

THE HP Palmtop Paper



**PC Cards:
A BOON TO YOUR PRODUCTIVITY!**

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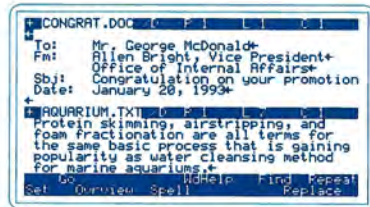
SWITCH!™ version 2

Multi-Tasking Software for 95LX!

Nominated for

"Product of the Year"

by Palmtop Paper



fastWRITE! - Word Processor with built-in 100,000 word **fastSPELL!** checker



fastNOTES! - Electronic pop-up notes software with full searching capabilities.



fastCOMM! - Full-Featured Communication Software - up to 14.4K baud!



Single-Key multi-tasking!

Instantly switch back and forth between these programs and your 95LX built-in applications.



SWITCH! - Multi-tasking software for your 95LX with control panel including Direct Launch, SwapAPP, Caps display, Block cursor and more.

New Features

- Provides SWITCHable! Environment
- Direct Launch DOS applications
- Customize your Blue keys
- Block cursor and Caps Lock display
- Typewriter style SHIFT/Caps keys
- Start-up DOS shell option

- **ACT!** - CONTACT SOFTWARE
- **fastLINE!** - ACE TECHNOLOGIES
- **myREMOTE** - ACE TECHNOLOGIES
- **Lander** - ACE TECHNOLOGIES
- **Personal Food Analyst** - MIRICAL CORPORATION
- **Palm Reference, Palm Database** - LIGHTHOUSE SOFTWARE
- **SOKOBAN** - with 300 undo's

Customize your HP 95LX

Version 2 now includes multi-tasking capabilities that allow SWITCHable! DOS applications to run simultaneously with MEMO, PHONE, LOTUS 1-2-3 etc. Now you can switch between programs with a single key! In addition, SWITCH!'s SwapAPP feature allows you to assign any SWITCHable! applications to your Blue keys and still gives you access to the built-in applications.

favorite DOS programs, change your default C:_DAT directory; and even erase a forgotten password.

SWITCH!'s control panel allows you to set the auto power off timer; displays digital battery levels; turn off serial port to save power; change alarm tone and level.

SWITCH! Menu and Control Panel

In addition, a menu-driven user interface gives you instant access to any of 48 DOS and EXM programs. Create single-key loaders for your

No more re-booting and closing built-in applications. Get SWITCH! and enjoy instant access to your programs!

For more information Call:
(800) 825-9977



SWITCH! version 2 (C1055) \$69

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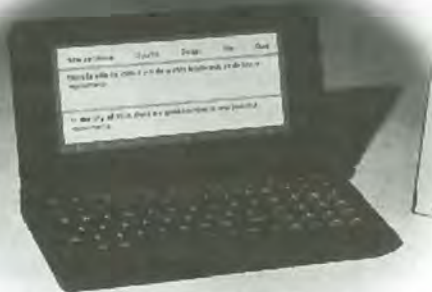
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Foreign Language *TRANSLATION...*

on an IC CARD for the HP95LX

IMPOSSIBLE! That's the reaction from virtually everyone. But, it's true! Fully automated, grammatical translation capability comparable to mainframes or PCs, all in economical IC Cards designed for the HP 95LX palmtop computer or compatible.

The **Globalink Translation System** gives you sentence-by-sentence translations with up to 90% accuracy. You can even load a file of 5 or 10 pages and have it translated while you read a book or watch a movie. Target language output may be post-edited one sentence at a time, or after an entire file has become translated. Some of the many amazing features the Globalink translation IC Cards include:



- Handling of idiomatic expressions.
- Multiple translations of a single word in a sentence based on part of speech (noun, verb, adjectives).
- Comprehensive general dictionary of over 60,000 terms.
- Input of foreign language accents on the English keyboard.
- On-screen editing with 95LX Memo text editor.
- Interlinear translation file.
- These and many more.

There are dozens of ways this low cost, high quality translation system can be useful to you, either for production, informational or educational purposes.

Whether you are at home, on an airplane, in a hotel, on vacation, in a meeting or in your office... high-quality foreign language translation is available to you in minutes.



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- Spanish to/from English* \$119.95
- French to/from English* \$119.95
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* **SAVE!** Buy two or more products @ **\$99.95**

You've read it in print — now get it on disk!

The HP Palmtop Paper ON DISK: 5 great benefits even the printed version doesn't have!

Now you can receive *The HP Palmtop Paper ON DISK* with every printed issue. Here are the benefits:

1. Locate items of interest fast

Each issue of *The HP Palmtop Paper ON DISK* contains the *entire editorial content* of the corresponding printed issue. The text is stored in ASCII format, and is readable by any word processor.

To locate an item of interest, just do an automated search for any keyword. The information you're looking for will appear on your screen instantly.

But fast access to items of interest is only the beginning, because you also get:

2. Access to almost every freeware and shareware program mentioned in the printed issue

That's right — virtually every freeware and shareware program mentioned in each printed issue is included in the corresponding *HP Palmtop Paper ON DISK*, along with documentation.

These programs are useful! Many of them have been written or specially adapted just for the HP 95LX.

To give you an idea just how useful these programs can be, we've summarized the contents of recent issues — see box at right.

Please note:

1. If you decide to use a shareware program, you are required to pay the shareware author his fee. Fees usually range from \$5 to \$45 — a fraction of the

cost of equivalent commercial programs.

2. We are unable to support you in using *The HP Palmtop Paper ON DISK* software.

3. Saves you time and money

Dozens of man-hours go into collecting, organizing, modifying, and documenting the programs in each *HP Palmtop Paper ON DISK*. Having the disks saves you the time and expense of doing all this work yourself.

4. In-depth descriptions of advertised products

Each issue of *The HP Palmtop Paper ON DISK* also includes detailed descriptions of some of the products advertised or listed in the printed issue. This helps you learn more about products of interest without having to call the manufacturer.

5. It costs so little!

The HP Palmtop Paper ON DISK consists of 2-4 360K floppy disks that you will receive along with each printed issue of your regular subscription to the newsletter. (*The HP Palmtop Paper ON DISK* does not include printed issues.)

A year's subscription to *The HP Palmtop Paper ON DISK* (6 issues) is just \$139. Shipping is included for North American customers.

That's less than \$24 per set of disks. *It's a great buy even if you only use one program per disk!*

Individual issues of *The HP Palmtop Paper ON DISK* are \$33 within North America, so a year's subscription saves you \$92.

You can save an additional \$19 by subscribing for two years for \$259.

Satisfaction guaranteed!

Should you ever become dissatisfied with *The HP Palmtop Paper ON DISK*, just let us know. The unused portion of your payment will be promptly refunded.

**TO SUBSCRIBE,
USE THE ENCLOSED
CARD OR CALL US
TOLL-FREE:**

(800) 373-6114

Thaddeus Computing, Inc.

P.O. Box 869, Fairfield, IA 52556
(800) 373-6114 (515) 472-6330
FAX: (515) 472-1879



TREMENDOUS VALUE!

Each issue of *The HP Palmtop Paper ON DISK* contains the complete editorial content of the printed issue, descriptions of advertised products, and virtually all the freeware and shareware mentioned in the issue.

To give you an idea of the tremendous value this represents, here are just a few of the highlights of the software included in recent issues of *The HP Palmtop Paper ON DISK*:

Instructions and utilities for accessing all programs are included on each disk.

WORD PROCESSING

VDE: Compact, powerful text editor — great MEMO alternative.

SPEL95: Spell Checker for the HP 95LX.

VDE-LX: Makes VDE work like WordPerfect.

COMMUNICATIONS

COMMO: Full-featured communications program — richer scripting language than the 95LX's built-in program — easier to automate your activities.

UTILITIES

95BUDDY: Lets you launch an application by selecting its data file in FILER, change default directories, and much much more.

OUTLINE PLUS: Outliner and text editor.

LOADMAKER: Run EXE, COM, or BAT files while in a built-in application.

FINISH: Completes word after you type first few letters.

acCIS: Automates CompuServe activities from the 95LX. Allows you to perform functions off-line, saving you line charges.

GAMES / ENTERTAINMENT

AG: Chess and Space Invaders (good graphics).

KLONDIKE: 7 pile game of Klondike Solitaire

DIVDSK: Checkers, Go-Moku, Tetris, Othello, Mastermind, Adventure, and 9 other games. Enjoy!

MUS95 & SNDPLAY: Music, quotes, sounds on the 95LX.

Plus travel organizer, language compilers, screen printing utilities, other games, and lots more! (See inside back cover of each issue for complete listings.)

FREE BONUS!

Each new subscription to *The HP Palmtop Paper ON DISK* includes one bonus issue — absolutely FREE!

Customers outside North America:

Please add \$24 for a one-year subscription, \$48 for two years. You may pay by credit card, check, or money order. Check or money order must be in U.S. dollars, drawn on a U.S. bank.

Or order from one of our European distributors: (Contact them for pricing in local currency.)

Country	Phone	Fax
Luxembourg & Belgium (BYTECOM)	+32 (0) 10 223455	+32 (0) 10 241730
France (PalmSoft)	1.44.76.11.00	1.40.26.94.32
Germany (W&W Prods)	0 22 02 / 42021	0 22 02 / 32794
Netherlands (ELDATA)	+31 (0) 20 6247284	+31 (0) 20 6325111
UK (Supplyline)	081-744-0022	081-744-0045

HOW DOES IT COMPARE WITH THE SUBSCRIBER DISK?

The HP Palmtop Paper ON DISK is not to be confused with the Subscriber Disk that you receive free in September with each year's subscription to *The HP Palmtop Paper*.

The annual Subscriber Disk is one or two 360K floppies containing some of the best freeware for the HP 95LX (no shareware).

Publisher's Message



Hal Goldstein

Freezing rain makes our Fairfield, Iowa streets impassable today, January 20, 1993: A great excuse to stay home and watch the inauguration of the new President of the United States of America.

As I listen to the speeches, I think of the HP Palmtop users in 70 different countries throughout the world who will read this. The fact that we carry the same little machine around in our pockets and purses allows us to transcend national boundaries. In the letters I receive and the conversations I have with subscribers, there's never any thought about nationality or ethnic group. We're only interested in how we can get more out of our 95LX.

The only real difference is in our level of computer sophistication. No matter what your level of computer experience is, you should find most of the articles in this issue of practical value. In our lead story, Mark Scardina discusses what many people think will be the most significant new computer technology of the 1990's: The **PCMCIA card**. The HP 95LX leads the way using an industry standard PCMCIA card slot. Many people think that the future usefulness of a palmtop will be determined by the PC card being used rather than by the particular palmtop. The HP 95LX card slot supports RAM and Flash Cards (extra storage space), ROM cards (software), and even a fax/modem card.

Speaking of modems, Larry Lefkowitz contributes a definitive piece on how to get **battery powered modems** to work with the HP 95LX.

For those of you who wish to make better use of built-in applications, look to David Shier's ideas about using **PHONE as a contact manager**. Then roll up your sleeves and step through Ed Keefe's contributions. See how easy and useful it is to extend 1-2-3's capabilities to **backsolving with HP CALC**. Then see how to use **the HP CALC Sigma function** to solve college algebra and calculus problems. Ed's writing is clear and full of insights for making more out of the powerful HP CALC built-in application.

Beginning users should also consult **BASIC Tips** and the **Getting Started** review of fundamentals. **Quick Tips** includes a listing of known HP 95LX bugs. For a great collection of tips, check out the four pages of **Most Frequently Asked Questions to HP Support**.

If you want to make use of your HP 95LX at the video store, check out my **User To User** column. We continue our series that describes how to make popular DOS programs run on the HP 95LX. Victor Roberts tells us how to get **InfoSelect**, a popular random note database program, working.

Also included are the usual assortment of letters, new product announcements and advertisements to complete the issue.

Our common interest in the 95LX unifies us. Let us trust that in this time of change, in the United States and around the world, the human race can see the fundamental unity of life that underlies the cultural diversity in mankind.

Hal Goldstein

The HP Palmtop Paper

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95LX in Romania, MyRemote Mischief, and a Very Fast William Tell Overture

We introduced the 95LX at The Bucharest International Fair and it was a crowd stopper. There were 2,000 - 4,000 people per hour passing the booth and I had to hold the 95LX over my head with the demo running. I got 12 minutes on Romanian national Television.

I had a lot of fun with MyRemote at the airport lounges. I inconspicuously borrow TV's remote unit to program the 95LX, and then the fun began. I tried to act as surprised as anyone when the ball game changed to something else, or the volume started changing. It would be very useful to have a library of .IR files.

I was in Switzerland yesterday and showed MUS95 to a guy on the plane. For some reason, the William Tell Overture went so fast, it was almost unrecognizable. It returned to normal when I re-booted. Has anyone experienced this and is there some speedup patch floating around in my 95LX?

Bob Denton

CompuServe ID: [72130,3233]

A Little Humor, Please!

You ought to start a humor corner. All your articles have been serious, I believe, and it may be a lot of fun for people to read and maybe even contribute. It seems there are several out there with a sense of humor.

Jeff Zorn

CompuServe ID: [71165,1650]

[Check out our new cartoon, Mr. Foster's TWISTERS, page 7 - Hal.]

95LX Helps Surgeon

I am a practicing Oral and Maxillofacial Surgeon in Richmond, Virginia and have been computer resistant

until recently.

The purchase of an HP 95LX has literally changed my life. This small portable power house has enabled me to track my patients, practice figures, payroll, employees, medications, investments, personal accounts, etc.

In short, this computer has made me a better business man and a better doctor. I have the information I need constantly available at my fingertips and I have used the 95LX in the hospital, in the middle of the operating room, in the mall and in the car.

Had I known about this when I went through my oral surgery training, I think I would have been a better resident also.

Thanks again to HP for such a wonderful product.

Dr. Joseph Niamtu, III
Richmond, VA, USA

95LX Printing Solutions

I have experienced some printing problems and felt that your users might have an interest in the solutions I have found.

My troubles first occurred when trying to print a small file which contained line draw characters to my HP Deskjet 500 printer. Using the print command from MEMO caused the line draw characters to print as blanks. When I tried the print command under FILER, it yielded the same results.

This is apparently a problem with the print command, so instead I used the DOS COPY command to copy the file to my printer. Since it was attached to the serial port, I used the following command to copy file MAP.TXT to the printer attached to the serial port of my 95LX: COPY MAP.TXT COM1. This worked great at first.

However, when I tried to print a long documentation file which contained line draw characters, I discovered another problem. The copy command does not support software handshaking. That means that the printer has no way of signaling the 95LX when its (the printers) memory buffer is full. Since my file was longer than the 16K buffer of my printer, the file printed several pages before the buffer overflowed and the output became garbled.

I decided to call HP for help on both of these problems. Unfortunately, they informed me that copy under DOS does not support the software XON/XOFF protocols. Nor did they have an answer for me as to why the first problem occurred. (They are still looking into it).

In the meantime, I decided to try copying the file to PRN instead by typing:

STOP! Before you buy another set of batteries...

BATTmanTM (NEW!) NiMH batteries



"If you are tired of throwing away batteries, BATTman will allow safe hassle-free use of rechargeables on your 95LX.."

"Every combination of BATTman works flawlessly and I never once lost data.."

- Palmtop paper, August 1992

With NEW Features!

- BATTman now reports "Hours used"
- NiMH provides 200% more capacity than standard NiCds
- Rechargeable up to 1,000 times
- No memory effects and non-toxic to our environment

Join thousands of other 95LX users, start using BATTman battery management software with NiMH Nickel-metal-Hydride rechargeable batteries and SAVE!

BATTman NEW! version 1.2 on 3.5" floppy \$49
BATTman with two Ni-metal-Hydrides \$59
BATTman with two Ni-metal-Hydrides & charger \$69

For more information on our products and how to order, call:

(800) 825-9977



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San Jose, California 95134 U.S.A.
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(Dealers & Distributors welcome)

PRN stands for the default printer. To my surprise, this worked correctly, printing the line draw characters AND supporting the necessary software protocols of XON/XOFF. This also works when copying to LPT1. Enter DOS using the **FILE** **MENU**.

I find it very interesting that software handshaking XON/XOFF protocols would be supported for the LPT1 (PRN) device but not for the COM1 (AUX) device. As far as I know, this is not documented anywhere, and the HP support personnel seemed interested.

Sheryl Hansen
Spring, TX 77379

Some System Compliant Programs Can Cause Data loss

As more system compliant software becomes available, users should know about a bug in the HP 95LX that could cause data loss. System compliant software, as chronicled in past issues of The HP Palmtop Paper, are programs with an .EXM extension that must be installed using an APNAME.LST file. Once installed, a system compliant program can be opened with a keystroke and work in conjunction MEMO, PHONE or any of the built-in applications. The 1992 Subscribers Disk contains a number of such files. Only CM-CALC has the problem discussed below (later versions of CM-CALC do not have the problem).

Last issue (page 55) a programmer's note was published warning that System Compliant EXM programs must not contain relocations or "fixups." Since then we have received numerous requests to expand upon that warning to allow programmers to have a bet-

ter understanding of the problem and its solution. Many users have also expressed concern as they do not know whether they have anything to worry about. Space only allows a description of a procedure for end users to determine if they have a problem. Programmers can obtain a more complete explanation by downloading FIXUP.ZIP from the HPHAND CompuServe forum, by obtaining this issue's Palmtop Paper ON DISK, or by sending The HP Palmtop Paper a self-addressed stamped envelope.

There is an easy way to check all of your EXM programs to determine whether any contain fixups using the DEBUG command hidden in English Language 95LX's. This can be done by going to DOS and entering:

```
C:\_SYS\DEBUG <path+program>
```

You will then see the "-" prompt. Enter a "d" and several rows of double digits will be displayed. Examine the first row and count six pairs over. If the next two pairs are not 00 then you have found a program with fixups. Obviously if none of the programs that you use have any, you need read no further. Also, if you find only one program with any you are still ok. If you have found more than one program with fixups, then unless they all have the same number, you need to take the following preventive action to prevent possible data loss. A program that performs the debug function and displays the number of fixups in an EXM will be on the PTP ON DISK.

1. Inform the author or company that distributes the software of this problem. You might also refer them to

- this article.
2. If you must continue to use these programs, make sure you run them one at a time, closing each one before opening another. If you don't remember and close one by mistake, simply reboot. This will clear the memory and prevent potential data loss.

3. Do not close any previously opened applications while using one containing fixups.

Mark Scardina
CompuServe ID: [76711,732]

Handheld Digital Multimeter Case

It's not very elegant, but HP's Handheld Digital Multimeter case works pretty well. It can hold the 95LX and a pocket modem, and has enough room for a cable

(Continued on page 49.)

Control your TV VCR Stereo with the 95LX

Introducing

myREMOTE™ version 2.0

Up to 100 commands

Single Key access to your Remote's functions

```

myREMOTE v2.0                                TV.IR
W Watch VCR movie                             @. Commercials Off
N Channel Up                                  @ALT-V VCR
LT Channel Down                               @ALT-C CD
UP Volume Up                                  @ALT-S STEREO
DN Volume Down                                @ALT-W Wake up 6am
= Recall                                       @ALT-P KQED-PBS
* Quick View                                  @ALT-D This old hou
- Mute Sound                                  @ALT-2 11pm News
/ Sleep Timer                                  @ALT-S Set Clock
+ On/Off                                       @ALT-D Daylight sav

v
Use ARROW keys to select item.
ENTER>Send E>dit D>lete I>nsert T>rain
                    
```

User programmable Macro commands

Multiple files for different remotes

Universal "Train" mode

New Features!

- Now you can control your 95LX with IR remotes - great for presentations, demos and fun.
- SWITCHable! with built-in applications
- New improved algorithms supports more remotes
- Allows time delayed operations with built-in macro commands.

myREMOTE version 2.0 (C1065) \$39

For more information Call:

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(Dealers & Distributors welcome)

New Products Designed to Work with the HP 95LX

In the first seven issues we listed over 285 hardware and software products, and other 95LX-related services already available from third-party manufacturers and developers. We will continue to list 95LX hardware, software, books, videos, training, and services as we discover them. Vendors of 95LX-related products should send us information.

By Richard Hall and Hal Goldstein

Hardware

Cases

Hanging Bracket

Bracket for HP 95LX. Constructed of electrostatically coated aluminum, hangs on most surveying tripods.

Availability Now
Pricing \$32.50
CONTACT: *Field Designs, 5013 Mozart Drive, Richmond, CA 94803, USA; Phone: 510-222-9999; Fax: 510-222-0770.*

Memory Cards and Card Drives

20MB Flash IC Memory Card

This PCMCIA 1.0 memory card is available for OEM only, in capacities up to 20MB (40MB with data compression). The HP 95LX can read/write to the entire 20MB, and the card features high read/write speeds. Card uses 5.0 volts from 95LX for read and write operations. A 3.3 volt read/write option is also available. Cards have an average sector endurance of 200,000 write operations.

Cards available in 1MB, 2MB, 4MB, 8MB, 10MB and 20MB.

Availability OEM Only
Medium Flash ROM Card
Pricing Call
CONTACT: *Magic Ram, 1850 Beverly Boulevard, Los Angeles, CA 90057; Phone: 213-413-9999; Fax: 213-413-0828.*

Software

Aviation

NAVMAP: Moving Map Program

NAVMAP is a moving map display program for DOS PCs and the HP-95LX Palmtop. It displays maps of where you are, and where you are going, and supports most LORAN/GPS receivers. Includes integrated flight planning featuring great circle routing using either high altitude jet routes, victor airways, RNAV, or VOR-VOR. Automatic Flight Progress Monitoring updates flight plan enroute. Database of over 18,000 airports and 5,000 nav aids, 15,800 intersections.

Availability Now

Medium Floppy disk
Runs under SysMgr No
Pricing \$495
(with 6 months of updates)

CONTACT: *Paragon Technologies, Inc., P.O. Box 273511, Boca Raton, FL 33427-3511, USA; Phone: 800-255-9411; Voice/Fax: 407-369-7118.*

Games

Opti-Bet

Compilation of routines for managing bankroll to give largest return from modest investments, based upon user stats, odds, and money pools for para-mutual wagering.

Availability Now
Medium Floppy Disk
Runs under SysMgr No
Pricing \$129
CONTACT: *Cartmill Fischer Software, 1911 Fairway Drive, Lagrange, KY 40031, USA; Phone: 502-222-8887.*

Health Care

Patient History and Physical

This program lets you enter patient history information and the results of physical exams directly into a special database, eliminating transcription costs and hand writ-

ten forms. You can select from over 560 patient questions using yes/no keys, medical reference tables, multiple choice, etc. PC version included and specialty programs available.

Availability Now
Medium .. ROM Card & Floppy disk
Runs under SysMgr Yes
Pricing \$399
CONTACT: *ComputerBooks, 20321 Irvine Ave, Suite 2, Santa Ana, Ca 92707, USA; Phone: 800-848-2023 or 714-966-2023; Fax: 714-966-0117.*

Personal Info. Managers

Instant Recall 2.0

This popular, well-reviewed time management and personal information manager for desktop PC's comes with translation software that converts back and forth between its file formats and the 95LX's .ABK and .PBK formats.

Availability Now
Medium Floppy disk
Runs under SysMgr No
FOR DESKTOP PC'S ONLY!
Pricing \$129
CONTACT: *Chronologic Corporation, 5151 N. Oracle, Suite #210, Tucson, AZ 85704, USA; Phone: 800-848-4970 or 602-293-3100; Fax: 602-293-0709.*

Utilities

HP 95LX Productivity Pack

Includes a clipboard enhancer, three versions of a spelling checker, and two games as a bonus. You can edit the clipboard and copy its files to disk.

