The Z-Letter

Number 3   February 1989

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WELCOME

Welcome to *The Z-Letter*, a newsletter for the community of CP/M and Z-system users. Everything in this issue is copyright © 1989 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, 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

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.

Material may be submitted on 5¼" diskette in any 48-tpi or 96-tpi format known to UniForm, or on 8" diskette, or printed or typewritten on clean white unlined paper. The first alternative is preferred. Please label the diskette carefully with your name, address, phone number, and the format it's written in. Sorry, diskettes cannot be returned.

Diskette files can be in WordStar format. However, standard ASCII files, with no control codes, and carriage returns only at the ends of paragraphs or marking blank lines, are preferred. Most word processors can save files in this format. If you have Spellbinder, this is the normal file format.

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.

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 U.S., FPO, or APO addresses. Subscriptions mailed to addresses outside the U.S., including Canada and Mexico, cost $32 for 12 issues, $64 for 24 issues. Back issues cost $2 apiece in the U.S., $2.67 foreign. Back issues are kept in print. There will be an index to *The Z-Letter*, updated every issue; its availability and price will be announced after each year of publication.

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, such as Bruce Morgen of *THE ONE-EIGHTY FILE*, and the computer section editor of the local newspaper.

THE STATE OF THE ART

Alpha begins shipping TURBO Pascal

One of the reasons this issue has taken so long to get out was the contract Alpha signed with Borland International to sell and support the CP/M version of TURBO Pascal, paying Borland a royalty, as reported in issue 2. Orders could not be filled immediately, however, as Borland had no stock of TURBO Pascal manuals to hand over, nor did they have the text of the manual on diskette!

After investigating the performance of various scanners, and the cost of scanning services, Alpha paid Home Word Shop, a typing company, to type the CP/M chapters and appendixes to disk, using Spellbinder on Eagle II machines. This took about a week. Then yours truly got to correct it, edit it, put in the MagicSeries commands, and produce the Table of Contents and Index. The resulting pages are the originals of the new, CP/M-only edition of the manual, supplied when you order TURBO Pascal from us. I hope you agree that it was a couple of months well spent.

Alpha mails the Z-Catalog

Another delay involved producing Alpha's first edition of the Z-Catalog. The ever-increasing requests for information arriving here convinced us of the urgency of producing a catalog to answer such letters, although it was always our intention that the same information appear in this issue as well.

You will note, if you have a copy of Echelon's edition of the Z-Catalog, that there are fewer items in ours. There are several reasons for this; we did not list any software for which we haven't negotiated a license to sell, we did not list any that doesn't exist yet, we have not offered any in combined packages for less than the sum of the separate parts, and we have omitted some software in which bugs have been found and not yet fixed. We have also omitted some software written in languages which neither of us can support, such as C.

The libraries, at $100, seems higher than Echelon's $99. However, Echelon's package was the source code, objects, and HLP files only. The reference manual ZCPR3: *The Libraries* was only available as a separate $30 item. You should realize that the REL and HLP files have been placed in the public domain and can now be found on bulletin boards. You can download them and order the manual from us for $30. For $29 less than they used to cost, you can instead, if you wish, buy the manual, and the source code, and get the REL and HLP files on disk without making the phone company rich. Also, the price of the manual is now applicable towards later purchase of the source.

TURBO Pascal and the laser-printer fonts in our catalog were not in Echelon's Z-Catalog, nor did it contain earlier versions (NZ-COM and Z3Plus may both be considered equivalent to Z-COM). TURBO Modula-2, licensed from Borland to Micromint, and from Micromint to Echelon, is not presently available at all.

Alpha obtains more software from Borland

Due to many requests we have received for them, Alpha has signed another contract with Borland to sell and support TURBO Tutor, the Database Tool Box, and version 3.0 of TURBO Pascal for MS-DOS/PC-DOS. We will announce the prices for these after matters such as manuals have been taken care of.

ZSDOS 1.0, ZDDOS 1.0 ship

Plu*Perfect and Sage MicroSystems East are selling ZSDOS and ZDDOS, BDOS replacements by the team of Cameron Cottrill, Hal Bower, and Carson Wilson. Some long-time Z-System users may remember P2DOS. ZSDOS and ZDDOS descend from it (although every line has been rewritten); ZSDOS more or less directly, while ZDDOS went through an intermediate stage called Z80DOS.

Both ZDDOS and ZSDOS are the result of a cooperative effort by our whole community. The team worked with Joe Wright to make sure that ZDDOS/ZSDOS are completely compatible with ZRDOS 1.9 and will work right with NZ-COM; with Malcolm Kemp to make sure it works well in harness with XBIOS; and with Jay Sage and Bridger Mitchell to make sure no problems are encountered under Z3Plus, BackGrounder II, or JetLoader. In addition, Cam comments that these are probably the most throughly tested BDOS ever; hordes of Z gurus have been using them and searching for ways to break them for almost a year.

ZDDOS is a BDOS replacement like ZRDOS, with DateStamper-type time stamping of files built into it. ZSDOS, assembled from the same source with different toggles set, has no built-in timestamping. Instead, it comes with four loadable timestamping modules. One does DateStamper-type timestamping (to a file), one does CP/M Plus style timestamping (to the directory), one reads DS timestamping and writes both kind, the last reads CP/M Plus timestamping and

writes both kinds. You load whichever you want, when you want. ZSDOS tracks the operation of NZ-COM, if you're running that, and makes sure the timestamping of your choice stays loaded until you say otherwise.

Both ZSDOS and ZRDOS implement CP/M Plus style file handling, just as ZRDOS does. Like ZRDOS 1.9, both permit files to be up to 32 megabytes (instead of 8 MB as in CP/M 2.2). A disk can be up to a gigabyte, with 16K allocation blocks; with 2K allocation blocks the limit is 32 MB (again, CP/M's limit is 8), with 4K blocks, 64MB.

ZSDOS has a number of other nice features while maintaining a standard BDOS size of 3.5K; too many to discuss here, but a few are so startling they must be mentioned. Its **internal BDOS search path** allows a CP/M utility to find its data files and overlays, if they're on the path, even though a CP/M program knows nothing about paths or user areas, and without modifying the CP/M tool at all. The **R/O sustain** feature means that a drive that's been set to read-only will not be reset to read-write when a warm boot occurs. **Fast relog** is a feature that makes warm boots faster, because the BDOS retains knowledge of which drives are hard disks, and doesn't reread their directories (a totally unnecessary action, since hard disks, unlike floppies, are not removable). Cam says this makes ZSDOS warm boots 40% faster than ZRDOS, and 70% faster than CP/M's BDOS, in tests he's run. All these features, and many others, are configurable on the fly (in macros, for instance) using accompanying utilities.

Cam claims that there are *no* incompatibilities with ZRDOS, and no features in ZRDOS 1.9 that are not included in ZSDOS and/or ZDDOS. The only reason you might not want to change, according to him, is if your machine's BIOS is written to use the IX and IY registers and then not reset them. Even then, if you're running NZ-COM, Cam supplies a patch that prevents the problems your BIOS would otherwise cause. Systems with such a BIOS are rare, but Zorba systems and Epson QX-10s are among the offenders. Remember, even with one of these you're OK if you're also using our NZ-COM.

ZSDOS or ZDDOS can be purchased for $60 by licensed ZRDOS owners, or by anyone else for $75, from Plu*Perfect Systems, Box 1494, Idyllwild CA 92349.

Adieu, *Profiles*

Ms. Jackie Huffman at Kaypro confirms the news, posted to the bulletin boards by Ted Silveira, that *Profiles* magazine has ceased publication. The September 1988 issue was the last one. The problem was not lack of subscribers, but lack of advertisers.

Kaypro has attempted to deal with the question of subscription liability by selling the list of MS-DOS subscribers to *PC WORLD*, who sent a letter out offering to fulfill the remaining term of subscriptions with equivalent issues of their magazine. No provision has been made, that we have been able to discover, for CP/M subscribers. The question of availability of back issues seems also to have been ignored.

