



# The Z-Letter

Newsletter of the CP/M and Z-System community

Number 40

November/December 1995



Shoe by Jeff MacNelly.

Reprinted by permission: Tribune Media Services

NEW PRODUCT FOR CP/M: LAMBDA ACCESS

Moving by leaps and bounds, by Tina Huovinen

MYZ80, by Maddy Huovinen and Terry Corona

Combining ZFILER and ARUNZ, by Bob Vinisky

INDEX TO ISSUES 35-40

# TABLE OF CONTENTS

<b>RANDOM ACCESS</b> <i>Editorial ramblings and community news</i>	
Lambda Access available .....	3
Oregon gets new area code .....	3
<b>SPELLBOUND</b>	
Moving by leaps and bounds by <i>Tina Huovinen</i> .....	3
<b>THE CP/M PC</b>	
Part II: MYZ80 by <i>Maddy Huovinen and Terry Corona</i> .....	6
<b>THE Z-SYSTEM APOLOGIST</b>	
Combining ZFILER and ARUNZ by <i>Bob Vinisky</i> .....	10
<b>ERRATA</b> .....	12
<b>PERSONAL ADS</b> .....	12
<b>LETTERS</b>	
S-100 treasure trove from <i>Rlee H. Peters</i> .....	13
DR Assembler Plus Tools from <i>H.K. Fraser</i> .....	14
SB180FX B/P Bios from <i>Harold F. Bower</i> .....	14
<b>RESOURCES</b> .....	15
<b>PUBLICATIONS</b> .....	17
<b>INDEX TO THE Z-LETTER, ISSUES 35-40</b> .....	18
<b>ART CREDITS</b> .....	27
<b>NEXT ISSUE</b> .....	28

---

Welcome to *The Z-Letter*, the newsletter of the CP/M and Z-System community. TZL is copyright © 1995 by David A.J. McGlone, Lambda Software Publishing, 149 West Hilliard Lane, Eugene, Oregon 97404-3057, phone (541) 688-3563, email [d.mcglone@genie.geis.com](mailto:d.mcglone@genie.geis.com).

The purpose of this magazine is to spread the news of our community, and to help newcomers get the most out of their machines. We welcome news, product reviews, how-to articles, praise, gripes, or just plain questions. Please submit material online to the email address above, on any size floppy disk in any soft-sector format, or typed or printed 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 letters become the property of Lambda Software Publishing upon receipt.

A subscription to *The Z-Letter* starts with the first issue after payment is received. See the Lambda ad in this issue for subscription rates, back-issue price, etc.

Anyone may submit personal ads. Each ad will be run three times. 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 at once.

All trademarks used herein are acknowledged to be the property of their owners.

*The Z-Letter* is printed by Hypatia Press, 360 West First, Eugene OR 97401, phone (541) 485-0947, and mailed bulk rate.

## RANDOM ACCESS

### Lambda Access available

In June 1994 I began writing a program to manage the data base of subscribers and subscriptions to *The Z-Letter*. Formerly the data was in a SELECTOR V data base, and labels for each issue of *The Z-Letter* were produced by a combination of SELECTOR V procedures, Turbo Pascal programs, and Nevada COBOL programs. By August 1994 I had replaced all this with a custom data-base program written in LPascal, based on the sample programs in Borland's Turbo Data-Base Toolbox package, and using the Toolbox B-Tree routines.

At the same time I was working on the data-base program, I was also working on B-Tree routines of my own, to free me from Borland's products entirely. In September 1994 I recompiled the data-base program to use my routines instead of Borland. In over a year of use I've found a fixed a couple of bugs in the data-base program, and there's a major feature I'd still like to add. However, I haven't found any bugs in the B-Tree routines.

Accordingly, I am now offering the B-Tree routines as a product, called Lambda Access. The price is \$40. The package includes the B-Tree routines themselves, in four files called LACCESS1.INC, LACCESS2.INC, etc. My subscription data-base program's source files are

included, along with the data base itself; and the source files and a sample data base for another data-base program for the Richmond Farmer's Market, based on the first but showing different ways to do things. There is no printed manual (too expensive); instead there's a manual on disk, in the file LACCESS.DOC.

Pascal programmers should have no difficulty using all this documentation and examples to write their own data-base programs, but if they do, they can always call or write me. The Lambda Access procedures and functions have the same names and take the same parameters as their Turbo-Access equivalents, so that programs written to use Borland's Toolbox can be compiled instead with Lambda Access, simply by replacing the include statements.

### Oregon gets new area code

All of Oregon has been area code 503 for as long as there have been area codes. With multiple phones per household, plus cellular phones, car phones, pagers, faxes, and modems, there are no longer enough 503 numbers. Effective November 5, 1995, the northwestern corner of the state, including Portland, kept area code 503; the rest of the state, including Eugene, switched to area code 541.



## SPELLBOUND

Moving by leaps and bounds  
by Tina Huovinen

Hello again! Last issue I introduced you to Spellbinder's Edit mode and Command mode. Normally, when you start Spellbinder you'll be in Edit mode, where you do most of your typing. When you want to load and run a macro, print text, read text from a file, write text to a file, or search for something, you use the Edit/Command command to switch to Command mode.

### The mode wheel

Just to confuse you, however, there is another kind of mode in Spellbinder. I wish the guy who wrote Spellbinder had chosen another word for it, but he didn't, and we're stuck with it now. The mode wheel only matters when you're in Edit mode. Remember the status line at the top of the screen? It looks like this:

EDIT

L 0001 C 001 \*WORD\*

The first word in the status line, EDIT, indicates that we're in Edit mode; it changes to COMMAND if we go into Command mode. L and C indicate what line and column we're on, or rather the current line and column position of the cursor. \*WORD\* means that the current setting of the mode wheel is WORD.

The mode wheel can be set to WORD, SENT (sentence), PARA (paragraph), MARK, or CHAR (character). WORD is the default; the mode-wheel setting reverts to WORD whenever you go into Edit mode, and it switches from any of the other settings to WORD whenever you type anything.

To change the mode-wheel setting, use the Cursor Mode command, Control-O. (To be mnemonic, this should be Control-M, but Control-M is a carriage return, and has been that since teletype days. It's fixed permanently in ASCII, and we can't change it for our convenience.) Each time you use this command, the mode setting advances one place around the wheel. If the setting is WORD, Control-O changes it to SENT; another Control-O changes it to PARA; another makes it MARK; another, CHAR; another, back to WORD again.

The purpose of the mode wheel is to keep the number of Spellbinder commands small and easy to remember. Suppose some other word processor had commands to move the cursor forward by a word, sentence, paragraph, mark, or character; back by each of these units; and to delete a word, sentence, paragraph, mark, or character at a time. That would be 15 different commands!

Spellbinder, instead, has three commands to do all this. Mode Forward (Control-F) moves the cursor forward by the amount indicated by the mode-wheel setting. If the mode wheel is WORD, Control-F (F for forward) moves the cursor forward to the beginning of the next word. If the wheel setting is SENT, the cursor jumps forward to the beginning of the next sentence. PARA sends the cursor forward to the start of the next paragraph, CHAR to the next character. A MARK is a caret (^); when the wheel is set to MARK, the cursor dashes forward to the next ^ it finds. If it doesn't find one, it goes all the way to the end of the text.

In the same way, the Mode Back command (Control-B, B for Back) moves the cursor back by a word, sentence, paragraph, or character. If the mode-wheel setting is MARK, the cursor moves to the last caret before its present position; if it doesn't find one, it moves all the way to the start of your text.

A third command that uses the mode-wheel setting is the Mode Delete (Control-D, D for Delete) command. This command deletes everything up to the start of the next word, sentence, paragraph, or character; if the wheel setting is MARK, it deletes

everything to the next caret or to the end of text, whichever comes first. If the amount of text to be deleted is more than one line, Spellbinder highlights the text that would be deleted, and asks you to confirm your intention with a Y or N before proceeding.

I know this sounds confusing at first, but it soon becomes second nature. The four commands are a lot easier to remember than 15, especially since three of them are Control-F for Forward, Control-B for Back, and Control-D for Delete.

These commands also involve a lot fewer keystrokes to perform common operations than the corresponding commands in other word processors. To delete a paragraph in some word processors, you have to move back to the beginning of the paragraph, mark it as the beginning of the block, move to the end of the paragraph, mark it as the end of the block, then execute the delete block command. Even if each of these operations are a single keystroke (and they probably aren't), that's a minimum of 5 keystrokes. In Spellbinder you tap the Cursor Mode key twice to change WORD to PARA, tap Mode Back to move to the beginning of the paragraph, and tap Mode Delete to delete the paragraph. That's 4 keystrokes instead of some multiple of 5.

### Scan

But suppose you want to delete two lines that are right in the middle of a paragraph. Do you have to hold down the Delete key until they're gone?

You could, but there are several easier ways. One involves the Scan command (Control-S, S for Scan). Scan switches the cursor between the left and right margins of the current line. No matter where you are, hitting Scan will make the cursor jump to the right edge of your screen. Hit it again, and it'll jump to the left edge of your screen, and so on, back and forth. This is handy when you want to change text that's way on the left when you're on the right, or vice versa. Use Scan to get near the right place, then a few Mode Forward or Mode Back commands to get there, instead of lots of them to crawl through the whole line.

Getting back to our two lines, you could use Scan to move past the end of the second line, then Mode Back, then Mode Forward. This will place your cursor right after the last character in the line, just like David's Line End key. Now hit RETURN to mark the line as the end of a paragraph, move up two lines, hit Cursor Mode twice to change WORD to PARA, and Mode Delete to delete the two lines. Pretty cumbersome, but now you know how Scan works.



**B, F, and D**

A better way involves the command-mode commands B, F, and D, which as you might guess are back, forward, and delete commands.

These three commands work on lines, not the mode wheel. B2 moves the cursor back two lines, F2 moves the cursor forward two lines, and D2 deletes two lines of text. B and F leave the cursor at the beginning of the line after they're done, no matter where the cursor was in the line. So if the cursor was on line 3, column 27, B2 would place it in line 1, column 1; F2 would place it in line 5, column 1.

The D command operates from the current cursor position. If you're in line 3, column 27, switch to command mode, and type D2, the two lines deleted will be *the rest of line 3*, plus line 4. To delete all of both lines, move the cursor to the beginning of the first line before typing D2.

Without a number of lines specified, B, F, and D operate like Mode Back, Mode Forward, and Mode Delete when the mode-wheel setting is MARK. That is, the command B by itself, will move the cursor back until it finds a caret or the beginning of text, whichever comes first. F by itself moves the cursor forward until it hits a caret or the end of text. Plain D will delete everything from the cursor position to the next caret or the end of text, after getting your confirmation if it's more than one line.

A related command is DA, or Delete All. When you type DA, Spellbinder asks for confirmation by printing REALLY? (Y/N) at the far right of the status line. If you type anything except Y, the command aborts, and nothing happens. If you type Y, Spellbinder deletes all text in memory, from beginning to end, no matter where the cursor is.

**The .C command**

Our dot command this time is .C, which is how you center a line in Spellbinder. David says that in the old days, typists would center a line by counting the characters in the line, subtracting them from the line length, divide the result by two, and start typing at that column. In Spellbinder it's much easier. To center a line, just start it with *c* or .C. For example,

```
.cNOW IS THE TIME
```

will print as:

```
      NOW IS THE TIME
```

To center a bunch of lines, put .C at the beginning of each one. For instance,

```
.cNOW IS THE TIME
.cA novel for all good men
.cby Christina F. Huovinen
```

will appear on the printed page as:

```
      NOW IS THE TIME
      A novel for all good men

      by Christina F. Huovinen
```

**Reading a file from disk**

Last time I showed you some of the combinations of T, W, and WD to print text to a file. Most of the time you won't write something all in one session. We all have distractions pulling us away from our writing. So this time I'll show you how to read text from a file into Spellbinder, so that you can continue to work on it.

Since the W command is used to Write text to a file, it seems logical that R is how you Read text from a file. Actually there are several commands R, RI, RO, and RD.

If your "edit buffer" (the space in memory that Spellbinder uses to hold text) is empty, either R or RI will work. Either one will cause READ FILENAME> to appear in place of the COMMAND in the status line. Give it the name of your file. If you type it wrong, Spellbinder will respond with FILE NOT FOUND and ask you for a name again. Once you get it right, Spellbinder will copy the whole file into memory.

If you already have text on your screen, R and RI do very different things. R copies text from a file to the end of the text already in memory, no matter where your cursor is. RI inserts the text into the existing text at the position of the cursor. So R is Read and RI is Read and Insert.

If you don't want the whole file all at once, you can specify how many lines you want with a number after the R or RI. R4 would copy the first four lines (or next four, if you've already read text) to the end of your text, while RI4 would copy the first or next four lines to the current cursor position.

The RD command (Read Done) closes a file that was opened to read from. Spellbinder automatically closes open files when you leave it, so this command would mostly be used when you had copied some text from one file and then wanted to read from another one. You'd close the first file with the RD command, then open the next one by reading from it. If you weren't ready to read from it yet, but wanted to open it before you forgot to do so, you'd use the RO (Read

Open) command.

Most of the time you just use the R or RI command. If the file you want to work on is too big to fit in memory all at once, there's another set of commands you use instead of the R and W variants; but we'll save that for a later installment.