[See Advertising, page 20.]

Availability Now
 Medium Floppy disk
 Runs under SysMgr Yes
 Pricing \$49.95
 CONTACT: EduCALC, 27953 Cabot Road, Laguna Niguel, CA 92677, USA; Phone: 800-677-7001 or 714-582-2637; Fax: 714-582-1445.

PhoneBook File Repair

Software that helps you recover PhoneBook files that have been corrupted. Use when you see the "File I/O error" or "RAM Disk Corrupt" messages.

Availability Now
 Medium Floppy disk
 Runs under SysMgr No
 Pricing \$95
 CONTACT: File Recovery systems, 665 N.E. Conifer Blvd., Corvallis, OR 97330, USA; Phone: 503-757-0044.

Palmtop Pets

Tips on cases, useful spreadsheet templates and macros. Budget with forecaster, Time Tracker, phonebook, gradebook and more. 32 pg booklet included, no programming experience required.

Availability Now
 Medium Floppy disk
 Runs under SysMgr na
 Pricing \$14.95
 (\$19.95 outside U.S.A)
 CONTACT: Picosoft, 11385 Carmel Mtn. Rd., Suite 1304-172, San Diego, CA 92128, USA.

Remote Commander

Remote Commander is a fully System-Manager compliant program to turn your 95LX into a universal learning re-

mote control for your TV/ stereo. Supports up to 55 keys per screen/file.

Availability Now
 Medium Shareware
 Runs under SysMgr Yes
 Registration fee \$15
 If ordered directly from author .. \$20
 (Specify disk size; lowa residence please send additional 5% lowa Sales Tax.)

CONTACT: Alex Patterson, 1203 S. Main St., Fairfield, IA 52556-3847.

Also available in Library 7 of CompuServe's HPHAND forum or on the Jan/Feb 93 issue of The HP Palmtop Paper ON DISK.

Wireless Communications

AS/400 Automated Message Paging

The ACO Pager/400 software installs on the IBM AS/400 mid-range computer system.

It allows the AS/400 system to automatically send any wireless messages to the 95LX via Skytel's SkyPage system. The 95LX must be equipped with a SkyStream Wireless Receiver.

Availability Now
 Medium 9-Track Tape
 Runs under SysMgr No
 (Runs on AS/400 system, not 95LX)
 Pricing \$1200
 CONTACT: DDL Systems Consulting, Inc., 184 Wexford Rd., Valparaiso, IN 46383, USA; Phone: 219-465-7333. Fax: same (call ahead before faxing).

Publications and Services

Application Development

Essex Marketing Service, Inc., has a group to develop custom applications for the HP


95LX. System-Manager compliant or DOS programs can be developed. This service is designed to provide custom solutions tailored to the unique requirements of specific applications.

CONTACT: Essex Marketing Services Inc., attn: Chris Smith, 272 Old Farms Road, Simsbury, CT 06070, USA; Phone: 203-651-8284; Fax: 203-651-7926.

New Bulletin Board for HP Handhelds

A free public access BBS has been started in the Chicago area for support of the HP48, 95, 41, 42, 28, and 71/75. File areas include Frequently Asked Questions, HP48 Goodies Disks, HP95, etc., with files being added daily.


Internet Usenet news-groups weekly updates com-



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ing in January.

First time callers have full access privileges, 120 minutes/day, no file ratios. Comm Specifications: 8 data bits, no parity, 1 stop bit, 120-0-14400 bps, V.32bis; V.42bis, MNP5, LAPM supported, easy to use Zmodem file transfers (now working).

Any questions, call Brian Walsh at the number below by voice at other times, or leave a comment to sysop when online.

Availability Now
Hours of Operation:

11pm to 8am Central Time, 7 days/week other times on request (call the above number by voice first).

CONTACT PHONE: 708-304-0666.

Upgrades, Updates, Corrections

acCIS Upgraded to Version 1.0

acCIS/SM is a powerful CompuServe access manager, specially designed for use on the HP 95LX Palmtop PC. It allows downloading of mail and forum messages, reading and processing them offline, forum library management, etc. acCIS/SM is System-Manager compliant, so other applications may be used besides acCIS at the same time. The HP 95LX clipboard feature is fully supported, so messages can easily be pasted into other text files. For writing messages, MEMO or any other DOS editor can be used.

Availability NOW
Medium Disk
Runs under SysMgr Yes
Pricing Free
AVAILABILITY: Library 6, HPHAND forum or Jan/Feb 93 issue of The HP Palmtop Paper ON DISK.

COMMO9.ZIP Removed from the HPHANDHELD forum

COMMO9, the general purpose communications program for the HP 95LX, has been removed from CompuServe in anticipation of the release of fastCOMM! 1.0, a commercial version of {COMMO} for the HP 95LX. fastCOMM! will be available in early 1993 from ACE Technologies of San Jose, CA. ACE can be reached at the following phone numbers: 800-825-9977 or 408-428-9722; Fax: 408-428-9721. For more on fastCOMM!, see page 14 of the Nov/Dec 92 issue.

Users who can't wait for the release of fastCOMM! may still obtain a copy of COMMO9 direct from the author when registering the PC version (release 5.3) of {COMMO}. Be sure to specify that you want the 95LX version. The author's phone number is: 707-573-1065 (Mon-Fri, 9am-5pm Pacific time).

Also note that there will be a generous fastCOMM! upgrade offer to registered {COMMO} users when fastCOMM! is released (the upgrade will be available until June 30, 1993).

HP 95LX / HP 48SX Developer Program Registration Form

To apply for registration as an HP 48SX or HP 95LX developer, please answer the questions below on a separate piece of paper and send or fax it to the contact listed below. The program is for software and hardware developers, not end users.

1. Your Name:
2. Company Name:
3. Address:
4. City: / State: / Zip:

5. Daytime phone:
6. Other phone (optional):
7. Fax, if available:
8. HP Product you are developing software/hardware for: HP 48SX? / HP 95LX?
9. Product(s) that you will be developing:
10. Current products on the market:
11. Area of expertise (e.g. electrical engineering, surveying, data collection, etc.)
12. Type of computer(s) used for software development
13. Estimated Size of application(s) (Number of K bytes)
14. Type of media used to distribute software: ROM/RAM/Disc
15. Bundled with product? Yes/No
16. Estimated volume sales of your applications (number of applications you expect to sell per year):
17. Estimated intro date:
18. Where did you hear about the developers program?

CONTACT: Mary Moore, Hewlett-Packard Company, 1000 NE Circle Blvd, Corvallis, OR 97330, USA; Fax to: Mary Moore at 503-750-2192.

Patient Manager Upgrades

Version 2 of this patient database now contains a customized demographics section, medication record, and vitals spreadsheet, as well as a patients notes module, lab spreadsheet, and to-do list. PC version included.

Availability February, 93
Medium .. ROM Card & Floppy Disk
Runs under SysMgr No
Pricing \$399
CONTACT: ComputerBooks, 20321 Irvine Ave, Suite 2, Santa Ana, Ca 92707, USA; Phone: 800-848-2023 or 714-966-2023; Fax: 714-966-0117.


PAMCO Closes Doors

PAMCO, the manufacturer of a small external card drive

(see page 38, Fall 91 issue), is no longer in business. We have no additional information at this time.

WORM Arcade Game Upgraded

This updated version of WORM for the 95LX features 10 skill levels, 40 different playing screens, tunnels, save and restore capabilities, and more.

Availability Now
Medium Shareware
Runs under SysMgr No
AVAILABILITY: WORM.ZIP  can be found in library 7 of the HPHAND forum of CompuServe or on the Jan/Feb 93 issue of The HP Palmtop Paper ON DISK.

ZIP 1.6 File Transfer Utility

ZIP, the file transfer utility found on the 1992 Subscribers Disk, has been upgraded.

The ZIP 1.6 upgrade has new directory log and compare features.

Availability Now
Medium Shareware
Runs under SysMgr No
Pricing Free
AVAILABILITY: On the Jan/Feb 93 issue of The HP Palmtop Paper ON DISK or in Library 7 of CompuServe's HPHAND forum.



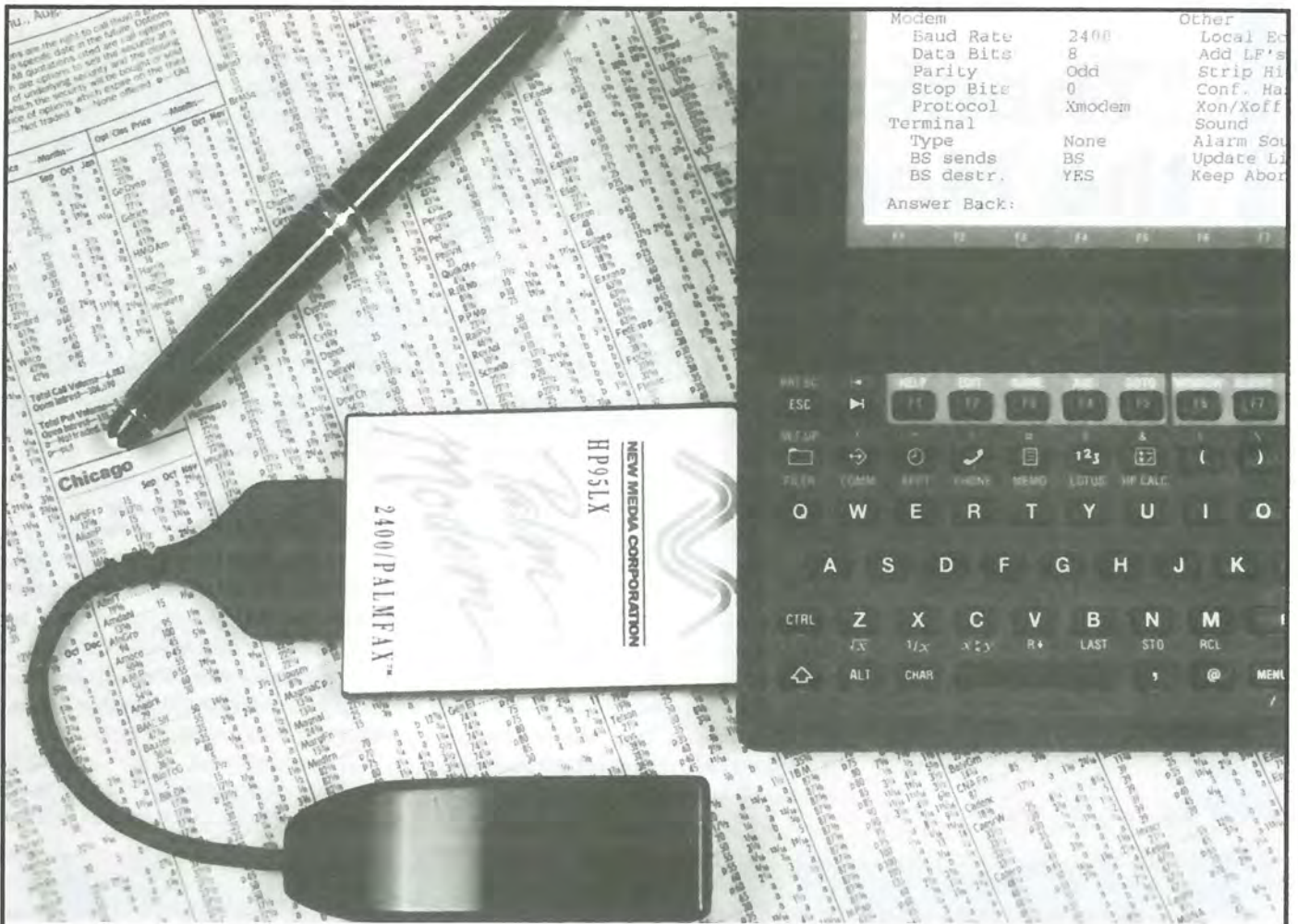
Shareware Mentioned in Third Party Products

On the Jan/Feb 93 HP Palmtop Paper ON DISK

*CIS **SHR Remote Commander
*CIS ACCIS
*CIS **SHR WORM
*CIS ZIP 1.6

*CIS - Also available in the HP Handhelds forum of CompuServe.

**SHR - SHAREWARE is software distributed free of charge for evaluation purposes only. If you decide to use it, you must pay the author the shareware fee. This goes for any shareware found on The HP Palmtop Paper ON DISK or CompuServe.



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"Thanks for the Memory" (Cards)

They used to store, at most, 1MB of data and cost more than \$500 a megabyte. Now Flash cards with file compression software can store up to 20MB of data and cost as little as \$50 a megabyte.

By Mark Scardina

One year ago we looked at RAM cards for the HP 95LX. Due to the many developments of this past year, I believe it's time that we re-examine this area.

The HP 95LX was designed prior to the development of uniform standards for RAM cards. The development of these standards was the responsibility of a nonprofit group called the PCMCIA. Since HP is on this committee, the 95LX ultimately was compatible with the initial uniform standards (PCMCIA 1.0 standards) released in 1991. Since then, there has been a release of updated specifications (PCMCIA 2.0). The new standards allow for the development of card-based modems, network adapters, and wireless links. The 95LX is not able to use the new PCMCIA 2.0 cards.

The PCMCIA standard number should not be confused with the "type" specification, which refers to the thickness of a card. Initially, RAM cards were 3.5mm thick. These have been given the designation of "Type 1." There now are two additional types: Type 2 (5mm thick) and Type 3 (10mm thick). Your 95LX can physically handle Type 1 and 2 sizes, not Type 3. (Remember, Type 2 can be used on the 95LX, PCMCIA 2.0 cards cannot!)

With one exception, which I will

get to later, the only function that you can use PCMCIA 1.0 cards for on the 95LX is file storage. There are currently three technologies available that can be used by the 95LX. These are Read-Only-Memory (ROM) cards, Static-Random-Addressable-Memory (SRAM) cards, and Flash-Random-Addressable (Flash RAM) cards. There is another type of memory card technology call Dynamic-Random-Addressable-Memory (DRAM). DRAM cards are used on many laptop and notebook computers, but DRAM cards cannot be used by the 95LX.

Read-Only-Memory (ROM) Cards



Some developers put software on ROM cards

ROM cards have been available since before the introduction of the 95LX. They are the least expensive form of memory card, but are read-only and cannot be written to. ROM cards are most suitable for storing software programs or data files that do not need to be changed.

A software program on a ROM card can be installed simply by inserting the card into the 95LX, eliminating the need of a disk drive or file transfer from another computer. The ACE Gamecard, Personal Food Analyst, Derive, HP's Dictionary/Thesaurus card, and the Global Translation card are examples of software programs on ROM cards. Most 95LX software is not available in this form because the card cost is 50 to 100 times that of a floppy disk.

ROM cards are more stable than their writeable counterparts. The software program is "etched" permanently into the card's microchips and can never be altered or lost through any action, short of physically destroying the card.

Static-Random-Addressable-Memory (SRAM) Cards

SRAM cards are the most popular card storage technology used on the

ABOUT THE AUTHOR

Mark Scardina is a computer consultant based in San Francisco, specializing in palmtop-based applications. He can be reached at 415-681-9672 or CompuServe ID: [76711,732] for commercial projects.

95LX — and it's becoming less expensive. While SRAM cards are still very expensive when compared to floppy and hard disk technology, SRAM prices have plummeted by almost 70% in the past year (from \$500 per megabyte to \$180).

SRAM's only other disadvantage is that its memory is retained by the presence of a battery. The lithium backup batteries used in the cards provide a one year life. However, there is a problem with this on the 95LX.

The earlier versions of SRAM cards sent exact data on the level of the backup battery to one of the pins in the card. The 95LX has circuitry to enable it to interpret this voltage and give you a warning in time to change the card's backup battery before it dies. Current SRAM cards, including HP's cards, have this battery level circuitry built-in and only report one of three conditions — OK, Warning, and Data Not Guaranteed. Unfortunately, the "Warning" indication cannot be read by your 95LX because the

pin is not hooked up. This means that when you get the "Card Battery Low" warning it may already be too late. (This means that BATTCK.COM on the 1992 Subscribers Disk, should not be relied upon to report the status of the RAM card battery.)

The recommended procedure with SRAM cards is to change the battery every 11 months. Set an 11-month reminder in APPT and change the battery whether you've received a low battery warning or not.

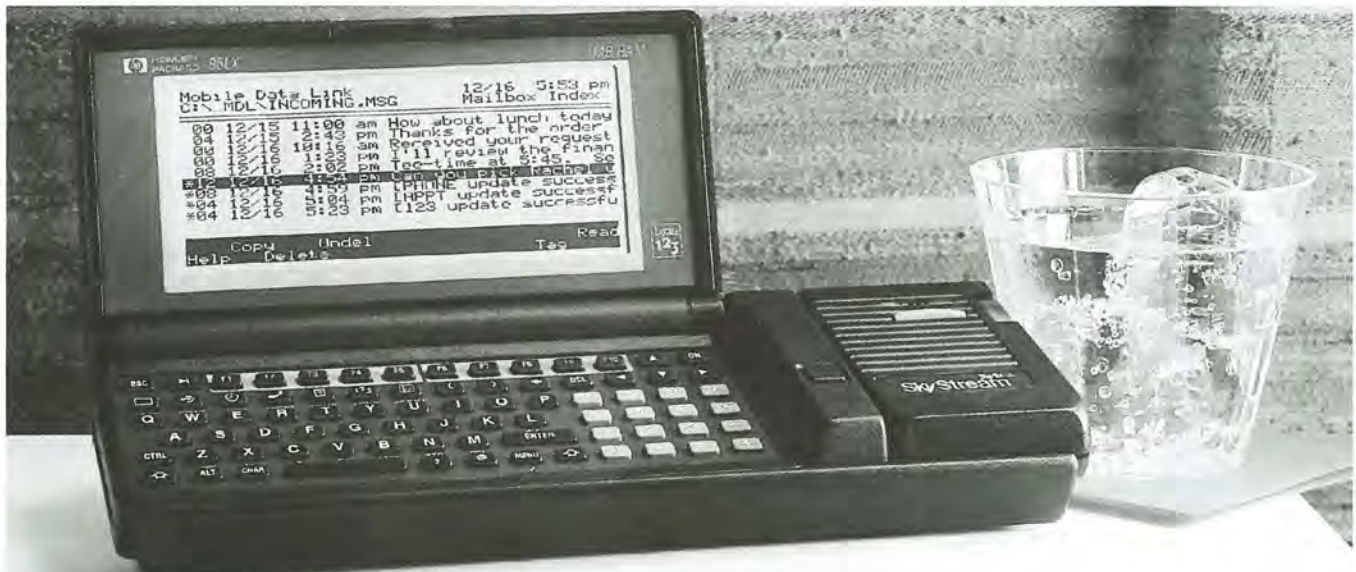
When your 95LX is off, it sends no power to the card. This occurs when you turn the 95LX off by pressing **[OFF]** or when the 95LX automatically shuts off after three minutes. If you do get a low battery warning, do not turn off your 95LX! Connect your Palmtop to the AC adapter so your 95LX doesn't "time-out" and change the battery. If you don't have an AC adapter handy, press a key every three minutes until you can change the battery. (You can also disable it from timing out with `TIMEOUT.-COM`.)

MR. FOSTER'S TWISTERS



From how many pocket palmtops did Peter Piper pick to peck? One peek and Peter picked a Hewlett-Packard packed pocket palmtop to peck.

SRAM cards do have advantages. First, they're the fastest of all the memory cards, especially when writing to them. Next, they have virtually an infinite life with no drop off of performance over time. They also are both readable and bootable without



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the need of additional software. This is a distinct advantage on the 95LX as it is possible to lose the data and programs on your C: drive. Since a SRAM card can always be read, you can keep your startup files (CONFIG.SYS and AUTOEXEC.BAT) on it and boot from the SRAM card to recover from a C drive crash (insert the SRAM card in the slot and press **CTRL-ALT-DEL**). Finally, SRAM cards can be easily interchanged among other computers with RAM card slots that support any level of the PCMCIA standard. Memory Card drives are available that connect to your desktop or portable computer and allow them to access your card's data quickly.

The largest SRAM or ROM cards available are 2MB. ACE Technologies has incorporated software into their SRAM cards and increased this limit 8MB (though the price per megabyte is currently higher).

Flash-Random-Addressable (Flash RAM) Cards



Sundisk Flash RAM Card

The third type of memory card technology is Flash RAM. Flash RAM has the ROM advantages of not needing a battery to retain its data, and the SRAM advantages of being writeable.

The implementation of different Flash RAM cards vary. Sundisk was the first company to introduce a writeable Flash RAM card for the 95LX. These cards conform to a supplemental PCMCIA-ATA standard that allows them to appear as more conventional IDE hard drives to the 95LX or a PC. This has the advantage of raising the upper limit on capacity

to the full 32M available under DOS 3.22 on the 95LX. Due to physical constraints, the maximum size currently available is 10MB (20M using compression software). This yields the cheapest cost-per-megabyte for high storage capacities.

While Sundisk has achieved a tremendous technological feat, its cards have some disadvantages. First, the card is not readable or bootable without a "device driver" (small software program) already running on the 95LX. This is not much of a problem, unless your 95LX's C drive corrupts or is otherwise lost. Sundisk users might want to carry an additional SRAM card with the files necessary to reinstall the Sundisk device driver — just in case!

Sundisk provides a serial cable and software to transfer the device driver software between a desktop or portable PC (286 or better, no Macs) and the 95LX. The Sundisk cards are marketed under the "Altec Electronics" label in Germany. When you purchase a Sundisk card from Altec, you get an additional ROM card with the device driver on it, making it easier to install. (As we go to press, ACE Technologies has announced their version of the Sundisk card, to be called the "DoubleFlash Card." The ACE card will also include the device driver on a ROM card.)

It should be noted that the device driver used is specific to the HP 95LX. If you want to use the Sundisk card in another notebook's or desktop's memory card drive, you have to first get the appropriate device driver. At this time only the 95LX driver is available. Databook and Zeos drivers have been announced. Additionally, AMI and Phoenix have announced device driver availability as a BIOS option. This will allow newer palmtops to read these cards without having to install a device driver.

Flash RAM cards, while having a virtually unlimited read life, have a limited write life. That means that there is no limit on how many times you can access data. However, there might be a limit on how many times you can change data. Flash RAM write life has been greatly increased through improvements in the memo-

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ry chips used in the cards and software incorporated to detect failing sectors. Claims have been made that a typical user need never worry about losing data due to a write life problem. However, I think that unless the card supplier is willing to back up this claim with at least a five-year warranty, SRAM cards may be safer. (At the time of this writing, Sundisk provides a one year warranty, which they may revise upwards. ACE has announced a lifetime warranty on its Flash RAM card.)

Finally, it takes a little bit longer to write to a Flash RAM card than it does to a SRAM card. This is because it takes a small amount of time for a Flash RAM card's write circuitry to come out of its "sleep" mode (necessary to allow the card to have similar power consumption as a SRAM card). I did not notice this additional write time in my daily use.

Flash RAM will shortly be available in a SRAM-type configuration. This will allow the Flash RAM card to be readable and bootable, without installing additional software on the computer. (The required device driver will reside on the card itself instead of the 95LX's C drive.)

These new Flash RAM cards will suffer the same storage capacity limitations as SRAM (2MB). The cards will be cheaper than their ATA counterparts due to less hardware being required for use within

the card. ACE Technologies has announced the availability of these cards later this Spring.

