The Z-Letter

Newsletter of the CP/M and Z-System community

Number 22 August/September 1992

```
&7
000         ; Filler.  KAYPRO.TAB, David A.J. McGlone, 9 September 1992.
000         ; Filler.
000         ; Filler.  This table redefines the Kaypro arrow keys to the values
000         ; Filler.  expected by Spellbinder.  This first section is blank
000         ; Filler.  because Kaypros have NO function keys; only cursor keys.
000         ; Filler.
000         ; Filler.  This section cannot be omitted, however, because the
000         ; Filler.  MKTAB table MUST have a 10-byte header.
000         ; Filler.
000         ; Filler.
;
254         ;               SPECIAL TABLE FOR SINGLE-CODE KEYS
            ;               KAYPRO KEY      EMITS   REDEFINED TO
004 012 255               ; RIGHT ARROW     CTR D   CTR L   (Right cursor)
005 011 255               ; UP ARROW        CTR E   CTR K   (Up cursor)
010 019 255               ;   (n/a)         CTR J   CTR S   (Scan)
011 004 255               ;   (n/a)         CTR K   CTR D   (Mode Delete)
012 005 255               ;   (n/a)         CTR L   CTR E   (Insert)
019 008 255               ; LEFT ARROW      CTR S   CTR H   (Left cursor)
024 010 255               ; DOWN ARROW      CTR X   CTR J   (Down cursor)
255         ; Block Terminator
;
255         ; END OF TABLES
```

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Welcome to *The Z-Letter*, a newsletter for the community of CP/M and Z-System users.

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THE STATE OF THE ART

TCJ changes hands

The Computer Journal has a new editor/publisher. Chris McEwen has handed the reins over to Bill Kibler, a long-time contributor. Bill lives and works in California, in the Sacramento area. See RESOURCES for the new address for *TCJ*. The (800) phone number and subscription rates have not changed.

EB&C calls it a day

Lee Bradley has decided to end publication of *Eight Bits & Change!* with the August/September issue, number 12. Back issues are available still, and his other products and services will continue. I hope he will contribute occasionally to *The Computer Journal* and/or *The Z-Letter*.

Lambda acquires Sound Potentials

Concerned lest Sound Potentials' collection of CP/M public-domain software become unavailable to CP/M users who don't possess or haven't learned to use a modem, Lambda Software Publishing has traded copies of some software it sells to Richard Brewster. In exchange, Lambda has acquired a complete set of Sound Potentials' collection, and even permission to use the Sound Potentials name after December 1992.

In addition, Ken Thomson of the Eagle Computer Users Group has acquired a PC and started getting involved in the MS-DOS scene. Because of this, he and I have decided that he will continue as CP/M librarian for ECUG until December, at which time Lambda will make available a CP/M public-domain service which will include the 30 782K disks from Sound Potentials, the 30 784K disks of the ECUG CP/M library, and the 49 241K 8" disks of CPMUG software purchased at Weird Stuff recently.

It will take some time to backup all these disks, catalog them, eliminate duplicates, and prepare a useful catalog from which people can order. It should be done by January; until then, continue to order from Sound Potentials or from Ken Thomson.

More software manuals available

Lambda has found copies of the Access manuals for CBASIC, MBASIC, Perfect Writer and Speller, Perfect Filer, and Perfect Calc. These manuals may now be purchased for $15 each. As with all Lambda products, tax, shipping, and handling are included in that price and should not be added by the customer. These changes are reflected in the Lambda ad at the back of this and future issues.

Attention shareware community

An Association of Shareware Authors and Distributors, or ASAD, has been formed, "dedicated to strengthening the future of shareware as an alternative to commercial software. ASAD is committed to providing members with a valuable means of both distributing and acquiring shareware for the betterment of their business, users group, or BBS, while ensuring that the registration requirements expected by the authors are encouraged."

Membership fees for BBSs and user groups are $45 per year, for vendors or distributors, $65 per year. Persons interested should contact ASAD at 2425 North Limestone Street, Springfield OH 45503-1109. Their phone numbers are: (513) 390-1099 (voice), (513) 390-1093 (BBS), and (513) 399-2501 (FAX).

Zilog releases 20-MHz Z180

Zilog, the creators of the Z80 chips used in all CP/M machines except the oldest ones, and co-designer with Hitachi of the Z180 used in the SB180 and YASBEC Z-System machines, has announced the completion and release of the faster Z180 around which the YASBEC was designed. The new CPU, part number Z8S18020VSC, should be available from Zilog distributors such as Anthem, Arrow, Hallmark, and Bell Micro by the time you read this. Zilog projects a list price for the part of $26.79 each in quantities of 1 to 40. For further information, contact Zilog Sales at (408) 370-8000.

A successor chip to the Z280 (used in the CPU280 computer) is being designed. No information is yet available on this Z380 chip. Watch this space!

MYZ80 news

Lee Bradley has tried out MYZ80, the Z80 simulator for AT-class PCs designed by Simeon Cran, and has prepared a primer on running CP/M and the Z-System on PCs using MYZ80 and NZCOM. MYZ80 is available as shareware under the file name MYZ80100.ZIP, and Lee's writeup as Z-4-AT11.ARC, from bulletin boards such as Lee's Z-Node #12, (203)

665-1100, and Z-Node Central, (213) 670-9465. Or you can get them on a disk for $10 from Lee's Small Computer Support, whose address you will find in the RESOURCES section of this magazine. The registration fee for MYZ80, which also gets you the latest version, is $30 Australian, which was $23.50 US when Lee wrote his article.

RANDOM ACCESS

This has been a very busy couple of months. Besides all the activity you will find under other headings in this issue, I managed to get several more issues of *TZL* indexed. I'm sorry this is taking so long.

Another activity taking up time is job hunting. While I have not given up on the idea of the CP/M museum, I have determined that it will take longer to get started than I can afford to be without an income. So I'm looking for a job as a technical writer. Anyone work for a company that needs one?

Boot disks

Several people have sent me boot disks. Thanks, guys. Please, everyone who reads this, drop me a line listing which computer boot disks you have. I don't have the space in this magazine to list which ones I have already, but it isn't nearly as many as I would like. About the only ones I don't need are Eagle disks. Anything else, I'd like to hear about. If you have a Kaypro, please list which version of CP/M you have, i.e., Kaypro IV 2.2.G. It seems that certain versions and certain ROMs require certain versions of CP/M to work properly. Was a complete list of the correspondence between Kaypro ROMs and Kaypro CP/M disks ever published? If anyone has such a list, please send it to me!

Lee Hart stops by

I had a couple of visits from Lee Hart, one of the bigwigs in the Heath/Zenith community, who was here in August in connection with his job. We talked about everything under the sun; he and Deborah even talked about their mutual interest in Macintoshes. We hit Halted, which made him wish there were a hardware place like it in Michigan, and Fry's Electronics, whose decor and contents amazed him about equally. Our conversation kept returning to the updated TRS-80 Model 100 laptop Lee wants to see built, preferably by a cooperative of interested people. I told him I would write the manuals.

TeleVideos everywhere

Lee and I also stopped at Weird Stuff, where I found, in a pile with two TeleVideo TS-801 computers and three TS-801 chasses, a TS-806/20. This is a late-model TeleVideo computer which can be used either as a personal computer or a multi-user system, and has a 20-Mb hard disk. The guys at Weird Stuff didn't know what it was, so I got it for $40.

That's not the best deal I've gotten in a TeleVideo, good as it is. At the August Foothill Flea Market, I purchased a TS-802H as-is for $5, from a guy who mostly sells laser-printer stuff. Imagine my glee to get it to the ECUG meeting and find out that it works, even the hard disk!

Inventory in progress

I've begun inventorying my collection of computers and software, but it's slow work. I've over a hundred computers in the house, garage, and basement at this point, and most of them came with software. The piles of disks have far exceeded any possibility of storing them in diskette boxes, flip files, or even book cases. At this point, they occupy drawers in file cabinets; two rows front to back in the case of 5¼" diskettes, one row per drawer for 8" diskettes.