Further compounding the problem, MS-DOS subscribers have reported not getting *PC WORLD*, while some CP/M subscribers have. If you are in either camp, you should write to PCW Communications, Inc., 501 Second Street, San Francisco CA 94107, or phone (415) 243-0500, to correct the problem.

If you were a CP/M subscriber and have not been compensated for the remaining term of your subscription to *Profiles*, write to Jackie Huffman at Kaypro Corporation, 533 Stevens Avenue, Solana Beach CA 92075, or phone her at (619) 259-4429. Note that this is *not* the number listed in the front of *Profiles*! That number, despite the message you may have gotten from the attached answering machine, is not being answered, nor are messages left there being attended to.

Micromint reports steady sales

John Gorsky of Micromint welcomed our inquiries on how sales of their SB180 and SB180FX single-board computers are doing. The SB180 remains popular, selling 10 to 30 units a month at $299. This won't make IBM lose sleep, but it's good steady business. The later model SB180FX sells about the same at $409. Micromint has had to charge extra for RAM with the RAM price increases; John quoted me $48 for 256K, $96 for 512K, but this is very subject to change. Micromint sells 10 to 15 of their memory expansion boards for the SB180FX each month, at $319 with (again) a RAM surcharge.

Mixed news from Computer Design Solutions

When we talked with President Randy Gilleland of Computer Design Solutions in December, his company was looking forward to a January shipment date for the Z280 boards they've been designing for S-100 systems, as well as a single-board computer design and a 16-bit version of the Z-System, to be called OS280.

Last month the engineering on the board was done, and CDS took stock of whether they would actually make money by going ahead. This is known in engineering as a reality check. The cold hard facts are that CDS needs to sell at least 100 of these boards at about $400 apiece to make a decent profit. Interest in them is very great (information cards from the *SUPERMICRO* article are *still* coming in), but they only have 15-20 certain or nearly certain sales. That is not enough, says Randy. Therefore, contact CDS and let them know, if you would definitely buy such a board for your S-100 system, were it available. See our last issue or the last issue of *SUPERMICRO* for information, or call or write to Computer Design Solutions, City Center 206 Cooper St., P.O. Box 127, Statesville NC 28677, (704) 876-2346.

Even if the S-100 board is not manufactured, OS280 will be completed as specified by CDS' contract with Alpha, Randy promises. Furthermore, the standalone Z280 board is not in jeopardy, because CDS need it for their own use.

The standalone board, however, runs the Z280 in 8-bit mode. It has only 128K of RAM with no provision for memory expansion, and runs slower than the S-100 board. It has no 16-bit data path, although the Z280's 16-bit port is exposed to the outside world by a bus. It has a floppy-disk controller, and may have SCSI on board as well. Details depend on the fate of the S-100 board.

If the S-100 board does not fly, Randy has committed himself to providing the basic information so that a real die-hard hacker could construct his own board. This would be provided as a package of schematics and parts list, available from CDS for somewhere in the neighborhood of $20-$25.

NAOG membership steady, ETS gives up on hardware

Bruce Morgen reports that membership in The North American One-Eighty Group has remained steady at about 350 members for two years now. NAOG is a user's group for owners of machines with the Hitachi HD64180 CPU, which includes the Micromint SB180 and SB180FX machines.

Electronic Technical Service is not doing so well. Ken Taschner's and Bruce Morgen's ETS sells hardware, chief of which is the ETS-180-IO+ board. This board piggybacks on the bus sticking out of the middle of the SB180 board and adds SCSI, a real-time clock, and two serial ports. Bruce says that orders have not been sufficient to continue making these boards, and he is offering the remaining ones on a close-out deal with 6 months' warranty but no support. Call him at (215) 443-9031 to check current availability of the boards, or write to NAOG, P.O. Box 2781, Warminster PA 18974.

New XBIOS in development

Citing past failures to meet his own deadlines, Malcolm Kemp of Xsystems Software declined to set a date for the next release of XBIOS, the banked BIOS for SB180s and SB180FXs. With that proviso, however, he was glad to discuss the features that would be included in the next release.

The new XBIOS will feature dynamic system configuration, similar to NZ-COM. It will not, however, load segments; this will be left to a utility, such as JetLoader. The cost will be $25; available options, by arrangement with the various authors, will be ZRDOS 1.9 for $10 additional, ZSDOS or ZDDOS for $60, or ZCPR 3.4 and JetLoader for $10.

SB180 or SB180FX owners interested in the extra TPA available under XBIOS should contact Xsystems Software, 4708 Elam Forest Drive, Stone Mountain GA 30083.

BUSCON/89-WEST

Hordes of happy hardware hackers descended on the Santa Clara Convention Center on February 6-9 to discuss the future of single-

board computers and computer buses that tie more complex systems together. Exhibits on February 7-9 drew potential OEMs and end-users to examine the products offered by manufacturers. Unlike more familiar computer conventions, that hype products for a particular make of computer, BUSCON exhibitors offered products that used every kind of CPU and every imaginable operating system, on hardware that ranged from STD, MultiBus I, MultiBus II, FutureBus, STE, VME, S-100, SCSI, the MacIntosh NuBus, the PC BUS, and many, many others.

I hoped at this event to get a picture of the hardware available to our community these days. As old CP/M machines die of part failure, and others are cannibalized to replace them, there must be manufacturers making new machines if the good fight is to continue to be fought. It does no good to have one of the best operating systems around, if there is no hardware to run it.

My first stop was the booth of *SUPERMICRO* magazine, to thank them for the free admission ticket they sent me. Who says editors get no perks? *SUPERMICRO* people in the booth assured me that the second issue under their new name (they used to be *The S-100 Journal*) would be out very soon.

Another welcome sight was the **AMPRO** booth. Ampro's enclosures and Little Board/Z80 single-board computers have been mainstays of the 8-bit world for many years now. While Ampro's "big new thing" at this convention was the Little Board/286, earlier models were also very much in evidence. The Little Board/Z80 is still a mainstay of our business, an Ampro representative told me, and it's not going away. For information about Ampro's single-board computers or their STD cards, contact Ampro Computers Incorporated, 1130 Mountain View/Alviso Road, Sunnyvale CA 94089, or phone (408) 734-2800.

The Ampro people pointed me at the **CuBIT** booth. CuBIT (that's as close as I can come to it until I get some Greek fonts, the u is actually a mu) makes a variety of STD bus cards, with the 64180, 6502, 80186, and V40 available as CPUs, as well as a smart CRT controller using the 8085 as a slave processor, prototyping boards, and STD backplanes. Of particular interest is the model 8000 (6 MHz 64180, 256K DRAM, 128K EPROM, $475), 8020 (4.6 MHz 64180, 64K SRAM,

32/64K EPROM, clock/calendar, A/D converter, $455), and 8021 (8020 without the A/D, $415). All have 2 serial and 2 parallel ports. For more information write to CuBIT, 190 S. Whisman Road, Mountain View CA 94041-1577, or call (415) 962-8237.

Gary Schlaich of **MANCO** was quite helpful once he learned I was looking for single-board computers and cards with the Z80, 64180, and Z280. He gave me a briefing on the history of the STD bus, and some tips on which other companies there had such boards. He also sent me a Z80/8085 product line catalog for **Pro-Log**, one of the companies he represents. The variety of these boards is too great to list here; I suggest that anyone interested write to MANCO, 3350 Scott Blvd., Bldg. 55, Santa Clara CA 95054, or phone (408) 496-6611.

