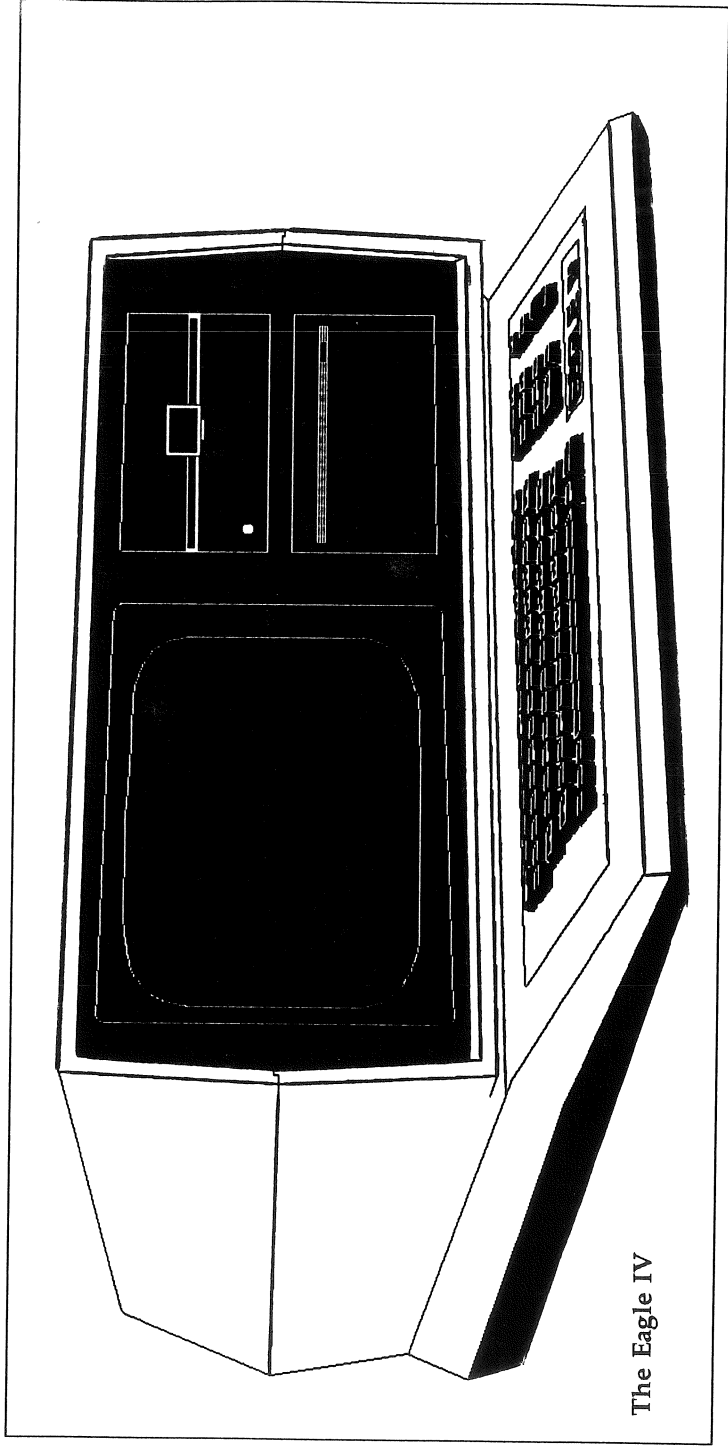


The Z-Letter

Number 6

May 1990



The Eagle IV

ABOUT THIS NEWSLETTER

Welcome to *The Z-Letter*, a newsletter for the community of CP/M and Z-system users. Everything in this issue is copyright © 1990 Alpha Systems Corporation, 711 Chatsworth Place, San Jose, California 95128, phone number (408) 297-5594. Publisher: Joseph W. Wright, c/o Alpha Systems Corporation. Editor: David A.J. McGlone, Lambda Software Publishing, 720 S. Second Street, San Jose, California 95112.

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

Submitting material for publication

Material may be submitted on 5¼" diskette in almost any format, on 8" diskette, or printed or typewritten on clean white unlined paper. Mail letters, articles, and news to the editor, address above. The deadline for submission of material is one full week before the end of the month. We cannot pay for articles, but for every article we publish, the author will receive that issue of *The Z-Letter* free. If the author has a subscription (see below), the subscription will be extended for one issue.

Letter policy

The editor and the publisher reserve the right to edit letters received to conform to standards of taste, decency, and language. We will NOT distort the meaning of any letter; we'll simply not print it first. If you are not willing to have any letter you send printed, or edited before printing, please say so in the letter. All other letters will be assumed to be for publication and become the property of Alpha Systems Corporation upon receipt.

(Continued on inside back cover)

TABLE OF CONTENTS

The Z-Letter Number 6, May 1990

ABOUT THIS NEWSLETTER

Submitting material for publication	2
Letter policy	2
Subscriptions	27
How to read your mailing label	27
Trademarks	27
Index available	27
Art credits	27

THE STATE OF THE ART *News of our community*

CP/M and Z-System enthusiasts meet	4
Al Hawley releases ZMAC and ZML	5
David McGlone forms Lambda Software Publishing	5
Hewlett Packard unveils LaserJet III	6
<i>Micro Cornucopia's</i> final issue	14

COMPUTER CLASSICS *Great 8-bit computers*

The Eagle IV, an easy-to-use workhorse	7
Upgrading the hard disk on a Micromint SB180FX, part 2	15
Using NuKey on a Kaypro II '83 with Turbo-ROM <i>by Joseph I. Mortensen</i>	16

WRITING ABOUT WRITING *Word Processing*

Nothing's perfect, but Spellbinder comes close	18
Magazines and magazine articles	25

THE STATE OF THE ART

CP/M and Z-System enthusiasts meet

As information about their systems becomes harder to find, with computer magazines dropping CP/M columns and CP/M primers disappearing from the computer bookstores, the 8-bit community is making greater efforts to come together in person whenever possible.

