS editing control keys can be used in EDLIN or from the DOS prompt. The editing keys copy various portions of the previous line you worked on. The control character affects the existing DOS command line in different ways. The table below summarizes the EDLIN commands.

EDLIN COMMAND SUMMARY

After entering EDLIN you are prompted for a command by a * _ prompt. At the blinking cursor you may type one of the following commands:

- | | |
|----------|---|
| a | Appends, or lets you read in portions of a file too large to read in all at once. |
| c | Copies a range of lines (i.e. 1 through 5) to another part of the file and then rennumbers the lines. |
| d | Deletes a specific range of lines from a file. |
| e | Saves edited file, renames original file with a .BAK extension and exits EDLIN. |
| i | Inserts text into a file immediately before the specified line. |
| l | Displays a range of lines on screen. |
| m | Transfers a block of text to another location in file. Does not duplicate as in Copy mode. |
| p | Displays file one screen (23 lines) at a time. |
| q | Exits the file without saving changes. |
| r | Replaces all occurrences of a string of text with a different string of text. |
| s | Searches file for a string of text. |
| t | Puts contents of one file into another, or into text you're typing. |
| w | Writes a specific number of lines to the disk. For saving portions of large files. |

EDLIN EXAMPLE WITH PORTABLE PLUS

One of the ways to get the HP ThinkJet to print in Compressed Mode is to send the appropriate PRINTER ESCAPE SEQUENCE to it from the Plus. An escape sequence is simply a series of ASCII characters beginning with the ASCII Escape Character. When the printer "sees" the ASCII Escape Character, it "knows" to interpret the characters that follow it as a printer configuration command. The escape sequence that tells the ThinkJet to print in compressed mode is ^ [&k2S.

This escape sequence can be placed directly in a document, and preceding the portion of the document you wish printed in compressed mode. Or you can create a separate file with the desired escape sequence(s) and use the DOS COPY command to send the escape sequence(s) to the ThinkJet.

Portable Plus and HP-110 users can place the ASCII escape character in any file while using EDLIN by pressing the **escape** key followed by %. The escape character will

appear in the file as the `^[]` symbol. To enter the ASCII escape character, you must press **esc** and **%**. You may not enter the `^` and `[]` symbols from the keyboard.

For this example we'll use EDLIN to create a file called COMPRESS with the above escape sequence in it.

1. Open the file by typing **edlin compress** from the PAM command line or from the DOS prompt. Press **return** and EDLIN will display the following:

New file

*
_

2. Enter EDLIN's INSERT mode by typing **i** and pressing return. Your screen will look like this:

New file

*1

1:*
_

3. Enter on line # 1 the ASCII Escape Sequence for compressed mode printing:

- Press **esc** once and then press **&**. The `^[]` escape sequence symbol will appear on the screen.
- Enter **&k2S** (the rest of the escape sequence). Please note that the "k" must be lower case and the "S" must be upper case.
- Press **ctrl-c** to exit the Edlin INSERT mode.
- Press **e** to exit Edlin and save COMPRESS.

After creating the file, enter **copy compress prn** from the PAM Command Line, or from the DOS prompt, and the escape sequence will be sent to the ThinkJet and it will be configured to print in compressed mode. `^[]&kOS` is the escape sequence to return the ThinkJet to normal printing mode.

You can look at your DOS manual or a good book on MS-DOS for more examples. (See the next article for an example of the creation of an escape sequence using the DOS COPY command. ■

Computer Heaven

By Michael Felsenstein

110

P+

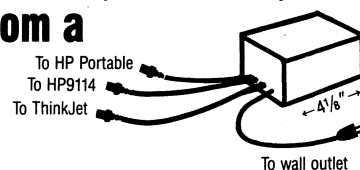
PV

LS/12

When I met with you, Hal, and your lovely wife Rita from Uruguay, at INTEREX in San Francisco, I handed you a series of DOS PROMPT commands created at my request by David Seagull. You asked me to expand on David's work and here it is. But first, a side trip into Felsenstein's *Divine Computer Comedy*.

Dante's *Divine Comedy* had three levels -- so too does the world of computers! There is COMPUTER HELL were I and most of my fellow users reside. Our punishment is the eternal love-hate relationship we have with our devilish machines. COMPUTER PURGATORY is the home of those condemned to work on their computer as a daily routine. And COMPUTER HEAVEN is where Hal and his computer wizards reside. The problem is that the language spoken

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in computer heaven is quite different from the one in computer hell. Dante had Virgil to guide him. I have found a mentor in David Weinegarden, a full-fledged hardware engineer who owns an HP-110.

Two recent crashes made me adopt the following rules:

- Save any text every 10 lines or screen full.
- Save any text needed in the future on a backup floppy disk before turning the computer off.

For extra safety, back up the backup floppy disk not less than every third session, or 6-9 hours. Save all LOTUS.WKS files on two separate disks. 710K goes a long way.

TIME SAVING SUGGESTIONS

To save time while in MEMOMAKER, stop bothering to align text while writing -- align only before rereading.

Always configure the system for the actual number of disk drives in the loop, as the computer checks the non-existing drives, wasting time.

Another time saver is to use the electronic disk as a temporary parking place for the file/spreadsheet you are working on. Save it on disk at end of session.

I created a series of command files to eliminate unnecessary or undesirable information in DOS.

When entering DOS from PAM the HP-110 prompt on the screen is:

Thu 10:01 [A:\]:

Change the A: drive to C: drive and the drive will kick in every time the return key is depressed. This not only wastes time but ultimately it wears out the disk and the drive. Whenever possible work out of the A: drive as it is faster and causes no wear.

Those of us in computer hell who are a little more advanced try to work mostly out of DOS. While PAM is convenient to carry out a few basic DOS functions, most of those functions are available in DOS. That brings in another important subject: Learn how to use at least the fundamentals of DOS, as it puts the operator in control of the computer. The DOS User Guide, furnished by HP, is helpful as a reference manual to find out which command does what, but not as a learning tool. Good DOS books

are available at your local book store. Creating a chart with the most needed commands will also expedite operation.

CREATE YOUR OWN PROMPT

The DOS PROMPT command typed after the DEFAULT prompt (aren't these beautiful words from computer heaven?) lets the user create his own prompt on the machine. Instead of **Thu 10:01 [A:\]:** (a rather boring prompt) you could have the following message appear as a prompt:

Touch this machine and you go to computer-hell [A:\]:

While some of the following have been published before, it seems worthwhile to include them all together in one place. The commands are placed in batch files and executed by typing the filename without extension. The commands are in progressive order, and each modifies the previous prompt further. MMNP.BAT contains the commands I use to start MemoMaker. All of the batch files below are used to exit DOS and go into MemoMaker A on the PAM screen. This is the one with the modified f7 key (destructive backspace) contained in MMNP.BAT from my HP-110.

- **MM.BAT** -- The first PROMPT command in this file defines f7 as a destructive backspace. The second line starts MemoMaker. The third line eliminates the "DAY" from the prompt after exiting MemoMaker:

```
prompt $e&f0a7k0d4L$eD$eP
memomakr
prompt $h$t$h$h$h$h$h$h$h [$p]:
```

- **NOTIME.BAT** -- the PROMPT command in this file sets the prompt to show the directory you are in, followed by the > symbol:

```
prompt $p$g
```

For example, if you were in an A drive subdirectory named "LETTERS" the prompt would look like this:

```
A:\LETTERS>
```

The first batch file eliminated the DAY from the prompt. This batch file would have the effect of removing the TIME from the prompt.

- **MMNT.BAT** -- The first and second lines are the same as in MM.BAT above. The last PROMPT command, upon exiting MEMOMAKER, restores prompt with directory path:

```
prompt $e&f0a7k0d4L$eD$eP
memomakr
prompt $p
```

- **MMNP.BAT** -- The first line of this batch file defines f7 as a destructive backspace and the second line starts MemoMaker. When you exit MemoMaker, the last line restores the plain prompt:

```
prompt $e&f0a7k0d4L$eD$eP
memomakr
prompt
```

The general form for the DOS PROMPT command is as follows:

prompt (text)(\$character)...

You can have more than one \$character and the text and \$characters can be in any order. Below is a list of the different \$characters available:

<u>\$character</u>	<u>gives this character or information in the prompt</u>
\$q	The = character
\$	The \$ character
\$t	Current time
\$d	Current date
\$p	Subdirectory you are in
\$v	The DOS version number
\$n	Default drive
\$g	The > character
\$l	The < character
\$b	The character
\$_	Return-Linefeed
\$e	ASCII escape code
\$h	Causes a backspace

BREAK/STOP KEY QUESTION

For the gentleman from Portugal, regarding the break/stop key: Type **break** from the DOS prompt and the computer tells you whether the break is on or off. To turn break on press **return-backspace-return**. While reading a file in DOS press the **stop-break** to scroll a file: RESUME SCROLLING WITH THE STOP/BREAK KEY ONLY -- any other key will turn Break/Stop off.

CREATING AND STORING ESCAPE SEQUENCES

The following instructions were created by David Weinergarden for Michael Felsenstein. It permits the creation and storage of escape sequences for the printer in DOS without going through the System Configuration menu. Going through this menu is on occasions erratic besides being time consuming.

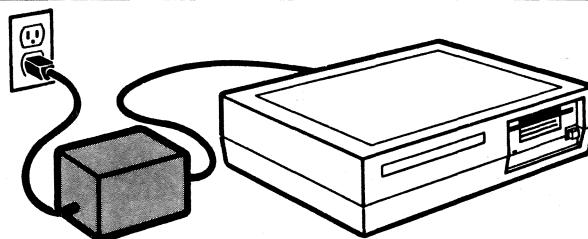
To write any file containing the "ESC" byte, hexadecimal 1Bh number:

1. Choose your file's NAME.EXT.
2. Make a plan for what bytes should be in the file, writing the [symbol where the ESCape byte belongs, i.e. [**&k3S**.
3. At the DOS prompt, type

copy con filename.ext and press **return**.

At every place the [symbol is in the plan, hold down the **control key** and press the [key. NOTHING WILL APPEAR ON THE SCREEN UNTIL YOU TYPE ANOTHER CHARACTER, which will cause ^[to appear, indicating that the ESCAPE byte has been entered. The character you enter immediately after pressing **ctrl-[** only causes ^[to appear on the screen -- it is not actually entered into the line. If you want it entered into the escape sequence, you must enter it AGAIN.

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.

How 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.

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,

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Portable Plus	•
Portable Vectra	
HP150	
IBM PC and compat.	

Enter the remaining characters. If you do not want the file to end with a carriage-return, line-feed, type **ctrl-Z** and press **return**. DOS will respond by saying: "1 file copied."

If the file is to INCLUDE carriage-return, line-feed, end-of-file as its ending, type **return**, **ctrl-Z**, **return**.

EXAMPLE:

Suppose you wanted to create the escape sequence listed in point two above (**[&k3s**). Here is a step-by-step of the process:

- Type **copy con filename.ext** from DOS prompt.
 - Press **ctrl-[]** to enter the escape byte.
 - Press **any key** to have the escape symbol, **^[]**, appear on screen.
 - Enter the **&** symbol.
 - Enter the lowercase **k** symbol.
 - Enter the number **3**.
 - Enter the lowercase **s** symbol.
 - Enter **ctrl-z** to mark the end of the file.
 - Press **return** to exit COPY CON and save the file.
- Examination of the file -- Try it on the printer. Do so by typing **print filename.ext**.
 - Examination of the file -- Use the program HA2DUMP.COM if you have it. Type **ha2dump < filename**. This will produce a count and 16bytes of hex per line, with ASCII at end.

- Examination of the file -- Use the DOS program DEBUG.COM if you have it. Type **debug filename** and the first thing you are presented with is DEBUG's command prompt: **-**. At that prompt, type **r** to see the REGISTERS.

Look for the number labeled CX -- it will be the same size you saw in the directory of the FILE if you did that.

Use that number to dump the contents of the file by typing the following from the DEBUG command prompt:

d 100 "CX #"

"CX #" is the number you saw in CX, not the letters CX #.

If you want to change anything, use the "e" EDIT command. For example, from the DEBUG prompt type the following:

e address

ADDRESS is the number of the byte you want to edit. Type the hex of the correct byte and press the **space bar** to go to next byte, or press **return** to quit the changing of bytes.

Write the result back to FILE by typing **w** from the DEBUG command prompt.

Quit DEBUG by typing **q** from the command prompt.

NEWS FROM



Personalized Software INC.

Products that make HP Portables smarter

P.O. Box 869, Fairfield, Iowa 52556 515 472-6330

By Hal Goldstein

110 **European Distributor** P+ **For Personalized Software Products**

PV HP engineer, Bernhard Sept, of West Germany will serve as the European distributor for Personalized Software's HP Portable and HP150 products. Bernhard is knowledgeable about these computers and speaks fluent French, German, and English. If he is not home when you call, leave a message on his answering machine, and he will return the call (phone listed below).

You may contact Bernhard directly or ask for his price list to determine the cost of products. You will find the prices comparable to the price you would pay us when you include shipping and taxes.

Normally you can expect to wait a couple of weeks after placing the order. However, Bernhard as of this writing, has a German and French keyboard Portable Plus and two French Portable Vectras in stock (he can substitute keyboards), along with some of our most popular software including ReadHP and the Norton Utilities.

CONTACT INFORMATION

Bernhard Sept
Hornbergstr. 6
7252 Weil der Stadt - 5
West Germany
Phone: 07033-44884
Fax: 07033-44828



P+ **ROMBO:** **The Portable Plus ROM Burner**

THE BEST WORK WE EVER DID

With the exception of *The Portable Paper*, of all the products and services Personalized Software offers, I feel proudest of ROMBO, our new ROM burner package. ROMBO will allow Portable Plus users to "burn" whatever

files they desire onto 128K or 64K byte ROM chips. These chips can then be easily inserted into any of the 12 Portable Plus Software (ROM) Drawer sockets. This means that users can now put over 1.5 Megabytes of software and non-changing data into the Software Drawer.

Putting whatever you need in ROM makes the Portable Plus even more powerful and flexible than it already is. ROMs installed in the Portable Plus become part of the computer itself. It is as if you could manufacture a portable computer to your specification --- the software and data you need gets built into the hardware of this new computer. If at some later time the software, the data, or your needs change, in a half hour you can have a new portable with new built-in software and data.

We are now shipping ROMBO thanks to the sustained efforts of a quarter of the Personalized Software staff and several outside contractors. Larry Baldozier provided the experience and methodology for ROM burning and tested all our work. Ron Chase designed and had produced our new 128K byte ROM and worked with the manufacturer of the serial ROM burner so that it would work properly with the Portable Plus. I wrote the batch file software to facilitate the ROM burning process. Portable Paper editor Richard Hall and myself wrote the manual. Glen Frank drew the illustrations for and proofed the manual.

ROMBO'S CONSTITUENTS

ROMBO consists of a serial ROM burner and a cable to connect the ROM burner to the 9-pin serial port on the back of the Plus. Two 128K byte ROMs are supplied with the package (additional ROMs available from us). An EPROM eraser and a ROM extracting tool also come with ROMBO.

The ROMBO Software Disk consists of original HP software created for burning Portable Plus ROMs. HP created this software for internal use and never made it a product. Fortunately, HP released these programs to the public domain. Unfortunately, most users will find the original documentation difficult to understand and the software not straightforward to use. To correct these problems I wrote several quite involved batch files which automate the entire ROM burning process. Details of how this ROMBO software works is given below.

The ROMBO Software disk also contains utilities which facilitate the ROM burning process. Two file compression utilities (LZEXE and SCRNCB) discussed in detail last issue (Vol. 5, No. 3, Pgs. 6, 29, and 34) allow users to compress .EXE and .COM files in such a way that they are still executable in their compressed form. RUN.EXE, also included on the software disk, is a utility that allows the user to divide up and then recombine large .EXE files. With this utility users can make use of a .EXE file larger than 256K - the normal ROM file size limit.

Finally, ROMBO includes a file size utility named DIRS. Where the DOS DIR command shows the size of a file independent of the medium on which it is stored, the DIRS utility reveals how much space a file actually takes up on a given medium. So for example, a 10 byte batch file really takes up 512 bytes when stored on the internal Portable Plus Electronic disk and 1,024 bytes when burned on a ROM chip.

Portable Fun!

11 great games for your Portable Plus
—only \$69.95! (subscriber price)



Chess



BRIDGE



YAHTZEE



Go-Moku

...and 7 more!

GamesPlus™ turns your Portable Plus into a portable game center packed with fun for the entire family.

Many people will buy GamesPlus for the Chess or Bridge games alone. But GamesPlus is a great collection even if you don't play Chess or Bridge.

Other games in the collection—like Yahtzee, Othello, and Go-Moku—are easy to learn, challenging, and don't take long to play. So even if you only use one or two of the games, GamesPlus is well worth having!

When you're traveling, GamesPlus is a fun way to occupy your waiting time. If you have

children, GamesPlus makes a wonderful present.

At only \$69.95 for subscribers, GamesPlus is probably the best game value in the computer industry today—and it's the only games package that runs on the Portable Plus.

Have fun! Order GamesPlus at our risk today.

GamesPlus
(11 games on disk).....\$99.95
Portable Paper subscriber price.....\$69.95
 PRODUCT NO. GA11NS

GamesPlus ROM Backup (11 games
on disk plus 6 games on ROM).....\$205.00
Portable Paper subscriber price.....\$175.00
 PRODUCT NO. GA11NK

GamesPlus ROM (if previously
purchased GamesPlus disk).....\$105.00
 PRODUCT NO. GA11NR

GamesPlus™ — 11 Great Games Customized to the Portable Plus

Exclusively from Personalized Software

Bridge

Using a modified Goren bidding system, our Bridge program lets you practice bidding and playing without having to round up four other people. Whether you're a beginner or an experienced player, Bridge will help you hone your skills for your next get-together!

