

THE HP Palmtop Paper



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Most Frequently Asked HP 95LX Questions to HP Technical Support

We thank the HP technical support staff for their considerable efforts in compiling for The HP Palmtop Paper readers these answers to the most often asked HP 95LX questions. In this first of a two-part series, HP's 900-number support staff answers queries concerning file transfer, programming, printing, phone directory conversion, internal RAM and RAM cards, AC adapter, batteries, and installing the HP 95LX Connectivity Pack.

*By the Hewlett-Packard
HP 95LX Support Staff*

Batteries

How can I make my batteries last longer?

First, use the AC adapter whenever possible. Applications which continuously update the screen (i.e. TigerFox), or use the serial port (i.e. FILER or COMM) use more power than programs which spend most of the time waiting for keystrokes. Use of the AC adapter is especially important with these high power usage programs.

Second, always close the FILER and COMM applications when they are not in use. These two applications turn on the power to the 95LX's serial port.

Third, when you are finished using the HP 95LX, turn it off. The power consumed in the five minute wait before the HP 95LX automatically turns off will add up.

Fourth, if you are running in DOS mode, the serial port is powered on. You can execute the SERCTL /O command in DOS to force the serial port off. See page B-17 in the HP 95LX User's Guide for details on this option. (The System Manager will turn

(Continued on page 13.)

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Publisher's Message

By Hal Goldstein



Hal Goldstein

You belong to the exclusive, distinguished, international circle of HP 95LX users.

You run companies, manage business finances, fly planes, manage others' time and activities, restore health, perform engineering feats, consult, sell professionally, study, research or argue court cases, and perform the whole spectrum of professional activities . . . and you use the HP 95LX.

You live throughout the U.S., Canada, and Europe, and reside in Mexico, Japan, India, Thailand, Australia, New Zealand, and in other Asian, African, and South American countries . . . and you take your HP Palmtop wherever you go.

You had the vision to comprehend the value of carrying a PC compatible computer in your pocket, and you blaze a trail for others. You are genuinely excited about this brilliantly engineered, compact Hewlett Packard creation, and want to know how to put it to full use.

Our mission at *The HP Palmtop Paper* is to share with you possibilities for using the HP 95LX — to provide you with new ways to profit from and enjoy your HP Palmtop. We do this by acting as the central hub where HP Palmtop users worldwide share knowledge and expertise. We organize that knowledge and disseminate it in the form of this newsletter and other related products and services.

We ask three things from you to help make this journal the highest success.

First, contribute. Send us your tips, articles, opinions, discussions of HP 95LX-related products, your software and Lotus templates. Send us whatever you think the majority (or at least a significant portion) of fellow HP 95LX users would find of practical value. We'll organize and share the best of this material with all of you.

Second, take the time to look at the information presented by our advertisers. You will likely benefit from the work performed by these companies, and from all those who create HP 95LX-related products.

Third, if you have not done so already, subscribe now. Have your colleagues and friends subscribe. There is so much useful information in *The HP Palmtop Paper* that most HP 95LX users will want to read and reread each issue and then save each issue for reference.

This first issue provides the foundation of HP 95LX knowledge that will be expanded upon in future issues. It will be rewarding to see what ideas fill these pages in the coming years. We look forward to your input and feedback.

Most importantly we look forward to providing you with the valuable information that will enhance and enrich your everyday use of the HP 95LX Palmtop.

In this issue you will see references to both "Personalized Software" and "Thaddeus Computing, Inc." In the future we will publish *The HP Palmtop Paper* under our corporate name, Thaddeus Computing, Inc.

The HP Palmtop Paper Volume one / Number zero Fall 1991

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POSTMASTER: Please send any address changes to Thaddeus Computing, Inc, Attn: *The HP Palmtop Paper*, P.O. Box 869, Fairfield, IA 52556.

Inexpensive Modem for the HP 95LX

A couple of months ago, when I was visiting my local CompuAdd store, I saw the GVC Mini Modem on the display shelf. It was a small, portable, battery-powered 2400 baud modem, with a \$69 price tag. My hand began to move involuntarily toward my wallet.

The modem didn't work with the 95LX right out of the box, but after experiments and a small amount of solder, I was happily racking up heavy connect charges on CompuServe.

Since that time, many HP 95LX owners have purchased this unit. Some units work right out of the box, requiring only a simple software command. Others require a slightly modified connector. Fortunately GVC seems to be a very responsive company; they have exchanged units for those who were unsuccessful with their initial purchase.

As you can tell, some experimentation is required. That is because identical looking GVC modems may contain different chip sets. Some chip sets don't work well with 95LX, because they require signals that the 95LX does not provide. Other chip sets seem to work fine with the 95LX.

Fortunately there seems to be some fairly simple cures for those with problems. The communal wisdom of several successful GVC modem users lies in GVCMOD.95*, a file residing on CompuServe's HPSYS forum, library 14. It contains tips on getting the modem to work with the 95LX.

Here is my solution:

1. Plug the cable that came with the Connectivity Pak into the 95LX.
2. Attach to the cable a 25-pin male-to-male gender changer, a 25-pin female-to-male null modem, and, finally the GVC modem.
3. Modify modem side of the gender changer. I connected pins 6 and 20 using a small wire and solder. One CompuServe message said to connect pins 4 and 20 instead.

Some people have had success without any modification. They have just sent the modem the following command;

AT&D0&W&W1

The moral is this; if you have \$69, and don't mind getting involved, you may end up with an excellent, low cost communications solution for the 95LX. I found the GVC Mini Modem at a CompuAdd Catalog Store. You can call them directly at 800-627-1967 to place an order. Ask for the GVC Mini Modem Catalog # 49581.

READING COMPUSERVE MESSAGES WITH LOTUS

Now that I had the modem working with the 95LX, I wanted to use my new setup to read messages from the CompuServe forums. Because there was no convenient way to do this, I developed some software that would permit me to download, read, and reply to messages from CompuServe.

It took a while to write, but, now that the software is working pretty well, I have another problem - dealing with my wife's reaction to the sound of 95LX keys crunching one inch from her ear, at 3 am, while I busily send messages all over creation.

Those with a similar desire to alienate their spouse might try software called MESSAG.EXE*, and is available in library 14 of the CompuServe HPSYS forum. It is built around a Lotus 1-2-3 spreadsheet that processes messages from the CompuServe forum.

By the way, if you have not written a program using the Lotus 1-2-3 macro language for a while, or have never tried, you will probably be surprised at just how powerful it is. The macro language in 1-2-3 Version 2.2 (the version included with the 95LX) is vastly improved over earlier versions. It can be used to develop almost any small application.

I used Lotus macros to process, read and reply to

HOW TO CONTACT US

There are a number of ways to get in touch with The 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 Palmtop Paper
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Fairfield, IA 52556
U.S.A.

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Phone: 515-472-6330
or 800-373-6114

CompuServe ID:
Hal Goldstein, [75300,2443]

(To send material to our street address, substitute "57 E. Broadway" for "PO Box 869".)

To contribute to The Palmtop Paper, contact Publisher / Executive Editor, Hal Goldstein or Managing Editor, Richard Hall.

To advertise in The Palmtop Paper, contact advertising sales director, Brian Teitzman.

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

For support: We are not staffed to answer your HP 95LX questions by phone. If you send us a letter describing your problem we may publish and respond to it. For faster response we suggest you:

1. Call HP at 800-443-1254 for pre-sales information, dealer locations, and answers to common questions.
2. Call HP for technical support at 900-288-0025 from 8am-3pm Pacific time. For non-U.S. customers, look in your User's Guide or call your local HP sales office.
3. Join the HP 95LX section of the CompuServe HPSYS Forum (call 800-848-8990 or 614-457-8650).

the downloaded CompuServe message, and also to create the message reply upload script.

If you are thinking of moving Basic onto the 95LX for programming, give the Lotus macro language a try. Because Lotus resides in ROM, it saves valuable RAM for other things. The Lotus spreadsheet metaphor, menuing capability, and database functions make many programming tasks easier than in Basic. As an added bonus (for me), whatever developed can be shared with other 95LX owners.

For those looking to get started using the Lotus macro language, a book such as

QUE corporations 1-2-3 Macro Library can be an excellent start. The information in the 95LX manual is good, but more a command reference than tutorial.

Well, Hal, I think this newsletter is a fine idea, and will open up new vistas for many 95LX users. Let me break a bottle of champagne on the side of *The HP Palmtop Paper*, and may the sailing be smooth.

Larry Lefkowitz
Small Systems Software
CompuServe ID [76137,155]

* Available on HP Palmtop Paper on Disk - Fall 91. See page 35-36 for more information.



ATTENTION INTERNATIONAL USERS



Please tell us how we can best serve you in these pages. This newsletter is intended for all HP 95LX users wherever you reside on this planet. Send us your tips, your suggestions, any feedback that will enable *The Palmtop Paper* to better assist international users.

We will be using the international ICON appearing on the top of this box to flag information that particularly applies to users outside the U.S.

1-2-3 Bug, Block Cursor

I discovered a serious bug in the HP 95LX version of 1-2-3 along with several work-arounds. The 1-2-3 Print-to-a-File does not work properly on the HP Palmtop!

Bring up a Lotus file and try the following command: MENU print file temp1 RETURN range a1..c10. Press FILER and then look up TEMP1.PRN. You will find the file listed, but with 0 bytes!

The reason why you may not have noticed this is that upon exiting Lotus (MENU quit yes), the proper data does get sent to the TEMP1.PRN file. However, one of the nice things about the HP 95LX is the ability to go from one application to another without exiting. Many users will want to work on the PRN file in MEMO without exiting.

I discovered a solution: print to another file. For example, perform a similar operation, but this time, print to TEMP2. A check to FILER reveals that TEMP1.PRN is now as it should be and TEMP2.PRN has 0 bytes. (When you exit Lotus, you will probably want to delete TEMP2.PRN. You should not delete it until you exit Lotus, or you will be in danger of seriously corrupting your RAM disk). I've also discovered that the HP 95LX doesn't always go into sleep mode after five minutes. I don't know why, but I suspect it has something to do with having TigerFox loaded or too many applications running at once. The way to reactivate power save seems to be, close all applications and reboot (CTRL-ALT-DEL).

There is also a neat set

of utilities available from *EduCalc* (800-677-7011) by Richard E. Harvey for \$27.95. I especially like WINK.SYS, a utility that changes the 95LX cursor from a line to a box for only 512 bytes of memory.

**Gerald Fuller
Pleasanton, TX**

The HP 95LX and the MAC

I have had my HP 95LX for a month, and it is indeed an

incredible computer. I also have a MAC and would love to be able to connect the HP 95LX to my MAC.

In this regard, the only reason I did not initially subscribe to your publication is that it seemed a bit "guruish" to me - if it is mostly IBM and DOS-related material, then it is too guruish. I wasn't even sure what disk size I should select for the Subscribers Disk - or more importantly would it be of any use to me with my MAC.

I do believe the MAC community will be a sizeable user of the HP 95LX, and hopefully you and other 95LX vendors will realize this.

Thanks for bearing with me. Any help you can be to a diehard MAC user will be greatly appreciated. Best of luck with your new publication.

**Bob Fischer
Westlake Village, CA**

[There indeed are many MAC HP 95LX users, and we hope to serve them with this newsletter. For HP 95LX-to-MAC solutions see "Most Frequently Asked Questions" article, page 15, and the Nuvotech advertisement on page 32.

The free Subscribers Disk will contain software useable on the HP 95LX independent of whether the owner has a MAC, an IBM compatible, another computer, or no computer. We are open to providing the Subscribers Disk on any format. Many of the newer MACs read IBM 3 1/2 inch disks. However, upon request we can supply the Subscribers Disk (and other materials) on disks with other formats, or if there is a demand, on a RAM or ROM card near cost. Subscribers should tell us of your requests.

Finally, I would be open to having "MAC Connection" articles or a regular column similar to the DOS Connection column in this issue. Please contact me, if any reader wishes to contribute or be in charge of it. - Hal]

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The HP 95LX and the Motorola NewsStream Receiver

Attach this small wireless receiver to your HP 95LX and have mail, appointments, and Lotus spreadsheet updates sent to you wherever you are.



HP 95LX and Motorola NewsStream Receiver in Cradle

By Hal Goldstein

Soon, an HP 95LX Palmtop user – automatically, instantaneously, and wirelessly – will be able to receive mail, have appointment and phone books updated, and receive updates to Lotus sales, portfolio or other custom spreadsheets almost anywhere. This miracle of modern technology will be accomplished by use of the wireless Motorola NewsStream Receiver (formally named "DataStream"), the Hewlett Packard

Mobile Data Link software and cradle, and a pager service.

The Hardware: The NewsStream Receiver and Cradle

The Motorola NewsStream receiver is a stand-alone unit. When connected to the HP 95LX through an HP custom-designed cradle, the NewsStream offers wireless one-way communications to the HP 95LX Palmtop.

The NewsStream receiver (a one-way radio frequency modem)

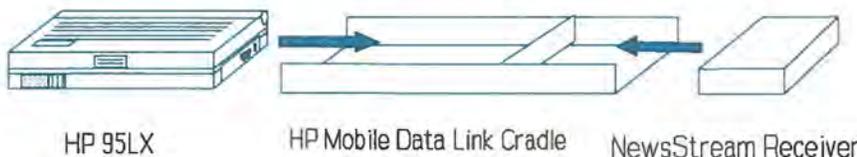
connects to a computer via the RS232 serial port. The unit measures 5.1 cubic inches and weighs 3.5 ounces. The integrated HP 95LX palmtop computer and NewsStream package can be carried in a Day-timer-type notebook, a briefcase or purse. The NewsStream receiver can be connected to the computer or detached and carried in the user's pocket for notification of inbound messages.

The NewsStream can inform the user that a message has been received by several means. The NewsStream can announce a receipt of a message through the sense of sight (a flashing green light), or sound (volume controlled beep). If the NewsStream and the HP Palmtop are connected and the Mobile Data Link software is installed and active, messages are transferred to the HP 95LX automatically.

The NewsStream receiver attaches to the right end of the HP 95LX with the HP Mobile Data Link cradle. The cradle has a U-shaped channel, into which the 95LX slides from one end, and the receiver slides into from the other end. Between the 95LX and the receiver is a "bulkhead."

This bulkhead has a plug on both sides – one plugs into the 95LX serial port, the other plugs into the receiver's serial port, thus connecting the receiver to the serial port of the 95LX. To allow use of the 95LX's serial port when the receiver is connected, there is a serial port connector on the back of the cradle, which electrically disconnects the receiver when you plug anything into it. There is also an AC adapter plug on the back of the cradle, allowing the 95LX to be powered by the AC adapter while in the cradle.

Finally, there is an IR (infrared) transparent deck that fills the cavity under the NewsStream that allows IR communications to still work even in the cradle and even with the NewsStream in place. No functionality is lost when the HP



cradle is added to the HP 95LX.

Connecting the receiver to the HP 95LX in this fashion creates a solid 1-piece unit that is 2.7 inches longer than the basic 95LX.

This cradle is general purpose mating hardware which lets you attach other devices to your HP 95LX, in addition to the receiver. It will be interesting to see what third-party products get developed for the cradle. A modem or an additional RAM card drive would seem like excellent candidates.

The Software:

Mobile Data Link Software

The software comes on a 128K ROM card. It can also be run from the built-in RAM disk on the C drive, from a RAM card, or directly from the ROM card. Messages flow from the receiver to the HP 95LX whenever the Mobile Data Link software is active. If the 95LX is off, it automatically turns on to receive the message, then turns off again.

The NewsStream receiver functions independently of the HP 95LX. It holds up to 32K of data and up to 56 messages. A message is a file containing optional initial characters that get decoded by Mobile Data Link Software. When the receiver is connected, these messages flow into the 95LX.

Mobile Data Link software was specifically designed for the HP 95LX. It knows about the 95LX built-in appointment book, phone book, and Lotus 1-2-3. When the message enters the HP 95LX, it is stored as a temporary file. The first few characters of the message are compared against a list of user-specified message tags kept in a configuration file. If there is no match, the message is placed in an incoming message file so that the user can read it and manually handle it (it's treated just like regular E-mail).

On the other hand if there is a matching message tag, the various processing options may treat the message as an appointment or to-do list entry, a phonebook entry, or a spreadsheet update. Other options are available and others may be added in the future.

Mobile Data Link software is System-Manager compliant: that is, it runs in conjunction with other built-in software such as MEMO or HP CALC. The main Index screen looks something like the PHONE main screen, with one line given for each received message. The first column contains an asterisk if it has not been read. The next column displays the date and time the message was received. The remainder of the line shows as much of the message as is possible. The highlighted entry may be viewed in its entirety by pressing ENTER.

The software looks much like the other built-in HP 95LX software: function key labels occupy the bottom two lines and pressing MENU brings up menu options across the top of the screen. Function keys let you Delete, Copy, Tag, and Undelete entire messages. The MENU command brings up File, Print, Append, Config, and Quit options that operate similarly to other 95LX software counterparts.

Without going into much detail, here are three examples of messages you might receive:

PHBK, "Personalized Software" "515-472-6330" "PO Box 869, Fairfield, IA 52556, Fax: 515-472-1879"

APPT 91/12/3 9AM-10AM "Board Meeting" "Note: Don't forget to bring your seminar notes."

PARTLST, A4..B5 "Blue Widgets" 57.50 "Red Widgets" 39.50

The "PHBK" in the first message cues the Mobile Data Link software to add an entry to the phone book. This message contains the name, number, and address fields required by the built-in PHONE application.

The "APPT" message sets up an appointment for you with the first quoted string being the title. The second string is the attached note.

Finally, in the third message, "PARTLST" is that name of the parts list the 1-2-3 WK1 file set up previously in the configuration file.

The 1-2-3 data is entered in row order and will be entered as follows:

	A	B
4	Blue Widgets	57.50
5	Red Widgets	39.50

What Happens

There are a number of ways to download messages into a NewsStream receiver. With a modem and either a PC or 95LX someone can send messages to a paging service phone number. The service sends the message via radio wave to your receiver. Once the receiver is connected to the 95LX and the software installed, the message is processed inside the 95LX.

You may also use a touch tone phone to dial the service and enter additional digits. Those digits get sent to the 95LX and, based on a decode file previously set up in the 95LX, result in a message to you.

For example, a common approach is to use seven digit phone numbers as the message code. So, for example, 234-5678 might be the code meaning "call the office," as well as the actual office phone number. Similarly, 789-0123, your home phone, would tell you to phone home.

Suppose your secretary and your spouse both dialed the service and then entered the 7 character codes. When you checked your main message file, you would see two new entries:

- * 2/14/92 11:42 A 234-5678 OFFICE
- * 2/14/92 1:37 P 789-0123 HOME

Who Will Use It

The NewsStream Advanced Information Receiver creates the opportunity for a variety of new services. Users could receive important radio mail while away from the office on their HP 95LX and NewsStream receiver. The NewsStream allows for wireless update of electronic spreadsheets or the updating of calendars as late-breaking information is received in the office and transmitted to executives on the move. A broad range of information services could be delivered to the NewsStream receiver, including company news (i.e., sales, pricing, shipment statistics, etc.), business news (the economy, stock market, etc.), world news, or news that is useful in one's life (weather, traffic, sports, etc.).

Motorola believes a variety of users will gravitate to this important new technology. Traveling business executives, who rely on electronic mail or develop their view of the world from spreadsheet models, will be early users of NewsStream Advanced Information Receivers. Real estate agents away from the office need the latest listing updates or interest rate quotes. Contractors juggling multiple subcontractors, costs and job sites will seek out this wireless technology.

Investors keeping an eye on the ever-changing economy need the latest information. Sales representatives will be able to match the critical needs of their customers with the ever-changing schedules of their companies. As computer hardware from other manufacturers becomes available, the Motorola NewsStream receiver is equipped to work with them as well as the HP Palmtop. Further, as unique software applications develop from third-party providers, even more classes of users will emerge.

Radio Common Carriers (paging service providers) can provide city, regional, and national radio coverage. International coverage will evolve in coming years. A system could even cover users within a single building, shopping mall or business complex. Thus, coverage could be tailored to the onsite, local, regional, national and international needs of the portable computing public.

The Future

Motorola and Hewlett-Packard are working with a number of third-party developers to produce applications for the HP 95LX and NewsStream. Expect to see some wondrous, imaginative, yet useful products chronicled in these pages in the coming years.

Ordering Information

The NewsStream receiver and the Mobile Data Link software is scheduled for release in December, 1991.

The Mobile Data Link, part HP F1006A, retails for \$119.95. It includes the cradle and the software to connect the HP 95LX with the NewsStream receiver.

We understand that the NewsStream receiver from Motorola will retail for \$299.00. To locate the NewsStream distributor nearest you, or for pre-sale questions, call EMBARC or SkyTel at the number listed below.

Important: Each NewsStream is built to receive a fixed frequency, so choose your paging service provider prior to purchasing NewsStream.

The system requires a paging service (approximately \$20 - \$80 per month). Actual prices may vary based on carrier chosen, types of information received, and usage.

EMBARC (800-362-2724) and SkyTel (800-456-3333) are national carriers. EMBARC, a service of Motorola's Paging Division, will allow users to send messages

through a 1200 bps RF signal in 70 metropolitan areas nationwide. (EMBARC begins operation in December 1991 and will expand into Canada and other U.S. markets in 1992.)

