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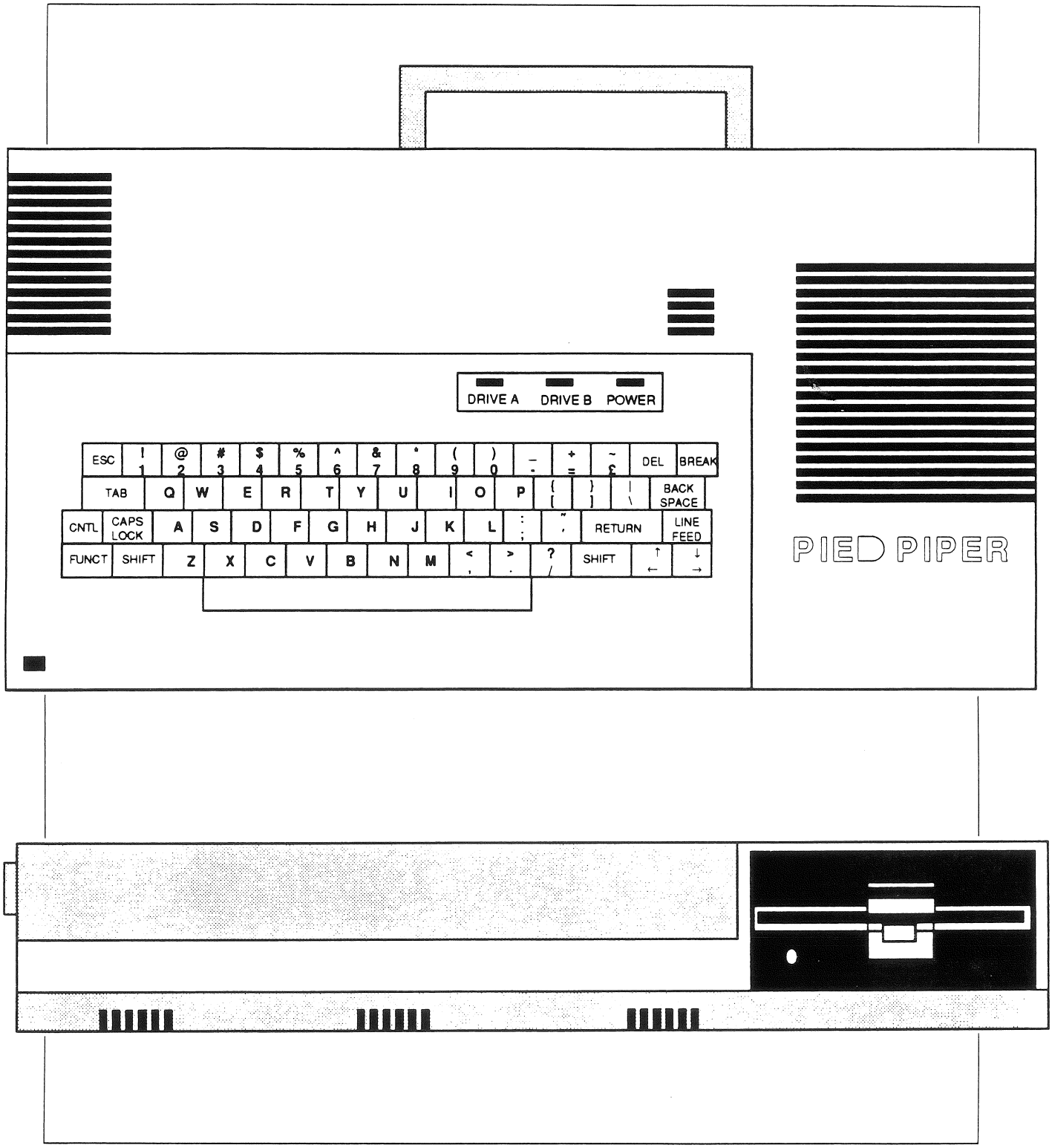
The Z-Letter

Newsletter of the CP/M and Z-System community

Number 17 November 1991



The Pied Piper computer

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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 © 1991 by the editor: David A.J. McGlone, Lambda Software Publishing, 720 S. Second Street, San Jose, California 95112-5820, phone (408) 293-5176.

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.