Chess

Our Chess program doesn't play on the Grand Master level, but it will give most players a run for their money. You can set total game time, average response time per move, level of play, and many other parameters. Practice openings, end-game strategies, and more. A great way to improve your game!

Fastermind

A code-breaking game. The computer gives you a number code (for example, 4 digits long, each digit can be 0-6). To break the code, you take a series of guesses, while the computer gives you clues as to which digits are correct. You select the level of difficulty for each game.

Foxhound

A strategic chase game. Three hounds try to corner a fox in 20 moves or less. The fox gets wlier as play proceeds!

Go-Moku

In this Japanese game of strategy, players take turns placing "stones" on a 19x19 grid game board. First player to get 5 stones in a row (horizontal, vertical, or diagonal) wins the game. Simple but challenging!

HP-Amateur

A reverse guessing game. The computer asks you a series of questions, then "guesses"

what you're thinking about. If you wish, it even tells you its reasoning. Instructions are included for adding your own "rules file" to the two provided.

Landmine

In Landmine, you navigate a mine field trying to avoid the hidden mines. Millions of hours have been spent playing the paper version of this game in high schools across America!

Memory

The old "Concentration" game that Hugh Downs hosted 25 years ago on TV. Find matching pairs of items among a set of "cards" whose faces are hidden.

Othello

To outflank your opponent, place one of your pieces at either end of a row of his pieces. Then his pieces become yours. When all spaces on the 8x8 grid are filled, the player occupying the most spaces wins.

Tic-Tac-Toe

The ever-popular game of X's and O's. When you play against the computer, your opponent never gets bored!

Yahtzee

A modern classic that's a great combination of chance and strategy. Players take turns rolling five "dice," using specific combinations of the dice to try to maximize their scores. The computer keeps track of scores and generates the roll of the dice.

GAMESPLUS ON ROM BACKUP

Our ROM Backup version of GamesPlus includes all 11 games on disk plus 6 games compressed onto two 64K ROMs (Chess, Fastermind, Go-Moku, Othello, and Yahtzee, plus special free bonus:

Tiger Fox, an engrossing maze/chase game.)

ROMBO also includes a 74 page manual based on several years of Personalized Software experience putting programs on ROM. The manual is divided into six chapters. The first chapter walks the user through the ROM burning process. The ROMBO software was designed to be self-sufficient with on-screen explanations, so most users will need this portion of the manual only for occasional reference or to give an overview of the whole process.

The second chapter gives hints, strategies, and examples of how to select files to put on ROM. It goes over in great detail the kinds of software that may be more tricky to ROM. The manual illustrates approaches to ROMming tricky software by sharing the techniques Personalized Software used when putting WordPerfect, Webster's Speller, AS-EASY-AS, Chess, and Squish Plus on ROM.

The third chapter details how the ROMBO Software works. The fourth "Trouble Shooting" chapter lists possible problems using the ROM burning software, their causes, and their solutions. The fifth and sixth chapters are only one page each in length. Chapter five shows how to erase the contents of ROMs using the EPROM eraser included with ROMBO. Chapter six describes how to copy the contents of an existing ROM onto a second ROM. Finally, the original documentation for the HP software which ROMBO uses, and for some of the utilities, is included on the ROMBO Software disk.

THE STEPS INVOLVED IN BURNING A ROM

The first thing a ROMBO user is asked to do is back up and reformat the Portable Plus internal Electronic disk. Main Memory from the PAM f6 System Configuration menu must be set to 344K or 216K depending on whether you are going to burn a 128K or 64K ROM. The f5 Datacom Configuration menu must also be set properly. Once the Portable Plus is configured correctly, ROMBO software can be installed onto the reformatted blank Edisk (A drive). The software installation is automatic - put the ROMBO disk into the disk drive, point to the PAM box that says INSTALL ROMBO and press Return.

Once installed, ROMBO shows up next to DOS as a PAM application. Starting ROMBO brings up the ROMBO Main Menu with six steps. Steps 1, 2 and 3 are the three steps required to create a Portable Plus ROM. In addition, you can select steps C, V, or F. Step C reviews how the Portable Plus must be configured. Step V lets the user verify that a ROM is blank (or has been erased). Step F lets the user start over and reformat his D drive (this will make sense in a minute).

- **STEP 1 CREATES A TEMPORARY NEW INTERNAL ELECTRONIC DISK** -- This is accomplished by special "device driver" software (file EDISK.SYS) that borrows

(Continued on page 24.)

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 (Read-Only Memory) 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?

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 in the center of this issue. For even faster service—or if you have questions about any of our ROMs—give us a call.

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.

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:

As-Easy-As	\$125.
Best of DOS Tools	\$129.
The Editor	95.
GamesPlus	105
HPDuette	95.
HPrint	95.
Shelp	55.
SideWinder	55.
Shelp + SideWinder	95.
Sketch	95.
Squish Plus	135.
SuperROM	49.
TermPlus	95.
Turbo Pascal 3	95.
Typing Whiz	95.
Webster's Speller	179.
WordPerfect	295.

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, in our catalog, or refer to articles in past issues. In this chart, "Type" refers to either HP (used HP ROM) or PS (Personalized Software ROM Backup Package -price includes both ROM and disk versions). **CALL FOR AVAILABILITY OF USED HP ROMS.**

Product	Part Number	Retail Price	Subscriber Price	Type	No. of chips	Notes
WORD PROCESSORS						
WordPerfect 5	WD11NK	\$919	\$595	PS	6	384K of files includes PlusPerfect, main WP program, help files, printer drivers, etc. Does not include required 300K wp.fil file, spelling checker, or thesaurus.
The Editor II	ED12NK	195	175	PS	1	The Editor version 1 is available as part of our SuperROM chip (see "Combined ROMs," below).
MemoMaker	-	-	-	HP	-	Comes on same chip as Time Manager (see "Combined ROMs" below.)
MSWord	MS20UR	394	199	HP	1	
MultiMate	MM20UR	520	295	HP	1	
WORD PROCESSING UTILITIES						
Format110	-	-	-	PS	-	Comes as part of SuperROM (see "Combined ROMs")
FormatPlus	FP13NK	175	165	PS	1	
HPrint	HP12NK	175	171	PS	1	
Mini PrinterTalk	-	-	-	PS	-	Comes as part of SuperROM (see "Combined ROMs")
Webster Speller	WB13NK	259	249	PS	2	
SPREADSHEETS AND UTILITIES						
Lotus 123,1A	LT12UR	495	249	HP	2	
Lotus 123,2.01	LT15UR	625	395 ²	HP	3	3rd ROM containing help doesn't have to be installed.
New Lotus 123,2.01	LT11HR	625	499 ²	HP	3	Pricing of NEW HP ROM if used ROM not available.
As-Easy-As	AS11NK	215	195	HP	2	
SideWinder	SW12NK	135	125	PS	1	Also available on a ROM with Shelp, and on our SuperROM chip (see "Combined ROMs" below).
DATABASE PROGRAMS						
Exec Card Manager	EC11UR	395	225	HP	1	(Lotus 1-2-3 can also be used as a database.)
COMMUNICATIONS						
PC2622	PC13UR	395	239	HP	1	VT100 and HP Terminal emulator.
Reflection	RF11UR	525	295	HP	1	Minor upgrade of PC2622
TermPlus	TE13NK	195	175	PS	1	Includes FormlIBM, Jetctrl, and other great utilities.
PRODUCTIVITY BOOSTERS / GAMES						
Best of DOS Tools	DT12NK	179	169	PS	2	Selected utilities from DOS Tools ¹
FilePlus	FE14NK	165	155	PS	1	
GamesPlus	GA11NK	205	175	PS	2	Chess, Go-Moku, TigerFox, FastMind, Othello, Yhatzee
HP Calculator	CL11NK	95	95	PS	1	From our 1987 Subscriber Disk
HP Duette	DU13NK	195	185	PS	1	Contains Portable Plus half of software
Shelp	SH12NK	110	105	PS	1	Includes note extraction program. Shelp also available on a ROM with SideWinder, and as part of SuperROM chip (see "Combined ROMs" below).
Time Manager				HP		Comes on same ROM as MemoMaker (see "combined ROMs" below).
Typing Whiz	TW12NK	145	135	PS	1	
Squish Plus	SQ11NK	264	235	PS	2	
GRAPHICS						
Sketch	SK12NK	175	171	PS	1	(Lotus 1-2-3 can also be used for graphics.)
PROGRAMMING LANGUAGES						
MSBasic	MS21UR	331	165	HP	1	This is not GWBASIC.
COMBINED ROMs						
MemoMaker/TimeMgr	MM21UR	245	119	HP	1	
Shelp,SideWinder	SH13NK	235	215	PS	1	Also includes SideWinder enhancement utility.
SuperROM (5 programs on one chip):The Editor, Format110, Mini PrinterTalk, Shelp, Sidewinder	SU11NK	474	299	PS	1	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.
BUNDLES						
Editor Pack +	FM17NK	823	599	PS	5	(Editor II, Webster, FormatPlus, FilePlus)
Editor Pack	FM16NK	658	499	PS	4	(Editor II, Webster, FormatPlus)

¹Utilities included in the Best of DOS Tools ROM backup Package are as follows. For program details, see catalog.
PACK DUMP TY CYPHER RENDIR WHEREIS TEE SDL FDATE LABEL DIRS TRANSLIT
CLEAN DIRALL ARCE MOVE OFF CHANGE ARCS20 MOVEALL TRIM BEEP SQPC SM
VDL TMA TJETA FCOPY ASK PRNCONF WAIT FGREP XCOPY FDUMP COPYNEW
Note: ARCS20 is shareware; the author normally requests a \$35 contribution. However, we've already paid your user fee.

²IMPORTANT: All HP ROM prices given in this chart (unless otherwise stated) are for used ROMs. Used HP ROMs (especially Lotus 2.01) are sometimes not in stock. Call to verify availability of used HP ROMs and pricing on new HP ROMs if used ROMs unavailable.

OUR COMPLETE HP110, PORTABLE PLUS PRICE LIST

Product	Part Num.	Retail Price	Sub. Price	With Portable Purchase*
*Items in this column are discounted further with a purchase of an HP110 or a like-new or used Portable Plus.				

HP110, PORTABLE PLUS COMPUTERS

COMPUTERS				
Like-new 512K P.Plus ¹	PP36UC	\$2795	\$995	
Used 512K P. Plus	PP16UC	2795	795	
Used 128K P. Plus	PP12UC	2590	395	
Used HP110 Portable	PQ11UC	3000	495	
Like-new German Plus ¹	PP37UC	2795	995	
German localiz. ROM	GE11UR	150	99	(50)
Like-new Swiss/Fr. Plus ¹	PP34UC	2795	995	
French localiz. ROM	FR11UR	150	99	(50)
Like-new Swedish Plus ¹	PP40UC	2795	995	
Like-new English Plus ¹	PP31UC	2795	995	
Like-new Italian Plus ¹	PP38UC	2795	995	
Italian localiz. ROM	IT11UR	150	99	(50)

¹All Like-new Portable Pluses come in original packaging with new battery, new manual, and our 1 year guarantee.

SPECIAL HP110, PORTABLE PLUS BUNDLES

HP110,ThinkJet,HP9114	PP40UX	\$4300	\$ 795
Like-new RAM Special ²	BU11UX	3816	1295
Used RAM Special ²	BU12UX	3816	1095
Like-new ROM Special ³	BU13UX	4450	1595
Used ROM Special ³	BU14UX	4450	1395
Like-new Terminal Spec. ⁴	BU15UX	4360	1395
Used Terminal Special ⁴	BU16UX	4360	1195
256K Terminal Special ⁴	BU17UX	4591	845

²RAM SPECIAL: 512K Port. Plus, 128K RAM drawer, Shelp, Editor II, Websters, FormatPlus, FilePlus, As-Easy-As, GamesPlus

³ROM SPECIAL: 512K Portable Plus, 128K RAM drawer, ROM drawer, GamesPlus, and ROMs:

Editor II, Websters, FormatPlus, FilePlus, Shelp, As-Easy-As

⁴TERMINAL SPECIAL: 256K or 512K Portable Plus, 1200B int. modem, Reflection or PC2622, MemoMaker, Time Manager

PERIPHERALS

MODEMS			
Used 1200 B. Internal	BM11UC	\$600	\$250 (167)
WorldPort Modem 1200	WM11NH	199	179
WorldPort Modem 2400	WM12NH	359	319 (295)
WorldPort M. 2400/MNP	WM13NH	499	425
WorldPort serial cable	WM14NH	30	20
WP 1200 Upgrade kit	WM13NG	199	179
WP Acoustic coupler	WM16NH	79	79
HP92205D Acoust. cplr	AC11NC	195	135

PRINTERS, PLOTTER (Used)

HP-IL ThinkJet Printer	TJ11UC	\$ 495	\$ 199 (179)
Serial ThinkJet Printer	TJ14UC	495	295
DeskJet Printer, cable	DJ11UC	837	425 (399)
HP-IL 7470A Plotter	PL11UM	1095	595
DeskJet Plus	DJ12UC	995	CALL
PaintJet	PA12UC	1395	CALL
LaserJet 500 Plus	LA13UC	4200	CALL
LaserJet IID	LA12UC	3795	CALL

DISK DRIVES (used)

HP9114A Disk Drive	DD11UC	\$ 795	\$ 199 (179)
HP9114B Disk Drive	DD12UC	795	249 (199)
15 Meg Hard Drive	HD11UC	2700	995

(with HP-IB/HP-IL Interface, HP1B, HP1L cables)

MEMORY, SOFTWARE DRAWERS (Used, P.Plus)

1 Meg HP RAM Drawer	MM11UC	\$1275	\$ 995
384K HP RAM Drawer	MM12UC	982	295
256K HP RAM Drawer	MM15UC	709	225 (199)
128K HP RAM Drawer	MM14UC	436	150 (99)
128K HP Memory Card	MM13UC	273	125 (99)
HP ROM Software Draw.	SW11UR	195	99 (79)

ROM BURNING (Portable Plus)

ROM Burning kit	EP10NH	\$695	\$595 (495)
(ROM burner & eraser, cable, 2 128K EPROMs, software, manual)			
128K byte EPROM	EP11NR	69	59 (49)
Four 128K byte EPROMs	EP12NR	276	199 (179)
128K PROM (can't erase)	EP18NR	64	54 (44)
Four 128K PROMs (")	EP19NR	256	179 (159)
64K 27C512, EPROM	EP13NR	25	22 (19)
ROM burning software	EP14NS	250	195
Custom 128K burning	EP15NE	150	135
Custom burning consult.	EP16NE	75 per hour	
2 for 1 trade	EP17NE	69	59

(send in 2 Pers. Sw. 64K ROMs, we'll make into 1, 128K ROM)

INTERFACE CARDS (used)

HP-IL Card For IBM PC	IL11UC	\$195	\$119 (99)
New HP-IL Card For PC	HP17HM	195	159
P.Plus Video Interface	VI14UC	435	195
P.Plus V.Intfce+Monitor	VM12UC	750	275
Composite monitor	VM11UC	325	150
HP1L/HP1B Interface	IL13UC	395	235
HP1L/Serial Interface	IL12UC	295	179

INPUT DEVICES

Log.Mouse P.Plus System	MS15NM	\$219	\$179
P.Plus Mouse Sftwre	MS11NS	70	60
P.Plus Mouse Cable	MS13NM	30	20
Numeric Keypad, P.Plus	TS11NM	139	135

THE PORTABLE PAPER

(Subscribers Disks Only Available With Subscriptions)			
1990 Subscription & Disk	PPN1PS	\$55.00	(Free)
All 1986-90 issues and disks	PL11PK	154.00	
All 1986-89 issues and disks	PP14PB	99.00	
Individual back issue	PP99PB	9.20	
PP Binder Vol.5	PB16NM	7.00	
PP Binder Vol.1-5	PB15NM	29.00	

SOFTWARE ON ROM (PORTABLE PLUS)

If the product number ends with "UR", it is a used HP ROM. If it ends with "NK", it is a new Personalized Software disk plus ROM backup.

Product	Part Num.	Retail Price	Sub Price	W/PlusBackup Price
Word Processors				
WordPerfect 5	WD11NK	\$940	\$595	(495) 295*
The Editor II	ED12NK	195	175	(99) 95*
MMkr/TmMgr	MM21UR	245	119	(99)
MSWord	MS20UR	394	199	
MultiMate	MM20UR	520	295	(199)
Editor Pack +	FM17NK	823	599	
(Editor II, Webster, FormatPlus, FilePlus)				
Editor Pack	FM16NK	658	499	
(Editor II, Webster, FormatPlus)				

Word Processing Utilities				
FormatPlus	FP13NK	\$175	\$165	(99) 95*
HPrint	HP12NK	175	171	95
Wbster Speller	WB13NK	259	249	(199) 179*

Spreadsheets and Database				
Lotus 123,1A	LT14UR	\$495	\$249	(199)
Lotus 123,2.01	LT15UR	625	395	
New Lotus, 2.01	LT11HR	625	499	
As-Easy-As	AS11NK	215	195	(159) 115*
Exec Crd Mgr	EC11UR	395	225	(199)
SideWinder	SW12NK	135	125	(99)

Communications				
Advanced Mail	AD12UR	\$295	\$150	(99)
PC2622	PC13UR	395	239	(99)
Reflection	RF11UR	525	295	(139)
TermPlus	TE13NK	195	175	(99) 95*

Productivity Boosters / Games				
DOS Tools	DT12NK	\$179	\$169	129
FilePlus	FE14NK	165	155	(99) 95*
GamesPlus	GA11NK	205	175	(159) 105*
HP Calculator	CL11NR	95	95	
HP Duette	DU13NK	195	185	(139) 95*
Shelp	SH12NK	110	105	55*
Squish Plus	SQ11NK	264	235	(199) 135*
Typing Whiz	TW12NK	145	135	(99) 95*

Graphics				
Sketch	SK12NK	\$175	\$171	95*

Programming Languages				
MSBasic	MS21UR	\$331	\$165	(99)
Turbo Pascal 3	TP13NK	No longer published		95*

Combined ROMs				
Shelp,SdWnDr	SH13NK	\$235	\$215	(139) 95*
SuperROM	SU11NK	474	299	(199) 49*

(Editor I, Format110, Printer/Talk, Shelp, SideWinder)

* You must own the disk version of the product in order to use prices in the "Backup Price" column.