SkyTel currently provides service in over 200 US markets and allows users to send messages through a 1200 bps RF signal.

For local service check check your Yellow Pages under "Paging Services" and ask them if they service Motorola products. Other local and regional services for Motorola's NewsStream receiver will be available in early 1992.

International paging services for NewsStream's European users will probably not be ready until sometime in 1992. For further information, contact: *Motorola GmbH, International Paging Products Division, Hagenauerstrasse 53a, 6200 Wiesbaden-Biebrich, Germany; (+49) 611-3611555.*



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ASK ABOUT FDP'S ILLUSTRATION SYSTEM & DATABASE LINK

AU-10-0991

Dictionary/Thesaurus ROM Card for the HP 95LX

More than just a spelling checker, this ROM card works in stand alone mode or with the built-in Memo Editor to check spelling, look up definitions, and find synonyms.



By Richard Hall

This nifty little ROM memory card turns your HP 95LX into a portable dictionary and thesaurus with over 116,000 words from the *American Heritage Electronic Dictionary* and 500,000 synonyms from the *Houghton Mifflin Electronic Thesaurus*.

To show you the features of the ROM card, we'll take you through the Dictionary/Thesaurus menu options.

Installation

Installation of the Dictionary/Thesaurus is simple. Insert the ROM card into the HP 95LX card slot and press **[ALT]-[MEMO]**. Because Dictionary/Thesaurus is a "System-Manager-compliant" application, it may be accessed when in any of the built-in 95LX applications by pressing **[ALT]-[MEMO]**.

Stand-Alone Operation

When you enter Dictionary/Thesaurus, you'll see the following screen.

Enter a word:

```

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All Rights Reserved.
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Electronic Thesaurus © 1987
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U.S. Pat. No. 4,724,523
  
```

Help Wild Dict Thes Wild
Spell Anagram

In this screen you are then prompted: "Enter a word:".

After doing so, select one of the seven function key commands listed on the bottom of the screen. They are as follows:

Help (F1)

Accesses a simple Help Screen.

Wild (F6)

Is a wildcard function that lets you search for words for which you have a partial spelling. When entering a word to search for, you must use one of the wildcard characters * or ? to perform a wildcard search.

For example, enter **yar*** and press **[F4]** to search for all words of any length beginning with "yar." Enter **yar??** and press **[F4]** to search for all five-letter words beginning with "yar." When the search is completed you are presented with a list of words. You can use the arrow keys to move the highlight bar through the list. Press **Accept (F3)** and the word you have highlighted will replace the word you have entered below the "Enter a word:" prompt. You can then use any of the Dictionary/Thesaurus commands on the newly selected word.

The Wild function only lists words, it doesn't give definitions or list synonyms.

Spell (F5)

Checks the spelling of the word entered and lists alternatives if the

word is not spelled correctly. Press **Accept (F3)** to replace the entered word with the word you have highlighted in the alternative spellings word list. You can then use any of commands on the newly selected word.

Dict (F6)

Checks dictionary for entered word, and lists hyphenation breaks, part of speech, primary and alternate definitions, and related words (adverbs, nouns, etc.). If you looked up "power" you would see the following:

```

Dictionary entry for:
power
-----
power
noun
1. The ability or capacity to act or
perform effectively.
2. A specific capacity, faculty, or
aptitude: had the power of
concentration.
verb: pow-er-ed, pow-er-ing, pow-ers
To supply with power, especially
mechanical power.
--pow-er-ful -- adjective
Help Print
  
```

The Down Arrow in the upper right of the screen indicates that there is more information on the word than can fit on the screen. Press **[V]** to scroll down to that information or press **[A]** to scroll back up.

Anagram (F7)

Lists any words that can be formed by rearranging the entered letters. For example, if you enter the letters "artp" and press **[F7]** you get back a list with the words "part," "rapt," and "trap" in it. Press **Accept (F3)** to replace the entered word with the word you have highlighted in the anagram word list.

Of course, we would never suggest using the Anagram feature to cheat at Scrabble!

Thes (F8)

Lists a definition of the word entered and a list of words having a similar meaning as the entered word. Press **[R]** or **[L]** to move the highlight bar to the synonym of your choice and press **Accept (F3)** to replace the entered word. You can then use any of the Dictionary/Thesaurus commands on the newly selected word.

For example, if you entered

"power" and pressed **(F8)** you would see the following:

```
Thesaurus entry for: Definitions: 4
power
1. (N) Effective means of influencing,
compelling, or punishing.
force weight muscle
```

```
Help Accept Print
```

In the upper right of the screen you see "Definitions: 4" below which is a Down Arrow key. This indicates that that "power" has four definitions. If you want to look at the synonyms for the other meanings, press **(V)** or **(A)**.

Quit (F10)

Exits the Dictionary/Thesaurus.

Each of the above functions except Help and Quit have a Print **(F9)** function for sending the output to a printer through the 95LX serial port.



HP Dictionary/Thesaurus Card

Using Dictionary/Thesaurus within MEMO

Insert the Dictionary/Thesaurus Card first and then call up MEMO and you'll see some changes in the

function key menu at the bottom of the screen. Specifically, four function keys have been added to the MENU:

SpDoc (F3)

This performs a spell check of the document from the current position of the cursor. Press **(^)-F3** to check the entire document regardless of where the cursor is.

When SpDoc comes across a word that is not in the dictionary, you get the following prompt: "Not in dictionary, enter correct word:". You can either press **(F4)** to accept the word anyway, enter the correct word, or press **(F5)** to get spelling alternatives for the word. From **(F5)** use the arrow keys to go to the desired alternative and press **(F4)** to replace the word in question.

Spell (F5)

The same as the Spell function in stand-alone operation. Spell checks the spelling of the word the cursor is on. If the cursor is on an empty space, Spell checks the first word prior to the cursor. Spell gives you a list of replacement words to select from.

Dict (F6), Thes (F8)

The same as the Dict and Thes functions in stand-alone operation.

Pressing **(^)** with Spell **(F5)**, Dict **(F6)** or Thes **(F8)** lets you use these functions as in the stand-alone option (i.e. you are prompted to enter a word for these functions).

The Dictionary/Thesaurus card only works with the MEMO Editor, or as a stand-alone option. However, you can spell check documents from other programs. Save your files in ASCII (text) format and read them into the MEMO editor. For example, 1-2-3 users can print a worksheet to a file by pressing **(MENU) print file**, and then read the file into the Memo editor to find spelling errors.

Playing Hangman

Hangman is word game that provides the most severe penalty possi-

ble for not guessing the secret word in time. To access this System-Manager-compliant game from within any other built-in application, press **(CTRL)-MEMO**. You see the following screen:



Hangman Screen

The dashes at the top of the screen indicate the number of letters in the secret word. Guess a letter by pressing the corresponding key. If you are correct, all occurrences of the letter will be indicated at the top of the screen. If you are wrong, the little man takes a step up the gallows, towards his fate.

For a new game, press **Game (F9)**. To silence the sometimes annoying beeping, press **Quiet (F5)**. Press **Quit (F10)** to exit the game.

Overall Impressions and Recommendations

This is a very functional and relatively inexpensive dictionary/thesaurus that provides a reference that is complete, and easy to learn and use. It slips in and out of the 95LX in a jiffy, and other than finding the start-up command **(ALT)-MEMO** you hardly need to use the documentation. If you use, or need to use a dictionary and thesaurus when away from your desk, and you don't want to carry around a book, this is the obvious choice.

Availability 12/91
 Medium Memory Card
 Runs under System Manager Yes
 Pricing \$149.95
 Company: Hewlett-Packard. Available through dealers carrying HP 95LX products.

Products from Hewlett-Packard for the HP 95LX

HP supplies a number of products that enhance the useability of the HP 95LX.

By Richard Hall

All products listed below are available through dealers who sell the HP 95LX. For additional HP 95LX see products from third-party vendors beginning on page 37.

Mobile Data Link

This cradle and software is used to connect the HP 95LX to the Motorola NewsStream receiver. See article beginning on page 4.

Availability 12/91
Product No. HP F1006A
Medium ROM Card
Runs under System Manager Yes
Pricing \$119.95

Connectivity Pack

Transfer files between your HP 95LX and IBM-compatible PC. The pack includes software, serial interface cable, and a 9- or 25-pin cable adapter to make a connection to your PC. See lead article, "Most Frequently Asked Questions" (Connectivity, page 14) for more.

Availability NOW

Product No. HP F1001A
Medium floppy disk
Runs under System Manager NA
Pricing \$99.95

RAM Cards

These plug-in cards act as electronic RAM disks for file storage. Use them like floppy disks. When unplugged, a card saves your information using power from its own long-lasting CR2025 battery. Designed for the HP 95LX to keep power consumption at a minimum.

Availability NOW
Medium RAM Card
Pricing
128K (HP F1002A) \$199.95
512K (HP F1003A) \$399.95

Dictionary/Thesaurus card

HP offers a Dictionary/Thesaurus ROM card for the 95LX. For a preview of the Dictionary/Thesaurus card see page 7, this issue.

Availability 12/91
Medium ROM Card
Product No. HP F10005
Runs under System Manager Yes
Pricing \$149.95

Serial Interface Cable

Connect the HP 95LX to a serial device such as a printer or modem or other PC. Comes with a 4.9 ft. cable with a 9-pin female serial connector. Same cable that comes with the Connectivity Pack above. Requires adapter kit, HP 82224A or equivalent to connect with modem or printer.

Availability NOW
Product No. HP 82222A
Pricing \$35.00

AC Adapter

This 110 V, 50-60 Hz adapter is recommended for those using the 95LX for frequent datacomm activity. Helps conserve battery life.

Availability NOW
Product No. HP 822241A
Pricing \$15.00

Serial Cable Adapter Kit

Adapt the HP 82222A serial interface cable. This kit includes a printer adapter and a modem adapter. Each adapter has a 9-pin male connector and a 25-pin male connector.

Availability NOW
Product No. 82224A
Pricing \$15.00

HP 95LX SUPPORT

HP 95LX Information and Support

[Editor's Note: Where can you turn to get your HP 95LX questions answered and learn more about HP 95LX capabilities? The Palmtop Paper is one such source. We'll look at several other excellent resources for HP 95LX support in this section of The Palmtop Paper.

First we'll learn about the CompuServe Information Service. The CompuServe HP Systems Forum contains an extraordinarily active and informative HP 95LX message section with a library full with HP 95LX-related files. Ted Dickens, the HP Forums "System Operator" (e.g. head "honcho") authors the following article

about the HP 95LX support offered on CompuServe. (I am a "regular" on the forum: that means you can tell me directly - publicly or privately - what you like and don't like about this newsletter.)

There is also HP 95LX support information on other electronic services such as PRODIGY. We welcome reader input on PRODIGY and other systems that actively support the HP 95LX user.

The second part of this article on HP 95LX support describes services offered by Hewlett Packard to 95LX users.

The Hewlett Packard HP 95LX

technical support staff provided the remainder of this article. The article consists of the answers to the most frequently asked questions fielded by the HP technical support personnel. We appreciate the efforts of T.H. and his colleagues who spent many evenings and weekend days preparing this article for The Palmtop Paper readers.

Next issue we will publish part II of frequently asked technical support questions. We will also continue our discussion about HP 95LX CompuServe support services. In addition, in upcoming issues we will examine books, magazines, and other learning materials that should increase your effectiveness using the HP 95LX. - Hal]

The CompuServe HP 95LX Forum

The HPSYS CompuServe Forum provides HP 95LX users with a wealth of support and up-to-date product information.

By Ted Dickens,
HP Forum Sysop
CompuServe # [76701,272]

Introduction by Hal Goldstein
CompuServe # [75300,2443]

Introduction

Those of us who use computers (and now the HP Palmtop) in our daily activity are pioneers of sorts. We have all suffered trying to make some piece of software or hardware conform to our will. Our reward has been a new set of tools that make our every day activities more effective and powerful. The investment of time in learning computer technology has given us a significant competitive advantage over those who are not computer literate.

I feel the same can be said about electronic networks such as CompuServe. If you are willing to tolerate the expense and the initial bit of frustration in learning a new tool, you will be rewarded in many ways.

Participation in CompuServe forums means access to a whole new world of useful knowledge. It provides an opportunity to "meet" people in all walks of life with whom you would never come in contact. Furthermore, CompuServe is great fun.

In particular the HP 95LX Palmtop section of the HPSYSTEMS forum is, perhaps, the best source available for quick responses to your HP 95LX questions. HP Forum SYSOP (system operator) Ted Dickens writes in the article that follows: "Post your HP 95LX question, and the next time you log on, you'll probably find at least one response, no matter how arcane the question." Hundreds of HP 95LX users fre-

quent the HP 95LX message area and contribute interesting insights, tidbits, firmly held opinions, and in-depth technical discoveries. If you feel shy at first or are pressed for time, just eavesdrop and "download" (copy to your computer) those messages and files of interest to you. However, don't be shy too long. The fun of CompuServe is participating and sharing information and ideas.

Expect a reasonable learning curve and to make a few mistakes "online" – no one minds much – we've all been there. The HP Forum SYSOP – the individual who is in charge of the forum – Ted Dickens, is excellent. He'll help you with any initial problems using the forum. Also, he is an extraordinarily knowledgeable and active 95LX user with lots of answers to your 95LX questions. In addition, from time-to-time you'll find some of the engineers who designed the HP 95LX on the forum and willing to answer some of your questions.

The HP Palmtop Paper and CompuServe compliment each other nicely in how they support HP 95LX users. One of the fundamental sets of opposites in nature is continuum vs. discrete; dynamic vs. stable; fluid vs. solid. CompuServe is more fluid and dynamic while *The HP Palmtop Paper* is more stable and solid. On CompuServe pose a 95LX problem and watch the thread of discussion and different angles in finding solutions. When the dust settles or to see a crystallized solution to a common problem look to *The HP Palmtop Paper*. I highly recommend both.

Talk to me on CompuServe – my ID is [75300,2443]. I am interested in your feedback about *The HP Palmtop Paper* and other HP 95LX-related issues. See you there!

Getting Started: Why the HP Forum?

The HP Forums on CompuServe have two goals – to allow users to talk to each other and to augment HP's support mechanisms.

In other words, it's a user's group. Only there are no meetings to attend and all communication is done electronically. Each of the more than 10,000 HP forum members gets to tailor this user's group to his or her individual needs.

The forum is a great place to get questions answered, keep up with the latest information from HP and other vendors, get software updates, and tap into the wealth of public domain and shareware software for your HP product. (The HP 95LX palmtop is just one of many HP products covered in the HP Forums.) And unlike HP's support channels, the HP Forums are open 24 hours a day, seven days a week.

If you have used an electronic bulletin board system (BBS), most of the forum concepts will be familiar. Each forum has three main areas:

- Message boards, where you can read and write messages;
- Libraries, where you can find files and download them to your system;
- Conference rooms, where you can "meet" on-line with other users and talk interactively.

Message Boards

Instead of one big message board, each forum is divided into sections; each section is devoted to a single topic. The sidebar lists all of the sections for each of the HP Forums. Of particular interest to *HP Palmtop Paper* readers: The HP 95LX section of the HP Systems forum.

If you have a question about your HP 95LX, post it in the 95LX section. The next time you log on, you'll probably find at least one response. No matter how arcane the question, it seems that someone always knows the answer off the top of their head – or knows where to find it.

The other way to benefit is to simply read the messages posted by others. It is a great way to learn about the HP 95LX. Because not only do you get answers to your questions – you'll get answers to

questions that hadn't yet occurred to you. That's particularly valuable when it helps you avoid making a mistake. We learn from our mistakes; the HP forums can help you learn from the mistakes of others!

One of the things that sets a CompuServe forum message section apart from a typical BBS is that forum messages are "threaded." When you ask a question and I send a reply, my reply is automatically linked to your question. Reply to my reply and the "thread" gets longer. If several people reply to your message, all of those replies (and replies to those replies) are added to the thread. Not only does this make it simple to read all of the related messages in the proper order, it is easy to pick out and read only the threads that look interesting. I'll talk more about this in a future issue of *The Palmtop Paper*.

Libraries

Each section has a corresponding library where you can find application notes, product announcements, software upgrades, answers to frequently asked questions, public domain and shareware utilities, captured "threads" on interesting topics, and more. All told, there is about 1.5 MB worth of information in the HP 95LX section.

Each file is accompanied by a one line title, a paragraph or two of description, and a list of key words to help you decide which files are of interest to you.

The files for the 95LX include several on-line conferences with the HP lab engineers, a description of the 95LX hardware, an updated list of available software packages, several games, and a group of interesting graphic images that can be used as "top card" opening screen displays. For example, the files MACDT.PCX and WINDOW.PCX will make your 95LX opening screen look like a MAC or Windows screen. Programmers can find documentation and utilities for writing system manager-compliant applications.

Conference Rooms

Electronic conferences offer you a

chance to "talk" to special guests. Folks from the HP lab, support, and marketing groups have been guests. So have the leaders from PCMCIA — the group responsible for the RAM card standard used in the 95LX.

Future conferences will cover specific facets of the 95LX (like power management) and there may be an ongoing series of conferences on software design for the 95LX.

What Is CompuServe?

The CompuServe Information Service (CIS) is a public-access computer system that provides information services. The breadth of information available from CIS is staggering. There are 1400 different information services. No matter what your personal or professional interests may be -- there is something on CIS that you will find valuable.

In a future article, I'll try to put all the information services into perspective. For now, I'll focus on the personal computer items. CIS forums cover the full range of hardware, software, and even "paperware" (magazines). Besides the forums for HP, you'll find forums for IBM, Apple, Microsoft, Lotus, Borland, Novell, and more. In the HP Systems Forum you'll find coverage for the 95LX Palmtop. In the *Palmtops* forum, you'll also find Casio, Sharp, Poqet, Traveling Software... All told, there are more than 200 computer companies active on CompuServe.

Accessing the HP Systems Forum

If you already have a CompuServe account, you can access the HP Systems Forum by typing GO HPSYS. If you don't have a CompuServe account, you can obtain a free Introductory Membership. Call 800-848-8199, ask for representative #231.

 **International** users can call the non-800 number in the U.S. (614-457-0802) or one of the numbers listed below. The Introductory Membership comes with a manual, instructions for getting signed on, and \$15 of free connect time.

THE PRACTICE FORUM: Learning on CompuServe's Nickel

Make your introductory membership credit last even longer by using the GO PRACTICE command to get into the Practice Forum. Not only will you find a "Sysops" (knowledgeable person in charge of the forum) who specialize in helping new users, you find lots of files of tips and tricks — and it's all free to any user. While you are in the Practice Forum, CompuServe suspends the normal connect charges. So you can learn to read and write messages, upload and download files all without paying for it.



(Overseas users, beware. Network charges are not suspended. In much of North America and some international sites, network charges are only 30 cents/hour. But for other places, the network charges can be significant.)

Section names

HP Systems Forum	HP Peripherals Forum
1 General	1 General
2 DOS related	2 Mass Storage
3 Vectra	3 PCL Utilities
4 HP150/ Touchscreen	4 LaserJet
5 HP110/Portable+	5 DeskJet
6 Analytical	6 PaintJet
7 Networking	7 ScanJet & FAX
10 NewWave	8 FAX products
11 HP Applications	9 HPs for Apples
12 Minis	10 Other peripherals
13 Handhelds	11 3rd party products
14 95LX Palmtop	15 Direct-Connect API

Country	Toll free	Normal
United Kingdom	0800 289 378	(+44) 272 255 111
Germany	0130 37 32	(+49) 89-66550-111
Switzerland	155 31 79	
Japan	0120-22-1200	03-3221-7363
Australia	008-02-5240	(+61) 02-411-8603
New Zealand	0800-44-6113	

Strategies

CompuServe is not free service. The basic V.S. connect rates are listed on the next page:

\$6.00/hour up to 300 baud
\$12.50/hour up to 2400 baud
\$22.50/hour up to 9600 baud.

But using very simple strategies can keep your monthly bill down – and the value up.

The first strategy is to decide how you are going to use CIS. Do you just want answers to your questions, or do you want to keep up with what's going on in the field? If the former, you only need to log on when you have a question. For the latter, you will need to log on at least once a week. (Messages are kept in a first-in, first-out queue; messages disappear after about a week.)

The second strategy is to choose your baud rate carefully. If you are going to log on interactively, consider 300 baud. That's roughly 300 words per minute which most of us can read comfortably. Use the faster rates only if you are going to be downloading files or using an automated access program. (More on that in a bit.) In fact, while you are learning to use CIS, 300-baud is ideal. The \$15 usage credit in the introductory membership will pay for 2.5 hours of access at 300 baud. That's enough to learn your way around.

The third strategy is to be selective. In each forum you can select sections of interest. CIS will then only show you messages from those sections. Further, you can "scan headers" and only read "threads" that sound interesting.

The final strategy is to use an automated access program. These are programs written specifically to access CIS. These programs (Autosig and Tapcis for the PC, Navigator for the Mac) have different user interfaces but share an underlying design philosophy: Do it off-line. With Autosig* (ATO for short), the program logs on to CIS, visits each of the forums I use, downloads all the new messages – then logs off. And it does this at the full speed of the modem. Then I read the messages and compose my replies off-line. When I'm done, ATO logs back on to upload my messages. The difference

is dramatic. Instead of me being on-line for an hour reading and writing messages, ATO does the same work in a few minutes of connect time.