### Starting up in command mode

Most of the time, the first thing you want to do in Spellbinder is go into command mode and read in a file. You can change Spellbinder to make it go into command mode automatically when you start it up!

Clear your memory with the DA command and type the following:

```
;Put Spellbinder in Command Mode on startup.
;
&143
022 255
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

We're not going to explain what this means yet, or how it works. For now, I just want to show you how to install this kind of change in Spellbinder.

Once you've typed these five lines, save them to disk with T/W/WD. Name the new file COMMAND.TAB so we can find it again later. Still in Command mode, move the cursor to the ampersand (the & character) and type PS, then hit the RETURN key.

If you've typed the lines exactly as shown, the cursor will move to the end of the text. If not, correct what you typed wrong and try again, moving the

cursor to the ampersand and typing PS.

Once you've typed PS and had the cursor move to the end of text, clear the text away with the DA command, then type XS. X, remember, is how you leave Spellbinder. XS is eXit and Save; you leave Spellbinder, but save certain kinds of changes permanently.

Back at the CP/M prompt, type SB to enter Spellbinder. When you hit a key to clear the initial screen, Spellbinder will automatically switch to command mode without you using the Edit/Command key!

### Wrapping up

In this column we learned how to switch the mode-wheel setting with the Cursor Mode command, and the Mode Back, Mode Forward, and Mode Delete commands. We also learned how the Scan command works.

In the command mode, we learned the B, F, D, and DA commands. The dot command .C centers lines of text. We learned how to read text from files with the R, RI, RO, and RD commands, and we customized Spellbinder to go into command mode automatically at the beginning of a session.

Read this until you understand it, and remember that sometimes the best way to understand something is to just go ahead and try it out. Next issue we'll begin to learn how to print text, and how to see how your text will print without actually sending it to the printer, which will save paper. We'll also learn the dot command E and the MOVEIT macro. — *Merry Christmas! Tina*

## THE CP/M PC

### Part II: MYZ80

by Maddy Huovinen and Terry Corona

Hello! This is the second installment of a series comparing three different ways to run CP/M programs on a PC. In the first one, Gina and Katey explored a CP/M emulator called Z80MU. This issue, Terry and I will do the same for a Z80 emulator called MYZ80. Next issue David McGlone and Zener will write about a CP/M program launcher called 22NICE. Finally, in issue 42, David McGlone and David Samson will run a standard set of CP/M programs on some 4-MHz CP/M computers, a 9-MHz Micromint SB180FX Z-System computer, an 18-MHz YASBEC Z-System computer, and a couple of different PCs with different CPUs and different clock speeds. They will

then compare the speeds of these programs on these different systems.

Terry and I come to this project with absolutely no biases about CP/M or MS-DOS; both of us have Macs at home. All tests were done on David McGlone's 286. My sister Tina helped us with Spellbinder, and Gina helped us find our way around the PC.

### Where to get it

The first place we looked for MYZ80 was on the CP/M CDROM. Using VTYPE on Tina's SB180FX, we

searched for "myz80" in the CDROM directory text CDROM.TXT which David had created by using an MS-DOS utility XDIR. We found lots of files, including some duplications. In \BEEHIVE\MYZ80 we found MYZ80111.ZIP, which is version 1.11 of MYZ80, and Z-FOR-AT.ARK, which is an article written by Lee Bradley in August 1992. The prices in it for MYZ80 and NZ-COM are out of date now. In \ZSYS\ZNODE-12\I we found MYZ80111.ZIP again, plus IMPMYZ80.LBR, MYZ80CLK.LBR, and MYZ80CK2.LBR. IMPMYZ80 is a version of the IMP modem program for MYZ80, constructed by Tom Mannion in September 1992. MYZ80CLK is a ZSDOS/ZDDOS clock driver by Steven N. Hirsch in August 1992, and MYZ80CKS is another one, with no FOR file to list the author or date. Other duplications, or earlier versions in some cases, were found in \BEEHIVE\OS, \JSAGE\ZNODE3\UPLOADS, \JSAGE\ZNODE3\MODEM, and \ENTERPRS\CPM\UTILS\F.

Lee Bradley has also assembled a demo package which he sells for \$10 (see RESOURCES). It includes MYZ80111.ZIP, the shareware version of 22DISK, and a demo setup Lee created.

### Running MYZ80

We used PKUNZIP to unpack MYZ80111.ZIP into these files:

```

MYZ80.DOC
CPMEXE
BOOT.CPM
A.DSK
HISTORY.TXT
INSTALL.NOT
READ.IST
ORDER.FRM

```

The files you actually need to run MYZ80 are CPMEXE, BOOT.CPM, and A.DSK. MYZ80.DOC is the "manual" for MYZ80, and you should read it, but it doesn't need to be there to run MYZ80. The last four files are special-purpose information also unnecessary to running MYZ80.

To start, just type CPM and hit return. Because this is the unregistered version, it will make you sit through two pages of text on getting a registered copy, plus many pages of instruction. This is a good thing the first few times.

Once you're through the display, MYZ80 offers you a prompt:

```
A0>
```

At this point you're "in CP/M." Actually, you're running MYZ80, which is a virtual Z80 or HD64180

chip written in 80x86 assembly language, and a virtual CP/M computer and CP/M-like environment written in Z80 assembly language. The documentation claims that the operating system supplied can be replaced with CP/M 2.2, CP/M 3.0, ZPM3, the Z-System, or any other compatible operating system.

### Disk drives

Your virtual CP/M computer has no floppy-disk drives. Drives A, B, and C, providing permanent storage like a hard disk, are actually files on your PC's hard disk. Drive A is the file A.DSK supplied with MYZ80, whose contents we'll examine in a moment. Drives B and C (B.DSK and C.DSK) are created by MYZ80 when you run it, if they don't exist already; they start out empty. Drives A, B, and C can hold up to 8160K of files. Drive D is a 190K RAM disk, using your PC's memory. Like all RAM disks, anything you put on it goes away when you turn your computer off, which in this case means when you exit from MYZ80. Using the COLDBOOT command (see below) does not wipe the RAM disk.

CP/M files are not visible from MS-DOS because they are contained in the disk files. MYZ80 comes with a number of CP/M files; you will no doubt add many more of your own.

### Resident commands

MYZ80 has the standard CP/M resident commands DIR, ERA, REN, SAVE, and TYPE. These are identical to the ones built into CP/M 2.2, except that this TYPE stops at the end of each screen's worth of text until you hit a key, and ERA lists the files it erases. By using SAVE we determined that drives A, B, and C have a 4K block size and drive D has a 2K block size. That is, any file on the "hard disks" will be at least 4K, even if it's only a single character, and all file sizes will be multiples of 4K. Files on the RAM disk will be at least 2K and all file sizes will be multiples of 2. David says these block sizes are twice as large as necessary for 8-Mb hard-disk partitions and RAM disks.

### Transient commands: IMPORT

MYZ80 comes with very few files on disk A. Fortunately, you can copy all your programs and files from your CP/M machine, using the IMPORT command. The syntax is `IMPORT MS-DOS-files`. For example, we copied all the files on a Kaypro II boot disk to the PC, using 22DISK. Then we copied them from the PC directory TEMP to MYZ80 with the

command `IMPORT \TEMP\*.*`. This gave us PIP, STAT, etc. to work with. Incidentally, when we tried `IMPORT \TEMP\*. * C:` we got no error message, but the files were copied to drive A, where we were, not drive C. `IMPORT` should either copy the files where we tell it to, or give an error message to let us know we won't get what we asked for.

We had to copy the files in two stages because you have no direct access to the PC's floppy-disk drives or hard disk, nor can you run MS-DOS utilities like 22DISK from inside MYZ80.

David suggested an experiment. Following his directions, we used UniForm to set the PC's drive G to Kaypro II format. Then we tried to copy all the files to MYZ80 with the command `IMPORT G:*. *`. This worked! So, while you still don't have direct access to the PC's drives with CP/M commands, you can import files directly from your CP/M diskettes – provided you have a copy of UniForm for your PC, your CP/M format is known to UniForm, and you remember to run UniForm before you go into MYZ80. You can automate this with the following commands:

```
UniForm /Q 4 /R c /R
CD MYZ80
CPM
UniForm /Q /S /R
```

The first line sets the UniForm drive on David's PC to Kaypro II format. UniForm displays only the formats appropriate to the drive you've selected as your UniForm drive, so go into UniForm manually to see which menu includes the format of your CP/M computer, and which option it is on that menu, replacing the "4" and "c" in this line. The second line logs you into the directory named MYZ80, and the third line executes MYZ80. The fourth line clears your UniForm drive after you leave MYZ80. If you type these lines into a file named ZBAT, this will all happen when you type Z at the MS-DOS prompt.

`IMPORT` and the other transient commands that come with MYZ80 have built-in help messages that tell you how to use them and give examples. To display them, type `//` after the command, for example, `IMPORT //`. David says this is a Z-System feature, and Z-System syntax for invoking the feature. Inconsistently, however, other options are not preceded by a slash, but a dash. While a double slash brings up the help message, the `O` option in `IMPORT` follows a dash instead of a slash. The `O` option tells `IMPORT` to go ahead and Overwrite a file if it already exists, instead of stopping and asking your permission to do so.

### Other transient commands

`COLOUR` changes the colours on your screen; on a system with a monochrome monitor, it just prints the message "This utility only works with colour systems." It won't even display the help message.

`DOSDIR` shows a directory of the MS-DOS disks, so you can find files you want to import without leaving MYZ80 to search for them.

`EXPORT` works like `IMPORT`; you use it to copy files from MYZ80 to the PC's disk drives.

`QUIT` exits MYZ80. Normally, if you have something on the RAM disk, `QUIT` will warn you of this, and require you to confirm that it's OK to shut down MYZ80 and lose the contents of the RAM disk. But `QUIT -O` tells it to go ahead without warning you or requesting confirmation.

You can also have MYZ80 pass an error code to MS-DOS. For example, `QUIT 14` would "cause MYZ80 to return an error level of 14". I don't know enough about MS-DOS to know what that means; trying this produced no reaction at all on David's PC. If we suppose that some MS-DOS utility or an MS-DOS program can somehow recover this message, this implies that we could set up a batch file that, as part of its operation, runs MYZ80. By renaming some CP/M program to MYZ80GO.COM, it would automatically run when MYZ80 started up. If this program ran into an error, it could invoke `QUIT` with the corresponding error code, for example, `QUIT 14` if the file it was supposed to work on was missing. The MS-DOS utility could then report that the file was missing, letting the user know that the work he told the computer to do wasn't finished. At least, that's the use for this feature that I can imagine.

MYZ80GO is a transient text-viewing program, similar to the built-in `TYPE` command. When it runs, it displays the text HELLO.TXT, which is all the pages of instruction you see when you enter MYZ80. MYZ80's CP/M is patched to run the program MYZ80GO whenever it boots. By erasing MYZ80GO, you can eliminate paging through all that information whenever you start MYZ80GO. If you want to read them after that, just type `TYPE HELLO.TXT`. The two pages on registering MYZ80 you'll have to live with until you buy a registered copy.

Of course, erasing MYZ80GO.COM doesn't change the patched place in MYZ80; it still looks for MYZ80GO whenever it boots. When it doesn't find it, it displays MYZ80GO? to tell you so. Terry and I fixed that by copying a CP/M public-domain directory program called D4, and renaming it to MYZ80GO. Now whenever MYZ80 boots, it displays the files in disk A, in alphabetical order, complete with their size, user area, and total used and unused space and

directory allocations.

SHRINK reduces disk files to their minimum size. This doesn't affect the size of the CP/M files on the disk, but reduces the file A.DSK, for example, to the minimum size required to hold the CP/M files. This matters only if your PC hard disk is short of space.

SLOWDISP slows down the MYZ80 display. You might need this if a CP/M program is too fast for the terminal emulation.

TERMINAL sets or changes the terminal emulation, including the number of lines and whether wrap-around is on or off. TERMINAL LIST displays the emulations available, and TERMINAL SHOW displays the current settings. There is no TeleVideo emulation listed.

### Keyboard redefinition

MYZ80 has two built-in features not normally part of CP/M. By pressing the CONTROL and BREAK and SHIFT keys all at once, you bring up a window in which you can redefine any of the keys on the keyboard. For instance, you could redefine F1 to emit D CARRIAGE-RETURN, which would run a program called D.COM.

Key re-definitions in memory go away when you leave MYZ80. But the transient program KEY loads and saves keyboard definitions. The command KEY TEMP -S saves the current definitions to a file called TEMP.KEY. KEY CLEAR wipes out any definitions in memory. To restore the ones in TEMP.KEY, say the next time you enter MYZ80, the command is KEY TEMP (without the -S option).

You could use the key-definition menu to program the keys differently for different CP/M programs, saving each set to its own file and loading it when needed with the KEY command. For instance, you could save dBase II key definitions in DB.KEY, and Spellbinder key definitions in SB.KEY.

### Built-in debugger

You call up the other built-in feature (the documentations calls them "online menus") by pressing CONTROL and BREAK together. In the window that appears is a complete debugger, complete with displays showing the contents of the virtual Z80's registers.

### Running CP/M 3.0 or ZPM+

In user area 1 of disk A are a number of files for running ZPM+ instead of the CP/M 2.2-like operating system. ZPM+ is supposed to be an improvement over CP/M 3.0, but it's not easy to test this. Because

it's a replacement for part of CP/M 3.0, the way that ZCPR is a replacement for part of CP/M 2.2, ZPM+ is not complete in itself, and Simeon Cran can't include the parts of CP/M 3.0 needed to complete it, because CP/M is the legal property of Novell, and is not public domain. David is a licensed distributor of CP/M 3.0, and we could have got the specified files from him, but we left this for a future time, as this article was late already.

The files in user area 1 include an alternate boot file that would load CP/M 3.0 or ZPM+ instead of CP/M 2.2. If you wanted your MYZ80 to always do so, you would rename this file to BOOT.CPM and rename the BOOT.CPM file to something else.

If you wanted to run sometimes one, and sometimes the other, you could use the COLDBOOT command. COLDBOOT reboots MYZ80, optionally with a different system. For instance, if your CP/M 3.0 system's boot file was named BOOT3.CPM, you would type COLDBOOT BOOT3 to reboot with that system.

### Actually running programs

We ran Spellbinder, FILT, David's subscription data-base program for *The Z-Letter*, LPascal, and NZ-COM.

We imported Spellbinder directly from the directory on the PC where David keeps the master from which orders are filled. Because we weren't sure what terminal the default MYZ80 terminal setting corresponded to, we tried running Spellbinder without running CONFIGSB to configure it. Everything we tried worked fine, except that the arrow keys on the PC's keyboard didn't match the Spellbinder cursor commands. This could be fixed by customizing Spellbinder, or by redefining the keys as described above.

FILT worked perfectly when we ran it to transform a Spellbinder file into standard ASCII, with carriage return and line feed at the end of every line.

LPascal compiled the data-base program with no errors. The problem of drive assignments, which Gina and Katey ran into with Z80MU, did not arise, because MYZ80's virtual computer has its own drive A, B, C, and D. After copying the data-base files to drive B, we ran the program. As expected, the TeleVideo graphics characters used to draw boxes appeared as capital letters instead of graphics; changing the characters in the source to PC graphics characters and recompiling would fix this. Graphics aside, we found no errors in running the program.

We imported all the files from the NZ-COM directory, copying the old disks first, then the new ones, so that we had all the files in both versions, but

the newer one when a program was in both sets. Then we ran MKZCM, which linked the MYZ80 BIOS with ZRDOS and ZCPR. Running that system, we set the path to D0: A15: D0; and copied all the COM files to A15:. We also loaded a history shell, LSH; fiddled with the directory names, and otherwise set up the environment in ways David suggested. When all was arranged, we ran NZBLITZ to save the environment to a file named Z.COM.

Typing Z at the MYZ80 prompt then launched us quickly into a Z-System environment, with a real BIOS, ZCPR, and ZRDOS running on top of Simeon Cran's virtual Z80. Everything worked fine, except that some utilities wanted a fancier TCAP than we had, like the one Gary Ratliff constructed for an HP 125 in issue 37 of this magazine. Selecting a specific emulation and a matching TCAP, then updating that TCAP, would probably eliminate any terminal problems. What we really need is a TeleVideo emulation, so that MYZ80 on David's PC can run programs copied from David's YASBEC or Tina's SB180FX without change.

Terry typed QUIT without remembering to exit from NZ-COM to MYZ80's CP/M, and discovered that you can exit from NZ-COM right to MS-DOS without going through the intermediate step. That's nice!

## Conclusion

Simeon Cran's MYZ80 appears to be a really good virtual CP/M machine. We couldn't find anything that wouldn't run on it, and David spent some time trying, after we finished our tests. The fact that you can run NZ-COM in this environment is terrific! It would be interesting to get CP/M 3.0 running, and then try to launch Z3PLUS. Perhaps we'll have time to try this sometime soon. Meanwhile, NZ-COM worked so well that we tend to believe that CP/M 3.0 and Z3PLUS probably would, too.

The isolation of the CP/M environment from the PC's floppy-disk drives struck us at first as a bad feature. In practice, however, the drives that matter are the virtual hard-disk partitions A, B, and C, and the RAM disk, drive D. The pipeline to the "outside world" provided by the IMPORT and EXPORT commands is more than adequate. We wish we knew how to add more hard-disk partitions. Tina's SB180FX has four 8-Mb partitions, plus two RAM disks; David's YASBEC has four 40-Mb partitions, plus a RAM disk. We tried making a copy of CDSK called D.DSK, but MYZ80 ignored it. Drive D remained the RAM disk, and drive E was still an illegal reference.

Comparison of 22NICE with Z80MU and MYZ80, and timed tests of program execution by all three programs, will appear in issue 42.

# THE Z-SYSTEM APOLOGIST

Combining ZFILER and ARUNZ  
by Bob Vinisky

In issue 38 we looked at shell tools and possible uses for them. We'll expand on that theme this time to see how we can use shells in our daily computing life. Programming ZFILER and MENU is a simple task for most applications. When combined with ARUNZ, these shells can generate amazingly sophisticated processing for your needs. This doesn't mean highly advanced programming, however, as most of your daily needs are quite simple. Let's take a look at a couple of examples.

ZFILER was developed as a file-management tool. If you've used SWEEP or a similar tool you'll take to the built-in commands immediately. The biggest advance in ZFILER (besides taking advantage of the Z-System path, named directories, etc.) is the macro facility. This macro system's easy to use and essentially extends ZFILER's functions to include *your* needs. Here are a couple of examples from my macro list.

## Reading files in libraries

Seldom-used tools or programs are often kept in libraries to conserve precious disk space. Before extracting the program from the library, I'll often wish to read the documentation. So I've set up a couple of simple macros to accomplish this with two keystrokes. Remember, the computer's supposed to make things simple, not bog you down with syntax, etc.

The ZTOOL list contains many items for manipulating libraries. Here I chose LDIR, LT and LBREXT. LDIR gives you a listing of the files in a library, LT types text files directly from a library, and LBREXT extracts files from a library, automatically uncrunching them if need be. I've chosen L to be my macro key for reading items from within libraries. Notice the exclamation mark in the macro below. This tells ZFILER to pause the screen after command



execution to let you read the screen display.

```
L! LDir $d$u$n
IF IN d%>o you want to see anything%<?
  typit $d$u$n
  ELSE
FI
```

First we execute LDIR with parameters `$d$u$n` – this tells LDIR to give a listing for the pointed-to file (`$N`) in the current directory (`$D$U`: where `$D` is the drive and `$U` the user area). This is necessary because you may not be logged into the DU where ZFILER's located. It isn't always necessary to include such detail, but it doesn't cost much space in the command line.

Once we have the library listing, the screen pauses and displays the flow-control prompt `Do you want to see anything?` IF IN stands for "if input"; it

pauses the screen while displaying the text. If we answer `N`, execution passes to the end of the macro and we return to the main ZFILER screen. If we want to see something, we press `Y`. Execution passes to the command `typit $d$u$n`:

```
TYPIT
$'What file do you want to see? ";LT $* $'11
```

TYPIT is a command in my ALIAS.CMD file. This alias puts up a prompt `What file do you want to see?` and waits for my response. `LT $* $'11` is the command to display the file. `$*` takes the entire command tail as its parameter. We passed the command `$d$u:$n` to TYPIT, and ARUNZ interprets this to mean the file ZFILER's pointing to. `$'11` is the response we gave the prompt `What do you want to see?`. This actually works easier that it is to explain. Here's a sample screen shot of this process:

```
Library: C0:DF11R  LBr Created: 01/15/89 0:00
Member Name      Size      CRC  Index | Member Name      Size      CRC  Index
=====
DF11R .CZM      75r  937k 1AE5   1 | DF11R .DZC      26r  325k 02E7   76
DF11R .FOR       2r   0.25k E808  102
```

```
DF11R  LBr members: 3 matched, 3 active, 0 free, 0 deleted, 3 total
Do you want to see anything? Y
```

```
What do you want to see? DF11R.FOR
```

```
^S pause, ^C abort, ^X next file, ^Z stops paging
Member: DF11R.FOR
```

*DF, vers. 1.1, revised. A program to display differences between two text files. Standard output to screen, or redirect output to diskfile or device. Written 1980, revised 1984; cosmetic change of help menu 1989.*

This two-step process is necessary so you can answer the initial prompt. Then, if you wish to go on, the alias executes. If not, you return to ZFILER. Simple and effective.

### Extracting files from libraries

Here are my macro and alias for extracting files. Here we use LBREXT instead of LT.

```
G
LDir $d$u$n
getitnow $d$u$n
```

```
GETITNOW
$'What file do you want? "
$"      Put it where? "
LbrExt $* $'12$'11
```

### Displaying a syntax message

A standard Z-System convention for reminding yourself of a tool's syntax is typing the tool name followed by two slashes (`//`). Here's how to do it in ZFILER:

```
A! IF EQ $f *.com;
  $d$u$n //;
  ELSE;
```



```
ECHO n%>ot a com file%<!;
FI
```

The macro reads: if the pointed-to file is a COM file (IF EQ \$f \*.com) then send the file name, followed by two slashes, to the multiple command line buffer (\$d\$u\$n //). If it isn't a COM file (ELSE), then don't

waste my time trying to display its syntax, tell me it isn't a com file.

These simple ideas will give you an idea of how ZFILER operates for you. They also show how a combination of ZFILER and ARUNZ opens up limitless possibilities for controlling your working environment.

## ERRATA

On page 6, middle right column of issue 39, it should say "tap the 'e' key", not *tape*. Too bad there's no automatic program to catch mistakes like that, where the wrong word is spelled correctly!

## PERSONAL ADS

### COMPUTERS FOR SALE OR TRADE

Each one in working condition, price \$50 plus shipping, unless otherwise specified. Two **Eagle III** computers, each with two 784K disk drives, \$75 plus shipping. One **Eagle II** computer. Two **TeleVideo 802** computers. One **TeleVideo 803** computer. One **TeleVideo TPC-1** portable computer. One **Epson QX-10** computer. Three **Kaypro** computers, all with double-sided 390K floppy-disk drives (Kaypro 4, New 2, 2X, etc.). One **Morrow MD-2** computer; terminal not included. One **Morrow MD-3** computer; terminal not included. One **Xerox 820** computer with dual 8" drive units. Two **TRS-80 Model II** computers, one **SSDD 8"** floppy-disk drive each. Five **NorthStar Horizon** computers, condition unknown, \$20 plus shipping; wood and steel covers available. Other computers come and go all the time; let me know what you're looking for. Will trade for comparable computers not in my collection. Contact David A.J. McGlone, phone (541) 688-3563.

### WANTED!

Will buy, or trade spare computer parts, books, manuals, software for the following items: **Boot disks:** Altos 8000 with hard disk, DEC VT180, Maxicom D/L with hard disk, Sanyo 2000, Sharp 5500, 5600, 5631, Sharp YX-3500, Systel 3, Telcom ECD 4000EX (3½"), TRS-80 Model II/12/16/6000 CP/M 3.0, Zeus 3X with hard disk. **Hardware:** Three (3) NorthStar Advantage hard-disk controller cards; three (3) TeleVideo hard-disk controller cards, Zenith Z-100 data separator card. **Software:** Any version of UniForm other than UniForm-PC and the CP/M versions listed in the price list at the back of this magazine. Contact David A.J. McGlone, (541) 688-3563.

### BOOKS FOR SALE

Even after keeping two copies each, the following titles are extra in the quantities listed: *CP/M and the Personal Computer*, 1. *CP/M Bible*, 1. *CP/M Handbook with MP/M*, 3. *CP/M Primer*, 8. *dBase II User Guide*, 3. *Everyman's Data Base Primer*, 1. *Inside CP/M*, 1. *Kaypro User's Handbook*, 1. *Mastering CP/M*, 1. *The MBASIC Handbook*, 2. *Oh! Pascal!* (Second Edition), 1. *Osborne CP/M User Guide*, 5. *The Perfect Manual for the Kaypro II*, 2. *Problem Solving and Structured Programming in Pascal*, 1. *The Programmer's CP/M Handbook*, 4. *Programming the Z80*, 1. *Soul of CP/M*, 1. *Starting Forth*, 1. *The Users Guide to CP/M Systems*, 1. *Using CP/M*, 5. *Using dBase II*, 3. *Z80 and 8080 Assembly Language Programming*, 1. *Z80 Assembly Language Programming* (Leventhal), 3. *The Z80 Microcomputer Handbook*, 3. *Z80 Users Manual*, 1. Will sell for \$15 each, or \$10 each if you buy four or more. Will also trade for any not listed here if I don't have two copies already, especially *CP/M Solutions* and *CP/M Techniques* by Barbier. Please help me lighten the load in my file cabinets! Contact David A.J. McGlone, (541) 688-3563.

### Books wanted

Looking for *Perfectly Serious, an Indepth Look at Perfect Writer*, by Kristine Farry. Also another one by Beverly Howard. Already have the PeopleTalk manual, not useful. Would like to have something on WordStar 4 besides the user manual, too. Contact George Kleiser, P.O. Box 752, Duson LA 70529.

### Hardware and information wanted

Technical information, mounting hardware, and power supply needed for Shugart SA 400 and SA 400L 5¼" floppy-disk drives. For use in TRS-80 Model III computer. Earl W. Ladendorf, 208 S. Columbia

Street, New Auburn WI 54757, phone (715) 237-2633.

#### Kaypro 2 for sale

Good working condition, with SWP board installed (runs early MS-DOS software, or may be used as 1-Mb RAM disk) and 5-MHz CPU. Also included: Kaypro daisy-wheel printer, Carrying case for computer, CP/M system disks, all software in Perfect series, some WordStar, BASIC, other CP/M programs, some issues of *Micro Cornucopia*, and many diskettes. Would like to find a good home for all as I have gone completely to MS-DOS. Robert C. Bates, 321 Hillsmere Drive, Annapolis MD 21403, phone (410) 267-7684, CompuServe 75447,1515.

#### S-100 manuals wanted

I need manuals for the following S-100 hardware: ASC 5¼" hard-disk controller, CPS 32K memory, Pickles & Trout IEEE-488 interface, PMMI MM-103-9 300-baud modem, QT clock/calendar, RCTC 1-Mb dynamic memory board kit, Seals 16K memory, Seiko extender board with logic probe, Simpliway VDB-A video

board, TDL Z16 16K memory. Rlee H. Peters, 1600A North Sierra View, Ridgecrest CA 93555-2438, phone (619) 446-4825.

#### Printer for sale

Brand new dot-matrix printer, Laser 192E, including manual and some paper. \$75 plus shipping if purchaser lives outside Eugene, Oregon. Call Ed Orth, (541) 688-2288.

#### Xerox 820-II computer for sale

Complete system with all manuals and software, dual 5¼" floppy-disk drive unit and dual 8" floppy-disk drive unit. \$50 plus shipping. Richard D. Gill, P.O. Box 372, Sunol CA 94586-0372, phone (510) 862-0425.

#### Printer ribbons for sale

17 new, unopened printer ribbons, plus 1 extra, that fit the following: Qume Sprint models 7, 8, 9, 10, 11, and 11+; DEC LQP-02; Apple III, Lisa, & Daisywheel printer; Exxon 500; Lanier EZ-1 & typemaster. \$29.00 for ALL, includes postage and handling. Ken Thomson, (415) 648-7550.

## LETTERS

#### S-100 treasure trove

9 October 1995

Dear sir:

During my working days at China Lake I worked in the Microprocessor Lab where we helped the scientists and engineers develop systems and software (mainly for missiles and control systems) by stocking hardware, software, handouts, and giving programming classes and general advice on small and embedded systems. One day I had the entire staff of the B1 program office from Edwards AFB in my office discussing office networking.

It soon became evident that computers were going to take over so I went out and became one of the first two or three home computer owners in the area. As leader of the Computer Club, I started to get invitations to help other engineers and scientists with their systems. Got to the point that I could do an IMSAI 22-slot motherboard in 2½ hours a la prima. Built a LOT of IMSAIs. Sure hurt to see them on pallets in the excess warehouse when the IBM PC took over. By then I had a garage full of S-100 cards, mainframes, manuals, software, and documentation. I made a friend a deal that he just couldn't refuse so he took away four truckloads of STUFF.

Since my retirement I've gotten back to CP/M and S-100 again. The other day my friend flew down

from Yerrington, Nevada, stuffed me into his homebuilt airplane, flew me up to Yerrington, stopped by the U-Haul, drove home, stuffed ALL of that STUFF in the back of the truck, wine and dined me overnight, and in the morning guided me to the highway and pointed the way home. As a result, I have a file cabinet full of S-100 cards, another cabinet full of manuals, 20 boxes of software documentation, and 20 boxes of 8" disks. There's a lot of duplication that I'll have to sort through. Do you need any copies of CP/M 2.2 or CP/M 3.0 books?

I note that you list CP/M 3.0 in your ad. One article I read recently said that he was running a BBS under CP/M 3.1 ??????

I realize that you specialize in the Z80 processor but there are a lot of other Digital Research operating systems out there as well as other manufacturers.

I have a LOT of operating systems for the 80x86 family (up to 100 users) and the source code for Wendin Dos, a multiuser, multitasking system with built-in windowing. Any interest in any of this stuff?

This brings me down to my last two dozen computers. The population out here in the desert was 35,000 prior to the cutbacks. May be closer to 25,000 now. The last count of the registered computers at the Naval Station was 11,000. This does

not count aircraft equipment, weapons systems, home-built embedded stuff, nor most development systems. From personal experience trying to inventory this stuff, I estimate that the count is only about 50% to 60% of reality. This is only one employer in the area so there's no idea how many all the contractors have. We have four thriving computer stores and a bunch of garage operations too.

A friend of mine contracts maintenance on a storage system for the Navy UNIVAC. This is a 10-Gb disk system. He tests the 500-Mb drives on an S-100 system and has a home-built controller to ring out the whole kaboodle. Know many folks with a 10-Gb S-100 system? I was inspecting the Cray when I was in computer security. Over in the corner behind a divider was an IMSAI. Turned out that was what they booted up the Cray with.

Best wishes,

Rlee H. Peters

1600A North Sierra View  
Ridgecrest CA 93555-2438  
(619) 446-4825

LT Col USAFA (Ret) GS-12 (Ret)

*Thank you for the duplicate books and manuals. Having the duplicate manuals means I won't have to pay printing or duplication costs when someone orders them. The extra books are even more valuable, since I have no contracts with their publishers and can't copy them.*

*To the best of my knowledge, there never was a version of CP/M-80 later than 3.0. The author of the article you saw may have made changes from a 3.0 source and called the altered version 3.1; this was a fairly common practice at one time. Or he may be calling some other DRI operating system CP/M when it's actually CP/M-85, CP/M-86, CP/M-68K, or something else.*

*Thank you for your offer of other DRI operating systems, but I'm not interested in anything except CP/M (2.2 and 3.0), MP/M, MP/M II, and the Z-System. The CP/M-86, Concurrent CP/M, etc. users will have to get their support somewhere else. I have to draw the line somewhere; the house is full of computers, etc. as it is!*

*Thank you for the 8" disks and the Exidy Sorcerer, which got here in fine shape. I haven't had a chance to play with it yet, but it looks like a fine machine. — DAJM*

#### DR Assembler Plus Tools

2 December 1995

Dear David:

Some years ago I inquired of Digital Research at their then U.K. office for their MAC assembler. I got a prompt and polite response from a Miss Bunce. She disclaimed all knowledge of the product and

suggested I try Messrs. Mackintosh. To me at the time the name meant two things. First was the well-known rain-proof fabric, and second was a brand of almost equally well known confectionery. Both commanded markets wider than any MAC then connected with software. Thus I became disenchanted with DR software. Fortunately, there were better products available elsewhere.

However, though frustrated then I was pleased to read your recent advertisement and to get this chance to enlarge my collection particularly in respect of the handbooks. A different author often improves one's understanding of a topic by his new viewpoint. DR handbooks have not enjoyed a good press but I haven't found them as opaque as they are painted. At least the readers are not addressed as idiots and dummies in the current repellent fashion. I hope this is a passing phase because the style of technical texts in other fields from the U.S. is usually excellent. *The Z-Letter* is not bad either!