Joe Wright was present at the **DSB SYSTEMS** booth (formerly Davidge Corporation). DSB sells a tempting variety of single-board computers and STD boards with either the Z80 or 64180, in various configurations with different amounts of DRAM, floppy controllers, hardware clocks, parallel and serial ports, EPROM sockets, and SCSI controllers. Like the other STD manufacturers, these boards are intended for industrial control and embedded systems. However, end users are welcome to buy, and CP/M and the Z-System are available from DSB. Like Micromint and Ampro, DSB also sells disk drives, enclosures, and complete systems. Their newer 64180 boards are comparable in performance to Micromint's SB180FX (SCSI included, also a clock with some models) at a price between that of an SB180 and SB180FX. They do not have the internal bus that Micromint's boards have, to which Micromint's memory and graphics boards attach. Instead, a user who wants a larger system would buy the STD cards and put it together using the standard STD bus. For more information, write DSB Systems, P.O. Box 1869, 94 Commerce Drive, Buellton CA 93427, or phone (805) 688-9598.

I had a wonderful time, thank you. This was the first convention in too long that wasn't wall-to-wall PCs and Macs. I saw no S-100 stuff, but there was lots of STD equipment. The Z80 and 64180 are both popular in STD circles. I talked to many exhibitors, gave out samples of *The Z-Letter*, and generally told them that our operating system was available for use by their customers. The free-wheeling discussion between Dean Davidge, Joe Wright, Sig Holman, and myself, jumping from subject to subject, was especially enjoyable; I

wish I'd had a tape recorder going. What a relief to hear and participate in a discussion in English, instead of IBMese, at one of these affairs!

ON! Systems confirms end of ON! computer line

Bill Elliot of ONEAC Corporation reports that manufacture of the innovative ON! computer by ONEAC's wholly-owned subsidiary, ON! Systems, ceased last summer. The decision was made largely because sales volume was not great enough; the increase in RAM prices, on which the memory-based ON! was dependent, was the final nail in the coffin.

The ON! computer was designed from the ground up by Nick DeWolf to be completely invulnerable to power failures. Ordinary power failures, such as unplugging the machine during operation, did not interrupt operations or corrupt data, as the built-in battery took over instantly. Repeated total power failures in a very short time sometimes returned the user to the main menu; hitting RETURN was all that was needed to restore the user to the application that had been running, with the cursor in the place it had been. Using very little power in the first place, and running very cool, it needed and had no fan. It had no hard disk, using instead a 4-MB RAM disk. Despite having no moving parts but the keyboard and the user's fingers, the ON! did not sell well. The relatively high price and the lack of a hard disk probably contributed to this.

The remaining machines in stock are being kept by ON! Systems for spare parts and other uses in connection with fulfilling the warranties on machines already sold. ONEAC's line of power-conditioning boxes and uninterruptable power supplies is doing well.

Cranberry Software Tools

Cranberry Software Tools (P.O. Box 681, Princeton Junction NJ 08550-0681) offers tools for the writer and the programmer. Their **Public Domain Programming Series** consists of a number of programming languages from the public domain, available on 14 diskettes for $5 per diskette. The languages are BASIC5, EBASIC, ZBASIC, FOCAL, UNIFORTH, FIG-FORTH, LASM, SAM76, Small-C

(both compiler and interpreter), Parasol, Draco, E-Prolog, Algol/M, Concurrent Pascal-S, PL/O, and RATFOR (What, no XLISP?). Their **ALPHA TEXT TOOLS** (no relation) includes an editor, a formatter, spelling checker, a tool that lets you design and print fonts on Epson dot-matrix printers, a menu for the above, additional fonts, a file-dumping utility, a C source-listing tool, formatter, and cross-reference utility, and a macro preprocessor for languages without conditional constructs. Prices vary from $5 (for the Commodore 128 public domain upgrade diskette) to $34.95 (for a set of most of the text tools).

CP/M Connection gives up

"Dear David:" writes Donna Ward of CP/M Connection, "We appreciate your request concerning a catalog on CP/M products. We believe there is a healthy CP/M market and it is heart-warming to hear from fellow users. However, we have been forced to focus our energies on another part of our company. We have therefore regretfully ceased operating the CP/M division of our company."

ASK ALPHA

The following selection of letters was culled from some of the correspondence that pours into Alpha every day. They were selected not for timeliness, but because they ask questions we believe other readers may also be wondering.

When you write to Alpha, please remember that for now we are one full-time person (Joe Wright) and one other person with a separate full-time job (David McGlone). Joe simply has not enough time to do much more than fill the orders in the correspondence and try to deal with any problems that come up, especially when you consider he also has software to write and marketing deals to arrange. Try, as much as you can, to send orders to Joe at 711 Chatsworth, and questions and comments about The Z-Letter directly to me at 720 South Second Street. That way we don't have to spend time separating one kind of letter from the other, or processing a letter many times. And any questions I can answer without asking Joe means that much more time for him.

On to the letters! Stuart Cox wrote to Echelon on July 10, 1988, saying in part:

Would you please send me copies of [Z-News] issues 807 to date, inclusive. Additionally, of my complete set of issues, I'm missing 308, 309, 502, and 504. Would you be so kind as to include these as well?

My machines are a PMC MicroMate 101 running CP/M Plus, a Kaypro 1 running CP/M 2.2, and an as-yet-unfinished Ampro Little Board with ZCPR. I'd like to receive a current copy of your system software list.

On the PMC, I'm particularly interested in changing to ZCPR from CP/M Plus, but I don't want to lose time and date stamping, command-line editing, [or] UniForm and Media Master format compatibility. I have 512K installed and have the EBMMUG dual hard drive. What options do I have here?

The Kaypro 1 has the U ROM. I've heard that I can't run ZCPR3 on it without popping for either the MicroC or Turbo ROMs. In addition, only the two floppies that came with the Kaypro are installed. Have I enough storage to operate a viable ZCPR3 system?

> Stuart Cox
> 1811 Chandler Ave.
> Victoria, B.C.
> CANADA V8S 1N9

First, Stuart, the last issue of **The Z-News** *was 809. We have no permission to reproduce or reprint Echelon's magazine, so we can't help you get the six issues you're missing. We've printed your address, so any readers who have spare copies of 308, 309, 502, 504, 808, or 809 can write to you.*

You will find a copy of our current Z-Catalog at the back of this issue, and you may have already received it separately. In the price list, note Z3Plus, just what you need to update your PMC to the Z-System. Since the system Z3Plus builds uses the CP/M Plus BDOS, you won't lose the features you mention; and since it uses your current BIOS, you will certainly not lose the ability to run UniForm, and shouldn't lose Media Master either.

About the Kaypro U ROM, we've heard that rumor too, but haven't confirmed it yet. Anyone have first-hand experience to share?

*If a two-floppy Kaypro gives you enough storage to operate in CP/M, you won't have any trouble running the Z-System on it. The only requirement for lots of storage in the host of utility programs, and you will soon determine which ones you actually use. The beauty of the Z-System is that there are four or five ways to do **anything**, but that doesn't mean that you will like all of them equally.*

November 16, 1988

Dear Joseph W. Wright:

Thank you for your complimentary copy of the first issue of "The Z-Letter". Please, enter my subscription and make sure I do not miss any of them. I am glad to learn that you intend to pick up where Echelon left. Does this imply that you may receive sending out the SUS software updates? The last one I received was #13.

Sincerely yours,
L. Van Hemelryck
16514 14th Ave. SE
Mill Creek WA 98012

Since you mentioned that you had received #1, and asked not to miss any, we have entered your subscription for issues 2 through 13, and mailed issue 2 to you. We will honor such requests; when there are none, we will start a subscription with the next issue.

SUS #13 was the last one Echelon sent out. Unfortunately, we haven't the manpower to spare for collecting the latest updates to Z-System utilities and mailing them to subscribers, much as we'd like to. NAOG does something similar, however, with their "userdisks". They charge $12 per disk in North America, $18 elsewhere. You and others who want to keep up without a modem might contact North American One-Eighty Group, P.O. Box 2781, Warminster PA 18974.

November 23, 1988

Dear Sirs,

Thank you for your complimentary copy of *The Z-Letter*. I enjoyed it and have enclosed a check for $24.00 for a one-year subscription.