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Material may be submitted on 5¼" diskette in almost any format, on 8" diskette, or printed or typewritten on clean white unlined paper. The deadline for submission of material is 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, the subscription will be extended for one issue.

Letter policy

The Z-Letter reserves 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 Lambda Software Publishing upon receipt.

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Index available

The Z-Letter is indexed annually. The index for issues 1-5 appeared in issue 5. The index for issues 1-18 will be published in February 1992.

BUILDING THE YASBEC COMPUTER

by Paul Chidley
II: Boot/Monitor EPROM manual

This manual is intended for those who are familiar with small microcomputer systems and microcomputers. Included are descriptions of each command with examples, and terminal configuration information. This monitor is intended for primitive access to the Z180 microprocessor, I/O, memory, and disk devices.

Terminal Configuration

The YASBEC Boot/Monitor EPROM is designed to be executed with a terminal device connected to the ASCI Port 1 of the YASBEC computer. If you intended to use the monitor portion of the EPROM, your terminal must be preset to the following values:

Baud Rate:	one of the following: 300, 600, 1200, 2400, 4800, 9600 or 19.2Kbaud
Bits:	8
Stop bits:	1
Parity:	none

EPROM Operations

Entry to the Boot/Monitor EPROM is through power-up or the RESET switch. At power-up or RESET, the bootstrap loader searches the physical memory for two 32K memory blocks. Once it finds two such blocks, they are mapped into the logical memory map, and the loader is relocated to RAM beginning at logical address 8000H.

If there is no bootable disk in floppy drive A, the bootstrap attempts to find a bootable SCSI device at SCSI bus address 0, LUN 0. If there is no bootable device there, the loader will again try the floppy drive. This attempt to locate a bootable device will repeat up to 15 times.

In addition, if either the floppy drive or SCSI controller is not present, the loader will not attempt to boot from that device. If the controller is present, but an invalid boot sector is successfully read, no more attempts will be made to boot from that device.

If no bootable device can be found, or the user presses the <RETURN> key, the monitor portion of the EPROM will be entered. The Monitor is relocated to E000H, and will begin execution.

The Monitor first attempts to determine the baud rate of the terminal. Beginning with 19.2K, and working down to 300 baud, the Monitor will look for a <RETURN> from the terminal. Once it obtains a <RETURN>, the sign-on message will be displayed.

The baud rate of your terminal determines how many times you will have to press the <RETURN> key. The lower the baud rate, the more keypresses are required.

NOTE: because the Monitor must auto baud your terminal, you will see no output until you press <RETURN> and the Monitor can determine your baud rate.

The Monitor prompt displays the physical bank number of the lower 32K of logical memory, from 00H to 1FH. Any of the physical banks may be mapped into the lower logical 32K with the B command.

Both the boot and monitor portions of the EPROM code are sensitive to the system clock rate. If you should change your system clock, you will require a new EPROM.

Logical disk track and sector values are used by the Monitor for disk access. Physical track and sector numbers are the actual track and sector locations on an YASBEC format disk.

For single-sided disks, logical track/sector numbers are the same as the physical track sector numbers. However, on double-sided disks, the physical track/sector numbers are different from the logical values:

48 tpi, double-sided disks (40 tracks/side):

Logical tracks are numbered from 00H through 4FH, even-numbered tracks on side 0, and odd-numbered tracks on side 1. Physical tracks are numbered from 00H through 27H on each side.

Logical sectors are numbered from 01H through 0AH, each side. Physical sectors are numbered from 11H through 1AH, each side.

96 tpi, double-sided disks (80 tracks/side):

Logical tracks are numbered from 00H through 9FH, even-numbered tracks on side 0, and odd-numbered tracks on side 1. Physical tracks are 00H through 4FH on each side.

Logical sectors are numbered from 01H through 05H, each side. Physical sectors are numbered from 11H through 15H, each side.

Each command, or command with trailing parameters, must be terminated with a <RETURN>. In the following examples, the <RETURN> key will not be shown, although nothing will happen until you press <RETURN>.

Parameters may be separated with either blanks or commas.