Lang may your lum reck!

Yours,

H.K. Fraser

5 Fern Grove

Blairgowrie

PH10 6RS

United Kingdom

*I agree that the X for Dummies titles represent an obnoxious trend. Unfortunately, it fits so well with the ignorance of the computer store salesmen and the ignorance they desire in their customers that it's probably here to stay. That is, the dumber the customers, the more times the stores will be able to sell them new hardware and software upgrades, whether the customers need them or not. In the old days computer owners were expected to learn how to use their machines, and just owning one was a sign of intelligence. As someone else remarked, CP/M for Dummies would have been so insulting that no one would have bought it.*

*Even worse than the X for Dummies series are the competition, the Complete Idiot's Guide to X folk. It's too bad Isaac Asimov is dead. I would love to see him make money by extending his The Intelligent Man's Guide to X series to computer subjects. — DAJM*

SB180FX B/P Bios

25 December 1995

David,

Have you had a chance to try out the SB180FX version of B/P Bios yet? Only a couple of small changes have been made, and one order has come through, with only one small hitch in installation, so I think it is ready to go.

I am currently working on software and hardware to install an LCD flat screen on one of my YASBECs to make an 8-bit laptop with VGA video. Should have it at TCF this year. Also definitely need to carry on with my long-standing plan for an Oberon compiler for the Z-System, and then maybe an entirely new OS and environment (right . . . in how many years?). Oh well, it's nice to dream.

Harold F. Bower  
7914 Redglobe Court  
Severn MD 21144-1048

(410) 551-5922  
HalBower@MSN.COM

*Sorry, Hal, haven't had time yet. Between holiday commitments, The Z-Letter, the calendar, the index, Lambda Access, LPascal, and the article I promised Dave Baldwin for TCJ, I've been busier than a one-legged man in a butt-kicking contest. Maybe, if I land the programming job I have my eye on, I'll be able to come to Trenton this year - but don't take that as a promise! - DAJM*

## RESOURCES

**Hal Bower** writes, sells, and supports B/PBios, the most advanced CP/M-compatible operating system today. Presently it's available for the Ampro Little Board, the Micromint SB180, and the YASBEC. The cost is \$69.95 plus \$3 shipping and handling. Hal Bower, 7914 Redglobe Court, Severn MD 21144-1048, phone (410) 551-5922. [2/95]

**Lee Bradley** sells My-Z-Demo, a package for running CP/M or the Z-System on a PC. The high-density 3½" disk contains Simeon Cran's My-Z80, the shareware version of Sydex' 22DISK, 170 utilities, and copious documentation files. Send \$10 to Lee R. Bradley, 24 East Cedar Street, Newington CT 06111-2534, phone (203) 666-3139. [2/95]

*The Computer Journal* covers all small computer systems, including CP/M. Published 6 times a year. Free sample issue available. Subscription is \$24/year surface, \$34 air, \$44/2 years surface, \$64 air, in the US. In Canada and Mexico, \$32, \$34, \$60, \$64 respectively. Elsewhere \$34, \$44, \$64, \$84 respectively. Dave Baldwin, 6619 Westbrook Drive, Citrus Heights CA 95621, (916) 722-3877. [9/95]

**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. Corvatek, 561 N.W. Van Buren St., Corvallis OR 97330, phone (541) 752-4833. [2/95]

*dieHard*, the Flyer for 8-bit Commodore computers, including the Plus/4, VIC-20, PET, C16, C64, and C128, is published bimonthly. A single copy is \$3.95 US and Canada, \$4.95 all other countries. Subscription is \$16.97/year US, \$20.97

Canada, \$24.97 all other countries. Subscriptions to the *Spinner*, a disk of the software in each issue, joint Flyer/Spinner subscriptions, and back issues are available; see the magazine for this information. Send orders to LynnCarthy Industries, Inc., 816 West Bannock, Suite 502, Boise ID 83702-5850, phone (208) 383-0300. [2/95]

**Discus Distribution Services, Inc.** sells Digital Research products, including its many operating systems. Their price for CP/M is \$150. They also offer CBASIC (\$600), FORTRAN-77 (\$350), and Pascal/MT+ (\$600). 16600 Meridian Road, Salinas CA 93907, (408) 663-6966. [2/95]

**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 \$3.00 shipping and handling to Elliam Associates, P.O. Box 2664, Atascadero CA 93423, or phone (805) 466-8440. [2/95]

**Herbert R. Johnson** is "Dr. S-100". He supports S-100 bus computers, including NorthStar, Compupro, Cromemco, IMSAI, and Vector. He can sell you S-100 boards, manuals, books, etc. Write to him at P.O. Box CN-5256 #105, Princeton NJ 08543, e-mail hjohnson@pluto.njcc.com, phone (609) 771-1503. [2/95]

**Lambda Software Publishing** publishes this magazine; see our price list in the back.

**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. 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! For details, a list of available items, or to borrow material, write to Library c/o Lee A. Hart, 4209 France Avenue North, Robbinsdale MN 55422, phone (612) 533-3226 [2/95]

**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 \$329 (\$295 each 100 quantity), or \$429 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, (800) 635-3355. [2/95]

**MicroSolutions** makes several products of interest to our community. UniForm-PC costs more (\$69.95) and knows fewer formats than 22DISK (see Sydex, below), but includes a few formats 22DISK doesn't. MicroSolutions also sells the CompatiCard IV, which lets a PC use 4 floppy-disk drives (including 8" drives) for \$95. MicroSolutions Computer Products, 132 W. Lincoln Hwy, DeKalb IL 60115, phone (815) 756-3411. [2/95]

**David Morrison** deals in Xerox 820, 820-II, and 16/8 computers, software, and manuals. P.O. Box 1911, Mishawaka IN 46546-1911, phone (219) 257-0193. [5/95]

**Morrow Atlanta Users Group** is a national Morrow computer user group. Membership is \$15 per year, which includes technical support and a subscription to their bimonthly newsletter, *Mor-Atlanta News*. Send membership checks to David McDonald, 5461 E. Wind Drive, Lilburn GA 30247, phone (404) 381-1384. Send articles for *Mor-Atlanta News* to Harold Arnovitz, 1259 Kittredge Court NE, Atlanta GA 30329; or upload them to (404) 634-1612. You can also upload them to the group's BBS, (510) 654-3798; leave a message to Editor. [2/95]

**Rondell Systems** services and repairs all kinds of computers. Call Ron Reymore at (503) 981-8617, or write to him at 9993 Broadacres Road NE, Hubbard OR 97032. [2/95]

**Sage Microsystems East**, selling and supporting the best in 8-bit software. NZ-COM, Z3PLUS,

XBIOS, 4DOS, DSD, BackGrounder ii, ZSDOS/ZDDOS, DosDisk, JetFind, ZMATE, BDS C, ZMAC, 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 PC 360K or Kaypro 4 disk format. Sage Microsystems East, 1435 Centre St., Newton Centre MA 02159-2469, Voice (617) 965-3552 (9:00 AM to 11:30 PM), Modem (617) 965-7259 (2400 bps) or (617) 965-7046 (v.32bis), e-mail SAGE@LL.MIT.EDU [2/95]

*The SEBHC Journal* is the magazine of the Society of Eight-Bit Heath Computerists, dedicated to Heath/Zenith H-8 and H-89 computers. It's published by Leonard Geisler, 895 Starwick Drive, Ann Arbor MI 48105, phone (313) 662-0750. [2/95]

**Chuck Stafford** sells products for Kaypro computers: Advent TurboROM, \$35; hard-disk conversion kit, \$175 (without clock); *Micro Cornucopia* Schematics and Theory of Operations for Kaypro II/2/IV, Kaypro 10, '84 Kaypros, \$15 each, any two for \$25, all three for \$30; Kaypro 10 Tinker Kit, \$10; Teac 96-tpi drives, \$15 each or two for \$25. Prices include tax and shipping. He sometimes has hard disks for sale: ST-225, ST-251, and others. Write to Charles B. Stafford, 4000 Norris Avenue, Sacramento CA 95821, or phone (916) 483-0312 evenings or weekends. [2/95]

**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). Free sampler disks with the limited shareware versions are available. The registered versions, which are more powerful, are \$25 each for 22DISK and AnaDisk, \$40 for 22NICE (which includes 22DISK). Add \$2.50 for shipping and handling with each order. Talk to Chuck or Miriam at Sydex, P.O. Box 5700, Eugene OR 97405, phone (541) 683-6033. [2/95]

**Jim Thale** sells the I/O board which gives the YASBEC two additional high-capacity disk formats, two serial ports, and two Centronics ports. The board's available with surface-mounts, PAL, and big chips only for \$150, or with the additional parts for \$210. James S. Thale, Jr., 1150 Somerset Avenue, Deerfield IL 60015-2944, phone (708) 948-5731. [2/95]

**Trio Company of Cheektowaga, Ltd.** sells several CP/M packages as well as PC software. They offer

InfoStar 1.5 (\$160), SuperSort 1.60 (\$130), and WordStar 4.0 (\$130). Write P.O. Box 594, Cheektowaga NY 14225, or call (716) 892-9630. [2/95]

Steven W. Vagts publishes *Z-100 LifeLine*, a bimonthly journal dedicated to the Zenith Z-100 dual 8088-8085 computer. A one-year subscription is \$15 per year to any U.S. zip code, \$18 to Canada or Mexico, and \$20 to any other country, from Steven W. Vagts, 2409 Riddick Road, Elizabeth City NC 27909, phone (919) 338-8302. [2/95]

Walnut Creek CDROM sells the CP/M CDROM, containing over 480 Mb of CP/M public-domain software and freeware, including the entire Sound Potentials, CP/MUG, and SIGM collections. The cost is \$39.95. California residents add 8.25% sales tax. Shipping is \$5 in the US or Canada, \$9 elsewhere. Walnut Creek CDROM, 4041 Pike Lane, Suite D-893, Concord CA 94520. Orders can also be placed at (800) 786-9907, or [orders@cdrom.com](mailto:orders@cdrom.com). For questions phone (510) 674-0783 or fax (510) 674-0821. [2/95]

## PUBLICATIONS

The following magazines and newsletters were received since last issue:

*The Analytical Engine*, Vol. 3 No. 1, November 1995, is published February, May, August, and November by CHAC, the Computer History Association of California, 3375 Alma Street, Suite 263, Palo Alto CA 94306-3518, fax (415) 856-9914, [Internet.engine@chac.org](mailto:Internet.engine@chac.org). This issue has part 1 of *Convivial Cybernetic Devices*, an interview with Lee Felsenstein; eulogies for John V. Atanasoff, J. Presper Eckert, and Gerard Salton; and news of CHAC's new Web page. Basic individual hard-copy subscriptions are \$35 per year; contact CHAC for information about other rates, including online. [All computers]

*A Bit More*, October 1995 and November 1995, is the newsletter of NOVAOUG, the Nova Osborne Users Group. The October issue prints online discussions on Pascal implementations that were available for CP/M, replacing the batteries in the Epson Geneva, Epson Geneva cables and other questions. The *CP/M Gems List* lists favorite programs.

The November issue includes *Low-Cost Internet Connections*, *Eye Glasses in the Computer World*, and *ZPM on Amstrads*. Membership's \$12 per year from William E. Kost, 7007 Brocton Court, Springfield VA 22150, phone (703) 569-2213. [Osbornes and PCs]

*Classic Computer Society Newsletter*, November 1995 and December 1995, is edited by Andy Shapiro. In the November issue Al Paarmann describes all the modifications he's made to what used to be a Kaypro II. There's more on this in the December issue, plus a note on direct I/O in WordStar. Contact the Classic