I ordered and received a copy of NZ-COM in July of this year. I have been running it on my Televideo 802 computer and I am happy to report that I have had absolutely no trouble with it. Congratulations on a fine product! There is, however, one suggestion that I would like to make. It would be very nice to be able to select the resident commands present in ZCPR 3.4. I have a manually installed version of ZCPR 3.3 and ZRDOS 1.7 running on my other computer, an Ithaca S-100 system. I installed this with no SUBMIT capability since I do not use SUBMIT files and used the extra space with NOTE, REN, and SAVE. This sort of flexibility would be greatly appreciated in NZ-COM. In any case, congratulations on an outstanding product and best of luck with your venture into the commercial 8-bit world (if there is such a beast). Please send me a list of products and I will try to support you as best I can. Best wishes.

> Sincerely,
> Gary Rhodes
> 1618 Burgundy Rd.
> Leucadia CA 92024

Thank you, Gary, for the kind words. Your letter also supports what I told Stuart above, since the Televideo 802, like the Kaypro 1, is a machine with two 48-tpi drives. I note that you, like most of our readers who have mentioned what computers they have, have more than one system. There are two points I want to make:

First, your subscription is for 12 issues, not one year (I know I put it in terms of years in our last two issues, and I apologize). You have paid for 12 issues, and you will get 12 issues. Should we have to quit publishing for some unforeseen reason, you will get $2 back for every issue you do not get. This is a promise. I do not expect this to happen, but I want the terms clear; far too many magazines have folded, and defaulted on subscriptions. We won't be one of them, not even if it has to come out of my own pocket.

Second, your RFE (request for enhancement) goes against our intent with ZCPR 3.4 and the trend in Z-System development. Commands may reside in many places in the Z-System; on disk (either as .COM files or in libraries), in the loadable resident command package (RCP segment), or in the command interpreter itself. In addition, as you probably know, special kinds of resident commands have their own segments. Flow-control commands like IF and ELSE reside in their own flow-control package (FCP

segment), and commands that intercept I/O can be made into loadable packages for use in the IOP segment. Well, the trend since at least ZCPR 3.3 has been to have only GET, GO, and JUMP in the command processor itself; this leaves the maximum room for future enhancements of the command processor. GET, GO, and JUMP are included because most of their code is a duplicate of ZCPR's anyway, so only a tiny bit need be added to ZCPR to include them. So we will probably not be changing NZ-COM as you suggest. If you want to customize your own copy of ZCPR, we do sell the source code for just that purpose.

6 December 1988

Dear Joe,

Thanks for the first issue of *The Z-Letter*. Enclosed is a money order for a one-year subscription. Please start with issue #2.

I hope a future issue addresses the use of Zmodem as a file transfer protocol for CP/M-compatible computers. To date, I am still trying to get a copy but would like to know how others are making out with it.

Please send your latest catalog. Do you have plans to start a floppy disk subscription of Z-System software?

Good luck with *The Z-Letter* and Alpha in 1989.

> Sawadee,
> Bill Thompson
> JUSMAGTHAI
> Box 3059
> APO SF 96346-5000

Most of your questions have been answered in response to previous letters this issue, Bill. I included the full text of your letter as an illustration of the fact that most of the letters we receive ask the same questions over and over. This shows how much of a community we all are, and explains how we can hope to answer everyone's questions without spending all of our time doing only that.

On Zmodem, we don't have it. It is available on the bulletin boards generally. Have you tried NAOG's? The numbers are (312) 649-1730 and

(312) 664-1730. Circuit Cellar also has an excellent one at (203) 871-1988. Maybe one of our readers is willing to write an article for us on Zmodem?

Calvin Richter wrote to us on 9 December, 1988, saying in part:

The most serious problem I am experiencing with NZ-COM is its apparent incompatibility with Bridger Mitchell's DateStamper utility. I had written originally saying I had been unsuccessful in my attempts to install DS; since then I have managed to install it — using the "unknown BDOS" version, of course — but it's quite prone to hanging the system during disk access. My assumption is DS is having problems accessing its !!!TIME&.DAT files. The system only hangs when DS is running, and I have been running DS under CP/M for several years without problems. While I am quite impressed with NZ-COM, I am very fond of DateStamper, and as a result, NZ-COM is not getting used as often as it deserves. Help!

On a more minor note, my distribution copy of NZ-COM contained neither Jay Sage articles mentioned on page 78 of the manual, nor the ZEX utility. You mentioned the ZEX oversight in the latest issue of *The Z-Letter*. You neglected to explain, however, how we could obtain a copy.

Where can I obtain information on ZRDOS? I know it's a BDOS replacement, but the manual barely mentions it, and supplies no technical information whatsoever.

And, finally, I have been running the ZCMD CCP replacement under CP/M, into which I had installed Zigi Klueger's SHOWTIME routine. Is there any way to incorporate it or a similar routine under NZ-COM?

All in all, I am quite impressed with NZ-COM and will be using it regularly if I can solve the DateStamper problems.

Sincerely,
Calvin Richter
W. 6999 King Rd.
Poynette WI 53955

*Joe Wright and Bridger Mitchell found and fixed your problem, Calvin, so I expect that you are now using NZ-COM all the time. The symptoms you experienced were due to your having a version of DateStamper that was older than NZ-COM and was unprepared for some of the things NZ-COM does. Anyone else experiencing these problems should contact Bridger Mitchell for an upgrade of DateStamper at Plu*Perfect Systems, Box 1494, Idyllwild CA 92349.*

The new ZEX has been uploaded to the bulletin boards and is spreading even as we speak. Like most Z-System utilities, it may be downloaded for no charge (except what you pay the phone company). We have an upgrade policy now where you can obtain the newest copy of anything of ours by sending us $10 and the old disk; we'll put the new software on the disk and mail is back. The current version of NZ-COM is 1.2D. The TCJ articles are also available on many bulletin boards.

ZCMD is another name for the original version of ZCPR, which is not supported by anyone. The current version of ZCPR is 3.4, and if you are running NZ-COM, you are also running ZRDOS 1.9 and ZCPR 3.4. Neither Joe nor I have heard of SHOWTIME, but you might try installing it into ZCPR 3.4 the same way you installed it into ZCPR 1.0. Please let me know whether it works.

20 December 1988

Gentlemen:

I understand you purchased the rights to the Z-System, and you will continue to support and develop it. Please send a catalog describing the products you handle.

I found two bugs in the Graphics and Windows package. Attached are two reports describing them, which you will be interested in if you are supporting this product. Considering their circumstances, I can understand why Echelon did not appear to be interested. However I suspect the bugs are still [there]. Should you have any questions, please feel free to contact me.

Yours truly,
James Ott
570 S. Fairfield Ave.
Elmhurst IL 60126

James: We are not supporting the Graphics and Windows package currently, because it only supports one terminal, and we haven't the time right now to make it more general. Nevertheless, we are printing your bug reports as a service to the community:

1. When using the ERAVERT subroutine in the GRXLIB, a stack problem occurs. I have a fix that I believe will work. Let us take a look at the code for ERAVERT:

```
ERAVERT:        EX      (SP),HL
                LD      A,OFEH
                LD      (FLAG),A
                JR      WRONGPLACE
                NOP
DRVERT:         EX      (SP),HL
RIGHTPLACE:     PUSH    AF
WRONGPLACE:     LD      A,(HL)
; code omitted ...
                POP     AF
                RET
```

The problem occurs in the operation of the stack. In this version of GRXLIB the jump used to enter DRVERT from ERAVERT is after PUSH AF, which I have labeled as WRONGPLACE. This jump should enter DRVERT at PUSH AF, which I have labeled as RIGHTPLACE.

As the source code for this module has not been released, I have not been able to check it over carefully. I do, however, believe this change will not affect other operations, except of course that this change means that the value in register (a) will not be preserved as stated in the manual. This, however, is better than a crash.