We'll cover the automated programs in more depth next issue.

Summary

Whether you need an answer to a specific question or want to stay abreast of the latest information, the HP Forums on CompuServe offer something to every 95LX user. Joining is easy and in no time at all, you'll be a CIS veteran. While CIS is not free, by using some simple strategies, you can get the most for your money.

Besides being a great source of information, the forums are also

just plain fun. There are some real characters, not all of them ASCII. In the midst of a discussion on why some 95LX's make faint clicking noises when running on batteries, we had some highly imaginative explanations – including "little green men who get in through the door on the card slot."

Try it out!

[Ted Dickens writes PC software for Niche Designs Corporation. He became a forum user in 1984, was "demoted" (Ted's comment) to Sysop in 1987, and has spent the last two years in a room with a PC, modem, and fluffy white walls – Hal.]

DERIVE a compact with more HP.



DERIVE[®], A Mathematical Assistant is now available for palmtops through 486-based PCs.

The DERIVE[®] program solves both symbolic and numeric problems, and it plots beautifully too.

- Symbolic math from algebra through calculus.
- Plots in both 2-D and 3-D.
- Simple, letter-driven menu interface.
- Solves equations exactly.
- Understands vectors and matrices.
- Split or overlay algebra and plot windows.

- Displays accepted math notation.
- Performs arithmetic to thousands of digits.
- Simplifies, factors and expands expressions.
- Does exponential, logarithmic, trigonometric, hyperbolic and probability functions.
- Taylor and Fourier series approximations.
- Permits recursive and iterative programming.
- Can generate Fortran, Pascal and Basic statements.

System requirements

PC version: MS-DOS 2.1 or later, only 512Kb RAM and one 3.5" or 5.25" disk drive. Suggested retail price \$250.

ROM-card version: Hewlett-Packard 95LX Palmtop computer. Suggested retail price is \$289.

Contact Soft Warehouse for a list of dealers. Or, ask at your local computer store, software store or HP calculator dealer. Dealer inquires are welcome.

* Available on Palmtop Paper on Disk - Issue 1.
See page 35 for more information.

2000 years of
Mathematical Knowledge
on a Disk

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Ste 304 • Honolulu, HI, USA 96816-3236
Ph (808) 734-5801 • Fax (808) 735-1105

Continued from front cover.

the power to the serial port back on when it is required for the built-in applications).

What is the proper procedure for changing batteries?

Before you change batteries, save the files from your open applications. Make sure all applications are closed and the HP 95LX is OFF before removing the batteries.

Remove the main batteries ONLY if the backup battery is installed. The backup battery provides the power to maintain RAM disk memory. If you take both main and backup batteries out, all of your internal RAM memory will be erased.

My HP 95LX shuts down without giving me any warning and won't restart. After I change the main batteries it starts right up. What's wrong?

The HP 95LX should give you a warning "MAIN BATTERY LOW" while your system still has enough battery left for you to save your files and close all open applications. If your HP 95LX runs out of battery power without giving a warning, then it is malfunctioning. You can send the HP 95LX to the HP Service Center for your area and the unit will be repaired. The last page of the Users Guide identifies the appropriate HP Service Center.

The AC Adapter

What is the required voltage/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.

 **International** versions of this adapter are made to accommodate the AC power in various countries:

HP 82241A	for USA/Canada (110v 50-60Hz)
HP 82241AB	for Europe (220v 50Hz)
HP 82241AU	for UK (240v 50Hz)
HP 82241AJ	for Japan (100v 50Hz)
HP 82241AG	for Australia (240v 50Hz)

Connectivity Pack Installation

I keep getting the "SYSTEM RESOURCE MISSING" message when I type APP95 at the DOS prompt on my PC.

You have installed the Connectivity pack on a drive other than C: or a directory other than CPACK. This is okay if the APP95 program can find where you've put the Connectivity Pack modules. To find the modules, APP95 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 `set pims=c:\cpack` (you should replace C:\CPACK with your own path).

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 modules.

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 nearer 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**.

I get "PACKED FILES CORRUPT" when I try installing the HP 95LX Connectivity Pack on my PC.

This may happen to those with DOS 5.0 on their PC. To fix the problem go to the DOS A:> prompt (or whichever drive has the Connectivity Pack disk) and type `loadfix install`. For those interested, the DOS 5.0 documentation provides information on the LOADFIX command.

Converting Phone Directories Into HP 95LX Phone Format

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 additional information.

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 do I do?

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, **(CTRL-z)**. Use **DEL** 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.

Printing with the HP 95LX

My printer doesn't respond correctly to the HP 95LX print commands. What do I do?

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 SETUP application by pressing -FILER and then press printer. This will display the settings that the HP 95LX is using. Use the Serial Cable Adapter Kit, part number HP 822-24A, to connect the HP 95LX serial cable to a 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-based communication with the HP 95LX.

Finally, check to see that 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.

My printer has only a parallel port. How can I print from the 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 con-

verter. 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. Try before you buy.

Programming on the HP 95LX

How can I program 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.

RAM Cards

When do I need a RAM card?

If you have allocated as much of the internal RAM to RAM disk as possible, and you need still more space to store files, you may need a RAM card.

Moving files from the internal RAM disk to the RAM card also gives you space to re-allocate internal RAM disk to system RAM.

A RAM card is also useful for storing a backup copy of the files on the internal RAM disk.

How big a RAM card can I use in the HP 95LX?

HP sells 128K and 512K RAM cards for the HP 95LX. The 95LX can use RAM cards as large as 2

MB if they follow PCMCIA 1.0 and JEIDA 4.0 memory card standards.

Transferring Files from the HP 95LX to Other Computers

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

The Connectivity Pack provides the serial cable and the FILER application software to transfer files to and from the HP 95LX and the PC compatible.

The Connectivity Pack includes the Appointment, Phone, Calculator, Memo, and Setup software which is similar to the software on the HP 95LX, but will run on your PC. The Connectivity Pack includes the following software: Merge, Translate, and DOS connect utilities.

The Merge utility merges phone book files or appointment book files. This is useful when you have a copy on your PC and another on your HP 95LX. The Translate utility converts the phone and appointment file formats of Sidekick Plus, Lotus Metro, and PC Tools into file formats the HP 95LX can use.

DOS Connect, also included in The Connectivity Pack, is software that has the effect of letting the PC use the RAM disks on the HP 95LX as its own additional drives. Using DOS Connect, the normal DOS copy command can copy files back and forth between the PC and HP 95LX.

The Connectivity Pack does not include Lotus 1-2-3 or the COMM application software.

The Connectivity Pack can be ordered from your HP dealer using part number HP F1001A.

The cable alone can be ordered using part number HP 82222A. Files can be transferred between the PC and the HP 95LX without The Connectivity Pack by using the cable, COMM on the HP 95LX and communications software on the PC.

I keep getting "Cannot Establish a Remote Connection" when using FILER, from either the HP95LX or the PC, to transfer files to the HP 95LX.

Both systems must be running the FILER application for the connection to be established. There are a number of possible causes:

1. *COM port on PC not correctly configured.* 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, use the PC's FILER Remote-Set command to tell FILER on the PC to use the COM2 serial port (described below).
To change COM ports from within FILER on the PC, press **[ALT]-[F10]** (the PC equivalent of pressing the 95LX MENU key). Then press **remote-set config interface 2** (to select Com2) **quit quit**. The HP 95LX should be set to COM1, the 4 pin serial port.
2. *Another PC program is running and using serial port.* Another cause of difficulty in getting 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, look at 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 smallest possi-

ble CONFIG.SYS and AUTOEXEC.BAT files. Then reboot the system. Start APP95. Try to establish a remote connection. If it works, then something in your more complete system setup is in conflict. To find it, systematically add to the CONFIG.SYS and AUTOEXEC.BAT files on the floppy disk each item which 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 your culprit.

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

The HP 95LX supports file transfers in the COMM 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.

If you do not have communications software for your Macintosh, you may also order the "HP 48SX to Apple Macintosh" serial interface kit (part HP 822094A). This kit includes the serial cable and KERMIT for the Macintosh, as well as some utilities for the HP 48SX calculator.

[Editor's note: see page 32 for a description of a third-party, 95LX-to-Mac file transfer product.]

Using the HP 95LX with a Modem

How do I connect the HP 95LX to my modem?

Use the serial cable HP 82222A and the serial cable adapter kit HP 82224A to connect the HP 95LX to your modem.

You will need to disable hardware handshaking on your modem. The HP 95LX supports only soft-

ware handshaking. Check the modem manual or contact the modem manufacturer directly for instructions on disabling hardware handshaking.

How can I use a battery-powered modem with the 95LX?

The following modems can be configured to operate in battery mode with the HP 95LX. These modems are manufactured by US Robotics, formerly Touchbase Systems. The brand name is WorldPort. US Robotics' technical support can be reached at 800-982-5151.

- WorldPort 1200 with any serial number.
- WorldPort 2400 with a serial number greater than 50,000.
- WorldPort 2400 with a serial number less than 49,999 after modification has been made to the modem by US Robotics.

How can I configure my WorldPort 1200 to operate with the HP 95LX?

Take the modem case apart and change the internal switches. Set switches 3 and 4 to ON.

How can I configure my WorldPort 2400 to operate with the HP 95LX?

Open the modem case and change the internal switches. Set switch 3 to ON.

Next, plug the modem into the AC adapter power supply. Connect the modem to HP 95LX using the serial cable, part number HP 82222-A, and the serial cable modem adapter, part number HP 82224A.

Set the baud rate to 2400 on the HP 95LX. To do this press **[COMM]**, then press **[MENU]**. From the menu select **settings config port baud 3** (for 2400 baud) **quit quit**. This will bring up the initial COMM screen. Enter **AT&D0&W** (the modem command) and press **[ENTER]**.

The modem should reply "OK" if it accepted the command. The

WorldPort 2400 should be able to connect to the HP 95LX and operate with or without the AC adapter after this command is accepted. (This command tells the modem to ignore hardware handshaking. This command is written to the modem's internal memory. Until you change it again the modem should continue to ignore hardware handshaking.)

How can I configure my WorldPort 2400 MNP to operate with the HP 95LX?

The 2400 MNP will NOT operate with the HP 95LX in BATTERY mode. However, it can be configured to operate with the HP 95LX while it is connected to an AC adapter.

To configure the 2400 MNP, set

switch 3 to ON. The switches are inside the battery compartment.

From this point forward, follow the same steps as for the WorldPort 2400.

Using the 512K of Internal RAM

The HP 95LX comes with 512K of internal RAM. What is the recommended allocation for RAM disk and System RAM?

RAM disk is the area of internal RAM where files are stored. System RAM is the area of internal RAM where programs are executed. The default (an even split) is best until you have a reason to change.

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. You can also free up system RAM for your Lotus spreadsheet by closing any Phone, Appointment, Comm, Calculator, or Memo applications which are open.

(Part 2 of "Most Frequently Asked HP 95LX Questions to HP's Technical Support Line" will be printed in the next issue of The HP Palmtop Paper. HP Technical Support can be reached at 900-228-0025 8:00 a.m. to 3:00 p.m. Pacific time, Monday through Friday.)

HP 95LX SUPPORT: HP Sources

HP 95LX Support from Hewlett-Packard

By Hal Goldstein

HP provides the following avenues of support:

1. Pre-sales information, dealer locations, and recorded answers to commonly asked questions are available at 800-443-1254. After calling the number, use your touchtone phone to select what pre-recorded information you wish to receive.
2. The technical support group is available at 900-288-0025 from 8 a.m. to 3 p.m. Pacific Time. There is a \$2.00 per minute charge billed to your phone. The first minute is free.
The HP Palmtop Paper has heard that HP is planning to offer an 800 number for HP 95LX technical support. This number would be available to

companies or individuals who have contracted and paid for this service. This plan is in response to the difficulty many customers have in calling the 900 from their offices. As we get further information, we'll report it in future issues of *The HP Palmtop Paper*.

3. As described in the article on page 10, there is an active user community on the HP Systems Forum (GO HPSYS) in the HP 95LX section, available through Compuserve Information Services. HP engineers frequent the forum and often give tips when other users can't help.
4. Customers can write letters to the Tech Support Group (use address in back of the manual).
5. If your HP 95LX requires service, in the U.S. you may con-

tact the Corvallis Service Center at 503-757-2002, 1030 N.E. Circle Blvd., Corvallis, OR 97330, U.S.A.



End users of the HP 95LX in all European countries should get support from the dealer where they bought their HP 95LX. These dealers have been trained to give 95LX support, and in turn get direct support from their local HP Response Center.

If you wish to contact HP directly, you will find HP local phone numbers on the inside back cover of *The User's Guide* supplied with your 95LX.

In other countries contact your HP sales office, dealer, or the number in the back of your *User's Guide*. You can also write the Corvallis Service Center at the address listed above for the location of other service centers.

Gaining Disk Space on the HP 95LX Through File Compression

HP 95LX users can save disk space using the free DIET.EXE compression program. This article assumes some working knowledge of MS DOS.

By Mark Scardina
Introduction by Hal Goldstein

Introduction:

What is Data Compression?

Storage space on the HP 95LX, like precious real estate, can be expensive and limited. The use of data compression programs can mean significant disk space savings on the HP 95LX's A drive and C drive.

Data compression simply means storing the same information (data files and program files) in less space. For example, if we could reduce the size of every 1-2-3 or MEMO data file or our PHONE book 40%, we would have that much more space left over for other files. Similarly, if we wanted to run our favorite DOS application on the 95LX, it would be great to be able to reduce the size of its main .EXE or .COM file.

Exactly how data compression works is beyond the scope of this article. However, in general terms a data compression program "translates" the "normal" way a file is stored and encoded into a more efficient encoding scheme.

There are two significant disadvantages to data compression. First there is usually some performance penalty since a file must be decompressed before it can be used by an application. For example, 1-2-3 only knows about WK1 data files not compressed WK1 files. Therefore, somehow compressed WK1 files must be decompressed before Lotus can use them.

Secondly, the compression/decompression program occupies some disk space. In addition, it usually requires extra disk space for tempo-

rary or permanent file storage. Some programs require extra system RAM to perform compression. In most cases judicious use of compression techniques provide more benefits to 95LX users than detriments. Often, performance penalties are not significant on the 95LX. Most often, proper application of compression techniques results in significant disk space savings.

There are a number of data compression techniques available, each with their unique advantages and disadvantages. Data compression techniques and approaches will be a continuing theme in *The Palm-top Paper* through the years.

This article's author, Mark Scardina, is familiar with most common file compression approaches for MS DOS machines. He feels for generalized use, DIET.EXE* offers the best data compression approach for 95LX users (especially since DIET's author makes it available for free).

Criteria for Using a Compression Program on the HP 95LX

PC capacity has been increasing at a startling rate. We now have laptops with 16MB of RAM memory and 120MB hard drives, and the notebooks are closing fast. This huge capacity has allowed users to operate with little or no concern for space. Therefore, switching to the 95LX can be quite an experience for the user who demands more than an electronic organizer from the diminutive palmtop. This inevitably leads one to search for data

compression programs to maximize the 95LX's available memory.

Since there is no specific compression software written for the 95LX, the first task in picking a utility is to define those qualities most desirable when used with the unique structure of the HP 95LX. The qualities of an ideal 95LX file compressor include the following:

1. To compress and decompress files automatically with a minimum of user intervention;
2. To compress and decompress data files created by DOS applications and by HP 95LX built-in software such as Lotus 1-2-3 and MEMO;
3. To compress application (.EXE, .COM, .EXM) files. (EXM files are "system compliant" software applications that work in conjunction with HP 95LX built-in software); and

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See page 35 for more information.

- To take up a minimum of system memory and disk space.

DIET.EXE on the HP 95LX

One such program that meets these criteria to a large extent is DIET by Terry Matsumoto.

There are two files that come with the DIET program: DIET.EXE and DIET.DOC. Only DIET.EXE needs to be copied to the 95LX. This file requires 22K of disk space. The text manual for DIET is DIET.DOC. It should be printed for reference.

DIET can be used manually. However, its real power is in its memory-resident ability, in which it compresses files automatically.

Let's first look at a few examples of using DIET manually. We assume you have already copied DIET.EXE to your C drive.

Diet compresses all types of files by using the command:

```
diet [drive:][\path][file.exe]
```

EXAMPLE 1:

Compress a program file:

- Enter DOS. (Do so by closing all your built-in 95LX applications except FILER and pressing **[MENU]** system.
- Suppose you have an 80K software application file named ROLODEX.EXE on the C drive. Issue the command:

```
diet rolodex.exe
```

DIET then displays a message that it is doing its thing. When it finishes, you'll see a message telling you how much it was able to compress ROLODEX.EXE. The good news about compressing .EXE or .COM files is that once you compress them you do not need DIET.EXE. ROLODEX.EXE, now, say 50K, executes just as before (perhaps takes a half second longer to load while it first decompresses itself).

EXAMPLE 2:

Compress data files:

Standard DOS Command LINE options such as wildcards (* and ?) are

available. For example, let's "diet" the files in your _dat directory.

- Enter DOS as before.
- Type **dir** and make note of how many "bytes free."
- Type **diet c:_dat*** and press **[ENTER]**. You will now see DIET in action as it compresses the files in _DAT.

You may want to repeat this command in any other directory where you store 1-2-3 WK1 files (i.e. **diet c:*.wk1**) since compressing 1-2-3 files can save a lot of disk space.

- Type **dir** again and see how many bytes you have saved.

DIET has several command line options that are discussed in detail in the documentation. If DIET returns a suggestion to try the **-v** or **-i** option on a file, you may be able to compress it, but you will need room for a temporary file its original size. If this happens to be a large file, you may be better off leaving it uncompressed to give you a net savings in disk space. The temporary files created by DIET during operation (named **__DIET__***) are usually deleted automatically, but if you find them these files can be safely deleted.

DIET becomes most useful on the HP 95LX when it is used as a memory resident application. See the sidebar for the particular memory resident installation instructions of DIET on the HP 95LX.

Once installed, DIET will automatically re-compress previously compressed files. This includes built-in software data files such as Lotus .WK1 files, MEMO .TXT files, and HPCALC .EQN files. It even compresses system compliant executable .EXM files.

Files automatically get re-compressed only if DIET initially compressed them. In other words if you create a new 1-2-3 file named BUDGET.WK1, you must first enter DOS and then type **diet budget.wk1** before gaining any compression advantages. Once a file has been DIETed, it will automatically be re-compressed if you are in DOS and

Installing DIET.EXE on the HP 95LX

The following instructions assume no RAM card. If you use one you can modify these instructions as appropriate.

- Copy DIET.EXE to C:\ of the HP 95LX.
- You will need to create a CONFIG.SYS file (or modify your existing one). Using MEMO. Type the following line: **shell=command.com /p** (empty space before "/p")
Then save this file as C:\CONFIG.SYS.
- Next create (or modify) an AUTOEXEC.BAT file. Within MEMO type the following lines:

```
echo off
prompt $p$g
set path=c:\;c:\_sys;c:\_dat
diet -z -p -tc:\
$sysmgr
```

Save this file as
C:\AUTOEXEC.BAT.

- Reboot (press Ctrl-Alt-Del) and you are ready to start compressing.

the DOS application saves it. If you are running one of the built-in programs, such as 1-2-3 or MEMO, and save a DIETed file, at first the file will not be recompressed. However, when you enter DOS and run any program (i.e. CHKDSK) the file will automatically get recompressed.

Therefore, you might create a simple batch file that you run from FILER periodically using the RUN command (press **[F4]** from FILER. The file (named, say, COMPRESS.BAT) could contain the following lines:

```
diet c:\_dat\*.txt
diet c:\*.wk1
```

The first command line above would compress any new MEMO.TXT files in the _DAT subdirectory. The second command line would compress all 1-2-3.WK1 files in the root directory. At the same time any built-in software data files waiting to be compressed would get compressed automatically no matter in what subdirectory on what disk drive they reside.

Problems Using DIET

Possible problems in using DIET on the HP 95LX usually can be traced to three areas:

1. NOT ENOUGH DISK SPACE

If the HP 95LX beeps during a program load and the program doesn't start, or indicates it can't load a file, that is an indication that there is not enough disk space for DIET to do its work. This usually occurs if DIET needs to create temporary files. The solution is to make more space, or un-compress the offending file (enter the command `diet -ra`).

2. USING TRANSFERRED COMPRESSED FILES

If your program is unable to run or has trouble opening a file, try un-compressing the offending file (enter `diet -ra`) and re-compressing it on the 95LX. If this is still unsuccessful use the SET command. For example, let's say the program you are having difficulty running is ROLODEX.EXE. You would use the command:

```
set dietsize=rolodex.exe
```

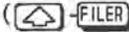
before launching ROLODEX.EXE. You could also put the above SET command in your AUTOEXEC.BAT file.

In copying files with DOS COPY, DIET, if resident, will un-compress the files first. If you would like them to remain compressed, issue the command:

```
diet -c <destination> <filenames>
```

3. INSUFFICIENT SYSTEM RAM MEMORY

Finally, in our experimentation we find you need at least 170K of System RAM in DOS for DIET to run

smoothly. If you receive an "Insufficient memory" error, use CHKDSK to determine how much System RAM you have. Then return to SYS-MGR and use the SETUP function () to increase your memory. An extra 24K of system RAM is used by DIET to remain memory resident. We will be interested in reports from other users as to how much total system RAM they need.