Cataloging these disks is interesting. The catalog program I use, Eureka!, is far faster than MASTCAT, FASTCAT, Catalog, or DISKCAT (unfortunately, Mendocino Software is unwilling to let anyone sell it anymore, or I'd be selling it). However, a Eureka! catalog, as I recently confirmed empirically, cannot contain the information on more than 255 disks. Cataloging the disks I get with each computer would far exceed this limit, even if each category, such as my personal files or backups of my hard disk, were a separate catalog. So I've been copying the original diskettes to Micromint DSDD 96-tpi format, using 22DISK on my Tandem 6AX when necessary. Each disk goes to a different user area, with user area 0 reserved for the name of the disk. Eureka! allows one to catalog each user area on a disk under a different name, to catalog only a given user area on each disk, or to catalog all files on all user areas under the name found in user area 0. I use the latter option. So far I have 37 of these disks, and the job is far from over. But if I were cataloging each disk separately,

this would be 144 disks.

Sharon Industries

Users with TeleVideo systems may wish to contact Sharon Industries, 1810 Old Oakland Road, San Jose CA 95131, phone (408) 456-1600. They repair TeleVideo terminals and computers for a minimum of $60, plus parts if it exceeds $60. You may request them to phone you with an estimate before proceeding with a repair. They can turn a floppy-only model into a hard-disk model (turn an 802 into an 802H, for instance), but if you can't supply the hard disk, it will cost $250. I took in a TS-802H which was working, plus two hard disks I had bought as-is; unfortunately, all three hard disks are bad. Suitable hard disks include Tandon TM 503 and Rodime 200 models.

Other things you can get from Sharon Industries are Teac 55F and Mitsubishi 4853 DSDD 96-tpi floppy-disk drives for $30, standard TeleVideo cables for $5, and brand-new TVI 925, 950, and 800 terminals in the carton for $200. (The TVI 800 is basically a TS-802 without the computer board, or a TVI 950 with extra room on the right for disk drives and boards. With its TeleVideo terminal capabilities and detached keyboard, it would make an attractive enclosure for a single-board computer such as an Ampro, Micromint, or YASBEC.)

The big haul

On September 11, I received a phone call from Doug Barnes, who got my name from Jay at Mike Quinn Electronics. Doug had been collecting pre-1980 computers with the aim of starting a museum. Now he was giving up the idea and moving to Oregon. Did I want his collection of 70 computers?

We settled on a price that was lower than he had hoped for, and a little more than I could really afford, and set Sunday the 13th for me to come look it all over. On the 12th, Ken Thomson and Howard Jespersen of the Eagle Computer Users Group agreed to drive there with their cars also, and help load and unload. So we had three cars to move stuff in, and four people (including my wife Deborah) to load and unload. It took two trips (six carloads).

We unloaded the software into my garage, the manuals onto my porch, and the hardware onto tarps in my back yard. I'm still listing what I've acquired, and finding places to put it all. A significant number of the systems are various models of TRS-80s, Commodores, and Apples. Anyone have the formatting and partitioning software for an Apple Profile hard disk? Doug's estimate of 70 computers was probably close to the truth. The number of Z80 computers that can run the Z-System is somewhat smaller, due to things like the Apple Lisa, Sinclair ZX80, BYT-80, Altair 680, Commodore Plus/4, two TI99/4as, and other alien systems. I probably have about 150 CP/M and Z-System computers at this point.

One of the most interesting systems is labeled simply "The Archives". It has the same weird upside-down disk drives that make the Dynabyte disks impossible for any other system to read. I hope this won't be true of this system also, but I'm afraid it will be.

The documentation acquired includes many magazines, but he threw out many before our meeting, not realizing I wanted them also. There are lots of manuals, for instance three storage boxes of North Star publications, many of them in North Star binders. On the other hand, much of the printed material is also not CP/M-related; most of the TRS-80 documentation is TRS-DOS, for instance.

I have not yet begun to sort out the floppy disks. Some North Star disks and TRS-80 game cassettes were found in the documentation, as well as the complete set of disks for the Kaypro 4-84. There was even a spare master CP/M disk, which I can give Ken Thomson for his Kaypro 2X to show my gratitude for his help. I sure hope there are boot disks for the Hyperion system somewhere in the pile.

Halted sale

HSC Electronics in Santa Clara (aka Halted) held its fifth annual parking-lot and clearance sale on Saturday, September 19, from 9 AM to 5 PM. I'm sorry that there was no advance notice in this magazine, but I didn't find out about it until long after last issue went out.

There was lots of electronic stuff for sale at terrific discounts, and even free refreshments from 11 AM to 3 PM. In addition, one section consisted of computers, terminals, and monitors for sale at the give-away price of 29¢ per pound. I purchased a North Star Advantage computer for $14.13 (including tax), and it works, and had the dealer's demo disk in the top drive.

SCRIPT OF THE MONTH CLUB

Fully recursive ARUNZ scripts
by Jay Sage

In an earlier column (*TZL* 15, September 1991), I described a very simple form of recursion in which a script called itself. This time I will present some ARUNZ aliases that implement full recursion in a very interesting way. In preparing for this column, I actually thought of a new recursive alias, which I will be presenting for the first time here. Before getting any further, however, I would like to acknowledge Dreas Nielsen, who conceived the basic approach to rigorously recursive aliases.

The first alias I will present here is called RECURSE. Before I show its definition, I would like to give an example of how it might be used. Suppose I want to format a whole bunch of disks. I could enter the command **FORMAT G:**, format a diskette, and then use the history shell to bring the command back for execution again. Much easier on the user is the command **RECURSE FORMAT G:**. This will run **FORMAT G:** and then ask us whether we want to run the command again. So long as we keep answering yes, we can keep formatting diskettes. When we answer no, the cycle comes to a clean end.

When I say that RECURSE is rigorously recursive, I mean that it can be used like any other command in a multiple-command line. Thus we could issue the multiple command

```
recurse format g: ; recurse format f:
```

to format a series of diskettes in drive G and then another series of diskettes in drive F.

Now let's look at the definition:

```
REC,URSE
  IF NU $1;
      ECHO;
      ECHO %<   s%>yntax: %<$0 cmdname
[parameters];
      ECHO;
    ELSE;
      $*;
      /rec2 $*;
    FI
```

If RECURSE is invoked with no command tail, then a help message is displayed using a series of ECHO commands. If there is a command tail, then the tail is submitted as a command (that's the line with **$***) and then a second alias, REC2, is called with the command line as its argument. Once REC2 is finished, the closing flow control command, FI, is executed, and the script ends.

All this looks pretty straightforward (there's no recursion here). The really interesting stuff, including the recursion, is in REC2, whose definition follows.

```
REC2
  FI;
  IF IN R%>un "%<$*" %>again (%<Y/%>n)? ;
    $*;
    /$!
```

Notice the strange, inverted order of the flow control commands. REC2 starts by closing out the open flow state that remains from the invocation of RECURSE. Then it asks whether the command should be run again. If the answer is no, the rest of the commands in REC2 are skipped, and control returns to RECURSE. At that point, the final FI in RECURSE completes the flow state opened by the IF IN command in REC2, and we exit from the alias in the same flow state in which we entered.

If the answer in REC2 is yes, then the command line passed to REC2 is executed (the **$*** line) and the entire REC2 command is invoked again (the **/$!** line). At this point we are right back where we were when REC2 was invoked the first time from RECURSE. This process can go on indefinitely.

One of my most frequent applications of the RECURSE script has been to put the datestamping file on a whole bunch of newly formatted diskettes. I already had an alias called PUTDATE or PD that would place the !!!TIME&.DAT file as a system file onto the diskette in the specified drive. To initialize a series of diskettes in drive G:, I would enter the command

```
recurse pd g:
```

The trouble with this is that it invoked the datestamping utility program PUTDS.COM over and over. It saved considerable time to use GO for all but the first initialization. Thus, I would enter PD G: manually the first time and then run

```
recurse go -d=g -s
```

This was a nuisance, because I had to remember the parameters required by PUTDS – and I wrote the PD script just to avoid having to tax my brain that way.

While writing this column, I thought of the following variant on the RECURSE script. It runs the command once as specified, but then it substitutes GO for the command name on all recursive invocations.

```
GOREC,URSE
  IF NU $1;
    ECHO;
    ECHO  $0 %>runs a command and then
          recursively runs the same;
    ECHO  %>command line with %<GO%>
          replacing the program name;
  ELSE;
    $*;
    /rec2 GO $-1;
  FI
```

The new line here is **/REC2 GO $-1**. This line invokes the ARUNZ alias REC2 with a first token of GO and then all but the first token in the original command line. Now I rewrote my datestamper initialization script as follows:

```
PUTDATE=PD
  ECHO d%>ating disks in drive %<$td1 (%<sys);
  /gorec b0:putds -d=$td1 -s
```

The script first displays a message telling what it will be doing, and then it invokes GORECURSE with the PUTDS command line. It works like a charm.