FAX / Modem on a Card

At the top of this article, I mentioned that there was one exception to the "storage only" use for 95LX cards. New Media has recently begun shipping its PalmModem card, a PCMCIA 1.0 device which works on the 95LX by virtue of a special device driver.

The New Media PalmModem is a fully functional 2400 bps modem and facsimile machine. The card contains both fax and modem circuitry as well as communications and fax software in ROM. The PalmModem needs only to be inserted into the HP 95LX. One end of the PalmModem cable plugs into the PalmModem. A standard telephone cord plugs into the other end.



PalmModem modem/fax card

Is Compression Software Desirable?



ACE DoubleCard

The answer seems to be an obvious, "Yes." The additional cost of such software has been reduced of late and, and the software has become very reliable. However, CPU processing time is an important consideration. (Compression software such as DIET, ACE Double Card software, and Stacker can on average double the amount of storage space available on your RAM card. These programs have been discussed in past issues of *The HP Palmtop Paper*.)

A program like Stacker has to do a lot of CPU processing to copy and save files. On most desktop computers, you don't notice this because the CPU on a 386 or 486 is faster than the hard drive you're writing to.

The 95LX is an XT-class machine with a slow CPU. However, its RAM disk is extremely fast compared to a hard disk. A compression program like Stacker on the 95LX slows down the access time to a RAM card as compared to an un-Stacked card. The result is that, if you routinely save large (100K+) files on a Stacked RAM card, your save times will increase by a factor of 10.

You should also realize that the advertised doubling of disk capacity is only an estimate. If you are planning on storing large numbers of program files (.EXE or .COM), you will probably see only a 50% increase. On the other hand, large worksheet or text files are highly compressible and a threefold increase is not uncommon when compressing these.

Conclusion

PCMCIA 2.0 is the new standard for memory cards. Future PCs with card drives, including any successor to the 95LX, will most likely have PCMCIA 2.0 drives. The PCMCIA 2.0 standard allows the development of modem, network, or wireless link cards, and many may consider upgrading to any 95LX successor to access these options.

One small point to remember is that the 95LX has only one memory slot. If you want to send a file using

the New Media fax/modem card mentioned above, you first have to copy the file to your 95LX's C drive. You can't have the file on your RAM card because you're going to remove that to insert the modem card (or whatever). This is not much of a problem, unless the file is large, and you don't have enough room on your 95LX's C drive.

One final point. You can use PCMCIA 2.0 memory cards in a 95LX. PCMCIA 2.0 I/O cards (modem, wireless, ect.) will not work.

Order Information

Memory Cards

The following companies carry memory cards compatible with the HP 95LX. For more information see display advertisements or product description on page indicated (if other issue, date indicated).

Company	Page #
ACE	outside back
Active Data	Nov/Dec 92, outside back
Adtron	19
EduCALC	20
Databook	30
Imaging Supplies Express	15
New Media	26
Sparcom	40
Sundisk	41

Other Products Mentioned

The following software products were mentioned as being available on ROM card. See display advertising or product description on page indicated (if other issue, date indicated).

Product	Page #
ACE Gamecard	Mar/Apr 92, pg. 3
ACE DoubleCard Software	outside back
Personal Food Analyst	23
Dictionary/Thesaurus Card	(HP dealers)
PalmFAX Modem Card	9
Stacker	(Jan/Feb 92, pg. 43)



Shareware/Freeware Mentioned in This Article

On the 1992 Subscribers Disk

TIMEOUT.COM
BATTCK.COM
DIET.EXE

How to Get Battery-Powered Portable Modems to Work with the HP 95LX

A portable modem expands the utility of the 95LX tremendously. Here's a little advice on using and choosing modems for the Palmtop PC.

By Larry Lefkowitz

Many HP 95LX owners are successfully using the palmtop as a portable communications platform to stay in touch with their office or on-line service while traveling. The 95LX with a battery powered pocket modem is an excellent, light-weight alternative to a notebook system.

However, there are several im-

portant points to consider if you want to use a portable battery-operated modem with the 95LX. What works on your PC or laptop may not work with your HP 95LX. This article highlights some of these differences, and presents a list of modems known to work with the HP 95LX. If you own a modem not mentioned on the list, the information presented here will be especially helpful.

Connecting Modem and 95LX

You must correctly connect your modem and 95LX before you can determine whether or not they will work together. Assuming that your pocket modem has a female 25-pin connector, a typical connection requires the following parts;

1. HP Serial Interface Cable – HP 82222A (\$35). Also available as part of the Connectivity Pack – HP F1001A (\$99.95).
2. 9-pin-to-25-pin Modem Adapter. Comes with the HP Serial Cable Adapter Kit – HP 82224A (\$15).



WorldPort Modem Fits into
HP Palmtop Cradle

The 95LX connects to the serial cable, which connects to the modem adapter, which connects to the modem. If you don't have access to the HP modem adapter, you'll have to substitute three other adapters: The 9-pin-to-25-pin adapter that came with the Connectivity Pack, a 25-pin, male-to-male gender changer, and a 25-pin male-to-female null-modem adapter.

Again, you must properly connect your modem to your 95LX! None of the suggestions in this article will work unless a proper cable connection is first established.

The Unique HP 95LX Serial Port

Compare the serial port on your 95LX to one on a desktop or laptop PC and you'll notice that the 95LX's port is smaller and simpler. It only has four pins, three of which are used as Receive, Transmit and Ground wires. Using only three wires helps to conserve valuable battery power.

In contrast, your desktop PC's serial port has several additional

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Mar 4 - Chicago, IL	Apr 1 - Tampa, FL
Mar 9 - Boston, MA	Apr 6 - Minneapolis, MN
Mar 11 - New York, NY	Apr 13 - Houston, TX
Mar 16 - Philadelphia, PA	Apr 25 - San Francisco
Mar 18 - Detroit, MI	Apr 20 - Seattle, WA

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ABOUT THE AUTHOR

Larry Lefkowitz is a regular contributor to The HP Palmtop Paper. He has been an Allstate Insurance agent for the last six years. Previous to that, he was a programmer/analyst and computer retail/direct district manager. Larry's CompuServe ID is [76711,731].

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wires (9-pin or 25-pin) that carry additional signals to your modem. Figure 1 below lists the pins and signals carried on them.

Figure 1

Pin # Name/purpose

- 2* TXD Transmit data signal (from computer to modem)
- 3* RXD Receive data signal (from modem to computer)
- 4 RTS Request to send signal (computer to modem)
- 5 CTS Clear to send (from modem to computer)
- 6 DSR Data Set Ready (from modem to computer)
- 7* GND Signal ground
- 8 CD Carrier Detect (from modem to computer)
- 20 DTR Data terminal ready (from computer to modem)

* These signals are provided by the HP 95LX. The remaining signals would normally be provided by a standard desktop/laptop system.

Most of these additional wires are not critical to the operation of the modem. However, some portable modems require at least one of these additional signals to function properly. That is the Data Terminal Ready (DTR) signal.

DTR: The Missing Signal

The DTR (Data Terminal Ready) signal is one of the signals not provided by the 95LX that is particularly important for some portable battery-powered modems. Designers of portable modems were interested in conserving battery power. Many portable modems use the DTR signal coming from the computer to turn the modem battery power on and off. A modem waiting for the DTR signal from a 95LX will never receive it, and never turn on. Such a modem will generally not work with the 95LX, unless you can modify the hardware and fool the modem into thinking it is receiving the signal.

The hardware modification generally provides voltage to the DTR pin on your modem connector (pin 20). This voltage can be "borrowed" from another pin on the modem that has power during normal operation, or may be provided by an external power source (battery). The modems

in the accompanying list which require modification are noted. One other thing to keep in mind; if you artificially supply the DTR signal in order to turn a modem on, you must remember to remove the signal so the modem can turn off. Otherwise, your battery will drain very quickly.

Software Command Sometimes Eliminates the Need for the DTR Signal

Some pocket modems will power on without the DTR signal, but WILL NOT function properly without it. Until the modem receives the DTR signal, it will remain in command mode and not pick up the phone line. Luckily, this problem can be overcome by sending the modem a simple software command. When this command is received, the modem will no longer require the presence of the DTR signal to function normally.

To send the command, follow

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these instructions: (It is recommended you issue this command to any pocket modem used with your HP 95LX.)

With your modem connected to the 95LX, go into the COMM program and press **[MENU]** Connect, then type **AT &D0 &W** and press **[ENTER]**. If the modem receives the command properly, it will respond with **OK**. The "AT" tells the modem to get ready to accept a command. The "&D0" tells the modem to ignore the DTR signal. The "&W" records this command permanently in the modem's non-volatile memory (which means that you will not have to re-execute the command the next time you turn on your modem).

If your modem does not respond to this command with **OK**, you may need to use a PC or laptop computer to send the command. This is because some modems will not even accept a command to ignore the DTR signal without the DTR signal being pres-

ent. Your PC or laptop can provide the DTR signal, while your 95LX cannot. Connect the modem to your PC, using a standard modem cable. Then, using a communications program on your PC, send the command as detailed above. The modem should now work properly with your HP 95LX.

Using Modems that Support Error Correction and Data Compression with the HP 95LX

Some modems support error correction protocols to insure the accuracy of data. If your modem supports MNP 2-4 or V42 error correction, and MNP 5 or V42bis data compression, you will need to enable "flow control" between your computer and the modem. Flow control allows the computer to regulate how much data is coming from the modem. Today's sophisticated compression technologies allows data to stream between

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the modem and computer at speeds up to 57K baud, which may overload the computers' ability to process it. Flow control allows the computer to signal the modem and, in essence, say: "Hey, wait a minute, I can't take any more data right now".

Conversely, flow control permits the modem to temporarily stop data coming from the computer. This may be necessary if the modem is encountering poor line conditions and needs to resend data more than once. While it is resending data, it cannot accept any more from the computer.

Not supported on the 95LX is the fastest, most reliable way to enable flow control. This method utilizes two special wires on the modem cable so that the Palmtop and modem can signal each other when they are, or are not, ready. RTS (Request To Send) and CTS (Clear to Send) signals are sent on pins 4 and 5 of the cable (see figure 1). A common

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term for this technique is "hardware handshaking".

A flow control method supported by the HP 95LX is accomplished through software. The computer and modem can send each other special characters (called XON/XOFF) in the normal stream of transmitted data. When using a modem that supports error correction/data compression with the HP 95LX, you must either enable XON/XOFF software flow control, or disable the error correction/data compression features of your modem.

ENABLING SOFTWARE FLOW CONTROL ON THE 95LX
 To enable software flow control (XON/XOFF) on your HP 95LX, make a change in the configuration of your communications software. If you are using the built-in COMM program, follow these directions;

- 1) Press **[COMM]** on the 95LX to bring up the COMM program.
- 2) Press **[MENU]** Settings Config Other Flow XON-XOFF Enable

Save these configuration changes with the **Save** option on the Settings menu.

If you are using the COMMO shareware communications program, you must change two lines in your

COMMO.SET file. You can use the built-in MEMO program, or other text editor to make the changes. When done, these two lines should look like this;

```
{sfc=yes}
{hfc=no}
```

Many modems that support error correction/data compression have hardware flow control enabled as their default setting. A modem that is set for hardware flow control will dial normally when connected to the HP 95LX, but appear to freeze once connection is made with the remote computer. Consult your modem manual for instructions on how to change the modem's default setting to XON/XOFF software flow control. The command that works for many Hayes compatible modems is; **AT &K4**.

If you are using the built-in COMM program on your HP 95LX, you can enter the above command manually each time you turn on your modem. If you want to make this setting permanent in your modem, add **&W** to the end of the above command before executing it.

If you are using COMMO, just add **&K4** to your modem initialization string in the COMMO.SET file.

Note: Certain file transfer protocols, such as Zmodem, require the use of hardware flow control, and will not work without it. Additionally, some communications programs require signals not provided by the HP 95LX (hardware handshaking, Carrier Detect) in order to operate properly.

Most AC Powered Modems Work
 Most AC powered modems will work with the HP 95LX. However, their size, and the need to be close to an AC outlet, makes them inconvenient to use with the HP 95LX.

Most Line Powered Modems Don't Work With the HP 95LX
 Line powered modems do not require a battery because they derive their power from both the phone line and the serial port of the computer

they are connected to. While these modems work well with most desktop and laptop systems, the 95LX cannot provide them with the power they need to operate. There are a couple of line-powered modems, however, that can be made to work with the 95LX through hardware modification. See the modem list at the end of this article. If you are so inclined, you may find that you can modify your line-powered modem to work with the 95LX.

Get Information on 95LX Communications on CompuServe

The 95LX Datacomm section (6) on CompuServe's HP Handhelds Forum (GO HPHAND) is an excellent place to share information on HP 95LX communications. If you have a question on getting your modem to work with the 95LX, there may be other users who can share their solutions with you.

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Modems That Work with the HP 95LX

The following modems are known to work with the HP 95LX. Some modems require modification to work properly, and are so noted. Most modifications are too detailed to reproduce here. Files detailing the modifications are available on the CompuServe Information Service, in the 95LX Communications Library (6) of the HP the Handhelds Forum (GO HPHAND). Specific filenames are mentioned in the modem list. Before using any of modems listed below with the HP 95LX, send the AT &D0 &W command to the modem (see article).

Designed with the 95LX in Mind

PalmModem 2400/PalmFax Fits in 95LX Memory Card Slot

This PCMCIA-compatible 2400 baud modem card fits in the card slot of the 95LX. Resident in the PalmModem is PalmTerm, a terminal emulation program optimized for palmtop computer use. A variety of upload and download protocols are provided with the terminal emulation program.

PalmModem comes with resident facsimile processing and transmitting software. 128K of on-board RAM is available on PalmModem for conversion of text to fax transmittable data without using the 95LX's resources.

SPECIFICATIONS: Baud - 2400, List price: \$269. CONTACT: *New Media Corporation, Irvine Spectrum, 15375 Barranca Pkwy, Building B-101, Irvine, CA 92718, USA; Phone: 800-453-0550 or 714-453-0100; Fax: 714-453-0114.*

WorldPort V.42bis Modem Fits in HP Mobil DataLink Cradle

The V.42bis is a 2400 baud modem that slides directly into the DataLink cradle. The modem runs off of either its own 9-volt battery, or the 95LX's AC adapter. The modem includes CCITT V.22bis/2400 bps compatibility, plus V.22/V.21 and Bell 212A/103 compatibility. It also includes V.42/V.42bis error control and data compression. The WorldPort 2400 V.42bis can also be used with an acoustic coupler where direct connection to the phone line is not possible.

SPECIFICATIONS: Baud - 2400, List price: \$249. CONTACT: *U.S. Robotics, 8100 N. McCormick Blvd, Skokie, IL 60076-2999, USA; Phone: 800-342-5877 or 708-982-5010; Fax: 708-982-5235.*

WorldPort Palmtop Fax/Data Modem

A portable send-fax modem with a 2400 bps data channel, designed for palmtop computers. Users have reported good results with this modem, and it does not require any hardware modification.

This modem and the New Media Palm-Modem currently presents the only practical way to send faxes directly from the HP 95LX. The modem converts ASCII text into fax format without the need for fax software on the 95LX. Units with early ROMs have trouble sending long faxes.

SPECIFICATIONS: Baud - 2400 data/9600 fax, List Price - \$249. CONTACT: *See contact above.*

WorldPort 2400

This is the modem recommended by HP for use with the 95LX. There are widespread reports of success with this modem. Modems with serial numbers over 50,000 have a special modification that allows them to work with the HP 95LX on battery power. By placing switch 3 in the ON position, the modem will not require DTR for power-on to occur. When switch 3 is on, the modem looks at the Transmit Data signal (TXD, see figure 1 in article) as an on/off switch. Therefore, to insure the modem is off after use, you must disconnect the modem cable.

Modems with an earlier serial number will work with the HP 95LX, but on AC power only. Note: The Worldport 2400MNP version of this modem will only work with the HP 95LX on AC power.

SPECIFICATIONS: Baud - 2400, List Price - \$229. CONTACT: *See contact above.*

Other Modems That Work with the 95LX

9624 VAP Pocket Fax/Modem

Compact, fully Hayes compatible 9600 bps send/receive fax & 2400 bps data modem. Connects to standard 9-pin RS-232C connector and runs on external adaptor or internal 9-volt battery. Comes with BITFAX/BITCOM software, user manual, 9-volt battery, AC adapter and phone cord.

SPECIFICATIONS: Modem baud: 2400, Fax baud: 9600, List Price: \$199. CONTACT: *Neutek International Corp., 824 South Mill Avenue, Suite 301, Tempe, AZ 85281, USA; Phone: 602-731-7211; Fax: 602-731-7212.*

GVC Mini-Modem (model MM24)

This modem may require a hardware modification depending on the chip set used in the modem. This generally requires connecting pins 5 and 20 on the modem side of the cable to force DTR high. See the file GVCMOD.95 on CompuServe for details on how to perform this modification. Some of these modems will work right out of the box with the HP 95LX, so try it first before starting modification.

Because of its low price, this modem has been fairly popular among HP 95LX users, who report good results after modifications are made (if necessary).

This modem used to be available from CompuAdd for \$69. According to GVC, it is no longer being manufactured, but still may be available from some sources. There have been some reports of this modem being available under different brand names.

The manufacturer states that this modem has been replaced by a series of pocket fax/modems. The GVC technical support department told me that these new modems would work with the HP 95LX without modification. The fax feature of these new modems will not work with the HP 95LX.

SPECIFICATIONS: GVC Mini-Modem MM24, Baud - 2400, Price: N/A; GVC Pocket Fax/Modem (SMM 9648/24), Price: \$159; GVC Pocket Fax/Modem (SMM 9696/24V), Price: \$249. CONTACT: *GVC Technologies, Inc., 376 Lafayette Road, Building B, Sparta, New Jersey, 87871, USA; Phone: 201-579-3630; Fax: 201-579-2702.*

Hayes Pocket Edition 2400

This line-powered modem requires a hardware modification in order to work with the HP 95LX. See the file HAYPKT.95 on CompuServe.

SPECIFICATIONS: Baud - 2400, List Price: \$179. CONTACT: *Hayes Microcomputer Products, Inc.; Phone: 800-635-1225*

Macronix MaxLite 96/PC

This 9600 baud data/fax modem works right out of the box with the HP 95LX. The fax feature will not work with the HP 95LX.

SPECIFICATIONS: Baud: 9600, List Price: \$595. CONTACT: *Macronix, Inc, 1348 Ridder Park Drive, San Jose, Ca 95131, USA; Phone: 800-468-4629, 408-453-8088, Fax: 408-453-8488.*

Practical Peripheral Pocket Modem 2400

This popular line-powered modem requires a hardware modification to work with the 95LX. See the files PM2400.95 and TINYMO.95 on CompuServe.

SPECIFICATIONS: Baud - 2400, List Price: \$159. CONTACT: *Practical Peripherals, Inc., 375 Conejo Ridge Ave, Thousand Oaks, CA 91361, USA; Phone: 800-442-4774 or 805-497 4774; Fax: 805-374-7200.*

Telebit Qblazer

This 9600 baud modem works right out of the box with the HP 95LX. The modem received a PC Magazine "Editor's Choice" recommendation in a comparison of high speed portable modems. Good results have been reported when used with the HP 95LX.

SPECIFICATIONS: Baud - 9600, List Price - \$299. CONTACT: *Telebit Corp, 1315 Chesapeake Terrace, Sunnyvale, CA 94089-1100, USA; Phone: 408-734-4333; Fax: 408-734-333.*

Cables Couplers and Adapters

Connectivity Pack (HP F1001A) Retail: \$99.95; Transfer files between 95LX and PC. Includes software, serial cable, 9-pin-to-25-pin adapter.

Serial Interface Cable (HP 82222A) Retail: \$35; Serial cable only.

Serial Cable Adapter Kit (HP 82224A) Retail: \$15; Kit includes two 9-pin-to-25-pin adapters, one for connecting to modems and another for connecting to printers.

CONTACT: *Local HP dealer. Products are also carried by: EduCALC, 27953 Cabot Road, Laguna Niguel, CA 92677, USA; Phone: 800-677-7001 or 714-582-2637; Fax: 714-582-1445.*

Telecoupler II Acoustic Coupler

This coupler lets you connect all but "line powered" modems to the handset of any telephone. RJ-11 jacks are not required. Transmits up to 2400 baud for modems or 9600 baud for fax.

SPECIFICATIONS: Price: \$139.95. CONTACT: *EduCALC, 27953 Cabot Road, Laguna Niguel, CA 92677, USA; Phone: 800-677-7001 or 714-582-2637; Fax: 714-582-1445.*

Available on the HP Palmtop Paper ON DISK.

*CIS GVCMOD.95 on the Fall 91 disk

*CIS HAYPKT.95 on the Jan/Feb 93 issue

*CIS PM2400.95 on the Sep/Oct 92 issue

*CIS TINYMO.95 on the Sep/Oct 92

*CIS - Available in CompuServe's HP Handhelds forum.

It's Tough Finding a Good Movie, and Product of the Year Nominations!

You don't need Siskel and Ebert when you've got a 95LX and a product called Movie Guide. Readers nominate three more Products of the Year: PalmModem, acCIS, and VDE.



By Hal Goldstein

95LX At the Video Store

A couple of months ago I saw an ad from Banner Blue about their \$49 **Movie Guide**. Movie Guide is a database of over 9,000 movies, giving you a plot description, actors and director, rating (1-4 stars), category (comedy, drama, etc.), award nominations and wins, box office sales, ratings and cautions about adult content, country of origin, black and white or color, year made, length in minutes and whether or not it's available on video. Movie Guide also contains information on over 8,000 movie stars and over 4,000 awards and nominations, including actors who have won or been nominated for an Academy Award, Cannes Film Festival winners, Golden Globe winners, and more.

Movie Guide's menus are intuitive, and you can search for movies in a variety of ways. For example, you can locate movies by title, by year by rating (1 to 4 stars), director, academy award winners, actor, and more. I thought, what a great use for the 95LX when I go to the video store.

I received a copy of Movie Guide, cleared off a 1MB RAM card, and put on 800K of files making up the Movie Guide software. (Using DIET from the Subscribers Disk saved me an additional 50K). I tried running Movie Guide and found it required 512K

of System RAM (configurable in SET UP: Press **<Shift>** **[FILER]** System) - which means Movie Guide requires a 1MB 95LX.

In order to run Movie Guide on the 95LX, I had to free up another 80K of System RAM by disabling System Manager. (See DOS tip in

Fall, 1991 issue or page 8 in the Subscribers Disk manual for how to disable System Manager.) Once all those system resources are devoted to Movie Guide, it runs reasonably well from the DOS prompt. You need to use the **[ALT]**-Arrow keys to traverse the Movie Guide screen. Run it first

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on a PC to get familiar with the program. Once I set up the program and got used to its interface (it didn't take long), I found Movie Guide quite useable on my HP 95LX.

I use it at the video store in two ways. If I am browsing and see a title that interests me, I check its rating, description, and so forth on my HP 95LX. Alternatively, I use the guide to search for possibilities. For example, I might look up the 3-4 star movies in 1985, movies with Dustin Hoffman, or academy award winners in the 1940's to choose a movie.

Some Parallel Devices Don't Work with the 95LX

There are an increasing number of products designed for the computer's parallel port other than printers. These include hard drives, floppy drives, tape backup units, and even removable hard disk systems.