Despite getting free exhibition admission from five different sources, I was unable to attend **BUSCON/90-WEST**, the annual west coast convention of hardware bus manufacturers and customers, due to the pressures of work. Last year's **BUSCON-WEST** was very interesting, with *Ampro*, *Davidge*, and *Supermicro* magazine being present, among others (see issue 3, page 9, of *The Z-Letter* 3, page 9). If someone who attended would send me a report, I would be more than glad to print it, even this late.

Locally, the **Z-System Users' Group (ZSUG)** held its first meeting on April 14, from noon to 2 P.M. David McGlone, Jim Otis, Hal Perry, and Bob Vinisky were present, and discussed what purpose a Z-System Users' group could serve, as opposed to a CP/M users' group. Not a big beginning, but it was Easter weekend. The intent of the group is to provide a place where local CP/M machine owners can see the Z-System demonstrated, and see how easy it is to convert to all those neat features using **NZ-COM**. It would help more advanced users like myself to have a place where gurus like Joe Wright can demonstrate installing and running features still in development, such as the hierarchical directories and extended **TCAPs** currently setting the bulletin boards abuzz. We will meet on the second Saturday of every month, from noon to 4 P.M., at Tandem Computers, 10435 North Tantau Avenue, Cupertino. Everyone in the area is invited to attend. Talk about PCs (MS-DOS machines) will *not* be tolerated.

I was unable to attend **The Trenton Computer Fair** because of the need to scrape together what I owed the IRS this year. This annual computer convention, in New Jersey, has featured a full day of CP/M and Z-System classes and talks. This year it happened on the April 21/22 weekend, and just about everybody in the

community except Joe Wright and myself were promised to attend. I hope some of you lucky people will give me a report on what happened! If so, it will appear next issue.

Al Hawley releases ZMAC and ZML

Al Hawley has completed and begun selling his fancy new assembler and linker, ZMAC and ZML, and I have finished producing the originals for the printed manual. Al says he demonstrated them at Trenton, and the response was enthusiastic. ZMAC costs \$50, and includes the early version of the manual on disk. The printed manual is available separately for \$20. Write to Al Hawley, 6032 Chariton Avenue, Los Angeles CA 90056, phone (213) 649-3575.

David McGlone forms Lambda Software Publishing

Joe Wright has decided to focus the efforts of his Alpha Systems Corporation on system software, which is what he does best, and not be distracted too much with application software. Accordingly, I have started Lambda Software Publishing to market the products that Joe feels are outside his own particular interests.

Lambda will maintain the list of subscribers for *The Z-Letter*, starting with this issue, and all subscriptions, orders for back issues, and inquiries should be directed to David A.J. McGlone, Lambda Software Publishing, 720 South Second Street, San Jose CA 95112. Joe Wright will continue as the publisher of *The Z-Letter*.

The eight LaserJet SoftFonts which Alpha has been displaying in its catalog have been greatly expanded, and should now be ordered directly from Lambda. Under the name Z-Fonts, there are now 272 typefaces from which literally millions of fonts can be ordered in any combination of orientation, height, relative width, slant, rotation, proportional or non-proportional, etc. Effective immediately, a Z-Fonts catalog can be ordered from Lambda, showing all the typefaces and giving instructions on what the options are and how to order them. The cost is \$2.

Lambda is also in communication with Ltek, Inc. and Cornucopia Software, arranging to make available again the CP/M version of

Spellbinder Word Processor, as well as the spelling checker Electric Webster. The contract with Ltek, current owners of the rights to Spellbinder, has been signed. Negotiations with Cornucopia are still underway. The complete package, which will include the software, the Spellbinder User's Manual, the Spellbinder Macro Manual, and the Spellbinder Technical Manual, will cost \$100. OEMs who wish to bundle a fully-configured version of Spellbinder with their machines are invited to write to Lambda.

Hewlett Packard unveils LaserJet III

By now you will have heard that HP has a new laser printer out, which replaces the LaserJet II. All articles on the subject have not been equally good at describing the technical advantages of this machine, however, so here goes.

The III uses the same engine as the II and can use all the font cartridges and SoftFonts that the II can. However, the III comes with a megabyte of memory, and has a feature that allows it to adjust the size of the dots it prints, even with old SoftFonts. This effectively gives greater than 300 dpi resolution, even though SoftFonts are 300 dpi bitmaps.

With the III, a new kind of *scalable typeface* is introduced. Eight typefaces come built into the III, which can be printed in bold, italic, and bold italic as well as regularly, and can be scaled from 0.25 points to 999.75 points.

On the business side of things, the list price of this marvel is \$2395, but it came out with a street price around \$1650, right where the LaserJet II was the week before the III's announcement. The III seems to have replaced the II in every sense of the word; the II has disappeared from the computer stores, and ads for the II have also vanished. This suggests that a LaserJet II could be obtained for a price between the III's \$1650 and the IIP's \$995, if a II can be found at all.

(Continued on Page 14)

COMPUTER CLASSICS

• The Eagle IV, an easy-to-use workhorse

One of the most attractive CP/M computers ever built also enjoys the distinction of being the easiest to use, the best integrated, and the easiest to repair or to add a hard disk to it. Also, it's a word-processing system second only to an NBI dedicated word processor. The Eagle IV computer, unlike many other systems, comes complete in a single unit whose maximum dimensions are 20.75" wide by 13.25" tall by 18" deep (see front cover).

The Eagle IV is actually but one model of a line of CP/M computers manufactured by Eagle, which later made and sold MS-DOS models as well. All of the CP/M Eagles have the same main board, the same keyboard and monitor, and the same case to put it all in. The various models differ chiefly in their storage capacities. An Eagle I contains one full-height, single-sided, 96-tpi floppy disk drive in the upper half of the drive module to the right of the monitor. An Eagle II contains two such floppy disk drives. An Eagle III also contains two floppy disk drives, but double-sided. An Eagle IV has one double-sided floppy disk drive above a full-height 10Mb hard disk. An Eagle V contains a double-sided floppy disk drive and a full-height 32Mb hard disk; the different hard disk, and different firmware on the hard-disk controller, are the only differences between a IV and a V. Eagle later renamed the entire CP/M line the IIE series, under which convention an Eagle IIE-2 is an Eagle II, a IIE-4 is an Eagle IV, etc. The Eagle I and V were manufactured in smaller quantities than the others, and it is by no means certain that there ever was an Eagle IIE-1 or IIE-5.