A PROGRAMMER CORNERED

Customizing Spellbinder for a Kaypro

A friend of mine from Tandem, named Mike, had given his old Morrow MD2 to a pair of neighbor kids, eight and ten years old, to use for school. The kids had somehow messed up their working copy of WordStar, and the WordStar help messages were represented by @@@@ instead of the actual text. After wrestling with the problem for an evening, and getting increasingly frustrated, Mike had his wife Linda call me about the problem.

Now, I hate WordStar, and I've never used it except when there was absolutely no other choice. But it sounded like an easy fix; probably the overlay file had been corrupted or erased. When Linda brought over the computer and the disks, I tried a few things which didn't solve the problem, and finally started WordStar installing itself from scratch on a new disk.

While this process went on and on, I was telling Linda about the computer museum I hope to start, and showing her some of the machines I've acquired. When the subject turned to software, I told her about how I used Spellbinder instead of WordStar, and how I started Lambda to keep Spellbinder available. Linda decided, after looking at the Spellbinder manual and seeing Spellbinder work on another computer, to buy a copy of it for the kids and forget about the WordStar problem. Naturally, this was music to my ears.

To make a long story short, the Morrow terminal did not display Spellbinder to its best advantage. Morrows came with several different terminals, which were standard terminals from other manufacturers with Morrow labels. Linda's Morrow terminal was a Lear-Siegler ADM20. It can emulate an ADM3, but that is such a basic terminal that Spellbinder has to clear the screen by writing it full of blanks, which produces a lot of eye-straining flicker. Also, the ADM3 has no reverse video, so enhanced characters look no different from unenhanced characters (though Spellbinder still treats them correctly), and block actions such as mode delete and cut can only show what text will be affected by replacing the text temporarily with slashes.

I suggested a number of alternatives to Linda, such as trading her a TeleVideo terminal for her Morrow terminal, or defining the ADM20 terminal to Spellbinder as a user-defined terminal. The former would have meant waiting for a cable to connect the MD2 to the TeleVideo terminal, and the latter didn't work right. We put in the values for the terminal, straight from the terminal manual, and things were much improved, except that the cursor movement was messed up. The Spellbinder screens were displayed incorrectly, with various elements in wrong places. Either I interpreted the cursor-movement information incorrectly, or else, as Lee Hart suggested, the terminal was unable to keep up with all the cursor positioning being sent by Spellbinder.

The solution we settled upon was for me to trade Linda another machine entirely for the Morrow. She loved the looks of a spare Kaypro 4 I had, and its disk format is 390K to the Morrow's 186K, so that's what we did. Configuring Spellbinder for the Kaypro was easy, since both the computer and Linda's printers were options in the CONFIGSB program.

One thing still had to be done. The Kaypro has no function keys, and its cursor keys use the WordStar cursor set (Control-E for Cursor Up, Control-X for Cursor Down, Control-S for Cursor Left, and Control-D for Cursor Right). These control characters in Spellbinder are, respectively, Insert, Mark, Scan, and Mode Delete, and the corresponding cursor commands use Control-K, Control-J, Control-L, and Control-H.

It is easy to correct such problems in Spellbinder. The table shown on the cover of this issue, saved to disk as KAYPRO.TAB, will be sent in the future with any Spellbinder order for a Kaypro. This Spellbinder table (&7) can be used to redefine up to two sets of function keys with different lead-in characters, plus redefining single characters such as control characters. In this case, we only need to redefine a few control characters. For instance, with this table installed, when the user hits the Kaypro right-arrow key, it emits Control-D. Spellbinder, when it sees this character, will interpret it as Control-L, which is the Spellbinder command to move the cursor to the right. The other Kaypro cursor keys are redefined the same way.

One other task remains. Since Control-E, -X, -S, and -D have been redefined, they can no longer be used for their assigned Spellbinder functions. If the user hits Control-E, wanting to go into insert mode, Spellbinder will now interpret it as Cursor Up. So other values are now needed for the commands now redefined. The ones Spellbinder normally uses for cursor movement will do nicely. To put it another way, Control-H, -J, -K, and -L have been replaced, and are now available for new jobs.

Actually, Control-H should not be redefined, since the Back Space key uses it on many computers and terminals. That leaves us three control characters to use. But we really don't need a Mark command, which is designed mostly for terminals that have no caret key. Since the Kaypro has a caret key, we really only need three control characters. I have assigned Control-J to Scan (J for Jump), Control-K to Mode Delete (K for Kill), and Control-L to Insert.

The table is installed in the standard way. With Spellbinder in the command mode and the Y, YT, and tab settings checked to make sure they are at the default values you want, you read KAYPRO.TAB into memory. The cursor is moved to the & of the &7 in the first line. Then you type PS and hit return, which installs the table into Spellbinder. Then you type XS and hit return, which saves the changes to the SB.DAT file created when you configured Spellbinder for the Kaypro and your printer. If your printer is not one known to Spellbinder, and you need to install printer tables as shown in previous issues (and the Introduction to Spellbinder manual) for the QMS KISS and LaserJet+ printers, it's best to install both tables at once, by reading them both into memory, one below the other. The PS command will install more than one table at a time.

ERRATUM

On the second line of page 6 of last issue, the command prompt was represented as A0<, instead of A0>. This was a typo by the editor, not a mistake by the author. I apologize for this error.

LETTERS

Home-brew system needs help

4 June 1992

Dear Ms. Black,

I have a problem with my home-brew CP/M system. Perhaps you can help.

I have an ATR8000 with Z80 and 8086 processors. The drives are two plain vanilla IBM-compatible MFM 360K. The keyboard is an Atari 130XE with Omnimon! as the interface software. The memory is 64K for the Z80 and 256K for the 8086.

The problem I have is that whenever I access a file more than twice, the system will not recognize the file the third time. I have since used my Commodore 128 and 1571 and 1581 drives to back up the remaining

"uncrashed" files. What I need is someone who can tell me what I've done, and I need a new system disk for the ATR8000 is any format the C129/1571/1581 will read and back up.

Thank you for your time ... You have my permission to give out my name and address.

John F. Sissons
2109 Dorothy
Pasadena TX 77502-3311

This letter was sent originally to Nancy A. Black, who writes the "Fearless Computing" column in ***Computer Monthly.*** *She sent a copy to me, saying that his question is way out of her line, on July 27. I can't answer it either. If any reader can help John, please write to him at the address above. – DAJM*

Kaypro info and a question

Dear David,

Enclosed is the Kaypro CP/M 2.2G Master Diskette copy you requested. It is an exact copy of the disk that came with my Kaypro 4-84, and it is of course in Kaypro 4 390K format. This disk has the CP/M 2.2 system on the system tracks and is bootable in a Kaypro 4-84 with the correct ROM installed, which is Kaypro #81-292. Since I had two of these ROMs and do not use either of them, I have enclosed one for your archives.

I have added four files to the disk: KBIOS.Z80, KBIOS.DOC, KBIOS.HEX, and KBIOSZ.HEX. KBIOS.DOC explains these files. KBIOS.Z80 is a disassembly of the Kaypro BIOS, i.e., the portion of the BIOS that is on disk and can be modified using the standard system-modification methods. It is necessary to modify the Kaypro BIOS if one is going to install ZCPR or some other CCP replacement.

I would like to add that I strongly recommend that anyone with a Kaypro 4-84 replace the ROM #81-292 with the Advent TurboROM, and replace the BIOS with the Advent TurboBIOS. I believe these are still available from Chuck Stafford, 4000 Norris Ave., Sacramento CA 95821, phone (916) 483-0312 evenings and weekends.

Got your package over the weekend, and I have spent the day today copying the SOUND POTENTIALS CP/M Library to your pretty blue disks. You are free to begin distributing this software as you like, right now. You may use the Sound Potentials name any way you want, as far as I'm concerned. I am registered in Pennsylvania as SOUND POTENTIALS, but will notify the state that I am going out of business as of December 31, 1992. I have no trademark or copyright on the name.