We unsuccessfully tried connecting a parallel floppy drive and a Bernoulli Transportable Drive to the 95LX

using serial-to-parallel converters made by Widget and Palmtree.

The problem is that these type of parallel drives use software called "device drivers" to teach the system to communicate with the new device attached to its parallel port.

When we attempt to attach these drives to the 95LX's serial port via a serial-to-parallel converter, the device driver gets stumped. Unless an ingenious solution is found, it may not be possible to attach these parallel devices to the 95LX.

New Corvallis General Manager

HP Corvallis, Oregon, the home of the HP 95, has a new division manager. Dan Terpack, former General Manager, took a position with Tektronix, Inc., in Wilsonville, Oregon. Terpack is replaced by Frank Cloutier, a 19-year veteran of HP. Cloutier led the original development activities for HP's thermal inkjet technology and has been the manager of R&D for inkjet printer technology at HP's

facilities in Singapore.

There have been other changes throughout the division, and this is not surprising as HP Corvallis expands into a new marketplace. Potential customers of HP palmtop computers are quite different from those who benefited from HP Corvallis premier calculators.

95Buddy: Frequently Asked Questions

For those who responded to my enthusiastic recommendation of 95-BUDDY, version 2, check out BUD-DY.FAQ in Library 7 of the HP-HAND CompuServe forum. If you use the 95LX's built-in programs a lot, 95BUDDY is a must. It saves many keystrokes and makes the user interface much more intuitive. BUD-DY.FAQ is a text file of frequently-asked-questions and includes details of 22 patches that fix bugs or modify features of 95BUDDY. The file also includes operating tips. My favorite patch is one that allows me to press

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most any key rapidly twice in succession to get its shifted value. For example, **3** pressed quickly twice produces a **?** (question mark); **h** pressed twice creates a capital **H**.

Company to Clone 95LX

Copam, Inc. demonstrated a prototype of a palmtop PC similar to the HP 95LX. The palmtop they showed at the November 1992 COMDEX computer show had system-manager-type programs, came with DOS 5.0, 512K of memory, and a CGA-compatible screen. The price is reported to be about half HP's list price.

However, several 95LX users saw the unit and were not at all impressed. Palmtop Paper contributor **Mark Scardina** reported the following: "The computer was made from inexpensive looking plastic, had an unusable keyboard feel, and a barely readable display. The kicker is that the CGA screen only displays the upper left 40 x 16 portion of a DOS pro-

gram's 80 x 25 screen display. No scrolling function is supplied and there's no way to view off-screen data!"


Product of the Year

In my last column I nominated **95-Buddy**, and Ace's **SWITCH 2.0** and **Double Card** as HP 95LX product of the year. A number of people had other suggestions – at least for honorable mentions.

Modem on a card


Many users are pleased with New Media's **PalmModem**, designed to slip into the 95LX's memory card slot. It comes with communications software and required RAM built into the card. PalmModem has a small plug-in cable and pod for the RJ-11 jack. It draws power from the 95 batteries, and can operate online for approximately one hour. It includes a 2400 baud modem and 4800 send fax.



acCIS

Larry Tachna, CompuServe ID [76520,1630], writes: "Hal, don't miss the new release of acCIS for inclusion in Product of the year. It is available in the CompuServe, HPHAND forum, Library 6, under the filename ACCIS9.ZIP . acCIS is System-Manager compliant, and has a clipboard and memo integrated into it. acCIS is a real nice piece of work. It does need Commo or FastComm as the communications engine."

acCIS allows users to automatically log onto CompuServe, and download mail and forum messages using a modem and the 95LX. This process saves quite a bit of on-line time – and expense!

VDE, MASM, CMCALC

Programmer Tony McNamara [76702, 1454] writes: "If not for the current versions of VDE  and MASM, I would probably only barely tolerate the 95LX. MASM (Microsoft Assembly Language) clearly won't win product-of-the-year, partly because it's old, and partly because it has limited appeal. However, I write 95LX programs using MASM and use VDE as an editor (review of VDE on pages 27-28 of the Jan/Feb 92 issue).

"Too bad Finish Line  isn't out for the System Manager yet – that would have gotten my nomination, but not until it works in MEMO (review on pages 31-32 of the Mar/Apr 92 issue). As it is, the single program I find most useful on the 95LX (other than those I've written and VDE) is probably Gene Dorr's CMCALC  I only wish it included ASCII as a base."

Order Information

Movie Guide – \$44.99

CONTACT: Banner Blue Software, P.O. Box 7865, Fremont, CA 94537, USA; Phone: 510-794-6850; Fax: 510-794-9152.

Paralink3 – \$80

Serial-to-parallel adapter.

CONTACT: WIDGET Software, 121 London Road, Knebworth, Herts SG3 6EX, UNITED KINGDOM; Phone: 011-44-438-815444; Fax: 011-44-438-815222.

Palmprint \$159

Serial-to-parallel adapter.

CONTACT: Palmtree Products, 145 Washington Street, Norwell, MA 02061, USA; Phone: 617-871-7050; Fax: 617-871-6018.

SWITCH! Version 2.0 – \$69

Menuing system for 95LX.

CONTACT: (see ACE below)

ACE DoubleCard – varies

CONTACT: ACE Technologies, Inc., 2880 Zanker Road, Suite 103, San Jose, CA 95134, USA; Phone: 800-825-9977 or 408-428-9722; Fax: 408-428-9721.

PalmModem – \$269

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CONTACT: New Media Corporation, 15375 Barranca, Irvine, CA 92718, USA; Phone: 714-453-0110; Fax: 714-453-0114.



Shareware/Freeware Mentioned in This Article

On the HP Palmtop Paper ON DISK

*CIS **SHR 95Buddy Nov/Dec 92 issue
*CIS AcCIS – Jan/Feb 93 issue
*CIS CMCALC – Nov/Dec 92 issue
*CIS VDE Fall 91 issue
*CIS **SHR FINISH11.ZIP Mar/Apr 92

*CIS – Also available in the HP Handhelds forum of CompuServe.

**SHR – SHAREWARE is software distributed free of charge for evaluation purposes only. If you decide to use it, you must pay the author the shareware fee. This goes for any shareware found on The HP Palmtop Paper ON DISK or CompuServe.

Beating the 95LX Into a Plowshare

Farming in the 90's is a far cry from the mule and plow of 100 years ago. This farm owner finds that if harnessed properly, the HP 95LX pulls its own weight around the farm.



By John K. Chimits


Modern day agriculture is a logistics headache! Our factories are thousands of acres of farmland scattered across hundreds of square miles. Just driving past each field can take upwards of eight hours, and that's without doing anything! With this much territory to cover there's no time to waste sitting in some room. Our offices have four wheels and a mobile phone.

After a failed attempt with a laptop computer that proved neither efficient nor portable enough, I stumbled across a review of the HP 95LX in a *PC Magazine* roundup of palmtops. I was impressed enough by their comments to get one. I continue to find new and valuable uses for this splendid machine. Here are some valuable uses I've discovered so far.

APPT - An unbelievable asset

Agriculture is a maze of schedules, including planting dates, watering dates, chemical application dates, harvesting dates, and employee work schedules. Timing is all important, and mistimed irrigations or chemical applications can mean the difference between a reasonable profit and a complete loss. I use my HP 95LX to

keep track of when the last irrigation of each crop was, how much water was applied, which fertilizers or herbicides were incorporated with the water, and which employee was assigned to watch that application. I then plan the next irrigation and make a note on the appropriate date to recheck the field moisture level.

State regulations are strict about the application of chemical pesticides and fertilizers. I use the 95LX scheduler to keep track of the earliest reentry date (when workers can go back in the field) and the minimum number of days to harvest. Harvest dates are entered in the scheduler along with other production-specific notes for that harvest. This provides a valuable historical reference that allows me to accurately track what was done, and how effective (in terms of production returns) those actions were. (Sample Appointment Book file in FARM.ZIP .


Tracking Maintenance with To-Do Lists

The To-do list adds further functionality. When an employee mentions

that a particular piece of equipment or property needs repairs, I make an immediate entry into the to-do list. I note the needed repairs and their priority, and schedule appointments if necessary. This technique keeps essential repairs from being forgotten, and saves time on multiple trips to town for parts. I check my to-do list while I'm in town and make sure I get everything I need for the farm in one trip!

PHONE - Multi-Purpose Database of Vendor / Buyer Information

When I need to contact a vendor to order some merchandise, or when I need to contact a prospective buyer, I have the contact information I need in PHONE. Not only do I keep address and phone numbers, but I use PHONE to keep other useful data.

I have one Phone Book file that contains the names of major pieces of farm equipment and their serial numbers (EQUIP.PBK ). The address section of the cards in this file lists common parts in the equipment, and their part numbers.



ABOUT THE AUTHOR

John Chimits and his father farm 2,800 acres of land in Southern California; primary crops are wheat and alfalfa. John also majored in Electronic Computer Engineering in college. His CompuServe ID# is [70760,500].



Equipment Phonebook, Card view

I use a Lotus spreadsheet with this database. A User Defined Character macro accessing the Cut and Paste facilities, lets me copy the information about a piece of equipment from the .PBK database to Lotus.

F6 – Goto 123

{F2} {123} {CTRL-F4} {ALT-Z} {ENTER}

The spreadsheet truncates the entry, creates a filename and loads another spreadsheet that contains the complete service record for the requested piece of equipment. Repair dates, part numbers, vendors and tractor hours are all kept track of in these sheets. If I modify the spreadsheet, I use another User Defined Character macro to automatically save the spreadsheet and return me to the equipment database.

F7 – Back Phone

{MENU} FS {ENTER} R {MENU} QY {PHONE}

I used this technique to keep my "Ranch File," a Phone Book database of where records on ground preparation, crop variety, acreage and production are kept. (I now use 95Buddy to accomplish this.)

Lotus 1-2-3

– Office Data on the Road

Lotus is a versatile data storage and evaluation program that I have adapted to many uses. I use Lotus to keep product inventories, to calculate crop costs, and to make production forecasts. The various data I accumulate can later be easily downloaded to my desktop machine and imported into a variety of other programs and reports. By using Lotus, as well as the other 95LX applications mentioned, I am better prepared to make the

quick, informed on-site decisions necessary to keep employees and equipment moving with a minimum of downtime. (Editor's Note: A number of John's spreadsheets can be found in FARM.ZIP.)

HP CALC / Solver

– Quick Calculations

I use HP CALC and its Solver function to get quick answers to important mathematical questions. I can quickly and accurately figure water deliveries, tank mixes, application rates and temperature conversions vital to the job at hand.

Best Third-Party Enhancements

The preceding dealt with the built-in functions of the 95LX. Every issue of *The HP Palmtop Paper*, or every visit to the HP Handhelds forum of CompuServe yields a bounty of new ideas and enhancements for the 95LX. Below are the tools that I have found most useful:

Framework III –

Quick Information Access

I also use Framework III on my HP 95LX (loaded onto a 2MB RAM card). This integrated program gives me a quick and easy way to access other

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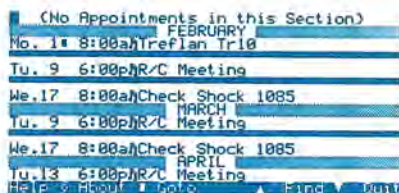
Video available to domestic market only.

databases (D-base & Framework), Outlines, Spreadsheets, and text files on the HP 95LX. Framework lets me import/export to 95LX file formats.

State law requires that we must be able to produce on demand a list of any pesticides and herbicides applied to any field within the last year. Framework on the 95LX lets me have those records at my immediate disposal. Should a worker become ill at the job site, I can quickly look up and see if he has been exposed to any chemicals, and then call ahead to have a material data safety sheet for the product faxed to the doctor.

Multiday – A Better View of the Appointment Book

This utility displays the appointments of a designated period chronologically, without all the dead space in between. In my business, many of tomorrow's decisions are based on yesterday's events. MultiDay lets me quickly scan past, present, and future appointments, giving me a better grasp of events.



MultiDay Appointment Screen

For example, each time I treat a field with a pesticide, I have to be aware of when the last spraying was, how long I have to wait before I can go back in the field, and how long before I can harvest the crop. Multiday lists my appointments by the screen full, making it easier to keep track of all these variables.

Switch! – Automatic Menuing System

This menuing system lets you put up to 48 System-Manager executable (.EXM) files and 48 DOS executable (.EXE, .COM, or .BAT) files per drive

in an easy-to-use menuing system. (For more on Switch!, see page 8 of the Jul/Aug 92 issue and pages 25 and 54 of the Nov/Dec 92 issue.)

Switch! lets System-Manager and DOS programs peacefully coexist on the 95LX. The newest version, Switch! 2.0, lets developers turn any DOS program into fully system compliant, "SWTICHable" programs. This will allow you to turn your 95LX into a customized Personal Info Manager.

95Buddy – Add New Features to the HP 95LX

If you don't have Buddy, GET IT! Buddy adds dozens of features and keystroke shortcuts to the built-in applications (see page 6, Jul/Aug 92 and page 18, Nov/Dec 92 issue).

One feature that I have found incredibly helpful is that 95Buddy lets you attach a text file to each entry in a Phone Book database. This lets you keep more in-depth information on an entry. Another feature lets you change the data field headings in Phone Book (Name:, Phone:, Address). I have used these two features to create a database of the farmland I use. The Phone Book database contains basic information about a specific plot of land. I press **F6** and Buddy loads a text file containing more information, including data on the Landlord, production and maintenance records, and physical structures on the property. This gives me one comprehensive resource for information on land, and takes much of the paper shuffling, memory straining, and guesswork out of my day-to-day decision making.

Conclusions

Mobile communications and data availability, as provided by the HP 95LX, are invaluable to me. They allow me to stay in touch with the necessary decision support information while remaining active in the day-to-day rigors of producing quality food for the American consumer. The quality and value inherent in the Hewlett Packard name are evident in the way the 95LX stands up to

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greasy hands and the rugged abuse of bouncing around over rough and dirty farm roads, sitting all day in 120° temperatures.

One modification I've made is to place a piece of velcro on the bottom of my 95LX and another on the top of my briefcase. The briefcase acts like a small desk, and gives the 95LX a relatively stable base.

Modern agriculture is a long way from the mule and plow of 100 years ago. Using the HP 95LX is just one more way American farmers are applying the latest technological advances to the problem of producing the lowest cost, highest quality food for our country and the world.



Shareware/Freeware Mentioned in This Article

On the HP Palmtop Paper ON DISK

- *CIS **SHR **Multiday** – Nov/Dec 92 issue
- *CIS **SHR **95Buddy** – Nov/Dec 92 issue
- FARM.ZIP** – Jan/Feb 93 issue
- EQUIP.PBK** in FARM.ZIP

*CIS – Also available in the HP Handhelds forum of CompuServe.

**SHR – SHAREWARE is software distributed free of charge for evaluation purposes only. If you decide to use it, you must pay the author the shareware fee. This goes for any shareware found on The HP Palmtop Paper ON DISK or CompuServe.

More Uses for PHONE

The Phone Book database can keep track of more than phone numbers. Here are some examples, along with instructions on creating User-Defined Keys to assist a phone call tracker.

By David Shier

Although the titles of PHONE's data fields are written in ROM and unchangeable, there's no law that forces you to enter names, phone numbers, or addresses in these fields. With this little shift in perspective, PHONE becomes a remarkably flexible database. Many HP 95LX users have discovered this, entering the data they find useful, and ignoring the field titles. This article explores a few more examples of useful databases that can be created using PHONE.

International Dialing Codes Database

The Phone Book which comes with the 95LX (C:_SYS_1.PBK), lists 20 commonly used international dialing codes. The name field contains the country name and the number field

is the country code. The address field contains the international access prefix used in that country to make direct-dial international calls. This .PBK file is written in ROM and cannot be modified. However, if you have a use for such a database, it's possible to edit it and add additional countries or city codes to it. Simply copy _1.PBK to another directory, call the copy up, and modify it. I have created such a file (DIALCODE.PBK), and modified it for English speaking users (I think it is easier to find Germany in my list than Bundesrepublik Deutschland in the original _1.PBK). The original is still in ROM, so you don't have to worry about losing it.

A CompuServe User Profiles Database

I have another Phone Book in which I list the people I communicate with on CompuServe. The name field lists their name, the number field contains their CompuServe ID number, and the address field lists biographical information such as forum memberships, requests for information, occupation and hobbies. This helps me write more personal messages to peo-

ple as I learn more about them. For example: Hal Goldstein's entry looks like this:

```

Edit card      01/04/93  3:03 pm
Enter the name
Name: Hal Goldstein
Number: 75300,2443
Address:
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HP Palmtop Paper - 95LX Newsletter
Former HP Engineer
  
```

Sample CompuServe Database

A Database of Functions Available in HP Solve

An example of a .PBK file that has nothing to do with names and phone numbers is the HPSOLVE.PBK, written by HP Palmtop Paper contributor, Ed Keefe. This file contains a listing of all the functions available in the Solve feature of the HP CALC application. The name field in this database contains the abbreviated name (mnemonic) of the function and a list of parameters. The category to which the function relates and the F-key you press to access the function is also found in the name field, spaced over to the right.

Calendar Supplement for the hp95

Important dates worldwide:

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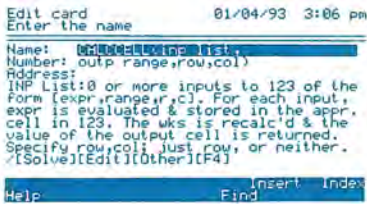
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ABOUT THE AUTHOR

David Shier is Director of Marketing and Sales for CK Technologies, where he promotes a line of circuit board and wiring harness testers, and writes user specifications. He can be reached at: CK Technologies, Inc., 1033 Business Center Circle, Newbury Park, CA 91320, USA; CIS ID: [75030, 3374]; Prodigy ID: CXBG88A.





Solve Help File, Full Card View

The information on category in the name field lets you search for and create a list of the functions in a specific category. For example, you can press **[F6]** (ONLY), type **123** and press **[ENTER]** to get a list of the functions related to Lotus 123.

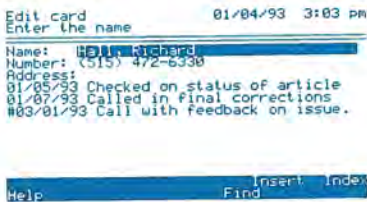
The number field lists the complete name of the function. Notice that the more important mnemonic abbreviation is placed in the name field so that it is always visible.

The address lines are used to provide a description of the function.

Phone Call Tracker

The following is based on using Phone Book along with some User-Defined Keys (also known as "user keys" or "macros") to create a phone call list and follow-up log. This idea was first brought to my attention by a detailed tip posted on Prodigy by Russ Fitzgerald. Russ uses this method to track his call schedule.

The name and number fields are used normally. The lines of the address field contain a list of phone call dates. If the date is preceded by a # character, then the call has not yet been made. Once a call has been made, the date entry is followed by a brief record of the conversation.



Phone Call Tracker, card view

What makes this Phone Book so useful are the user keys (macros) that are used to maintain it. Below is a summary of those keys, followed by an explanation of how to create them

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(see pages 21-14 to 21-19, *HP 95LX User's Guide*, for more information on Creating and Using User-Defined Keys):

[CHAR]-[F9] – is used to schedule a call to be made on a given date (usually today or tomorrow). This user key (macro) inserts the # and date on the first address line. All other information in the address field is bumped down one line.

[CHAR]-[F5] – is used when making a call. The user key (macro) opens the card, so that you can see all the relevant information. It then erases the "#" in front of the date and moves the cursor to the end of the line so that you can insert a brief note about the call. If the call is not completed (such as when you are connected to an obnoxious voice-mail system), pressing the (ESC) key will cancel the changes made by the user key (macro) so that you can try the call again later.

[CHAR]-[F8] – is used to reschedule the call for another day. This user key (macro) replaces the current date with a new follow-up date.

Creating the User Defined Keys for Phone Call Tracker

The best way to understand the functioning of a specific user key (macro) is to use the 95LX's "Learn Mode." This records into a user key each keystroke as you enter it. You can also enter a new user key (or modify an existing one) with the "User Mode." Instructions for creating the user keys in this article are given using the Learn mode. For more information on both the Learn and User Mode, see page 21-16 of *HP 95LX User's Guide*.

First, generate a phone book file with a few names and numbers (remember that we are reserving the address lines for our schedule). Next create the call scheduling user key (macro) as follows:

Call Scheduling User Key (F9)

1. Highlight with cursor the name of a person you wish to call.
2. Press **<Shift>-CHAR-F9** to record your user key. Note that both **<Shift>** and **CHAR** are "sticky" keys, which means you can press the keys individually without having to hold, therefore you don't need to hold down all three keys simultaneously. You should hear a two-tone beep tone informing you the user key is being recorded. (If you hear a single-tone beep, the F9 key has already been programmed.) If you make any typos, you should press the **<Shift>-CHAR-F9** sequence again to end the user key recording. Then press **SetUp CHAR**, delete the F9 user key and start again.
3. Press **F10** to open the card, then (**<Down>-<Down>**) to move the cursor to the first line of the address field. Next type the date you wish to schedule the call, say **#01/01/93** (space after 93), and press **ENTER**. The 01/01/93 above is just a sample. You can enter any date you wish, but you must maintain a consistent format for the date. The total number of characters used to enter the date must be the same so that subsequent user keys will work. Note that you precede the date with the pound sign (#) so the date is identified as a call to be made. Press **F10** to exit editing process.
4. The user key is now complete, so press **<Shift>-CHAR-F9** again to end the learn mode.

To schedule another call, move the cursor over the name of the person to be called and press **CHAR-F9**.

The down side of this method is that you are creating a user key that schedules a call for one specific date only. If most of the calls you will schedule are for that date, this solution is fine. However, if you need the flexibility of entering a different date each time, follow the steps above, modifying step three:

3. Press **F10** to open the card, then press **<Down>-<Down>**, type in the pound sign (#), a **<Spacebar>**, and

a **<LeftArrow>**. Go to step four.

This creates a user key that types in the # and lets you enter the date (remember the importance of a consistent date format). After you have typed in the date, press **ENTER** to move the rest of the line down, and press **F10** to go back to the main Phone Book screen.

Call Placing User Key (F5)

Schedule two or three more calls in your sample database so that you have a reasonably-sized list to work with. Now before creating the user key to place calls, sort the database

so that only a list of the people to be called today is displayed. To do this, press **F6**, type # followed by the date, and press **ENTER**.

Now move the cursor to the first call to be made and generate the call placing user key as follows:

1. Press **<Shift>CHAR-F5** to start the recording process.
2. Press **ENTER** to open the card.
3. Press **<Down>-<Down>** to move the cursor to the date field.
4. Press **DEL** to erase the #.

(Continued on page 30.)

Finally a, Database With a Difference!



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System Requirements

PC Version: MS-DOS 3.0 or higher, 640K RAM.

95LX Version: HP 95LX Palmtop with 512K RAM.

For Information contact 4-You Software:

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Fax: 310-538-8968

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(Continued from page 27.)

5. Finally, press END (**<Shift>**-**<RightArrow>**) to move the cursor to the end of the line.
6. Press **<Shift>**-**CHAR** **F5** to stop recording the user key.

This user key opens the data card, erases the #, and moves the cursor to the end of the date so that you can enter notes about the call. If you were unable to complete the call, simply press **ESC** (twice with 95Buddy installed) to erase all the changes.


After you are done with the call (and writing your notes), press **F10** to return to the list. Notice that the person you just called is no longer listed since the # was erased from the beginning of the date.