2. When using the OPENW subroutine (and other routines that read the screen) in the GRWLIB, the program crashes when U1 (a user-supplied RAT routine) is available. I have isolated the cause. The wrong return address is saved on the stack before jumping to the user-supplied RAT routine, U1. See the code on the next page:

ALPHA SYSTEMS CORPORATION ORDER FORM

Name _____

Date _____ Telephone _____

Company _____

Street _____

City _____ State _____

Country _____ Zip or postal code _____

Computer type/brand _____

Format _____

Order: (Refer to price list — prices are in U.S. dollars)

Item number and name	Quantity	Unit Price	Total this line
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Subtotal $ _____

If California, add 7% sales tax $ _____

Shipping and Handling $ 4.00

TOTAL $ _____

ORDER INFORMATION FOR LASER-PRINTER FONTS

Typeface _____
Height _____ Width _____
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Flop? _____ Reverse? _____
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Symbol Set _____
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ALPHA SYSTEMS CORPORATION ORDER FORM

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Date _____ Telephone _____

Company _____

Street _____

City _____ State _____

Country _____ Zip or postal code _____

Computer type/brand _____

Format _____

Order: (Refer to price list — prices are in U.S. dollars)

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Subtotal $ _____

If California, add 7% sales tax $ _____

Shipping and Handling $ 4.00

TOTAL $ _____

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Symbol Set _____
Fixed/Proportional _____
   Pitch (for fixed only) _____

```
SOMEWHERE$IN$GRWLIB:
        LD      A,(U1$IS$AVAILABLE$FLAG)        ; get flag
        OR      A                      ; test whether U1 available
        JR      Z,SOMEWHERE$ELSE       ; skip if U1 not available
        PUSH DE
        PUSH BC
```

```
; This instruction is wrong!  HL should point to the address
;    to return to, as in the corrected instruction below.
;       LD      HL,(RETURN$FROM$U1$HERE)
```

```
; THIS is the correct instruction:
        LD      HL,RETURN$FROM$U1$HERE
```

```
        PUSH HL         ; save on stack as return address from U1
        LD      HL,(USL)           ; HL → U1 pointer in TCAP
        LD      E,(HL)
        INC     HL
        LD      D,(HL)
        EX      DE,HL          ; HL → U1 user-supplied RAT routine
; DE → buffer to save screen in:
        LD      DE,(SAVE$BUFFER$POINTER)
        JP      (HL)           ; Go to user-supplied RAT routine U1
```

```
RETURN$FROM$U1$HERE:
        POP     BC
; More code follows but is omitted ...
```

As the source code for this module has not been released, I have not been able to check it over carefully. I do, however, believe that this change will not affect other operations.

3. Concerning the ISPDM routine in the GRWLIB, the manual states that upon return the ISPDM routine returns with:

> A = Zero Flag set (Z) if not Pull Down Menu character
> A = NZ if character is Pull Down Menu Control character

This is just the opposite of what occurs. The manual should read:

> Zero Flag set (Z) if Pull Down Menu Control character

Zero Flag reset (NZ) if not Pull Down Menu character

Should you have any questions, please leave a message for James Ott at Z-Node 15, (312) 664-1730.

Excellent work, James. Thank you. Readers should note that James is using version 1.0; if there are later versions, these bugs may be fixed.

Richard H. Sutton of Toms River, New Jersey, asks:

I have an Intel MDS-800 (8080 chip) with CP/M 2.2 and a Z80 system with CP/M Plus (3.0). May I have descriptive material on both [NZ-COM and Z3Plus] plus price? In using the ZCPR system will the current CP/M files be read directly, or must they be read in CP/M and saved as ZCPR files before system changeover?

The good news, Richard, is that no such conversion is necessary with either NZ-COM or Z3Plus. The Z-System is a systems upgrade to CP/M, and uses the BIOS running on your CP/M system (whether 2.2 or 3.0). Since format information resides in the BIOS, that means your new system will read and write to your files exactly as your old system did. The bad news is that NZ-COM will not work with a machine that has an old 8080 chip. ZCPR 3.0 was the last release of ZCPR that was written in 8080, rather than Z80, instructions. Your Intel machine is CP/M-compatible, but not Z-compatible. See the Z-Catalog in the back of this issue for a definition of those terms, and for the description and prices of NZ-COM, Z3Plus, and the other products we offer.

BEGINNER'S CORNER

Surviving in a PC world

Now that you've found, bought, inherited, or been given a CP/M machine, your first question is undoubtedly "Where do I get help?" Even if you have all the software that originally came with the machine, and all the manuals (no certain thing in a second-hand machine), you probably have lots of questions. Even the best of manuals usually makes certain assumptions, and you are unlikely to know what it's assuming. Or you may have actual damage or worn-out parts to your machine that needs to be fixed.

The local computer store is probably no help. The odds are that *you* know more about CP/M than the "experts" at the local Businessland or Computers 'R' Us. The store people who knew CP/M are mostly gone into other fields, or they're running one-man computer repair or consulting businesses. Most of the guys offering you blank stares used to be car salesmen, and haven't heard of anything that doesn't run on a PC or a Mac. (One exception: if the store sells Commodores, the Commodore 128 runs CP/M Plus, or CP/M 3.0, as well as the proprietary Commodore system. If your CP/M computer runs CP/M Plus, most of the Commodore 128 CP/M programs will run on your computer. Try it out first before you buy a program, to make sure it runs on your machine.)

The way out of your fix is (a) user's groups, (b) bulletin boards, and (c) magazines. Let me take these one at a time, although you will most profitably investigate all three at the same time.

User's groups are mutual-help societies. Their theme is that in unity there is strength. For you the point is that someone in the group can probably answer any questions you have, and help you fix any problems you're running into. After all, if you were the only person on Earth with a CP/M machine, you might as well scrap it; one person does not make a community, and it takes a community to support a computer. The user group will have people in it who know the hardware and can make fixes, or they will know shops that fix your brand of computer. They can supply missing software, if it's public domain, or they will have the current address of the company selling the software, if it is still for sale. Most user groups have a newsletter with articles that will interest you. The user group can also advise you what software they've found will run on your machine. They will know about other models of the machine, and how to upgrade to them, if there is a way to do that.

How do you get in touch with a user group? One way is your local paper. Check the want ads, under the section that lists local clubs. If your paper has a computer section, check that, and try calling the editor of that section. If it does not have a specific computer section, try the section that describes social events; there are often user-group meetings on the calendars.

Computer Currents is a free newspaper/magazine distributed via news stands and in stores in several parts of the country. They list user groups in the back, although they often do not have space to list all the ones they know about. Write or phone them to learn where you can get a copy, if you live in the following areas:

Northern California
5720 Hollis Street, Emeryville CA 94608
(415) 547-6800 or (800) 233-8383

Southern California
3000 Ocean Park Blvd., Suite 3000, Santa Monica CA 90405
(213) 452-7530

Texas
17806 Davenport, Suite 105, Dallas TX 75252
(214) 931-0157

Greater Atlanta
1165 Timberland Drive, Marietta GA 30067
(404) 955-4467

Boston/New England
375 Cochituate Road, Box 9171, Framingham MA 01701-9171
(508) 879-0700

Another free magazine/newspaper is *MicroTimes*, which has a column called User Group Network. Try one of these addresses or phone numbers if you live in California:

Bay Area Office
5951 Canning St., Oakland CA 94609
(415) 652-3810

San Jose Office
36 Harold Ave., Suite 8, San Jose CA 95117
(408) 244-4400

Orange County Office
800 S. Brookhurst, Suite 1F, Anaheim CA 92804
(714) 776-2900

If none of these methods finds a user's group for your computer, another user group may be able to help you. FOG, originally just the First Osborne Group, is today a user's group to which user groups belong; check with them to see whether they know of a user group for your computer. FOG, P.O. Box 3474, Daly City CA 94015-0474, phone (415) 755-2000. The Boston Computer Society operates the same way, but I have no address or phone number for them. If all else fails, a CP/M users group will be better than nothing, though still far short of the helpfulness of a user group that covers your machine.