I have enjoyed collecting, producing and distributing the excellent programs available in the public domain of CP/M (and even writing some myself). The first SOUND POTENTIALS catalog was produced in the fall of 1987. I started the business because many of the suppliers of public domain software for CP/M were quitting. When I got my Kaypro 4-84 CP/M computer in 1984, copying fees for CP/M public domain disks were not extremely low. *Micro Cornucopia,* for example, charged $12.00 for a Kaypro single-sided disk, 191K. This was about 6.3 cents per 1K. *Micro C* later lowered their price to $8.00 per disk. I thought the $12.00 per disk was a fair price at the time (the Kaypro had cost $1900.00!). I appreciated the convenience of getting a diskette in the mail instead of having to use a modem to call bulletin boards. The catalog descriptions made it easy to order.

The main drawback was having to buy a diskette filled with a collection of files chosen by someone else. When I began SOUND POTENTIALS, I wanted to make it possible for someone to order just the programs wanted. That's why I designed the catalog as I did. I regretted that because of the cost of producing the catalog, I could not afford more space for description of the programs. I wanted at minimum to provide the date, the author's name, and the version number of the program. This was more information than I had found in most CP/M public domain disk catalogs.

I decided to fix the copying price at 5 cents per 1K of LBR files, with the programs all crunched into LBR file types. I charged a simple flat fee for the size of the order, to compensate me for the time needed to copy the files. At no extra charge I would copy the order to any 5¼" CP/M or IBM format that my equipment would allow, supplying and formatting disks as needed for each order. I also offered a discount for orders on larger disk formats, since I would not need to supply as many diskettes for those orders. I decided never to change the pricing, so that orders from older catalogs would have the correct price.

I think the pricing is fair, especially when you consider you are paying for personal service attention by the proprietor (me) on every order. The

prices of MS-DOS disks or Commodore disks cannot serve as a basis for comparison. That would be comparing oranges vs grapes. A proper comparison would be between the pricing at SOUND POTENTIALS and that of other businesses supplying CP/M public domain software. Pricing aside, the bottom line is the continuing availability of the public domain of CP/M.

I'm glad you're taking over the collection. It represents only a fraction of the history of CP/M public domain software, but I believe it has some value. The work of CP/M public domain programmers has a place in the history of microcomputing, and it should be remembered. Moreover, many of the programs remain useful today.

I am excited to learn Spellbinder, and anticipate using MagicSeries in the future. I have NZCOM up on my Kaypro, but am still using ZCPR 3.3 for now. I have a problem with NZCOM. My TurboROM operating system has Plu*Perfect DateStamper integrated into the system tracks (the DateStamper version is called "K6-B"). After NZCOM loads its DOS module, the DateStamper hooks are lost, and date stamping quits working. I need the date stamping, and will not really use NZCOM until I can solve this problem. Any suggestions? I have some ideas, but no easy solutions.

Very truly yours,
Richard E. Brewster
SOUND POTENTIALS
Box 46
Brackney PA 18812
(607) 772-0409

Richard, thanks for the chips and the files and the information about Kaypro ROMs. This is exactly the kind of collectible the museum needs to acquire, and exactly the sort of information that needs to be published for our community. I appreciate also the permission to use the Sound Potentials name, catalog, etc. I haven't decided yet what the price will be for distributing your collection of software, or how I will do it.

I can't really help you with your problem with DateStamper, but it surely has been faced before by people running NZCOM on Kaypros. I suggest you talk to Joe Wright, Bridger Mitchell, Jay Sage, or Cam Cottrill. Send them a message on your local Z-Node, and they will answer. Probably loading DateStamper in your startup alias, or substituting ZSDOS or ZDDOS for ZRDOS, will restore your date stamping. – DAJM

Floppy disks, drives, and a bird story

July 25, 1992

I've bought and used 120 DSDD 96-tpi 3M disks since 1983. I have yet to find one that wouldn't format, until I tried some in Jerry Davis' TEACs. Four out of ten brand spanking new disks wouldn't go. Degaussing, biasing with shelf magnets, nothing worked.

I talked to a 3M engineer. He says new drives often have a thin film of corrosion, dust, oil, whatever, on the heads. It never occurred to me to run a cleaning disk through a brand new drive, but I went home and ran one a full two minutes on each drive. Afterwards, all ten new disks went 100% perfect on both drives, not even restart hiccups. I wonder whether owners ought to be advised to run cleaning disks through new drives before they use them?

This guy agrees with Jerry that no one should try 3M DSDD disks in 96-tpi drives. They just aren't that precisely manufactured. He says to pay the ripoff for 3M DSDD 96-tpi disks (which I do, because of my insurance), or use another brand.

I still have trouble with seven old disks, but lack a magnifier powerful enough to look for scratches. The guy at 3M said to send them to him and he'll look for scratches. If he hits anything unusual, I'll let you know. All I have to say is, don't let spiders get into an Eagle!

August 4, 1992

I have always lived in housing next to dusty streets. I do now. Gravel dust is insidious. It will drift into the bottom of disk boxes no matter how careful one is. That's why I am almost religious about never removing a disk from the box and sleeve unless it's actually in a drive – which still leaves skin oil and other contaminants to migrate onto the storage surface, especially after five to nine years, which is the age of those disks. I suspect you've stated it correctly when you talked about heavy wear. If you only knew! Especially the letter-writer.

More later, after 3M sends my bad disks back.

August 12, 1992

Got the bad disks back from 3M. They say a bunch of "rotational scratches". That will be spider webs. Those things cause scratches on just about anything

they get rubbed against. They're about as abrasive as they come. Probably because they're sticky and collect every grain of dust.

If I'd known they were there, I'd have fumigated before I took the panel down. There are two openings to the outside beside an old-style door sill that I had no way of knowing about. They let bugs in between my twice-a-year fumigation with those aerosol things the farmers use for grain bins. 3M says I need to run cleaning disks through the drives regularly. But I've been doing that anyway, so no change there.

You can add this to the cat-urine stories: When I was working on an oil pipeline in Saudi Arabia, part of my job was installing and maintaining a 150 MC FM voice-data link between pump stations and slave pumps 75 miles downstream. Two continuous-carrier frequency diversity transmitters and receivers for data, plus a simplex push-to-talk circuit for vehicles on the road between. All hooked to the same antenna system through High-Q Motorola cavities.

They worked fine at first. Then the noise meters started climbing. And climbing. And climbing, until they started shutting down the pumps because of loss of sensor data. Everybody on the line, engineers in Beirut, manufacturer tech reps, all halfway between a double-strength snit and a tizzy.

One day I looked up at the antennas just in time to see a falcon go *phtttt* on the insulators. Four wide by eight high Andrews Corner Reflectors, four insulators per reflector, two sets of antennas. That's a lot of insulators for wet bird manure to cause white noise when RF sizzles across it!

I left a cloud of dust, sand, and falcon feathers getting to the supply room for a non-conductive brush. Climbed the whole 200 feet to the antennas, brushed the bird droppings off, climbed down, and everything was nominal. Did the same thing at the slave station and kept my mouth shut for a month. By then, our reserve tanks (for shutdowns) were empty, while every other station on the line had full tanks and engineers all over my equipment like flies on camel manure, trying to figure out why our system was the only one working right. Then the Station Manager and I told them what we'd done. I became forever known as "the inventor of the bird-droppings check." Which, of course, was adopted line-wide the next day.

Got any more cat-urine stories? If so, I'll see whether I can match them. At age 70, retired, I got lots of 'em.

Sincerely,
Eugene Austin
P.O. Box 115
Tilden NE 68781

MS-DOS past, CP/M laptop future

August 21, 1992

Dear David,

Good to hear from you. Glad you're a man with a plan; if you can't find a job, make one yourself!

On the origins of MS-DOS: Both stories in *TZL* #21 are correct. Let me fill in some pieces.

J.G. Letwin is a very talented and innovative programmer. He wrote Heath's HDOS operating system, versions 1 and 2, which were a considerable advance over CP/M 1 and 2. When Heath decided to drop their own operating systems in favor of industry standards like CP/M, Letwin started job hunting.

Meanwhile, an insignificant division of IBM had developed a klutzy terminal based on the 8088. Its poor performance caused management to order the project killed. But the design team didn't want to take a loss. They decided to rename it a "computer" and peddle it fast before management got wise. The terminal that failed became the IBM PC.

A computer needs software. IBM went to Microsoft, and Bill Gates fell all over himself to help. He shoved MBASIC through XLT86 (an 8080-to-8086 source-code translation program by DRI), and had an instant 8088 version of MBASIC. The PC initially had 16K of RAM, MBASIC in ROM, and a cassette interface.