Other than the addition of a SCSI card, a Xebec hard disk controller, and a second power supply, the five models' hardware differ only in what combination of floppy disk drives and hard disks they contain. So I will refer to them generally as Eagle computers for the rest of this article, ignoring the MS-DOS models and the differences between the storage peripherals of the CP/M models.

The Eagle's CPU is a 4 MHz Z80. It has 64K of memory. The monitor is an 11" diagonal green Motorola which displays 24 lines

of 80 characters each. There are no special graphics. A nylon glare filter comes with the Eagle, not as an externally mounted plate but held in place over the monitor itself but within the case. The front bezel of the case pops off (if you know how), for cleaning or replacing the nylon screen.

Disk formats and drive assignments

Eagles have two different formats. The single-sided format used by the Eagle I and II, referred to as the Eagle II format, has a capacity of 384K. The native format of the III, IV, and V, called the Eagle III format, is a double-sided one with a capacity of 784K. For maximum compatibility between the two formats, the Eagle III format is exactly the same as the Eagle II's on the first side of the disk, then continues around on the second side, rather than having consecutive tracks on alternate sides to minimize head movement of the floppy disk drive. (One couple I knew had an Eagle II at home and an Eagle III at work and never knew their machines used different formats, because they never happened to fill a disk more than halfway.)

For further increased compatibility between models, the Eagle II format is an alternate format of the III, IV, and V. Eagle did this by putting multiple definitions for the disk drives into the BIOS. On the I the single floppy drive is A; on the II the top floppy is A: and the bottom one B; and these models can only read Eagle II format. The Eagle III also addresses its drives A: and B: in its own format, but can read or write floppy disks in Eagle II format when the drives are addressed as I: and J; respectively. The Eagle IV and V address their single floppy drive as E: (Eagle III format) or I: (Eagle II format). In addition, the IV and V BIOS includes definitions for a second floppy drive, addressed as F: (Eagle III format) or J: (Eagle II format). To add a second floppy on the hard-disk models, just replace the full-height floppy with two half-heights, making the necessary data-cable and power-cable attachments, and drilling four new holes in the aluminum drive cage. As soon as the two half-height floppies are installed, jumpered as 0 and 1, and the latter terminated, both drives are ready for business!

The IV reserves drives A: and B: for its hard disk, partitioned into 8 and 2 Mb respectively; however, if the 10Mb hard disk is replaced with a 16Mb unit, the second partition can be the full 8Mb CP/M allows, with no change of BIOS. The Eagle V contains a 32Mb hard disk partitioned in drives A:, B:, C:, and D:, each 8Mb in size. Both the IV and V boot from their hard disk.

Ports

The ports on the back vary slightly from model to model. Very early machines have audio-visual input and output ports, reflecting the original design of the machine as part of a intelligent projection system by Audio Visual Laboratories, Inc. These machines always have the AVL logo on the lower right of the keyboard. Most Eagles have a parallel port, two serial ports, and a system port.

This last port, found on all models except the V, allowed you to buy an Eagle without a hard disk, and then add one later if you needed it (hard disks were expensive in those days; the Eagle IV cost \$1000 more than the Eagle III). Eagle made external hard-disk units, the File 10 and File 40, consisting of a box with a power supply, SCSI interface board, and hard disk. The File 10 hard-disk unit contains the same full-height 10Mb drive as an Eagle IV; the File 40 contains the same 32Mb disk as an Eagle V. Eagles I, II, and III need a different BIOS installed when adding a File 10 or 40, after which the File 10 or 40 is drive A: and the machine boots from it. Two Files 10 can also be daisy-chained to provide a I, II, or III with drives A:, B:, C:, and D:. The Eagle IV BIOS already provides for hard-disk drives C: and D:, so they can be used as soon as the File 10 is attached. Early Files 10 are Corvus hard-disk units with an Eagle label.

System software and utilities

The operating system for the Eagle is CP/M 2.2, with the standard CP/M utilities. However, an Eagle owner was sheltered from the operating system, in line with Eagle's determination to provide businessmen with a computer they could plug in and begin using immediately. The hard disk of a IV or V, as well as the Spellbinder and UltraCalc distribution disks, has a menu program called

HELLO.COM, with CP/M set up to run it upon booting. The choices on this menu call up the bundled software and the Eagle utilities, so that an Eagle owner whose first machine it is has no idea that he is dealing with separate programs running under an operating system that can also run others. For the more experienced or adventurous user, the IV and V menus contain an option that allows you to exit from the menu program into CP/M (after displaying a dire warning about the perils of doing so). Also, the CP/M distribution diskette has an ordinary CP/M system on it that does not run HELLO.COM on startup.

HELLO varies according to the model and the bundled software. "Enter the word processing system" calls up Spellbinder, a powerful word processor. "Enter the financial planner" calls up Accounting Plus or UltraCalc, whichever was included (see *Third-party software*, below). "Assign your system parameters" calls the Eagle utility ASSIGN, which lets you select the parallel or either serial port for the printer, select parameters for each serial port, change the screen scrolling rate, and disable the beeper. "Backup your diskettes" calls DISKUTIL, which on a II does single disk drive copying (with disk swapping), single disk drive copying with formatting, formatting only, and disk format verification. On a III, DISKUTIL lets you copy from the top drive to the bottom, format the disk in the top drive, format the disk in the bottom drive, etc.