In creating your strategy for using DIET, you should keep the following guidelines in mind:

First, DIET is as efficient as the best compression utilities available. This also means that it will slow down the loading and unloading of your programs. Speed this process by being selective in the DIETing of your files.

Second, anytime DIET requires a temporary file, that disk space (the original uncompressed file size) cannot be used while the program is running. Therefore, you have to decide whether DIETing that file gives you a net saving in disk space, as it takes up in disk space its compressed plus original size.

A Final Warning

I have used DIET for over a month without major problems. However, backing up your files to a PC on a regular basis is always a good idea. It's especially a good idea while you gain experience and confidence in using DIET.

This approach is experimental, and although it seems to be very effective, you should use it at your own risk. If you have problems, or find ways of improving this technique, please send me or Hal Goldstein a CompuServe message, or write *The HP Palmtop Paper*.

Conclusion

To many people the 95LX's memory limitations may seem a throwback to the days of the original IBM XT. What they need to consider is the efficient compression software developed by many clever programmers since then. Hewlett-Packard's internal code name for the HP 95LX was

JAGUAR, and it seems only fitting to use a program called DIET to keep it "lean and mean."

Ordering Information

DIET is free and available on many public bulletin boards or on CompuServe. On CompuServe you can find it in the IBMSYS forum, File Utilities Library. As of September, 1991 it was named DIET12.EXE. To extract DIET.EXE and DIET.DOC type `dlet12` from the DOS prompt. The copy of DIET.EXE used for this article was dated 8/20/91.

HP Palmtop Paper subscribers will receive DIET.EXE at no charge on the *1992 HP Palmtop Paper Subscribers Disk* sent with Volume 1., No 2. issue (March/April 1992).

Finally, *HP Palmtop Paper* subscribers may obtain DIET.EXE as part of *The HP Palmtop Paper ON DISK*, Issue 1. See page 36 for a description of this service.

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DOS Software on the HP 95LX

By Mark Scardina

I have tested a number of pieces of IBM PC compatible software on the HP 95LX with varied results. I have been successful in using the following pieces of software on my HP 95LX described in the chart below. Some of the software is free or is shareware available from bulletin boards or CompuServe. Other products are commercially distributed.

If the product is freeware or shareware, the CompuServe forum where it resides is listed as follows: CIS: GO Forum. The name of the file to download is in parentheses. (Note: the name of the file and the CompuServe forum and library can change over time.)

Products with a "Y" in the "Sys-Mgr" column are TSR (memory resident) programs that can be made to work while 95LX built-in software such as 1-2-3 or MEMO remain

open. Products that have a "Y" in the "40 Col" column, naturally run, or can be customized to run on the 95LX 40-column by 16-line display. The minimum files required to run the software are listed in "Files Required." The amount of disk space required by these files is listed in the "Size" column. If Diet is used as described in the previous article, the "Diet Size" column reveals reduced disk space requirements.

I have had success running each of these programs on the HP 95LX. However, I, of course, can make no guarantees. Backing up your files on a regular basis makes sense whenever experimenting with software not designed for the HP 95LX, especially TSR software and software that uses the serial port.

Hopefully, through the months we can collectively add to this chart while discussing particular pieces of software on the HP 95LX in depth.

Please, send us the results of your experimentation: add to this chart; report in detail on useful DOS products for the HP95LX; or modify information on the chart.

Please mail a description of your results on disk or paper to: *The DOS Connection, The Palmtop Paper, PO Box 869, Fairfield, IA 52556.* Send CompuServe mail to *Mark Scardina, 71551,467* or to *Hal Goldstein, 72257,714.*

Future articles I have in mind will cover the following subjects: a 95LX Outliner; a 95LX Communications Program; using CONFIG.SYS and AUTOEXEC.BAT; using your 95LX as a Remote PC; great TSRs for the 95LX.

[Mark uses his 95LX for PIM, E-mail, entertainment, and programming sophisticated audio/video systems. He is President of Audio Video Entertainment Media, an A/V communications firm. Those needing audio/video equipment assistance can call him at 415-681-9672. His CompuServe ID is 71551,467.]

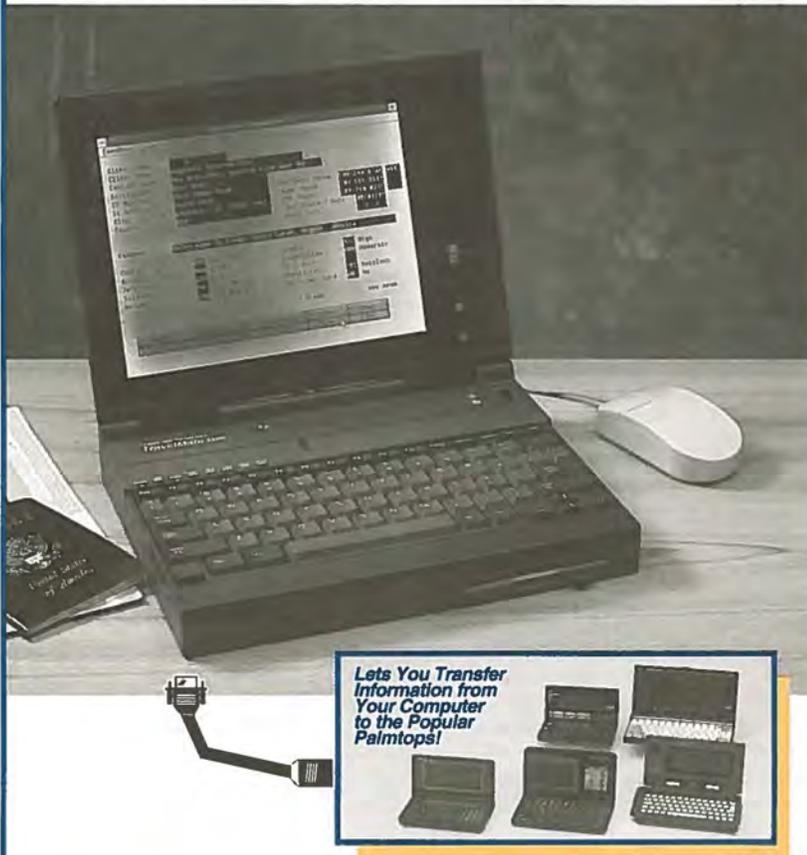
SOFTWARE PROGRAM	COMPANY	PHONE NUMBER	DESCRIPTION	TYPE	SOURCE	SYS MGR	40 COL	FILES REQUIRED	SIZE	DIET SIZE
FastLynx	Rupp Corp.	213-850-5394	Bidirectional File Transfer program	File Transfer	Commercial	N	N	FX.EXE	114K	74K
Expansion Box	Rupp Corp.	213-850-5394	Allows Desk PC to be server to the HP95	Server	Commercial	N	N	EBOXSER.SYS	7K	N/A
PC-Outline*	CIS: Go IBMAPP Library 2: (PCO334.ARC)*		Outliner similar to that portion of Grandview	Outliner	Shareware	N	Y	PCO.EXE, PCO.CFG, PCOMAC.CFG	74K	50K
Memorymate	Broderbund	415-492-3500	Free form database similar to Tornado	Database	Commercial	N	N	MEMO.EXE, MEMO.KEY, MEMO.DEF	72K	45K
Grandview	Symantec	408-293-9600	Outliner, Calender, Organizer	Outliner	Commercial	N	Y	GV.*, (.HLP opt)	420K	280K
VDE*	CIS: Go IBMSYS Library 1: (VDE161.ZIP)*		Powerful Text editor, wordprocessor	Text Editor	Freeware	N	Y	VDE.COM	57k	38K
Manifest	Quarterdeck	213-392-9701	System setup and hardware analyzer	Diagnostic	Commercial	Y	N	MFT.EXE	75k	48K
Diet*	CIS: Go IBMSYS Library 6: (DIET12.EXE)*		All purpose file compression program	Compression	Freeware	Y	N	DIET.EXE	22K	N/A
KBFix2*	CIS: Go IBMSYS Library 3: (KBFIX2.ARC)*		Caps lock control program	Caps Utility	Freeware	Y	Y	KBFIX2.COM	7K	5K
EZ Cursor	Seaside Software	714-278-3780	TSR to customize cursor	Cursor Utility	Commercial	Y	N/A	EZC.COM	1K	N/A
PCAnywhere	DMA	800-468-6353	Remote access PC program thru modem	Remote PC Control	Commercial	Y	N	Uses Datalcomm	n/a	N/A
ANSI.SYS	Microsoft		Comes with normal MS-DOS	System Driver	Commercial	N	N	ANSI.SYS	4.5K	N/A
Encore*	CIS: Go IBMSYS Library 3: (PB18.EXE)*		DOS utilities TSR that allows recording of frequently used key sequences.	Macro Key Util	Freeware	Y	N/A	ENCORE.COM	2K	N/A

* Available on The Palmtop Paper on Disk - Issue 1. See page 35 for more information.

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PC World - Feb. '91

"BCIM is a low cost package aimed at sales people and owners of small businesses. Its data base is fully customizable, offering 100 user-defined fields and basic forms tools."

PC Today - April '91

"The history screen in BCIM lets you view a complete history of your past calls, letters, and meetings with the client."

Success Magazine - Nov. '90

"Using BCIM is like eating popcorn. Once you start, you can't stop. It's easy to learn and fun to operate. You can customize client attributes for any industry, whether it be as commonplace as medicine or as arcane as zookeeping."

Independent Business - Jul / Aug '91

"BCIM can also be upgraded to either of two beefier programs called Eighty/20 Advanced and Eighty/20 Professional. That way, users who reach BCIM's limit can step up without having to re-enter all of their information to a new program."

Personal Selling Power - Sept. '90

"Once you transfer all your data into the program, (BCIM) you can write letters from the computer, personalize them in whatever way you choose, generate a variety of forms and labels, print out by zip code all the prospects or customers in any area you happen to be, do a mailing to these people say a week before you're going to be in that location, and all at a tremendous time savings. I consider that well worth the \$70 initial investment."

PC Computing - Sept. '91

BCIM is included in the "Best Product" category out of 17 Contact Management programs reviewed.

 **Disk-Count
Software, Inc.**
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Lechmere, Best Buy Co., Office Max and Computer Express on PRODIGY®.

Lotus

WHICH ADD-INS WORK

Preliminary testing of 1-2-3 on the 95LX produces some disappointing results regarding add-ins. Add-ins that only implement new @functions should work; others will probably not. We have tested the current versions of 14 popular commercial add-ins. Here are the results:

These don't work: SeeMORE (Personics); @BASE (Personics); Look&Link (Personics); Macro Editor/Debugger (Personics); Sideways (Funk); Always (Funk); Noteworthy (Funk); Worksheet Utilities (Funk); 2D graphics (Intex); 3D graphics (Intex); 4WORD (Symantec); Budget Express (Symantec)

These do work: Rescue (only some parts) (Intex); @EASE (Spreadsheet Solutions)

There are a variety of technical reasons. The two major reasons are:

1. Most commercial add-ins hook into 1-2-3's jump table which is in the code segment. In the 95LX, the code segment is in ROM which makes it rather hard to change!
2. Some add-ins use their own drivers. The 95LX has a hardcoded driver set.

It also appears that once you attach an add-in, you should not detach it. We're doing some additional testing to narrow this problem, but at the moment it appears that detaching an add-in can quickly lead to a system crash.

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

SQZ WORKS

Other readers report Lotus add-in file compressor SQZ Plus works on the HP 95LX.

*Hal Goldstein,
Editor, The Palmtop Paper*

LOTUS WORKSHEETS ON COMPUERVE

The home on CompuServe for 1-2-3 release 2.x worksheets is library 2 of the LOTUSA forum. We have several checkbook management worksheets there and much much more.

*Mark Horvatic
CompuServe ID: [76703,4163]*

DELETING BUILT-IN WK1 FILES

The bad news is that it is impossible for U.S. HP 95LX users to delete the *.WK1 templates that come with the HP 95LX. The good news is that they do not occupy any useable space, so they are just a cosmetic annoyance.

The HP 95LX was designed to provide enough space in ROM for an English and a European language version of all the built-in software. (Any software etched in ROM is a permanent part of the machine.) HP engineers finding extra space in ROM on U.S. versions of the HP 95LX kindly added unadvertised and undocumented extras, including Lotus templates and other files (to be discussed in future issues).

*Hal Goldstein
Editor, The Palmtop Paper*

AC Adapter

RADIO SHACK AC ADAPTER

I use an AC adapter from a Radio Shack part number 273-1455 for my HP 95LX. This same adapter also powers the HP82441A printer.

*Gene Trotton
Sparks, New York*

ADAPTER SPECIFICATIONS

The HP adapter for the 95LX outputs 9VAC, 13.5VA MAX. That's right: AC output. The 95LX has a full bridge rectifier. Obviously, DC input is just fine, too.

The official HP transformer says: Input: 120V AC 60Hz 20VA, Output: 9VAC 13.5VA MAX.

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

TESTING AN AC ADAPTER

There's a very simple 5-minute test to test the AC adapter. Plug in the power supply, turn on the 95LX and wait. If, after 5 minutes, the 95 shuts itself off -- it was running on battery power, not the AC adapter.

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

Appt

PRESS SPACE FOR COLON

When entering appointments or using the watch function, you do not have to hunt for the ":". Just type SPACE rather than colon

when you want to enter time (and SPACE for "/" to enter a date).

*Hal Goldstein
Editor, The Palmtop Paper*

BUG IN PHONE AND APPT FIND FUNCTION - SORT OF

Many readers reported a bug in the PHONE and APPT FIND function. They pointed out that if a string can't be found, the system locks up and you must reboot (CTRL ALT DEL). In fact, if you wait long enough (as long as 10 minutes or more), you will regain control of your HP 95LX.

*Hal Goldstein
Editor, The Palmtop Paper*

Battery

BATTERY CONSUMPTION

The following is a listing of HP 95LX battery current consumption based on a working voltage of 2.80V. These are approximations.

Unit off	0.79ma
FILER active, serial off	40-50ma
FILER active, serial on	50-60ma
FILER off, built-in apps on	30-40ma
Disk read/write	140-190ma
File transfer using FILER	150-200ma
DOS Application open, idle	50ma
DOS Application open, active	100-150ma

I use a Poqet 512K SRAM card and find no steady state current differences whether or not the card is installed in the HP 95LX, and no matter if the HP 95LX is on or off.

*Mark Scardina
CompuServe ID: [71551,467]*

HOW TO BLOW YOUR RAM DISK

Pulling out a battery while the machine is turned on is a sure-fire way to blow the RAM disk.

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

Carrying Cases

SOURCES FOR CASES

Readers have reported a variety of sources for cases that fit the HP 95LX. These range from a \$99 Sharper Image case to a Wal-Mart \$5.80 camera case. Also we've heard that people use the Wizard case as well as cases from other HP calculators.

*Hal Goldstein,
Editor, The Palmtop Paper*

CIS CompuServe

FILES IN THE 95LX LIBRARY

Download HPSL14.DES for one-line descriptions of all files in the 95LX library (14). HPSALL.ZIP has same information for all of the libraries.

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

Connectivity

RUNNING DCS95 ON DESKTOP

Run DCS95 on the desktop, and DC95 on the 95LX, and your 95LX suddenly has megabytes of disk space! (You must have LASTDRIVE=: in CONFIG.SYS on the 95LX to get this to work). Useful for testing out whether PC programs are suitable to run on the 95LX without the hassle of clearing out your 95LX C: drive.

*Ian Wells
CompuServe ID: [100020,734]*

DOS Tips

YOU CHOOSE: DOS OR SYSTEM MANAGER

Here is a little tip that I have played around with. Setup a CONFIG.SYS and an AUTOEXEC.BAT file as follows using MEMO.

Put the following command in the CONFIG.SYS file:

```
shell=c:\command.com /p
```

(You MUST have an empty space between ".com" and "p" or you will lock up your 95LX, and may lose the contents of your C drive.)

In the AUTOEXEC.BAT file, include the following text:

```
echo off
path C:\C:\_DAT
prompt $p$G
cls
echo Press any key for built-in software
echo Press Ctrl-C to enter DOS
pause
$sysmgr
```

With this procedure when I reboot (by holding down CTRL and ALT and pressing DEL), I have the option to enter DOS (by pressing CTRL-C) or the built-in applications (by pressing any key). Here are some advantages to this approach:

1. Entering DOS this way saves me over 80K of main memory, which is needed in many DOS applications.

- It is often easier to get to DOS this way then have to close down all my system manager applications and enter DOS through the FILER. (I must be careful to have saved all open files before rebooting).
- If I later enter DOS from FILER, the DOS PROMPT and the PATH will already be set up.
- The only real penalty is an extra 1792 bytes is taken up by COMMAND.COM loading before \$SYSMGR.

To get back to the built-in applications from DOS, reboot again. Another way is to create a one line batch file, S.BAT with the line: **\$sysmgr**

Marty L Mankins
CompuServe ID: [75300,1770]

EXITING TO DOS

To enter DOS you need to use the MENU system command from FILER. Or you may try to run a program directly with the F4 Run key. However, when you try, you often will get the annoying message: "Cannot launch file: Other applications are open. Press ESC to continue."

You now have to go back and close any open applications. The problem is that you probably don't remember which applications are open.

The trick is to first quit FILER (MENU quit). From there you will be placed in the previously opened application, which you can quit. In this way, continue quitting applications until you find yourself at the opening screen.

Now, return to FILER and exit to DOS.

Hal Goldstein
Editor, *The Palmtop Paper*

Filer

THE POWER OF ENTER KEY

The FILER becomes very useful as soon as you discover the power of the ENTER key. Put the cursor line on a subdirectory such as _DAT, press ENTER, and you'll be in the _DAT directory. Put the cursor on ..., press ENTER, and you'll be back in the root directory. Put the cursor on a file, press ENTER and you will see its contents if it is a TXT (ASCII) file.

Hal Goldstein
Editor, *The Palmtop Paper*

HP Calc

EXPONENTIATION

Exponentiation can be done directly in HP CALC, although this feature is only

indirectly discussed in the *User's Guide*. For example, to calculate the fourth root of 16 in algebraic mode type: **16 ^ (1/4)** and press **ENTER**.

Hal Goldstein
Editor, *The Palmtop Paper*

ADVANCED TECHNICAL SOLUTIONS

All the HP 19BII application books can be used with the HP 95LX except that the 95LX lacks a forecasting exponential, power, logarithmic function. If you need a jump-start in the 95LX equation solver, buy the Advanced Technical Solutions using HP SOLVE. EduCALC 800-677-7001, carries it (stk ID:548 for \$9.95). They have 3x3 simeq's as well as triangle solutions, etc. F.J. Orantes, Corona, New York

Tim Schweikert
CompuServe ID: [72037,754]

CENTIGRADE/ FARENHEIT CONVERSION

I have a simple centigrade to farenheit conversion equation in SOLVE in HPCALC:

$$F = C * 9/5 + 32$$

Hal Wyman
Seattle, Washington

International

The HP 95LX and the Connectivity Pack are available in the following local versions: German, French, Italian, Spanish, Portugese. That means the keyboard and the software are fully localized for the language. These localized versions are bilingual, that is, the English software and keyboard mapping are always available with the local language and can be selected from SETUP.

The localized versions are identical to the English version with the exception that some Lotus templates and the HB and TFOX EXM files are not included.

Hal Goldstein
Editor, *The Palmtop Paper*

Memo

MAKE THE A DRIVE THE DEFAULT

It is not possible to directly change the C:_DAT default MEMO directory. However, here is a kludgy solution to make the default the A drive.

Hit in sequence: **Shift-CHAR-F1**. (You can actually choose any

function key, F1 through F10.) If volume is on, you will hear a musical beep. You are now in User Key Learn Mode (see the *User's Guide*, page 21-14). You are ready to define a system macro — your own custom function key that will make A:\ the default MEMO directory.

Press the following keys in sequence: **MEMO MENU File Open Backspace** (9 times) **a:\ ENTER**. Now turn off learn mode by pressing: **Shift-CHAR-F1**. You'll here another two tone signal. The 9 backspaces erased: C:_DAT*.TXT.

You now have a user macro. Press **CHAR F1**, and you'll find yourself in MEMO ready to retrieve (open) a file from the A:\ directory.

Bob Weeks
CompuServe ID: [70143,3540]

MODIFIED CURRENT FILE?

There is a simple way to tell whether you have changed your current MEMO file since the last time you saved it. After you save a file, as soon as you type anything within MEMO, an asterisk appears on the second line to the right of the file name. If you start a new file, the asterisk sits in the first column of the second line.

Therefore, if you need to quit MEMO, look for the asterisk to see if you need to save your work before exiting.

Hal Goldstein
Editor, *The Palmtop Paper*

Memory

DATA SPACE LIMITED TO 64K

Each of the built-in HP 95LX system manager applications (except 1-2-3) is limited to 64KB of data space. That 64KB holds the programs variables and the entire data file. That's why the limits exist. A phone book file can be as large as 56KB. An appointment book is a bit smaller, a MEMO file can be just about the full 64KB.

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

MAXIMIZING SYSTEM RAM

The only files that must be on the C: drive are the various .ENV files in the _DAT directory. I was able to get create 496KB for SYSTEM RAM this way.