For some reason people felt it needed a disk operating system. The obvious choice was Digital Research Inc., who had a version of CP/M for the 8088 called CP/M-86. The two met, but DRI president Gary Kildall "killed all" by alienating IBM executives with his cavalier attitude. Rumor has it that he left three IBM execs cooling their heels while he was out taking flying lessons.

So IBM went back to Microsoft for help. Gates had nothing, but knew of a CP/M-86 clone, written by Dave Patterson of Seattle Computer Company. Patterson called it QDOS (Quick and Dirty Operating System).

Gates called Patterson, and bought the rights to QDOS without identifying his ultimate customer. Patterson agreed to supply updates and bug fixes; in return for which Microsoft would do the same and allow him to keep distributing QDOS with Seattle Computer's products for free.

Now Microsoft needed someone with operating-system experience to turn QDOS into a finished product. Enter J.G. Letwin, Microsoft's new MS-DOS product manager. MS-DOS version 1 was just warmed-over QDOS, but MS-DOS version 2 clearly shows Letwin's talents. Heath users immediately recognize the command syntax, directory structure, installable device drivers and other features from HDOS. What would have been HDOS version 3 became MS-DOS version 2.

And what of Patterson? He was rather upset to get only $30,000 for an operating system that Gates sold to IBM for $32 a copy. Adding insult to injury, Microsoft refused to supply the promised upgrades. So Seattle Computer introduced the world's cheapest PC-compatible computer. For $60 you got a credit-card-sized PC board with an 8088, one (1) byte of I/O, and one (1!) byte of RAM. And a copy of MS-DOS 3.1, which Seattle was entitled to supply free with any computer they sold.

Bill Gates wasn't amused. Patterson's customers used the board as a paperweight, and ran Seattle DOS on their PC clones. Patterson had a completely legal way to sell MS-DOS without a penny going to Microsoft. After an acrimonious legal debate, Patterson agreed to desist in return for a generous addition to his bank account.

A CP/M Laptop: Today's PCs are not suited to portable computing. MS-DOS effectively requires hard disks and floppy-disk drives. PC software expects large amounts of memory and fast CPU clock speeds. Users expect large keyboards and sophisticated high-resolution displays. The hardware architecture is very complex. Putting all this in a portable leads to a computer with serious compromises in size, weight, cost, reliability, and battery life.

Apple's Mac portables are no better. They also try to do too much, and wind up doing simple things poorly. Such computers are technological marvels, but not very practical for casual use. They appeal to power users, the fashion conscious, and of course manufacturers and retailers (expensive computers are highly profitable).

On the other extreme are pocket computers, like the Sharp Wizard, Atari Portfolio, and Apple Newton. Some are glorified calculators, with chiclet keyboards and tiny screens. Others are toy MS-DOS machines, with major PC compatibility limitations. Scrolling windows provide a "peephole" look at an 80x24 screen, and a pen or stylus tries to compensate for the lack of a full keyboard. It's hard to imagine anyone using a pocket computer for even casual letter writing.

There is only one example of a successful portable computer between these extremes; the Radio Shack TRS-80 model 100/102. Hundreds of thousands have been sold since 1984, and it's still in production.

It measures 9" x 11" x 2", weighs 3 pounds, and runs 20 hours on four AA cells. It has a full size keyboard, and an 8x40 character display (240x64 graphics). It has a modem, and serial, parallel, bar-code, and cassette ports. It is simple enough that most people can figure it out without a manual, like a calculator. Price is $350 to $600.

But, lacking any competition, Radio Shack never updated the design to take advantage of newer technology. The 100 is still stuck with its original small screen, limited memory, and feeble disk options.

My goal is to produce a modern equivalent; an 8-bit portable computer for the 90s. 8-bit CPUs are far simpler, cheaper, and take less power. The Z80 family has the best software and development tools available.

Most systems use one super-powerful CPU, surrounded by dumb CPUs in the keyboard, video, etc. (Einstein and the Three Stooges). This complicates design and software. Instead, I would use multiple Z80s working in parallel, loosely coupled via parallel ports.

Goals

light weight:	3 pounds maximum
small size:	9" x 12" x 2" maximum
long battery life:	8 hrs min., nicad AA cells
highly legible display:	80x25 characters, 640x200 graphics
full size keyboard:	standard QWERTY layout
low cost kit:	$100 basic, $250 full
standard interfaces:	serial, parallel, SCSI
easy to use:	manuals in ROM
reconfigurable:	imitates other computers

Main Z80
- runs CP/M BDOS and CCP (not BIOS)
- runs user programs (Wordstar, MBASIC, etc.)
- BIOS is just a 256-byte stub that calls I/O Z80s

Console Z80
- handles screen
  - character display
    - formats (80x24, 80x25, 160x40, etc.)
    - attributes (blink, underline, reverse, etc.)
    - fonts (bold, italics, etc.)
  - graphics display
    - 640x200 pixels
    - point, line, boxes, area fills, etc.
- handles keyboard
  - features (caps lock, auto-repeat, etc.)
  - programmable function keys
  - keyboard macros
  - pointing devices (mouse, light pen, etc.)
- terminal emulation
  - DEC, TeleVideo, Wyse, Zenith, etc.
- serial port
  - sets baud rates, parity, bits, etc.
  - buffers data to avoid lost characters
- parallel port (printer)
  - print spooling
  - screen printing
  - printer emulation (translate printer commands)
- modem port
  - Hayes emulation
  - sets baud rates, parity, bits, etc.
- real-time clock
  - auto-on, auto-off, alarms, etc.

Disk Z80
- handles all BDOS disk calls
- track-buffers data for speed
  - RAM disk
    - internal RAM beyond 64K
    - memory cards
    - PCMCIA compatible
    - physical disk drives via SCSI
    - memory mapping bank switches memory for main CPU software

Technically, you don't need a DOS on a diskless system, but it comes in handy anyway. I'll just call it "OZ" (Operating Z80 System). OZ is the firmware that handles all hardware-dependent aspects of the portable.

In CP/M parlance, OZ is the BIOS. CP/M is the most popular operating system in Z80 systems. Most common PC and Mac programs have CP/M equivalents, which perform well even with less memory and slower clock speeds. Any CP/M system can run Z-System for those so inclined.

To answer your questions:

1. Cost would start around $200, and go up depending on memory, peripherals, etc. If it goes past $500, you're going the wrong way; give up and buy a PC clone laptop.

2. Keyboard is important; it is the hands of the machine. I'd use a full size, full travel keyboard, exactly like a typewriter. Minimize number of keys; use a touch screen, pointing device (mouse, trackball, or stylus) instead of dozens of function keys.

3. Display: 640x200 supertwist LCDs are widely available, small, light, low power, and contrast is good even without back lighting. For example, BG Micro is selling them for $19.95. The display is the face of the computer, and should be good enough so you don't miss a CRT.

4. I would not include floppies or hard disks. Mechanical devices are completely out of place in a battery-operated portable. Memory is so much better and cheaper.

5. More memory is always better. The PCMCIA standard (credit-card-sized) memory cards are rapidly replacing disks, and I think the trend will continue. You can already get them with RAM, ROM, EPROM, flash EPROM, and EEPROM up to 2 megabytes each, and they will only get better with time.

6. I would include a good modem, serial, parallel, and a SCSI port. This lets you interface the portable to anything easily. I see it as a "data sponge" – it can absorb data from any source, massage it, and dump it to any other device. I'd also like to include an infra-red link and analog I/O, so it can communicate with non-computer devices as well.

I am a design engineer, so hardware design is easy and enjoyable to me. But I can't build such a machine myself. Perhaps there are others who enjoy PC board layout, building prototypes, bargain hunting for parts, writing software, writing manuals, marketing, etc. If such a team could be assembled, we could build a hacker's laptop. Have you seen Lee Felsenstein's proposal for a "hacker's Mac clone?"

Same idea!

Yours truly,
Lee A. Hart
323 West 19th Street
Holland MI 49423

P.S. I wrote this on my model T, which is solar powered, has sub-C internal nicads, and a 50% faster clock. Software includes Ultrascreen (which makes the display 10 lines of 60 characters); and Super-ROM (a word processor, spreadsheet, data-base manager, and thought outliner). Printing was done on a Diconix 150 portable printer.