If you have the hardware and software to talk to other computers over the phone line (a modem is the hardware you need, plus a program such as MODEM7, IMP, or the TERM III program Alpha sells), you can find a lot of help by putting messages on bulletin boards, then checking back later. Unfortunately, getting a modem and hooking it up to your computer is *exactly* the sort of problem that a user group can best help you with. If you can't find a user group, insist that the vendor who sells you the modem hook it up properly, and don't hesitate to ask questions of whoever supplies the software to run it. This is a case where you cannot settle for less, unless you only bought the modem for its looks!

Once you begin to learn your way around the bulletin boards, you will find that some user groups are distributed all over the country and only "meet" on the bulletin boards. So if you can get the help you need to get connected to the bulletin boards, you will then have lots more help from individuals and groups. Bulletin boards are often listed in local papers, and both *Computer Currents* and *MicroTimes* list phone numbers for bulletin boards.

Another source of help is **magazines**. Most user groups publish newsletters; some publish actual magazines, with useful articles as well as notices of meetings. Some models of computers have magazines dedicated to them, published independently of any user group; your user group will probably know about them. And, although most newsstand and bookstore magazines are completely worthless to the owner of an 8-bit computer, some of them have CP/M columns as well. Some of the magazines cluttering up my house that are still being printed are:

Circuit Cellar INK — If you're a real, dyed-in-the-wool, engineering-degree hardware hacker, you will want to subscribe to *Circuit Cellar INK*. The Circuit Cellar was a hardware column in *Byte* from the earliest days of that magazine. Its author, Steve Ciarcia, says that his favorite programming language is solder. The Micromint SB180 started as a Circuit Cellar project. Now that *Byte* has become just another PC magazine, Steve and company are publishing their own magazine. If that sounds like your cup of tea, write to Circuit Cellar Incorporated, 4 Park Street, Suite 20, Vernon CT 06066. Subscriptions are $14.95 per year (6 issues) in the U.S.A. and possessions, $17.95 in Canada, $26.95 everywhere else.

The Computer Journal — This is the magazine for you if you're a software hacker, or perhaps if you're familiar with CP/M but not the Z-System. Technical articles on the Z-System tend to end up in TCJ, with people like Bridger Mitchell, Jay Sage, Ken Cottrell, and Rick Charnes writing for it. The address is 190 Sullivan Crossroad, Columbia Falls MT 59912. Subscriptions are $16 per year, or $28 for 2 years.

Computer Shopper — Widely available on newsstands and in bookstores, *Computer Shopper* calls itself "The World's Biggest Computer Magazine", and it is; each issue is 10" by 13" by 1" thick! CS is paid for by the direct-mail ads that fill it, but it has lots of articles, too. Among all the PC articles, Mac articles, Apple II articles, Amiga articles, Atari articles, etc. (we're talking hundreds of pages and dozens of short articles) is the occasional one of interest, such as the one on Heath/Zenith 8-bit developments in the December 1988 issue. More to the point, Cheryl Peterson has her CP/M Column in every issue. This is mostly for CP/M Plus on the Commodore 128, but Cheryl does not exclude questions or information about other CP/M computers, either. She tries hard to keep up with what's new and pass it along. Expect articles about the Z-System in the near future, as we sent her a copy of Z3Plus and people have been mentioning us in letters to her. Subscriptions are $29.97 per year in the U.S., $31 more than that everywhere else, from Coastal Associates Publishing, L.P., 5211 S. Washington Ave., Titusville FL 32780. As for the sheer size of the thing, I suggest clipping.

Micro Cornucopia — This magazine has a column called CP/M Notes. This is the last vestige of what used to be a very interesting, if highly technical, magazine. It's still highly technical, but only occasionally is either CP/M or the Z-System mentioned outside of the CP/M feature. A feature on Kaypros has been missing for the last two issues and may have died. Subscriptions are $18 for 1 year in the U.S., $26 in Canada and Mexico, $36 elsewhere by surface mail or $50 elsewhere by air mail, from Micro Cornucopia, Inc., 155 NW Hawthorne, Bend OR 97701.

Issues 45 and 46 have begun and continued an alphabetical listing of vendors still selling CP/M products, complete with addresses, phone numbers, and the date the information was last verified. This is a very large and very complete list. The whole thing is available from Samuel Vincent of the CP/M Special Interest Group, Pittsburgh Area Computer Club, P.O. Box 6440, Pittsburgh PA 15212. Help keeping it up to date is requested.

Sextant — This is a magazine for Heath/Zenith computers, any model, with information on both CP/M and MS-DOS models. If you have any Zenith or Heath/Zenith computer, you should subscribe. I don't have one, and I find something interesting in each issue, anyway. Subscriptions are $22.94 for 8 issues in the U.S., $26 in Canada or Mexico, $32 elsewhere, from Sextant Publishing Co., 716 E Street, S.E., Washington DC 20003.

There is also a magazine specifically for 8-bit Heath/Zenith computers, according to their ad in *Sextant*. *The SEBHC JOURNAL* is $15 a year from 895 Starwick Drive, Ann Arbor MI 48105. Sorry, that's all I know about it.

SUPERMICRO — Last, but scarcely least, this magazine used to be called *The S-100 Journal*. The S-100 hardware bus was used in all the earliest personal computers, even before CP/M was invented. S-100 systems today are typically multiple-CPU systems with both 8- and 16-bit processors, usually with the 8-bit processors running CP/M, CP/M Plus, the Z-System, or TURBO DOS, while the 16-bit processors run MS-DOS and the system as a whole runs under Concurrent DOS. Anyway, the magazine's name change reflects an increased interest in the VME, Multibus I, and Multibus II buses, as well as the S-100 bus. It's a very technical magazine, and more hardware than

software, but very interesting. *SUPERMICRO* #1 had an article called "How To Build a 1-MegaByte RAM-Disk" for S-100 systems running CP/M. Subscriptions are $24 for 1 year in the U.S., $40 for 2 years. Add $10 per year for Canada and Mexico, $16 per year elsewhere. Send orders to SUPERMICRO, P.O. Box 50777, Provo UT 84605-0777.

Now I expect that dozens of people will write to me, berating me for leaving out favorite magazine. I sure hope so, anyway; if I'm missing a good one, I want to know about it! One thing, though; don't write to tell me about magazines, like *Computer Currents* and *MicroTimes*, that *used to have* a CP/M column, or magazines no longer published, like *The User's Guide*. I'm only listing currently-published columns and magazines here. (But if you have old CP/M magazines you want to get rid of, I'll take them. Write and tell me what you have.)

Next issue: What this country needs is not a good 5-cent cigar (ptui!). I'll discuss what the 8-bit community needs, and list some of the ways that many of these needs are being met, so that you can take advantage of them. Our WRITING ABOUT WRITING column will resume, with the first part of a comparison of WordStar 4.0 and Spellbinder 5.3, the latest CP/M versions of two word processors. And we'll have an article on writing TURBO Pascal programs so that they adhere to the standards of Z-System utilities.

Z-CATALOG

Welcome! You are reading Alpha Systems Corporation's first catalog of software products available for CP/M-compatible and Z-compatible computers. If you have a computer presently running the CP/M or Z-System operating systems, or any computer with an Zilog Z80, or Hitachi HD64180 chip, the software we sell will run on your machine.

What do CP/M-compatible and Z-compatible mean?

Any computer which has an Intel 8080 or 8085, or the Zilog or Hitachi chips mentioned above, will run the CP/M operating system. We use the term *CP/M compatible* to describe these machines, which include some models of Kaypro, Osborne, Morrow, Ampro, Eagle, and Televideo computers, among many others. An Apple II can run

CP/M with the addition of a special card that has a Z80 on it, and the Commodore 128 runs CP/M as well as the Commodore operating system it shares with the Commodore 64. Application software that runs under CP/M is also CP/M-compatible, such as the original versions of Borland's TURBO Pascal, MicroSoft's MBasic, Ashton-Tate's dBase II and MicroPro's WordStar, along with thousands of other programs.