On a IV or V, the menu is more elaborate. Here ASSIGN and DISKUTIL are called from a secondary menu under "Access the utility system", which also lets you exit to CP/M. "Backup your hard disk files" calls BCKUP, the Eagle archive utility. BCKUP has a menu of its own, and will let you back up all the files on the hard disk, or create a file listing the files to be backed up (wild cards are allowed), and back up only those files. Not only does BCKUP prompt you for another diskette when the current one is filled; unlike most other backup programs, BCKUP will split a file across diskettes, allowing you to back up even files which are larger than the 784K format capacity! To restore such files to the hard disk, Eagle also provided a RSTOR utility. Finally, the IV and V menu includes "Quit", which calls PWRDWN to park the hard disk heads.

Third-party software

Eagle bundled Spellbinder with every machine, under a license from Lexisoft, Spellbinder's creator. To make Spellbinder even easier to use than it already is, Eagle configured it for their machine and also modified the machine's keyboard for Spellbinder (see Figure 1, previous page).

In addition to Spellbinder, CP/M and CBASIC were bundled with the Eagle. Early Eagles also included a large (six 784K diskettes!), cumbersome, difficult but very complete accounting system called Accounting Plus, which sold separately for between \$1000 and \$2000. Later Eagles came with a mediocre spreadsheet called UltraCalc, instead of Accounting Plus.

The story of Eagle Computer

The Eagle was made at first by AVL (from February 1981, first shipped September 1981) as part of its audio visual presentation control system, then by Eagle California as a subsidiary of AVL (3/16/82). Eagle Computer, Inc. was formed in April 1983, with headquarters in Los Gatos, California. Eagle later introduced the Eagle 1600 series, a superior but less compatible PC using the 8086 CPU (first shipped in quantity in February 1983), and the Eagle PC series (first shipped May 1983). Eagle went public that year, completing an initial public offer of common stock one week late on June 15, 1983 despite the death of its president in a car accident on the original date.

Eagle enjoyed healthy sales from then to February 1984, bringing out the PC-2, PC Plus, the Eagle Spirit (an MS-DOS portable), and EagleNet, a LAN system. The lawsuit that IBM brought against clone manufacturers on February 21, 1984 was settled by Eagle on the same day, but loss of revenue due to writing a new BIOS and testing 100 software packages cost Eagle \$10 million (including \$2.1 million lost in sales when it discontinued the IIE series), and turned its stock into waste paper.

Continuing to develop new products despite this loss, Eagle introduced the Eagle Turbo XL in May 1984. To pay for advertising for the XL, Eagle sold its stock of IIE machines. Other

products, including the Turbo GT and the Eagle Concorde multi-user machine, may never have seen the light of day.

It took Eagle two years to die a slow, agonizing death, struggling all the while with refinancing schemes, and even winning a \$4 million order from the People's Republic of China in 1985. On June 10, 1986, Eagle filed for Chapter 11 protection. Unable to pull one last rabbit out of its financial hat, Eagle announced on July 31, 1986, that it would liquidate under Chapter 7, and did so, ending the history of a company that made great computers, but was bad at business.

Support for the Eagle today

For the Eagle owner today, help is hard to find, but still available. The Eagle Computer Users Group can be reached at P.O. Box 3381, Saratoga CA 95070, and is listed in both *Computer Currents* and *MicroTimes*. Annual dues are \$15. The group's phone number, (408) 972-1965, is the phone number of Jerry Davis, whose Morgan Thielmann and Associates services and repairs all makes of Eagles, as well as PCs in general and Unix systems. The group's secretary, Shirley Welch, runs a word-processing service called Home Word Shop, using Eagles and Spellbinder. ECUG has members all over the country, but a hard core of about a dozen members meets on the second Saturday of every month at Tandem Computers, 10435 North Tantau Avenue, from 9 A.M. to noon, thanks to the generosity of that Cupertino mini- and main-frame computer manufacturing company. ECUG is also a Spellbinder users' group. Its nameless newsletter comes out once a month, right after the meeting, and contains a mix of news and articles on Eagles, MS-DOS, Spellbinder, and the Z-System. Four sample issues may be obtained by writing to the P.O. box. Back issues are available in a lump for \$7, and the group also sells the Eagle manuals for the IIE, PC, and 1600 series. ECUG is eager to keep people using Eagles, and will go a long way to help a new owner learn his machine, or an old owner get his fixed.

On the east coast, the Washington Area Eagle Users' Group meets the first Thursday of every month at the George Mason Regional Library, 7001 Little River Turnpike (Route 236), Annandale, Virginia, from 7:30 P.M. Membership in WAEUG is open to "any

person or organization interested in exchanging information about the use of all CP/M and MS-DOS Eagle and Televideo systems, and PC clones of all configurations". Annual dues are \$15. Applications forms are available from the Membership Chairman, WAEUG, 2022-L44 Baltimore Road, Rockville MD 20851. General information about the group can be obtained by phoning Chet Pryor at (301) 340-0957. Chet publishes *Winging It*, "Newsletter of the Washington Area Eagle Users' Group, Columbia Data Products Special Interest Group, and Televideo Special Interest Group", almost as irregularly as I do *The Z-Letter*. It is generally heavy on local news and MS-DOS product reviews, although the September 1989 issue printed Elliam Associates' entire CP/M catalog. The *Winging It* Electronic Bulletin Board is (301) 340- 3207.

Two companies still repair Eagles. Morgan Thielmann and Associates, phone (408) 972-1965, is a member of ECUG and does all their hardware work. In southern California, Wilkinson Software, 17801 Sky Park Circle, #B, Irvine CA 92714, phone (714) 724-1294, has continued to develop the Eagle PC and Eagle 1600 BIOSes, and fix bugs in both of them. Both companies work together as needed, and both do business all over the country.

COMPUTER CLASSICS is a feature describing CP/M computers that are no longer manufactured. The point of the feature is to document the great diversity achieved before the IBM PC smothered innovation in microcomputers. Many CP/M computers had unique features not found in later computers of any kind. The editor welcomes further information on the computer described in this issue, as well as information about other brands of computers from informants who know them well.