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

Phone

PHONE/APPT DEFAULT FILES

PHONE and APPT keep track of the last open file; they will automatically reload that file. So if I use A:\MY.PBK, PHONE will automatically load it. But if I use the File Open command — PHONE will return to the C:_DAT directory.

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

USE LOTUS FOR LARGE PHONE BOOKS

For those having large phone books and do not want to divide them up into separate files, consider using Lotus. Lotus has database functions, can be programmed for your personal needs, and is limited only by memory. There may even be address book applications out there already. Check the Lotus and IBM CompuServe forums.

Larry Lefkowitz
CompuServe ID: [76137,155]

Printer

RADIO SHACK SERIAL-PARALLEL CONVERTER

The 95LX has only a serial port and many printers have only a parallel port. To translate from serial to parallel data requires a separate device. The Serial-Parallel converter. The one caveat for buyers of these devices is that to work with the HP 95LX it must be capable of disabling the DTR handshaking.

A Radio Shack device seems to work with the HP 95LX. It's model # 26-2829 Tandy Serial-Parallel Converter at \$99.

Switch settings: 1 on, 2 off, 3 on (9600 baud), 4 on (8 bit), 5 and 6 off (no parity), 7 off (Xon/Xoff), 8 off (serial to parallel transmission).

Hal Goldstein
Editor, *The Palmtop Paper*
D.C. Mitchell
Cincinnati, Ohio

MAKE SURE SERIAL PORT IS ON BEFORE PRINTING

Just a little tip for those using a word processing program from DOS with the HP 95LX. Don't forget to reenable the serial port before you print (**serctl /w**). I spent half an hour before I realized that the batch file that loaded my word processor turned off the serial port, making printing impossible. I thought I'd save someone else from the agony.

David Hayden
CompuServe ID: [70530,541]

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Through the Looking Glass

Ed Keefe shares his initial discoveries with the 95LX, including a procedure for extracting a vertical rectangle of characters from a MEMO file.

By Ed Keefe

Why use the title, "Through The Looking Glass," for a column about palmtop computing? Why that particular title rather than something more computerish?

I suppose the reason I chose this title is because Lewis Carroll, the author of *Alice Through the Looking Glass* and *Alice In Wonderland*, is one of my favorite literary figures. Few people know that Lewis Carroll was really Charles Dodson, a university instructor in math and logic. He lived and wrote in the 19th century, long before the invention of computers.

Yet, I sometimes wonder how Lewis Carroll would have reacted to a modern computer. Would he have only seen his face in the looking glass screen of a computer, or would he have gone through the looking glass and envisioned how a computer worked? Would he have fully appreciated that computers are the crystallized version of the logic he loved to teach? Would he have guessed that millions of people would use such logic machines to write books, play games, cook their meals, keep track of their daily schedules, or solve math problems?

And what would Lewis Carroll have made of a computer that could fit in the pocket of his waistcoat? Would his sole response have been "curiouser and curiouser" or would he have learned to use it? Would he find delight in telling others about the marvels of his Little Black Logic Box?

I don't know how Lewis Carroll would have reacted to computers. I do know that I have always been

fascinated with them, ever since my first taste of Fortran programming, back in 1960.

Since that time, I have continued to use computers in my teaching of logic, math, and physics. I currently teach hundreds of students how to begin using computers. I show a select few the subtle secrets of computer programming.

My real pleasure comes in sharing with others my fascination with computing. I enjoy participating in people's initial frustration with computing and watching them, eventually, master the machine.

The feelings of frustration and fascination, along with a sense of mystery and mastery, are my daily cup of tea. I get these feelings every time I face a new computer or pop the shrink-wrap on a software package.

As an instance of both frustration and fascination, let me tell you about my initial reactions to the Hewlett-Packard 95LX.

Look What They've Done to My Keyboard

Soon after getting the HP 95LX, I tried entering a sample spreadsheet. I was on a roll until I got to the @avg() function. It me a long time to discover it, unshifted next to **MENU** where it should be.

Next I tried the MEMO Editor. It didn't take long to decide that I would not be using MEMO to write this column. I was doing all right in it until I tried entering a front-slash character (/). All I got was a pop-up menu. Eventually I resorted to using the grey, division key in the number pad. This didn't seem right, but it works.

I soon discovered that all built-in applications use the grey division key to enter a front-slash character. However, when in DOS, pressing **MENU** will enter a front slash.

Look What They've Done to My Spreadsheet

I explored all the built-in 1-2-3 templates and found them to be quite well written. Having tested them thoroughly, I decided to delete them, only to find that I could not. The .WK1 files in the C:\ directory are write protected. I transferred a program called CHANGE from my desktop computer to the 95LX and tried using that program to change the write protected status of the Lotus files. The program failed to do the job. The computer told me that the disk, itself, was write protected.

It turns out that there are files in the Root (C:\) directory that are built-in and reside in Read Only Memory (ROM), while others reside in RAM. Here is a great mystery. I have not figured out how HP made this happen. I've been working with MS-DOS since 1982 and I've never seen anything like this before. Fascinating!

While working with 1-2-3, I pressed **CTRL** and saw the words "COPY PASTE" appear on the bottom of the screen. I thought I had found a glitch. I'd never seen anything like this in all the years that I've used 1-2-3. Out of frustration, I put a question to the folks on the HP Forum of Compuserve. They quickly informed me that this was no glitch. It was the normal method to access the clipboard in 1-2-3, and would I please "read the manual?" I read it again and discovered a trick.

Suppose you have a text file, created in MEMO. Suppose, further, that you want to extract the first ten letters in each of the first ten lines. How could you do that?

Here's my recipe. Use 1-2-3 to import the text file. Get into Lotus

by pressing **F12** and then press **MEMU** file import text. Then go to the `_DAT\` subdirectory to get a listing of the `.TXT` files. You do this as follows. If the message at the top of the screen says: `File to import: C:*.prn` use the arrow keys to move the highlight bar to `_DAT\`. Then press **ENTER**, type `*.txt` and press **ENTER**. Otherwise you can type in `c:_dat*.txt` after the "File to import:" prompt and then press **ENTER**.

Next, press **F3** to get a two column listing of any and all `.TXT` files. (The **NAME** key (**F3**) sure beats scrolling file names across the top of the screen, doesn't it?) Point at the **MEMO** file you want and press **ENTER**. This imports the file into the spreadsheet. Next press **MEMU** worksheet global column 1 to make the column widths all 1 character wide. Press **CTRL** to activate the clipboard. While holding **CTRL** press **F2** to start the COPY operation. Move the cursor to the first character to be copied. Then press the Period key to lock the start of a block and use the cursor keys to highlight the characters you want to extract. Press **ENTER** when the range is set. Press **MEMU** and **F4** to PASTE the text into a **MEMO** file. Granted this is an offbeat discovery, but it is something unique to the HP 95LX. Fascinating. What other discoveries are yet waiting?

Further Frustrations

To add to my initial frustrations, I tried getting my 1-2-3 "GradeBook" program to work. I use "GradeBook" on a daily basis in my teaching. It is replete with menus and "pick lists" I've added during the five years I've used it. It wouldn't work on the 95LX.

The problem, as I soon discovered, was that my Menu labels were too long. What was even more frustrating was that, when I looked at the lines that were supposedly too

long, they all appeared to be well under the 40 character limit — not so! Even though the labels had less than forty visible characters, it turned out that they also had more than forty trailing blank characters. The only way this showed up was when I pressed **F2** (EDIT key) and examined the labels. Sure enough, the editing cursor landed far to the right of the last visible character. This is something to be aware of whenever you adapt a spreadsheet to the 95LX's small display.

From my point of view, learning

something new is more fascinating than the computer itself. I'll be sharing more of this learning in future columns.

Until then, Happy Porting!

[Ed Keefe is an author, programmer, computer science instructor, and long-time contributor to The Portable Paper, our newsletter supporting HP's other portable computers. He is the president of the Fast Aid Company, 314 SW Logan, Ankeney, IA 50021. Ed's Compu-Serve ID# is [73277-1064].]

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The Savvy User

Our Savvy User discusses his initial experiments with his 95LX: getting to DOS, successes running DOS Software, transferring files to other PC's without The Connectivity Pack, getting the WorldPort MNP modem to work, and cutting and pasting.

By Thomas Page

Why Savvy User?

Since this is my first column in the premier issue of The Palmtop Paper an introduction is proper. My name is Thomas Page and the name of the column is *The Savvy User*. I have written a column with the same name for *The Palmtop Paper's* sister publication, *The Portable Paper* for almost three years. I live in Houston, Texas, where I am employed by one of the nation's largest natural gas pipeline companies. I am a long time user of microcomputers and in fact was perhaps the first user of microcomputers in the natural gas industry.

Compared to the mainframe computers of ten years ago, my 64K, HP-125 microcomputer was considered a mere toy. I thought it was wonderful. It was much more powerful than any calculator and turnaround was instantaneous in comparison to the next day turnaround many mainframe applications provided. In 1984 I joined the front lines of the portable computer revolution by purchasing one of the original HP Portables. It was ridiculed and called a toy by the IBM-PC clique since it had only 296K of memory and was not 100% IBM compatible and could only run a few programs. I was not bothered. It ran 1-2-3, an OK terminal program, and editor. The important thing about any computer is not what it doesn't do but what it does do.

Compared to the current standard (386 CPU) for microcomputers the 95LX seems a toy. Although the 95LX is classified as a PC compatible, most programs designed for the current PC standard are too big for

the 95LX. If you are using a 95LX there is no way to be a 'power user' but you certainly can be a "savvy user."

Like you, I have not had my 95LX long enough to know everything about it. I am not a computer professional, but I keep experimenting in order to make the HP 95LX more useful to me. As you will see, I am not always successful in my experimentation. Hopefully as you read *Savvy User*, you will find not only my results, but the process of getting those results of value.

Using DOS

The 95LX's FILER is an effective file manager program. However, at some time or another most of us will need to go to DOS to accomplish some task. Below is a batch file to make getting into DOS easier. Name it ADOS.BAT or something like that to make it appear near the top of the list of files when FILER is invoked. To run ADOS, put the cursor line on ADOS.BAT within FILER and press Run (F4).

```
echo off
cls
serctl /o
prompt $p$g
path c:\;c:\_sys;c:\_dat;c:\bin
command
```

Note the "serctl /o" command. Every time FILER is invoked the serial port is turned on and it does not turn off on a DOS exit. Including this command in the batch file turns the serial port off to conserve the battery. If you want to print from a DOS application you must turn the serial port back on by entering serctl /w.

Also note the three subdirec-

tories included in the PATH command. \bin is a subdirectory that many users including me use to store program files. The _sys and _dat directories are built into your HP 95LX. Since by default MEMO leaves files in the _dat directory, you may wish to leave your BAT files in that directory. (The PATH command tells DOS where to look for program files.)

The _sys directory is hidden and is not normally displayed by FILER or the DOS DIR command. If you exit the FILER to DOS, you can easily take a look at _sys by typing:

```
cd _sys
dir
```

From FILER you can see the _sys directory by pressing Goto (F5) and typing _sys.

DOS Software on the 95LX

You may not be able to go down to your local software emporium yet and buy many programs for your 95LX. However, there are a number of good programs available written for PC's that are well-suited for the 95LX. You may even have them stashed in a box somewhere. For example, Directory Sort, File Find and Quick Unerase from Norton Utilities version 3.0 are much smaller than the current version and are almost as effective.

In addition there are a number of small public domain DOS utilities you might find useful. Two that come to my mind are CHANGE.COM* and VDL.COM*. CHANGE allows changing a file's attribute. CHANGE lets you protect a file from being modified or deleted by making it read-only. VDL works like the DEL command from DOS, but prompts you with the names offiles and asks for verification before each file is deleted.

* Available on Palmtop Paper on Disk - Issue 1. See page 35 for more information.

Transferring Files Between a 95LX and a Computer without the Connectivity Pack

The Connectivity Pack provides an excellent means for transferring files between the 95LX and a PC compatible, but unfortunately my primary computer is an HP Portable Plus, which will not run the Connectivity Pack. As a result I had to find a different way to transfer files. HP 95LX users with computers other than a PC compatible can use a similar approach.

A short analysis of options led me to the conclusion that I could connect the serial ports of the 95LX and any other computer using a serial cable. I could then use communications programs on each end and transfer files using XMODEM protocol.

Making the connection between the HP 95LX and the Portable Plus was not difficult at all since the HP 95LX serial cable (#: HP82222A, \$35) equipped with the 25 pin adapter mated perfectly with my Portable Plus's modem cable. I loaded Reflection, my Portable Plus communications program and the 95LX's built-in COMM application. I then made sure the serial port parameters were set consistently, including setting the baud rate at 19,200. Next I issued commands in Reflection on my Portable to XMODEM SEND a file and turned to COMM on the 95LX and issued a command to XMODEM RECEIVE a file.

After a few retries the computers synchronized and the file was transferred. I transferred a number of files, but it seemed the 95LX indicated an extraordinary number of retries before synchronization. Since files were transferring I let it pass. I then tried transferring a file from the 95LX to the Portable. The file transferred almost instantly.

Since I could see a number of situations when it might be desirable to swap files with a computer not equipped with the Connectivity Pack, I decided to try the XMODEM file transfer with another computer and a different communications program. Since it was available, I de-

cidated to try an old version (3.61) of CrossTalk XVI on my roommate's 386 PC compatible. Connecting the 95LX to the 386 was accomplished by plugging the 95LX serial cable to a modem cable attached to the COM1 port of the 386. I loaded CrossTalk and the 95LX COMM program and was able to establish a link and transfer files between the two computers.

Using the 95LX with the WorldPort MNP Modem

One of the greatest powers of a computer is its ability to transfer data over great distances using a modem and the telephone system. I was unable to immediately test the 95LX with my WorldPort 2400 MNP modem since I did not have the necessary adapter to mate the 25-pin female port with the 95LX serial cable. A trip to my neighborhood Radio Shack store yielded a 25-pin male/female null modem and a 25-pin male/male gender changer. Although not especially elegant, these two parts provided a suitable bridge between the end of the 95LX serial cable with 25-pin adapter and the WorldPort.

Since the 95LX, unlike my Portable Plus and most other computers, does not provide a DTR signal, I had to adjust switch #3 in the modem to cause it to turn on in response to data transmission from the computer. Switch #3 is the second from the left as viewed through the battery compartment. In my configuration all switches are down except #3 which is up.

Although the modem turned on after I moved switch #3 from the down to the up position, I spent a number of fruitless sessions attempting to connect with CompuServe before I decided I should try connecting the WorldPort to AC power to eliminate the problem of turning the modem on. Plugging in the WorldPort's battery eliminator causes the modem to turn on and stay on as long as the battery eliminator is connected.

Unfortunately my WorldPort's battery eliminator had decided to

"go South for the Winter" long before the end of Summer. A Saturday morning stroll down to Electrotex, my other neighborhood electronics supplier, produced a suitable replacement.

After I connected the battery eliminator I discovered I could very easily control the modem from the 95LX's COMM program and had no trouble dialing and connecting with CompuServe. Since I am somewhat hard headed and am used to directly controlling the modem with AT commands, I did not test the 95LX's built-in dialing feature. After I connected with CompuServe I went to the HP forum and tried downloading some files from the 95LX library. I tried several times but I was unable to download any files using the XMODEM protocol. Later I called back and tried to download using Kermit. Again I was not successful but I must admit that I have no experience with Kermit. After reading the HP 95LX manual I had no difficulty capturing data that displayed on the computer's screen to a file, but I still could not download files with XMODEM.

After using the modem with the battery eliminated, I tried using it on battery again.

Again I had no luck.

I called U. S. Robotics, manufacturers of the WorldPort. They told me that the 95LX is incompatible with the WorldPort 2400 MNP. I am not convinced of this as I will explain later.

CrossTalk on the 95LX

I then decided to run a standard communications program on the 95LX and see how it would work. My choice for this was CrossTalk XVI, version 3.61. To minimize its size I processed the program with LZEXE before transferring it to 95LX. [*LZEXE reduces EXE and COM files in the same way DIET does. See article on page 18 - Ed.*] This reduced its size from 80,308 bytes to 41,735 bytes. The standard CrossTalk configuration file, STD.XTK, added an additional 1,196 bytes. I did not even think

about transferring CrossTalk's very large help file.

Although CrossTalk expects a 25-line by 80-column display, I had little difficulty using CrossTalk on the 95LX. CrossTalk is my favorite PC communications program and I've used it over seven years. I avoided changing communications parameters by presetting them with the default configuration file. When it became necessary to enter a CrossTalk command on the HP 95LX from DOS, I simply pressed -ALT- to display the CrossTalk command line. Using CrossTalk I had no difficulty establishing a connection with CompuServe and downloading files. To provide maximum control, rather than depending on CrossTalk's built-in automation, I placed CrossTalk in 'local mode' and directly controlled the modem by typing AT commands.

Using this configuration, I ran the WorldPort MNP modem on battery power despite what US Robotics told me!

After this fortunate experience I took another look at my modem manual and discovered a recommendation that the modem be configured to ignore DTR if DTR is not being used for power-on. This is accomplished by sending the command, AT&D0&W, to the modem. I did this and then tried again using the 95LX COMM program and the modem on battery power. I achieved no better results. It looks like the 95LX terminal program needs improving or there is something more to learn about it. It does seem that if a 5-year-old version of CrossTalk will work on the 95LX, a program designed especially for the 95LX should be just about perfect.

My experience with computer communications indicates that magic is involved. If you discover the proper incantations please share them with us.

[Editor's note: The HP 95LX COMM program can be made to work downloading CompuServe files with XMODEM protocol. The 95LX's built-in configuration file for CompuServe communications sets the serial port to operate with 7 data bits, even parity. The XMODEM

protocol uses 8 bits, no parity. The HP-95LX should be set to use 8 bits, no parity. The first prompt from CompuServe may look like garbage, but the user ID should be entered anyway. CompuServe will detect that you are using 8 bits, no parity, and switch to support that. XMODEM transfers should now work. Unfortunately, Tom's HP 95LX serial port went "South for the Winter" and had to be repaired before he could test this.]

Cutting and Pasting

Copy and Paste are available within APPT, PHONE, MEMO, 1-2-3, and HP CALC. They are listed on the function key menu at the bottom of the screen. (You have to press CTRL to get these options in HP CALC and 1-2-3.)

For example, in the Calculator program you can duplicate an equation in the Calculator's Solve Catalog. This is especially useful since editing an equation is easier than

rewriting it from scratch. You can also use Copy and Paste to copy information between applications. For example, you can copy a Lotus range into MEMO.

It will be interesting to see how practically HP 95LX users will implement this feature.

Next Issue

Getting the most out of 1-2-3 on a computer with a small screen may require some techniques you are not currently using. Next issue I will share with you a few techniques that work for me. I have become fascinated with the Equation Solving feature of CALC. We will see what I come up with worth sharing.

[Tom works for a natural gas pipeline company in Houston, Texas, and was one of the first to use PC's in the natural gas industry. He been a contributor to The Portable Paper, our sister newsletter, for the last three years. Tom's CompuServe ID is: [76011,3655].]



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Programmer's Corner

By Ed Keefe

Introduction

Are you a programmer or registered developer for the HP 95LX? If so, then this column is for you.

Hopefully, this column will become your special section of *The Palmtop Paper*. It will be a chance for you to pick up some new ideas, pose a problem or solve a problem from other programmers.

Let me start by mentioning that I am a teacher of computer programming. I view this column as an extension of my teaching activity. For me, teaching is just another word for learning. As a teacher, I have the privilege of learning from some of the brightest students around.

My style of teaching is more a sharing of ideas and problems rather than a didactic presentation of facts.

If I discover a new idea, or run up against a knotty problem, I tend to share it with others. My expectation is that I will learn more from an exchange of ideas than by keeping my knowledge, or ignorance, to myself.

So, what you may expect to find here is a free exchange of ideas, problems, questions, and tentative answers. Over the life of this column you may expect to see more of your own responses and less of my ruminations.

I earnestly invite your responses. Remember, you are the teachers. I'm the learner in this column.

Let's begin by taking a look at some of the problems that are peculiar to the HP 95LX.

Once Upon a Small Screen

The small screen of the HP 95LX may pose a problem for some programmers. The problem arises not

so much from putting text on the screen, but rather from getting the "right" text on the screen. Just when we were getting used to writing elaborate Help screens, full of pull-down menus and pop-up windows, we are confronted with a screen that calls for brevity, clarity, and conciseness.

Here's a suggestion that may help you reduce the number of words in a help screen without losing any of its meaning. Try pushing your text through a grammar checker such as QUE's RightWriter program. I've tried this with several help screens and found that I could say the same thing in one screen that originally took two.

Graphics

If you like to use line graphics to make a screen more eye-appealing, you will run into another problem with the HP 95LX.

The HP 95 uses the Lotus International Character Set (LICS) rather than the IBM character set. As a result, you can't use many of the line graphics characters. In particular, the line characters that mix double and single line characters are missing from LICS.

For now, the best work-around is to stick with either all double-line or all single-line characters.

Now, here is a question for those who have dug deeper into their HP 95 than I have. I recall that the HP 110 and HP Portable Plus had the ability to switch between the HP character set and the IBM character set. I wonder if the full IBM character set is buried somewhere in the memory of the 95LX and, if so, is there a way to use it? If not, is there a way to load the IBM character set from a font-file and use that in place of the LICS characters? Has anyone tack-

led this problem? Let us know.