Thanks for the full story on the history of MS-DOS, Lee. The laptop you outline sounds attractive, and if we can get it together, I'd like to write the manuals and supply a configured copy of Spellbinder already installed in each machine. I agree that floppies and hard disk are unnecessary, if there's a fast, easy-to-use way to load programs and extract text written on the laptop, and the machine has at least 10 megabytes of memory, either static or backed by its own battery. I'd prefer 640x400 display, so the 24 lines of text won't be squashed too badly, especially if some screen area will be sacrificed so that the keyboard doesn't need to have function keys. We could call the machine Gitana, which is Spanish for gypsy. – DAJM

PERSONAL ADS

Xerox 820-II for sale

Working Xerox 820-II in good condition, 2 DSDD 8" drives, all manuals and some internal documentation (I used to work at Xerox). CP/M, WordStar 4.0, Tutsim simulation software included. Newer keyboard, lower profile than older model. $50. Also selling Turbo Pascal, Waltz Lisp, MuMath, $30 each. Steve Trapp, 24768 Mango Street, Hayward CA 94545, phone (510) 785-0171.

Free CP/M computers

Intel Intellec-2 computer with 2 2-Mhz 8080 CPUs, many manuals. Toshiba computer with 8085 CPU, manuals. Both in working condition, both with 8" drives, both free to anyone who will come get them from their storage place in San Pablo, CA. Call David McGlone at (408) 293-5176 if interested.

Printer for sale

Diablo 630 letter-quality printer for sale. Includes tractor wheels and ribbon. $100 or make an offer. Eugene Heil, 3025 Crate Lane, San Jose CA 95132, phone (408) 258-3282.

MAGAZINE ARTICLES

The following magazines were received since last issue. Articles relevant to the CP/M and Z-System community, if any, are listed for each magazine. Where the address and subscription rate is not listed, see the listing for the magazine in the RESOURCES section.

The Computer Journal, #56, July/August 1992. *The Computer Journal – The Next TEN Years*, by Bill Kibler, the new editor/publisher. Jay Sage is off to the second European Zed-Fest, and promises us a report next issue; his column this issue is about 4DOS, an MS-DOS shell with Z-System-like features. Tilmann Reh's *Connecting IDE Drives to 8-Bit Systems* includes board schematic, circuit diagram, and GAL logic. He indicates that Jay Sage may make these available in the U.S. *8 Queens in Forth* by Frank Sergeant attempts to solve a standard logic problem with readable Forth code. Walter J. Rottenkolber describes *Kaypro-84 Direct File Transfers Without Null Modem*. There's also a long letter from Herb Johnson on S-100, and one from Al Straumfjord on how he put together his YASBEC. *TCJ* is a magazine that every CP/M or Z-System user should subscribe to. See the RESOURCES section for subscription rates and the NEW address.

Computer Monthly, July 1992: Starting with this issue, *CM* changes format, shrinking to 8 x 10½ inches, and from white newsprint to shiny paper. Besides shrinking the page size, the number of pages has been reduced. So what got left out? If you answered all the Adam, Apple II, and other Classic Computer columns, plus the FOG material, you're right. The only remaining regular column of interest is Nancy Black's "Fearless Computing" column. This issue's column is mostly desktop publishing under the Geos operating system, and Commodore 128 programs that can write MS-DOS formats. The collection of programs listed for desktop publishing, starting on page 130, is also interesting, because many of the fonts listed are HP SoftFonts that can be used

on a LaserJet with any computer. Some of the programs even generate or edit HP SoftFonts, and while these programs only run on PCs, the resulting fonts can be used with any system.

August 1992: Nancy Black's column is the only article of interest this issue. She talks about Commodore bargains, transferring files from a Commodore word processor to WordStar 4.0, and utility software. She also lists some addresses of resources for people using older systems, including yours truly.

Though most of the good columns have disappeared, the classified ads in the back are still useful. *CM* has been reduced to $13.95 for 1 year, or $23.95 for two years, from Computer Monthly Subscriptions, P.O. 55886, Birmingham AL 35255-9951.

The Cursor August and September 1992. This is the newsletter of a Denver user's group called the PC-CLUB, formerly CP/M SIG. August's article is the standard spiel about the Dvorak keyboard. September's was instructions for cleaning dot-matrix print heads, by Ron Sheretz of the St. Louis User's Group for the PC. The club has an extensive CP/M library as well as PC software, and should be useful to people in the Denver area. Dues/subscription is $18 annually to the PC-Club, P.O. Box 5633, Denver CO 80217-5633. The editor is Eliot Payson, (303) 798-7812.

Eight Bits and Change! Volume 2, Number 6 (Issue 12), August/September 1992. This is the last issue of *EB&C!* It covers the SILENT utility, prints a couple of messages from Lee's bulletin board on MYZ80, an MS-DOS Z80 emulator, and otherwise contains various bits of humor that Lee has been waiting for space to publish.

RESOURCES

Paul Chidley is the co-inventor of the YASBEC computer. The YASBEC board is $100 Canadian, the YASMEM memory-expansion board is $30 Canadian, the EuroCard backplane is $25 Canadian, and the ZVID video board is $35 Canadian with PALs, $25 Canadian if you wish to provide your own PALs from the logic in the documentation. Contact Paul Chidley, 162 Hunterhorn Drive N.E., Calgary Alberta, Canada T2K 6H5, phone (403) 274-8891.

The Computer Journal is the foremost magazine in today's CP/M community. Published 6 times a year. Free sample issue available. Subscription is $18/year, $32/2 years (US); Foreign, Surface is $24/year, $44/2 years; Foreign, Air Mail is $38/year, $72/2 years. Contact The Computer Journal, P.O. Box 535, Lincoln CA 95648-0535, phone (800) 424-8825.

Corvatek sells KEY-UP, a keyboard interface for IBM-style keyboards. The DM-1 for Big Boards, DM-2 for Xerox 820, DM-3 for Kaypro, DM-4 for Franklin, DM-5 for ASCII Universal, DM-6 for Apple II are each $129. Inquire for other models and custom key definitions and applications. They also sell Keytronic keyboards in QWERTY or Dvorak; the KB5150 is $112, KB5151 is $164; shipping and handling extra. Corvatek, 561 N.W. Van Buren St., Corvallis OR 97330, phone (503) 752-4833.

Davidge Corporation makes and sells the Ampro Z80 Little Board, one of the CP/M computers still made. This is a 4-Mhz Z80 single-board computer with 64K RAM. The Little Board without SCSI is $240, the Series 1B Little Board Plus is $250. Software, BIOS source, manuals, and repair service are also available. Volume discounts available. Write to Davidge Corporation, 94 Commerce Drive, P.O. Box 1869, Buellton CA 93427, phone (805) 688-9598.

Elliam Associates sells disks of public-domain software and commercial software for most CP/M computers, including the Amstrad PCW. For a 100+ page catalog, send $8.50 plus $2.00 shipping and handling to Elliam Associates, P.O. Box 2664, Atascadero CA 93423, or phone (805) 466-8440.

Lambda Software Publishing publishes this magazine and sells CP/M and Z-System software, manuals, laser fonts, books. See the ad at the back of this magazine.

Microcomputer Mail-Order Library of books, manuals, and periodicals relating to microcomputers in general, and Heath/Zenith systems in particular, will loan you any item for 4 weeks for a handling fee plus postage. Send the deposit plus enough for postage, and the requested items will be sent you by first class priority mail. When you return them, the deposit and any left-over postage, minus the handling fee, will be refunded. For periodicals, the deposit is $1 per issue, $0.25 handling; books and hardware manuals are $5 deposit, $2 handling fee; software manuals are $10 deposit, $5 handling fee. The price is deliberately low to encourage people to learn more about their computers. Inevitably, some

items will be lost in the mail or not returned. Donations of printed material would therefore be greatly appreciated! To obtain a list of available items, or to borrow material, write to Library c/o Hart, 323 West 19th Street, Holland MI 49423.

Micromint makes and sells the SB180 and SB180LO computers. These are 9-MHz HD64180/Z180 single-board computers with 256K RAM. The SB180 is the size of a 3½" disk drive, costs $299 ($195 each 100 quantity), or $399 with ZCPR, ZRDOS, BIOS and ROM sources. The SB180LO is the size of a 5¼" disk drive, has SCSI, costs $400 ($320 each 100 quantity), or $490 with ZCPR, ZRDOS, BIOS and ROM sources, Z-System utilities. The SB180FXMME 2-Mb memory-expansion board, populated with 256K, costs $319. Micromint, Inc., 4 Park Street, Vernon CT 06066. Technical Assistance, (203) 871-6170. To order, 1 (800) 635-3355.