THE STATE OF THE ART (continued from page 6)

Micro Cornucopia's final issue

It is with deep regret that we announce the final issue (Number 53, May 1990) of *Micro Cornucopia*, published by David J. Thompson in Bend, Oregon. *Micro C* (as it was affectionately called) dropped its last connection with the 8-bit world, a CP/M column, in issue 49. Nevertheless, for many years it was a great source of source code, technical information, and community spirit. It will be missed.

Over the phone, Sandy Thompson told me that the CP/M systems and back issues of other magazines offered for sale on page 74 of the final issue are already gone. Back issues of *Micro C* can still be obtained while they last; issues 8, 10, 11, 27, and 33-37 are sold out. An index is being prepared and may be obtained on disk, presumably in PC format, for \$6. It is free with an order of 10 or more back issues.

Upgrading the hard disk on a Micromint SB180FX

Part 2

Ah, the joys of being an early purchaser of a hardware or software product! After last issue went to print, I discovered that Micromint has available a set of instructions for installing a Seagate ST138N hard disk in an SB180 or SB180FX. When I purchased my system, a 30Mb hard disk with built-in controller was not available with a Micromint system; this is why I went with a 10Mb hard disk with built-in controller, rather than give up scarce room in the box to a 30Mb hard disk and a separate controller. The Seagate hard disks are now standard with Micromint systems, and the proper responses for all the XBIOS menus are part of the start-up instructions.

There is one potentially serious mistake in last issue's article. On page 9, I gave wrong values for menu 33.1.9. **These wrong values can cause loss of data, as they can scramble the directory on your final partition!** This happened to me; fortunately, I still had the floppy backups of everything. The correct values are **615** for **Reduced Write Current Cylinder**, **615** for **Increase Write Precomp. Cylinder**, and **0** for **Maximum ECC Data Burst**.

Another thing I learned from Micromint concerns the **Memory Wait States** parameter under menu 24. The correct value for this depends on the speed of the memory chips in your machine. If you have the slower 150 ns chips, the correct value is **2**. If you have the faster 100 or 120 ns chips, choose **1** for faster operation. How to tell? Well, **2** is always safe, just not as fast. Try **1**, and if the machine sometimes hangs up and has to be rebooted, you have the slower chips and should change the parameter to **2**.

Using NuKey on a Kaypro II '83 with Turbo-ROM

by Joseph I. Mortensen
4214 Chelsea Court
Midland MI 48640
(517) 835-6923

Copyright © 1989 by Joseph I. Mortensen

Making the move to NZ-COM on my much-modified Kaypro II '83 meant that I had to give up using Xtrakey. Give up is not quite the word, but since Xtrakey eats up about 7K of RAM, using it with the Z-System would not leave me enough TPA to run WordStar 4.0. WordStar's built-in key redefinition facility always takes two keystrokes – <ESCAPE> plus whatever key has been redefined. With Xtrakey I had reconfigured the numeric keypad with the WordStar editing commands – all single strokes. Not willing to give up the use of the keypad in this manner, I ordered NuKey from Alpha Systems.

On the day NuKey arrived I eagerly copied the files from the master disk, made a new Z-System version to accommodate the IOP and leave enough RAM for WordStar, and prepared to create the first KEY file. No dice. NUKEY.COM would always hang up. I called Joe Wright for some help. Over the phone he gave me a way to get around the problem: use the SAVE command to create an empty XXX.KEY file, then use DDT or ZPATCH to insert the appropriate characters. NUKEY.COM would now load itself and the KEY file. At least I could have a working key redefinition program, even if it seemed somewhat crippled.

After giving some thought to a better way of doing things (since I still haven't been able to make NuKey work as it should), I realized that a couple of Z-System aliases would do the trick. The first of these I named MAKEKEY and added to my ALIAS.COM file:

```
MAKEKEY=MK,EY  poke 20 7E 00 5C 00 00 00;
                 save 20-25 $1key;
                 poke 20 00 00 00 00 00 00
```


I use address 20H in low memory as a temporary space to poke the appropriate characters needed to create a KEY file. 7EH is the tilde [~] character used to invoke NuKey for a key definition. 5CH is the backslash [\] used by NuKey as its extend character. These two characters each followed by 00H plus two more 00H bytes must be the first six bytes in a KEY file. These are then saved as a KEY file using the file-name parameter from the command line. For example, MAKEKEY WS will create a new WS.KEY file ready to be invoked by NUKEY.COM. The final command in the alias clears memory locations 20H through 25H.

Saving key definitions gave me trouble, too. The NuKey save command wouldn't work for me. Once again an alias came to the rescue. To save key definitions I use the alias SAVEKEY:

```
SAVEKEY=SK,EY=KEYSAVE    save $+i040d-$+i0600 $1key
```

This alias saves the key definitions in the IOP portion of memory to the file named on the command line. For example, SAVEKEY WS preserves whatever is in the 500-byte data section of IOP in the file WS.KEY. By using the ARUNZ variable \$i (for IOP) this alias works on any version of NZCOM I'm running as long as it has an IOP section in it. If I had NZCOM configured with an IOP larger than 12 records, it would be necessary to change the second address in the save command accordingly.

Along the way I encountered another problem with NuKey – one that never occurred with Xtrakey. The numeric keys on the main part of my Kaypro keyboard issue the same keystrokes I put on the keypad. It's more than a bit disconcerting to expect the numeral 8 and get ^Q^R (go to top of file command on the keypad 8). Not good. Once again an alias or two provided the solution. I poke the CBIOS addresses of the keypad values to set the high bit on each of the keypad bytes. This makes the keypad keys distinct from their counterparts on the main keyboard. When I use WordStar the alias HIPAD pokes the new values:

```
HIPAD    poke f339 B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 AD AD 0D AE
```

When NuKey is loaded it reconfigures the high-bit values according to whatever is in the KEY file, eliminating the conflict.