The graphics screen of the HP 95LX is somewhat unique as well. It is not like the screens found in most color computers. Rather it is a simple, bit mapped display. I suspect that it behaves somewhat like a monochrome display screen with a Hercules card. However, in the case of the 95LX, there is no plug-in card. You'll have to write your own screen driver to take advantage of any graphics presentations.

Here's an idea. Borland's Turbo C and Turbo Pascal both use BGI (Borland Graphic Interface) drivers for all of the current graphics screens. Borland also provides a BGKIT file for those who want to write their own screen drivers. Is anyone willing to experiment with this to see if it is more than a blind alley? The BGKIT is available on CompuServe in the Borland forum (go bproga).

Another intriguing approach to graphics on the 95LX is the use of PCX graphics files. The opening screen of the 95LX uses a PCX file. If you've found your way into the _SYS directory, you've spotted 1000.PCX and have probably used that as a novel replacement for the usual opening screen. If you haven't tried this yet, just use the Set-Up key and choose Owner, then Picture. Enter the picture file name as C:_SYS\1000.PCX and then quit back to the opening screen.

So the double question is: where is the PCX driver program located? Is there a way to hook into this program and use it in other programs to display graphics? If this is a possibility, then we could use the PC-Paint program, on our desktops, to create some great graphics screens for the 95LX.

And speaking of screen drivers: where is ANSI? Has anyone tried installing ANSI.SYS or NANSI.SYS, on their 95LX? What happened?

The Keyboard

The biggest problem with the keyboard is its smallness, right? Other than that, it works fairly well. The usual programming techniques for reading keystrokes work for the 95LX.

However, many of the keys on the 95LX return an extended scan-code. If you're looking for a small challenge, how about writing a program that will capture and display the scan and ASCII code, as well as the name for all the keys, including those preceded by the **ALT**, **CTRL**, and **CHAR** key modifiers.

Command Line

Switches and Arguments

One thing to keep in mind when writing software programs for the 95LX is that you might want to avoid using command line arguments or switches in your programs.

Programs which require parameters like Grep, Pkzip, Pklite, and so forth, can't be run directly from FILER. You either have to shell out to DOS, or you have to use a batch file to run the program. Both alternatives tend to be a nuisance.

Perhaps a better approach would be to write programs that prompt the user for any input, such as file names, when they start running. If your program has a lot of options, consider displaying these options before prompting the user for input.

How About TSRs?

Should we avoid writing Terminate-Stay-Resident programs?

For sure, the HP 95LX can handle TSR programs, but most novice users cannot. It is all too easy to start a TSR program from the FILER, by accident. When you quit the FILER, there will be a hole in the computer's memory where the FILER was. The unsuspecting user could be headed for a crash.

Choosing the

Best Programming Language

I suspect that Assembler is the best language for the HP 95LX. It will

let you make the most of limited disk space and, if you know what you're doing, it should also give you the fastest running programs.

If you don't know Assembler, but do know "C," consider using the Spontaneous Assembly Library from *BaseTwo Software, 11 East 200 North, Orem, UT 84057; 800-277-3625*.

Spontaneous Assembly contains over 700 different functions, written in assembler, and callable by C-sounding names.

Oh Say Can You C?

The next most appropriate programming language would have to be C.

I have been using Turbo C 2.0 for the past month to write several game programs for the HP 95LX. TC2.0 works well and yields reasonably small executable files. Borland's extensions to ANSI-C, such as "cprintf()" and "window()" also work on the HP 95LX and produce fast screen updates.

HP recommends Microsoft C and Assembler. All of the examples and working code in the Developers' Pac were apparently written using MS C 5.1 and MASM.

If you want to write System-Manager-compliant programs, today, you are almost obliged to write them in MS-C. System-Manager-compliant programs let the user run your program and then switch, via a blue-key, to the built-in applications such as MEMO or 1-2-3.

In my first attempt at writing a System-Manager-compliant program, I was unable to make use of the MS C routines in Turbo C. As time goes on routines for creating System-Manager compliant code may become available for free or as shareware in Turbo C, Turbo Pascal, and other languages.

System-Manager-compliance is a most important subject and will be dealt with in future columns. Those of you who have some experience writing System-Manager-Compliant applications, be sure to share your experiences here

When compiling C programs, use the small memory model librar-

ies. This will limit you to 64K for code and 64K for data.

Turbo Pascal 6.0

Turbo Pascal 6.0 has become my preferred programming language for the HP 95LX. It produces .EXE files that are smaller than comparable programs, written in Turbo C.

If you want to incorporate windows and fast screen updates in Turbo Pascal, be sure and use the CRT unit.

For windowing techniques, I have found that the WIN.PAS and WIN.OBJ files that come with Turbo Pascal 6.0 work very well and give the best bang for the buck. Other windows libraries work well, but they tend to add a lot of overhead.

Object Oriented Pascal and C++ are also useful, but, again, the extensions to the languages add overhead to the resulting .EXE files.

An Oldie-But-Goodie: Turbo Pascal 3

If you have a copy of Turbo Pascal 3.02A languishing in a file drawer, get it out, and dust it off. It will work almost out-of-box on the HP 95LX.

The version of Turbo Pascal 3.02A that I tried is for the IBMPC. It works on the HP 95LX like a charm. I used TINST to install the screen for "default mode" and to specify that the error message file could be found as C:TURBO.MSG.

I then used the Norton Utilities program to make one slight modification to TURBO.COM. At offset 006B hex, I changed 19 hex to 10 hex. This changes the screen size, for the built-in editor, from 25 lines to 16 lines. Then I used DIET.EXE to compress TURBO.COM to a 31K file; ported both TURBO.COM and TURBO.MSG to the 95LX and tried writing a simple program. The results were favorable. Even the normal writeln() function performed well. Screen updates were more than acceptable.

If you want a high level language that you can take with you in

your palmtop, then Turbo Pascal 3.02a seems to be the smallest, "standard" compiler/ editor available.

How About Basic?

BASIC programs should also work on the 95LX, at least if they are compiled. I have not tried BASIC code on my 95LX. I'd be interested in the experience of others who have tried using this venerable language on their 95LX.

Getting Buggy: DEBUG

Finally, if you want the ultimate

programming challenge, without sacrificing any disk space, you might try using DEBUG.COM. DEBUG.COM is available in the C:_SYS subdirectory on the 95LX.

Past issues of PC Magazine contain many useful articles that will get you started using DEBUG.

If you have an older version of MASM, you should also find that it contains a copy of MAPSYM and SYMDEB. SYMDEB is the big brother to DEBUG. The documentation for this program will give you some more ideas of what you can do with DEBUG.

Let's Keep in Touch

As I mentioned at the beginning of the article, I look forward to your responses, answers, reflections and further questions.

To reach me you can: send a letter to Ed Keefe 314 SW Logan, Ankeny, IA 50021; send a message to me via CompuServe at 72377,1064; leave a recorded voice message at 515-248-7500; or send a letter or fax to Personalized Software, Programmer's Corner, PO Box 869, Fairfield, IA 52556; Fax: 515-472-1879.

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Built-In RAM: Part 1 – The RAM Disk

The concepts of RAM Disk, RAM Card, System RAM, Total Memory, Disk Drive, File, A Drive, C Drive, Byte, Kilobyte, and Replacing Current File are explained in this column designed for novice HP 95LX users.

By Hal Goldstein

The Vocabulary of Computers

Computers can be frustrating even to the most sophisticated user. To a "beginner," the whole experience of trying to make practical use of all the built-in capabilities of the HP 95LX can be overwhelming.

In this regular column we'll review fundamental concepts and procedures of which all HP 95LX users should be aware. These ideas will form the basis for our work on the HP 95LX and to a large extent, our work on other computers.

Learning how to use a computer means learning a new way of thinking. That way of thinking gets expressed in what we can call here "computerese," the vocabulary needed to describe computer-related concepts. The challenge of learning this new vocabulary is the interdependent nature of the concepts. That is, to understand one term, we need to understand others, which in turn often are defined by the first term. The only solution to this Catch 22 situation is repetition. Keep reading and rereading the manual and articles such as this, keep trying things out, don't be afraid to make mistakes. Eventually the whole gestalt sinks in.

Understanding the concepts presented in this regular column geared for beginning and to some extent intermediate users will enhance the practical daily use of our HP 95LX. This article will be successful if, when done, you have a clear understanding of what "saving and replacing files to the RAM disk" means. We will define terms as they are introduced.

Total Memory = RAM Disk + System RAM

Hold down the Shift key and press Filer to enter the Setup menu. At

the top of the screen (in an even more important position than time, date and battery level) are three values. Total Memory equals 512 and is the sum of the values listed for RAM Disk plus System RAM. 512 here means 512K which can be thought of the capacity to "remember" 512,000 alphabetic characters.

In Computerese we use the term "bytes" instead of "characters." The "K" in 512K stands for "kilobytes," roughly 1,000 bytes per kilobyte.

All HP 95LX users have 512K of RAM, of Total Memory built in. RAM is an acronym meaning memory. On the HP 95LX there are two very different types of memory, long term and short term, or in computerese RAM disk and System RAM.

The RAM disk is where we permanently store information such as the memos we write, the Lotus spreadsheets we create, our phone directory, our appointments, and our HP CALC equations. System RAM is the temporary work space where we create or modify the memo, the spreadsheet, the phone book, the appointment book, or the equations. In this article we will focus on the RAM Disk. Next time we will look at System RAM and see how the two relate.

Built-In RAM Disk

Let us say when we pressed Shift FILER, the screen showed we had a 254K RAM Disk. A 254K RAM Disk means we have room to permanently store approximately 254,000 alphanumeric characters worth of information. Maybe our phone directory takes up 25K, a Lotus spreadsheet takes 15K, and a letter we just wrote in MEMO takes 10K. If no other files were on our RAM Disk, we would have used up 50K of

our 254K RAM disk to store our phone book, Lotus file, and letter.

In the last paragraph we spoke of "files." We also alluded to the built-in application PHONE, where we create our phone book; 1-2-3 where we create spreadsheets; and MEMO where we create letters.

The notion of "file" is probably the single most important concept to understand when using a computer.

To understand the concept of storing files on the RAM Disk let us look at how we might store files on a desktop computer using floppy disks. Most people have seen floppy disks - the 5 1/4" black floppy kind and the solid 3.5" colored disks.

Suppose we write a report on a desktop computer. When we finish for the day, naturally we want to save our work so we don't have to retype it all in again. On our desktop, we could save our report by giving it a name and "saving" it to the floppy disk physically located in a "disk drive." Once named and saved, our report becomes a "file" on the floppy disk. Similarly, other information such as a Lotus spreadsheet, letters and memos, or our address book, could be stored as files onto the floppy disk.

Because we can put a floppy disk in our briefcase, it is easy to conceptualize that our file is physically stored on the floppy disk. On the HP 95LX we can also store files. We store them to the built-in RAM Disk. According to what we discovered by looking at our Setup screen, we have a RAM Disk with enough room to store 254,000 (254K) worth of characters.

The built-in RAM Disk in the HP 95LX is said to reside in the "C:" drive.

The RAM Card

If we purchase a RAM Card to fit in the HP 95LX card slot, we have more room to store our files. Placing a 128K RAM Card in the card slot on the side of the HP 95LX, means we have room to store 128,000 additional alphanumeric characters (bytes) of information.

The card slot is the HP 95LX "A:" drive. Therefore, when we save

files to the RAM Card in the card slot, we must save the file to the A drive. For example, to save a MEMO file to the RAM Card, we must save it as, say, A:NOTES using the "A:" prefix. If we do not give the HP 95LX a disk drive letter, the HP 95LX normally assumes we are saving to the built-in C drive.

A RAM Card operates much like a floppy disk in that after saving files to the RAM Card we can remove it from our HP 95LX and put it our briefcase for later use. (The backup battery in the RAM Card keep the files alive).

Technically, that RAM Card is also a RAM Disk. With a RAM Card, we have a built-in RAM Disk in the C drive and another RAM Disk on the RAM Card in A.

A disk, whether it be a floppy disk, a RAM disk, or a hard disk (a higher capacity disk found as part of most desktop personal computers), is a medium for permanently storing files. This is the "long term" memory we originally spoke of.

Replacing Current File

Let's look what happens when we save a file to the RAM Disk. Suppose we want to create a new file within MEMO. To do so, we enter MEMO and press **[MENU]** file **n**ew. If we are asked to "Save Changes," we enter **y** or **n** depending on whether we want to save our current work. (The meaning of "save changes" will be clearer soon.)

Now, we type some notes. For safety sake, we decide to save those notes even though we know we will be working on them again soon. We press **[MENU]** file **s**ave and type **n**otes for the file name. Notice that now just below "Memo" on the top left of the screen is the name of the file we just saved, "NOTES.TXT." The NOTES.TXT file resides on the RAM Disk on the built-in C drive.

(When MEMO saves a file, it automatically adds the .TXT extension to the eight-character-or-less name you give the file. Similarly, APPT adds the .ABK extension, PHONE adds .PBK, HP CALC adds .EQN, and Lotus 1-2-3 adds .WK1.)

Let us say we add to the NOTES file and decide to save it again to be safe. This time we press **[MENU]** File **S**ave. MEMO asks if we want to save the file as C:_DAT\NOTES.TXT. (We'll talk about the meaning of subdirectory _DAT in a future article). We do, so we press **[ENTER]**. We are now asked, "Replace current file? (Y/N)".

It is important that we understand what is happening when we are asked to replace the current file.

Currently, a file named NOTES.TXT exists on our RAM Disk. That file contains none of our recent additions. It contains only the notes we had made up to the time we originally saved the file.

Now we want to save our new work. All our additions reside in short term memory, in System RAM, not yet on the RAM Disk.

Before our HP 95LX lets us make those additions to NOTES.TXT permanent, it asks whether we want to destroy the "current" version of NOTES.TXT on the RAM Disk in order to replace it with our latest version. It asks us whether we want to "replace current file." In other words do we want to replace the current version of NOTES.TXT -- the one that exists on the RAM Disk from the first time we saved the file -- with the updated version we have been working on. We do, so we press **y**, "Yes."

The same sequence of keystrokes occurs when we want to update our APPT file, our PHONE book, or our HP CALC work. Similarly, when we modify our 1-2-3 work, we save the results by pressing **[MENU]** file **s**ave **[ENTER]** **r**eplace.

An unfortunately note: MEMO messages are confusing because MEMO uses the word "replace" in several ways. That is why you need to understand what is going on behind the scenes.

Suppose you added a few more sentences to NOTES. Then on impulse you decided to finish a letter you had been working on. You issue the **[MENU]** file **o**pen command. The message you get: "Replace file without saving? (Y/N)". The file in question is NOTES which you modi-

fied but did not save. You are being asked whether you want to bring in the letter without saving your recent work in NOTES. Answer **n** and you will be back in NOTES, where you can save the latest version with a **[MENU]** file **s**ave **[ENTER]** **y**. Answer **y** and you will lose your latest work in NOTES as soon as you bring in the letter.

Next Time

Next time we will continue this discussion of System RAM and RAM Disk. We will examine what System RAM is in more depth and will explain why we might want to reconfigure the System RAM / RAM Disk ratio and how to do it.

In subsequent issues we will also go deeply into procedures for safeguarding and backing up our work. There is nothing more frustrating than losing the work we did on our computer. We've all lost work; however, there are definite prevention procedures. We will be examining step-by-step approaches for preventing such loss.

If you have suggestions on preventing data loss (e.g. specific backup procedures), please write. Also, please send me feedback on whether you found this article useful and what you would like to see in this column in the future.

MEMORY

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CARDS

News From Thaddeus Computing, Inc.

By Hal Goldstein

[Editor's Note: In this issue you will see references to both "Personalized Software" and "Thaddeus Computing, Inc." In the future we will publish The HP Palmtop Paper under our corporate name, Thaddeus Computing, Inc.

The HP Palmtop Paper — What to expect

Our aim is to make this expanded, free, first issue worth the subscription price of *The HP Palmtop Paper* in itself. We expect future issues to be even more valuable as we get feedback and knowledge from our expanding readership base. Expect to see more discussions of HP 95LX-related products, more tips for using built-in software, more ways of increasing your HP 95LX productivity. Even though this issue contains a bit more editorial content than normal, expect substantial information in each issue.

Our challenge will be to provide as much useful information for as many of you as possible. The challenge is best expressed from the comments of two readers representative of the feedback we received:

"I would especially like a column systematically covering software architecture and perhaps details of hardware construction; design breakthroughs, 'inside the 95LX.' Document the debugger, and is there a built-in assembler/disassembler?"

Warren Anderson, M.D.
Hawaii

"PLEASE, PLEASE, PLEASE, PLEASE, have significant space devoted to novices such as myself."

Jack Friou
Columbus, Georgia

Our attempt will be to supply enough information to satisfy users on both ends of the computer sophistication spectrum. Fortunately, many articles such as product reviews and tips on built-in software appeal to almost everyone.

Richard Umble of Bellevue, Washington summed up our thinking for the general thrust of *The HP Palmtop Paper*:

"Please keep part of the magazine for the novice: Don't make it too technical. The HP 95LX Palmtop appeals to executives who have little time or patience for more complicated devices in their lives. By subscribing to the magazine I want it to help me use my HP 95LX to its full capacity without having to become a programmer."

Finally, we see *The HP Palmtop Paper* fulfilling the desire of Robert Bernardino of Campbell, Ohio:

"I would like to see Personalized Software be the focal point for getting software companies to port their programs onto the 95LX."

Our newsletter, devoted exclusively to the HP 95LX, should encourage developers to create products for the HP 95LX. We intend to actively encourage the development of new products and the porting over of existing products for the HP 95LX.

Contribute To The HP Palmtop Paper

We view *The HP Palmtop Paper* as a chronicle of the collective wisdom of HP 95LX users throughout the world. As you turn through these pages, you'll find that 95LX users like yourself created the tips, ideas, articles, and regular columns. The "best stuff" comes from the day-to-day users of the HP 95LX.

What you can contribute

1. Letters - on any topic. You might comment on an item from a previous issue, tell us your experience with an HP 95LX product, thank or make suggestions to HP, or whatever.
2. Tips - on built-in software or other topics dear to the hearts of HP 95LX users.
3. Articles - about uses of built-in software, third-party 95LX products, technical details, or

other topics of interest to HP 95LX users.

4. Article proposals - outline a possible article, and we'll give you feedback.
5. Review products - if there is a particular class of products you feel especially qualified or interested in reviewing, contact us.
6. Software submissions - If you have developed or know of free software, Lotus templates or macros, etc. that most or all HP 95LX users would appreciate, submit them to us for possible inclusion on the 1992 HP Palmtop Paper Subscribers Disk.
7. Beta test site - If there's a particular class of HP 95LX-related product that you would be willing to test, contact us. We'll put developers in contact with you.

How to contribute

Send your submissions or comments by disk (text in MEMO [ASCII] or WordPerfect format) to: Thaddeus Computing, Inc., PO Box 869, Fairfield, IA 52556; fax: 515-472-1879, or to our CompuServe mail [75300, 2443]. You may also contact Hal Goldstein or Richard Hall directly at 515-472-6330 or 800-373-6114.

What you get in return

The satisfaction and fun of sharing your experiences, and the appreciation of your fellow HP 95LX users.

The HP Palmtop Paper ON DISK — Issue 1

This new service is not to be confused with the 1992 Subscribers Disk which will be sent free to all HP Palmtop Paper subscribers with the May/June issue. (See following article for more information on the Subscribers Disk.)

Contents of Disk

The HP Palmtop Paper ON DISK - Issue 1 will consist of:

1. The editorial content of this entire newsletter in a text (ASCII) file, readable by any word processor. Having the contents of this issue on disk means you can search for a key word in your word processor and immediately find the information you need.

2. In-depth descriptions of some of the products advertised or listed in this issue.
3. All free software and shareware listed in this issue along with documentation. Note that if you decide to use the shareware, you are required to pay the shareware author his fee (usually between \$5 and \$35). Also we will be unable to support you in your use of the software included on this disk. See the accompanying chart for the contents of this disk.

Note: some of these programs may be selected for the 1992 Subscribers Disk to be sent free to all 1992 subscribers to *The HP Palmtop Paper*. *The HP Palmtop Paper ON DISK, Issue 1* is ready for shipping.