Rescheduling User Key (**F8**)

This user key lets you reschedule calls left over at the end of the day to the next business day. With the cursor on the first record in the list, follow these steps:

1. Press **<Shift>**-**CHAR** **F8** to start the recording process.
2. Press **F10** to enter the first record.
3. Press **<Down>**-**<Down>** to move the cursor to the date field.
4. Press **<Right>** to move to the right of the #, then press **DEL** **DEL** **DEL** **DEL** **DEL** to erase the old month and date.
5. Enter the new month and day for the call (in mm/dd format).

How to take these Phone examples one step further

The newest version of 95Buddy (2.3)  adds some useful features to PHONE. First, it lets you change the names of the data fields in the PHONE cards. You can change Name:, Number:, and Address:, to anything you want. Second, 95Buddy lets you assign an associated MEMO file to a particular PHONE entry. All you do is press **F6** while you're in a specific PHONE card, and the associated .TXT file will load into MEMO and display.

For more on these features, see the 95Buddy Documentation. For more on the new 95Buddy, see pages 18 and 37 of the Nov/Dec 92 issue.

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6. Press **F10** to complete the edit.
7. Finally press **<Shift>**-**CHAR** **F8** to end the user key recording.

Use this user key as follows: Place the cursor on the index entry you wish to change and press **CHAR**-**F8** to change the date. Do this for each entry remaining on the list.

After you are done, you can return to the full list by pressing **F6** **ENTER**.

Modifying User Keys for Future Dates

The next morning you can modify the Call and Rescheduling user keys for the correct dates. Press **SetUp** **Char**, highlight **F8** and press **ENTER** (or **F10**) to edit the user key. Press **ENTER** and move the cursor to the date. Delete it and type in the next day for calls. Then press (F10) to return to the index.

Do the same with the (F9) User key.

Schedule any new calls for today using the CALL **F5** user key. Then press **F6** (ONLY) to display the day's calls. The examples above show that with a little ingenuity, the built-in applications may provide far more versatility than HP and Lotus ever imagined.



Shareware/Freeware Mentioned in This Article

On the HP Palmtop Paper ON DISK

*CIS **SHR 95BUDDY on Nov/Dec 92
*CIS DIALCODE.PBK on Jan/Feb 93

On the 1992 Subscribers Disk HPSOLVE.PBK

*CIS - Also available in the HP Handhelds forum of CompuServe.

*CIS **SHR - SHAREWARE is software distributed free of charge for evaluation purposes only. If you decide to use it, you must pay the author the shareware fee. This goes for any shareware found on The HP Palmtop Paper ON DISK or CompuServe.

Backsolving in 1-2-3

Lotus 1-2-3 typically solves its problems from left to right and from the top down. There are times when you might want to solve a problem in the reverse direction.

By Ed Keefe

Suppose you use Lotus 1-2-3 to compute a twelve month financial projection. In the last row and last column of the spreadsheet, you arrive at the "bottom line," the yearly profit. It's a lot smaller than you anticipated; \$60,000 rather than the \$100,000 you had hoped for. You wonder how much capital you should start with to reach your goal of \$100,000. The best you can do is to repeatedly adjust your capital investment figure to seek the goal of \$100,000; a tedious task, to say the least.

It would be great if 1-2-3 had a goal-seeking function built into it. As this article shows, HP CALC can be used to perform such goal-seeking. It makes 1-2-3 appear to be solving the problem backwards. Backsolving, as it's called, gives added power to the "what-if" capabilities of 1-2-3.

We discussed the power of "backsolving" in the last issue of *The HP Palmtop Paper* (page 52, Nov/Dec 92). Solver's CALCCELL function lets you run the Lotus spreadsheet in reverse to do "goal-seeking." The Lotus spreadsheet used in the last issue (INSURE.WK1) compared the value of whole life vs. term insurance. The example given showed you how to use backsolving to find the annual premium for term insurance that gave a savings/loss figure exactly equal to zero.

It turns out there's an easier way to get 1-2-3 to backsolve; a way that doesn't involve writing Solver programs. The recipe for doing this is well documented in the Users Manual. In my edition of the manual, the recipe starts on page 28-20. The subti-

tle is "Using the Solver in a 1-2-3 Worksheet."

Please read or reread that section of the manual for a thorough explanation of the procedure. I won't repeat what the manual says. Rather, I'll show you a few more examples and point out a couple of the "gotchas" that I've discovered.

A Simple Example of Backsolving

One of the problems that occurs in many algebra texts goes something like this. "Given that $Y = 4.32^X$, find the value of X which will make Y equal to 234." That is to say, if 234 equals 4.32, raised to some unknown power, X, what's the value of X?

To find this value by hand, you'd need to know something about logarithms. However, with your HP 95LX in hand, you can skip the logs and go directly to a solution in one of several ways.

You can solve the equation by using Solver alone. On your 95LX, simply press **HP CALC** **MENU** **Solve**; then move to an empty line and press **F2** (Edit). Key in the equation $Y=Z^X$. Press the **F9** [Calc] key and key in **234** and press **F2**. Key in **4.32**, press **F3**, and then solve for X by pressing **F4**. The answer is 3.7282.



ABOUT THE AUTHOR

[Ed Keefe is an author, programmer, computer science instructor, and long-time contributor to support publications for HP computers. He is the president of the FastAid Company, 314 S.W. Logan, Ankeny, IA 50021. Ed's Compu-Serve ID# is [75300,3667].]

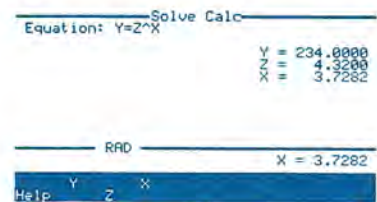


LOTUS



HP CALC

(This assumes that Solve is set up to display four decimal points — press **MENU** **Options** **Format** **Fix** 4.)



Solve Calc Screen

Now, let's see how to do the same thing using Lotus 1-2-3. Press **123** (the blue key) to call up an empty worksheet. If Lotus is already up with another worksheet, save the worksheet (press **MENU** **File** **Save** <filename> **ENTER**) and then erase it (**MENU** **Worksheet** **Erase** **Yes**).

Put the cursor in cell B2 and key in the formula $+A1^A2$ and press **ENTER**. This is just another way of writing Z^X , except that the variables "A1" and "A2" reference spreadsheet cells. Cell B2 contains the formula and is used as a "Formula cell" in this example. (Don't worry about the "ERR" that appears in B2.) Put the cursor in cell A1. Key in the number 4.32 and press **ENTER**.

Now press **[HP CALC]** to return to the "Solve Calc" screen. (If you've closed down HP Calc prior to this, you'll have to press **[HP CALC]** Menu Solve, move the highlight bar to $Y=Z^X$ and press **[F9]** (Calc)). Press **[ESC]** **[F8]** to go to the "Solve 1-2-3" screen and again press **[F8]** (the Form key) to bring up the worksheet. Position the cursor in cell B2 and press **[ENTER]**. Key in the value 234 and press **[F9]** (VALUE). Finally, press **[F10]** (Solve). This will return you to the worksheet. Move the cursor to the cell where the answer will appear (say, A2) and press **[ENTER]**. The Solve 1-2-3 screen will reappear, the numbers will roll, and soon you'll see "Solve Result = 3.7282." Press the [1-2-3] blue key and observe that cell A2 now shows "3.728208."

Now, suppose you want to restore the worksheet to its original values. Press **[HP CALC]** to return to the "Solve 1-2-3" screen and press **[F5]** (UNDO). You'll get an error message that says "Error: 1-2-3 did not accept data." This happens because cell A2 was blank before we started backsolving. UNDO restores the original value, and for some reason Solver can't restore a cell which has no value (i.e. and empty cell). The work-around for this "gotcha" is to put zero, or any value, in cell A2 prior to backsolving. In other words, give Solver a value that it can restore and it will work like a charm.

A More Complicated Example From Financial Math

Suppose you're contemplating a mortgage for \$125,000.00. The bank wants to charge 8% interest for a 30 year loan. You want to know what the monthly payments will be. Moreover, you want to know the total principal and interest paid back over 30 years.

You decide to use 1-2-3 to solve the problem rather than the TVM function in CALC. Press **[123]** and put the cursor in cell A5. Key in mortgage price, 125000, and press **[ENTER]**. Next go to cell A6 to enter the interest rate. Key in 8/100/12 and press **[ENTER]**. You should see "0.006666," the

monthly interest rate. Next, move the cursor in cell A7 and key in 30*12 and press **[ENTER]** to get "360." Go to cell A8, key in @PMT(A5,A6,A7), and press **[ENTER]**. The answer to the monthly payments will be "917.2057."

To find the total principal and interest, go to cell B8 and key in 360*A8. The cell displays "330194.0." Now go to cell B6, key in 12*100*A6, and press **[ENTER]** to see "8," the annual interest rate. Just out of curiosity, what kind of interest rate would bring the total principal and interest down to a nice, round number, say, 300,000.00? To find the answer, press **[HP CALC]** **[F8]** (1-2-3) **[F8]** (Form). When the worksheet appears, move the cursor to cell B8 and press **[ENTER]**. This will be the formula cell for this example. Back in the "Solve 1-2-3 screen," key in 300000, press **[F9]** (VALUE) and **[F10]** (Solve). In 1-2-3 move the cursor to cell A6 and press **[ENTER]**. The Solve 1-2-3 screen will appear and you'll see a message

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"Error: Solve cell must be a value." That's right, Solve can only change numbers. It can't modify formulas. So, press the 1-2-3 blue key. Press **[F2]** to bring the formula into the edit

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line. Press **F9** to force a recalculation and press **ENTER** to put the value in A6.

Return to Solver and press **F10** and **ENTER**. The Solve result will be "0.0059." Push **123** and see that the monthly interest rate is 0.005850 and the annual interest rate is approximately 7.02%.

We didn't backsolve for the annual interest rate (APR) because it doesn't work. If you try converting B6 (the APR cell) to a value and using it as the Solve cell, Solver will try to backsolve – and fail. However, if you really want to backsolve on B6, here's how to modify the worksheet to make this happen.

In 1-2-3, put the value **8** in cell B6. In cell A6, key in the formula **+B6/12/100** and press **ENTER**. Repeat the backsolving operation using B6 as the Solve cell. This time the Solve result will be "7.0203," the APR.

What The Manual Doesn't Tell You

Solver can only backsolve on one value at a time. It can only find a single goal. However, you may want to see the effect that backsolving would have on many values at the same time. Here's an example of how this might work.

Suppose you're running a small company that has four sales regions. The sales regions report the following year-end profits:

North-East: \$100,200.00
 South-West: \$150,000.00
 North-West: \$50,000.00
 South-East: \$78,000.00

To find the total profit for the company, use the same 1-2-3 worksheet as before and enter the data in cells A10 through A13. Put the formula **@SUM(A10..A13)** in cell A14. You should see "378200" appear.

Assuming that the regions will perform proportionately as well next year, what profits should each region show to make the total profit equal \$500,000.00? The solution to this puzzle lies in the word "proportionately." To see what this means, perform the following operations in 1-2-3.

Begin by copying cell A10 to B10. (Put the cursor on A10 and press

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MENU Copy **ENTER**; move the cursor to B10 and press **ENTER**.) Also copy the formula in cell A14, to cell B14. Cell B14 will act as the Formula cell for Solver. Cell B10 will act as the Solve Cell. Remember, it has to be a value and not a formula.

The rest of the data items must be formulas if this example is to work as advertised. Key into **B11** the formula **+A11*\$B\$10/\$A\$10**. This gives us a

number in B11 that is based on the value in B10. I've rearranged the terms slightly. The actual computations might look like $102000 * (150000 / 102000)$. The "\$" signs force the cell references to be absolute rather than relative. When you key in the cell references, just push **F4** and the "\$" signs will appear automatically.

Now copy this formula from cell B11 to cells B12..B13. (Put the cursor

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on B11 and press **[MENU]** Copy **[ENTER]**; move the cursor to B12 and press **[ENTER]**. Follow the same procedure for B13.) At this point the numbers in column B should look exactly like the numbers in column A.

When you're ready, press **[HP CALC]** and **[F8]** in the "Solve 1-2-3" screen. When the worksheet appears, make cell B14 the Formula cell by highlighting it and pressing **[ENTER]**. Back in Solver, key in 500000 and press **[F9]** (VALUE) and **[F10]** (Solve). In the worksheet, highlight cell B10 and press **[ENTER]**. Solver will backsolve and come up with "132,469.5928." Switch to 1-2-3 and see that all the other numbers in column B have changed as well:

```
B10 132469.50
B11 198307.70
B12 66102.59
B13 103120.00
B14 500000.00
```

If you get the drift of how this works, you should be able to extend the capabilities of Solver further.

Remember, to make Solve 1-2-3 work, you need one Formula cell and one Solve cell. The Solve cell must be a value, not a formula. The other data items can be formulas which somehow relate a data item to the Solve cell. In this example, the other three data items are proportional to the value of the Solve cell. However, you don't need to use a simple proportional relationship. You could make the formulas in cells B11 through B13 as complicated as you like. Go for it!

Use With Care!

Here's an oddity — an example that should fail, but doesn't.

In the 1-2-3 worksheet, go to cell B16 and key in the formula @SQRT(A16) (square root of cell A16). Put the cursor in cell A16 and enter the value -10. "ERR" appears in cell B16 because Lotus 1-2-3 can't find the square root of a negative number.

But suppose you forgot that 1-2-3 had a @SQRT() function and tried to

use backsolving to find the square root of a negative number.

In the 1-2-3 worksheet, go to cell B18 and key in the formula +A18^2 and press **[ENTER]**. Press **[HP CALC]** and in the "Solve-1-2-3 screen" press **[F8]** to make B18 the Formula cell. Type in -10 and press **[F9]** to set the Formula value equal to -10. Press **[F10]** to Solve and make cell A18 the Solve cell. Watch the numbers roll. On my 95LX, the Solve result=-0.000000003. Is this a bug, or has HP CALC just backsolved itself into a corner? Who knows! I wouldn't trust the answer.



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How to Get InfoSelect Working On Your HP 95LX!

This "random information processor" makes it easy to save, and later find those odd pieces of information that never seem to fit into a regular database.

By Victor Roberts

Infoselect is an easy-to-use information storage and retrieval program for MS-DOS computers. Billed as a "random information processor," InfoSelect stores data of any kind in "windows" which appear on your screen in the form of "Post-it" type notes. Using InfoSelect's GET command, information can be retrieved simply by entering any character string that appears in the note. Let's say you have the following note entered in InfoSelect:

The HP Palmtop Paper
Thaddeus Computing, Inc.
P.O. Box 869
Fairfield, IA 52556
(800) 373-6114
(515) 472-6330
FAX: (515) 472-1879

You can find this note by entering **Thaddeus**, or **52556**, or **Palmtop**, etc. You can find all notes containing fax numbers by entering **FAX**.

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InfoSelect is not limited to lists of phone numbers. You can use it to store birthdays, project information, a list of the records or video tapes in your collection, etc.

In addition to simple information retrieval, InfoSelect can automatically dial a phone number found in a note, remind you of to-do notes based on dates entered into the note, and link multiple notes with hypertext.

Infoselect is designed to run as a TSR on desktop PCs. However, it can also be run as a stand-alone application. This mode is recommended for use with the HP 95LX, as well as with multi-tasking environments such as Desqview and Windows.

While InfoSelect is designed for a standard 80-column-by-25-row screen, an interesting adjustment described below makes it highly compatible with the 40-column-by-16-row screen on the 95LX.


When run as a DOS TSR, InfoSelect can "grab" a screen-full of data from the underlying application, and "paste" data into underlying applications. It includes a decent editor that supports Wordstar-like editing commands. The editor supports cut-and-paste within a window (note) and between different notes. It can print one or many copies of any note.

Infoselect supports a maximum of 32,000 characters per note, and 10M per database. Since the whole database is kept in system RAM, (including EMS) the maximum size of a

database on the 95LX will be about 500K. (I don't use databases greater than about 30K.)

I have used both InfoSelect 1.05 and 2.0 on my 95LX. Except where indicated, the comments in this article should apply to both versions.

Minimum Disk Space Requirements

The minimum installation of InfoSelect requires the following seven files: IS.EXE, MENU.WD, USER.WD, BASE.WD, SCREEN, NORM.LA, and GLOBAL.GA. You can use DIET or PKLITE to compress the IS.EXE file. (I used DIET 1.20 . Later versions of DIET are available and may give different compressed file sizes.) With IS.EXE compressed, a minimum installation of InfoSelect 2.0 requires 113,152 bytes of disk space plus room for your BASE.WD data file. InfoSelect 1.05 needs 104,960 bytes of disk space plus room for the BASE.WD file. I attempted to Diet BASE.WD, but got very little compression. (*Editor's Note: BASE.WD is the data file that gets loaded automatically when you start InfoSelect. All InfoSelect data files have the .WD extension.*)

If you intend to edit and save your BASE.WD file or any other *.WD file, you will need free disk space equal to the size of that file.

InfoSelect Adjustments

Make the following adjustments to InfoSelect and it will be easier to use on the 95LX:

ABOUT THE AUTHOR

Victor Roberts is an Electrical Engineer who manages an R&D group working on high performance gas discharge light sources. Vic's CompuServe ID# is [70413,1423], his Internet ID is roberts@crd.ge.com and his Prodigy ID is DXXP18A.



Display One Note at a Time

From within InfoSelect, set the number of windows displayed by pressing **A**(djust), **W**(indows). Then press **<Down Arrow>** twice until the "Max Windows" screen is displayed. Press **1** (one) and then **ENTER**. Finally, press **ESC ESC** to return to the main display. [Note: According to PTP subscriber Wingfang Li, the "thick line current window frame" doesn't display well on the 95LX. He suggests changing that to either the single or double line option. He also suggests using InfoSelect's SETUP.EXE program to change display "colors" to find the best combination for the 95LX.]

Change Window Size to Fit 95LX Display

Change the default size for the new windows so it matches the 40-column-by-16-row screen on the 95LX. To set the default size of new windows, press **N** to create a new window. Then press **ENTER** 12 times (13 times in Version 1.05) and press any regular character to mark the end of the window. Then press **ESC** and use the Right, Down and Up Arrows to adjust the size of the new window to fit the 95LX screen. Press **ESC** again to set the size of the new window. Next press **X**(tra) **F**(rame) and choose option 1. Answer **Y**(es) to the, "Are You Sure", question. Then press **D**(isk) **S**(ave) to save the adjustments. You can then **T**(hrow) away the new window and do another **D**(isk) **S**(ave).

Reduce Time for Activation of Screen Saver Function

InfoSelect interferes with the operation of the 95LX's auto-shutoff timer. This feature automatically shuts down the Palmtop after three minutes of inactivity to save battery life (95Buddy  or Timeout  will let you to change this default setting). When InfoSelect is displaying a note, the 95LX apparently thinks the program is active and will not automatically shut down to save batteries. InfoSelect has its own screen saver function with a default setting of 10 minutes. The 95LX auto-shutoff timer does not start running until the InfoSelect screen saver cuts in. So if your 95LX is set to shut off after three

minutes of inactivity, it will take 10 minutes for InfoSelect to go into its screen saver mode and another three for the 95LX to shut down.

After InfoSelect shuts the screen down, you can bring it back by pressing **<Spacebar>**. After the 95LX shuts down, you have to press both **ON** and **<Spacebar> <Spacebar>**.

The EDIT mode of InfoSelect does not enable the screen saver, and does not disable the 95LX timer so, if you are editing a note, your 95LX will shut down in the normal time.

Set the InfoSelect screen saver to its minimum value of one minute so InfoSelect will have the least effect on your 95LX's auto-shutoff. (Setting the screen saver to zero keeps the InfoSelect screen active all the time, and the 95LX auto-shutoff does not work.)

To reduce the time for activation of the screen saver function in InfoSelect, press **A**(djust) **V**(ideo). Then press **<Down Arrow>** twice to bring up the "Auto Screen Blanker" display,


press **1** **ENTER** **ESC** **ESC** to return to the Note display. Press **D**(isk), **S**(ave) to save the settings.

This completes the InfoSelect adjustments.

Using InfoSelect on the 95LX

If you use your 95LX primarily in DOS mode, load InfoSelect as a TSR just as you do on your desktop. (This involves placing a command in your AUTOEXEC.BAT file or manually starting InfoSelect in the normal manner). InfoSelect will not pop up over the built-in applications when loaded as a TSR program. If you mix DOS and built-in applications you will need to run InfoSelect in the non-resident mode.


Batch File for Loading InfoSelect

A good way to start up InfoSelect is to create a batch file (IS.BAT ) that performs three actions. First, it turns off cursor tracking on the 95LX to make sure your one InfoSelect window is always visible on the 95LX


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screen. It also makes sure that the Alt-Arrow function is turned on. Next, it switches to the directory where you keep InfoSelect and starts InfoSelect with the N option to run non-resident. Finally, when you exit InfoSelect, it switches cursor tracking back on. The commands in the batch file look like this:

```
dispctl +k -c
a:
cd \is
is n
cd \
dispctl +k +c
```

I keep IS.BAT in C:\. I close all the built-in applications, highlight IS.BAT in FILER, and press [F4] and run InfoSelect.

A more convenient way to run InfoSelect, is to use a "loader" program to call IS.BAT (for more on loaders, see page 19, Jan/Feb 92 issue). A loader lets you use a hotkey to start up InfoSelect. The loader lets you start InfoSelect on top of other built-in applications (except 1-2-3). You have to exit InfoSelect before

you can go back to the built-in applications.

I created my loader (IS.EXM [F]) with a programming language called UTIL Forth (see page 31, Jan/Feb 92 issue), but you can also use Dave Goodman's LDRMKR [F] to make your own loader. Remember that the loader should call IS.BAT, not InfoSelect itself.

Watch Out for These Glitches

When you start up InfoSelect, it stops at the "Welcome to InfoSelect" screen. Version 1.05 hangs up indefinitely. Version 2.0 hangs up for 10-20 seconds, depending on whether you are operating on battery power or AC power. With either version of InfoSelect you can clear the "Welcome" screen immediately by pressing any key.

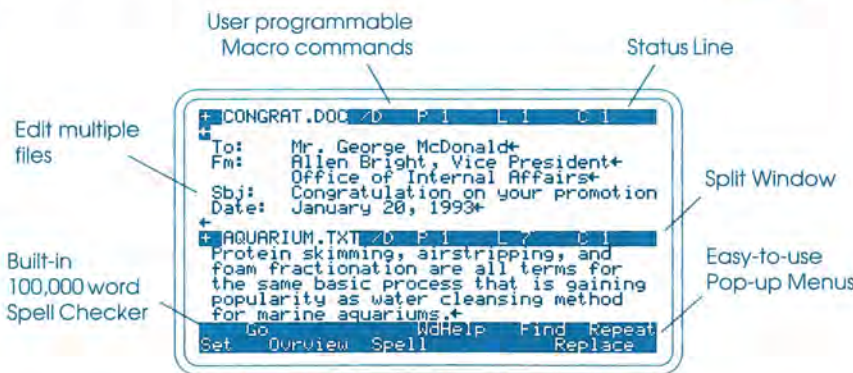
The second problem is that the GET function runs very slowly when you are operating on battery power. When executing GET, InfoSelect constantly polls the keyboard for addi-

tional input. This puts the 95LX into its Light Sleep mode where the processor slows way down to conserve battery power. There is a two-part work-around for this problem. First, keep typing your search string even if InfoSelect has not completed its search for the characters already entered. Second, if you have entered your complete search string, or as much as you think you need, press [ENTER]. This switches off keyboard polling since InfoSelect knows it does not need to check for more keyboard input. When keyboard polling stops, the 95LX will switch the processor back to full speed and the GET search will zip along at normal speed (for a 4MHz V20 processor.)