SOFTWARE ON DISK

Word Processors				
The Editor II	ED11NS	\$ 99.95	\$ 79.95	(49)
Editor Pack	FM16NX	259.00	195.00	
(Editor II, FormatPlus, Webster Speller)				
The Editor II/Format	ED13NX	119.95	99.95	
VI (Unix-like editor)	VI11NS	195.00	169.00	
WordPerfect 4.2 P. Plus	WD18NS	435.00	339.00	
WordPerfect 5.0 P. Plus	WD17NS	645.00	395.00	(299)
(Includes PlusPerfect)				
PlusPerfect	WD14NS	150.00	129.00	(99)

Word Processing Utilities				
Format110	FM12NS	\$39.95	\$35.95	
FormatPlus	FP11NS	79.95	69.95	(49)
MemoMaker Pack	FM14NX	159.90	125.00	
(Format Plus, Webster Spelling Checker)				
Formatter	FM11NS	59.95	49.95	
HPrint	HP11NS	80.00	75.95	
PrinterTalk	PT11NS	49.95	44.95	
PrinterTalk, Format110	PT12NS	89.90	59.95	(49)
RightWords Dict. Ext.	RW12NS	29.95	29.95	
RightWriter	RW11NS	95.00	89.00	(79)
Webster Speller	WB11NS	79.95	69.95	(49)
WordPlus Speller	WP11NS	150.00	99.00	(79)

SpreadSheet and Statistics				
As-Easy-As	AS11NS	\$99.95	\$79.95	(59)
101 Macros	MC11NS	69.95	62.95	
Lotus 123, v2.01 / Symphony				
P.Plus Software Driver	LT14NS	69.95	59.95	
SideWinder and Utilities	SW13NS	79.95	69.95	
SideWinder	SW11NS	69.95	59.95	(49)
Statistix 2.0	ST11NS	169.00	159.00	

Database/Accounting Software				
Condor 3	CR11NS	\$495.00	\$379.00	(299)
Condor Jr	CR13NS	99.95	89.95	
Used dBase II	DB11U1	550.00	295.00	
Dac-Easy Accounting	DC11NS	150.00	129.00	

Communications				
Kermit	KE11NS	\$ 19.00	\$ 19.00	

Relay Gold (Plus)	RG11NS	295.00	279.00	
TermPlus	TE12NS	99.95	79.95	(49)
Term110	TE11NS	99.95	79.95	
CompuServe starter kit	CM11NS	39.95	35.95	
YTERM	YT11UC	135.00	49.95	

File Transfer

HPDuette for P.Plus	DU11NS	\$99.95	\$89.95	
Link110	LK12NS	90.00	85.95	
LinkPlus	LK11NS	90.00	85.95	
ReadHP	RD11NS	79.95	69.95	

Productivity Boosting Utilities / Games

BacTools	BC11NS	\$49.95	\$39.95	
DOS Tools	DT11NS	44.95	39.95	
FilePlus	FE12NS	69.95	59.95	(49)
GamesPlus	GA11NS	99.95	69.95	(49)
Norton Utilities Adv.	NU12NS	150.00	129.00	(99)
Norton Utilities	NU11NS	99.95	89.95	(79)
Private File	PF11NS	39.95	34.95	
Shelp	SH11NS	55.00	49.95	(49)
Squish Plus (P.Plus)	SQ11NS	129.00	99.95	(79)
Tiger Fox	TF11NS	32.95	29.95	
Time Manager (HP110)	SB11NS	9.50	9.50	(Free)
Typing Whiz	TW11NS	49.95	39.95	

Graphics

Flowcharting II+	FL11NS	\$229.00	\$199.00	
Log.Mouse P.Plus System	MS15NM	219.00	179.95	
PrintMaster (P.Plus)	PR12NS	79.95	69.95	
Sketch	SK11NS	80.00	75.95	
Sketch Halftone disk	SD11NS	9.50	9.50	

Programming

Turbo Pascal 5.5, P.Plus	TP52NX	\$219.00	\$175.00	
Upgrade for Plus, HP150	TP15NS	69.00	69.00	
(must own IBM PC Turbo 5.5, honor license)				
T.Pascal 3.0 Optimizer	TP17NS	125.00	119.00	
Used MS BASIC	MS11UC	325.00	165.00	
Used compiled BASIC	CO14U1	425.00	225.00	
Used MS GW BASIC	GW11UC	425.00	250.00	
Used Programmer's Tools	PT11UC	325.00	175.00	
Used FORTRAN	FO12U1	395.00	250.00	

Project Management

PertMaster for HP110	PR15NS	\$695.00	\$499.00	
PertMaster for P.Plus	PR12NS	695.00	499.00	
Milestone	ML11NS	99.95	89.95	

Learning Material for HP110, P.Plus

How to Use the HP				
Portables Video Tapes	VP11NM	\$150.00	\$119.00	(99)

ACCESSORIES, SUPPLIES

BATTERIES

LS/12, PORTABLE VECTRA PRICE LIST



Product	Part Num.	Retail Price	Sub. Price
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LS/12 SPECIFIC PRODUCTS

LS/12 COMPUTERS

Used LS/12, 20 Meg Drive	LS11UM Call for pricing, avail.
Used LS/12, 40 Meg Drive	LS12UM Call for pricing, avail.

LS/12 Memory

1 Meg EMS Memory	EM11NH	\$ 295	\$ 285
4 Meg EMS Memory	EM12NH	1195	1095

LS/12 Internal Modems

HPD1502a 2400 Modem	IM11HL	\$449	\$369
Datastar 5, 2400/MNP	DA11HL	599	539

LS/12 Drives

Weltec 5.25" Drive	WE11NH	\$349	\$299
LapTape tape backup	LA11NH	795	695

Additional LS/12-Specific Products

Expansion Chassis	EX11NH	\$499	\$449
Numeric Keypad	NU11NH	129	115
HPD1057A Battery	NB11HL	299	269
HPD1058A Recharger	BC11HL	109	109
HP Carrying Case	CC11HL	99	80
80287 math coprocessor	MA11HL	649	575

PORT. VECTRA CS SPECIFIC PRODUCTS

PORTABLE VECTRA CS COMPUTERS

New Portable Vectra CS 20	VE13HC	\$3595	\$1795
Used Portable Vectra CS 20	VE17UC	Call for pricing, avail.	
Used Portable Vectra CS	VE12UC	Call for pricing, avail.	

Internal Modems

HPD1003A 2400 Baud	VE16UC Call for pricing, avail.
HPD1002A 1200 Baud	MO11UC Call for pricing, avail.

Serial card and EMS Memory

Dual serial/EMS Card	AD11HC Call for pricing, avail.		
1 Meg EMS memory	EM11HC	\$595	\$295

External Hard Disk

TravelDisks: hard disk, P. Vectra CS bus extender card, cable			
TD-10 (10 Meg) new	TD11NH	\$ 995	\$ 945
TD-10 (10 Meg) used	TD12NH	650	595
TD-20 (20 Meg) new	TD13NH	1095	995
TD-20 (20 Meg) used	TD14NH	775	725
TD-30 (30 Meg) new	TD15NH	1195	1095
TD-30 (30 Meg) used	TD16NH	900	835
TD-40 (40 Meg) new	TD17NH	1295	1195
TD-40 (40 Meg) used	TD18NH	1100	995
TD-100 (100 Meg) new	TD19NH	1895	1795
TD-100 (100 Meg) used	TD20NH	1500	1395
TD-250 (250 Meg) new	TD21NH	3495	3195
TD-250 (250 Meg) used	TD22NH	CALL	CALL
Extra P.Vectra Bus Extender	TD23NH	80	75
Extra cable	TD24NH	110	99
Extra IBM Bus Extender card	TD25NH	50	47

Other Vectra CS Products

HP-IL Adapter Card	HP16NM	\$245.00	\$235.00
HPD1007A Soft Case	CS12HC	Call for pricing, avail.	
HP69009 Battery	BA11HC	250.00	225.00

Monitors for Vectra CS (and LS/12)

Monochrome Monitor	V112HC	129	119
CGA Monitor	MO12HC	399	299
EGA Monitor	MO13HC	599	479

THE PORTABLE PAPER

(Subscribers Disks Only Available With Subscriptions)

1990 Subscription & Disk	PPN1PS	\$55.00
For Vectra CS, 1988-90 issues, disks	VE11PK	89.00
For Vectra CS 1988-89 issues, disks	PP15PB	59.00
For LS/12 1989-90 issues, disks	LS11PK	69.00
For LS/12 1989 issues, disk	PP12PK	39.00
Individual back issue	PP99PB	9.20
PP Binder Vol.3	PB13NM	7.00
PP Binder Vol.4	PB14NM	7.00
PP Binder Vol.5	PB16NM	7.00

USED LS/12, P.VECTRA CS PRINTERS

New Diconix - parallel	DT11NH	\$ 519	\$ 399
New Diconix - serial	DT12NH	539	415
Serial HP2225D ThinkJet	TJ14UC	495	295
Parallel HP2225C ThinkJet	TJ11U1	495	295
DeskJet Printer, cable	DJ11UC	795	425
DeskJet Plus	DJ12UC	995	CALL
PaintJet	PA12UC	1395	CALL
LaserJet 500 Plus	LA13UC	4200	CALL
LaserJet IID	LA12UC	3795	CALL
Rugged Writer	RU11UC	1695	CALL

LS/12, P.VECTRA CS PERIPHERALS

Portable Modems / FAX

WorldPort FAX/Modem 2496	WF11NH	\$ 699	\$ 599
WorldPort Modem 1200	WM11NH	199	179
WorldPort Modem 2400	WM12NH	359	319
WorldPort M. 2400/MNP	WM13NH	499	425
WorldPort serial cable	WM14NM	30	20
WP 1200 Upgrade kit	WM13NG	199	179
WP Acoustic coupler	WM16NH	79	79

External hard drive / tape backup

Weltec Serial 20 Meg Hard Disk (PhD)	WE12NH	\$1099	\$ 899
Valitek Serial and Parallel Port Tape backup units			
60 Meg Valitek	VA11NH	1695	1495
160 Meg Valitek	VA12NH	2395	1995

Other LS/12, P.Vectra CS Peripherals

EtherNet Adapter	ET11NH	\$695	\$629
Logitech Mouse	MS14NM	119	99
Statpower PC100+ Inverter	ST11NH	179	169

LS/12, PORTABLE VECTRA SOFTWARE

The Editor II	ED11NS	\$ 99.95	\$ 79.95
Condor 3 for IBM	CR11HM	495.00	379.00
LapLink	LA11NS	139.95	119.00
LinkPC	LK14NS	90.00	85.95
NoSquint	NO11NS	39.95	37.95
Squish Plus	SQ12NS	99.95	89.95

CALL FOR CONSULTATION AND PRICING
ON OTHER IBM COMPATIBLE SOFTWARE PRODUCTS

LS/12, P.VECTRA ACCESSORIES

Printer Supplies

TJ plain paper cartridge	TJ15HC	\$10.95	\$10.95
TJ inkjet paper cartridge	TJ14HC	10.95	10.95
HP92261n inkjet 2500 z	TJ12HC	64.95	59.95
HP51630a inkjet 500 z	TJ13HC	19.95	19.95
DeskJet ink cartridge	CT11HC	19.95	19.95

Disks

10 3.5" disks and case	DS11NM	\$44.90	\$29.95
10 3.5" 1.44M disks, case	DS12NM	69.95	59.95

Cases

Targus leather system	TA11NM	\$199.95	\$179.00
Targus nylon system case	TA12NM	99.95	89.95

Cables

Standard Parallel Cable	PL11NM	\$29.95	\$24.95
P.Vectra 25-pin serial prn	SE12HC	\$29.95	\$24.95
9-pin AT serial printer cable	SE11HC	\$29.95	\$24.95

ADDITIONAL COMPUTERS

USED HP150 COMPUTERS, DRIVES, PERIPHERALS, ACCESSORIES, SOFTWARE: CALL
Free HP150 Catalog CAT150 0.00 0.00

NEC LAPTOPS INCLUDING 4.4 ULTRALITE: CALL

TOSHIBA LAPTOPS: CALL

MIT IBM COMPATIBLE XT, AT, 386 SYSTEMS: CALL

1 year on site warranty. Great reviews.
Call for pricing and consultation. We'll help you build a system exactly suited to your needs and budget. Here is sample PC Magazine Editor's Choice MIT system:

12 MHZ AT 286 compatible,
1.44 Meg Floppy,
40 Meg Hard Drive,
Monochrome Monitor \$1430

PERSONALIZED SOFTWARE COMPATIBLE XT, AT, 386 SYSTEMS

1 Year warranty. High Quality. Lowest pricing.

Call for pricing and consultation. We'll help you build a system exactly suited to your needs and budget.

Sample Systems

10 MHZ XT Compatible,
640K Memory,
720K 3.5" Floppy, 20 Meg Hard Drive,
Monochrome monitor \$879

12MHZ AT 286 Compatible,
1 Meg memory,
1.44 Meg 3.5" Floppy, 40 Meg hard drive,
Monochrome monitor \$1199

386SX Compatible,
16MHZ,
1 Meg memory,
1.44 Meg 3.5" Floppy, 40 Meg Hard Drive,
VGA color monitor \$1895

**Remember:
We'll take your current system in trade**

(Continued from page 19.)

some of the Main Memory. Once installed the device driver fools the system into thinking that there is a built-in electronic D drive.

When the you select Step 1, you are asked what kind of ROM you want to burn. You may choose either a 64K ROM, a 128K ROM, a 64K ROM pair, or a 128K ROM pair. To the Portable Plus a ROM pair behaves like a single ROM. So, if you select a 128K ROM pair, it is as if you are putting files on a single 256K ROM.

When the you make your selection, ROMBO automatically creates a file named CONFIG.SYS with one line in it. If, for example, you choose to burn a 128K ROM pair, the CONFIG.SYS file would contain the following line:

```
device=edisk.sys /4 /h
```

The parameters after EDISK.SYS differ depending on the size and kind of ROM you want to burn.

Once ROMBO creates the correct CONFIG.SYS file, you are asked to reboot the system by holding down the **CTRL** and **Shift** keys and pressing **break**. Rebooting installs the device driver, creating a D drive suitable for the type of ROM to be burned. So, if you want to burn a pair of 128K ROMs, selecting the appropriate option creates a D drive that holds 256K bytes of files.

When you reboot the Portable Plus, ROMBO prompts you to press **return** to format the D drive. Once the D drive is set up, you exit the ROMBO software program and use the DOS COPY command or the PAM File Manager to copy the files you want burned into the new D drive. You are on your own to put the files in the D drive that are to be ROMmed. Usually you will copy the files you want ROMmed from the HP-9114 floppy drive to the D drive. You can make your ROMmed application show up in PAM by copying a PAM.MNU file to the D drive. Both the ROMBO and Portable Plus user manuals discusses how to create a PAM.MNU file. The ROMBO manual gives many hints to facilitate this file selection process. When you are done copying files to the D drive, restart ROMBO from PAM or type ROMBO from DOS. Select Step 2 to create the image of what is to be burned into ROM.

- STEP 2 PUTS ALL THE FILES ON THE D DRIVE INTO ONE OR TWO IMAGE FILES -- Each IMAGE FILE contains the exact copy of what is to be burned into ROM. So if you are creating a 128K ROM pair, Step 2 forms two image files, one image file for each ROM to be burned.

It is helpful but not absolutely necessary to understand how the Portable Plus views ROMs installed into the Software Drawer. Each installed ROM or ROM pair forms a subdirectory on the Portable Plus B drive. That subdirectory automatically becomes part of the DOS PATH, so .EXE, .COM, and .BAT files can execute directly from PAM or the DOS [A:\] prompt. During ROMBO Step 2, you are asked to give a name for that B drive subdirectory as well as the name for the image file(s). ROMBO then runs the Hewlett-Packard

IMAGE.COM program which creates the proper ROM directory structure and gives it its B drive subdirectory name.

■ STEP 3 BURNS THE IMAGE ONTO ONE OR TWO ROMS

-- When Step 2 is done the ROMBO Main Menu appears, and you are ready to select Step 3 to burn the image file onto the ROM. ROMBO instructs how to properly set up the ROM burner. Then ROMBO uses the Hewlett-Packard BURN.COM program to burn the image file(s) onto one or two ROMs.

Once you burn the image file(s) onto the ROM(s), you are ready to use the ROM(s). To do so, you insert the ROM(s) into the Software drawer. If you burned a ROM pair, you will insert the two ROMs into adjacent slots. A single ROM can be inserted anywhere in the Software Drawer.

Removing and reinstalling the ROM Software Drawer usually forces you to reformat the Portable Plus internal Electronic disk. Therefore, you will probably want to back up the image files and the D drive files before placing ROMs into the Software drawer.

When the software drawer is installed, the system should be restored. In particular the Main Memory which is given its default value of 80K when the software drawer was removed should be increased to its preROMBO value.

If all went well, the ROMmed applications will show up on the PAM screen.