On exit from WordStar the regular values for the keypad are restored with the alias LOPAD:

```
LOPAD poke f339 30 31 32 33 34 35 36 37 38 39 2D 2C 0D 2E
```

I leave the keypad <ENTER> key (0DH) unchanged. The location of the keypad values (0F339H on my system) is fixed by the size (62.25K) of CP/M I need for a 20 Meg hard drive running under Turbo-ROM. Different configurations of NZ-COM do not affect this address.

When I tried to set up the keypad with WordStar's editing commands, I found another problem. NuKey won't accept DEL as a character. DEL simply erases the previous key entered. Since I want the 7 on my keypad to erase the line to the left of the cursor (^Q-DEL), this presents a problem. I solved it by redefining the 7 as ^QW and then used ZPATCH to change the W to DEL in the KEY file (i.e., by changing the byte 57H to 7FH). It's not an elegant solution, but it gets the job done.

For now, until Joe Wright can tell me how to make NuKey work as it should, my kludges will do the job.

WRITING ABOUT WRITING

Nothing's perfect, but Spellbinder comes close

MicroPro's WordStar is the best known and most widely used word processor in our community. However, it is neither the earliest, nor is it the best. Lexisoft first released Spellbinder in January 1978. The first release of WordStar was in June 1979.

WordStar users, like MS-DOS users, often admit its deficiencies. In the search for a better word processor, they move on to WordStar clones such as NewWord and LZEd. In contrast, Spellbinder users hang on to it unless they move on to a computer system, such as the Macintosh, for which no version of Spellbinder is available. People generally prefer whichever word processor they first learn; but WordStar users exposed to Spellbinder often switch, while I have seen the reverse happen only once.

In the article that follows, I will assume that you are familiar with WordStar, and explain some of the ways that Spellbinder differs. More detailed comparisons may follow in later articles. It is only fair to inform you that I have an interest in Spellbinder; I am arranging to become a distributor of the CP/M version. Having said that, I should point out that the *reason* I am becoming a Spellbinder distributor is to ensure that this superior word processor, which I use myself for all my writing, remains available to our community. In other words, I am selling Spellbinder because I think it's great, rather than saying it's great because I hope to sell it.

Spellbinder's advantages

Spellbinder is fast. Unlike WordStar, Spellbinder works in memory. Changes you make are reflected immediately. The only time you wait for disk accesses is when you save your text to disk (the old file is renamed with an extension of BAK) or fetch the next segment of a file too large to fit into memory all at once.

Look, Ma, no formatting. Attempting WYSIWYG, WordStar displays text on screen according to the current paragraph formats. You must wait while changes trigger reformatting. In Spellbinder, you can insert format commands anywhere in a file, but they are applied only when you choose to preview the text with the View command, or to print it.

Spellbinder does microjustification. One of the most common questions in WordStar columns such as *Computer Currents* used to have concerned getting WordStar to line up right margins of text, known as justification. WordStar reliably justifies only with large units of white space, such as a space character. This results in text with large ugly holes in it. Spellbinder justifies text in tiny fractions of an inch, resulting in an even appearance.

Proportional printing. WordStar also has a history of problems with proportional printing, like text in a book, as opposed to non-proportional printing like a typewriter. Spellbinder allots a width for each character based on its real width, rather than using the same width for all characters.

No menus. Spellbinder has help text at the bottom of the screen, which you can even turn off altogether if you wish. It does *not* have WordStar's obtrusive menus at the top of the screen.

Fewer commands to remember. WordStar has a huge number of similar commands, which are difficult to remember. The cursor may be moved left or right one character, up or down one line, right or left one word, to the top or bottom of the document, to the right or left end of the current line, to the beginning or end of a block marker. The screen itself may be moved up or down one line, or up and down one screen. You can delete a character, a word, a line, or a block. Each of these (and others) is a separate command, with its own, non-mnemonic control character or sequence of control characters. Spellbinder performs the same functions (and others besides) with far fewer commands, by defining a *cursor mode*. The cursor mode is a wheel, whose current status is shown at the top of the screen, which toggles from WORD to SENTENCE to PARAGRAPH to MARK to CHARACTER and on around to WORD again. The MODE BACK command moves the cursor back by whatever cursor mode is currently selected, for instance, back one word if the default cursor mode of WORD is selected. There are also MODE FORWARD, MODE DELETE, and MODE ENHANCE commands.

Commands are easy to remember. Both Spellbinder and WordStar use control codes and escape sequences for commands. But Spellbinder's are mnemonic for the most part, while WordStar's are arbitrary. In WordStar, to quote but one of many examples, Control-A means LEFT ONE WORD; Spellbinder uses Control-B for MODE BACK, and ESCAPE B for BACK TO LAST MARK. In command mode, *Bn* is the command for BACK *n* LINES. This example is typical of both WordStar and Spellbinder.

Powerful search commands. Spellbinder's SEARCH command set are far more powerful than WordStar's FIND and FIND/REPLACE commands. *S* searches for the next matching string, *Sn* searches for the next *n* matches. *SA* searches All text in memory, *SG* searches Global text, meaning the whole file, not just the part of it which is in memory right now. *SR* repeats the last search command.

For all of these except SR, you have a choice of providing the string to be searched and the string with which to replace it all at once, or in response to the prompts which the command will issue if you don't provide them both at once. If you provide them both, the command will replace them all at once. If you respond to the prompts, Spellbinder will show you each match in turn, asking you whether the text should be replaced in this instance, and doing so if you type Y for yes. For instance, SA/Ferd/Fred/ will replace all occurrences of Ferd with Fred. But SA by itself will cause Spellbinder to ask for the string to be replaced (you respond by answering Ferd), then the string to replace it with (you answer with Fred). Spellbinder will then go to each Ferd in turn, allowing you to choose whether to replace that particular one with Fred.