Monitor Commands

Following are descriptions of each command, required parameters (if any), and examples of each command. Some common features of the Monitor:

- <CTRL-S> is used to stop or start a console display
- <CTRL-X> is used to exit a function in progress
- All parameters require hexadecimal values
- Address parameters can contain 1 to 4 digits, while byte parameters can contain 1 or 2 digits.
- SCSI block number parameters are entered as two parameters: a most significant byte, and a least significant word. For example, 012345 would be entered as either 01 2345 or 01,2345.

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HELP display

Syntax: ? or /

Displays a list of Monitor commands and their required parameters on the console.

Display this help text	-> ?
ASCII table	-> A
32K Bank select	-> B[bank]
Call subroutine	-> C[addr]
Dump memory	-> D[from] [until]
Exchange byte	-> E[from] [until] [byte] [with]
Fill memory	-> F[from] [until] [hex]
Go to routine	-> G[addr]
Hex math + - *	-> H[1st hex] [2nd hex]
Input from port	-> I[port number]
Move memory	-> M[from] [until] [to]
Output to port	-> O[port number] [byte]
Printer toggle	-> P
Query memory for 1-8 bytes	-> Q[from] [until] [1-8 bytes]
Read floppy disk	-> RF[addr] [drv] [trk] [sec]
Read SCSI disk	-> RS[addr] [SCSIaddr] [LUN] [block]
Set memory	-> S[addr]
Test memory	-> T
Upload Intel HEX file	-> U
Compare memory blocks	-> V[from] [until] [with]
Write floppy disk	-> WF[addr] [drv] [trk] [sec]
Write SCSI disk	-> WS[addr] [SCSIaddr] [LUN] [block]
Z-system boot	-> Z

ASCII table display

Syntax: A

Displays an ASCII table on the console.

BANK select

Syntax: B[bank number]

Maps in one of 32 possible 32K banks into the lower 32K of logical memory. The current bank number is displayed in the command prompt.

B0	Maps the EPROM at logical address 0000H.

CALL a subroutine

Syntax: C[addr]

Permits calling a subroutine by entering C followed by an address value. Upon returning from the subroutine, the Monitor will be in the command mode. For example, to set a breakpoint, insert the hex code for a RET instruction (C9H) at the desired breakpoint address using the L command. When the program reaches the breakpoint address, program execution will cease, and return to the Monitor command mode.

C10F0	Executes a subroutine at address 10F0H, then returns to the command mode.

DUMP Memory Contents

Syntax: D[from] [until]

The contents of memory beginning at [from] through the [until] address will be displayed on the console.

D0100 01FF	Displays contents of memory from 0100H through 01FFH as hexadecimal values plus any printable ASCII characters.
D470	Displays contents of memory from 470H through 4EFH.
D	Displays 256 bytes memory beginning from the last displayed address.

EXCHANGE byte

Syntax: E[from] [until] [byte] [with]

Memory bytes beginning at [from] through [until] with the value [byte] will become the new value [with]. Only those bytes matching [byte] will change.

E100 1FFF 55 AA	Stores AAH in all memory locations from 1000H until 1FFFH that contain 55H.

FILL Memory

Syntax: F[from] [until] [hex]

Fill memory beginning at [from] through [until] with the hexadecimal value of [hex].

F1000 1FFF 55	Store 55H in all memory locations from 1000H through 1FFFH.

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GO anywhere

Syntax: G[addr]

Executes a program beginning at [addr].

G0100	Jump to address 0100H, and execute a program.
GE000	Jump to the Monitor entry point (restart the Monitor program).

HEX math + - *

Syntax: H[1st hex] [2nd hex]

Performs addition, subtraction and multiplication of two one to four digit hexadecimal numbers. The results are displayed as follows.

H10 20	Displays sum, difference and product of the two numbers: 0010 + 0020 = 0030 0010 - 0020 = FFF0 0010 * 0020 = 0200
H20 10	Displays sum, difference and product of the two numbers: 0020 + 0010 = 0030 0020 - 0010 = 0010 0020 * 0010 = 0200

INPUT from port

Syntax: I[port number]

Reads the contents of the I/O port at the [port number] address, and displays the value on the console. The port number specified may use the entire 64K I/O space of the Z180. Both the hexadecimal value and binary value of the I/O port are displayed.

I84	Input and display the byte at I/O port 84H. Display it in both hexadecimal and binary forms.