WE WILL RENT ROMBO

A month-by-month rental option is available for those who feel they wouldn't use ROMBO enough to justify purchasing it. One month's rental costs \$195 and includes the ROM burner, EPROM eraser, software, and documentation. The rental fee is applied towards purchase of ROMBO. If you rent ROMBO for three consecutive months you get to keep it.

ROMs are not included in the rental price and must be purchased separately. See the outside back cover of this issue for individual ROM prices. ■

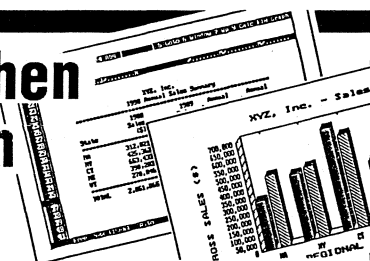
As-Easy-As Highly Recommended

As mentioned last issue, we have been working with Trius, Inc. to get their latest version of As-Easy-As to run on the Portable Plus. As-Easy-As is very similar to Lotus 2.01 with a few additional features. I can think of three reasons why HP Portable Plus users should consider As-Easy-As (and why we have spent the time and resources with Trius developing the product):

1. Lotus 2.01 and Lotus 1A compatibility. As-Easy-As retrieves and saves WK1 and WKS files -- and can convert files effortlessly back and forth.
2. Flexibility in the Portable Plus environment. You can run As-Easy-As from the RAM Edisk or from ROM.

Why pay \$500 or more for Lotus® 2.01 when you can have a fully compatible program for just \$79.95?

\$79.95 for disk version; \$195 for disk version plus ROM Backup (subscriber prices)



Until now, if you wanted the advantages and compatibility of Lotus 1-2-3, Version 2.01 for your Portable Plus, you had to pay \$625 retail for a ROM.

Now you can have a program that acts similar to Lotus 2.01 for just \$195 (disk and ROM) — or only \$79, if all you need is the disk version.

You can't get that much spreadsheet power for your Portable Plus for less!

The program is called As-Easy-As, because it's as easy as 1-2-3 (get it?), and it fully lives up to its name: As-Easy-As does almost everything Lotus 2.01

does (see list at right). It even does some things Lotus can't do, like matrix operations.

If you're new to spreadsheets, you'll find As-Easy-As to be powerful, yet easy to learn and use.

If you already use Lotus, you have nothing new to learn. As-Easy-As works in much the same way — and it reads and writes Lotus 2.01 WK1 files and Lotus 1A WKS files, so you don't have to change your data.

To gain the advantages of Lotus 2.01 at a fraction of the price, order As-Easy-As at our risk today.

	Retail Price	Subscriber Price
As-Easy-As on disk	\$99.95	\$79.95
PRODUCT NO. AS11NS		

	Retail Price	Subscriber Price
As-Easy-As ROM Backup (disk + ROM)	215.00	195.00
PRODUCT NO. AS11NK		

Lotus 1-2-3 is a registered trademark of Lotus Development Corporation.

As-Easy-As does virtually everything Lotus 2.01 does — and more!
Portable Plus version is available only from us.

EASY AS 1-2-3

As-Easy-As gives you almost all the features of Lotus 1-2-3, Version 2.01, including:

- Accommodates large worksheets (8,192 rows by 256 columns)
- Choice of Pull Down or Panel Menu Interface
- Choice of Functions including mathematical, statistical, logical, financial, string, date, time, and user-definable
- Powerful frequency distributions tables (Bins)
- Capable of linking current worksheet with information from other worksheets and disk
- Versatile, powerful graphics capabilities, including support for 9/24-pin and LaserJet printers, ability to create PIC files, comprehensive chart-generation capabilities for bar, line, X-Y, pie, stacked bar, hi-lo, polar, area charts, and delta semi-log and log-log graphs
- X-Y data regression
- Database operations, data input forms, reads/writes dBASE files
- Text search, replace, justify
- Goal-seeking capabilities (give desired answer and As-Easy-As gives you the input)
- User-configurable printer setup file
- Worksheet auditing
- Named range, function, and macro selection lists
- Multiple planes (3-D simulation)
- Macro programming language, including over 70 powerful macros
- Macro record/playback capability and single-stepping through macros
- Full support of sub-directories and path names
- User-configurable screen options
- Able to shell to DOS.

MEMORY REQUIREMENTS

As-Easy-As requires 272K of Portable Plus main memory, plus 120K of electronic or floppy disk space (plus another 50K of disk space if you want to use the Help files).

3. Price. The disk (RAM) version sells to subscribers for \$79.95. The disk with ROM backup version costs subscribers \$195. HP sells Lotus 2.01 for \$625!

We used LZEXE (see last issue) and shrunk the main As-Easy-As executable file to around 100K so the main program and its accompanying message file occupy less than 120K of Edisk space. Add another 50K if you want to use the excellent As-Easy-As help system. The ROM version includes Help and comes on two ROMs.

The only bad news is that As-Easy-As requires 272K of Main Memory so it can run and still leave room for a 25K spreadsheet. (The Lotus ROM was designed so that it used ROM space as Main Memory. That means Lotus requires only 96K of Portable Plus or HP110 Main Memory.)

Differences in the Portable Plus and IBM PC As-Easy-As implementation mostly involve keyboard mapping. Most of the Portable Plus Extend Char keys work. The Extend Char Arrow keys become Home, End, Page up and Page Down. In Edit mode, Extend Char f7 and f8 toggle Insert/Replace and perform the delete character function. Finally, if you don't like the way the screen looks you can use the As-Easy-As COLOR command to adjust font selection and shading. We included the HP Portable installation program so the RAM version of As-Easy-As installs automatically on to the Portable Plus.

As-Easy-As comes with an excellent, readable, attractive manual from Trius and several pages of additional Portable Plus information from us. ■

Greater Storage Capacity for Portable Plus Possible in the Future

P+

I have given up thinking that HP's discontinuance of the Portable Plus means that it will no longer be enhanced. ROMBO, As-Easy-As, and the outline program all discussed in this column show that it still has life and potential.

Recently, three concrete opportunities for expanding the Portable Plus storage capability have come to my attention. Your interest will determine what gets produced.

TWO MEGABYTE ROM DRAWERS

First of all, reader Frank Keresztes-Fischer has been actively perusing finding a designer and manufacturer of 2, 4, and even 8 Megabyte RAM drawers. We have two companies that have given me quotes on producing 1, 2, and 4 Megabyte RAM drawers for the Portable Plus. At this point we can probably produce 2 Meg RAM cards that would retail for about \$1500 -- less in quantity. If we could get a commitment for between 25 to 50 of them, we could go into production.

FLASH ROM DRAWERS

Secondly, HP engineer Richard Wilson called me with an idea for building a ROM drawer based on Flash Memory (See article on PSION computer, Vol.5, No.1, Pg.10). Flash ROMs could be written to electronically. That means you could reprogram "ROMs" in about a minute in a way similar

to saving a file to Edisk from within the Portable Plus. A separate charger would probably be needed. Also, you would have to modify an entire 256K ROM subdirectory whenever you wanted to change the contents of a Flash ROM. Richard said there would probably be room to include 512K of RAM in the drawer.

As an example, you could install the Flash ROM drawer and keep your existing ROM drawer files. This way you could have 3.5 MB of file storage in ROM and Flash ROM and still have 1 MB left for Edisk and Main Memory. Or you could use a 1 MB RAM drawer and have 2 MB RAM and 2 MB for Flash ROM.

This project is in the investigation stages, so naturally, how the drawer functions may change. Again, your interest will determine whether or not we go into production.

PORTABLE PLUS HARD DRIVE

We understand that MicroTek of West Germany has at last designed a Portable Plus drawer that would house a Prairie Tek 20 Meg hard drive. New hard drives are now small enough so as to fit into a Portable Plus drawer. My understanding from speaking with a local engineer, is that it would not be difficult to create such a 20 MB hard drive for the Portable Plus with accompanying device driver software to support the new drive. Such a device would reduce the battery life of the Portable Plus.

Again, I await your interest.

BLANK DRAWERS MAY BE NEEDED

One way to significantly control the cost of any of the above-mentioned drawers is to not have to retool and manufacture new Portable Plus blank drawers. When you purchased the Portable Plus many of you received a blank dummy drawer. You may have later removed the drawer to make use of a Software (ROM) or Memory (RAM) drawer. Your blank drawer may be needed if we are to produce these new drawers.

Fortunately, we have been saving blank drawers and have about 500. If any readers feel like donating blank drawers which they are not using, we would appreciate it.

One MB RAM Cards May Be Hard to Come By

P+ For a while it looked like HP would stop producing 1 MB RAM drawers. However, as of this writing, they will do one more run, before officially discontinuing them in September. These drawers retail for \$1275. We sell them for \$995 when we have them. If we get a sufficient number of used 1 MB drawers, we will lower the price. However, at this time, we are barely able to keep up with orders so the price will probably stay at \$995 for some time. ■

Outliner For the Plus

P+ I have been looking for an outliner program for the Portable Plus since I started the company. I use Symantec's Ready and GrandView outliner programs all the time on my Portable Vectra CS and LS/12 to plan and brainstorm. An outliner program lets me create outlines, move or copy points around easily to any level, and hide or expand details in a traditional outline format taught in grade school.

Reader Joe Jesson sent me a shareware outliner program

that, thanks to his "hacking", now works on the Portable Plus. I have not yet been able to contact the shareware author, but the outliner works quite well in the Portable Plus environment. One nice thing is that the program creates only ASCII files. That means you could use the Outliner to create your outline and then use the file within The Editor, Memomaker, or any word processor. Similarly, you can import any ASCII file into the outliner. The outliner program has a "text" mode so you can work directly with straight ASCII text files (created by Memo-Maker or The Editor).

The only problem I have had with this outliner is making use of its key customizing feature. This feature lets you assign any function of the program to any keystroke combination. So, for example, suppose you were working in the outline on point II B. You now want II B 1 instead of II C. Normally, if you press Return from II B, II C will automatically appear on the next line. To have the next line prompt with a II B 1, you would press F2 and Tab.

In theory you could use this outliner's auxiliary outline installation program to assign that same function to, say, **extend char-r**. Based on my experiments, it is not easy to make these new key assignments and many Portable Plus key combinations do not seem eligible. However, I will keep playing with it and hopefully work with the author. In any case, the program and its features work well enough on the Portable Plus to make it a most useful program for outline aficionados such as myself.

Hopefully, by next issue, we will be able to announce it as a new Portable Plus product. ■

Additional News Tips, and Updates

P+

COMPETITION FOR SKETCH

Aaron Morse and some of his cohorts are working on a graphics program for the Portable Plus that I am told is much more sophisticated than Sketch. I'll report on progress and details as they become available.

110

P+

INTEGRAL

PV

If you need parts or software at used prices for the HP Integral, give us a call.

LS/12

P+

WORDPERFECT 5.0 IMPORTS WORDPERFECT 5.1 DOCUMENTS

P+

Portable Plus WordPerfect 5.0 users can import 5.1 documents. WordPerfect engineers were clever enough when they designed WordPerfect 5.0 to create an import capability for newer versions. Naturally, WordPerfect 5.1 features not in 5.0 do not work on the Plus 5.0 version.

PROSPECTS BLEAK FOR GETTING LOTUS 2.2, MS-WORD 5, AND THE WORLDPORT FAX TO WORK ON THE PORTABLE PLUS

P+

There is no good news to report here. Our research indicates that it would be almost impossible to get MS-WORD 5 to work on the Portable Plus.

For the optimistic subscriber there is still an outside chance for LOTUS 2.2 and WorldPort Fax. We're still working on it, but don't get your hopes up. ■

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

HOW TO RESTORE DELETED FILES

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!

HERE'S HOW IT WORKS

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?

VERSION 4.0 OR ADVANCED EDITION —WHICH ONE SHOULD YOU BUY?

If you have an HP110, The Advanced Edition does not work. If you have a Portable Plus or HP150, The Advanced Edition of The Norton Utilities includes all of Version 4.0, plus many additional features. Among these are:

- 1. Speed Disk:** Packs the files on a floppy, electronic, or hard disk more efficiently. This reduces disk head wear and significantly reduces the time it takes to save or retrieve a file.
- 2. Advanced "NU" Program:** Undeletes blocks of text from disks that have become "corrupted" (unreadable by DOS). Also lets you access and modify the DOS directory and F.A.T. table.
- 3. Format/recover:** Restores all the files on a hard disk if you have accidentally reformatted it. (Note: this feature does not work on the HP150 or Portable Plus.)

Our recommendation: If you have a hard disk, or want to be able to manipulate directories, or need to access ASCII data from non-HP formatted disks, use the Advanced Edition.

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

"Indispensible."
—PC Magazine

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

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

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.

POWERFUL FILE MANAGEMENT COMMANDS

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 package: THE NORTON UTILITIES are also an excellent *disk management system*. Here are some examples of what you can do:

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 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,

"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."

*Hal Goldstein, Publisher
The Portable Paper*

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 convert HP150 read-only files into erasable files), 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).

CUSTOMIZED TO YOUR COMPUTER

Because of their great helpfulness and ease of use, THE NORTON UTILITIES are a best-seller in the IBM PC market. Personalized Software is authorized to distribute them on 3½" disk for users of the HP150, HP110 and Portable Plus. (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 5¼" disk sold by Peter Norton for IBM PCs.

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.



**THE NORTON
UTILITIES**

DATA RECOVERY
DISK MANAGEMENT

THE NORTON UTILITIES 4.0 . . \$99.95
Portable Paper Subscriber Price . . . \$89.95
PRODUCT NO. NU11NS

**THE NORTON UTILITIES
ADVANCED EDITION \$150.00**
(includes Version 4.0)
Portable Paper Subscriber Price . . \$129.00
PRODUCT NO. NU12NS

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

PORTABLE VECTRA VIEWS

[Vectra Views contains information which specifically pertains to the Portable Vectra CS and Vectra LS/12 Laptop PC. In this column we note the latest developments in Portable Vectra and LS/12 products from Hewlett-Packard, Personalized Software, and other third parties, and include specific tips for Vectra and LS/12 users. Please feel free to contribute on disk or letter to Personalized Software, PO Box 869, Fairfield, IA 52556, or call (515) 472-6330, FAX (515) 472-1879.]

5.25" Parallel Port Floppy Drive

PV
LS/12

By Richard Hall

"Backpack" is a 5.25" floppy disk drive that will connect directly to the parallel port on the LS/12 or Portable Vectra CS. For users who need a 5.25" floppy this should be a good solution. Backpack comes in 360KB and 1.2MB models and needs no interface cards or expansion slots. A 10K device driver is provided to assign the next available drive letter to Backpack at startup.

The unit comes with a wall-mounted transformer (power adaptor) and is designed to stay put in offices (at work or home) that need extra floppy storage or quick odd-format support for software installation and file exchanges. Backpack will work with any IBM-compatible parallel port. Backpack is also available in 3.5" models. You can "daisy-chain" Backpacks if you need additional floppy drives.

Backpack is due to ship in August. We will test it with the LS/12 and Portable Vectra and report the results.

ORDERING INFORMATION

Backpack is being developed by Micro Solutions Computer Products of DeKalb, IL. The 360K or 1.2MB external 5.25" drive retails for \$349. If Backpack tests out, we'll put it on the price list at a discount. ■

Cursor Utility

PV
LS/12

[Thanks to Glenn Zane for this tip. Glenn has been using laptop computers since the Hewlett-Packard 110 Portable Computer was introduced 6 years ago. He is a partner in Mason, Bruce, & Girard Inc., a forestry consulting firm in Reading, California.]

By Richard Hall

MONO.COM is an 896 byte cursor utility developed by PC Magazine and available through PC Magnet/CompuServe. Portable Paper subscriber Glenn Zane tells us that he uses

MONO.COM on his PC-compatible NEC UltraLite because it produces a large, readable cursor with Lotus Symphony.

Glenn also tried CURSOR.COM, the cursor utility that comes with WordPerfect. He reports that MONO.COM produces a more suitable cursor for Symphony.

MONO.COM should work on the Vectra CS and the LS/12, but not on the Portable Plus.

As mentioned, MONO.COM is available through CompuServe. Type: go pcmagnet. ■

LS/12 Tape Backup Problem

LS/12

Joel Hedge, a Portable Paper subscriber from Dallas, reports that Tallgrass Technology's LapTape tape backup unit does not work when he uses a VGA monitor with his external Expansion Chassis, but does fine when using the CGA card in the LS/12. A Tallgrass technician stated that excessive noise could be the problem and that they would check into it. ■

Possible LS/12 Problem

PV
LS/12

A possible problem in the manufacturing of the LS/12's CPU may give rise to one of the following symptoms: blank, bright blue screen; failure to boot; system hangs-up; fuzzy characters; or missing rows or columns in the display. If you are experiencing one or more of these symptoms, contact your HP dealer to arrange for repairs. HP will cover the cost of the repair and return postage to you. You will have to pay for shipping your LS/12 to the appropriate HP Service Center.

If replacement assemblies in addition to the original manufacturing problem are needed, the extra cost will be charged to the customer or his service contract. ■

Minimum File Configuration and Installation for Popular Programs

PV
LS/12

This article discusses which parts of popular programs are necessary, which files are optional and can be deleted, and how you go about installing these programs.

[The materials below are from a number of sources including information from subscribers of the Portable Paper and the UltraLite Connection (our other newsletter). Occasionally we found that different people had different opinions about which files were needed and which could be deleted. We have not tested everything and offer this article as a starting point. Please write us about your own experience with these programs.]

By Richard Hall

The information in this article pertains to PC-compatible computers like the LS/12 and the Portable Vectra CS. In order to help you decide which files you have to install to create working copies of your favorite software this article divides these files into 3 categories:

EIGHT ways to make your LS/12 Vectra or Portable Vectra CS more productive!

Transfer your files to another PC without hassle!