Morgan, Thielmann & Associates sells and services computers, not only the latest 386 and 486 systems with DR DOS or Unix, but also Eagle computers, all models, and other CP/M computers. Call them at (408) 972-1965 for prices and information.

Sage Microsystems East, selling and supporting the best in 8-bit software. NZCOM, Z3PLUS, XBIOS, PCED, DSD, Z-System Software Update Service, Backgrounder ii, ZSDOS/ZDDOS, DosDisk, JetFind, ZMATE, BDS C, Turbo Pascal, ZMAC, SLR Systems assembly-language tools, MEX-Plus and MEX-Pack. Next-day shipping of most products with modem download and support available. Order by phone, mail, or modem. Shipping and handling $3 USA, $4 Canada per order; based on actual cost elsewhere. Check, VISA, MasterCard. Specify exact disk formats acceptable. Sage Microsystems East, 1435 Centre St., Newton Centre MA 02159-2469, Voice (617) 965-3552 (9:00 AM - 11:30 PM), Modem (617) 965-7529 (pw=DDT) (MABOS on PC-Pursuit)

Small Computer Support no longer publishes *Eight Bits and Change*, but still sells public-domain CP/M packages, $15 each for the game disk, word-processing disk, dot-matrix printer disk, time-manager disk, SIL compiler disk, NPS COBOL compiler disk, mailing-list disk, spreadsheet disk. NZCOM, Z3PLUS, ZSDOS, BDS C, ZMAC also available. CP/M computer training, $15/hour. Contract programming service available. Computers, printers for sale. Write Small Computer Support, 24 East Cedar Street, Newington CT 06111, or call (voice) (203) 666-3139 or (data) (203) 665-1100.

Sound Potentials sells disks of CP/M public-domain software. Send $2.00 for a printed catalog and other information to Sound Potentials, Box 46, Brackney PA 18812. Note: after December 1992, Sound Potentials will no longer be in business, but their collection will be available from Lambda Software Publishing.

Chuck Stafford sells important products for Kaypro computers. The Advent TurboROM allows flexible configuration of your entire system, reading and writing additional formats, and more; $35. The hard-disk conversion kit includes everything needed to add a hard disk except the hard disk itself; the interfae, controller, TurboROM, software and manual. $175 without clock, $200 with clock; very few are left, so order now. Orders receive a free copy of the schematic for the Personality Decoder Board which lets you run more than two drives, and use 96-tpi drives (when combined with the TurboROM); unfortunately there are no more of the actual boards left. Write him at 4000 Norris Avenue, Sacramento CA 95821, or phone (916) 483-0312 evenings or weekends.

The Staunch 8/89'er is a magazine for users of Heath/Zenith H-8 and H-89 computers; $15 per year. Kirk L. Thompson, the editor, also sells CP/M and HDOS software, in all H/Z formats, including hard-sector. Write him at P.O. Box 548, West Branch IA 52358, or phone (319) 643-7136 (evenings and weekends).

Sydex sells PC software useful for copying CP/M files and handling CP/M disk formats (22DISK), running CP/M programs on a PC (22NICE), and copying CP/M boot disks without having the original machine (AnaDisk). $25 each plus $2.50 shipping and handling per order. Free sampler disks with the limited shareware versions are available. Talk to Chuck or Miriam at Sydex, P.O. Box 5700, Eugene OR 97405, phone (503) 683-6033.

EAGLE COMPUTER USERS GROUP

The Eagle Computer Users Group is one of the few remaining support groups for users of Eagle computers, both the CP/M line and the later 1600 and PC models. Because Spellbinder was bundled with Eagle computers, ECUG is also a Spellbinder users group. Anyone who acquires an Eagle computer is urged to get in touch with ECUG by writing Lambda Software Publishing, 720 South Second Street, San Jose CA 95112-5820, or phone Morgan Thielmann and Associates, (408) 972-1965. Do not use the old P.O. box, which will soon expire and not be renewed.

Meeting place

Meetings are the second Saturday of every month, from 9 A.M. to Noon. The remaining 1992 meetings are October 10, November 14, and December 12.

Until further notice, ECUG meetings will be at the home of Bill Josephson, 1681 Samedra Street, Sunnyvale, California. How to get there: Going west on Homestead Road, you come to Mary Avenue, which dead ends at the High School. One short block farther on is Samedra Street (parallel to Mary). Turn right on Samedra. Bill's house is white; it's the third house on the left. If you get lost, you can call Bill at (408) 245-0318.

August 8 meeting

Our August meeting was attended by Bill Josephson, David Banoff, Howard Jespersen, Sena, Shirley Welch, Dick Dethlefsen, Gene Chapin, Ken Thomson, David Honkala, David McGlone, Jerry Davis, and Jack Morse. Ken brought his Eagle, and I brought a TeleVideo 802H which I had just bought at the flea market.

General talk and consulting on individual problems occurred. Dave Honkala returned the PC software library, and gave Ken and me a BASIC program he had written to calculate compound interest (see below). Howard Jespersen got a bunch of CP/M public-domain software from Ken Thomson.

Jerry Davis says that Computer Terminal Service has moved to 8971 Quiet Canyon Road, Placerville CA 95667, phones (800) 675-2880 and (916) 621-2888. Despite the name, the company does not service terminals (perhaps they used to?). They repair printer carriage motors and print heads.

Compound interest program

The following program was written by David Honkala in Microsoft BASIC. No commentary or article accompanied the program. Dave demonstrated it at the August 8 ECUG meeting. Some editing of the program has been done to make it fit within the two-column format of *The Z-Letter;* otherwise it would have taken one more page than remains this issue.

```
10 REM  Program by David E. Honkala - K8SNX
20 REM
30 PRINT CHR$(26)  'Clear screen display
40 REM        COMPOUND INTEREST PROGRAM
50 REM       For use to determine a projected savings
55 REM        plan or a scheduled depletion of a
60 REM        savings account.
70 REM                  Begin Main Program
80 FOR SPACE = 1 TO 6  'Blank spaces at top of screen
90 PRINT
100 NEXT SPACE
110 REM        Calculate results and display output
120 ENDUP = STARTUP + YRS  'Calculate year of
          final summary
130 PRINT "      C O M P O U N D   I N T E R E S T
              C A L C U L A T O R
140 FOR SPACE = 1 TO 4
150 PRINT
160 NEXT SPACE
170 PRINT "      What year do you start your
          investment     ";
180 INPUT STARTUP
190 PRINT "      How much is your principal
          investment     $";
200 INPUT INV
210 PRINT "      What is your anticipated yield in
          percent  ";
220 INPUT PCT
230 PRINT "      How many years do you plan to save
                 ";
240 INPUT YRS
250 PRINT "      How much do you add each year to
          savings  $";
260 INPUT BUCKS
270 PRINT "      How much will you withdraw each
          year      $";
280 INPUT DRAWOUT
290 ENDUP = STARTUP + YRS  'Calculate last year of
          program process
300 PCT = PCT / 100  'Calculate decimal value of
          percent
310 TOT = INV  'Set value for final total
320 FOR  PERIOD = 1 TO YRS 'Control loop based on
```

```
        years
330 YIELD = TOT * PCT  'Calculate annual yield
340 TOT = TOT + YIELD + BUCKS - DRAWOUT
350 NEXT PERIOD
360 FOR SPACE = 1 TO 3
370 PRINT
380 NEXT SPACE
390 PRINT TAB(10) "The total after "; YRS;  " years is
        $ "; INT(TOT)
400 PRINT TAB(10) "and your annual return is $";
        INT(YIELD); " in "; ENDUP; "."
410 FOR SPACE = 1 TO 6
420 PRINT
430 NEXT SPACE
440 FOR TIME = 1 TO 5000 'Time delay
450 NEXT TIME
460 AN$ = "N"
470 INPUT "          Do you wish to have a hardcopy
        printout "; AN$ 'Printout
480 IF LEFT$(AN$,1) = "y" THEN GOSUB 560
490 IF LEFT$(AN$,1) = "Y" THEN GOSUB 560
500 YN$  = "N"
510 INPUT "          Do you wish to repeat this
        program "; YN$
520 IF LEFT$(YN$,1) = "y" THEN GOTO 30
530 IF LEFT$(YN$,1) = "Y" THEN GOTO 30
540 REM     'Main program completed
550 END
560 REM     Hard copy printout subroutine
570 FOR SPACE = 1 TO 6
580 LPRINT
590 NEXT SPACE
600 LPRINT TAB(15) " C O M P O U N D   I N T E R
        E S T   P R O G R A M
610 FOR SPACE = 1 TO 4
620 LPRINT
630 NEXT SPACE
640 LPRINT TAB(10) "Your principal investment is . . .
        . . . . $"; INV
650 PCT = PCT * 100
660 LPRINT TAB(10) "Your anticipated yield is  . . . . . .
        . ."; PCT
670 LPRINT TAB(10) "The years you are planning to
        save is  . . ."; YRS
680 LPRINT TAB(10) "The amount added each year is
        . . . . . $"; BUCKS
690 LPRINT TAB(10) "The amount withdrawn each
        year is  . . . . $"; DRAWOUT
700 FOR SPACE = 1 TO 3
710 LPRINT
720 NEXT SPACE
730 LPRINT TAB(10) "The total after "; YRS; " years is
        . . . . $"; TOT
740 LPRINT TAB(10) "and your annual return is $";
        YIELD; " in "; ENDUP; "."
750 LPRINT CHR$(12)
760  FOR TIME = 1 TO 5000
770 NEXT TIME
780 AN$ = "N"
790 RETURN
800 REM     Hardcopy display subroutine completed
```