MOVE Memory

Syntax: M[from] [until] [to]

Moves the contents of memory beginning at [from] through [until] to a new memory location beginning at [to]. Overlapping source and destination ranges are handled properly.

M1000 1FFF 3000	Move memory contents from 1000H through 1FFFH to an area of memory beginning at 3000H (through 3FFFH).

OUTPUT to Port

Syntax: O[port number] [byte]

Writes value of [byte] to I/O port [port number]. The port number specified may use the entire 64K I/O space of the Z180.

O84 10	The value of 10H is written to I/O port 84H.

PRINTER Toggle

Syntax: P

Toggles the printer echo flag on and off. NOTE: make sure your printer is turned on before entering this command, or your system will appear to lock up.

QUERY Memory for Byte(s)

Syntax: Q[from] [until] [byte1] [byte2] ... [byte8]

Search for a one to eight byte sequence in memory beginning at [from] through [until].

S1000 1FFF E5	Search memory from 1000H through 1FFFH for any bytes containing the value E5H, and display address if any are found.
S1000 1FFF 3E 11 32	Search memory from 1000H through 1FFFH for a three byte pattern containing 3E, 11 and 32 in the specified sequence. Display addresses of those that are found.

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READ Floppy Disk Sector

Syntax: RF[addr] [drv] [trk] [sec]

Reads one sector from the specified drive, track, and sector into memory beginning at [addr]. Drives are specified by numbers from 0 through 3 (drives A through D). Tracks are specified in the following manner:

48 tpi, single-sided: Tracks 0 - 27H
48 tpi, double-sided: Tracks 0 - 4FH
96 tpi, single-sided: Tracks 0 - 4FH
96 tpi, double-sided: Tracks 0 - 9FH

Sectors are numbered from 01H through 1AH (48 tpi disks) or 01H through 05H (96 tpi disks).

This command will retry up to three times to read the requested sector. If all attempts fail, the FDC status byte, unit number, track and sector will be displayed, along with a text message explaining the error.

RF100 0 1 1	Read one sector from drive A, track 01H, sector 01H, into memory beginning at 0100H.
RF100 1 4F A	Read one sector from drive B, track 4FH, sector 0AH (10), into memory beginning at 0100H.

READ SCSI disk block

Syntax: RS[addr] [SCSIaddr] [LUN] [block]

Reads one SCSI block from the specified SCSI address, LUN and block number into memory beginning at [addr].

The SCSI block number is entered in two parts; most significant byte, and least significant word. For example, to read block 123456 into memory starting at 100H from the SCSI drive at address 0, LUN 1, the following command would be used: **RS100,0,1,12,3456**.

This command will retry up to two times to read the requested block. If both attempts fail, the SCSI status block and status byte will be displayed.

RS100 2 1 0 0	Read block 0,0 into memory at 100H from SCSI device 2, LUN 1.

SET Memory

Syntax: S[addr]

Permits changing memory contents beginning at location [addr]. To change the value, enter two hexadecimal digits, or a single ASCII character preceded by a single quote ('). The command will then present you with the following address and it's contents. Pressing <RETURN> will proceed to the next location without changing the current location. To back up to the prior location, enter a minus sign. To exit back to the Monitor command mode, enter a period, or any other character other than those mentioned above.

S0100 Begin entry of hex or ASCII characters at address 0100H.

TEST Memory

Syntax: T

This command displays the results of the boot up RAM memory test. It displays how much RAM you have, and where it is.

T Displays the RAM memory results, as both a total amount, and a bitmap.describing the location of each 32K block. Each 1 in the bitmap represents a 32K block of RAM. Ordering is from high memory on the left to low memory on the right.

256K of RAM. Bit map is as follows:
00000000000000000000111111110000

Upload Intel HEX file

Syntax: U

Uploads an Intel format hex file from a computer or terminal connected to the console port into memory. This command returns to the prompt after an end of file record has been received, or an invalid checksum has been detected.

COMPARE Memory

Syntax: V[from] [until] [with]

Compare (verifies) the contents of memory beginning at [from] through [until] with the contents of a second block of memory beginning at [with]. Only those addresses where a match is not found are displayed at the console. Nothing is displayed where a match occurs.

V1000 3FFF 4000 Compares the contents of memory from 1000H through 3FFFH with the memory contents from 4000H through 7FFFH.