Highly rated **LapLink** software offers high-speed file transfer between your Vectra and another IBM PC compatible using **LapLink's** special cable. Versatile (works with parallel and serial ports) and easy to use (simple manual or automatic file tagging).

LapLink for PV, LS/12 la11nh

Retail: \$139; Subscriber: \$119

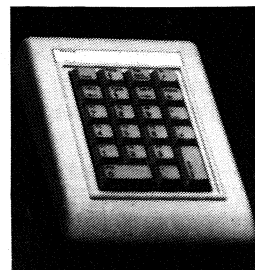


Fast numeric entry for your LS/12!

The **Zenith Numeric Keypad** plugs into the right side of your LS/12. Calculator-style numeric keypad simplifies spreadsheet and database numeric entry tasks.

Numeric Keypad, LS/12 nu11nh

Retail: \$129; Subscriber: \$115



Access any Ethernet network with your Vectra!

Xircom Pocket Ethernet Adapter attaches to your Vectra (or any PC compatible) parallel printer port. It lets you connect to any Ethernet LAN, supporting Novell NetWare versions 2.0a and higher. It's 5 oz: the size of an audiocassette case.

Ethernet Adapter, LS/12,PV et11nh

Retail: \$695; Subscriber: \$629

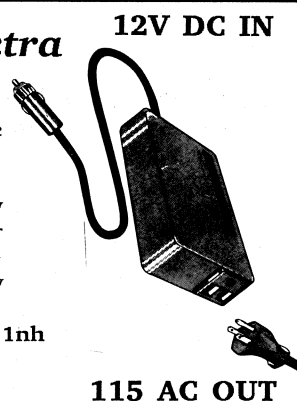


Recharge your Vectra while driving!

Plug your Vectra recharger into the 4.5" x 3.5" x 1.3", 1 lb, **PC100+ StatPower Pocket Power Inverter**. Recharge your Vectra battery by connecting the PC100+ to your car's cigarette lighter. The PC100+ provides instant 115V power from any 12V source.

StatPower PC100+ PV, LS/12 st11nh

Retail: \$179; Subscriber: \$169

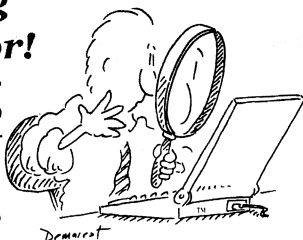


No more squinting to find your cursor!

Why search for a faint underline? Make Vectra cursor **BIG** and **BOLD** with **NoSquint** and see the cursor clearly without strain.

No-Squint PV, LS/12 no11ns

Retail: \$39.95; Subscriber: \$37.95



Fax your files anywhere, anytime!

Now you can have both a 9600 bps Group III facsimile and a full-featured 2400 bps modem in one completely portable, pocket-sized unit! Share the **WorldPort 2496** among different PCs, or use it just for your work and travels. Connects to Vectra serial port and can operate from its own battery or from AC power.

WorldPort 2496 PV,LS/12 wf11nh

Retail: \$699; Subscriber: \$599

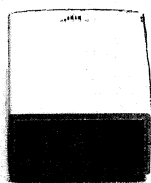


Back up your LS/12 hard disk files to tape!

Tallgrass Technologies top-quality tape backup unit backs up LS/12 #20 or 40 Meg hard disk. Connects via LS/12 floppy disk connector in back. HP lab tested and approved.

LapTape Backup Unit, LS/12 la11nh

Retail: \$795; Subscriber: \$695

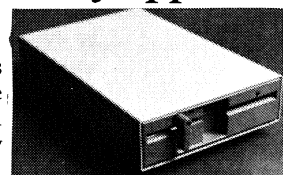


Access files from 5.25" floppies using your LS/12

Weltech 5.25" disk drive plugs right into the LS/12 external drive port in back of LS/12. Can read from and write to 360K and 1.2M floppy disks.

Weltech 5.25" drive LS/12 we11nh

Retail: \$349. Subscriber: \$299



- **Required** -- files must be present for the software to run.
- **Features** -- add significant functionality to the basic software, but can be deleted if not absolutely required.
- **Options** -- are add-ons and supplements to the software that can be deleted or retained without affecting the basic software.

The file sizes in the tables may vary from your experience. For instance, there were many different release dates for WordPerfect 5.0 and the size of some of the files will vary.

LOTUS 123, 2.2

PV Earlier versions of Lotus 123 have copy protection that allows only one installation on a hard disk.

INSTALL FROM EXTERNAL DISK

1. After running the INIT program on the System diskette, the Lotus manual tells you to use the MS-DOS COPY command to copy all the files from three diskettes into the 123 subdirectory on the hard disk. To avoid running out of room, we suggest:
 - You initially copy only System, Program, Font, Print-Graph, Install, and Help files.
 - You don't copy the Tutorial and Sample files, all of which have a .WK1 extension. Also, you may not need the Translate files (.XLT extension), which allow you to import data from other programs.
 - Later, to make more room, you may be able to delete the Help and Install files.
2. Copy all the files from the diskette labeled "System, Help and PrintGraph Disk."
3. Copy all the files from the diskette labeled "Install and Install Library Disk."
4. From the diskette labeled "Translate and Sample Files Disk", copy only the DRIVERS and UTIL.SET files.
5. Run INSTALL, selecting the monochrome CGA display (MCGA) and the appropriate printer. If you don't plan to change these settings, delete the INSTALL.* files.
6. After you become proficient at Lotus 1-2-3, you may wish to delete the help files (.HLP extension).

Lotus 123 Version 2.2

Files	Size(KB)	Comments
REQUIRED		
123.CMP	246	Basic software
123.DLD, 123.DYN		
123.EXE, 123.RI, 123.SET		
FEATURES		
BLOCK1.FNT	99.8	Fonts
BLOCK2.FNT		
BOLD.FNT, FORUM.FNT		
TALIC1.FNT, ITALIC2.FNT, LOTUS.FNT, ROMAN1.FNT		
ROMAN2.FNT, SCRIPT1.FNT, SCRIPT2.FNT		

PGRAPH.EXE	68.2	Print graph
PGRAPH.CNF		
PGRAPH.HLP		
MACROMGR.ADN	13.3	Macro manager
INSTALL.DVC	452.1	Configuration
INSTALL.EXE		
INSTALL.LBR		
INSTALL.SCR		
*.XLT	234.8	Translate file

OPTIONS

SAMP????WK1	87	Sample files
TUTOR???WK1	63.7	Tutorial

As the table above indicates, a stripped-down version of 2.2 occupies just 246K.

Lotus 123 Versions 2.0/2.01

PV Release 2.0 must be unprotected before it can be installed on a hard disk. (Utilities such as CopyII PC can accomplish this).

INSTALLATION

Run the install program to create a new 123.SET file. Install the appropriate driver for your printer and select "Color Display Adapter" for your laptop's monochrome screen. When installation is completed, delete the unnecessary files and back up the essential files on a floppy disk or RAM card.

Lotus 123 2.0/2.01

Files	Size(KB)	Comments
REQUIRED		
123.CMP	190	Basic software
123.DYN		
123.EXE, 123.SET		

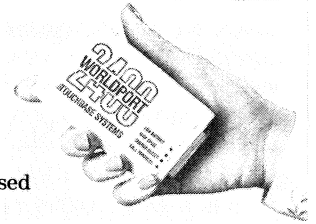
Quattro

PV Quattro is a popular spreadsheet program developed by Borland International. Its complete configuration can produce graphs as well as read from and write to Lotus 123 files. Unfortunately, the complete configuration also requires a lot of disk space. If you can live without the graphs and don't need to access Lotus files, you can squeeze this one on 360K.

INSTALLATION

There is no installation program to run. Copy files from the original disks that come with the program. Use Quattro's menus to change defaults as necessary.

2400 baud portable modem for your HP Portable



The 4"x2"x1" 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 communications 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"x2"x1", 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 non-volatile 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 portability, reliability, well-designed features, and ease of use. Order yours, risk-free, today.

	Retail Price	Subscriber Price
WorldPort 2400 modem	\$359.00	\$319.00
	PRODUCT NO. WM12NM	
WorldPort Modem 2400/MNP	499.00	425.00
	WM13NH	
WorldPort 1200 modem (without software)	199.00	179.00
	WM11NM	
Cable to connect modem to HP Portables	30.00	20.00
	WM14NM	
Acoustic coupler (300/1200 baud)	79.95	79.95
	WM16NM	
Upgrade kit: WorldPort1200—WorldPort2400 (includes Carbon Copy PLUS software)	199.00	179.00
	WM13NM	

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (#, exp. date, signature) to Personalized Software P.O. Box 809, Burfield, IA 52536-315 172 0630

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.

Copyright 1988 Personalized Software

Quattro

Files	Size(K)	Comments
REQUIRED		
Q.EXE	360	Necessary
Q1.OVL		program files
Q2.OVL, Q3.OVL		
Q4.OVL, QUATTRO.RSC, QUATTRO.DEF		
FEATURES		
*.BIG	170	Allows program to use graphs
*.CHR		read .WKQ, .WK1, and
FRWK1.TRN, FRWKS.TRN,		.WKS files.
FRWKQ.TRN, FSWK1.TRN, FSWKS.TRN		
FSWKQ.TRN		

PV Quattro Pro

Quattro Pro is Borland's highly-acclaimed upgrade for power-spreadsheet users. Quattro Pro is 123-compatible and gives you the option of using 123-style menus and commands (which should minimize the learning curve).

Info World, PC Magazine, BYTE, and PC Computing all gave Quattro Pro rave reviews and liked it better than Lotus

123 2.2 and 3.0. On InfoWorld's 10 point scale, Quattro Pro got an 8.6 -- the highest score (Lotus 123 3.0 scored 7.9 and 2.2 scored 6.6).

Quattro Pro can be run on PC-compatibles with a 640K internal RAM environment, where Lotus 3.0 cannot. Borland accomplishes this with a new memory management system, VROOMM (Virtual Run-time Object Oriented Memory Manager). VROOMM loads only the program components you need, leaving memory space available for your worksheets.

The necessary files occupy about 1,075K of hard disk storage space (file compression might improve this a little). These necessary files could fit on a 1.44MB 3.5" floppy disk.

Quattro Pro is a big and powerful program.

SPECIAL OFFER FOR USERS OF OTHER SPREADSHEETS

Lotus 123 is still the most popular spreadsheet program around. Borland wants 123 users to try their product and is selling Quattro Pro to existing users of 123, Excel, Supercalc, or Symphony, for \$99.95. This offer, about a \$400 discount on normal retail price, is officially in effect until July 31st but will probably be extended through September. Contact Borland for further details. Let us know what you think about Quattro Pro.

Quattro and Quattro Pro were developed by Borland International, 1800 Green Hills Road, Scotts Valley, California. Phone: 800-331-0877.

Quattro Pro

Files	Size(K)	Comments
REQUIRED		
Q.EXE	78	Main program
*.MU	200	Menu files, different formats for Quattro Pro's menus.
Q.VRM	700	This program lets Quattro "swap" different portions of a file or program.
RSC.RS	1.5	Resource file saves modifications to Quattro's default settings.
KERNAL.BGI	28	Graphics interface program.

WordPerfect 5.1

PV
LS
12 We use WordPerfect 5.1 for publishing *The Portable Paper* and *The UltraLite Connection* (our newsletter supporting the NEC UltraLite). The WP 5.1's files come compressed on a number of diskettes and you must run the INSTALL program to uncompress them and install them on a computer. You may not manually copy the files you want from the master disk. Install only the basic WordPerfect files listed below, bypass fonts, graphics, custom printers, and other options to save space. Or you can install WP on a desktop and use LapLink, or some other file transfer software to move the appropriate files over to your laptop.

[Note: WordPerfect 5.1's licensing agreement is more strict than previous editions. You may only have WordPerfect 5.1 installed on one computer, even if they are both yours and you are the only one capable of using them. That implies that if you choose to laplink a copy to your portable, you must either delete the copy on the desktop, or get a multi-site license, which is relatively inexpensive if you're the only one using them.]

WordPerfect 5.1

Files	Size(KB)	Comments
REQUIRED		
WP.EXE	807.1	Basic software
WP.FIL		
WP.MRS, KEYS.MRS, STANDARD.PRS		
FEATURES		
WPHELP.FIL	185.9	Help files
WP{WP}.SET	varies	Installing any printer creates this file. The drivers have extensions .PRS. (Our .SET file is 3K and our .PRS file is 83K)
printer.PRS		
OPTIONS		
SPELL.EXE	417	Spelling checker
WP{WP}.US.LEX		
WP{WP}.EN.THS	358.2	Thesaurus

There are additional options that have not been listed in this summary. The big change in the REQUIRED files from 5.0 is WP.FIL, which has grown to 575.6K.

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It's the Mobile Ni-CaD Recharger (MNR-2) from S.O.S., and it couldn't be easier to use: simply plug one end into your car's cigarette lighter and the other into your Portable, Portable Plus, HP9114, or ThinkJet.*

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* Also works with HP41C/CV/CX, HP71B, and HP75C/D hand-helds; HP82143 and HP82162 printer/plotters; HP82161 cassette drive; and rechargeable reserve battery packs for all these devices.

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MS-Works

PV
LS
12 Microsoft Works requires a formal installation using Microsoft's SETUP program. You can install it directly on your laptop from an external disk drive, or use SETUP to install a special version on a PC desktop for transfer to the laptop via a file transfer program like LapLink. If you laplink Works over, be sure the copy you install on the desktop has a screen driver appropriate to the laptop you are transferring it to.

Follow all instructions provided with Works. Refer to the following list for guidance in customizing Works for your laptop. The minimum fully functional Works requires 608K. Consult the table for options that can reduce the requirement.

MS-Works 2.0

Files	Size	Comments
REQUIRED		
WORKS.EXE	392.8	Basic software
COMM.SCD		
SCREEN.VID		
WORKS.INI		
FEATURES		
HELP.OVL	164.1	Help files
WORKS.HLP		
MAIN.DIC	181.8	Speller/dictionary files
SPELL.OVL		
THESAUR.OVL	336.4	Thesaurus files
THESAUR.LEX		
*.RFT	225.3	Font files used with graphs
*.SFT		
.PRD	varies	Printer file

THE SAVVY USER

By: Thomas R. Page

110 DOS -- A MOST ENGLISH COMPUTER LANGUAGE

P+ Now and then we hear someone complaining because computers don't understand English. In reality they perhaps understand more English than we realize. DOS **PV** and English are not that much unlike. English often omits **LS 1/2** parts of sentences because they are not necessary even in the most polite of speech. Consider this typical English request:

"Jack, please take a copy of the report to Mr. Jefferson."

Compare it to the DOS copy command:

"COPY A:REPORT.TXT C:"

P+ The DOS command is rather terse but it is not especially different to the request made of Jack. Since the computer is expecting a request or command there is no reason to call it by name. Contrary to popular opinion it has no feelings to hurt, there is no reason to add the fluff of humanity to the command. Sure the command shown above demonstrates a bit of computer jargon in the representation of disk drives and filename, but most human activities develop a jargon to simplify and increase accuracy of communication between participants.

Unlike humans DOS is unable to make inferences. It can only execute a command exactly as issued and it cannot make any assumptions about what it should do, and therefore if it cannot understand the command it will respond with sometimes cryptic error messages. But maybe this is not all that bad. The computer is not doing the wrong thing and you did not have to give it three pages of instructions and get a wrong answer.

110 CURRENT DISK - CURRENT DIRECTORY

P+ For filing data on a disk, subdirectories are conceptually equivalent to dividers, file folders, and tabs for managing data in a filing cabinet. With a bit of thought, very sensible **PV** and useable directory structures can be built on one's disk. **LS 1/2** Unfortunately a long path name involving several levels of subdirectories can make getting to data difficult. There is a DOS procedure that is almost equivalent to pulling a folder from a filing cabinet and laying it on your desk. That is simply making the directory, containing the data (files) you expect to be working with, the current directory.

When you do this only filenames have to be specified to request data in the current directory. The CD command is used to make any subdirectory the current directory while working in DOS. Unfortunately some programs insist on booting up in specific directories and may change to that directory when loaded from another directory. Often this is not as much the fault of the program as it is of the way the program was installed. A few issues ago I showed you a way to make 1-2-3 load with the current directory as the active directory.

Most programs provide a method of changing directories but generally the DOS change directory command is easier to use. If you wish to process data, or create related files in the same directory with more than one program, working off the current directory becomes even more desirable.

I showed one of the secretaries at my office how to use subdirectories and set her word processor up to load with the DOS current directory as the active directory. She quickly saw the advantages of this method of operation and was really put out when a new word processor installed on her computer was configured to default to a specific subdirectory. Of course the solution to her problem was to hack the installation to make it work like she wanted it to.

A concept related to that of current directory is current disk. Since many people only work with one disk they often forget the concept of current disk. Generally it is best to work with the fastest or biggest disk as the current disk and this is actually what most users do. Portable users generally make drive A (the E-disk) the current disk. PC users make drive C (the hard disk) the current disk. A degree of confusion results because even though it is intuitively proper, the change directory (CD) command does not change current disks. In DOS changing to the current disks is accomplished by simply typing the disk designation, A:, B:, C:, etc., at the prompt.

This actually enhances the flexibility and ease of use of DOS. It permits having current directories on non-current disks and it permits changing the current directory of a non-current disk without making another disk current. It is especially useful when copying files as it eliminates specifying directories. Remember DOS always copies to or from the current disk and current directory unless an alternate is specified. Knowing this can eliminate a lot of typing.

Explaining these concepts in an understandable manner is difficult but the concepts are quite intuitive and easy once the light comes on. The best way to develop an understanding is to create some subdirectories on two or three disks and experiment a bit.