In contrast, we reserve the term Z *compatible* for hardware that can run the Z-System, and applications that require the special features of the more advanced operating system to run. A computer with an Intel 8080, for instance, cannot run any version of the Z-System command interpreter ZCPR later than version 3.0, because later versions were written in the more extensive and more efficient command set of the Z80 chip. And most Z-System utilities will not run under plain old CP/M. So while almost all CP/M programs will run under the Z-System, programs written to use the features of the Z-System will not run under CP/M, which lacks those features. CP/M and Z-System compatibility is a one-way road, running from the earlier and simpler operating system (CP/M) to the later and fancier one (the Z-System).

What is the Z-System?

The Z-System is the state of the art in what are sometimes referred to as 8-bit operating systems. While there is considerable technical room for debate over which chips are 8-bit and which ones are 16- or 32-bit, even CP/M systems with 4 MHz Z80s (a measure of chip speed) routinely outperform traditional 16-bit systems such as the IBM PC. Finally, the Zilog Z280 is a 16-bit chip, and a version of the Z-System is under development for it, which will extend the term Z-compatible into the 16-bit domain.

Although it began as public-domain enhancements to CP/M 2.2, the Z-System today is a fast, efficient, powerful, and dynamic operating system with all the desirable features of MS-DOS, most of the features of UNIX, and many features found only on mainframe computers, such as dynamic allocation of operating system memory. The computer press concentrates on operating systems such as MS-DOS, the Macintosh operating system, and OS/2, largely due to the marketing clout of the huge companies that sell them, and thinks

that CP/M is an obsolete operating system that died out years ago. While the fanfares have been blaring out release after release of slow, huge, inefficient and bug-ridden operating systems, a small band of software designers has been upgrading CP/M and the public-domain programs written for it into a fast, rich, efficient operating system that outperforms everything else in the microcomputer world. We call this treasure the Z-System.

Practically all active CP/M public-domain authors these days provide support for Z-System features in their programs. Due to the demonstrated popularity of the Z-System, industry leader MicroPro released a new CP/M version of WordStar last year; this version 4.0 included support for Z-System paths and named directories. Reportedly they sold over ten thousand copies of this version in two months.

What is Alpha Systems Corporation?

Alpha Systems Corporation has been in business since 1979, dedicated to the development of microcomputers using such chips as Intel's 8080, 8085, 8048, and 8051, Zilog's Z80, and Hitachi's HD64180. Since 1984, we have concentrated entirely on the software side. Alpha developed the first Z-System offered by a computer manufacturer, for Ampro's Little Board Z80 computer. In 1985, the system software for the Micromint SB180, the first of the new breed of HD64180 computers, was developed here. Alpha also wrote the system software for the ON! computer, a radical Z80 computer designed from the ground up to be immune to power failures and electrical glitches.

In 1988, Echelon, Inc. closed its doors. Echelon was a small business based in Los Altos, California that had for many years served as the driving force behind Z-System development. In addition to ceaselessly proselytizing the virtues of the Z-System through *The Z-News*, its biweekly newsletter, Echelon maintained a network of bulletin boards that helped unify the Z-System community, and sold a large catalog of software licensed from many sources. With Echelon's retirement, Alpha has stepped into the breach and hopes to be able to serve the user community in much the same way. We have started our own newsletter, *The Z-Letter*, and with this edition of the Z-Catalog offer a selection of Z-System operating system modules and applications. Echelon has signed over its rights and trademarks to Alpha.

Software availability and policies

The software listed below is available from Alpha Systems Corporation, 711 Chatsworth Place, San Jose, California 95128. Our phone is (408) 297-5594. Please use one of the order forms in the middle of this issue. Payment should be in U.S. dollars by a check or money order made out to Alpha Systems Corporation. Sorry, we cannot accept VISA or MasterCharge, at least for now. However, we will send orders C.O.D. through UPS.

Please specify your format as well as the kind of computer you have. If your computer is a fairly rare make but can read a common format such as Kaypro II or Ampro, it might be wise to specify the more common format as an alternate. We can supply software in most CP/M formats, including 8-inch disks and Apple II. If you do not specify a format, we will assume you want your software on Kaypro II disks.

Upgrades are available for $10 upon return of your old disk. Make a backup copy of your disk, for safety's sake, then send the *original disk* to us along with a check or money order for $10. The new version will be copied onto your original disk and mailed back to you.

Ordering laser-printer fonts

To order a downloadable font for your LaserJet-compatible laser printer, fill out the *back* of one of the order forms in the middle of this catalog. Space is provided for eight font orders, as that is the minimum order we can accept at this time. If you wish to order more than eight, copy the order form as many times as you need. The following information must be supplied for each and every font you wish to order:

1. Typeface. Which of the typefaces shown in item 14 of the price list do you wish to order? Put the number here.

2. Height. You may order fonts ranging from 3.0 to 720.0 points in size. Bear in mind that anything smaller than about 6 points is very hard to read. Also, if you have a LaserJet Plus or compatible, the largest characters you can print is between 30 and 40 points. A LaserJet II has no such limit. A point is about 1/72 of an inch.

3. Width. The normal width for a font is the same as the height. If that's what you want, put the same size here as you put in the previous space, or just leave this space blank. If you want a 12-point font with characters half as wide as the samples shown, you would put 12 under height and 6 under width.

4. Slant. You may order fonts with characters that lean, or slant, from -45 to +45 degrees, where negative numbers mean that the characters slant to the left. A font slanted to the right may be used as an italic font, although it is not actually the same thing. Note that lines written with a slanted font still march across the page normally; only the individual characters lean.

5. Rotation. You may specify that the characters in a font are to be rotated from 0 degrees (normal) to 360 degrees clockwise. Characters rotated 90 degrees lies down on their right sides; 180 degrees is upside down; 270 degrees of rotation puts the characters down on their left sides. The difference between a letter rotated 45 degrees and one slanted 45 degrees is that the rotated character is the same shape as an unrotated one, where a slanted character is distorted as it leans. Again, the orientation of the lines of print is not changed, only the orientation of the characters in the line.

6. Flop? If you say **Yes** here, the characters will be in mirror-writing, that is, they will be rotated around their vertical axes.

7. Reverse? If you say **Yes** here, the font you receive will print white characters on black, instead of the normal black on white.

8. Portrait/Landscape refers to the orientation of the lines of type, rather than the individual characters. Portrait fonts print along the shorter dimension of the paper, while Landscape fonts print along the longer side. Think of portrait paintings, which are typically taller than they are wide, as opposed to landscape paintings, which are normally wider than they are tall.

9. Symbol set. Put here the name of an HP symbol set, or a range of characters in decimal or hexidecimal. If you leave this space blank, the font you receive will be US ASCII.

10. Fixed/Proportional. Specify whether you want the characters in your font to each take up the same space, like a typewriter, or proportional, so that narrow letters take up less space than wide characters. The resident fonts built into your LaserJet are fixed spacing; this catalog is done with proportional fonts.

11. Pitch. If you chose a fixed-spacing font, specify the pitch of the font. Pitch is measured in characters per horizontal inch; choose a number between 0.00 and 80.00 cpi. Elite is 12 cpi, pica is 10 cpi. Proportional fonts have no pitch, because each character takes up horizontal space proportional to its own width.

Generally, note that you **must** fill in typeface, height, portrait/landscape, and fixed/proportional for each font you order; if you choose a fixed font, you must specify the pitch. Leaving the other spaces blank is the same as specifying that you want the same width as height, no slant, no rotation, not flopped, not reversed, and US ASCII symbol set.