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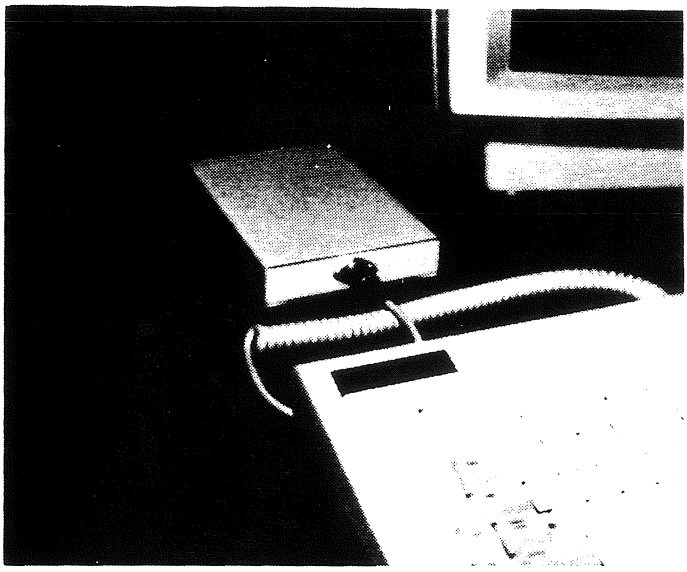

MODELS

DM-1 FOR BIGBOARD

Cable ready to plug directly into Bigboard's Keyboard connector. Bell, Reset-in, Reset-out, and Type Ahead Buffer options available with hardware jumpers on host PC board.

DM-2 FOR XEROX 820

Cable ready to plug directly into Xerox 820 Keyboard connector. Bell, Reset-in, Reset-out, and Type Ahead Buffer options available with hardware jumpers on host PC board.

DM-3 FOR KAYPRO

Cable ready to plug directly into Kaypro's Keyboard connector. AC power adapter included.

DM-4 FOR FRANKLIN ACE 1000

Cable ready to plug directly into Franklin Ace 1000 Keyboard connector.

Reset-out, and Type Ahead Buffer.

DM-5 UNIVERSAL†

ASCII parallel or serial data is presented on a DB-25P connector. The KEYUP interface can be adapted to a variety of computers simply by constructing the proper cable.

Usable functions:

- **Reset-in** Host reset of KEYUP and keyboard.
- **Reset-out** KEYUP reset of host computer using (Alt-Cnt Del).
- **Bell** KEYUP bell driven by host computer.
- **Type Ahead Buffer** Requires ACK signal from host computer.
- **Serial Data** KEYUP can transfer serial data to host computer at 300, 1200, 4800, and 9600 baud. TTL signal level.

The above functions are activated in neg. or pos. TTL logic on the DB-25P connector.

DM-6 FOR APPLE II

Cable ready to plug directly into Apple II Keyboard connector.

Reset-out.

Type Ahead Buffer options available with hardware jumperson Apple II PC board.

WRITE to Floppy Disk Sector

Syntax: WF[addr] [drv] [trk] [sec]

Writes one sector to the specified drive, track, and sector from memory beginning at [addr]. Drive, track and sector parameters are specified in the same way as the READ Disk Sector command.

This command will retry up to three times to write the requested sector. If all attempts fail, the FDC status byte, unit number, track and sector will be displayed, along with a text message explaining the error.

WF1000 0 1 1	Write one sector to drive A, track 1H, sector 1H, from memory beginning at 1000H.
WF100 1 4F A	Write one sector to drive B, track 4FH (79) sector 0AH (10), from memory beginning at 0100H.

WRITE to SCSI disk block

Syntax: WS[addr] [SCSIaddr] [LUN] [block]

Writes one SCSI block to the specified SCSI address, LUN and block number from memory beginning at [addr].

The SCSI block number is entered in two parts; most significant byte, and least significant word. For example, to write from memory starting at 100H to block 123456 on the SCSI drive at address 0, LUN 1, the following command would be used: **WS100,0,1,12,3456**.

This command will retry up to two times to write the requested block. If both attempts fail, the SCSI status block and status byte will be displayed.

WS100 2 1 0 0	Writes from memory at 100H to block 0,0 on SCSI device 2, LUN 1.