110 DICTIONARY PROGRAM

P+ Recently I read Richard Rhodes's Pulitzer Prize-winning **PV** book, *The Making of the Atomic Bomb*. This most interesting book shows how discoveries in the science of physics inevitably culminated in building the bomb. I thought it **LS 1/2** was a history book, but my local bookstore put it on a shelf with science books. The book's best feature is giving enough personal history of the various individuals involved to make them real people without becoming a cloying exposé.

The book is well written and easy to read if you have a million dollar vocabulary. There are at least two ten-dollar words on each page. My Webster's New Collegiate Dictionary was a constant companion while I was reading it. To make looking up all these words easy, I wished that I had a dictionary program for my Portable. Typing in a word would have been much easier than searching through a dictionary.

Actually there are a few dictionary programs but they are too big for a Portable. I have not seen it demonstrated but there is a Dictionary program on CD-ROM for the Mac-Intosh that will even pronounce the word. I tried an Inductel's Funk & Wagnall's Standard Desk Dictionary program on the Toshiba T3100 at my office. It took over half of the T3100's 10 meg hard disk to load the program. I have not used the program enough to become thoroughly comfortable with it and that, accompanied with the fact that I do not like the T3100 one bit, may be the sole reason that I was not 100% pleased with the program. Actually the program pretty much functioned as expected, except I did not find its menu intuitively correct. In other words I found it easy to get hung up in the menu. The program behaved in many ways just like my dream dictionary. It can even be run as a TSR to pop up over a word processor. If you have a computer with 5 1/2 meg of hard disk to spare I would suggest that you might want to try it. In fact the dictionary is just one of a number of systems that run under a generic data management program called the Knowledge Acquisition System or simply KAS. In addition the program provides a method of creating custom data bases.

If this program interests you write or call:

Inductel Incorporated
18661 McCoy Avenue
Saratoga, CA 935070
Phone: 408-866-8016

DATA OVERLOAD

110 Who is not overloaded with data. If you are not, you apparently don't empty your mail box. I would gladly pay 50 cents to mail a letter if I didn't get the junk mail. Most mail is worthless but it has to be checked to determine that it is not important. After a time one begins to recognize certain junk and throws the letters away unopened. Of course the trick then becomes for the sender to make the letter look as important as possible so it will at least get opened. You can almost be assured that anything in the mail that looks like a check isn't. Or how about the trick of putting the name of a law firm as the return address?

One of the hot topics now is managing or selecting data from the expected future data flood. Every so often I see an article about how information-savvy people in the future will use computers to select useable information from the masses of garbage. In fact such articles have appeared in the last two issues of Business Week. I have seen advertisements for electronic clipping services that will, based upon criteria specified by you, select news and other articles to read. I suppose we will all be reduced to using these tricks to survive but I really wonder if we will be better informed.

Also works on the
HP150.

FilePlus: The Portable Plus file manager. Fast, sophisticated, easy-to-use!

- List files in two directories simultaneously
- Copy, move, and delete multiple files
- Sort directories
- Create protected ("Read-Only") files
- Back up only those files that have changed since last backup
- And much more!

When Hewlett-Packard introduced the P.A.M. file manager in 1983, the program was ahead of its time. With P.A.M., users could copy, rename, and delete files by pressing function keys instead of having to enter DOS commands.

Today, however, users are more sophisticated—and so are the file management programs that have come on the IBM PC market. These programs go way beyond P.A.M. in their abilities and in the convenience they offer the user.

Most of these file managers won't run on the Portable Plus, but we've developed one that does. It's called **FilePlus**, and here are its benefits:

1. Display two directories

This is a feature that even some of the most popular IBM compatible file management programs don't have! FilePlus lets you list two directories (from the same or different disks) simultaneously on screen. This makes it especially easy to move files back and forth between the two directories.

2. "Point and Shoot"

You don't have to wade through P.A.M.'s function key menus to perform a simple operation like copying a file.

Instead, you simply display the contents of the source and destination directories side-by-side, tag the file you want to copy, then use a simple Lotus-like menu to enter the "Copy" command with a single keystroke.

You use the same "Point and Shoot" method to run programs and to move, delete, view, etc. any files you wish.

3. Tag multiple files

You can tag any number of files in a directory, then perform the same action (copy, rename, delete, protect, etc.) on all of them in a single step.

4. Sort files

FilePlus can list the files in a directory by name, extension, size, or date. (An alphabetical listing by name helps you locate files in a hurry. A listing by size is useful in determining which files to erase in order to free up any needed amount of disk space.)

5. Single-step "Move" command

To move a file from one directory to another, you no longer have to copy the file first then delete the original. FilePlus lets you do it with a single "Move" command—and you enter the command with one keystroke!

6. Protect your files

You can protect your files (make them "Read-Only") to guard against accidental deletion. FilePlus even lets you do this with entire directories! You can unprotect the files whenever you wish.

7. Show attributes (Read-Only, Hidden, Archive)

FilePlus displays the attributes of all the files in a directory so you can view them at a glance or change them in a flash.

8. Backup only if changed

FilePlus allows you back up just those files that have been changed since the last backup.

FilePlus will save you time and effort, boost your productivity, and increase your enjoyment of your Portable Plus. Once you try FilePlus, you won't want to be without it.

Order FilePlus at our risk today!

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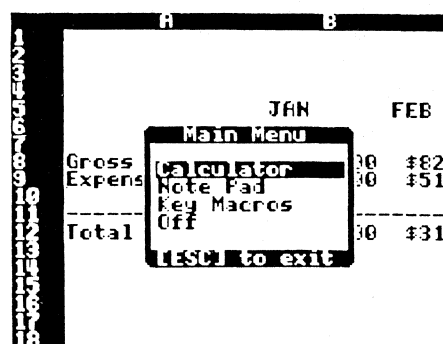
RECOMMENDED FOR:	
HP110 Portable	Portable Vectra
Portable Plus	HP150
IBM PC and compatibles	

Shelp

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):



SideKick and SuperKey are registered trademarks of Borland International, Inc.

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

"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

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.

PRODUCT NO. SH11NS

Shelp\$55 (\$49.95 for Portable Paper subscribers)

60-day no-risk trial: If, after 60 days you are dissatisfied with this product for any reason, you may return it for a full refund. **To order,** use the postage-paid form at the back of this issue, or send check or credit card number to: Personalized Software, P.O. Box 869, Fairfield, IA 52556 515/472-6330

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In reality we may be limiting ourselves to knowing more and more about less and less. I suppose there will be some way to include some random inputs of general interest and this will certainly be better than nothing, but will it provide the depth and breadth of knowledge one requires to be a good citizen?

I am always amazed at the intuition or whatever that causes me, from time to time, to randomly pick up a newspaper or magazine and find an article of great importance that I had not expected. Can this intuition be built into a computer program? I think we must make some effort to insure that our data inputs do not become totally computer managed.

One thing for certain, electronic data management programs will require very large computer resources. The electronic dictionary described in this article requires 5 1/2 meg of disk and it is very well-organized data. Data that exists in a more free form state will demand even more resources. And since a picture is worth a thousand words these data management systems eventually must provide for photographic-quality graphics which will probably increase the computer resources required by several orders of magnitude.

What does this mean to us as dedicated portable computer users? Nothing, other than the fact it will always be necessary for portable users to think smarter and compute smarter than other people. Certainly many advanced data management techniques will be useable on

portable computers but never will the power of a desk top or main frame system be built into a portable. All systems will increase power but the power of each system will always be limited by the available 'real estate' and electric power.

Simply, portable users will have to continue to do what they have always done—select from the mass of data available that which is most needed to perform the current task and load it on their machines and leave the rest at the office. Techniques that you have learned because your Portable is limited will always be beneficial. The real power-users will never be those guys who load their machines with the biggest most demanding programs available, or those who never have a large enough disk. The real power-users are the savvy users.

There are currently available several advanced data management programs or at least good prototypes of such programs. One such program is Lotus Magellan. Another is ZyIndex. I have not used Magellan and would quickly get to 'talking out of school' if I said too much about it. To the best of my knowledge Magellan is a good program if you can afford the disk space it requires—it certainly is not a Portable program. It would be more accurate to classify Magellan as a disk management program rather than a data management program.

ZyIndex on the other hand is a true heavy-duty data management program. There are two primary components to the ZyIndex system, an indexing program and a search

program. The indexing program, ZYINDEX, is used to read document files and creates a data base of information in the files. The search program, ZYSEARCH, does a key word search of the data base to retrieve files containing requested data.

The possibilities of ZyIndex are limited only by one's imagination. Obviously one could easily create a data base of correspondence. Attorneys should quickly see the possibilities of indexing court transcripts. At my office, we have created a data base of our customer requests for information and our responses to these requests. In reality our system is still in prototype stage but we have worked with it enough to demonstrate its usefulness.

Of course ZyIndex, like 1-2-3, requires some imagination to use. Also some knowledge of DOS and disk organization is needed to get the best performance from the program. But this is no different than any other program. The ZyIndex programs accept a number of command line parameters which make it possible to use batch files to set up custom applications.

If you want a leg up on the future I would suggest getting a copy of ZyIndex and doing a little experimenting. There is an early version of ZyIndex that will run on the Plus but I don't recommend it since ZyIndex does require significant amounts of disk space to store data.

If this program interests you write or call:

ZyLAB Corporation
3105-T North Wilke Road
Arlington Heights, IL 60004
Phone: 312-632-1100
Fax: 312-632-1129

AS-EASY-AS

110 As the name indicates, AS-Easy-As is as easy as 1-2-3. I don't think any long-time 1-2-3 user would have much problem using AS-Easy-As. I will admit to being somewhat put off by AS-Easy-As's display. It is not at all bad and even possesses some useful features, but it is not the classic 1-2-3, with its simplicity that I have become accustomed too. Although commands are very 1-2-3-like, they are presented in pull down rather than sliding bar menus. The good thing about the pull down menus is that they, in many instances, indicate selected options. The bad thing is that when in command mode, they obscure part of the spreadsheet. This is not really that objectionable but takes a little getting used too.

P+ My guess is that AS-Easy-As is about 98% 1-2-3 compatible. It supports some functions that 1-2-3 does not, but there is at least 1-2-3 one function that is not supported by AS-Easy-As: that function is @NOW. In AS-Easy-As the 1-2-3 1A function has been expanded to work like Release 2's @NOW. AS-Easy-As imports the @NOW with no problem, but converts it to @TODAY. If the spreadsheet is reloaded into 1-2-3, the @TODAY function is converted to @INT(@NOW), thus destroying the ability to transfer time stamps between programs. Hour-minute-second information is carried in the fractional part of the result returned by @NOW in 1-2-3 or @TODAY in AS-Easy-As.

PV There are some incompatibilities in graphics. AS-Easy-As supports more graphics options than 1-2-3. I have not had time to examine the ramifications of these differences, but obviously 1-2-3 cannot display a non-supported graph.

One good point for AS-Easy-As is that it highlights the

coordinates of the cell pointer very much like 1-2-3 Release 3. A bad point, the letter designating the column is right-justified rather than centered. This, coupled with the slash column divider, may be a plus but it surely takes some getting used to.

There are some differences in the print command between 1-2-3 and AS-Easy-As. I think 1-2-3 Release 3's print command is inferior to that in Release 1A for a number of reasons. First it only prints what is highlighted and will not print overlapping side-borders which I find very useful, and second, when printing unformatted border rows are lost when the page command is issued. I did not fully evaluate printing with AS-Easy-As but I did find a couple of items that I thought to be flaky. When printing in formatted mode, issuing the page command to advance to the end of a page will cause a heading to be printed on the next page even if all you want to do is eject a form from the printer. But when printing unformatted, issuing the page command has no effect. It does not even eject the form.

Unlike 1-2-3, AS-Easy-As permits printing graphs from inside the spreadsheet. And you thought Grandma was slow. I'll bet it took 15 minutes for my test graph to print on the ThinkJet. AS-Easy-As offers an option to print graphs to a PIC file. I did not test this option. Is there a program similar to 1-2-3's PrintGraph for use with AS-Easy-As?

There is one feature of 1-2-3 as implemented on the Portable that is better than 1-2-3 on any other portable computer, and that is using the Select key to turn on the END prefix before doing a cursor option. On other portables this is a 2 key operation requiring pressing the Fn key and one of the arrow keys. AS-Easy-As on the Plus requires pressing two keys, [Extend Char][right arrow], to turn on the END prefix. However, the cursor keys work correctly for editing formulas. The Select key should only turn on the END prefix, not replace the END-HOME key as it does in 1-2-3 Release 2. Release 1A got it right.

One thing some users may find annoying: AS-Easy-As puts the Plus in alternate mode. If you always run from PAM you will probably never notice, but if you run from DOS you may find that the function keys don't work as expected.

I can understand displaying the Logo screen when the program loads for the first time but there should be a configuration option to suppress or display it only momentarily on subsequent loads. There is a solution to this problem: use STUFF.COM in a batch file to throw a carriage return on loading.

Does AS-Easy-As support an autoloading spreadsheet? I tried AUTO123.WKS and I tried throwing a filename via the command line, but I could not get a spreadsheet to autoloading.

AS-Easy-As's help function is adequate and easy enough to use. It is not quite as good as 1-2-3 since it is not context sensitive.

AS-Easy-As is a good program but I am not ready to rip out my 1-2-3 Release 2.01 ROM and replace it with AS-Easy-As. The ROM-based 1-2-3 permits a much larger spreadsheet since it executes out of ROM.

[Tom works for a natural gas pipeline company in Houston, Texas, and was one of the first to use PC's in the natural gas industry. His excellent contributions to The Portable Paper have proved beyond a shadow of a doubt that he is truly "The Savvy User."] ■



By David Hughes

Turbo Reboot: Writing Your Own Utilities

P+

PV

LS/12

110

I NEED IT!

Ever have a need or desire to reboot your Portable Plus or IBM-PC from the command line? Have the hankering for a little utility to do the trick on both machines? This month we depart from our normal custom of writing, and craft a friendly, safe little program that will reboot your IBM-PC or Portable Plus from the command line.

Personalized Software will include the reboot program and other utilities developed for this column on the next (1991) Subscribers Disk.

CHOOSING THE TOOLS

In order to write our reboot utility, you will need to have access to Turbo Pascal 5.5 and the PlusCrt unit, available from Personalized Software, or from the HP Users Forum on CompuServe. I have also taken the time to illustrate the utility in Modula-2, C, and Assembly, just in case you don't have Turbo Pascal, and want to use some other language. Since Turbo Pascal is the most popular language among the readership of *The Portable Paper*, I will try to give it the greatest coverage.

DEFINING OUR OBJECTIVE

The first step towards successful programming is clearly defining the objective. Writing a program is not much different than writing a short story; you define the characters (or variables), and animate them (with procedures). The goal of our little utility is to successfully reboot the computer from the command line by typing "reboot." Since the program is supposed to be friendly, a brief confirming message such as "ARE YOU SURE?" will be displayed before the reboot. The program will then wait for either a 'Y' or 'N' at the prompt. If the user types a 'Y', the computer will reboot. If an 'N' is entered, the computer will state that the request has been canceled and return to the MS-DOS prompt.

Keeping the utility as portable as possible between the Portable Plus and the IBM-PC is another important goal. From page A-7 of the *Portable Plus Technical Reference*

Manual, we read, "The Portable PLUS forces a hardware reset when the re-boot interrupt is called. The IBM-PC loads in track 0, sector 1 to the boot location and jumps to it." In our utility, we will write it for either the Portable Plus or the IBM-PC by taking advantage of this interrupt. I have attempted to find a solution for the HP-110, without much success.

WRITING TURBO REBOOT

It is relatively easy to write our simple reboot utility with Turbo Pascal. The majority of the work involved in writing the program is collecting the user's input and displaying messages. Rebooting the computer simply involves invoking MS-DOS interrupt 19h (hex).

```
program Reboot;
```

```
uses Dos, PlusCrt;
```

```
var
```

```
  r : Registers;  
  ch : char;
```

```
begin
```

```
  writeln;  
  write( 'REBOOTING SYSTEM - ARE YOU SURE? ' );  
  ch := UpCase( ReadKey );  
  if ch = 'Y' then  
    begin  
      writeln( 'Yes' );  
      intr( $19, r )  
    end  
  else begin  
    writeln( 'No' );  
    writeln( 'Request canceled.' );  
  end;  
end;
```

```
end.
```

The Turbo Pascal method isn't ideal, because it requires the special PlusCrt unit, in lieu of the standard Crt unit supplied with Turbo Pascal. In order to make the same utility run on the HP Vectra, you'll need to use the standard Crt unit supplied with Turbo Pascal. One possible solution to having two utilities is to modify the Crt unit so that it recognizes the Portable Plus and the IBM-PC. Another idea is to free the utility of any interface, which means the computer will reboot without asking if "reboot" is typed. If this program is compiled to disk without debugging or runtime error checking, the end result is a 4k EXE file. The UpCase function is a standard Turbo Pascal function that translates a character from lower to upper-case. To call the Intr() procedure, a dummy record of registers is used. The Intr() procedure directly calls MS-DOS with interrupt 19h, and performs the task we desire. *Voila. It's simple!*

SKINNING THE CAT AGAIN

There are many different ways of writing our reboot utility. Sometimes we need to "see" another language in action to get a feel how well it solves a particular problem. I rewrote the program in Modula-2, C, and Assembly in order to give us a "feel" for the syntax of each language, and the relative size of the executable program that was produced.

Speed up your Portable Plus

At least 60% faster with our low-cost "FastPlus" upgrade!

By installing a faster processor and increasing the clock speed of your Portable Plus, you can run Lotus 1-2-3 and other applications at least 60% faster than before.

The upgrade is straightforward, but requires skill and experience working inside a Portable Plus.

If you want to try it yourself, see our instructions in *The Portable Paper* Vol. 3, No. 1, pp. 12-14.

If you want our trained technicians to do it for you, call to schedule an appointment, then send us your Portable Plus and \$250.