After you have filled out the back of the order form with the information about the fonts you want, be sure to list how many fonts on the front of the form. The price for these fonts is $5 apiece, with a minimum order of 8 fonts ($40).

Price list

CP/M software

1.   TURBO Pascal 3.0 $60.00
     This is the CP/M version of the compiler from Borland International that changed the standard for microcomputer Pascals. No longer available from Borland, but sold and supported by us by contract with Borland. Comes with a newly corrected edition of the Reference Manual suitable for insertion in a 5½ × 8½ binder.

Z-System operating-system modules

2.   -- NZ-COM 1.2d $70.00
     Formerly, the only way to upgrade your CP/M 2.2 computer to the Z-System was to download the assembly-language source

files from a bulletin board, decide what features you wanted, edit the source files, assemble them, load them into memory, and then save the results using DDT. NZ-COM spares you this. You run the MKZCM program, which combines the BIOS of your base CP/M system with the assembled ZRDOS 1.9 and ZCPR 3.4 segments included on this disk to make a dynamic Z-System for you automatically. Then you just type "NZCOM" to run your new system. Comes with a large suite of Z-System utilities and a manual by Jay Sage and Bridger Mitchell that takes you through the process step by step and introduces you to the Z-System. Highly recommended for all CP/M 2.2 users!

3.   ZCPR 3.4 (Source) $50.00
The assembly-language source code for the latest version of the Z-System command interpreter is available for those who want to upgrade static, bootable Z-System machines such as the SB180 or SB180FX, for those who wish to customize their systems the old way, or for anyone who wants to customize the command interpreter itself.

4.   Z3Plus 1.02 $70.00
Z3Plus is like NZ-COM (see above), but specifically designed for CP/M Plus (CP/M 3.0) computers such as the Commodore 128. It installs on your CP/M Plus system in seconds. This makes it possible, for the first time, to migrate from CP/M Plus to the Z-System, a feat thought to be impossible. Z3Plus comes with ZCPR 3.4, and keeps the CP/M Plus BDOS and all of its facilities.

Z-Tools
(Software development utilities)

5.   The Libraries (SYSLIB, Z3LIB, VLIB) [version 3.6] $100.00
These assembly-language subroutines furnish over 400 functions used to write ZCPR3 and ZRDOS utilities, making the re-invention of basic functions unnecessary in much the same way that high-level languages supply basic programming structures. The libraries work with 8080/Z80/NSC800/HD64180 targets. This package includes the relocatable objects in MicroSoft REL files, the online documentation (HLP files), the source code, and the manual.

Input/Output Package segments

6.   **I/OR** $40.00
     Our input/output recorder redirects output to/from console, to
     a printer, or to a default file, under the control of the ZCPR
     RECORD command. This allows you to send the output from a
     program to your printer or to a file, even if it's a CP/M program
     that has neither facility built into it. 15K segment, ZRDOS
     required.

7.   **B/Printer** $40.00
     This print spooler provides deluxe background single-file
     printing with no diminishing of your TPA size. 15K segment,
     ZRDOS required.

8.   **NuKey   2.03** $40.00
     This advanced function-key generator redefines keyboard keys
     with a special lead-in character. Different sets of key
     definitions may be saved as files and loaded for use with
     different applications and different terminals, allowing you to
     customize even programs that are not customizable and non-
     programmable terminals. Even multi-character function keys
     may be redefined!

Lasting-Value Software (Applications)

9.   **Discat 1.0** $40.00
     Our catalog program, Discat, efficiently maintains and catalogs
     floppy and hard-disk files for easy recall. Modular, menu-
     driven, fancy and easy to use, it comes with a loose-leaf, 67-
     page instruction manual.

10. **TERM III 1.0** $100.00
     This telecommunications program provides full facilities for
     communicating with other computers, terminals, and
     information services, including wide and local area
     networking, automatic phone answering and message handling.
     It is modular and menu-driven, with extreme flexibility for
     automatic operations.

Documentation

11. *ZCPR3: The Manual*   **$24.00**
    This handbook for users of ZCPR3 and its utilities is a 351-page, typeset, bound book by Richard Conn. The section on installing ZCPR is now obsolete with the invention of NZ-COM for CP/M 2.2 systems and Z3Plus for CP/M Plus systems, and the information dates back to ZCPR 3.0 (ZCPR 3.4 is the current release). However, it is still an invaluable reference to the host of utilities available for the Z-System, and we recommend its purchase to all new users of the Z-System.

12. *ZCPR3: The Libraries*   **$30.00**
    This manual describes VLIB, Z3LIB, and SYSLIB, three libraries of assembly language subroutines used to write Z-System utilities. It teaches structured, quick-program writing. Loose leaf, 310 pages. The cost of this manual is deductible towards later purchase of the source code and objects (see item 5 above). That is, you can buy this manual now and the source and objects will later cost $30 less.

13. *The Z-Letter*   **$24/12 issues U.S., $32 foreign**
    Our newsletter serves to spread the news of new developments in the community of CP/M and Z-System users, such as new programs, new machines, etc. The availability of old CP/M software and newsletters for particular machines is also tracked in these pages. We also help newcomers get the most out of their machines. Articles and letters are most welcome. **Subscriptions** are accepted for 12 or 24 issues. The rate is $24 for 12 issues, or $48 for 24 issues, for subscriptions mailed to U.S., FPO, or APO addresses. Subscriptions to other addresses are $32 for 12 issues, $64 for 24 issues. **Back issues** cost $2 apiece in the U.S., $2.67 foreign. All back issues are kept in print.

Laser-printer fonts

14. LaserJet fonts   **$5 per font, minimum order $40**
    Alpha Systems Corporation is selling SoftFonts that can be downloaded to a LaserJet Plus, LaserJet II, or other laser printers that emulate either of these. You specify the typeface,

size, orientation, fixed or proportional spacing, etc. (see *Ordering fonts*, above). We will send the fonts you have specified on a disk or disks. The fonts cost $5 apiece, with a minimum order of 8 fonts, or $40. If there are enough orders, we will expand the selection of typefaces in which fonts can be ordered. At present we will sell fonts in the following styles:

Typeface 1001 (Like Renaissance, Palatino)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 , . / ? ; : ' " [ ] ( ) + = _
- * & $ # ! @ % ^ '

Typeface 1002 (Boldface version of 1001)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 , . / ? ; : ' " [ ] ( ) + = _
- * & $ # ! @ % ^ '

Typeface 1003 (Italic version of 1001)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 , . / ? ; : ' " [ ] ( ) + = _
*- * & $ # ! @ % ^ '*

Typeface 1004 (Boldface italic version of 1001)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 , . / ? ; : ' " [ ] ( ) + = _
*- * & $ # ! @ % ^ '*

Typeface 1005 (Like Commercial Symbols)

○ ✳ ✟ ★ ☆ ✩ ◆ † ≃ ʼ

Typeface 1006 (Like Geo, Bauhaus)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 , . / ? ; : ' " [ ] ( ) + = _
- * & $ # ! @ % ^ '

Typeface 1007 (Like Park Avenue Script)

A B C D E F G H I J K L M N O P Q R S T U V W
X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 , . / ? ; : ' " [ ] ( ) + = _
*- * & $ # ! @ % ^ '*

Typeface 1008 (Like Hobo)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 , . / ? ; : ' " [ ] ( ) + = _
- * & $ # ! @ % ^ '

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Alpha Systems Corporation
711 Chatsworth Place
San Jose, California 95128

This issue of The Z-Letter was originally printed with pages 5-1/2 x 8-1/2 inches, folded in the middle, and saddle-stapled. Starting with issue 7, The Z-Letter is 8-1/2 x 11, printed in two columns, suitable for insertion in three-ring binders. Accordingly, this reprint has been enlarged so that each page is the same size as the new format, so that it may be placed in the same binders as newer issues.

A limited supply of the original printing, in the original size, is still availble at the regular back-issue price.