Computer Society, P.O. Box 2007, Santa Barbara CA 93120, (805) 684-8838, for membership information. [All computers]

*The Computer Journal*, #76 (November/December 1995): Helmut Jungkunz' "European Beat" celebrates the 10th anniversary of the Schneider/Amstrad CPC User Group Munich. Herb Johnson ("Dr. S-100") has more about GIDE, the S-100 bus, and the Jade bus probe. The schematics of the Jade bus probe are in the center fold this issue. Terry Hazen's *PC Time Clock* includes quite a bit on timekeeping in Z-System machines. Ronald W. Anderson's "Small System Support" includes part 5 of his C Tutorial series, plus a section on Assembler. Claude Palm talks about *Floppy Disk Problems* he found and fixed while working on his CPUZ180 single-board computer. See our RESOURCES section for TCJ's address and subscription rates. [All computers]

*Sanyo PC Hackers Newsletter*, September 1995, October 1995, and November 1995, contains some Sanyo CP/M model information, but most of the contents is for Sanyo PCs, mostly the MBC-550 series. The November issue has *Experiences Printing Envelopes with the Canon BJ-100*, which is independent of computer or operating system. Dues are \$20/year 3rd class, \$25 first class US or Canada, \$30 foreign air; back issues are \$2 singly or \$17 for any 12 consecutive issues. Victor Frank Publishing, P.O. Box 762, Menlo Park CA 94026. [Sanyo]

*Z-100 LifeLine*, #42 (November-December 1995). This issue has a ten-page insert reprinting Z-100 field service bulletins. See RESOURCES for address and subscription information. [Z-100]



## INDEX TO THE Z-LETTER, ISSUES 35-40

This is the year-end index to the 1995 issues of *The Z-Letter*. A combined index to all issues from 1 through 40 will be available shortly as a separate publication. Its availability and price will be announced in *The Z-Letter* as soon as it's completed.

### SECTION I. CONTRIBUTORS

- Austin, Eugene**  
Letter 35:8, 36:10
- Baker, John D.**  
Letter 38:13
- Bates, Robert C.**  
Ad 39:14, 40:13
- Blizzard, Ron**  
Letter 37:12
- Bower, Harold F.**  
Letter 40:14
- Butler, John S.**  
Letter 35:6
- Campanell, Larry**  
Letter 36:8
- Corona, Teresa Luisa**  
Artwork 39:5  
The CP/M PC  
II: MYZ80 40:6
- Davis, Ron**  
Ad 37:7, 38:15, 39:14
- Digital Research Inc.**  
The Horse's Mouth  
Application Note 2, 2/20/82 37:17
- Doughty, Charles**  
Ad 37:7, 38:15, 39:14
- Eshelman, Greg**  
Ad 36:8
- Finn, Michael C.**  
Letter 39:15
- Fraser, H. K.**  
Letter 40:14
- Gill, Richard D.**  
Ad 39:14, 40:13
- Hart, Lee A.**  
"Engineer Disease" 37:18  
Letter 35:10
- Haygood, Bill**  
Letter 38:14
- Hazen, Terry**  
Letter 39:14
- Huovinen, Christina Frederica**  
Artwork 38:6, 39:5, 40:3  
Spellbound  
"Moving by leaps and bounds" 40:3  
"Setup, SAVE, and SRECOVER" 39:5  
"Soft keys for many TeleVideo models" 38:6
- Huovinen, Margaret Venetia**  
Artwork 38:6  
The CP/M PC  
II: MYZ80 40:6
- Jefferson, Regina**  
The CP/M PC  
I: Z80MU 39:9
- Johnson, Steve**  
Letter 35:8
- Kingsbury, Mark J.**  
Letter 35:9
- Kleiser, George**  
Ad 37:7, 38:15, 39:14, 40:12
- Ladendorf, Earl W.**  
Ad 39:14, 40:12
- Lambda Software Publishing**  
Price List 35:23, 36:21, 37:19, 38:19, 39:19
- Mackie, Katherine Mary**  
Artwork 40:3  
The CP/M PC  
I: Z80MU 39:9
- MacNelly, Jeff**  
Shoe 35:1, 35:22, 35:24, 37:6, 37:13, 38:14, 39:1, 39:8  
40:1, 40:28
- McGlone, David A. J.**  
Ad 35:6, 36:8, 37:7, 38:15, 39:13, 40:12  
Illustration 35:22  
Index to *The Z-Letter*, Issues 1-34  
I. Contributors 35:18  
II. Titles 36:14  
Index to *The Z-Letter*, Issues 35-40 40:18  
A Programmer Cornered  
"How I did my taxes" 36:13  
"Setting up Spellbinder's soft keys" 35:14
- Opperman, Jim**  
Ad 35:6, 36:8
- Orth, Ed**  
Ad 39:14, 40:13
- Pellegrino, John J.**  
Letter 35:9
- Perera, Andre**  
Ad 35:6
- Peters, Rlee H.**  
Ad 39:14, 40:13  
Letter 40:13
- Ratliff, Gary L.**  
"The Z-System on an HP 125" 37:8



- Reymore, Ron**  
 Ad 35:6  
**Sage, Jay**  
 Letter 38:14  
**Schuemann, Wil**  
 Letter 37:13  
**Stefenel, Rudy**  
 Letter 35:8  
**Thomson, Kenneth D.**  
 Ad 40:13  
**Toone, Gregory**  
 Ad 35:6  
**Vinisky, Robert**  
 The Z-System Apologist  
 "Combining ZFILER and ARUNZ" 40:10  
 "A first look at shells" 38:12  
 "An introduction to aliases" 36:6  
 "Starting to use the Z-System" 35:5  
**Warsh, Al**  
 Letter 36:9  
**Wieland, Jeffrey J.**  
 Letter 35:7  
**Wright, Don**  
 Cartoon 38:1  
**Zener**  
 "Fixing the system tracks of the TS-802H" 37:6  
 Index to *The Z-Letter*, Issues 1-34  
 I. Contributors 35:18  
 II. Titles 36:14

## SECTION II. TITLES

- 22DISK formats added 37:4  
 ADDS Multivision help wanted 35:9  
 All about LaserJets 36:4  
 AmigaZ80 available 36:3  
 Application Note 2, 2/20/82 37:17  
 ART CREDITS 38:18, 39:18, 40:27  
 Bill Josephson dies 39:3  
 Books for sale 37:7, 38:15, 39:13, 40:12  
 Books wanted 38:15, 39:14, 40:12  
 CCP/M membership renewals due 37:5  
 Changes in the RESOURCES listings 35:4  
 Cleaning out Emerald Microware 36:4  
 "Combining ZFILER and ARUNZ" 40:10  
 Compiled CBASIC available 36:4  
 Computer museums? 35:8  
 Computers for sale or trade 35:6, 36:8, 37:7, 38:15, 39:13, 40:12  
 CP/M Calendar for 1996 39:3  
 CP/M CDROM begins shipping 35:3  
 THE CP/M PC  
 "Part I: Z80MU" 39:9  
 "Part II: MYZ80" 40:6  
 CPMUG and SIG/M libraries available 35:3  
 CP/M UniForm available 36:3  
 Dave Baldwin accepts editorship of *TCJ* 39:4  
 DR Assembler Plus Tools 40:14  
 DR Assembler Plus Tools available 39:3  
 DRI, history of computing, Unix 35:8  
 DRI patches not needed? 35:8  
 DRI, Turbo Modula 2, computer history 35:7  
 "Engineer Disease" 37:18  
 Epson QX-10 for sale 35:6  
 ERRATA 36:8, 40:12  
 File conversion by OCR 36:4  
 Files restored to Sound Potentials 36:4  
 "A first look at shells" 38:12  
 "Fixing the system tracks of the TS-802H" 37:6  
 Free time on GENie for new users 37:3  
 Give your computer a pet 37:5  
 Hal Bower's summer projects 37:4  
 Hard times for lovers 36:5  
 Hardware and information wanted 39:14, 40:12  
 Help! 37:7, 38:15, 39:14  
 THE HORSE'S MOUTH  
 Application Note 2, 2/20/82 37:17  
 "How I did my taxes" 36:13  
 HP 125 computers for sale 35:6, 36:8  
 IDE for CP/M 37:3  
 Index to *The Z-Letter*, issues 1-34  
 I. Contributors 35:18  
 II. Titles 36:14  
 Index to *The Z-Letter*, issues 35-40 40:18  
 "An introduction to aliases" 36:6  
 Kaypro 2 for sale 39:14, 40:13  
 The kindness of non-strangers 38:3  
 Lambda Access available 40:3  
 Lambda caps, anyone? 37:4  
 LETTERS 35:6, 36:8, 37:12, 38:13, 39:14, 40:13  
 LeBug 5.1 available 37:3  
 LNW-80 36:8  
 Mechanical calculator for sale 37:7, 38:15, 39:13  
*Micro C* reprinted 36:5  
 Micromint vs. Amstrad? 36:9  
 MIX C, Editor, ASM available 37:3  
 More DRI and Echelon products available 35:3  
 More on the Amstrad 35:9  
 More Z-Node information 38:14  
 Morrow 2, 3 UniForm available 38:3  
 Morrow MD-11 for sale 35:6  
 "Moving by leaps and bounds" 40:3  
 New adventures of the mad collector 37:5  
 New Amigas coming 38:4  
 New CD format agreed to 39:4  
 New ECUG meeting site 39:3

- New Year's predictions 35:4  
 NEXT ISSUE 35:4, 37:5, 38:5, 39:4, 40:28  
 No more typewriters 38:4  
 NorthStar Horizon for sale 37:7, 38:15, 39:14  
 NZ-COM "downdated" 38:3  
 Old-computer awareness mounts 38:4  
 Oregon gets new area code 37:4, 38:5, 39:4, 39:18, 40:3  
 Oregon's oddest jobs 39:4  
 Organizing all your diskettes 36:5  
 Other publishing projects 39:4  
 PERSONAL ADS 35:6, 36:8, 37:7, 38:15, 39:13, 40:12  
 Price of *The Z-Letter* increases 39:3  
 Printer for sale 39:14, 40:13  
 Printer ribbons for sale 40:13  
 Printers for sale 35:6  
 A PROGRAMMER CORNERED  
   "How I did my taxes" 36:13  
   "Setting up Spellbinder's soft keys" 35:14  
 PUBLICATIONS 35:13, 36:13, 37:16, 38:18, 39:17, 40:17  
 RANDOM ACCESS 35:3, 36:3, 37:3, 38:3, 39:3, 40:3  
 RESOURCES 35:11, 36:11, 37:14, 38:16, 39:15, 40:15  
 Revised indexing schedule 38:5  
 S-100 manuals wanted 39:14, 40:13  
 S-100 treasure trove 40:13  
 SB180FX B/P Bios 40:14  
 SB180FX B/P Bios completed 39:3  
 School Daze 35:10  
 "Setting up Spellbinder's soft keys" 35:14  
 "Setup, SAVE, and SRECOVER" 39:5  
 "Soft keys for many TeleVideo models" 38:6  
 Sound Potentials II begun 35:3  
 Sound Potentials catalog altered 35:3  
 Spellbinder soft keys 36:10  
 SPELLBOUND  
   "Moving by leaps and bounds" 40:3  
   "Setup, SAVE, and SRECOVER" 39:5  
   "Soft keys for many TeleVideo models" 38:6  
   "Starting to use the Z-System" 35:5  
   TCJ to change editors 38:4  
   TeleVideo TS-802H problem solved 38:14  
   TEX 1.0 available 37:3  
   Trenton again already? 36:5  
   TRS-80 Model I, III, IV hardware wanted 37:7, 38:15, 39:14  
   Turbo Editor Toolbox available 36:3  
   TVI 995 graphics "fixed" 38:3  
   TZL index publication plan 35:3  
   UniForm for the Osborne 1 available 37:3  
   Wanted! 36:8, 37:7, 38:15, 39:13, 40:12  
   *Who's Who in the West* 38:5  
   Working Assets Long Distance 38:4  
   Xerox 820-II and Diablo 630 for sale 36:8  
   Xerox 820-II computer for sale 39:14, 40:13  
   Xerox 820 Corvus hard disk 38:13  
   Xerox hard-disk information wanted 37:12  
   XLT86 1.1 available 38:3  
   YASBEC development 39:14  
   Z3PLUS on Osborne Executive? 35:6  
   ZDB24A released 38:4  
   Z-Node 6 information 39:15  
   Z-Node help wanted 36:3  
   Z-Nodes surveyed 37:13  
 THE Z-SYSTEM APOLOGIST  
   "Combining ZFILER and ARUNZ" 40:10  
   "A first look at shells" 38:12  
   "An introduction to aliases" 36:6  
   "Starting to use the Z-System" 35:5  
   "The Z-System on an HP 125" 37:8

## SECTION III. SUBJECTS

- 22DISK, 22NICE  
   See Sydex  
 A (ZFILER macro) 40:11  
 Access Manager 35:7  
 Adam's House  
   See AIM  
 ADDS Multivision 35:9  
 ADVISA  
   Nov/Dec 94 35:13  
 AIM  
   Jan 95 35:13  
   Apr 95, May/June 95 37:16  
   Sep 95, Oct 95 39:17  
 ALIAS 36:7  
 ALIAS17LBR 38:13  
 ALIAS.CMD 36:7  
 Aliases  
   See the Z-System  
 Amiga  
   See Commodore Amiga  
 AmigaZ80  
   See Lambda Software Publishing  
 Ampro computers  
   YASBEC development 39:14  
 Amstrad PCW  
   Micromint vs. Amstrad? 36:9  
   More on the Amstrad 35:9  
*Amstrad PCW User's SIG*  
   Jan 95 35:13  
   Mar 95 36:13  
   May 95 37:16  
   Jul 95 38:18  
   Sep 95 39:17

- AnaDisk  
 See Sydex  
*The Analytical Engine*  
 May 95 36:13  
 Aug 95 38:18  
 Nov 95 40:17  
 Anderson, John 37:13  
 Anderson, Ronald W. 40:17  
 Apple II 38:14  
 Area codes  
 Oregon gets new area code 37:4, 38:4, 39:4, 39:18, 40:3  
 Arnovitz, Harold  
 See Morrow Atlanta Users Group  
 ARUNZ 36:7  
 "Combining ZFILER and ARUNZ" 40:10  
 ARUNZ11LBR 38:13  
 Asimov, Isaac 40:14  
 ASM 35:8  
 Atanasoff, John V. 40:17  
 AUGER  
 Feb 95 35:13  
 Mar 95, Apr 95 36:13  
 May 95, Jun 95 37:16  
 Jul/Aug 95 38:18  
 Sep 95, Oct 95 39:17  
 AUGUST 35:10  
 Baker, John D. 39:18  
 Baldwin, Dave  
 Dave Baldwin accepts editorship of *TCJ* 39:4  
 BALIAS 36:7  
 Baumann, Robert A. 39:9  
 Biersdorf, Bill 37:13  
 Big Board 35:7  
 22DISK formats added 37:4  
*A Bit More*  
 Nov 94, Dec 94, Jan 95 35:13  
 Feb 95, Mar 95 36:13  
 Apr 95, May 95 37:16  
 Jun 95 38:18  
 Jul-Aug-Sep 95 39:17  
 Oct 95, Nov 95 40:17  
 Bower, Harold F. 39:14  
 Hal Bower's summer projects 37:4  
 Resources 35:11, 36:11, 37:14, 38:16, 39:15, 40:15  
 SB180FX B/P Bios 40:14  
 SB180FX B/P Bios completed 39:3  
 Bradley, Lee 37:13, 40:7  
 Resources 35:11, 36:11, 37:14, 38:16, 39:15, 40:15  