(This covers the cost of de-soldering the Harris 80C86 processor and replacing it with the faster NEC V30, increasing the clock speed from 5.33 MHz to 8 MHz, and

returning your computer to you via UPS surface. If you prefer overnight return shipping, add \$35.)

In most cases, we'll perform the upgrade and ship your computer back the same day we receive it. In all cases, we guarantee our work for 60 days.

Please note: This upgrade will void your HP warranty, and HP will be under no obligation to service your Portable Plus in the future. However, we will continue to service upgraded machines, and HP repair centers may, in fact, do the same.

This "FastPlus" upgrade will make your Portable Plus more than twice as fast as the original IBM PC—that's even faster than the HP Portable Vectra!

To save time running your spreadsheets, editing your documents, loading programs, saving files, and almost anything else you use a computer for, order the "FastPlus" upgrade today. You'll appreciate the difference it makes!

"FastPlus" upgrade for Portable Plus \$199
PRODUCT NO. FAH1G

(Be sure to call first to schedule an appointment.)

Overnight return shipping . . \$35.

MODULA-2

This program is the successor to Pascal, designed by Niklaus Wirth, the creator of Pascal. As you can see, the program looks very similar to Turbo Pascal. The TopSpeed Modula-2 compiler was used for this example. The main advantage of Modula-2 is that the I/O calls are normally routed through MS-DOS, so this program works on the Portable Plus and Vectra without modification. The TopSpeed compiler produced a 4k EXE file, similar to Turbo Pascal. The main difference between the two languages that we can see here is that Modula-2 requires the unit's name be pre-pended to the library function with a '.', unless specifically "imported." There are many other differences, but our goal is to get the flavor of the language.

MODULE Reboot; (* Reboot utility in Modula-2 *)

IMPORT IO, SYSTEM, Lib;

VAR
 ch : CHAR;
 R : SYSTEM.Registers;

BEGIN
 IO.WrLn;
 IO.WrStr('REBOOT SYSTEM - ARE YOU SURE? ');
 ch := CAP(IO.RdKey());
 IF ch = 'Y' THEN
 IO.WrStr('Yes');
 Lib.Intr(R, 19H);
 ELSE
 IO.WrStr('No');
 IO.WrLn;
 IO.WrStr('Request Canceled.');
 IO.WrLn;
 END;
END Reboot.

ANSI C

This C programming language was developed by Brian Kernigan and Dennis Ritchie of AT&T Bell Labs. Unlike the Pascal or Modula-2 examples, our C reboot utility looks very different. One peculiarity is the way we write the prompts to the display - since there isn't a standard function to print a string without a carriage return/linefeed at the end, we must print the prompt one character at a time. The TopSpeed C compiler was used for this exercise, and produced a 5.4K executable file.

/* Reboot program for the IBM-PC & Portable Plus */

```
#include <conio.h>
#include <dos.h>

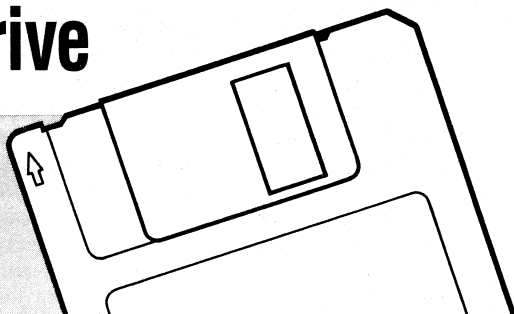
char *msg = "REBOOT SYSTEM - ARE YOU SURE? ";

main()
{
    int ch;
    union REGS r;

    while ( *msg != '\0' )
        putchar( *msg++ );
    ch = getch();
    if ( toupper( ch ) == 'Y' ) {
        puts( "Yes" );
        int86( 0x19, &r, &r );
    }
    else {
        puts( "No" );
        puts( "Request canceled." );
    }
}
```


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ASSEMBLY LANGUAGE

Alas, we have saved the very best for last. What you really wanted was a simple utility that was less than 1K in size that would do the same thing as those 4K - 5K utilities written with the higher-level languages. To perform this small miracle, we must think small and "do it ourself" in assembly language. The following example was assembled using Borland's Turbo Assembler 1.01, and linked with the Turbo Linker. The resulting utility was about 640 bytes long. Assembly Language has the least amount of overhead, and is the most direct way to solve this problem. Since it uses MS-DOS for both input and output, it is portable between the Portable Plus and Vectra. *That's more like it!*

```
%TITLE "Reboot Utility for IBM-PC"
%SUBTTL "6/12/90 - D. Hughes"
```

```
.MODEL small
.STACK 100h
```

```
.DATA ; Beginning of the DATA segment
Welcome db 'REBOOTING SYSTEM - ARE YOU SURE? $'
Canceled db 'Request Canceled.', 0dh, 0ah, '$'
Yes db 'Yes', 0ah, 0dh, '$'
No db 'No', 0ah, 0dh, '$'
```

```
.CODE ; Beginning of the CODE segment
start: ; Program entry point
    mov ax, @data ; Tell the CPU where the data is
    mov ds, ax
    mov dx, OFFSET Welcome ; Print the Welcome text
    mov ah, 9 ; MS-DOS write string function
    int 21h ; MS-DOS services
```

```
getKey: ; Get a key from the keyboard
    mov ah, 0 ; Get the key from BIOS
    int 16h ; BIOS keyboard interrupt service
    cmp al, 'y' ; Is it a 'y'?
    jc rbok ; jif TRUE
    cmp al, 'Y' ; if not, is it a 'Y'?
    jnc norb ; jif FALSE - so exit
```

```
rbok: ; Reboot the computer
    mov dx, OFFSET Yes ; Print the 'Yes' string
    mov ah, 9 ; MS-DOS write string function
    int 21h ; MS-DOS services
```

```
int 19h ; System reboot interrupt.
jmp exit
```

```
norb: ; Don't reboot computer
    mov dx, OFFSET No ; Print the 'No' string
    mov ah, 9
    int 21h
    mov dx, OFFSET Canceled ; Print 'Request Canceled...'
    mov ah, 9
    int 21h
```

```
exit: ; Exit this program
    mov ah, 4Ch ; Terminate our program
    mov al, 0 ; and return to MS-DOS
    int 21h
```

```
END start
CODE ENDS
```

CONCLUSIONS

It is easy to write simple utilities for your Portable Plus or Vectra, if you take some time to clearly define the objective. There are a variety of different languages to choose from; some are easier to learn than others. It's largely a matter of taste, time, and budget. With the exception of Assembly Language, each high-level language will require a significant amount of your Portable's RAM and Edisc.

From time to time this column will feature short programming projects aimed at helping you become better acquainted with your Portable Plus or Vectra. Portable programs that work on the HP-110, Portable Plus, and HP Vectra are of special interest. What kind of utility programs would you like to see that would make your life easier? One neat idea is for a utility to change the Portable Plus's System Config or Datacomm Config directly from DOS. Others include a softkey programming utility, or a modem utility, all from the command line. What do you think? We stand ready to listen.

[David is a service engineer for computer power systems at KW Control Systems of Middletown, New York, and a long-time contributor to The Portable Paper.] ■

(Continued from page 5.)

Four - Meg memory IC's are now common-place and 16 Meg's are just around the corner. I suggest you develop a relationship with a company capable of keeping those designs current with the latest RAM and ROM densities so Personalized Software can continue to give our systems more and more capabilities. (I can help you find such a company, if you need help).

Wait a minute, why stop there? If the Portable Plus is such a good machine as we all believe, why not revitalize its construction. I understand that it is unlikely that Hewlett-Packard can be convinced to reverse their decision about support, why would they object to someone else building the machine? Especially, if they were to collect some kind of a royalty!! Is the tooling scrapped??

3. I know of several companies that Personalized Software could develop a relationship with that could take on the design and manufacture for memory up-grades. Also, I know some who could manufacture the entire machine for a fraction of HP's costs, thereby presenting the possibility of a very competitive resale cost. And, some of these companies could even upgrade the entire design of the system to go to the latest microprocessors, graphics chips, etc.

Why think small? Go for it. Let me know if I can help.

Dale Montgomery
P.O. Box 520
1391 N Harrison Ave.
Cary, NC 27513

Comments on ROMBO: The Portable Plus ROM Burning Kit

I am delighted to see that the ROM burner project has come to fruition; you may remember a letter I sent 18 months ago in which I discussed a similar project that HP was considering. Their thoughts were to put the EPROM burner into one of the drawers of the Portable Plus, to do what the newer "Flash Cards" do.

The idea was to allow users to backup or store data/programs on a bank of EPROMs that were electrically (rather than UV) erasable. Naturally the project was pulled when HP planned the discontinuance of the Plus.

There must be some way to incorporate the newer Intel flash ROMs into the Plus, I know they have developed a 32 pin 128K ROM that has a life of 10,000 cycles.

This technology is exactly what PSION has used in their Organizer and their latest Portable computers for a "hard disk". Flash ROMs do not require enormous power input to program or "burn," and they are electrically erasable. This also means you can have a dynamic RAM/ROM mix, both the ROM drawers could be used and applications could be stored as if they were on hard disk.

If there were any ROM failures the appropriate ROM could then be removed without needing delicate surgery that would be required if a 1 Megabyte RAM drawer failed (due to surface mount technology used in the RAM drawer).

I would expect there to be some trade-off against the Plus's battery life, but this would be minimal in most instances as the extra power would only be required when writing to "disk."

I would like to order a ROM burner pack p/n EP10NH. I realize that there has been some investment of time etc. in this project, but was surprised at your prices. Locally available serial ROM burners cost \$US 300 and 32 pin 128K EPROMs are \$US 10, ROMs \$US 8. The 32 pin to 28 converter can't cost much (although I accept there may be some time required to rewire it) and I wouldn't expect the UV eraser to cost very much. My point is that the cost of the kit appears to be more expensive than it needs to be, and if the objective, as stated, is to get all Plus owners to buy one, then I think price may be a problem.

For me it is justifiable because of the investment I have in Plus's and its ROMs, and the need I have to free up some RAM space. I also intend to repack the Word-Perfect ROMs onto 128K EPROMs, "crunch" WP.FIL and put ARC (or similar) onto it so that when WP5.0 is executed WP.FIL is unpacked before WP5 is run. This should give the 300K disk space that WP.FIL requires back to other applications use then WP5 is not being used. There should be other advantages for other programs as well.

Could you please send both program file compressors on ahead? Is the ROM burner U.S.A. voltage, and if so what voltage options are available, I would need 220-240 volts?

Andrew Jackson
Auckland New Zealand

[We are looking into Flash EPROMs right now. One problem they present is that they need 12 volts to be programmed. At present, the current going from the Portable Plus into the memory drawers is 5 volts. If we can change this, the modification is sure to put an increased demand on the battery.]

I am sorry we did not accomodate you sending the compression software ahead of time. I know our name is "Per-

sonalized" Software, and we do try to take care of individual requests. However, sometimes we get swamped like we did last month creating the ROM burner manual, publishing two newsletters, and performing a host of other responsibilities. We are sorry we had to put off some individual requests.

As for pricing, many man-months were invested by our staff to produce ROMBO (our ROM burner). Transforming HP software, a commercial serial ROM burner, and existing EPROMs into something easily usable by our customer base took quite a bit of work and planning. We have orders for 20 and we hope to sell at least 100 units.

We priced ROMBO about twice the cost of raw materials (no labor). HP and other manufacturers typically have a 3 times multiplier - that is, the retail of an item is about three times its manufacturing costs.

I hope this rationale makes sense to you and other readers. Actually, I had expected to have to charge more for ROMBO, but quality work by our internal staff and good cooperation with our suppliers kept our costs down. I think \$794 for ROMBO and 6 128K ROMs is a good value. -- Hal.]

Future Directions for Personalized Software

While I agree on supporting Laserjet printers and New Wave because they are HP products, I have some thoughts on other portable computers that may prove to "need" the same type of support as the HP portables. First some philosophical discussion.

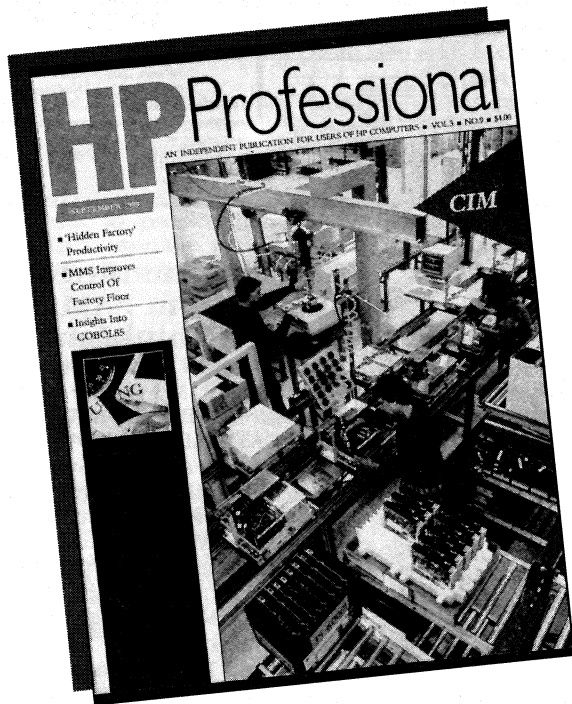
HP portables are unique products. Their users are also unique. Those of us that use HP portables have real needs for a true portable computer. We do not use them as executive trophies: (that is) a measure of our status similar to salary level, number of subordinates, size of office, type of office furniture etc.

Based on consulting on computer systems belonging to other individuals/organizations, I estimate that at least 50% of all personal computers are desk trophies. The "boss" usually has the most powerful machine and barely can use it. The staff gets the executive hand-me-downs and usually can only do the specific tasks for which they have been "trained", that the "boss" can't or won't do.

Forty percent of all personal computers are used by one individual reasonably skilled in one or two tasks. But, in case of problems, a support person must be consulted.

The remaining 10% of personal computers are used by experienced people

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

who actually need and use most of the capabilities of the machine. These people only need support infrequently. In fact, they usually provide most of the local support within an organization. They also join users' groups. I feel that this group contains most Portable Paper subscribers.

Personalized Software should aim at the 10% group using unique and unusual systems that are not perceived to be executive trophies. The NEC Ultralite is a prime example of an executive trophy. There is no point in trying to function in the dilettante marketplace. You haven't in the past, and have been successful. Why change?

Two possible choices of systems to support are the Psion Mobile Computers and the Datavue Snap. (Please note that I have no connection with either of these companies. These are used only as examples of unique and unusual portable computers that are, in some ways, similar to the HP portables and do not appear to be perceived as executive trophies.)

The Psions are light (4.5 pounds) use RAM and Flash EPROM technology and run several days on AA batteries. Also, there are several peripherals and I/O ports to aid in interfacing with desk-top systems. The most expensive model is MS-DOS compatible, the other two models are not. I've enclosed some spare literature on these machines.

The Datavue Snap is unique in that it comes in several parts: A five pound keyboard and screen using a built-in battery-backed RAM disk for storage. (I believe that an additional ROM/RAM card is available.) A two pound add-on battery to increase running time to 6 to 8 hours. (It shouldn't be too difficult to make a

longer-lived and heavier battery for those who want one.) Two drive units: one with a 20Meg hard drive (AC power required) and a 720K floppy drive; the other with two 720K floppy drives (can run on batteries as well as AC). The drive units also contain an IBM compatible 1/2 card slot. (Many uses for this slot come to mind.) Also, there are 3 user-switchable display screens available. Unfortunately, I don't have any literature on the Datavue Snap. There are probably other similar portable computers in the market-place. Specifically, ones that can use ROMs, as you are getting involved with programming ROMs with software from some of the major producers. (Note: P C Magazine of July 1990 page 77 mentions rumors of Windows etc. on ROM.) It is certainly worth the effort to evaluate these machines for possible support by one of your publications. No matter what, and I can't put enough emphasis on this, these machines must be unique and actually intensively used rather than displayed as trophies.

Something totally unrelated to the subject of this letter, worth examining by you, is the CAD program, Draft Choice, distributed by Trius (the maker of As-Easy-As). So far, I've not been able to make it fully function on an IBM clone; but then I've only experimented with it for an hour or two. I suspect that it's a little buggy, like early versions of As-Easy-As that I've tried. If Trius was willing to modify As-Easy-As to run on an HP, why not their CAD program?

Keith Schaefer
Venery Groups Limited
P.O. Box 370
Nassau, NY 12123

Problem Running Sketch from PAM; Linking ThinkJets

110 When I try to install "Sketch" or "The Word" from PAM I get the following error message: UNABLE TO ACCESS INSTALLATION DATA FILE. I have enclosed a copy of the screen at that point. I must then go to DOS to run the program, and then I never seem to have all of the files I need in my Plus. What am I doing?

Is there any way to put two ThinkJet printers in the circuit and then direct the printing of Memo-Maker or Lotus 123 to the printer of choice? I have label stock in one and ThinkJet paper in the other. I now have to unplug number one printer and put those two cables together, to direct the output to number two.

Thomas F. Moore
P.O. Box 22033
St. Louis, MO 63126

[My only guess is that somehow your master disk got corrupted, and we need to send you a new disk. The only way that I know of to run two ThinkJets off the same Portable Plus is to use a serial-to-HP-IL converter. You can order it from us used for \$179. The converter runs one ThinkJet off the HP-110 or Portable Plus 9-pin serial port and the other ThinkJet runs in normal fashion off the HP-IL port. - Hal]

Market Forecaster on Plus

I answer your request for my opinion about the future of Personalized Software. In real life I was a Professional Engineer with an HP calculator. Now I am retired with a Portable Plus. The Portable suits

me perfectly though I do not use it daily. When needed I can carry it to a volunteer job at The Science Museum or to a cabin in the woods. I use it with MemoMaker for correspondence, or with Lotus 123 for personal records, investment, income taxes, and engineering calculations connected with The Science Museum. With my limited use I can not imagine investing learning time and money in a different machine.