Spellbinder allows your search to contain more than just text characters. In a search command, < stands for a carriage return, allowing searches and replacements of more than one line. ? stands for any character in a search string; in the replace string, it stands for the entire search string. This saves a lot of typing. * tells the search command to find a string whether it's upper or lower case, enhanced (8th bit set) or not. ! means whole word only; SA!/hard/Hard/ would replace hard with Hard, but ignore hard occurring in other words such as hardly and hardened. An enhanced # in a search string stands for any numeral; SA/##/?. □□/ would replace all two-digit numbers with the same two-digit number followed by a period and two spaces (the □ here represents a space). An enhanced & represents any character which is neither a number nor a letter. Finally, \ means treat the following character literally; < in a search or replace string stands for a carriage return, but \< is just a symbol for less-than.

Easy configuration. Until its last CP/M release (4.0), you could only change WordStar features by patching the hexadecimal object code. Long files of these patch locations, and what they did, circulated on the bulletin boards, and at least one book was written on the subject. Version 4.0 replaced this with a configuration utility with menus within menus within menus, *ad nauseam*.

Spellbinder, on the other hand, is simple to configure. The program SBCONFIG is used to tell your copy of Spellbinder what your monitor and printer are. Everything else is changed within Spellbinder itself, in either of two simple ways.

Spellbinder keeps its defaults in internal tables, which you can call up and change on the fly. Page formatting information, text formatting information, tab settings and the page title each have its own table, a command to call up the table for editing, and a command to insert the table into text at the current location of the cursor, where it will take effect when the file is viewed or printed. Such changes can be made permanent, or default, in two different ways:

The XS command. The normal means to exit from Spellbinder is the X command. If you change your tab settings, for instance, and then exit with the eXit and Save command, XS, all tables currently in effect will be saved as the new defaults. This is the simplest way to change defaults in Spellbinder.

The PS command. More powerfully, any of Spellbinder's tables can be called into the edit space, modified, installed and tested, and then saved as above with the XS command. The tables are ordinary text files on disk, which you read in like any other file, modify using Spellbinder's own commands and the information available in the User's Manual and Technical Manual. When you are done changing a table, you move the cursor to its beginning and type PS in command mode. This installs the table and lets you test it. If testing shows you changed it correctly, you can save the changed Spellbinder you are now running by quitting with the XS command. You can also save the table like an ordinary file, and read it in and install it only when you want its changed values or added capabilities. You might do this, for instance, if you were using a different set of laser-printer fonts than you usually do, and you wanted to install font-changing commands and space tables for the unusual set.

Spellbinder text is ASCII text. WordStar writes a carriage return and line feed at the end of every line, and sets the high bit of every character at the end of a word. Spellbinder only inserts a carriage return when you hit <RETURN>, which you need to do only at the end of a paragraph, or to insert a blank line. For using Spellbinder text with compilers, there is a feature called *autovert* which lets you save a file with carriage return/line feed pairs at the end of every line, but actual text for printing with Spellbinder neither has nor needs them.

Characters with the high bit set are called *enhanced characters* in Spellbinder, and there are two commands connected with them. ENTER ENHANCE is a toggle; when it is ON, characters you type have their high bit set. MODE ENHANCE sets the high bit of the next character, word, sentence, paragraph, or block of text, depending on the current setting of the cursor mode. Enhanced characters are shown in reverse video or half intensity, depending on your terminal. Their use depends on the SPECIAL CHARACTER entry of one of Spellbinder's tables. If that entry is 1, for instance, enhanced characters will be printed underlined. Other possibilities are slash through and dash through, for legal documents, don't print, print as spaces, and print as regular characters.

Macro programming language. With release 4.0, WordStar finally acquired macros, allowing the user to define multi-key functions using WordStar's editing commands. Spellbinder has always had macros. Spellbinder's MPL (Macro Programming Language) is a full-featured interpreted programming language, which uses not only Spellbinder's command-mode commands but other commands of its own. The language is described in the Macro Manual. Spellbinder comes with macros for double-column print, columnar actions such as deletion or insertion of a column of text at a given column and for a given range of lines, batch printing, key redefinition, tabular addition, boilerplating, mail merge, preparing mailing labels, selecting items from a single-file data base, sorting items in a file, numbering lines of text, and forms handling. Since MPL is interpreted, the macros are necessarily the source; they can be run, or simply read in like any normal text for inspection or modification to your own macros. Other macro features include configuration of a general-purpose macro when it's run, and repeated invocation of a macro once it has been loaded.

Some disadvantages

No laser features. Because of its age, Spellbinder has no specific features for controlling the enormous flexibility of laser printers. It can handle any kind of printer, with proper configuration, and most people use the same fonts over and over, anyway. Nevertheless, features that let you specify the location of a SoftFont on disk, load it, and automatically update space tables and

other tables would be welcome. I hasten to add that WordStar has no such features, either. For full use of a laser printer, you are best advised to use Spellbinder, WordStar, or your favorite word processor as an editor only, and use the MagicSeries (see *The Z-Letter*, issue 2) as your formatter.

Can't be used in aliases. Spellbinder was designed as a word processor, not a system editor. I have heard that the original designer wanted an NBI dedicated word-processing system but couldn't afford one, so he wrote Spellbinder instead. My wife, who has used NBI systems as well as Spellbinder, says they closely resemble each other. WordStar can be used to edit a file in the course of an alias by reading it in and executing a sequence of its commands. Spellbinder will not do this. You must call up Spellbinder separately, hit any key to get past its version screen, and then run a macro or read in a file.

Maximum edit-buffer size. Spellbinder does its work in an edit buffer whose maximum size is 24K, assuming that your TPR has that much room left after running the Z-System and loading Spellbinder itself. Files larger than 24K must be worked on in 17K sections using the G (Get or Global) command. Commands like Print, View, Search, and Jump can be used for n number of lines (P14 prints 14 lines), all text in memory (PA, for instance), or the entire file, one section at a time (PG). This takes a little getting used to.