That's all folks! Have fun with InfoSelect on your 95LX. Please send me any suggestions for improving this set of instructions. Address them to the HPHAND forum on CompuServe, to my CompuServe ID, or to my Internet address shown above.

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Answers to Most Common Questions Received by HP Technical Support Staff, 1992

Once again we thank the Hewlett-Packard Technical Support staff for providing us with the following information.

By HP Technical Support

I've turned my HP 95LX on but the screen is blank.

It is likely that the main batteries are low and that the HP 95LX is being powered by the backup battery. The backup battery will maintain your data for a few hours but is not strong enough to display data on the screen. Either plug into an AC adapter or change the main batteries as soon as possible. If it is not a power problem, you can try a hard reset, see page 1-13 in the HP 95LX User's Guide. If this does not work contact your Service Center.

My keyboard is locked up and the HP 95LX won't respond to any keys. What do I do?

Start by pressing **[ESC]**. If that doesn't work, simultaneously press **[CTRL]-[ALT]-[DEL]**. If that doesn't work you can use a hard reset, see page 1-13 in the HP 95LX User's Guide.

Should I buy a RAM card instead of the 1MB version?

The 1MB version has twice as much memory (RAM), which means you can store more files and run larger programs. The maximum size program you can open on the 512K version is about 480K bytes. The maximum size program you can open on the 1MB is about 600K bytes. A 512K RAM card will let you store

more files, but the size of a program you can open will not increase. Using a RAM card is analogous to using a floppy disk in the A: drive on your desktop PC.

How do I start a new Phone Book?

In the Phone book application, press **[MENU]** File New. Insert some names and numbers. Then press **[MENU]** File Save and type in a name for the new file and press **[ENTER]**. Now, when you press **[MENU]** File Open, all the phone book files in the _DAT directory will be displayed.

What do I need to transfer files to my Macintosh PC?

The HP 95LX supports file transfers in the Datacomm application. Both Kermit and Xmodem transfer protocols are provided on the HP 95LX. If you have software on the Macintosh that transfers files using either of these protocols, you only need the cable to connect to the HP 95LX. The cable can be ordered from your HP dealer by specifying part number HP 82223A.

Some third party products have been developed to provide the Macintosh - HP connection. Sparcom and DataViz have solutions advertised in *The HP Palmtop*

Paper.

What do I need to transfer files to my IBM PC?

The Connectivity Pack provides the cable, adapter, and software to transfer files between the desktop PC and the HP 95LX.

The Connectivity Pack includes the Appointment, Phone, Calculator, Memo, Filer, and Setup software which is similar to the software on the HP 95LX. The key difference is that the MENU key on the HP 95LX is replaced with the **[ALT]-[F10]** keystroke on the desktop PC.

The Connectivity Pack

also includes some software not on the HP 95LX: Merge, Translate, and DOS Connect utilities. The Merge utility merges phone books and appointment books. The Translate utility converts formats of Phone and Appointment files. The Translate utility converts the formats of Sidekick Plus, Lotus Metro, and PC Tools. DOS Connect lets you set up the HP 95LX like an additional disk drive to your desktop PC.

The Connectivity Pack does not include Lotus 123 or the Datacomm software. It must be installed and run on a local hard drive. The Connectivity Pack software is not designed to run from networked drives.

How Do I Get Technical Support for my HP 95LX?

ASK THADDEUS, Thaddeus Computing, Inc. - Call (800-767-4795 or 515-472-7584) or fax (515-472-9595) the publishers of *The HP Palmtop Paper* your HP 95LX problem. Rates are \$2.00 per minute plus an additional charge for non-U.S. callbacks to cover the cost of international long distance rates.

HP Technical Support HP offers these options:

- **90-DAYS FREE SUPPORT** - is offered to all 95LX users and is available by calling (503) 757-2004.
- **FREE AUTOMATED SUPPORT** - is offered 24 hours a day by calling (800) 443-1254.
- **6-MONTH SUPPORT CONTRACT** - for \$149 you get a toll-free number and 6 months of unlimited support. Call (800) 443-1254.
- **900-NUMBER SUPPORT** - available on a pay-as-you-go basis (first minute free, \$2.00 per minute thereafter). Call (900) 288-0025.
- **COMPUSERVE GO HPHAND FORUM** - Call 800-848-8199 or 614-457-0802: For membership state #231.

The Connectivity Pack can be ordered from your HP dealer using part number HP F1001A. You can get the cable only by ordering part number HP 82222A.

A Windows based connectivity solution is available from a company called Intel-link.

How can I connect my modem to my HP 95LX?

Use the serial cable HP 82222A (included in the Connectivity Pack) and the modem adapter plug (included in the Serial Cable Adapter kit, HP 82224A) to connect the HP 95LX to your modem. See the I/O Application Note included in the HP 95LX package for more details.

You will need to disable hardware handshaking on the modem. The HP 95LX only supports software handshaking. Check with the modem

manufacturer for instructions on disabling hardware handshaking. (See *modem article, page 14 this issue, for more information.*)

Can I send a fax from my HP 95LX?

Several fax/data modems are now available for use with the HP 95LX. (See *modem article, page 14 this issue, for more information.*)

Can I change the default directory in the Memo application from C:_DAT to a name I like better?

No. The default directory for Memo cannot be changed. That is also the default directory for the Appointment, Phone, Calculator, and Datacomm applications.

To override the default, you can record a user key macro to go to a different

directory at the touch of the Char key. Instructions for creating user key macros are found in the User's Guide on pages 21-14 through 21-20.

You can change the default directory in Lotus 123. See page 13-8 in the HP 95LX User's Guide.

There are also commercial shareware programs such as Switch! and 95BUDDY that will allow you to define your own default directory for the built-in applications. The CompuServe Information Service is a good source of shareware programs.

What can I do with the HP 95LX's I/R port?

You can transfer files between two HP 95LXs by using the Filer application. You can transfer files between an HP 95LX and an HP 48SX using the Datacomm application. You can print the cur-

rent screen to the infrared printer, part number HP 822-40A, using the Print Screen keys and a special program that you run on the HP 95LX.

The program, 95IRP.ZIP, is a TSR (Terminate-and-Stay-Resident) program that provides access to the Infrared printer.

How can I print graphics screens developed in HP CALC and 123?

Using a TSR program, 95PS- .EXE, available on CompuServe or the PTP on Disk, you can print graphics that are in the display by pressing **[PRT SC]**.

How do I run a TSR (Terminate-and-Stay-Resident) program on the HP 95LX?

Use the Memo application, create two files: CONFIG.SYS

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and AUTOEXEC.BAT. The CONFIG.SYS file should contain the following line: **SHELL=COMMAND /P** (with a space between "COMMAND" and "/P"). The AUTOEXEC.BAT file should contain the name of the TSR you want to run, followed by the line \$SYSMGR which will start the built-in System Manager. These files should be put in the root directory of your RAM card if you have one. They will also work in the root directory of the internal RAM disk. These files are executed whenever the system is rebooted. Before rebooting the system, quit all of your open applications, making sure to save files that you have modified. Then, press **CTRL-ALT-DEL** to reboot the system. During the process of restarting the system, your AUTOEXEC.BAT and CONFIG.SYS files will be

executed. The User's Guide contains instructions for the SHELL command on page B-24.

WARNING: These commands represent a serious modification to your HP 95LX. You should be experienced with the use of CONFIG.SYS and AUTOEXEC.BAT files. If you make a mistake in these files, you may not be able to reboot the system. Therefore, you should only install these files on a RAM card. If there is a problem, you can remove the RAM card and the system will boot up in the normal way.

Can I do programming on the HP 95LX?

The HP 95LX is a computer that can execute compiled code written in many languages. The easiest way is to develop programs on your

PC and download the executable files to the HP 95LX.

Also, you can load your preferred compiler or interpreter onto the HP 95LX. If it is compatible, you can develop as well as run your programs on the HP 95LX. BASIC and C are the languages most often used in this manner. Be advised that most compilers and interpreters require a large piece of your RAM disk.

What's wrong if my printer isn't responding correctly to the HP 95LX print commands?

First make sure that the HP 95LX and the printer are both set to the same baud rate. Then check that the HP 95LX printer driver being used is one that the printer is able to emulate. To check this on the HP 95LX, start the SET UP application by pressing

<Shift> [FILER] select Printer in the displayed menu. This displays the settings that the HP 95LX is using. Select the appropriate setting for your printer. Use the Serial Cable, part number HP 82222A, and the Serial Cable Adapter Kit, part number HP 82224A, to connect the HP 95LX to the serial printer.

Next, check to see that hardware handshaking is disabled on the printer. This is often done with DIP switches on the printer. Look in your printer manual for instructions. Hardware handshaking is usually done with pins 4, 5, and/or 20. These are not available on the HP 95LX serial port. By disabling the use of these pins, printers are forced to look to pins 2 and 3 for software handshaking communication with the HP 95LX.

Finally, check to see that

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the printer is set up to receive data in the format that the HP 95LX sends it: 8 bits, 1 stop bit, 1 start bit, and no parity bit.

How can I print to a parallel port printer from my HP 95LX?

You can send the files to your PC and print from the Connectivity Pack applications. Or, you could purchase a serial-to-parallel converter. These devices convert the serial signals from the HP 95LX into a parallel format that the printer can interpret at its parallel port. Before you purchase one of these devices, be sure that you can disable hardware handshaking on the converter.

There is also the JetEye infrared-to-Parallel converter (Extended Systems), which connects to a LaserJet printer and lets you print from the 95LX via the I/R port.

How can I convert my database of customer information into an HP 95LX Phone book?

From your database, print out a file with the name, phone number, and address fields delimited by quotes and separated by commas. Use the translate utility in the Connectivity Pack to convert this CD1 formatted file into the HP 95LX phone book format. See the Connectivity Pack manual page 4-9 for instructions.

What other programs will run on the HP 95LX?

Some programs that run on the IBM PC XT can be run on the HP 95LX. The program must be able to work with an MDA display (no graphics). The program must be able to execute within the available system RAM. A program that uses the serial port may not

work, depending on the specifics of how it accesses the serial port. You may need a RAM card for more file storage.

If the program meets these criteria, it is worth a try. Back up your files before you experiment.

Note that all programs that run on the HP 95LX may not be easy to use. The screen (16 lines by 40 columns) may require extra scrolling. (The display is moved around the 25 line by 80 column screen memory by pressing **ALT** and an arrow key at the same time).

What is the recommended allocation for RAM disk and System RAM?

RAM disk is the area of internal RAM where your files are stored. System RAM is the area of internal RAM where your programs are executed. The default on the 512K ver-

sion is an even split. This is the best setting for most users. The 1 MB version default maximizes the allocation of system RAM and minimizes the RAM disk. Most users don't need more than 300k of system RAM and should reallocate in favor of the RAM disk.

You should expand your RAM disk if you have no more space to store files.

You should expand your System RAM if you don't have enough space to run your programs or your Lotus spreadsheet has the MEM indicator showing.

When I type APP95 to run the Connectivity Pack on my PC I get the "SYSTEM RESOURCE MISSING" error message.

You have installed the Connectivity Pack on a drive other than the C drive, or in

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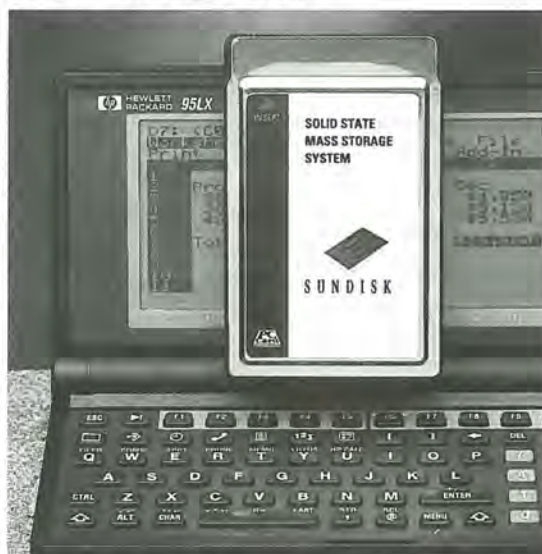
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or in a directory other than CPACK. This is okay if the APP95 program can find where you've put the Connectivity Pack modules. To find them it looks to the DOS environment for a variable named PIMS which should be set with the path to the Connectivity modules. The command to define this variable is the following:

```
SET PIMS=C:\CPACK (replace C:\CPACK with your installation location).
```

To display the current values of the DOS environment file, type **SET** at the DOS prompt. PATH and PIMS should both contain the path to the Connectivity Pack software.

The SET PIMS command should be in the AUTOEXEC.BAT file. The problem may be that the SET PIMS command is not executed during the start-up process because it is preceded by the execution of another program. To fix this, put the SET PIMS command closer to the beginning of the AUTOEXEC.BAT file. After this is changed, save the AUTOEXEC.BAT file and reboot the PC. After rebooting, type **APP95** and press **[ENTER]**.

When translating my CD1 (Conventional Data) file into the HP 95LX Phone Book format, I get 99% complete and then the Translation utility stops and displays the message "INVALID FILE FORMAT". What's wrong?

Some programs attach an End-of-File marker when they produce an output file. To fix this, start the Memo application and open the CD1 file. Page down to the end of the file. There you should find some special characters after the last record. These characters will look like one or more horizontal arrows, (Control Z). Use the DEL key

to remove these characters. Save the file. Run the corrected file back into the translate utility. With these EOF markers gone, the translation should complete successfully.

What is the required voltage and current for the AC adapter?

The adapter should output either AC or DC at 9 volts. If the output is AC, then the minimum current is 350 milliamps. If the output is DC, then the minimum current is 175 milliamps. The DC output plug can be either polarity.

The AC adapter made by HP is the same one used for the HP 82240A Infrared Printer. Different versions of this adapter are made to accommodate the AC power in various countries: *HP 82241A for USA and Canada (110v 50-60Hz), HP 82241AB for Europe (220v 50Hz), HP 82241AU for UK (240v 50Hz), HP 82241AJ for Japan (100v 50Hz), and HP 82241AG for Australia (240v 50Hz).*

I get "CANNOT ESTABLISH A REMOTE CONNECTION" when trying to transfer files from my PC to 95LX with FILER.

Both systems must be running the Filer application for the connection to be established.

The most common cause of trouble is that the Filer on the PC is trying to communicate through COM1 and the serial cable is plugged into COM2. To test this, change the PC's Filer Remote-Set to use the COM2 serial port. To change COM ports from FILER on the PC, press **[ALT]-[F10]** and select from the top menu **Remote-Set, Config, Interface, COM2, Quit, Quit**. On the *HP 95LX, the port should be set to COM1.

Another cause of difficul-

ty in making a remote connection is that another program running in the background on your PC has control of the COM port that the Filer is trying to use. To fix this, move the serial cable to another port and update the Remote settings configuration. (To update the Remote settings use the same procedure as in the previous paragraph.) After the port has been changed, try again to get the Filer to establish a remote connection.

If you don't have another port, examine your system to find the source of the conflict. You can most easily do this by booting the system from a floppy disk with the minimum possible CONFIG.SYS and AUTOEXEC.BAT files. Reboot the system, start APP95, and then try to establish remote connection. If it works, then something in your more complete system set up is in conflict. To find it, systematically add to the CONFIG.SYS and AUTOEXEC.BAT files on the floppy disk each item that may be causing the conflict. Each time you add an item to the AUTOEXEC.BAT or the CONFIG.SYS, reboot the PC, start APP95, and try to establish a remote connection. When the connection fails again, you have found the conflict.

I have set a password in my HP 95LX and it won't work now. What's wrong?

The password function is case sensitive. If you originally set up your password while the CAPS lock was on, you will need to turn it on again when entering your password. Be very careful that you are entering your password in the correct case. You may want to change your password to all lowercase. If it still doesn't work, you must take out the main

and backup batteries to initialize the HP 95LX. You will lose all your data, but the HP 95LX can be used again.

I've transferred my files from my 95LX to my PC using CPACK but I can't find them on my PC.

There are several places you can look. In the Filer, on the Local side (using split-screen), look in the root directory and any other directories you may have transferred the files into. To change directories in the Filer, highlight the directory you want and press **[ENTER]**. You can also look at a file on the application screens. For instance, to look at an appointment book file in the appointment book application, you can press **[ALT]-3** to bring up the appointment book screen. Press **[ALT]-[F10]** to bring up the menu. Select **File Open**. If your file appears on the screen, highlight it and press **[ENTER]**. If it doesn't appear on the screen, highlight **..** and press **[ENTER]** to move up a directory. Then look for the file you want or select another directory where you think the file might be.



Shareware/Freeware Mentioned in This Article

On The HP Palmtop Paper ON DISK

- *CIS *SHR **95Buddy** Nov/Dec 92
- *CIS *SHR **95IRP.ZIP** Jan/Feb 92
- *CIS *SHR **95PS.EXE** Jan/Feb 92

*CIS Also available in the HP Handhelds forum of CompuServe.

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SIGMA — "It's a Wonderful Function"

Solver's SIGMA function can be used to perform many complicated calculations, including calculus.

By Ed Keefe

This article explores SIGMA(), the summing function in HP Calc's Solver. SIGMA is one of the more powerful features of Solver. Let's see it in action before we try to describe it.

Press **HP CALC** **MENU** **Solve**. Move the cursor down to an empty line and press **F2** (Edit). Then key the following lines into SOLVE's edit screen. (The **<Tab>** acts like a carriage return in the Solve Editor. You can indent terms using **<Spacebar>**. I've laid the formula out in this line-by-line fashion because I think it's easier to read. You don't really need to put carriage returns or indents for the formula to work. Also, the answers in this article assume that you have HP Calc set to display four decimal places (press **MENU** **Options** **Format** **Fix** 4).)

```
answer=
  SIGMA
  (
  counter,
  initial,
  final,
  step,
  counter^2
  )
```


When you're ready, press **ESC** to leave the Solve Editor screen (press **F6** to "Save changes before exiting?"). Then press **F9** (Calc) to go to the "Solve Calc" screen.

```
Solve Calc
SimpSignal: answer= SIGMA ..
              answer = 14.0000
              initial = 1.0000
              final   = 3.0000
              step    = 1.0000

RAD
14.0000

answer final
Help  initia step
```

Solve Calc Screen for SIGMA

Set initial= 1, final= 3, and step= 1. Press **F2** (answer) and see below, "answer = 14.0000." (Editor's Note: All the formulas in this article are found in KEEFE.EQN )

What SIGMA Does

SIGMA turns out to be a looping routine, built on the ability to add the results of successive mathematical operations to an "accumulator." The

accumulator is a memory buffer that SIGMA stores its results in.

Here's a step-by-step description of what SIGMA does when you press the "answer" key:

1. SIGMA clears out the accumulator. (like pressing the [C/CE] key on a pocket calculator)
2. SIGMA assigns the value of "initial" (1) to counter
3. SIGMA checks to see if the value of "counter" is less than or equal to the value of "final." If it is, SIGMA performs the following calculation loop:
 - a) compute "counter^2" (i.e. square the present value of "counter")
 - b) add this result to the hidden accumulator
 - c) add the value of "step" to "counter"
 - d) Go back to step 3 above

When step 3 above determines that the value of "counter" exceeds the value of "final," SIGMA ceases to perform the loop calculation, copies the value from the hidden accumulator to the "answer =" line, and quits.

Some Features of SIGMA

SIGMA is very much like BASIC's "FOR..NEXT,STEP" loop in that it

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ABOUT THE AUTHOR

[Ed Keefe is an author, programmer, computer science instructor, and long-time contributor to support publications for HP computers. He is the president of the FastAid Company, 314 S.W. Logan, Ankeny, IA 50021. Ed's Compu-Serve ID# is [75300,3667].]

uses four arguments: 1) a counter, 2) an initial value, 3) a final value, and 4) a step value.

However, unlike the "FOR..NEXT" loop, SIGMA takes a fifth argument; a function or expression that is evaluated and added to a built-in, hidden accumulator.

The HP 95LX User's Guide (page 29-22) doesn't mention this, but the values for "initial, final, and step" can be any numbers. The numbers can be positive or negative, whole or fractional. For example, in the above SIGMA function example, change the value of step to 2 and press **F2** to find "answer = 10." SIGMA summed up $1^2 + 3^2$ ($1 + 9$) and then quit. The next run through the loop would have made the value of counter exceed the value of final (3), so SIGMA quit before doing that.

To see the effect of using a negative, fractional value for step, try this: Set initial = 3; final = 1; and step = -0.5. Press **F2** (answer) to see that the answer = 22.5. (In this case, SIGMA accumulated $3^2 + 2.5^2 + 2^2 + 1.5^2 + 1^2$ and then quit.)

Note that the value of the first argument (counter) never shows up in the Solve Calc menu.

A Neat Trick

Create a loop with a built in pause. Return to the Solve Editor screen and modify the equation like this.

```
answer =
  SIGMA(
  {
  counter,
  initial,
  initial,
  1 !dummy step!,
  initial^2+0*L(initial:initial+10)
  }
```

Press **ESC** **F6** (YES to save changes) and **F9** (Calc) to display the Solve Calc screen. Set initial = 0 and press **F2** (answer) to see "answer = 0." Now press **F2** again to see that the answer = 100. Press **F2** again and the answer = 400. Each time you press **F2**, a new answer is calculated.

Here, we've forced SIGMA to perform a single pass through the loop by setting the second and third

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arguments to the same value. The fourth argument (step) is not needed, but it must be given some value. One works as well as any number.

We expanded the fifth argument by adding a Let() function. The expression "0*L(initial:initial+10)" adds nothing to the value of "initial^2" because it is multiplied by zero. However, it does increase the value of initial by 10 each time you solve for "answer."

Let's make a slight modification to the program so that the value that is being squared is displayed in the Solve Calc screen.

Press **ESC** **F2** (Edit) and add a couple more lines to the equation file.

```
answer = 0*CurrentVal =
  SIGMA(counter,
  initial,
  initial,
  1 !dummy step!,
  initial^2+
  ! Let "CurrentVal" be
  the same as "initial" !
  0*L(CurrentVal:initial)+
```

```
! Then add 10 to initial !
0*L(initial:initial+10))
```

The two additions, "+0*CurrentVal" and "0*L(CurrentVal:initial)" put the value of "initial" in "CurrentVal" and display it on the Solve Calc screen. Neither expression will affect the operation of the program since they're both multiplied by zero.

The phrases in between the exclamation points are comments. They don't hurt the equation, and can be helpful when you're trying to make sense of the equation later on.

The "factorial" of any number "N" is the product of the whole numbers from 1 to N. So, for example, the factorial of 5 is $1*2*3*4*5 = 120$. To get Solver to calculate the factorial of N, just change the fifth argument (initial^2+) to **FACT(initial)+** and change "0*L(initial:initial+10)" to **0*L(initial:initial+1)**. After you've made the changes, press **ESC** Yes **F9** to return to the Solve Calc screen.

There, set initial = 0, and press [F2] (answer) repeatedly. The number you are taking the factorial of is displayed on the "CurrentVal" line.