September 12 meeting

Attendees in September were Bill Josephson, David McGlone, Bob Kowerski, Howard Jespersen, Dick Dethlefsen, Dave Banoff, Ken Thomson, Shirley Welch, Dave Honkala, and Jerry Davis.

David Banoff talked at some length about scalable fonts, particularly for PCs under Windows. It was a good talk, though I think the material he had and the length of his talk outlasted his audience's interest. Next time we should try to split such a large subject into two or more parts. Dave gave a good picture of the availability and prices of various font packages, including a handout he prepared comparing the packages from various companies.

Dave's talk was not all that was going on; Howard Jespersen finished copying the club's public-domain CP/M software to try out on his Eagle IV. Ken Thomson had brought his Kaypro 2X; I, unfortunately, forgot to bring some Kaypro boot disks for him to try on the machine. But Howard and Ken both agreed to help me collect Doug Barnes' computer collection the next day, and we got Ken fixed up afterwards (see RANDOM ACCESS, "The Big Haul"). Ken also gave me some 8" disks for a Fujitsu M2302 MP/M system. Dave Banoff also had some advertisements from Gazelle Systems for their Q-DOS, OPTune, Back-It 4, and Back-It for Windows products, and demo disks showing how the products work; many people present took them.

ECUG software libraries

ECUG has two software librarians. Anyone seeking CP/M or Z-System software should contact Ken Thomson, 71 Rosenkranz Street, San Francisco CA 94110, phone (415) 648-7550 until December; after that, contact David McGlone (see THE STATE OF THE ART, "Lambda acquires Sound Potentials"). For PC (MS-DOS) software, our librarian is Jack Morse, 1082 W. Hill Court, Cupertino CA 95014, phone (408) 252-6103. This is a new address, but the phone number is the same.

When you request software from Ken or Jack, send them floppy disks, not money, and the postage to

mail the disks. They will copy the software you request onto your disks and mail them back to you. That way no money changes hands, as would be the case if they continued to charge a fee per disk.

PC software received since last issue:

Automated Systems: Wedding Planner and Party Planner.

Restaurant Management Systems (P.O. Box 171515, Irving TX 75017-1515, phone (214) 986-6581): EZTIME version 2.0, 4/12/92

Typeright Company: General Invoice Sales Tracker Plus version 3.70

Original PC diskettes acquired by David McGlone and added to our PC software library at the September meeting: Micro Star AMTAX 86, TVG Systems MultiMail Two, Cougar Mountain Software, Inc. C.M.S. System and General Ledger Demo, Quadram Quadlink System Master Disk.

(continued from Page 2)

The purpose of this magazine is to spread the news about new developments in the community, and to help newcomers get the most out of their machines. So send us the news about your new software or hardware, your opinion of someone else's product, that article you've been meaning to write, your praise, gripes, or just plain questions! This is the place.

Please submit material on 5¼" diskette in almost any format, on 8" diskette, or printed or typewritten on clean white unlined paper. We cannot pay for articles, but the author of any article we publish will receive that issue of *The Z-Letter* free. If the author has a subscription, the subscription will be extended for one issue.

The Z-Letter reserves the right to edit for publication letters received. If you're not willing to have your letter printed, or edited before printing, please say so in the letter. All other letters will be assumed to be for publication and become the property of Lambda Software Publishing upon receipt.

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Anyone may submit personal ads. Each ad will be run three times automatically. If the ad doesn't achieve its end in that time, it can be reinstated after a lapse of one issue. If the ad succeeds before it has run three times, please inform us so we can drop it at once.

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720 South Second Street, San Jose, CA 95112-5820, phone (408) 293-5176

Wants to know what version of PC Calc I offered him

Spellbinder (version 5.3H), $60. The best CP/M word processor. Includes all four manuals. (Ltek)

CP/M (version 2.2), $25 (DRI)

MagicIndex (version 3.00), $100. Text formatter used to produce this newsletter. Versions available for standard word processor or WordStar, LaserJet or Diablo 630. Please specify your word processor and printer when ordering. (CES)

Computer manuals, $15 each. Eagle CP/M, Eagle 1600, Eagle PC Plus and Spirit, Otrona Attache, and Pied Piper. Inquire about others. (Various companies)

Eagle Computer Users Group newsletter, $15. All issues from July 1987 to October 1990.

***The Z-Letter*, back issues:** $3/issue (US, Canada, Mexico), $5/issue (elsewhere).

***The Z-Letter*, subscription:** $18/12 issues (US), $22/12 issues (Canada & Mexico), $36/12 issues (all other). Now published bi-monthly.

Z-Fonts catalog, $3 (US, Canada, Mexico), $5 (elsewhere). Samples of all the fonts available from Lambda for HP LaserJet printers, with instructions on how to choose what size, orientation, etc. you wish.

Z-Fonts, $8 per font. (Digi-Fonts)

NZ-COM (version 1.2d), $50. Turns your CP/M 2.2 system into a dynamic Z-System machine. (Alpha)

ZCPR 3.4 source code, $35. (Alpha)

I/OR, $25. Saves the screen in a file, saves printer text in another file. 1.5K IOP segment, ZRDOS required. (Alpha)

B/Printer, $25. Deluxe background single-file printing. 1.5K IOP segment, ZRDOS required. (Alpha)

NuKey (version 2.03), $25. Advanced function-key generator. 1.5K IOP segment, ZRDOS required. (Alpha)

All three IOP segments, $60. (Alpha)

CBASIC Reference Manual, (DRI); ***MBASIC Reference Manual,*** (DRI); ***Perfect Calc User's Guide,*** (Perfect Software, Inc.); ***Perfect Filer User's Guide,*** (Perfect Software, Inc.); ***Perfect Writer/Speller User's Guide,*** (Perfect Software, Inc.); ***The CP/M Handbook with MP/M,*** by Dr. Rodnay Zaks (SYBEX); $15 apiece.

Customizable diskette carriers, $3. Each protects up to three 5¼" diskettes from harm in briefcase, etc.

SuperCalc (version 2.0), $30. (Sorcim)

Boot disks wanted!

I am building a library of CP/M boot disks so that I can supply working CP/M disks for all makes of machines. The disk should contain the CP/M utilities, the formatting and other utilities that are specific to the machine, and have the operating system on the boot tracks. I will pay you $5 for each one I don't have already, or deduct $5 from any products you buy from me.

Advantage Horizon

Disk copying – $10 per disk

I can copy most soft-sector (both single- and double-density) 5¼" CP/M formats, including Apple II CP/M and Commodore CP/M. (Sorry, no hard-sector formats except Northstar and Heath/Zenith.) I can also copy 8" disks and 3½" formats. Copies can be CP/M <–> CP/M, CP/M <–> MS-DOS, CP/M <–> Mac, or Mac <–> MS-DOS; specify the format of your originals, and the format desired for the copies. Both originals and copies will be returned. *The responsibility is* **yours** *to ensure that you are the legal owner of material you ask me to copy.* Software you buy from Lambda will be sent to you in the disk format you request at no extra cost.

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Make sure you tell me your name, company name if any, address, home and business phone, and the computer format in which software should be supplied. For back issues, list which issues you want. For fonts, use the order form from a copy of the catalogue. Your check for the total should be in U.S. funds in an international money order, or the equivalent in your country's currency.