Conclusion

I have touched on just a few of the differences between Spellbinder and WordStar in this article. Describing Spellbinder in full, let alone comparing it with WordStar feature by feature, would take several books. If you are used to WordStar, and like it, Spellbinder would seem very strange to you. On the other hand, if you are looking for something more powerful than WordStar, or if you dislike WordStar and want a different word processor, Spellbinder may be just what you're looking for. When the necessary contracts have been signed and Spellbinder is again available, it will be announced in this magazine and in the newsletter of the Eagle Computer Users Group. I hope to modify future releases of Spellbinder to incorporate Z-System features, as well.

Magazines and magazine articles

The Computer Journal

Two issues of *The Computer Journal* have come out since our last issue. TCJ #42, Jan/Feb 1990, includes *Dynamic Memory Allocation* by Dreas Nielsen, and *Using BYE with NZCOM* by Chris McEwen. Jay Sage's regular *Z-System Corner* tells where to get a megabyte of HELP files, encourages everyone to attend the GENie Z-System roundtables, has news about BDS Z (the Z-System version of BDS C), does a nice overview of the Z-System, and discusses changing systems using JetLDR. Bridger Mitchell's *Advanced CP/M* column talks about PluPerfect Writer's new version and using BDS Z with REL files.

TCJ #43, Mar/Apr 1990, has *LSH, a New History Shell for Z-System* by Rob Friefeld. Kirk Thompson writes about *Letwin's Prior Progeny*, *Heath's HDOS*, *Then and Now*; HDOS is a non-CP/M operating system for 8-bit Heath/Zenith computers. Michael Broschat wrote *S-100: There's Still Life in the Old Bus*. Jay's column announces that Chris McEwen is reviving Echelon's SUS (Software Update Service), whereby you could subscribe to the latest software, and discusses fully customizing NZCOM (instead of just going with its automatic selections). Bridger discusses Z80 assembly-language parameter passing.

If this all sounds as good to you as it did to me, you will be glad to know that many back issues of TCJ are still available: issues 1-4, 6, 8, 16, 18-40, 42, and 43 can be ordered for \$350 each, or \$300 each if you order 6 or more, from The Computer Journal, 190 Sullivan Crossroad, Columbia Falls MT 59912, phone (406) 257-9119. TCJ is about the only Z-System magazine besides *The Z-Letter*, and deserves our community's support.

Pieces of Eight

This is the newsletter of CCP/M, the Connecticut CP/M Users' Group, whose motto is "8-bit Computing: Smaller Is Better!" Due to the burden of putting out this newsletter monthly, CCP/M has just announced a new policy where *POE* will come out bimonthly. In between will be a single-sheet news bulletin, called *Smaller Is Better!* *SIB* will contain only the minutes of that month's CCP/M meeting.

POE often has valuable articles. In the January 1990 issue, Lee Bradley reviews *The "Hot Ones"*, namely ADIR (which gives you a directory of your ARUNZ aliases), HOST (which lets you run one computer from another, the two connected by a null modem cable), and Poor Person Speller, a spelling checker. He also reviews X10.COM, which is an program written by Rick Swenton. This program lets a CP/M computer schedule events in the X10 home-control system sold by X10 Inc., Heath, and Radio Shack. Previously, only PCs and Macintoshes could do that.

The February 1990 issue of POE had little of lasting interest, though I enjoyed reading it. The CCP/M bulletin board, (203) 665-1100, is now Z-Node #12. The March issue had an article about Z-ifying YesMan, again by Lee Bradley. I also enjoyed *Ten Reasons Why CP/M Is Better Than MS-DOS*, by James F. Taylor.

To join CCP/M you need not live in Connecticut. Dues are \$15 a year, payable to Tom Veile, 26 Slater Avenue, Norwich CT 06360.

The Epson LifeBoat

If you have an Epson QX-10 or Geneva, you should join NEUG, the National Epson Users Group. Annual dues are \$25 (different rates for Canada, overseas, or students), or \$160 for a lifetime membership, from Managing Editor Richard Shoemaker, Box 1076, Lemont PA 16851. NEUG puts out *The Epson LifeBoat* 6-9 times a year. The February 1990 issue is typical of the ones I've seen, 60 pages of material in two-column, no-margins format in small print, literally *cramming* everything they can get into the issue. While a large portion of it is MS-DOS and Valdocs stuff, a lot of it is Geneva, QX-10, or just general CP/M stuff. From the February issue I learn that *The Epson LifeBoat* is taking over QXConnection's subscription obligation, and, to a lesser extent, the ValWorld Gazette obligation that QXConnection had itself taken on. SemiDisk seems to be still supporting RAM disks for QX-10s, and Comfiler hard disks seem to still be available. I'm also going to follow up on the list of Epson related exchange newsletters whose addresses are given in this issue.

(Continued from inside front cover)

Subscriptions

Subscriptions will be accepted for 12 or 24 issues. A subscription starts with the first issue after the subscription payment is received. The cost is \$24 for 12 issues, or \$48 for 24 issues, for subscriptions mailed to US., FPO, or APO addresses. Subscriptions mailed to addresses outside the US., including Canada and Mexico, cost \$32 for 12 issues, \$64 for 24 issues. Back issues cost \$2 apiece in the US., \$2.67 foreign. Back issues are kept in print.

Subscriptions should be paid by check or international money order in U.S. dollars, mailed to Alpha Systems Corporation.

How to read your mailing label

If you are a subscriber, your address label lists when your subscription expires, for example, "Subscription expires with issue 12". If we have sent you a single issue in hopes that you will subscribe, it will be marked "Sample copy". "Complimentary" copies go to people we expect to spread the word of the newsletter's existence, and perhaps contribute information or articles.

Trademarks

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

Index available

The Z-Letter is indexed at the end of each calendar year. The index for issues 1-5 appeared in issue 5.

Art credits

The illustration of an Eagle computer on the front cover, and of an Eagle keyboard on page 11, are by Deborah Snavelly.

Lambda Software Publishing
720 South Second Street
San Jose CA 95112