Numerical Integration Using SIGMA()

One of the classic problems in calculus is finding the area under a curve. The procedure for doing this is called definite integration and is represented by the following symbol:

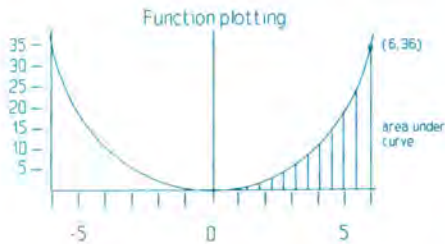
$$\int_a^b f(x) dx$$

("f(x)" is some function and "a" and "b" are lower and upper bounds of "x")

To see how SIGMA can approximate definite integration, let's use a simple function, "f(x) = x²." Press [ESC] a couple of times to get back to your Solve Catalog. Go to a blank line at the bottom of the catalog, press [F2] (Edit) and enter the equation, y=x². Press [F10] (Graph) to get a graphical idea of what the function looks like. Press [MENU] Erase Data and then press [F3] (AUTO). You should see a parabola that stretches from x = -5.00 to x = 4.94. It touches down on the x axis at x=0 and y=0.

Next, we'll compute the area under this curve and above the x axis, from the point where the curve touches the x axis (x = 0, y = 0) to the point where x = 6.00 and y = 36.00.

We begin by dividing the area under the curve into a set of thin rectangles of uniform width. (We'll use "dx" to represent the width of the thin rectangles.)



Area under the curve

The problem becomes one of summing up the areas of all the thin rectangles. But instead of multiplying the height of each rectangle by the width (dx) and then adding up the areas, we'll find the height of each

rectangle, add all the heights, and then multiply that number by the width to get the area.

This will give us a close approximation to the total area. It's an approximation because the rectangles overflow the area under the curve. There are extra small triangular areas on the top of each rectangle, above the curve. However, if we make the width of the rectangles very, very thin, the triangular areas won't matter that much.



Area under curve approximated by thin rectangles of uniform width.

Here's a SOLVE equation that will compute the area under the parabola. (Again, the words between the exclamation marks are comments, and not needed for the function to work.)

```
Area=SIGMA(x,
  a,      !start!
  b,      !end!
  dx,     !width!
  x^2     !height!
)*
dx       !width!
```

The SIGMA() part of this equation finds the sum of the heights, from point a, to point b, along the x axis. The value of x is incremented by dx until point b is reached. At each point, the height is computed from the formula "height=x²." Finally, the sum is multiplied by the width, dx, to give the Area.

To see what kind of result you get, key the above formula into SOLVE's editor and press CALC [F9]. Set a = 0, b = 6, and dx= 0.5. Press [F2] and you should find that Area = 81.25. (If you set dx = 0.05 and solve for Area - Area = 72.90. This is closer

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to the exact value of 72.00. You'll also find that the calculation takes a little longer.)

Refine the solution: Press **[ESC]** **[F2]** and modify the formula to read:

```
Area=SIGMA(x,
  a+dx/2,
  b,
  dx,
  x^2
) * dx
```

Adding "dx/2" to the value of "a" has the effect of using the average height of the rectangle.

Press **[F9]**, set dx = 0.05, leave a = 0 and b = 6, and press **[F2]** to find that Area = 71.9988. Adding "dx/2" makes the answer more accurate.

Finally, make the solution more general, and force SOLVE to compute the width for us. Press **[ESC]** **[F2]** and modify the formula like this.

```
Area = 0*L(dx : -(a-b)/res)+
SIGMA(
  x,
  a+G(dx)/2,
  b,
  G(dx),
  x^2
) * G(dx)
```

The expression "0*L(dx,-(a-b)/res)+" forces SOLVE to compute the width (dx) of the rectangles, provided we tell it how many rectangles we want. ("res" abbreviates "resolution.")

Using "dx" as the first argument in L() and using it only inside G() everywhere else, hides "dx" so it won't appear in the menu. (See page 27 of the May/June HP Palmtop Paper for more on the L() and G() functions.)

When you're ready, press **[F9]** (Calc), set a = 0, b = 6, res = 100, and press **[F2]** to find Area = 71.9982.

This particular method of numerical integration is the simplest, but its accuracy is limited. Note that the final algorithm will let you find the numeric integral of any continuous function. Just substitute your function for "x^2" in the above equation.

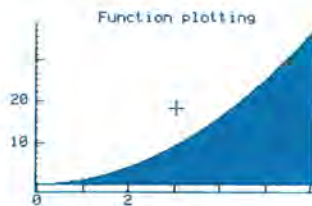
For a different algorithm that does the same thing, but more precisely, see page 36 of the booklet, *Technical Applications: HP-27S, HP-19B*, Hewlett-Packard # 00027-90044. The booklet is available from EduCalc.

Viewing the Area Under a Curve

To see the area under the curve $Y = X^2$, start the SOLVE Editor and enter the following equation ("!" then "!" and "!" else "!" are comments).

```
AreaGr=IF(L(Z:-Z+1)>0,
  ! then ! X^2,
  ! else ! 0
)
```

Press **[F10]** (Graph) and set XMIN = 0, XMAX = 6.1 and RES = 360. Press **[F3]** (AUTO) and watch the area between the curve and X-AXIS get shaded in.



Function plotting: Area Under Curve

How does this work?

The answer is that Graph has its own built-in loop mechanism which feeds increasing values of x into the equation. Each time a new value is fed into the equation, the L(Z:-Z) argument is evaluated. This causes L() to flip-flop between positive and negative values. If the value is positive, then X^2 is plotted, otherwise the line $y=0$ is plotted. As Solve plots the graph and X increases, each point connects to the next point. Since Y alternates between X^2 and 0 as X increases, the area between $Y=X^2$ and $Y=0$ gets filled.

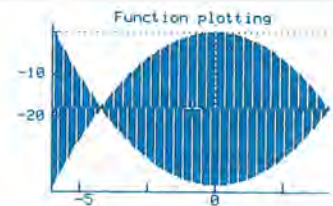
Z is just a variable that can be toggled from positive to negative numbers. Z's initial value will be whatever is in memory when the plotting starts. We don't care what the value is, just so it's not zero. To cover this rare case, we use "+1" to insure that Z never starts with 0.

Something Fishy

This technique can be used to plot the area between two curves as well. Enter the following equation in the SOLVE Editor.

```
FISH=IF(L(Z,-Z+1)>0,
  -X^2,
  X^2-36
)
```

Press GRAPH and set XMIN = -6, XMAX = 4.3 and RES = 300. Press **[F3]** (AUTO) and watch a silhouette of a fish appear on the screen.

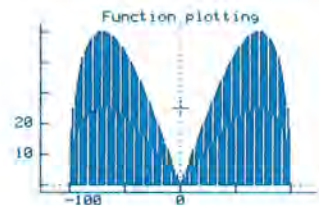


Fish Graph

Here's another plot from Jeff Mattox, the author of the HP 95LX add-in program 95Buddy. Key in the following equation in the Solve Editor.

```
IF(
  L(z,-z+1)>0,
  1,
  -1
) * SQRT(x^2 - (x/10)^4)
```

Press **[F10]** (Graph), set XMIN = -125, XMAX = 125 and RES = 300. Then press **[F3]** (AUTO) and, with a little patience, Jeff claims that you can see a "butterfly." (I see a bow-tie.)



Butterfly or Bow-tie?

For more of this stuff, I refer you to a Rorschach ink-blot test.

Until next time, Happy Programming!



Shareware/Freeware
Mentioned in This Article
On the HP Palmtop Paper ON DISK
KEEFE.EQN on Jan/Feb 93

Quick Review of the Basics

Files, bytes, RAM disk, System RAM, and directories: Understand these concepts and you'll get more out of your 95LX!

By Hal Goldstein

Last year this column discussed files, directories, bytes, RAM disk, System RAM, and other "behind the scenes" concepts. Users need to understand these concepts to get the most out of their HP 95LX. Hours of confusion and frustration can be avoided if the beginning user understands the fundamentals necessary to perform any activity on the 95LX.

Because these concepts are so important, we will take another brief look at them and bring our new subscribers up to date. This time, rather than giving a long abstract explanation, I'll cover the applied value of each concept briefly. For a more in-depth treatment of each, look at past Getting Started columns, consult the *HP 95LX User's Guide*, or pick up an introductory book on personal computing.

Files

This is the single most important concept you should understand. Your PHONE book, MEMO notes, APPT book, 1-2-3 spreadsheets, and HP CALC equations are all stored in separate files. When you save a file in any of these applications, the information contained in the file is accessible upon demand. In addition, you can transfer such files to other computers.

CAUTION: Remember that when you add something to any of these files (i.e., a new address to your Phone Book), the addition does not become a permanent part of the file

until you save the file. (In MEMO, PHONE, and APPT you save a file by pressing **[MENU]** File Save **[ENTER]** Yes.)

When you save a file for the first time, you are asked to give it a "filename" between one and eight characters long (filenames may not include blank spaces). Examples of some legal file names include BUDGET, YEAR_END, and SAM-MEMO. The

95LX automatically "completes" the name by adding a three character "extension" to the filename. MEMO adds .TXT, PHONE adds .PBK, 1-2-3 adds .WK1, APPT adds .ABK, and HP CALC adds .EQN. When you go into FILER and look at file names, you can easily identify the application the file was created by from its three character extension.

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PC Magazine,
April 28, 1992

"IntelliLink removes the user from the complexities of accurately translating data between file formats."

The HP Palmtop Paper,
March/April 1992

"IntelliLink is the most important ingredient in combining PC personal information products & hand-held electronic datebooks."

Andrew Seybold, Industry Expert,
Outlook on Professional Computing,
February, 1992

Bytes

The number of bytes in a file is a measure of the size of the file. Each byte contains approximately one character (i.e. a letter, number, punctuation mark, etc.) worth of information. One kilobyte refers to 1024 bytes (and is abbreviated by the letter K). So a 12K file has roughly 12,000 characters worth of information.

RAM Disk

The HP 95LX comes with a built-in RAM Disk (designated as the C drive). When you save a file, by default you save it to the C drive — onto the built-in RAM Disk. The double-A batteries (and if they fail, the backup battery) provide the energy needed to maintain your files in RAM. If all batteries go dead, you lose the files on your RAM drive. On a 512K 95LX you start with 254K of RAM disk. On 1MB unit you start with 398K of RAM disk. The size of the RAM disk can be increased or decreased as described in the next section.

System RAM

When you run an application such as PHONE, a copy of your phone book file is stored in temporary System RAM. When you add a new phone number, the temporary copy of the file is updated. Saving the phone book file by pressing **[MENU]** File Save **[ENTER]** Yes makes the updated temporary PHONE file the permanent file.

On a 512K unit there is a total of 512K of RAM that gets divided between System RAM and RAM Disk. If the RAM disk has 254K then System RAM contains 258K. Similarly, a 1 Meg unit contains 1024K bytes of RAM. Initially that gets divided, 398 RAM Disk, 626 System RAM.

You can change the System RAM / RAM Disk ratio by closing all applications and pressing **[<Shift>]**-**[FILER]** System Memory. Then use the left or right arrows to adjust the ratio and press **[ENTER]** **[ENTER]** to set the change.

The greater the size of the RAM Disk, the more space you have to permanently store files. The greater

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the System RAM, the more applications (PHONE, MEMO, etc.) you can run at the same time. A larger System RAM also means that you can open bigger files (i.e. larger 1-2-3 worksheets). Therefore, if you want to switch back and forth between large PHONE, APPT, 1-2-3, and MEMO files, you might need to increase the size of the System RAM.

Directories

When you save a file, you save it into a directory. The HP 95LX comes with the C directory built in. In addition, there are two subdirectories built into the C directory: **_DAT** and **_SYS**. If you open up FILER you'll see **_DAT**, but not **_SYS**. That's because **_SYS** is a "hidden" subdirectory (more on this below).

PHONE, COMM, APPT, and HP CALC files are automatically saved to the C:_DAT directory. 1-2-3 files are saved into the C:\ directory. The simplest way to get a practical under-

standing of this is to go into FILER. If the top line says C:\ you can press **[<DownArrow>]** to see the names of all the files in C:\. To move to C:_DAT directory, put the black cursor line on **_DAT** and press **[ENTER]**. To go back to C:\, put the cursor on the line that says **.. View Up** and press **[ENTER]**.

Remember the hidden **_SYS** directory. It doesn't display in FILER as a subdirectory of C:\, but it's still there and you can go to it and view its contents. With the cursor in the C:\ directory press **[F5]** (Goto), type in **_SYS** and press **[ENTER]**. You should get a listing of the files in the **_SYS** directory. These files are in permanent ROM. They can be copied elsewhere, but cannot be erased or modified and resaved to the **_SYS** subdirectory.

Spending the time needed to understand these concepts will make your HP 95LX computing simpler and more effective.

(Continued from page 4.)

and card or two. According to HP's catalog blurb, its convenient to carry on your belt, and has plenty of room to stow accessories. Its made of gray, tear-resistant nylon with a strong, commercial grade zipper. It has a water-resistant polyurethane coating, and closed foam padding protects the contents from damage. Order the Handheld Multi-meter Case (HP # E2304A) from HP Direct, (800-452-4844) for \$19.

Stephen Thomas
CompuServe ID: [70222,37]

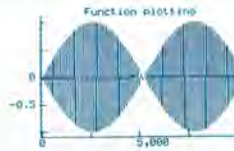
Create HP CALC Graphics

The 95LX offers you an easy and inexpensive way to create your own graphics from within HP CALC by using simple mathematical formulas.

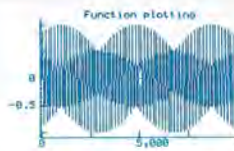
For example, consider the well known formula $y = \sin(x)$ and start Function Plotting (press **F10** (Graph)), set the RAD option (press **MENU** Options Radians), set XMIN=0, XMAX= 10,100, YMIN=-1.2, YMAX= 1.2 and XVAR=X. Now your parameter to play with is the Resolution **F10**, the number of points to be calculated for a curve.

As you vary **F10** from 179 to 195 or over, as I did,

you can watch how dramatically curves will change their character. You will receive the most beautiful patterns worth studying in a time of leisure and relaxation. In case your boss wanders by: It's all mathematics!



Y=sin(x) Res=189



Y=Sin(x) Res=193

How do you like that N=189 or 193? Try to plot $y = \sqrt{x} \sin(x)$ and see what happens when you change XMAX (F6) and/or F10. Find your own formulas.

For those of you interested in theory of mathematics: Because of the wide range of the x-axis values for the y-axis are calculated not from one and only 'hill-and-valley' as usual but are collected 'jumpwise' from 'hills-and-valleys' set

widely apart but still following strict mathematical rules and thus not allowing for a smooth connection of all points.

Hermann Schmitt
Winnweiler, GERMANY

Linear Programming

In "Through the Looking Glass" (pages 33-35 Sep/Oct 92) Ed Keefe wrote about linear programming (not to be confused with computer programming). He mentioned the no-longer-available Eureka program in this regard.

I've found a better solution for Linear Programming problems. It's currently available, easy to use, handles up to 50 constraints and 25 variables. And, best of all, it's free.

The number-crunching program is called LINSOLVE. It's written by Timo Salmi, who has placed it in the public domain. The version to look for is number 2.8 or later. I found my copy of LINSOLVE on disk #1536 from the PC-SIG Library.

Although LINSOLVE is not designed for the HP 95LX, it works well on the Palmtop PC. I use MEMO to create input files and examine output files. Most of the results appear in the first 40 columns

of the screen.

LinSolve takes up 103K bytes of disk space and can be run from FILER (close down other applications, highlight and press **F4** (Run)). The program prompts for the names of the input and output files. It asks you if you want to maximize or minimize and then crunches away.

LinSolve makes Linear Programming a delight rather than a headache. It may not satisfy everyone's need, but it has handled all the problems I've thrown at it while working on my MBA.

Tom Tache
Norfolk, VA, USA

Don't Have to Exit FILER to Save Batteries on Newer 95LXs

Congratulations on the Nov/Dec 92 issue! An answer to a frequently asked question (page 62 of the Nov/Dec 92 issue) advises exiting FILER when not in use because of battery drain. I think that advice is obsolete and applies only to the old (pre-March '92) 512KB models.

Ted Dickens
(HP Forums Sysop)
CompuServe ID: [76701,272]

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Way to get Worksheet Macros to Work on French 95LX?

1. My French language 1MB 95LX is equipped with an opposed to a QWERTY layout) and works in either French or English. However, the built-in Lotus worksheets _CFLOW and _STAT work in English only because the macros in them have not been translated into French. Is there a way I can get these macros working in French?

Pierre Arnoldi

Lausanne, SWITZERLAND

[The _CFLOW and _STAT are in the built-in ROM so there is no way to change them to French or anything else. However, if you copy them to another file name, you will be able to edit anything in the spreadsheet including the MACROS - Bob.]

Text-Based Adventure Games for the 95LX

I recently discovered 20-30 text-based interactive adventure games that will work on the 95LX. There are two volumes: "The Lost Treasures of Infocomm" (retail: \$69) and "Additional Lost Treasures of Infocomm" (\$49.95). A setup utility lets you set screen size for the 95LX. You have to run WINSI.SYS (and ANSI.SYS emulator) on the 95LX before running the games. The game programs are text based and DIET down 80% to save space. The packages are distributed by Activision, 11440 San Vicente, Los Angeles, CA 90049 USA; Phone: 310-207-4500; Fax: 310-820-6131.

Eric Thorson

Menlo Park, CA, USA

GWBasic Works on the 95LX

I have installed Microsoft GWBasic on my HP 95LX, and it works! I use some calculation programs, asking input from the screen and replying to the screen. This works fine. However, I noticed that the following

GWBasic statements don't work correctly:

- All graphical functions, (CIRCLE, LINE,..) return an "Illegal function call" message
- BEEP behavior is very strange. The first time it is called, the beep will sound for 8 sec approximately. The second time, it will beep forever!
- The system will hang (and need to be rebooted) on any attempt to use the serial port. (OPEN "COM1:"). HP support in France say this is a known problem, but they do not have a fix for it. But it is possible to print screen output by re-directing the Basic interpreter output : GWBASIC > PRN: under DOS.

Olivier Sokal

France

More on GWBasic

I have found that GWBasic is a very good alternative for BASIC programming on the

95LX. It only uses 80K of disk space, and you can DIET it to 62K.

You can also benefit from GWBasic's abbreviated typing and press [ALT] and a letter to obtain a whole word (i.e. [ALT]-P = Print, [ALT]-I = Input). This feature is much easier to use if you have the STICK.COM utility.

I expanded the size of my blinking cursor by typing LOCATE ,,0 in GWBasic direct mode. You can also include this command in your programs. I also found that GWBasic's sound command works differently on the 95LX. For example, if you type SOUND 200,2 in direct mode you cause a tone to

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sound that continues until you type in SOUND 200,0. If you enter any other SOUND command before SOUND 200,0, you'll lock up the 95LX.

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Making the 95LX Work Faster with Drive95

You mentioned on page 13 of the Sep/Oct 92 issue that the 95LX seems to work slowly when Drive95 from Sparcom is connected. I have also noticed this phenomena, and discovered the following solution.

Before leaving either DOS or FILER, make sure that drive G does not remain the current DOS drive! Reset the current drive to C before exiting DOS or FILER. Under DOS, type C: at the DOS prompt. In FILER, press **F5** (Goto) and switch back to drive C.

When you reset the current drive to C, DOS will not try to go to drive G all the time, which causes the delay.

Oliver Sokal

CompuServe ID: [100013,1142]



Shareware/Freeware Mentioned in This Article

On the HP Palmtop Paper ON DISK

*CIS**SHR MUS95.ZIP - N/D 92

*CIS**SHR LINSOLVE - J/F 93

On the 1992 Subscribers Disk

*CIS WINSI.SYS

*CIS DIET.EXE

*CIS STICK.COM

*CIS - Also available in the HP Handhelds forum of CompuServe.

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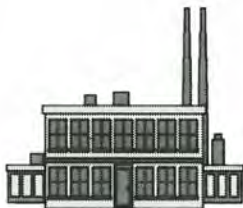


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••• BASIC TIPS •••

This section focuses on the 95LX's built-in applications, giving tips of a more basic level. We are interested in your feedback on this section. Is it differentiated enough from Quick Tips? Do you have any tips? Please write: *The Editor, The HP Palmtop Paper, Thaddeus Computing, 57 E. Broadway, Fairfield, IA 52556.*

Appt

THE 95LX IS A TWO TIMER

The "Local City" feature in APPT can be quite useful when traveling (press **APPT** **F9** (Watch) World City). As you move across time zones, you can let your home base time serve as an always-accessible time anchor. You can continually update the current time as you change time zones.

Keeping the two times up-to-date is simple. The World City represents your home base. When traveling, the Local City is where you currently are. The Local City's time is normally the current time that shows up in your applications.

Setting the time is simple. Set up the Local City first. Move the cursor to Local City: and press **F2** (City). Type the first letters of your local city and the cursor will jump there. If your city doesn't appear, either use a nearby city with the same time zone, or better, press **F8** (Insert) and type in your city's information. Enter the World City in the same way. Both entries should be the same at home.

When you travel, change the Local City. When you change the time zone of the Local City, the HP 95LX asks you whether to change the system date and time for all applications to the new Local City time. Normally you will answer yes. Then, for example, the time that shows up, on the top line of the MEMO screen will reflect the new local time.

HP Calc

CUTTING AND PASTING NUMBERS INTO HP CALC

You can use the 95LX's CUT and PASTE features to bring numbers into, and copy them from, HP CALC. Let's say you have a MEMO note that refers to a \$23.50 cash withdrawal you made from one of those automatic teller machines (ATM). Copy this to an HP CALC LIST using the following steps.

First, with the MEMO note open, move the cursor to the beginning of the number, press **F9** (Mark), move the cursor to the end of the number and press **F2** (Copy). Next, press **HP CALC** **MENU** List. Move the cursor to the location in the list that you want to insert the number. Press and hold down **CTRL** to expose the COPY and PASTE keys, and press **F4** (PASTE). The copied number appears at the bottom of the screen. Press **ENTER** and the pasted number placed on the list. The new sum appears at the bottom of the screen. Last, press **ENTER** to Add, or **F10** (LIST-) to

subtract the number from your running total.

You cannot copy individual items from LIST to another function. If you press **CTRL** **F2** (COPY) when you are in LIST, the 95LX copies what ever total is in the Calc line at the bottom of the screen (below the horizontal line and above the menu).

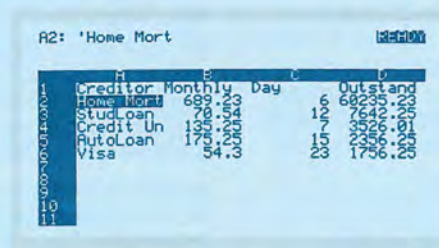
(For more on LIST, see page 23-7 of the *HP 95LX User's Guide* or Basic Tips, page 49 of the Sep/Oct issue of *The HP Palmtop Paper*.)

Lotus

SORTING A LOTUS LIST DATABASE

Lotus 1-2-3 is ideal for making simple list-type databases, where you might want to look at the list from different perspectives. As an example, let's create a list of your debts, including the creditor, amount of monthly payment, day of the month payment is due, and outstanding balance. Open LOTUS to a blank spreadsheet. In cell A1 put the label, **Creditor**. In B1 put **Monthly**. In C1 put **Day**. In D1 put **Outstand**. In cell A2 enter the first creditor, **Citibank**. In cell B2 put the monthly payment, say **54.30**. In cell C2 put day of month it's due, say **23** (23rd of each month). In cell D2 put the outstanding balance, say **1756.25**. In each of the subsequent rows follow the same pattern. Enter about five examples.