 Brewster, Richard 35:3, 36:4  
 B/P Bios  
 See Hal Bower  
 BT-80 35:7  
 Bulletin boards  
 See Z-Nodes  
 Butler, John S. 37:3  
 Byte magazine 39:9  
 Calculators  
 Give your computer a pet 37:5  
 California Computer Systems 35:8  
 Canon CX  
 All about LaserJets 36:4  
 Canon CX-Based Laser Printers 36:4  
 CBASIC  
 Compiled CBASIC available 36:4  
 CCP/M  
 See Connecticut CP/M User's Group  
 CHKDIR 36:7  
 CHNGCHR 38:18  
*Christian Science Monitor* 38:4  
*Classic Computer Society newsletter*  
 Dec 94, Jan 95 35:13  
 Feb 95 36:13  
 Apr 95, May 95 37:16  
 Jun 95, Jul 95 38:18  
 Sep 95, Oct 95 39:17  
 Nov 95, Dec 95 40:17  
 CLED 38:13  
 Cobley, David  
 See ADVISA  
 Cohen, Benjamin H. 37:16  
 Collecting computers  
 The kindness of non-strangers 38:3  
 New adventures of the mad collector 37:5  
 Commercial product, definition 39:9  
 Commodore Amiga  
 AmigaZ80  
 See Lambda Software Publishing  
 New Amigas coming 38:4  
 Compact discs  
 New CD format agreed to 39:4  
 CompatiCard IV  
 See MicroSolutions  
*Complete Idiot's Guide to . . .* 40:14  
 Computer accessories  
 Give your computer a pet 37:5  
 Computer history 35:7, 35:9  
 Old-computer awareness mounts 38:4  
*The Computer Journal*  
 #72 (Mar/Apr 95) 37:16  
 #73 (May/Jun 95) 37:16  
 #74 (Jul/Aug 95) 38:18  
 #75 (Sep/Oct 95) 39:17  
 #76 (Nov/Dec 95) 40:17  
 Dave Baldwin accepts editorship of *TCJ* 39:4  
 Resources 35:11, 36:11, 37:14, 38:16, 39:15, 40:15  
*TCJ* to change editors 38:4  
 Computer museums 35:8  
 Computer Resources of Waimea 39:8  
 Computerwise Consulting Services 39:9, 39:10

## CONFIGSB

See Spellbinder

## Connecticut CP/M User's Group

CCP/M membership renewals due 37:5

Cook, Willis 37:16, 38:18, 39:18

Cooper, Robert 37:13

Corona, Teresa Luisa 39:4

## Corvatek

70 (Nov/Dec 94) 35:13

71 (Jan/Feb 95) 35:13

Resources 35:11, 36:11, 37:14, 38:16, 39:15, 40:15

## Corvus

Xerox 820 Corvus hard disk 38:13

Xerox hard-disk information wanted 37:12

Cottrell, Ian 37:4, 37:13

## CP/M

## THE HORSE'S MOUTH

Application Note 2, 2/20/82 37:17

CP/M 3.0 40:9

## CP/M CDROM

See Walnut Creek CDROM

## CP/M on a PC

## THE CP/M PC

"Part I: Z80MU" 39:9

"Part II: MYZ80" 40:6

## CPMUG

CPMUG and SIG/M libraries available 35:3

## CPT

22DISK formats added 37:4

File conversion by OCR 36:4

Cran, Simeon 36:3

## THE CP/M PC

"Part II: MYZ80" 40:6

D4 40:8

## Data bases

Lambda Access available 40:3

New adventures of the mad collector 37:5

## Data conversion

File conversion by OCR 36:4

## Davidge

22DISK formats added 37:4

DDT 35:8

Dean, Robert 37:13

## DEC VT-180

New adventures of the mad collector 37:5

Deere, Norman J.

See AUGER

## dieHard

Resources 35:11, 36:11, 37:14, 38:16, 39:15, 40:15

Digital Research 35:7

DR Assembler Plus Tools 40:14

DRI patches not needed? 35:8

## Dire Straits

"Engineer Disease" 37:18

## Discus Distribution Services

Resources 35:11, 36:11, 37:14, 38:16, 39:15, 40:15

Diskettes, organizing 36:5

Display Manager 35:7

Doll Fun 39:4

Dr. S-100

See Herbert R. Johnson

DR Assembler Plus Tools 40:14

Available 39:3

Drexel Hill North Star RCP/M and BBS

Z-Node 6 information 39:15

DSD 35:6

DU 37:10

Dummies, . . . for 40:14

Dvorak, John C. 38:4

Eagle Computer Users Group 39:5, 39:8

Bill Josephson dies 39:3

New ECUG meeting site 39:3

EASE 38:13

EATUMUP 38:18

ECHO 36:6

Eckert, J. Presper 40:17

## ECUG

See Eagle Computer Users Group

Elliam Associates 35:10

Resources 35:11, 36:11, 37:14, 38:16, 39:16, 40:15

Emerald Microware 36:4

Emerald Coast Adam Users Group

See AUGER

Emerald Microware 35:7

Epson Geneva (PX-8) 36:9

Escom AG 38:4

Fale, Henry 37:16

Felsenstein, Lee 40:17

FILT 39:12, 40:9

Finn, Mike 37:13, 39:15

Fowler, Terry R.

See AIM

Frank, Victor

See Sanyo PC Hackers Newsletter

FTL Modula-2 35:7

G (ZFILER macro) 40:11

Gandia, Ramon 36:5, 38:18

Garrison, Brian 35:7, 36:4

Geisler, Leonard

See The SEBHC Journal

GENie 37:3

GETITNOW (ARUNZ alias) 40:11

GIDE 37:3, 37:16

Goodenough, David 35:7

Grover, Brian 37:13

Guzis, Chuck

See Sydex

Haisley, Lindsey 37:13

- Hart, Lee A.  
See Microcomputer Mail-Order Library
- Hassard, Robert F. 37:16, 38:18
- Hawley, Al 37:13  
Z-Node help wanted 36:3
- Haygood, Bill 36:3
- Hazen, Terry 38:4, 39:18, 40:17
- Healy, Patrick J. 38:3
- Hedstrom, Jim 37:16
- Herman, Paul 39:18
- Hewlett Packard  
"The Z-System on an HP 125" 37:8  
See LaserJet
- Hinckley, Liv 37:13
- Hirsch, Steven H. 38:14, 40:7
- Historically Brewed*  
#8 37:16
- History of computers, computing  
See Computer history
- History of the Personal Computer* 35:9
- H-SCOOP 37:16
- HSB 38:13
- Huddleston, Jay 35:14, 38:3
- Humor  
Cartoon 38:1  
"Engineer Disease" 37:18  
*Shoe* 35:1, 35:22, 35:24, 37:6, 37:13, 38:14, 39:1, 39:8  
40:1, 40:28
- Huovinen, Ann 38:6
- Huovinen, Christina Frederica 38:3, 38:6, 39:4, 39:9  
Picture 38:6, 39:5, 40:3
- Huovinen, Margaret Venetia 38:6, 39:4
- Huovinen, Veikko 38:6
- Huovinen, Wilho 38:6
- IDE for CP/M 37:3  
See also GIDE
- IMPMYZ80 40:7
- IMSAI  
S-100 treasure trove 40:13
- Index of *The Z-Letter*  
See Lambda Software Publishing
- Intelligent Man's Guide to . . .* 40:14
- Isaac, Sheldon 39:15
- Jacobs, Carol 36:4, 38:3
- Jefferson, Regina 39:4, 39:9
- Johnson, Herbert R. 35:13, 37:3, 37:4, 37:16, 38:3, 38:18,  
39:17, 40:17  
Resources 35:11, 36:11, 37:14, 38:16, 39:16, 40:15
- Jones, Ken 37:13
- Josephson, Bill  
Bill Josephson dies 39:3
- Jungkunz, Helmut 35:13, 39:17, 40:17  
"Junk or History? Time Will Tell" 38:4
- Kaypro 35:7
- Kemp, Malcolm 39:3
- KEY-UP  
See Corvatek
- Kibler, Bill 38:4, 38:18, 39:4, 39:17
- Kildall, Gary 37:16
- Klein, Thierry 35:14, 38:18, 39:18
- Kopp, Greg 37:13
- Kost, William E.  
See *A Bit More*
- L (ZFILER macro) 40:11
- Lambda Software Publishing  
AmigaZ80  
AmigaZ80 available 36:3
- CBASIC  
Compiled CBASIC available 36:4
- CP/M Calendar for 1996 39:3
- CPMUG  
CPMUG and SIG/M libraries available 35:3
- Data conversion  
File conversion by OCR 36:4
- Digital Research  
Compiled CBASIC available 36:4  
DR Assembler Plus Tools available 39:3, 40:14  
More DRI and Echelon products available 35:3  
TEX 1.0 available 37:3  
XLT86 1.1 available 38:3
- Echelon  
More DRI and Echelon products available 35:3
- Index for *The Z-Letter*  
Issues 1-34  
I. Contributors 35:18, 36:8  
II. Titles 36:14  
Issues 35-40 40:18  
Revised indexing schedule 38:5
- Lambda Access  
Lambda Access available 40:3  
Running under MYZ80 40:9  
Running under Z80MU 39:12
- Lambda caps, anyone? 37:4
- LeBug 5.1 available 37:3
- LPascal  
Running under MYZ80 40:9  
Running under Z80MU 39:12
- Publication plan 35:3
- Micro Cornucopia*  
*Micro C* reprinted 36:5
- MIX C, Editor, ASM available 37:3
- New Year's predictions 35:4
- NZ-COM  
NZ-COM "downdated" 38:3  
Running under MYZ80 40:9  
Running under Z80MU 39:12  
"Starting to use the Z-System" 35:5  
"The Z-System on an HP 125" 37:8
- Oregon gets new area code 37:4, 38:4, 39:4, 39:18,  
40:3

- Oregon's oddest jobs 39:4  
 Price List 35:23, 36:21, 37:19, 38:19, 39:19, 40:29  
 Resources 35:11, 36:11, 37:14, 38:16, 39:16, 40:15  
 SIG/M  
   CPMUG and SIG/M libraries available 35:3  
 Sound Potentials  
   Files restored to Sound Potentials 36:4  
   Sound Potentials catalog altered 35:3  
   Sound Potentials II begun 35:3  
 TEX  
   TEX 1.0 available 37:3  
 Turbo Editor Toolbox  
   Turbo Editor Toolbox available 36:3  
 UniForm  
   CP/M UniForm available 36:3  
   Morrow 2, 3 UniForm available 38:3  
   MYZ80 IMPORT command 40:8  
   UniForm for the Osborne 1 available 37:3  
 XLT86  
   XLT86 1.1 available 38:3  
*The Z-Letter*  
   Changes in the RESOURCES listings 35:4  
   Price of *The Z-Letter* increases 39:3  
 Laptops  
   Hal Bower's summer projects 37:4  
 LaserJet  
   All about LaserJets 36:4  
 Laser printers  
   All about LaserJets 36:4  
 LBREXT  
   "Combining ZFILER and ARUNZ" 40:10  
 LDIR  
   "Combining ZFILER and ARUNZ" 40:10  
 LeBug  
   LeBug 5.1 available 37:3  
 Lexisoft 39:5  
 LNW-80 36:8  
 Loki Engineering 38:3  
 LPUT 37:11  
 LSH 38:13  
 LT  
   "Combining ZFILER and ARUNZ" 40:10  
 LynnCarthy Industries  
   See *dieHard*  
 MAC 40:14  
   See also Lambda Software Publishing  
 MacDiarmid, Paul 35:14  
 Mackie, Katherine Mary 39:4, 39:9  
 Magic-L 38:3  
 Mannion, Tom 40:7  
*Marquis Who's Who in the West* 38:5  
 Mason, Kent 37:13  
 McDonald, David  
   See Morrow Atlanta Users Group  
 McEwen, Chris 37:13  
 McGlone, David A.J. 38:6, 39:9  
   *Who's Who in the West* 38:5  
 McIntire, Barron 37:13  
 Mead, Richard 37:13  
 MENU 38:12  
 Microcomputer Mail-Order Library  
   Resources 35:12, 36:11, 37:14, 38:16, 39:16, 40:15  
*Micro Cornucopia*  
   See Lambda Software Publishing  
 Microdesign 36:9  
 Micromint 35:4  
   Hal Bower's summer projects 37:4  
   Micromint vs. Amstrad? 36:9  
   Resources 35:12, 36:11, 37:14, 38:16, 39:16, 40:16  
   SB180FX B/P Bios 39:3, 40:14  
 MicroSolutions 35:4, 36:3, 40:8  
   Morrow 2, 3 UniForm available 38:3  
   Resources 35:12, 36:12, 37:15, 38:16, 39:16, 40:16  
*Microtimes* 38:4  
 Miller, Beery 37:3  
 Mr. Kaypro  
   See Stafford, Chuck  
 Mitchell, Bridger 38:3  
 Mitchell, Ron 35:13  
 MIX Software  
   MIX C, Editor, ASM available 37:3  
 Modula-2 35:7  
 Moore, Larry 37:13  
*Mor-Atlanta News*  
   Feb/Mar 95 35:14  
   Apr/May 95 37:16  
   Jun/Jul 95 38:18  
   Aug/Sep 95 39:18  
   See also Morrow Atlanta Users Group  
 Morgen, Bruce 39:15  
 Morrison, David  
   Resources 37:15, 38:17, 39:16, 40:16  
 Morrow computers  
   22DISK formats added 37:4  
   Morrow 2, 3 UniForm available 38:3  
 Morrow Atlanta Users Group  
   Resources 35:12, 36:12, 37:15, 38:17, 39:16, 40:16  
 Morse, Jack 39:3  
 Mortensen, Joseph 38:4  
 MOVCPM 35:8  
 Museums  
   See Computer museums  
 MyZ80 36:3  
   THE CP/M PC  
     "Part II: MYZ80" 40:6  
 MYZ80CK2 40:7  
 MYZ80CLK 40:7  
 My-Z-Demo  
   See Lee Bradley  
 Nelson, Gar 37:13

- Newcomer, Alan 36:5  
 Nordell, Roderick 38:4  
 Nova Osborne Users Group  
   See *A Bit More*  
 NZ-COM  
   See Lambda Software Publishing  
 Oberon  
   Hal Bower's summer projects 37:4  
 OCR  
   File conversion by OCR 36:4  
   Micromint vs. Amstrad? 36:9  
*The Oregonian* 39:4  
 Organizing all your diskettes 36:5  
 Osborne 1  
   UniForm for the Osborne 1 available 37:3  
 Osborne Executive  
   Z3PLUS on Osborne Executive? 35:6  
 Palm, Claude 37:16, 40:17  
 Paarmann, Al 38:18, 39:17, 40:17  
   See *Classic Computer Society newsletter*  
 Parsons, Richard 35:3  
 Payson, Elliott 38:3  
 PDOSHDDVR 38:14  
 The Printer Works 36:4  
 Programming  
   "How I did my taxes" 36:13  
   "Setting up Spellbinder's soft keys" 35:14, 36:8  
 Proprietary product, definition 39:9  
 Public domain, definition 39:9  
 QMS KISS  
   All about LaserJets 36:4  
 Quikdata 37:16  
 Raskin, Jef 38:18  
 Ratliff, Gary 38:3, 38:4, 40:10  
 RCPZRL11LBR 35:5  
 Reh, Tilmann 35:13, 37:3, 37:4, 37:16  
 Reid, Robert 37:13  
 Reymore, Ron  
   See Rondell Systems  
 Richmond Farmer's Market 40:3  
 Riff, Joan 39:9  
 Ristad, Harley 35:10  
 Roberts, Dick 37:13  
 Roch, Bill 38:18  
 Rodriguez, Brad 35:13, 37:16, 38:18  
 Roe, Mike 37:16  
 Rondell Systems  
   Resources 35:12, 36:12, 37:15, 38:17, 39:16, 40:16  
 Rottenkolber, Walter J. 35:13, 38:18, 39:18  
 Running CP/M programs on a PC  
   See CP/M on a PC  
 S-100 systems  
   S-100 treasure trove 40:13  
 Sage, Jay 35:6, 36:7, 37:13, 38:3  
 Sage Microsystems East  
   Resources 35:12, 36:12, 37:15, 38:17, 39:16, 40:16  
 St. Clair, Miriam  