I have no contact with other users of the Portable. Therefore the Portable Paper has been essential for my education with the Portable. I read the Paper completely, make notes on important points, and use the index. I will subscribe as long as you publish it. My reaction to your other points is weak. I do not need to follow HP's work. My interest in printers is small so long as my ThinkJet works. When it fails, I will look to you first. You continue to have my good will and confidence.

Now I change the subject to something of more general interest. A few months back I purchased an investment aid called "The Market Forecaster" from William Finnegan Associates, Inc (cost \$284). It tries to predict Standard & Poors 500 stocks average for 16 weeks ahead. I think the prediction is useful, but I limit my comments to my experience with the program on the Portable Plus. It is designed to run on a PC. It runs on that Portable with these limitations.

- 1) The help screen does not work – that is not important.
- 2) The arrow keys are supposed to move the cursor for data entry – they do not. An entry error can be corrected only by using RETURN to step around through all 32 entry blocks. It can be a nuisance but is not serious for a careful person.

- 3) When the FORECAST runs its calculations, the Portable Plus time and date are reset to machine zero. I made a batch file that prompts for TIME, then for DATE, then recalls the Forecaster. EXIT without FORECAST then stores the data file with correct time and date.
- 4) During the FORECAST calculation, the Portable Plus sometimes crashes. Data entered during the session is lost and must be reentered. It occurs about once in three weeks. It requires a Contrast Button reset. To limit the time lost by data reentry, I use FORECAST after every two days of data entry.

Data can be entered daily, but I enter it only weekly from Barrons. When things go well with no crash, it takes about 10 minutes per week. The screen displays the data and prediction for each day. A screen print records it for the week. The program automatically keeps 6 weeks of past data in files. At 4 or 5 week intervals a number in Barrons verifies the past calculations.

The batch file I mentioned above calls up a Lotus worksheet after correcting time and date. For visual and graphical comparison, the worksheet lists the predictions and 16 past weeks of some mutual funds such as a S & P Index fund and a bond fund. The worksheet is used to decide timing in switching between funds. I recommend the program as worthwhile but it should be used with my batch file.

John Davies
767 Heinel Drive
St. Paul, MN 55113

[The Market Forecaster wasn't available through our normal sources. We're trying to find a source for it now. We'll report more in the next Portable Paper – Hal.]

Plus Flies High in the U.S.A.F

P+ The Ph.D. colloquium at the University of Maryland for my degree program in Supreme Military Science was very successful. My fellow learners and faculty from The Union Institute found my presentation on The Maharishi Unified Field Based System of Defense very thought-provoking. Before enlisting in the Air Force Band I stopped in Milwaukee to visit my parents. While I was there I gave a similar presentation at the University of Wisconsin to The Wisconsin Student Peace Conference.

I really like my HP Portable Plus I received from Personalized Software. In the military the name of the game is "hurry up and wait." While I have been "waiting" I have been using my computer to write letters to Generals and other high-ranking officers. I have successfully recruited several members for my doctoral committee. Also, the letters I have printed on my ThinkJet Printer look very professional. I especially like the advantage of having a portable printer. For instance, I showed a letter addressed to a General to my commander during a break from rehearsal in the band's music studio. He suggested some changes that would make it look and sound more "military." Because of the portability of the HP computer, disk drive, and printer I was able to implement these changes there immediately and still beat the time deadline set by the General's staff.

Thank you for your generosity.

AIC David R. Leffler
USAF PSC1 Box 864
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■

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* Requires proof of purchase of WordPerfect 5.0 and PlusPerfect, and written confirmation that you will honor the WordPerfect license agreement.

Here's What You Get

Here's what you receive when you order the Portable Plus or HP150 version of WordPerfect (published exclusively by us). Note: See box below to determine whether you should buy WordPerfect 4.2 or 5.0.

1. Complete WordPerfect software and Users Manual

The entire IBM PC version of WordPerfect (on 3½" disks) and the standard WordPerfect users manual.

2. Special utility programs

Our versions of WordPerfect 4.2 and 5.0 both come with an IBM PC emulator program that allows WordPerfect to run on your HP computer. (The Portable Plus version of this emulator is called PlusPerfect.) Our disks also include "batch" files that allow you to run WordPerfect automatically.

3. (Optional) ROM Backup for Portable Plus

6 ROM chips containing PlusPerfect and a significant portion of WordPerfect 5.0. (You can use 4 or 6 of these ROMs, depending on the amount of space available in your ROM drawer.)

Although you'll still need to store a 300K WordPerfect file on your disk and set main memory to 376K, this ROM Backup saves you up to 384K of RAM.

To purchase the ROM Backup, you must already own (or order) WordPerfect 5.0 and PlusPerfect on disk.

4. Instruction booklet

In addition to the comprehensive WordPerfect users manual, we supply our own instruction booklet. It tells you, step-by-step, how to get started, what to ignore in the users manual, and how to use WordPerfect on your HP computer.

5. Keyboard template

We also include a convenient 4-color keyboard template that we've designed specifically for the unique keyboard layout of your Portable Plus or HP150. The template shows you, at a glance, which keys to press to execute each of WordPerfect's functions.

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

TO ORDER

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

the Portable Plus and HP150

Frequently Asked Questions

(If you have additional questions, don't hesitate to call us!)

Q. Are the Portable Plus and HP150 versions of WordPerfect identical to the IBM PC version?

A. WordPerfect 5.0 and 4.2 are identical on all three machines, except:

- a.) the on-line tutorial does not run on the Portable Plus or HP150. (However, the "learning" section of the users manual covers the same material as the tutorial.)
- b.) the "Preview Document" feature (which shows special fonts and graphics as they will appear on printing) functions in a limited way.
- c.) Some extra, unessential utilities that come with WordPerfect do not run on the HP150 or Portable Plus.

With both 5.0 and 4.2, if you already know how to use WordPerfect on an IBM PC, you can use the HP version right out of the box.

Q. Can I transfer WordPerfect files back and forth between different versions of WordPerfect and between my HP computer and an IBM PC?

A. Yes to both.

WordPerfect 5.0 has a built-in transfer utility that makes sharing files between versions of 4.2 and 5.0 easy.

Moreover, WordPerfect produces identical files on an IBM PC, Portable Plus, and HP150. The only difficulty that may arise in transferring files between these machines is that HP and IBM computers use different formats. If you don't already have the ability to accomplish the transfer, you can either use our Disk Conversion Service or a variety of hardware or software solutions, depending on your system. For details, see "File Transfer Made Easy," in our product listings in this issue.

WordPerfect 4.2 or 5.0—Which Should You Buy?

To determine which version of WordPerfect to buy—4.2 or the new 5.0—follow these steps:

Step 1. Assess your needs.

Please see the column, "WordPerfect's Newest Version" (at top right) to learn about the features that are unique to Version 5.0. If you need these features, then 5.0 is the version for you, provided your machine can run it (see below).

Step 2. Check your memory size.

Portable Plus:

To comfortably run Version 5.0, you'll need a

Q. Where can I get assistance in using WordPerfect on my HP150 or Portable Plus?

A. If you have a problem related to the HP150 or Portable Plus—or if you're not sure where the problem lies—call us. If you have a question about how to use a WordPerfect feature, call WordPerfect Corporation. They are famous for the calibre of their customer support, and you can call them toll-free.

Q. Will the HP version of WordPerfect work with my printer?

A. Our instruction booklet tells you how to run WordPerfect with all printers that work with our Portable Plus or HP150, including serial, parallel (Centronix), HP-IB, and HP-IL.

WordPerfect in Brief

Here are some of the advanced features that have made WordPerfect the world's number-one selling word processor. (These features are common to WordPerfect 4.2 and 5.0).

Speller

WordPerfect's built-in spell-checker is fast, thorough, and easy to use. The main dictionary contains 115,000 words, and you can add words of your own to one or more auxiliary dictionaries. The Speller also counts the number of words in a document or in any block of text.

File merging and mail merging

With WordPerfect, it's easy to produce personalized form letters (mail merging), and to assemble reports, proposals, and contracts from pre-written components.

Thesaurus

WordPerfect's Thesaurus helps you find the right word when you need it. Synonyms are grouped by noun, verb, and adjective, and at the touch of a key, you can look at second and third levels of alternatives.

machine with at least 896K of RAM (e.g., a 512K Portable Plus with a 384K RAM drawer, or a 128K Portable Plus with two 384K RAM drawers).

With an 896K machine and our ROM version, you can run WordPerfect without an HP9114 disk drive. Otherwise, with an 896K Portable Plus, you need to load WordPerfect from the HP9114. Once you load WordPerfect, you no longer need the HP9114 to run WordPerfect.

To comfortably run Version 4.2, you'll need a machine with 640K of RAM.

You can run either version of WordPerfect with just 512K of RAM if you're willing to do a lot of disk access from your HP9114.

Columns

WordPerfect's Columns feature is ideal for writing a newsletter, glossary, script, or any text that requires columnar format. Up to 24 columns can be formatted in either newspaper style (snaking) or parallel style (side-by-side). The columns appear on the screen exactly as they will print on the page.

Footnotes and endnotes

WordPerfect streamlines the task of creating and editing footnotes and endnotes. Just enter information at the appropriate spot, and WordPerfect takes care of numbering and formatting—including allowing just the right amount of space at the bottom of the page. If you later add or delete a note, WordPerfect will automatically renumber the others.

Table of contents

Mark portions of your text, specify a format, and WordPerfect will automatically generate a Table of Contents and an Index for your document.

Math

WordPerfect lets you use 4-function math for calculations across columns and for subtotals, totals, and grand totals down columns, anywhere in your document. Whenever you change a number, WordPerfect updates the totals. It's like having a mini spreadsheet at your fingertips—without leaving WordPerfect.

Sort

You can sort lines, paragraphs—even external database records—from within WordPerfect. You can apply logical rules to the sort: It's easy, for example, to generate an alphabetized list of all customers in California who have purchased more than \$100 worth of merchandise within the last 6 months.

Note: You might consider purchasing a 1 Megabyte RAM drawer for your Portable Plus. This would let you bring the superb WordPerfect speller module wherever you go without having to load it in from an external disk drive. And with a megabyte of extra RAM, you'd have lots of room left over for text files.

HP150:

To run Version 5.0, you'll need 512K of memory and a double-sided disk drive.

To run Version 4.2, you'll need 256K of internal memory and either a double-sided or single-sided disk drive. (Note: If your HP150 uses single-sided disks, you'll also need a hard disk drive to run Version 4.2. Neither version of WordPerfect will run on a dual-floppy single-

WordPerfect's Newest Version

Here are the main features that have been added to WordPerfect in upgrading it from Version 4.2 to 5.0:

Fonts and printing

WordPerfect 5.0 lets you set margins, tabs, etc. using inches, centimeters, and points. Fonts may be freely mixed and changed without affecting margins, tabs, or column definitions.

Integrated text and graphics

WordPerfect 5.0 lets you insert graphic images from most graphics programs directly into your text. You can enlarge, reduce, move, and rotate most images to your specifications.

Styles

You can combine text and codes to create a specific "style," or format, that you can then use over and over again (for chapter headings, subheadings, etc.).

Document compare

WordPerfect 5.0 will compare the on-screen document to an existing document on disk. Text that has been added will be "red-lined" (marked with a vertical bar in the left margin), and text that has been deleted will be shown in "strike-out."

Keyboard redefinition and macros

WordPerfect 5.0 lets you store any sequence of keystrokes so that those keystrokes will be executed upon the press of a single key. This "macro" feature allows easy entry of repeated text and commands. One way to use macros is to change the key assignments for WordPerfect's features. There is no limit to the number of different keyboard layouts you can thus define.

sided HP150 system.)

Our recommendations:

In general: Choose WordPerfect 4.2 if: (a) your machine demands it, or (b) you're already using 4.2 on other machines and don't intend to upgrade, or (c) you wish to save some money and don't need the new features in WordPerfect 5.0.

On the other hand, if you want those new features and your machine can handle it, WordPerfect 5.0 is the one you should get. If you use a Portable Plus, you'll tie up the least amount of RAM if you purchase our ROM Backup version of WordPerfect 5.0.

ROMBO!

**Portable Plus users:
Now you can easily put programs
and data on ROM yourself!**

**— up to 1.5 megabytes
per ROM drawer!**

No more lugging a disk drive wherever you go! No more taking up precious Edisk space with frequently used programs and data! Now you can easily put almost any program - and important data - on ROM chips and store them in your Portable Plus's ROM drawer.

Once you've done so, your programs and data are available instantly, with no danger of loss and no need for an external disk drive.

"Burning" your own ROMs is easy - even for a computer novice - with our Portable Plus ROM Burner. All you do is connect the ROM Burner to your Plus, and follow the simple instructions we provide for using the software that comes with the unit. (We even show you how to have your ROM programs automatically show up on your PAM menu!)

ERASABLE!

If you make a mistake while burning in a ROM - or if you later wish to change the contents of your ROMs - no problem. Just use the ultraviolet eraser that comes with our ROM Burner and start over. (Our programmable ROMs are technically "EPROMs", which stands for "erasable programmable read-only memory.")

UP TO 3 MEGABYTES ON ROM!

The ROM drawer that fits into the bottom of your Portable Plus has sockets for 12 ROMs. Each socket can hold a 128 Kbyte ROM. Even though there are more than 50 programs now available on ROM for the Portable Plus, most people only use 2-6 of the 12 sockets - which means part of the 1.5 megabytes of each drawer's available ROM capacity is going to waste.

Our Portable Plus ROM Burner lets you fill that unused ROM space with fixed data and with almost any Portable Plus program you wish - including programs that are not commercially available on ROM. This eliminates the need for an external drive and



frees up valuable space on your electronic disk.

Regardless of your needs, we invite you to take advantage of this Portable Plus break-

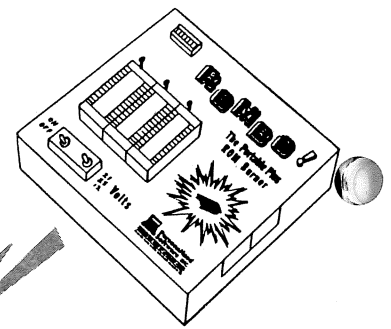
through. Put your programs and fixed data on ROM and experience the ultimate in portable computing convenience. Order our ROM Burner for the Portable Plus today.

ONE YEAR GUARANTEE • 60-DAY TRIAL
See order form for details

HERE'S WHAT YOU GET

A must for every Portable Plus user, ROMBO: our ROM Burner package includes:

1. **Personalized Software ROM Burner for Portable Plus, with serial cable.** Burns commercially available 64 Kbyte ROMs or special Personalized Software 128 Kbyte ROMs.
2. **Ultraviolet eraser.** Erases 64K or 128K ROMs for reburn. Lets you correct mistakes or change programs or data. Also useful for testing to make sure your newly burned ROMs work properly.
3. **All necessary software,** including: two compression programs that shrink COM and EXE files so you can fit more programs on ROM.
4. **Two Personalized Software 128 Kbyte EPROMs** (erasable programmable ROMs).
5. **Complete user manual.** Clear, step-by-step tutorial, written for novice and experienced users alike. How to burn ROMs, how to use accompanying software, how to get ROM programs to show up on your PAM screen. Also includes suggestions on what to put into ROM, how to avoid snags, and other tips based on our years of experience in supporting the Portable Plus.



PRICING

- **EP10NH Rombo: Personalized Software ROM Burner Package for the Portable Plus** (ROM Burner, serial cable, ultraviolet eraser, software, two 128 Kbyte EPROMs, user manual) Retail: \$695 Subscriber: \$595
- **Personalized Software 128 Kbyte erasable programmable ROMs (EPROMs) for the Portable Plus**
EP11NR Single EPROM Retail: \$69 Subscriber: \$59
EP12NX Set of 4 Retail: \$276 Subscriber: \$199
- **Personalized Software 128 Kbyte non-erasable programmable ROMs (PROMs) for the Portable Plus**
(Ideal for making multiple copies of ROMs)
EP18NR Single PROM Retail: \$64 Subscriber: \$54
EP19NX Set of 4 Retail: \$256 Subscriber: \$179
- **EP13NR 27C512, 12.5V, 64 Kbyte EPROM**
Retail: \$25 Subscriber: \$22
- **EP14NS ROM Burner software and manual only**
(Useful if you wish to burn your own 64 Kbyte EPROMs for the Portable Plus using a different ROM burner)
Retail: \$250 Subscriber: \$195
- **SW11UC Portable Plus ROM drawer**
Retail: \$195 Subscriber: \$99
- **EP15NE Custom ROM services**
EPROM (includes 10 minutes testing to make sure your ROM works in Portable Plus as specified)
Retail: \$150 Subscriber: \$135
- **EP16NE ROM consulting** (additional testing, batch file rewriting, etc.): \$75/hour
- **RENTAL** \$195 per month. Call for details.

BREAKTHROUGH IN PORTABLE PLUS ROM TECHNOLOGY

Our Portable Plus ROM Burner is a breakthrough for Portable Plus owners. It copies programs and data onto special 128 Kbyte programmable ROMs created exclusively for us.

Aside from ours, the largest commercially available programmable ROMs that fit the sockets inside the Portable Plus ROM drawer are only 64 Kbytes. Our 128 Kbyte programmable ROMs give you double the storage capacity!

Moreover, unlike the procedures you have to go through with other ROM Burners, ours are easy. We supply all the software you need and a user manual that even a novice can follow with ease. Most importantly, ours is the only ROM Burner that lets you burn these ROMs directly from your Portable Plus.

We also offer custom burning of non-erasable ROMs. With volume discount, this can cost significantly less than the price of blank EPROMs.

Call for a quotation.

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