Let's sort the list of creditors from greatest outstanding balance to least outstanding balance. Press **MENU** Data Sort Data-Range **ENTER**. Move the cursor to cell **A2** and press the period key (.). Then move the cursor down to cell **D6** and press **ENTER**. This selects the range **A2...D6** for the Data-Range, and brings you back to the screen that says "Sort Settings." Now select the field you want to sort by. Press Primary-Key, move the cursor to **D1** and press **ENTER**. Press D for descending, **ENTER** Go. The 95LX screen will look something like this:



Creditor	Monthly	Day	Outstand
Home Mort	689.23	16	68235.23
StudLoan	70.543	12	7642.25
Credit Un	135.250	12	3526.01
AutoLoan	175.250	15	2326.25
Visa	54.3	23	1756.25

Worksheet sorted by outstanding balance (column D), descending order

We could look at the same data sorted alphabetically by creditor name, monthly payment, or day of the month due. To sort by a different column, select a different cell after you press Primary-Key (i.e. A1, B1, or C1). (Caution: Make sure you set the Data-Range for all columns. If you set it to one column (i.e. D1..D6) only that column will be sorted, destroying your database. In the example above, the outstanding balances would be associated with the wrong creditors. Use 1-2-3 and the sort feature to keep track of your music collection, recipes, stamp collection, or any other list that you might want to sort and view from different perspectives. (For more on LOTUS sort, see page 5-29 to 5-34 of the *HP 95LX User's Guide*.)

Phone

FIND THAT NAME QUICKLY

You can really put your electronic HP 95LX phone book to work if you enter information with a little forethought. Planning ahead will mean that you will be able to find names — even those whom you forgot — easily.

First off, most people find it better to enter last name first in the PHONE Name field. Even if you enter first name first, be sure to do so consistently.

To find a name, just type the first one or two letters. For example, if you have entered last name first and want to find Sam Jones, just type J and you will whisked away to the J's in your phone book. If you are inconsistent and have Jim Smith listed with Sam Jones, it will be more cumbersome finding the name you want.


The second important trick is to enter key words, especially when you are entering a new acquaintance whose name could be easily forgotten. For example, suppose you just made a new business contact with a gentleman that trades in coins, and who has a beard. On the last line of the address field you could type the words: "coin beard bus". "Coin" and "beard" are words to remind you of the individual; "bus" is a word you use for all your business contacts.

Six months later, when you want to recall the gentleman's name, you might remember he had a beard or that he sold coins. You could press **F7** (find) and do a search on **coin** or **beard** to find him. Alternatively, you could press **F6** (only), type in **bus** and press **ENTER** to turn up all your business contacts and select him from there.

▲▲▲ QUICK TIPS ▲▲▲

123 Lotus

LOTUS PBK HELP FILE

There is a Lotus help file I have created that may be of use to the other users. The file, 123@FUNC.PBK , is used with PHONE. I can add working examples in it for future use. Many of the examples came from the book *123 Release 2.3, the Complete Reference* by Mary Campbell. I use this file rather than the built-in help in Lotus since there are real examples, better descriptions, and I can modify the file anytime.

Reeves Byrd
Gainesville, FL, USA

MACRO MANAGER ADD-IN WORKS ON THE 95LX


I have been using the Macro Manager add-in for about one year without any problems. Mark Horvatic (former HP sysop and former World of Lotus sysop) tested it on the 95LX and found that it caused bad system crashes. However, try as I might, I could not get Macro Manager to crash the 95LX.

I don't know if Macro Manager is available separately anywhere. I got it from a PC copy of Lotus 123, Ver. 2.2 that I had.

Ronald Vieceli
CompuServe ID: [73310,3663]

Batteries

BATTERY LIFE COMPARISONS

After months of experimentation (and thanks to 95BUDDY ) , I have a reasonable handle now on average battery life for different cell types. My results are as follows:

Primary cells:

Standard Alkaline — 16 hours
Eveready Lithium — 41 hours

Secondary (rechargeable) cells:

Radio Shack NiCd — 7 hours
Green Power NmH — 11 hours

Since the Eveready Lithium (a.k.a. LithEON) cells cost over 3 times as much as alkaline, it is clear that they are not as cost effective. (They are convenient, however, and they create 2.5 times less toxic waste.)

The Radio Shack NiCd (650 MaH) may not be the best NiCds; Millenium are rated at 800 MaH, for example, and would be closer to

the NmH. The NmH last about a week for me, so that's what I plan to use in the future.

Larry Finch
CompuServe ID: [73677,3414]

DOS

DISABLING CURSOR TRACKING

When DOS applications are running, the ALT-shifted cursor keys scroll the display in all four directions. You can thus bring any portion of the 80x25 logical display into view on the 40x16 physical display.

Normally, the 95LX automatically scrolls the display to keep the cursor visible. This feature is called "cursor tracking." For some programs, cursor tracking is great — for others it's lousy. (Many programs turn off the cursor and then move it to the bottom of the screen — that really looks odd when done on the 95LX; the screen keeps jumping to the bottom!) It's easy to disable cursor tracking so that the display only scrolls in response to the ALT-shifted cursor keys. Close all applications but FILER and press

[MENU] System to get to a DOS prompt. Then type **dispcctl -c** to disable cursor tracking. You can also include the command in a batch file to launch your DOS program, or put it in your AUTOEXEC.BAT file. (For more on DISPCCTL, see the *HP 95LX User's Guide*, page B-16).

Ted Dickens (HP Forums Sysop)
CompuServe ID: [76701,272]

HP Calc

USING HP CALC'S SOLVER

HP CALC is modeled after the HP19BII Calculator. A good resource/reference on using Solver is *An Easy Course in Using the HP-19BII* by Grapevine Press (800-338-4331 or 503-754-0583). It has too much on some topics, but it helped a bit with the solver.

Fred Kaufman
CompuServe ID: [72560,36]

Memo

EDIT TWO FILES AT ONCE

If you have the HP Dictionary card, this includes a new copy of MEMO which appears as a file in the A

drive. You can copy this into you C drive and assign it a new hot key such as ALT-MEMO in your APNAME.LST file. This procedure allows you to hot key back and forth between two copies of MEMO — that way two files can be edited at once.

Ian Powell

Misc.

PROTECTIVE PLUGS FOR AC AND SERIAL PORTS



It bothered me that HP didn't supply plugs to cover the AC and Serial ports, so one night I settled down with my 95LX, and a "Magic Rub" eraser (not crumbly like the others), an X-Acto knife and a pencil.

I rubbed the pencil around the outline of the AC jack, then pressed the white eraser against it, leaving the outline of the port opening on the eraser. I then set upon it with the knife, carving away until I had a nice plug with a rim around it. I repeated this process with the serial port, and colored the erasers with a black permanent marker.

These plugs keep dust and other contaminants from entering the 95LX through the two openings, and helps prevent the serial port pins from getting bent by pens and other tools of destruction.

Dave Goodman
CompuServe ID: [72330,130]

WEATHER MAPS ON THE HP 95LX

I've been viewing the CompuServe weather maps on my 95LX. You'll need two shareware programs, GIFPCX.ARC  Forum: GRAPH-SUP Lib: Format Conversion Library #: 4) and PCXVIEW  (available in HPHAND forum). GIFPCX is used to convert the downloaded map (in the *.GIF graphic format) into a .PCX file recognized by the 95LX. PCXVIEW is used to view the *.PCX files on the 95LX.

Download the maps you wish to view from GO MAPS (use option 4) into .GIF files (e.g., M1.GIF). Then create the following batch file:

```
echo off
for %%f in (*.gif) do gifpcx %%f
rem use gifpcx %%f /v if you want
reverse video
diet *.pcx
rem Skip the DIET step if you don't
```

run DIET as a TSR pcxview mapname1 mapname2 etc

This will convert all of the downloaded maps to .PCX, Diet the results, and display the map M1.PCX that you downloaded as M1.GIF.

Each map will take 3.5 to 5K in .GIF and 4 to 7K in .PCX. GIFPCX Diets to 20K and PCXVIEW to 5K. Conversion takes 30 sec. per map.

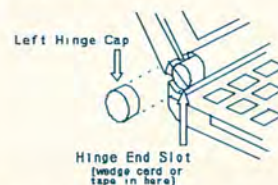
WARNING: Executing GIFPCX will interfere with 95Buddy (double click application keys will not work, etc). You will have to reboot after executing GIFPCX to restore 95-Buddy functions.

This procedure is a good one for all the pilots and others who would like to view weather maps and other .GIF files on their 95LX.

Richard T. Due
CompuServe ID: [70544,3665]

TIGHTEN LOOSE HINGE ON THE 95LX


As your 95LX gets older, you may find that the cylindrical hinge between the screen and the keyboard gets loose and wobbles a little. One way to tighten the hinge up is to take the left hinge cap off and wedge a small folded piece of your business card into the little slot now exposed on the end of the hinge (see graphic).



Some 95LX owners have wedged "Dymo" label tape and thin pieces of black plastic shim stock in the exposed slot. One owner removed the right hinge cover, stretched a rubber band over the opening and replaced the cover.

Jeff Zorn
CompuServe ID: [71165,1650]
David Rosenfeld
CompuServe ID: [70020,677]

HP 95LX BUGS

[Excerpted from the *95BUDDY*  manual.] Don't blame 95BUDDY for these 95LX bugs. The worst ones are listed first; I found them the hard way. This is very likely only a partial list. If you find more bugs, send them to me or *The HP Palm-top Paper*.

■ When you cold boot (press **CTRL**-**Shift**-**ON**), one of your RAM disk files may be corrupted even if you answer "no" to the disk format prompt. (You will get an I/O error when you try to read it.) This is bad, very bad. The problem can be corrected with a small TSR program called UNRESET, available from ACE Technologies for \$29. (This problem does not occur on 1MB units with a RAM disk size of 512K or less.)

■ MEMO will claim your disk is full (when it is not) and destroy your file if you use cut & paste on a large file (over 30K). If this happens to you, don't panic. Cut as big a chunk out of your file as MEMO will allow, then save what's left (it should work). Then press **MENU** File New **F4** (PASTE), and save that piece as a second file.

■ After deleting text in MEMO, you may see some little square symbols with holes in the middle appear in your text where some other characters used to be. Usually, they show up at the beginning of lines. This is not a major problem.

■ Mistakes in your APNAME.LST file can cause all sorts of weird behavior, such as beeping when you push a blue key, or very slow operations.

■ Lotus 1-2-3 reminds you to save your work if you quit without saving a modified file. However, if you call up another worksheet, Lotus will dump the one you are working on without saving it. Actually, this is not a bug; it's a Lotus-ism.

■ If you set the Appointment Book default leadtime to other than 5 minutes (press **MENU** Settings Leadtime) an alarm with a leadtime of exactly 5 minutes will not sound an alarm.

■ A particular use of the Appointment Book "Find" function can scramble the display of appointments. Specifically, if you have more than one appointment scheduled in a day, position the cursor at midnight or very close thereafter, and search for one of the appointments in that day using the "find" function, the appointments may get scrambled. Some appointments may disappear or be moved in from other days. This effect is temporary and will clear up if you go to another day and then come back.

■ If you set an appointment alarm mode to "enable" and later change

the setting back to "disable," the alarm will still go off as originally scheduled. Scheduling a later appointment will sometimes correct the problem, or you can reboot.

■ If you use the Appointment Book's Remove function to clear out old appointments (press **MENU** Remove), the 95LX does not "think" you have modified the file. This means that if you quit APPT (press **MENU** Quit, **MENU** q, **MENU** @, or **MassExit**), you will not be reminded to save your file, and thus, will not update your appointment file. When you do "MENU remove," change/insert an appointment to mark your file modified.

■ If you try to open a MEMO file that has no file extension, you get a file not found error. 95BUDDY fixes this problem.

■ Sometimes, after exiting from DOS, the Filer display will look like an elevator that got stuck between floors. The Filer data is in the correct place; it's the display window that's too low. Close the Filer and your display will correct itself.

■ The HP 95LX real-time clock is much more accurate than the System Manager clock. The clocks are controlled by different internal oscillators. The low-frequency oscillator (for the real-time clock) is more accurate. When the HP 95LX is left on, the System Manager clock drifts. The SysMgr clock is "reset" whenever power is cycled. Because the error is so large and consistent (1%), I wonder if the problem isn't really a software bug in the SysMgr clock logic. AnyBuddy want to disassemble the code?


■ When using the IBM Proprinter driver (specified by pressing **SetUp** Printer Config Name), sometimes a few characters are output at the beginning of printing, followed by normal printing for about half a page, and then the printing stops. The solution is to set both your printer and your 95LX over to **Epson emulation**. Check your printer manual to see how to configure the printer. Use the SET UP instructions above for the 95LX.

Jeffrey Mattox
CompuServe ID: [71044,2356]

HOW TO TAKE ADVANTAGE OF A SECOND HP 95LX?

1. With the Connectivity Pack, two serial cables, a gender bender and a null modem adapter you can

"add" the disk space on your 2nd unit to your primary unit. Cable your units together using the hardware described (or solder two serial cables together). Run DCS95 on your second unit and DC95 on your primary unit. Voila! I have two batch files for this: the first turns on the serial port, runs DC95 and adds the new drives to my search path (SET PATH=). The second file removes DC95 (DC95/U), turns off the serial port and restores my path.

2. Use COMMO , MostHost and a modem to turn your 2nd unit into a small (really small) BBS. Then you can call it to save and retrieve files and messages. COMMO and MostHost are shareware.

3. Use the 2nd unit to control your house using the serial port. Contact: Home Automation Labs in Atlanta, GA or Alpha Products for suggestions on this.

4. Add a fax/modem and printer to your 2nd unit and leave it at home as a small fax machine.

Dave Goodman
CompuServe ID: [[72330,130]]

RECOVERING FROM A TRASHED RAM DRIVE

The messages, "RAM disk corrupt" and "Data error..." indicate that your RAM drive has been trashed. This means that some files can no longer be read.

If you do not have a backup of your files, you should first try to transfer all files that are not corrupted to your desktop PC (using the HP connectivity pack or some other file transfer software).

Then do a hard reboot (press **CTRL**-**Shift**-**ON**) and answer **Yes** when asked if you want to initialize the RAM disk. This will reformat your disk, ERASING ALL DATA! The disk is no longer corrupted, but your files are gone.

You can then transfer your backed up files from the desktop PC to the HP. This should solve your problems with data errors.

Thomas Rundel
CompuServe ID: [100023,2477]

SYSTEM MANAGER

System Manager (SYSMGR) is the application program interface (API) used by the internal applications. It lets the 95LX do task-switching. SYSMGR applications make calls to the SYSMGR kernel, which in turn perform specific tasks on behalf of the application.

In the absence of a CONFIG-

.SYS and AUTOEXEC.BAT file, SYSMGR is launched automatically. If you create a CONFIG.SYS file, then you need to put the \$SYS-MGR command in AUTOEXEC.BAT to launch SYSMGR. Note that this is NOT an external command; it's an internal command on the 95LX.

SYSMGR.EXE, by Mark Scardina, is an alternate way of getting SYSMGR running from AUTOEXEC.BAT. Mark has just uploaded a new version of SYSMGR.ZIP , a System-Manager replacement he created. This program is for those who have problems keeping their hotkeys functioning. This new version eliminates the need to load an extra copy of COMMAND.COM, saving 1700 bytes of memory. It consumes zero memory once System Manager is launched, saving another 900 bytes. It also provides startup access to DOS, eliminating the need to put a PAUSE command in your AUTOEXEC.BAT file.

There's no trick to using CONFIG.SYS and AUTOEXEC.BAT.

Ted Dickens (HP Forums Sysop)
CompuServe ID: [76701,272]
Mark Scardina
CompuServe ID: [76711,732]

CONNECTING THE 95LX TO A MODEM OR ANOTHER PC

The 95LX by itself, is a DTE (Data Terminal Equipment). All DTE's are designed to connect to a modem (a DCE, or "Data Communication Equipment") without having to switch pin positions in the connection. The HP cable that everyone uses switches the TD/RD pins and lets the 95LX plug right into another DTE (your desktop PC). The adapter used to connect the serial cable to a modem cancels the TD/RD switch done by the HP cable.

Stanley Dobrowski
CompuServe ID: [71031,2162]



Shareware/Freeware Mentioned

On the HP Palmtop Paper ON DISK

123@FUNC.PBK - J/F 93

*CIS**SHR GIFFCX.ARC - J/F 93

*CIS**SHR PCVIEW - J/F 93

*CIS Free SYSMGR.ZIP - J/F 93

*CIS**SHR 95Buddy - N/D 92

Free COMMO - J/A 92

*CIS - Also available in the HP Handhelds forum of CompuServe.

**SHR - SHAREWARE is software distributed free of charge for evaluation purposes only.

HOW TO CONTACT US

There are a number of ways to get in touch with *The HP Palmtop Paper* staff. You can write; mail us a disk with your comments; send CompuServe mail; fax; or call. Our address is:

Thaddeus Computing, Inc.
The HP Palmtop Paper
PO Box 869 or 57 E. Broadway
Fairfield, IA 52556, U.S.A.

Fax #: 515-472-1879
Phone: 515-472-6330
or 800-373-6114

CompuServe ID:
Hal Goldstein, [75300,2443]

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To subscribe, change address, or clear up any problem with your subscription, contact our subscription department (Director Sharon Dilmore).

Technical Support

ASK THADDEUS, Thaddeus Computing, Inc. — Call (800-767-4795 or 515-472-7584) or fax (515-472-9595) the publishers of *The HP Palmtop Paper* your HP 95LX problem. Rates are \$2.00 per minute plus an additional charge for non-U.S. callbacks to cover the cost of international long distance rates.

HP Technical Support — HP offers these options:

- **90-DAYS FREE SUPPORT** — is offered to all 95LX users and is available by calling (503) 757-2004.
- **FREE AUTOMATED SUPPORT** — is offered 24 hours a day by calling (800) 443-1254.
- **6-MONTH SUPPORT CONTRACT** — for \$149 you get a toll-free number and 6 months of unlimited support. Call (800) 443-1254.
- **900-NUMBER SUPPORT** — available on a pay-as-you-go basis (first minute free, \$2.00 per minute thereafter). Call (900) 288-0025.
- **COMPUSERVE GO HPHAND FORUM** — Call 800-848-8199 or 614-457-0802. For membership state #231.

How to submit an article

The richness of *The HP Palmtop Paper* comes from the contributions of 95LX users. We and your fellow users welcome your submissions. (We do not offer payment for articles; your reward is knowing that you've helped others.)

If you have a good idea and want to "go for it," send it in via CompuServe EMail [75300,2443] or send disk or hard copy to Hal Goldstein or Rich Hall at the above address. Alternatively you can send an outline of your idea. We will try to guide you as to when and whether we would use the article and contact you if we need clarification or have any suggestions. We may want to use an article but for a variety of reasons you may not see it for many months. Please understand that we cannot promise to run any article.

If you can, especially if you write a Palmtop Profile, send us a black and white photo of yourself.

Products Advertised in *The HP Palmtop Paper*

Company	Product	Page number
4You Software	(Information Manager)	27
ACE	(DoubleCard RAM Memory Cards)	outside back
	(Switch)	inside front
	(BATTman Battery Monitoring Software)	4
	(myREMOTE)	5
	(Classic Lunar Lander)	33
	(fastLINE)	32
	(fastNOTES)	33
	(fastCOMM)	36
	(fastWRITE)	37
Adtron	(Memory Cards and Card Drives)	19
ASP	(Calendar Supplement)	25
BSE	(Serial/Parallel Connectivity Kit)	48
CM Software	(Pocket Sales Force; Pocket Field Force)	40
Computer Instructors	(95LX, Lotus, ACT! Training Classes)	14
Connection Point	(Leather Case)	45
CSS	(Environmental Case)	7
Databook	(Memory Card Drive)	30
DataViz	(MacLink Plus)	inside back
EZ Software	(EZ Arithmetic math tutorial)	32
EduCALC	(95LX Accessories Catalog)	20
Essex Marketing Services	(UTIL - Forth Programming)	16
FastAid	(Multi-Macro Manager)	21
Genus Software	(Mileage Log)	35
	(Amortization Software)	43
GlobalLink	(Language Translation Software)	1
Greenwich Instruments	(Serial-to-Parallel converter)	15
Imaging Supplies Express	(RAM Memory Cards)	15
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Software on The HP Palmtop Paper ON DISK (January/February 1993)

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ACCIS.ZIP	Application: Update of CompuServe access manager	Shareware	8
LINSOLV.ZIP	Application: Linear problem solver	Free	49
REMOTE.ZIP	Application: Turn 95LX into TV/VCR remote control	Shareware	7
ZIP.ZIP	Application: Update of file transfer program	Free	8
IS.BAT	Batch file to run IS.EXM (InfoSelect loader)	Free	36
IS.EXM	InfoSelect Loader	Free	37
DIALCODE.PBK	Built-in: U.S. area codes and country codes .PBK file	Free	25
FARM.ZIP	Built-in: Profile-related .PBK, .TXT, and .WK1 files	Free	22
KEEFE.EQN	Built-in: CALC .EQN file related to SIGMA function	Free	43
WORM.ZIP	Game	Shareware	8
GIFPCX.ARC	Utility: PCX utility	Shareware	54
PCXVIEW.ZIP	Utility: PCX viewing utility	Shareware	54
UNZIP.EXE	Utility: decompresses .ZIP files	Free	na
BUDDY.FAQ	Text: Frequent 95Buddy questions	Free	20
HPALL.ZIP	Text: Descriptions of files in all HP forums of CompuServe	na	na
ADVERT.ZIP	Text: in-depth descriptions, products advertised this issue	na	na
PTP7.ZIP	Text: The HP Palmtop Paper, Jan/Feb 1993	na	na
README.ZIP	Text: cover letter for HP Palmtop Paper ON DISK	na	na

Software mentioned and included in other issues of The HP Palmtop Paper On Disk or the 1992 Subscribers Disk.

95BUDDY.ZIP	(Nov/Dec 92) New version of a popular utility	Shareware	29
95IRP.ZIP	(Jan/Feb 92) IR port print screen utility	Free	39
95PX.EXE	(Jan/Feb 92) Print screen utility	Free	39
BATTCK.COM	(92 Subscribers Disk) Battery monitor utility	Free	11
CMCALC.EXM	(Nov/Dec 92) New version, Computer Math Calculator	Free	18
DIET.EXE	(92 Subscribers Disk) File compression utility	Free	35
GVCMOD.95	(Fall 91 ON DISK) Instructions for GVC modem	Free	18
INSURE.WK1	(Nov/Dec 92) Insurance worksheet	Free	34
LDRMKR.ZIP	(May/Jun 92) Utility to create loaders	Shareware	37
MULTIDAY.ZIP	(Nov/Dec 92) Weekly view of appointments	Shareware	24
FM2400.95	(Sep/Oct 92 ON DISK) Inst. for PPP Modem 2400	Free	18
STICK.COM	(1992 Subscribers Disk) Sticky key utility	Free	50
TIMEOUT.COM	(92 Subscribers Disk) Adjust auto timeout	Free	11
TINYMO.95	(Sep/Oct 92 ON DISK)	Free	18
VDE	(Fall 92 ON DISK) Word Processing program	Free	21
WINSI.ZIP	(1992 Subscribers Disk) Alternate ANSI.SYS file	Free	50

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