   See Sydex  
 SALIAS 36:7  
 Salton, Gerard 40:17  
 Sands, Jim 37:13  
*Sanyo PC Hackers Newsletter*  
   Jul 95, Aug 95 39:18  
   Sep 95, Oct 95, Nov 95 40:17  
 SAPZ 36:7  
 SB180, SB180FXMME, SB180LO  
   See Micromint  
 SCALA Software 38:4  
 School project 35:10  
 SCSI network  
   YASBEC development 39:14  
*The SEBHC Journal*  
   Resources 35:12, 36:12, 37:15, 38:17, 39:16, 40:16  
 Shapiro, Andy  
   See *Classic Computer Society newsletter*  
 Shareware, definition 39:9  
 Shells  
   See The Z-System  
 SIG/M  
   CPMUG and SIG/M libraries available 35:3  
 Silver Reed  
   22DISK formats added 37:4  
 Sinotech 35:10  
 Smith-Corona 38:4  
*Smithsonian*  
   Apr 95 37:16  
 Snavelly, Deborah 36:5, 36:20  
 Sony  
   New CD format agreed to 39:4  
 Sound Potentials  
   See Lambda Software Publishing  
 Spellbinder  
   AD command 39:8  
   B command 40:5  
   BAK files 39:7  
   .C command 40:5  
   Centering text 40:5  
   Combining commands 39:7  
   Command mode 39:7  
     On startup 40:6  
   COMMAND.TAB 40:6  
   CONFIGSB 39:5, 39:12  
   Cursor keys 39:6  
   Cursor Mode command 40:4  
   Customizing Spellbinder 40:6  
   D command 40:5  
   DA command 40:5  
   Dot commands 39:7  
   Eagle version 39:5



- Edit/Command toggle 39:7
- Edit mode 39:6
- Exit command 39:8
- F command 40:5
- Hewlett-Packard 125 version
  - See WORD/125
- Insert 39:6
- Lambda Software Publishing package 39:5
- Leaving Spellbinder 39:8
- Lexisoft package 39:5
- Macros
  - SAVE 39:7
- MARK 40:4
- Mode Back command 40:4
- Mode Delete command 40:4
- Mode Forward command 40:4
- Mode wheel 40:3
- "Moving by leaps and bounds" 40:3
- MYZ80, running under 40:9
- OFF END 39:6
- PS command 40:6
- R command 40:5
- .R (remarks) 39:7
- RD command 40:5
- READ FILENAME 40:5
- Reading files 40:5
- REALLY? (Y/N) 40:5
- RI command 40:5
- RO command 40:5
- SAVE.WPM 39:7
- SBTABS30LBR 35:3
- SBTABS50LBR 38:11
- Scan command 40:4
- "Setup, SAVE, and SRECOVER" 39:5
- Soft keys
  - "Setting up Spellbinder's soft keys" 35:14, 36:8
  - "Soft keys for many TeleVideo models" 38:6
  - Spellbinder soft keys (letter) 36:10
- SRECOVER 39:8
- Starting Spellbinder 39:5
- Status line 40:3
- Tables
  - 143 40:6
- T command 39:7
- TVI11.TAB, TVI16.TAB 38:11
- W command 39:7
- WD command 39:7
- WORD/125 39:5
  - "The Z-System on an HP 125" 37:8
- X command 39:8
- Xerox 16/8 version 39:5
- XS command 40:6
- Z80MU, running under 39:12
- & 40:6
- Spinner
  - See *dieHard*
- SPP 35:7
- SRECOVER
  - See Spellbinder
- Stafford, Charles B. 35:13, 36:5, 37:16, 38:18
  - Resources 35:12, 36:12, 37:15, 38:17, 39:16, 40:16
- Stagliano, Gary 37:5
- Steele, Bill 37:16, 38:18
- Sydex 38:4
  - 22DISK formats added 37:4
  - File conversion by OCR 36:4
  - Resources 35:12, 36:12, 37:15, 38:17, 39:17, 40:16
- TALIAS 36:7
- Tax preparation
  - How I did my taxes 36:13
- TCAP, extended
  - "The Z-System on an HP 125" 37:8
- TCSRC 37:9
- TeleVideo Systems Inc.
  - 802H (computer)
    - "Fixing the system tracks of the TS-802H" 37:6
    - TeleVideo TS-802H problem solved 38:14
  - 995-65 (terminal)
    - "Setting up Spellbinder's soft keys" 35:14, 36:8
    - TVI 995 graphics "fixed" 38:3
  - "Soft keys for many TeleVideo models" 38:6
- TEX
  - TEX 1.0 available 37:3
- Thale, James S., Jr. 37:4
  - Resources 35:12, 36:12, 37:15, 38:17, 39:17, 40:16
- Then, Dr. Edward 36:13
- Thomson, Kenneth D. 38:3, 38:4
- Thompson, Dave 36:5
- Thompson, Kirk L. 35:4
- Toshiba
  - New CD format agreed to 39:4
- Trainor, Dave 37:13
- Trenton Computer Faire 36:5, 36:9, 37:16
- Trio Company of Cheektowaga
  - Resources 35:13, 36:12, 37:15, 38:17, 39:17, 40:16
- "A Trusty Machine That Got the Job Done" 38:4
- Turbo Database Toolbox 40:3
- Turbo Editor Toolbox 36:3
- Turbo Modula-2 35:7
- Turbo Pascal 35:7
- Typewriters
  - Cartoon 38:1
  - No more typewriters 38:4
- TYPIT (ARUNZ alias) 40:11
- UniDOS
  - See MicroSolutions
- UniForm
  - See MicroSolutions
- Unix 35:9

- UUCP 35:7  
 USA Today 39:18  
 Vagts, Steven W. 38:18  
   Resources 35:13, 36:12, 37:15, 38:17, 39:17, 40:17  
 VALIAS 36:7  
 Van Hemelryck, Ludo 37:13  
 Van Horn, Roger 37:13  
 Veit, Stan 35:9  
 Victor computers  
   New adventures of the mad collector 37:5  
 Victor Frank Publishing  
   See *Sanyo PC Hackers Newsletter*  
 Vier, Tom 38:14  
 Vinisky, Robert 37:16, 38:18  
 VLU 37:11  
   NZ-COM "downdated" 38:3  
 VMENU 38:13  
 Walnut Creek CDROM 39:9, 40:6  
   CP/M CDROM begins shipping 35:3  
   Resources 35:13, 36:12, 37:15, 38:17, 39:17, 40:17  
 Warren, Roger 37:13  
 Warsh, Al 35:10  
   See also *Amstrad PCW User's SIG*  
 Westernberger, Theo 37:16  
 Who's Who in the West 38:5  
 Wiener, Alan 35:14  
 Williams, DeMaris 38:3  
 Wilson, Carson 37:13  
 Wirth, Niklaus 37:4  
 WORD/125  
   See Spellbinder  
 Work-at-Home Directory 39:6  
 Working Assets Long Distance 38:4  
 Wright, Joe 38:3  
 XALIAS 36:7  
 XBIOS 39:3  
 Xerox 16/8 36:9  
 Xerox 820 35:7  
   Xerox 820 Corvus hard disk 38:13  
   Xerox hard-disk information wanted 37:12  
 XLT86  
   XLT86 1.1 available 38:3
- YASBEC  
   22DISK formats added 37:4  
   YASBEC development 39:14  
 Z3PLUS  
   "Starting to use the Z-System" 35:5  
   Z3PLUS on Osborne Executive? 35:6  
 Z80MU  
   THE CP/M PC  
     "Part I: Z80MU" 39:9  
 Z-100 LifeLine  
   #37 (Jan-Feb 95) 37:16  
   #38 (Mar-Apr 95) 37:16  
   #39 (May-Jun 95) 38:18  
   #40 (Jul-Aug 95) 39:18  
   #41 (Sep-Oct 95) 39:18  
   #42 (Nov-Dec 95) 40:17  
   See also Steven W. Vagts  
 ZASM 37:9  
 ZCPR  
   See the Z-System  
 ZCPR3 - *The Manual* 35:5, 38:13  
 ZDB  
   ZDB24A released 38:4  
 The Zee-Machine 38:4  
 ZF11LBR 38:13  
 ZFILER 38:12  
   "Combining ZFILER and ARUNZ" 40:10  
 ZFILEV13.LZT 35:5  
 Z-FOR-AT 40:7  
 Zinkow, Mike 37:16  
 The Z-Letter  
   See Lambda Software Publishing  
 Z-Nodes  
   Z-Node 6 information 39:15  
   Z-Node help wanted 36:3  
   More Z-Node information 38:14  
   Z-Nodes surveyed 37:13  
 ZPM+ 40:9  
 The Z-System  
   "Combining ZFILER and ARUNZ" 40:10  
   "A first look at shells" 38:12  
   "An introduction to aliases" 36:6  
   "Starting to use the Z-System" 35:5  
   "The Z-System on an HP 125" 37:8

## ART CREDITS

Tina Huovinen drew the picture on page 3 from a photograph taken by Katey Mackie.

# NEXT ISSUE

This issue is LATE! It should have been going to the printer the first week of December 1995, not the first week of January 1996. Blame it on the two weeks I spent trying to make money at Holiday Market, or the fact that I was determined to get the index for the 1995 issues into this issue, not the next one. See you again in 30 days with Bob Vinisky's next column on the Z-System, Tina Huovinen's next column on Spellbinder, part III of THE CP/M PC, featuring 22NICE, a freshly-updated RESOURCES section, and other goodies.



# Lambda Software Publishing Price List

149 West Hilliard Lane, Eugene, OR 97404-3057  
(541) 688-3563

- AmigaZ80 - \$45.
- CP/M 1996, calendar and Z-Catalog - \$3
- CPMUG public-domain software -  
Catalog disk: \$10. Lists all 92 disks.  
Individual disks: \$10 each.  
Complete set: \$400 (save \$520).
- Digital Research Inc. (Novell) -  
Software is \$25 each. Manuals are \$20 each,  
\$15 if purchased with the software.
- Access Manager 1.1  
*Programmer's Guide*  
*Reference Manual*
- BT-80 1.0
- CBASIC 2.8  
*Reference Manual*
- CBASIC Compiler 2.0  
*Graphics Guide*  
*Programming Guide*  
*Reference Manual*
- CP/M 2.2  
*Operating System Manual*
- CP/M 3.0 (CP/M Plus)  
*Programmer's Guide*  
*System Guide*  
*User's Guide*
- The CP/M Card  
*User's Guide*
- CP/M Software Finder
- CP/Net 1.1
- Despool
- DR Graph  
*Reference Guide*
- GSX  
*Programmer's Guide*  
*User's Guide*
- Link 1.31  
*Operator's Guide*
- MAC 2.0  
*Language Manual and Applications Guide*
- MP/M
- MP/M II  
*User's Guide*
- Pascal/MT+ 5.6.1  
*Reference Manual*  
*Personal Basic Reference Guide*  
*Personal Basic Tutorial*
- PL/I-80 1.4  
*Applications Guide*  
*Language Manual*  
*Programmer's Utilities Guide*
- RMAC 1.1  
*Reference Manual*
- SID  
*Reference Manual*  
*User's Guide*
- SPP 5.5  
*User's Guide*
- TEX 1.0  
*User's Guide*
- XLT86 1.1
- ZSID
- DR Assembler Plus Tools set - \$60.  
Includes MAC, RMAC, SID, ZSID, *Programmer's Utilities Guide*, and *SID Reference Manual*
- Eagle Computer Users Group newsletter -  
July 87-October 90 in one volume, \$15.
- Echelon products -  
Software and manual, \$40 each;  
Manuals only, \$15 each.
- Assembly Language Translators
- DISCAT (version 13)
- DSD
- TERM III (version 12)
- ZAS/ZLINK (version 3.0)
- Z-MSG  
Publications, \$15 each,  
\$10 each if four or more ordered.
- JetFind User's Guide*
- Kaypro Z-System Manual*
- ZCPR3 and IOPs*
- ZCPR3: The Libraries*
- ZCPR 33 User's Guide*
- ZDM/ZDMZ/ZDMH User's Guide*
- Z-Index*, index to *The Z-News*
- The Z-News*, complete set
- Z-Node Configuration*
- ZRDOS 1.0 Programmer's Guide*
- Z-System User's Guide*
- Lambda Access - \$40.
- LeBug (version 5.1) - \$20.

MagiIndex text formatter (version 3.00) – \$100.

*Micro Cornucopia* –

Back issues:

Issues 8, 10, 11: \$8 @ US, Canada, Mexico,  
\$10 each elsewhere.

All other issues: \$4 @ US, Canada, Mexico,  
\$6 apiece elsewhere.

Complete set: \$150 (53 issues).

Author and subject index on disk: \$10.

Kaypro disks –

Catalog disk: \$5. Lists all 49 disks.

Individual disks: \$5 each.

Entire set of disks: \$200. Save \$45.

Big Board disks –

Catalog disk: \$5. Lists all 30 disks.

Individual disks: \$5 each.

Entire set of disks: \$100. Save \$50.

MIX ASM (version 1.10) – \$20.

MIX C (version 2.10) – \$60.

MIX Editor (version 1.10) – \$30.

SIG/M public-domain software –

Catalog disk: \$10. Lists all 310 disks.

Individual disks: \$10 each.

Complete set: \$1000 (save \$2100).

Sound Potentials and Sound Potentials II  
public-domain software –

Catalog disk: \$10.

Any software in the collection: \$10/disk.

Spellbinder Word Processor (version 53H) – \$60.

SuperCalc 2 – \$30.

TeleSolutions-80 – \$25.

Turbo Editor Toolbox – \$40.

UniForm – \$65.

Versions available:

Actrix

Epson QX-10

Kaypro

Micromint

Morrow MD-2, 3

Morrow MD-5, 11, 16, 34

Osborne 1 (DD)

TeleVideo 801, 802, 802H

Toshiba T100

Xerox 820-II

Z-Fonts catalog – \$3 (US, Canada, Mexico),  
\$5 (elsewhere).

Z-Fonts – \$8 each.

*The Z-Letter* –

Subscription: \$18 per year, all countries.

Back issues, 1-11 at a time:

\$3 each (US, Canada, Mexico),

\$5 each (elsewhere).

Back issues, 12 or more:

\$150 each (US),

\$185 each (Canada & Mexico),

\$3 each (all other).

Z-System software –

NZ-COM (version 12H) – \$20.

Z3PLUS (version 102F) – \$20.

ZCPR 3.4 source code – \$15,

\$10 if purchased with NZ-COM.

I/OR – \$25.

B/Printer – \$25.

NuKey (version 2.03) – \$25.

All three at once – \$60.

*We have extra copies of many other computer manuals, software manuals, and books, in quantities too small to list here, for \$15 each (\$10 each if you order four or more). Call us and ask!*

Floppy disks – \$1 per disk.

8" SS, 8" DS, 10 hard-sector, 16 hard-sector.

Customizable diskette carriers – \$3 each.

Each holds 3 5/4" disks.

Disk wallets – \$3 each. Holds 6 5/4" disks.

Disk copying service – \$10 per disk. Discounts over 20 disks.

ORDERING

Please allow 4-6 weeks for delivery. Sorry, no credit cards or CODs. If you live outside the U.S., payment should be in U.S. funds in an international money order. Don't add anything for shipping and handling; it's included in the price. Don't add anything for sales tax; Oregon has none.