Software Included on *The HP Palmtop Paper ON DISK* - Issue 1

Product	Function	Type	Page
APCALC	Sys-Mgr compliant programmer's calculator	Shareware	43
ATO	Automates CompuServe activities, saves money	Free	12
CHANGE	Changes File Attribute, protects data	Free	27
DIET	Compresses files, saves disk space	Free	17
ENCORE	Keyboard macro program, saves keystrokes	Shareware	20
GAMES	15 Games, adds spice	Shareware	41
GVCMOD.95	How to get GVC modem to work with 95LX	Free	2
HPSL14.DES	Description of HP 95LX CompuServe library files	Free	22
KBFB2	Cap lock control, makes keyboard more useable	Shareware	20
MESSAGE	Automates 95LX CompuServe access via 123 macros	Free	2
PCOUTLINE	Outline program, organizes work	Shareware	20
SKDL	Graphics program, creates sketches	Shareware	41
TRAVELWARE	Organizer for traveling	Shareware	42
VDL	Automatic deletion program, cleans up disk	Free	27
VDE	Compact powerful text editor MEMO alternative	Shareware	41

How to order *The HP Palmtop Paper ON DISK*

1. **SINGLE ISSUE** - *The HP Palmtop Paper ON DISK* (Fall 1991 issue described above and in box on this page). Price:
 U.S./Canada: \$33
 Other International: \$38
2. **ONE-YEAR SUBSCRIPTION** - (Fall 1991 issue and all 6 1992 issues). Price:
 U.S./Canada: \$139
 Other International: \$169
3. **SPECIFY DISK SIZE** - Please be sure to indicate the size and format of the floppy disk you wish (3.5" 720K; 3.5" 1.44M; 5.25 360K; 5.25 1.2M; Mac).
4. **SEND PAYMENT** - Money Order or Check (in U.S. dollars drawn on U.S. bank) or Master Card, Visa (including card number and expiration date) to:

The HP Palmtop Paper ON DISK, Issue 1, Thaddeus Computing, Inc, Box 869, Fairfield, IA 52556; Fax to 515-472-1879; or Call 515-472-6330 or 800-373-6114.

Free Subscriber Disk To All Subscribers

One of the most popular and appreciated aspects to our sister publication, *The Portable Paper*, has been the annual Subscribers Disk. We will fill a 720K 3.5 inch floppy disk (or several 5.25" 360K floppy disks) with the best free software for the HP 95LX we can find -- and there is and will be plenty to choose from.

For example, DIET.EXE dis-

cussed in this issue is a prime candidate. As other utilities, programs, Lotus templates and macros come to our attention, they will become candidates for the disk. Please send us your submissions or proposals for the 1992 Subscribers Disk. If you use or have developed a utility that you think other HP 95LX users would appreciate having, please send it to us as soon as possible on a floppy disk.

This free offering to all our subscribers is not to be confused with *The HP Palmtop Paper ON DISK - Issue 1*, described above. We will mail the Subscribers Disk to all subscribers with (or about the same time as) the May/June, 1992 issue.

The HP Palmtop Paper Challenges Readers

Here are several challenges for savvy HP 95LX users. If you have a good solution or even a good partial solution to share with other HP 95LX users, send it our way to: *The HP Palmtop Paper Challenge, BOX 869, Fairfield, IA 52556*. We'll publish your responses in future issues.

If any vendor would like to give away products as prizes for the best responses to our challenges, contact us. We'll name your product and how it can be obtained when we describe the challenge and when we publish the response. If readers would like to pose other challenges, please do so by writing us.

Challenge 1

Many HP 95LX users would like to go back and forth quickly between 95LX built-in applications and DOS software. It can seem quite cumbersome to have to manually close down all HP 95LX applications and save work before entering DOS. When returning from DOS, a user would like to automatically access the MEMO, 1-2-3, and other built-in application files he last worked on before exiting to DOS. Send us your procedure for quickly going back and/or forth between HP 95LX built-in software and DOS applications.

Challenge 2

Many of us are used to software that creates a backup file upon saving. Such software renames the existing version of that file with a BAK extension and then performs the normal save. This procedure preserves the current version of a file along with its previous version.

Further, many HP 95LX users for safety sake would like to automatically store that backup file to a different drive (e.g. store NOTES.TXT to C:_DAT and NOTES.BAK to A:_BAK) We would be interested to see a solution that would allow a user to save a file from any built-in 95LX application while at the same time automatically storing its backup file to a second drive.

Products from non-HP vendors designed to work with the HP 95LX

All known HP 95LX-related hardware, software and connectivity products are listed and briefly described.

By Richard Hall and Hal Goldstein

A number of manufacturers and developers have already created products to enhance your HP 95LX. In order to bring you up-to-date, we have listed all known commercial products along with some of the most popular shareware* products available for the HP 95LX. Compu-Serve members can check the HP 95LX forum library for additional listings of freeware and shareware.

In order to list all products we have given only a brief description of each product. We have done our best to list these products in an accurate and unbiased way as of October, 1991. We apologize for any omissions or incorrect data. For more details we suggest you see the advertisements in this issue or contact the distributor directly.

In future issues we will discuss, describe, compare, and review many of these products. If you wish to share your experience with any of these products with fellow HP 95LX users, please write us, and we'll do our best to publish your comments. Those interested in reviewing products should write or call us telling of your interests and background.

Finally, as you can already see, there are many HP 95LX-related products, and we may not be able to review or give a detailed discussion of all of these products, especially as the numbers grow. Please tell us what product or class of products you are most interested in seeing discussed in these pages.

* Available on Palmtop Paper on Disk - Issue 1.
See page 36 for more information.

Hardware and Connectivity

Carrying Cases

Custom 95LX Cases

Available in leather or washable nylon, these cases incorporate a secure, zippered pocket for holding IC cards, and a checkbook-sized pouch for receipts, checkbooks, notes, business cards, etc. Available in black, blue, and other standard colors. Custom colors and silk-screening are available.

Availability	NOW
Pricing	
Nylon case	\$24.95
Leather case	\$39.95
Deluxe case	\$49.95

COMPANY: *Palmtree Products Inc., 51 Sawyer Road, Suite 150, Waltham, MA 02154; 617-891-3880; Fax: 617-647-4075.*

Professional Organizer Case

The Pocket Professional Organizer protects your palmtop PC and stores memory cards, credit or business cards, or driver's license in any of 14 pockets. An additional sleeve holds pen or pencil and a zippered pocket protects important documents. This leather case comes in a flat-black color.

Availability	NOW
Pricing	\$99.95

COMPANY: *Sparcom Corporation, 897 NW Grant Avenue, Corvallis, OR 97330; 503-757-8416; Fax: 503-753-7821.*

See Advertisement, Page 3.

Day Planner Cases

Cases designed to work with Day

Planners. Vinyl or leather cases come in black or burgundy color in a variety of styles and prices.

Availability	NOW
Pricing	\$8.99 - \$149.99

COMPANY: *Franklin International Institute, Inc., P.O. Box 31406, Salt Lake City, UT 84131-0406, 800-654-1776; Fax: 800-242-1492.*

Connectivity

In this section we list a series of products that allow HP 95LX users to transfer information between the HP 95LX and other computers.

Serial Cabling

Hewlett Packard offers a HP 95LX to AT compatible serial cable along with an adapter kit for printers and modems. See products from HP section on page 9.

All Purpose Serial Cabling

This serial cable package allows you to connect the 95LX with a printer, modem, or other PC. The kit consists of a cable with "strain relief" for long-term reliability, and four adapters. The cable has a 4-pin plug for the HP 95LX serial port on one end and an RJ-11 phone plug on the other which fits into each of the adapters. This allows you to carry one cable for many different jobs.

The kit includes adapters for a modem, a printer, a 9-pin PC serial port, and a 25-pin PC serial port. A public domain KERMIT disk is included for PC file transfers.

Availability	Now
Pricing	
Cable, choice of 1 adapter	\$30
Cable, 4 adapters, KERMIT	\$45

COMPANY: *CMT, 413 SW Jefferson Ave., Corvallis, OR 97333. 503-752-5456; Fax: 503-752-4117.*

HP Connectivity Kit

See HP products section, page 9 for more information on 95LX to PC Connectivity kit.

95LX to Windows Connectivity

IntelliLink is an MS Windows alternative to the software in HP's Connectivity Pack. IntelliLink allows direct import/export capabilities to and from Windows applications on your PC, with a few clicks on a dialogue box. IntelliLink provides dynamic update reconciliation for imported appointments and phone items with Personal Information Managers including with IBM Current, mainframe PROFS connection; Sidekick 2.0 (running as a Windows 3.0 DOS application; Polaris Packrat; Asymetrix Daybook; Word for Windows & AmiPro; MS Excel for Windows; Lotus 1-2-3 for Windows; Paradox database; dBase database; Windows 3.0 Clipboard. The IntelliLink package does not include a serial cable.

Availability NOW
 Medium floppy disk
 Runs under System Manager Yes
 (HP resident portion)
 Pricing \$149.95
 COMPANY: *IntelliLink, Inc., 7 Parker Street, Acton, MA 01720; 508-264-9943.*

HP 95LX to MAC, Windows, and MS DOS Connectivity Kits

Nuvotech connectivity kits link the 95LX to a MAC, Windows or DOS PC. Each kit includes a 1.5 meter HP 95LX serial cable, 9-pin to 25-pin adapter, software on 3.5" (and 5.25") disks, and an owners manual.

Availability 11/91
 Medium floppy disk
 Runs under System Manager No
 Pricing (Specify which kit) \$99
 COMPANY: *Nuvotech, 2015 Bridgeway, Sausalito, CA 94965; 800-468-8683, 415-331-7815; Fax: 415-331-6445.*

See Advertisement, Page 32.

Disk Drives - Floppy

Serial Drive

The FD-200, battery-powered, PC compatible 3.5" disk drive weighs under 3 pounds. The drive connects to the HP 95LX serial port and

allows the user to run programs or access data directly from a standard DOS 1.44MB 3.5 inch disk. The unit comes complete and ready to use.

Availability 12/91
 Pricing \$499.95
 COMPANY: *Sparcom Corporation, 897 NW Grant Avenue, Corvallis, OR 97330; 503-757-8416; Fax: 503-753-7821.*
 See Advertisement, Page 3.

Disk Drives: RAM and ROM Card

A number of companies make both internal and external Card Drives for your desktop PC computer. These drives look like floppy disk drives, and let you use your RAM or ROM card like a floppy drive to exchange data between your HP 95LX and PC. Card drives generally come with software "device drivers" that install onto the PC so the PC knows how to handle the card drive.

Here is a list of the card drive manufacturers of whom we are aware. Expect a future article in *The Palmtop Paper* that compares the features and pricing of the various alternatives.

Many Alternatives

Adtron makes a whole series of SolidState Data Drives including external and internal single- and dual-card drives with serial, parallel, or PC Bus interface. The external drives connect to the PC either via the serial or parallel port; the internal drives fit inside the PC.

External Drive with serial interface	
Availability	Now
Pricing	\$350
External Drive with parallel interface	
Availability	NOW
Pricing	\$350
Internal Drive with Bus interface	
Availability	NOW
Single drive	\$345
Dual drive	\$640
ROM Card Programming Option (for external serial or parallel drive)	
Availability	NOW
Pricing	\$100
PC/XT/AT ISA Bus Adapter	
Availability	NOW

Pricing \$141

COMPANY: *Adtron Corporation, 128 West Boxelder Place, Suite 102, Chandler, AZ 85224; 602-926-9324; Fax: 602-926-9359.*
 See Advertisement, page 29.

Internal Drive

Databook offers an internal Thin-Card drive. The drive also programs FLASH ROM cards. An external card drive will be released in first quarter, 1992.

Availability NOW
 Pricing \$489
 COMPANY: *Databook Inc., 10 Alder Bush, Rochester, NY 14624; 716-889-4204; Fax: 716-889-2593; Modem: 716-889-2593.*

Parallel Drive for Europeans

DIP offers the Pico, an external card drive that connects to your PC's parallel port.

Availability NOW
 Pricing £175
 COMPANY: *DIP Systems, 32 /Frederick Sanger Road, Surrey Research Park, Guildford, Surrey, GU2 5XN ENGLAND; 0483 301555; Fax: 0483 301434.*

Parallel Drive For the U.S.

PAMCO offers a small inexpensive external card drive that connects to your PC's parallel port.

Availability NOW
 Pricing \$149.95
 COMPANY: *Pamco Electronics Inc., 377 Carowinds Blvd., Fort Mill, SC 29715; 800-255-6265 or 803-548-6740.*

External Serial Drive

Palmtree offers a RAM card reader that connects to the serial port of any PC-compatible, the HP 95LX, or PS/2 computer powered by an external AC adapter.

Availability NOW
 Pricing \$229
 COMPANY: *Palmtree Products Inc., 51 Sawyer Road, Suite 150, Waltham, MA 02154; 617-891-3880; Fax: 617-647-4075.*

RAM Cards

A number of third-party vendors are offering RAM cards. Here's a listing

EduCALC ...The one stop source for all your 95LX accessories.

Software:

Derive 2.06

Simplifies BIG Algebraic expressions for you. Features symbolic algebra, derivatives, vectors, matrices, trig, statistics, finance, plus 2D and 3D plots!
Stock #2348 (Derive 2.06, ROM Card).....\$249.95

Money Manager

Program features banking, checking, credit card, and expense functions. Comes with 95 and PC versions; disk version requires 512K RAM card and Connectivity Pac.
Stock #2492 (95 Money Manager, 3.5" & 5.25") List \$60.....\$54.95
Stock #2494 (128K RAM Card with MM installed).....\$214.95

Connect your 95 to PC Windows with

IntelliLink

Import/export to and from Windows at the field level with a few clicks of your mouse. Requires serial cable and PC running Windows 3.0
Stock #2517 (IntelliLink 2.1, 5.25" & 3.5") List \$100.....\$89.95

Mechanical Engineering Equation Library

160 of the most used equations for ME, plus Lotus 1-2-3 spreadsheets. Requires Connectivity Pack.
Stock #2535 (ME Library for HP 95, 5.25").....\$29.95

95 Utility Pack

36 small, efficient programs written for the 95 and its 40 column display. Requires Connectivity Pack.
Stock #2467(95 Utility Pack, 3.5 & 5.25 Disks) List \$35.....\$27.95

FX-7 Flight Pak

Includes flight plans, DUATS weather briefings, E6B and weight and balance. Requires Connectivity Pack.
Stock #2544 (FX-7 Flight Pak).....\$194

Contact 95

Contact Manager for HP 95 and Windows, featuring integrated appointment book with Hot Key access functions. Requires 1Meg RAM card and Connectivity Pack.
Stock #2559 (CONTACT 95, 5.25).....\$199

TravelWare

Keep all your trip records on the HP 95. Requires Connectivity Pack.
Stock #2555 (95 TravelWare, 5.25).....\$29.95

Foreign Language Translation

Sentence by sentence translation including idiomatic expressions of Spanish, French, and German.
Stock #2566 (95 Spanish, 2 cards) List \$299.....\$279
Stock #2567 (95 French, 2 cards) List \$299.....\$279
Stock #2568 (95 German, 2 cards) List \$299.....\$279

Curve Fit: Linear Regression Software

Enter up to 99 points and find area under the curve, do graphs, and compare standard deviations for linear regression.
Stock #2545 (Curve Fit ROM card) List \$260.....\$235

95LX-UTIL FORTH Programming System

Turn your 95 into a software development system.
Stock #2562 (95LX-UTIL, 5.25) List \$70.....\$64.95

muLISP for the HP95

Fast, Compact language customized for the 95. Requires Connectivity Pack.
Stock 2560 (95 muLISP, 5.25).....\$399

HP 95LX Books:

Lotus in Minutes on the HP 95LX Palmtop

The essential commands and procedures of Lotus 1-2-3 in the 95, such as global commands, formulas, macros, and databases.
Stock #2469, Lotus in Minutes, 124p softbound.....\$8.95

The Answers You Need for the HP 95LX

Palmtop PC

The perfect, quick and easy reference book to keep on the desk beside your 95.
Stock #2468, Answers for the 95, 112p softbound.....\$8.95

Explorer's Guide to the HP 95 Palmtop PC

Stock #2534, Explorer's Guide to HP95,112p softbound.....\$17.95

Using Your HP 95LX: Practical

Examples and Applications

More than 150 real-life examples from HP and Lotus experts
Stock #2564, Using Your HP 95LX, 380p softbound.....\$24.95

Hardware:

HP 95LX

Stock #HP95LX (Palmtop Computer) List \$699.....\$499

Palmtree SolidState Data Drive

Connects to any serial port on a PC/Compatible. Up to 115,200 baud data transfer rate.
Stock #2362 (External Data Drive) List \$299.....\$279

Internal ThinCard Drive

Include half-length PC board and Drive which fits into 3.5" or 5.25" Drives. Includes software
Stock #TM2000 (ThinCard Drive).....\$289

Touchbase WorldPort Modems

HP's Suggested standard issue modem for HP 95LX communications.
Stock #2461 (WorldPort 1200 Modem) List \$159.....\$134.95
Stock #2462 (WorldPort 2400 Modem) List \$229.....\$194.95
Stock #2489 (WorldPort 2400/V.42 BIS) List \$349.....\$299.95
Stock #2481 (Tandy Acoustic Coupler 2).....\$79.95

2400 bps miniModem

This is a Low Cost, pocket sized Solution from EduCALC.
Stock #MM24B (2400bps miniModem).....\$139.95

Diconix 180si Portable Printer

Features Centronics and Serial interfaces. Uses HP Ink-Jet Printheads.
Stock #K150P (Diconix Serial Printer) List \$450.....\$339

RAM Cards/Interfacing Equipment:

Palmtree Products

Stock #2363 (1MB RAM Palmtree) List \$649.....\$629
Stock #2364 (2MB RAM Palmtree) List \$995.....\$945

Hewlett-Packard

Stock #1002A (128K RAM Card) List \$200.....\$159.95
Stock #1003A (512K RAM Card) List \$400.....\$319.95

Sparcom

Stock #2368 (256K RAM Card) List \$199.....\$169
Stock #2369 (1M RAM Card) List \$500.....\$459

ACE card

Stock #2521 (512K RAM ACE card).....\$219
Stock #2522 (1M RAM ACE card).....\$429
Stock #2523 (1.5M RAM ACE card).....\$629
Stock #2396 (2M RAM ACE card).....\$829

Here's how you hook your 95 up to a PC, printer, or modem.

Stock #F1001A (Connectivity Pack) List \$100.....\$79.95
Stock #8222A (Serial Interface Cable only) List \$35.....\$29.95
Stock #8222A (Serial Cable Adapter Kit) List \$15.....\$14.95
Stock #2533 (95 Serial Interface Kit, 5.25").....\$36.96

Nuvotech

Stock #2556 (PC Connectivity Kit, 3.5 & 5.25) List \$99.....\$89.95

JetEye to LaserJet

Stock #ESI9500A (JetEye Interface) List \$129.....\$114.95
Stock #SPX325 (Serial-Parallel Converter).....\$106.95
Stock #2449 (Dual Purpose Cable).....\$34.95

Accessories:

Cases:

Stock #2519 (Nylon 95 Carry Case, black) List \$25.....\$19.95
Stock #2520 (Leather 95 Carry Case, black) List \$40.....\$27.95
Stock #2361 (Leather DeLuxe 95 Carry Case, burgundy) List \$50.....\$44.95
Stock #2354 (Pocket Prof. Organizer).....\$69.95

Adaptors:

Stock #2569 (Cigarette-Lighter Adaptor) List \$40.....\$34.95
Stock #82241A (AC Adaptor, for USA).....\$14.95
Stock #82241AB (AC Adaptor for Europe, 220v 50Hz).....\$14.95
Stock #82241AU (AC Adaptor for the UK, 240v 50Hz).....\$14.95
Stock #82241AJ (AC Adaptor for Japan, 100v 50/60Hz).....\$14.95
Stock #82241AG (AC Adaptor for Australia, 240v 50Hz).....\$14.95

Call us 8 to 5, Monday through Friday, West Coast Time, for ordering and technical assistance. 30-Day money back guarantee; overnight shipping available.

Send for **FREE** Catalog:

EduCALC

27953 Cabot Rd.
Laguna Niguel, CA. 92677
(800) 535-9650, ext. M



of the ones we've found with pricing as of October, 1991:

ACE Technologies Inc.

Distributes RAM cards and other memory, I/O card technologies. Each RAM card comes with a lithium battery installed, and coupon for 4 more replacement batteries.

Availability NOW
(call for 1.5MB card availability)

Pricing	
512K Card	\$239
1MB Card	\$459
1.5MB Card	\$669

COMPANY: ACE Technologies Inc., 2880 Zanker Road, #103, San Jose, CA 95134; 800-825-9977; Technical support: 408-428-9722; Fax: 408-428-9721.

See Advertisement: Inside Front Cover

ADTRON Corporation

Offers the following low power consumption RAM cards.

Availability	NOW
512K RAM	\$238
1MB RAM	\$460
2MB RAM	\$867

COMPANY: Adtron Corporation, 128 West Boxelder Place, Suite 102, Chandler, AZ 85224; 602-926-9324; Fax: 602-926-9359.

See Advertisement, Page 34.

DIP Systems

Offers the following RAM cards:

Availability	NOW
128K RAM	£95
512K RAM	£175
1MB RAM	£295
2MB RAM	£490

COMPANY: DIP Systems, 32 Frederick Sanger Road, Surrey Research Park, Guildford, Surrey, GU2 5XN ENGLAND; 0483-301555.

Hewlett-Packard

Offers a 128K and a 512K RAM card. See Products from HP section, page 9.

Palmtree Products

Offers 3 RAM memory cards. Meets HP specification for low power consumption.

Availability 11/1/91
Pricing

What's to come in 1992, product-wise?

HP 95LX users can expect a whole range of software and hardware products designed for the HP 95LX. The Palmtree Paper will keep you abreast of developments as these products become available.

Here are some guesses of just some of what we might expect:

STORAGE

1. External floppy drives and hard drives that connect to the HP 95LX via the serial or infrared port.
2. Additional RAM card drives that attach directly to the HP 95LX.
3. Many kinds and sizes of RAM cards, Flash ROM cards, one-time programmable ROM cards, and part-RAM part-ROM cards.

PERIPHERALS

1. Expect to see peripherals connected to the HP 95LX via the serial port, the infrared port, the RAM Card slot, and the Mobile Data Link cradle.
2. 2400 and 9600 Baud Modems, MNP modems, Fax/Modems.
3. Printers.
4. Products that enhance the Motorola NewsStream receiver, two way radio communication devices.
5. Input and output devices such as monitors and keyboards that enhance the useability of the HP 95LX.

SOFTWARE

1. Utilities will be developed
 - a. to exchange and merge data created in desktop PC applications or other pocket organizers with data created using the HP 95LX built-in software;
 - b. to facilitate moving between built-in (system manager compliant) 95LX applications and DOS applications;
 - c. to work around other HP 95LX limitations
2. System manager compliant applications (e.g. software that works in conjunction with HP 95LX built-in programs).
3. A variety of applications specially suited for the portability of the HP 95LX. Such software will include contact management, money management, data base, games, and personal information management applications.
4. A variety of vertical market applications for such industries as insurance, real estate, engineering, medicine, education and so forth.
5. Routines written in various programming languages to ease the development of HP 95LX applications.
6. Popular IBM-compatible software redesigned for HP 95LX use.

These product ideas represent only a small sample of what we will be seeing in the coming months and years as new technologies come to fruition. Expect to see more discussion in The Palmtree Paper about what the synergy of pocket computing and new technologies will mean to each of us.

512K RAM card	\$349
1MB RAM card	\$649
2MB RAM card	\$995

COMPANY: Palmtree Products Inc., 51 Sawyer Road, Suite 150, Waltham, MA 02154; 617-891-3880; Fax: 617-647-4075.

Sparcom Corporation

Offer battery-backed RAM cards engineered for the requirements of the HP 95LX. Extended battery life

up to 40% longer in RAM cards.

Availability	NOW
Pricing	
256K RAM Card	\$299.95
1MB RAM Card	\$499.95

COMPANY: Sparcom Corporation, 897 NW Grant Avenue, Corvallis, OR 97330; 503-757-8416; Fax: 503-757-7821.

See Advertisement, Page 3.

Wireless Receiver

NewsStream

See NewsStream article beginning on page 4 for details on this Motorola / HP collaborative effort.

SOFTWARE

Contact Management

ACT!

ACT! automates the contact and calendar information of business people, integrating a contact database, scheduler and report generator. The 95LX version of ACT! will be able to interface directly with desktop versions of the software, allowing easy information transfer between the desktop and the 95LX.

Availability 4th quarter 1991
Medium floppy disk
(ROM version available 1st quarter, 1992.)
Runs under System Manager No
Pricing to be announced
COMPANY: *Contact Software International Inc., 1625 W. Crosby Road, #132, Carrollton, TX 75006; 800-365-0606, 214-418-1866; Fax: 214-418-2311.*

BCIM

Business Contacts and Information Manager is a sales and client management tool that manages time and activities as well as files and retrieves client profiles, correspondence, orders, and other vital data. It includes word processing, mail management, and auto dialing features. Install BCIM on a desktop and you can transfer contact phone and scheduling information to the 95LX.

Availability NOW
Medium floppy disk
Runs under System Manager No
Pricing
DOS version \$69.95
Windows version \$99.95
COMPANY: *Disk-Count Software Inc., 1751 West County Road B., Suite 107, St. Paul, MN 55113; 612-633-0730.*

See Advertisement, Page 21.

Pocket Sales Force

A program for controlling sales activity, lead and enquiry maintenance, contact follow-up, letters, mailshot and label production. Create a fully personalized system, with 20 user-definable fields. Single and multiple criteria search filters across 25 fields for fast retrieval. System Manager compliant with direct hot-key access to the HP's built-in applications.

It also provides multiple-choice pop-up list boxes for fast entry, merge print records, time- and date-stamped Notes history, output to Lotus 1-2-3 and macros for repetitive tasks. Pocket Sales Force is designed to be a complete solution for the sales professional.

Availability NOW
Medium ROM card/floppy disk
Runs under System Manager Yes
Pricing \$200
COMPANY: *Richard Hill, CM Software, Business Unit 1, 33 Sandford Road, Littlemore, Oxford, OX4 4XT, United Kingdom; (+44) 865-748875; Fax: (+44) 865-748873.*
See Advertisement, Page 19.

General Applications

15 Games*

Palmtop Paper columnist Ed Keefe, makes this contribution to HP 95LX users. Games designed for the HP 95LX screen and playable on any PC compatible computer include: Checkers, Concentration, Foxhounds, Go-Moku, Mini-adventure, Fastermind (like MasterMind), two versions of Reversi (Othello), Petals Around The Rose, Slot Poker, Poker Solitaire, Tetlix (like Tetris) Unscramble, Toggle-the-block, Fast-poet: free-form poetry writer.

Availability NOW
Medium floppy disk
Runs under System Manager No
Pricing \$29.95
COMPANY: *Shareware. Check or M/O. Available CompuServe HP 95LX library. The FastAid Co., 314 SW Logan, Ankeny, IA 50021. Add \$10.00 for overseas shipment. Specify 5.25" or 3.5" disk.*

SketchPad: A Drawing Tool*

SketchPad allows drawing and editing pictures on the HP 95LX. You can type in different-sized fonts, draw in three "colors," and "reverse" entire pictures to negative, black-on-white or white-on-black. SketchPad also allows copying sections (blocks), and various other editing procedures.

You can use SketchHPad to create PCX files for use as your (top-card) picture file on the sign-on screen. The PCX files created by SketchPad can be imported into your drawing package for printing.

Availability NOW
Medium floppy disk
Runs under System Manager No
Pricing \$15
COMPANY: *Shareware. Available CompuServe HP 95LX library. Dr. S. Rafaeli, 13 Hahayil St., Jerusalem, Israel (Internet: KBUSR@HUJIVM1.bitnet).*

VDE Editor for the 95LX*

The VDE Editor is a small word processor that runs on nearly all MS-DOS systems; version 1.62 supports the 95LX's screen and keyboard. VDE can be used as a full-screen DOS file editor, an add-on editor for telecom, database, and other application software, or a powerful word processor in itself.

VDE requires 56K of disk space (38K after compressing the file with PKLITE), and 128K or more system memory. It edits multiple files, with full block operations, find/replace, undo, macros, file utilities, and user-programmable keys.

VDE offers automatic text formatting, centering, justification, and full printer control including bold, italic, and other special effects; and it handles files either in plain ASCII text or in formats compatible with WordStar, WordPerfect, XyWrite, and Microsoft Word.

Availability NOW
Medium floppy disk
Runs under System Manager No
Pricing \$30
COMPANY: *Shareware. CompuServe IBMAPP or PALMTOP Forum. Eric Meyer, 3541 Smuggler Way, Boulder, CO 80303. E-mail address: CompuServe [74415,1305].*

* Available on Palmtop Paper on Disk - Issue 1. See page 35 for more information.

Money Management

Money Manager

Provides access to your financial data, including bank info, checks, credit cards, income, and expenses. Money Manager features simplified reconciliation of bank and credit card information plus report printing functions to screen or printer.

A PC and a 95LX version of the software are included so that you can exchange your financial data between your desktop and palmtop PC.

Availability NOW
 Medium Floppy disk or RAM Card
 Runs under System Manager No
 Pricing

Disk version \$59.95
 128K RAM Card version \$199.95

COMPANY: *Autobyte Corp., Timex Building, Route 11, Mooers, NY 12958; 514-637-6232; Fax: 800-465-4925.*

See Advertisement, Page 26.

Managing Your Money: Meca Software, Inc.

Managing Your Money is a best-selling personal financial management software package.

Availability Not Determined
 Medium Floppy disk or ROM Card
 Runs under System Manager .. Unknown
 Pricing

HP 95LX version \$99.95
 95LX and PC versions \$299.00

COMPANY: *Meca Software, Inc., P.O. Box 907, Westport, CT 06881, 203-226-2400.*

Personal Information Managers

TravelWare Organizes Trips*

TravelWare is a Personal Information Manager organized around the activity of travel. TravelWare lets you use the 95LX to access flight, auto, lodging, and meal information. In addition, you can keep To-Do lists, a daily schedule, and expense information. TravelWare's Expense

* Available on Palmtop Paper on Disk - Issue 1.
 See page 36 for more information.

Summary function lets you breakdown and total expenses by category. The necessary files take between 30K and 40K of disk space.

TravelWare is user-supported shareware. An evaluation copy along with 11 other shareware programs can be obtained directly from its developer.

Availability NOW
 Medium Floppy disk
 Runs under System Manager no
 Registration price \$30
 Shareware evaluation price

5.25" disk \$5
 3.5" disk \$6

COMPANY: *RSE Variety Pak, 1157 57th Drive SE, Auburn, WA 98002. Phone in Mastercard/Visa orders to RSE at 206-939-4105.*

Reference

The Bible on ROM

The text of the King James Version of the Bible on Flash ROM card. The program includes word search and verse display features along with print-to-disk or file utilities. Future products to include English Concordance, Strong's Dictionaries, Strong's Concordance, and Hebrew and Greek texts. Reduced price for multiple orders.

Availability NOW
 Medium 2MB Flash ROM card
 Runs under System Manager No
 Pricing \$300
 COMPANY: *Dean Lampman, #5 Hickory Woods, Loveland, OH 45140.*

Dictionary/Thesaurus card

For details of this HP product see article on beginning page 7.

Authentic Foreign Language Translation

The Globalink Translation Systems gives true sentence-by-sentence translations with results given in the grammatical structure of the target Language. According to the manufacturer, the product gives translation quality which is equivalent to that obtained from sophisticated desktop or mainframe sys-

tems. Load a 5-10 page file and have it translated. Language output can be post-edited one sentence at a time, or after an entire file has been translated.

Spanish/English, French/English, and German/English versions will be available.

Availability Nov/Dec 91
 Medium ROM card
 Runs under System Manager No
 Pricing \$299
 COMPANY: *Globalink Inc., 9302 Lee Highway, Fourth Floor, Fairfax, VA 22031; 800-255-5660, 703-273-5600; Fax: 703-273-3866.*
 See Advertisement, Inside Back Cover

Technical

DERIVE: 95LX "Mathematical Assistant"

DERIVE is a menu-driven "computer algebra" program that lets you apply the rules of algebra, trigonometry, calculus, and matrix algebra to solve a wide range of mathematical problems. DERIVE provides a non-numeric approach to math that eliminates many of the problems associated with mathematical derivations.

The 95LX version of DERIVE is distributed on floppy disks until the manufacture of the ROM card version is complete. The disk version requires that users have a 512K RAM card for the 95LX and a method for transferring files from a desktop PC (such as the HP Connectivity Pack). DERIVE ROM cards are expected to be available in November 1991. When available, DERIVE ROM cards will be sent to registered 95LX users of the diskette version at no additional charge.

Availability NOW
 Medium floppy disk
 (ROM card available 11/91.)
 Runs under System Manager No
 Pricing \$289
 COMPANY: *Soft Warehouse Inc., 3660 Walalae Ave, Suite 304, Honolulu, HI 96816-3236; 808-734-5801 (after 11 AM, Pacific Standard Time); Fax: 808-735-1105.*

 European Distributor: Dr. Bernhard A. Kutzler, President, Soft Warehouse Europe, Schloss Hagenberg, Linz, Austria, A-4232; 43-7236-3297-81.

See Advertisement, Page 12.

UTIL: Forth Programming on 95LX

UTIL is an implementation of the Forth programming language for the HP 95LX. Forth provides a powerful set of commands and the mechanism to define new commands to suit the needs of your application.

UTIL Forth code is compact, allowing the creation of applications which make efficient use of the 95LX's limited memory resources. The UTIL kernel (operating system and standard word set) requires just 8K of the 95LX's RAM. The full development environment needs less than 28K. UTIL's screen driver is configured for the 95LX's 40-character by 16-line display. In addition, UTIL runs under the 95LX System Manager, so invoking it from another application is as simple as pressing a key.

Availability NOW
Medium floppy disk
Runs under System Manager Yes
Pricing \$70
COMPANY: *Essex Marketing Services Inc.*,
272 Old Farms Road, Simsbury, CT 06070;
203-651-8284; Fax: 203-676-9481.
See Advertisement, Page 18.

Programmer's Calculator*

This system manager compliant calculator program makes a nice companion for HP Calc for programmers. It performs number conversions (hex, octal, binary, decimal), has an ASCII display mode, and does basic integer math functions.

Availability NOW
Medium floppy disk
Runs under System Manager Yes
Pricing \$10, \$15 for 3.5" Disk
COMPANY: *Shareware. HP 95LX Compu-Serve library. Andy Finkel, 59 Pond's Edge Drive, Downingtown, PA 19335, Compuserve 70007,4173*

* Available on Palmtop Paper on Disk - Issue 1.
See page 35 for more information.

Utilities

Express for MCI Mail

A communications manager for MCI mail originally developed by MCI Mail and Lotus. This version has been adapted for the screen constraints of the 95LX. Express manages incoming and outgoing messages, and can send text and data files to E-mail users on public and private networks around the world. In addition, Express allows messages to be delivered on any Group III fax machine, or via the postal service or overnight courier.

Availability Early 1992
Medium ROM Card
Runs under System Manager No
Pricing \$149
COMPANY: *Palmtree Products Inc.*, 51 Sawyer Road, Suite 150, Waltham, MA 02154;
617-891-3880; Fax: 617-647-4075.

95 Utility Pack

Contains 36 small programs written or modified for the 95LX and its 40-column display. Adds many new commands to DOS 3.22. Gives you memory information, battery status, contrast adjustment, speaker level, keyboard state, and more.

Availability NOW
Medium floppy disk
Runs under System Manager No
Pricing \$27.95
COMPANY: *EduCALC*, 27953 Cabot Road, Laguna Niguel, CA 92677; 800-677-7001.
See Advertisement, Page 39.

Vertical Markets

Insurance: FINPACK LX

Family Needs Analysis Software for Insurance Professionals performs survivor's retirement, education funding, and disability needs analysis. Links to FINPACK B, a more comprehensive desktop and portable financial planning system. Must be loaded onto a 512K RAM card to run with the 95LX.

Availability NOW
Medium floppy disk
(Must be loaded on 512K RAM card.)

Attention Developers of Products for the HP 95LX

Both Hewlett-Packard and *The Palmtop Paper* can assist you in the development and marketing of your HP 95LX-related products.

Qualified developers may register with HP. To qualify you need to be in the business of developing computer-related products (the program is not for end-users). To register with Hewlett Packard and to become an HP 95LX ISV (independent software vendor), you need to send HP the following information:

Name, company, address, phone number, fax number, products working on, current products on the market, areas of expertise (e.g. electrical engineering, surveying, data collection, etc.).

In return if you are accepted into the program you will receive technical information and other support services to assist the development of your product.

Send this information to: *Richard Kirby, Hewlett-Packard, 1000 NE Circle Blvd., Corvallis, OR 97330; 503-750-2360 Fax: 503-750-3008.*

 Europeans, send this information to: *Hanno Martin, Hewlett-Packard S.A., 150, Route du Nant-d'Avril, 1217 Meyrin/Geneva, Switzerland; Call 41 (22) 780.86.68; Fax: 41 (22) 780.81.59.*

The Palmtop Paper can also assist you in a number of ways. We will describe or review your product, sell you advertising space. We may also be able to put you in contact with our subscribers to Beta test your product. In addition, our parent company may produce a catalog of HP 95LX products in the coming year, in which case we will consider your product for that catalog.

Runs under System Manager No
Pricing \$149
COMPANY: *Financial Data Planning*, 2140 S. Dixie Highway, Miami, FL 33133; 305-858-8200; Fax: 305-858-7282.

See Advertisement, Page 6.

Medicine: ComputerBooks

Software For Physicians. These ROM card programs turn the 95LX into a physicians reference, diagnostic tool and patient management system. Four stand-alone cards are available:

PHARMACEUTICALS

A database containing over 1,700 generic and trade named drugs with adult and pediatric dosages, warnings and contraindications, therapeutic and pharmacologic classifications, and information on how they are supplied. This drug database can be easily searched by generic or trade name in addition to a drug's classification.

PHYSICIAN'S REFERENCE I

An interactive program to assist physicians with their diagnostic analysis. Contains a number of interactive, formula-based programs with detailed information on each.

PATIENT MANAGEMENT

Keeps computerized patient records in your 95LX and lets you access them with easy search and retrieval capabilities. Reminders and notes sections let you keep patient history, your to-do list, or whatever patient data you need. Store lab results in a simple, customizable spreadsheet format.

DRUG INTERACTIONS

Provides instant access to drug interactions. Select up to 20 drugs and/or drug classifications at one time and obtain their interactions.

Availability NOW
 Medium ROM Card
 Runs under System Manager No
 Pricing

- Pharmaceuticals \$399
- Physician's Reference I \$299
- Patient Management \$399
- Drug Interactions \$399

COMPANY: *ComputerBooks, Newport Trade Centre, 20321 Irvine Avenue, Suite 2, PO Box 9167, Newport Beach, CA 92658-9986; 800-848-2023, 714-966-2023; Fax: 714-966-0117.*

Pilots: FX-7 Flight Pak

Provides pilots with a comprehensive set of flight planning tools including: Flight Planning, DUATS weather briefings, E6B Flight Computer, and Weight & Balance. Plans a "great circle route" for the pilot automatically in either VOR-to-

Products Advertised in The Palmtop Paper

Company	Product	Page number
ACE	(RAM Cards)	inside front
Adtron	(Card Drives)	29
Adtron	(RAM Cards)	34
Autobyte	(Money Manager)	26
C.M. Software	(Pocket Sales Force)	19
Disk-Count Software	(BCIM Contact Manager)	21
Essex Marketing Services	(UTIL - Forth)	18
EduCALC	(95LX Accessories Catalog)	39
Financial Data Planning	(Insurance Specialists: FINPACK TM LX)	6
Globalink	(Foreign Language Translation)	inside back
Nuvotech	(MAC, Windows, DOS Connectivity Kits)	32
Soft Warehouse	(DERIVE - Mathematical Assistant)	12
Sparcom	(RAM Cards, Cases, more)	3
Personalized Software	(Subscribe to Palmtop Paper)	back
Personalized Software	(Advertise in Palmtop Paper)	24

VOR, RNAV or LORAN formats. Detailed leg-by-leg flight plans are generated by the FX-7 showing magnetic course and heading, average ground speed and distance along with ETE and ETA.

Flight plans and aircraft profiles can be stored and recalled for later use. FX-7 comes with a complete U.S. navigational database including every navaid (over 5,000), every intersection (over 12,000), and all public and private airports in the U.S. Selected nav aids and intersections for Canada, the Caribbean, Central America and Mexico are also included. A typical configuration occupies 170K of disk space (depending database size). Free information packet available.

Availability NOW
 Medium floppy disk
 Runs under System Manager No
 Pricing \$195
 COMPANY: *Paragon Technologies, P.O. Box 273511 Boca Raton, FL 33427-3511; 800-255-9411 or 407-369-7118.*

Books/References

Lotus in Minutes on the HP 95LX Palmtop PC

Plain English tutorial and quick reference for the essential commands, formulas, macros, and databases.

Availability NOW
 Medium 124p softbound
 Pricing \$8.95
 COMPANY: *EduCALC, 27953 Cabot Road, Laguna Niguel, CA 92677; 800-677-7001.*
 See Advertisement, Page 39.

The Answers You Need for the HP 95LX Palmtop PC

Quick, plain English answers to common questions concerning Lists, Macros, Printing, Plotting, Charting, and other topics are given in this reference.

Availability NOW
 Medium 112p, softbound
 Pricing \$8.95
 COMPANY: *EduCALC (see above)*
 See Advertisement, Page 39.

Explorer's Guide to the HP 95 Palmtop PC

Focus on using DOS on the 95LX. Subjects include redirection and piping file, directory management, and TSR's. Shows how to use CHKDSK, DEBUG, Hearts & Bones, and the other version of Tiger Fox. Includes tables, charts, sample programs, and program hints.

Availability NOW
 Medium 112p, softbound
 Pricing \$17.95
 COMPANY: *EduCALC (see above)*
 See Advertisement, Page 39.

95LX Information on Video

Over 16 hours of the 1991 95LX/48SX Developers Conference are available on video. In addition a three hour presentation on the HP 95LX by an HP engineer is available. The taping was done not as a commercial project but in the spirit of making available valuable information. Pricing includes shipping.

Availability NOW
 Pricing, 95/48 Conference \$25
 Pricing, Engineer talk \$15

COMPANY: *Jake Schwartz, 135 Saxby Terrace, Cherry Hill, NJ 08003; 609-866-6331 or 609-751-1310.*

Foreign Language TRANSLATION...

on an IC CARD for the HP 95LX

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 been translated. Some of the many amazing features the Globalink translation IC Cards include:



ACTUAL SIZE



- Handling of idiomatic expressions.
- Multiple translations of a single word in a sentence based on part of speech (noun, verb, adjective).
- 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.

In production: Available in Late November 1991*

(Suggested Retail Price)

- Spanish to/from English* \$299
- French to/from English* \$299
- German to/from English* \$299



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*Two IC Cards per product

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Germany (W&W Software Products)	0 22 02 / 42021	0 22 02 / 32794
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(More countries are being added. Write or Fax us for a current listing.)



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