Z-system boot

Syntax: Z

Typing Z followed by <RETURN> will attempt to locate a bootable device in both the first floppy drive, and the SCSI device at SCSI bus address 0, LUN 0. Entering a <CTRL-C> will also start the boot operation (this is equivalent to pressing the RESET switch).

Ampro Z80 Little Board/PLUS
by Davidge

FEATURES

Little Board/PLUS is a complete 8-bit, Z80-based single board microcomputer. It includes all the circuitry, software, and firmware necessary to construct a functional CP/M-based computer system. Some of the main features are:

- 4MHz Z80A 8-bit microprocessor
- 64K bytes dynamic RAM, 4K-32K EPROM
- Two spare counter/timer channels
- Floppy controller capable of controlling from one to four single- or double-sided, single- or double-density, 40- or 80-track mini or micro floppy drives.
- Two RS232C serial ports
- One Centronics printer port
- SCSI/PLUS multi-master I/O expansion bus:
  - SASI Disk/Tape controller compatible
  - ANSC X3T9.2 (SCSI) compatible
  - Multiple Little Board networking
  - Simple bi-directional I/O (17 lines)
- Mounts directly to a 5¼" disk drive
- Minimum external components
- Power connector and voltages compatible with 5¼" disk drive.

FUNCTIONAL DESCRIPTION

CPU, Memory and Timing
The heart of the Little Board/PLUS is a Z80A 8-bit microprocessor operating at 4 MHz. All system functions are based on a single 16 MHz master clock. System RESET is provided in two ways: upon power-up and via an external RESET switch.

Two types of memory are present: EPROM and RAM. A 28-pin EPROM socket provides from 4K to 32K bytes of firmware space. Jumpers are used to program the socket for a 2732, 2764, 27128, or 27256 type EPROM. The EPROM can be enabled and disabled by software.

System RAM consists of eight 64K x 1 bit dynamic RAM devices. Control circuitry for the RAM is entirely digital (no one-shots or R-C components) and provides a high degree of reliability.

A Z80 Counter Timer Circuit (CTC) provides four programmable counter or timer channels. Two of the CTC channels provide the baud rate used by the two serial I/O ports. The other two CTC channels are available for use as programmable timers in applications programs, for real-time clock functions, etc.

Serial Ports
A Z80 Serial Input/Output Controller (SIO/0) provides two fully programmable, asynchronous serial ports. Each channel has four of the standard RS-232C signals: TxD, RxD, RTS, and CTS. These signals are sufficient for interfacing most serial printers, modems and terminals.

In those cases where other signals are required for one of the serial ports, handshaking signals can be borrowed from the second port (if not needed by that port). Polarity and use of the handshaking signals is defined by the software.

Programmable baud rate clocks are supplied by the CTC for baud rates up to 9600 baud. Additional circuitry provides baud rates of 19.2K and 38.4K baud, for Port A only. Since the two serial ports are otherwise identical, either can be programmed as a terminal, modem, serial printer, or other RS-232C interface.

Parallel Printer Port
The parallel port provides the 10 essential signals of a Centronics-type printer interface: Data Bits 1-8, Data Strobe, and Busy. Both the Data Strobe (output) and Busy (input) handshake protocols are defined by software.

Floppy Disk Controller
A Western Digital 1772 floppy disk controller device provides all the functions required to interface with standard 5¼" "mini" - and most 3½" "micro" - floppy disk drives. The 1772 includes the following capabilities within a single LSI device:

- Digital phase locked loop
- Digital write precompensation
- Motor on start/stop delay
- Software controlled step rates

Timing for the floppy disk interface is derived directly from the 8 MHz system clock, without delay lines, R-C time constants, or one-shots. This again results in a very high degree of system reliability.

SCSI/PLUS Multi-Master Bus
A 50-pin "ribbon cable bus" interface which meets the specifications for the popular Small Computer System Interface (SCSI) - formerly called "SASI" - provides a general purpose multi-master I/O expansion bus. All SCSI Initiator and Target functions are fully supported, including bus arbitration and disconnect/reselect.

In addition, Little Board/PLUS supports the initiator function of AMPRO's innovative SCSI/PLUS extension to SCSI. This allows connection to up to 64 SCSI/PLUS Target devices, rather than the usual eight device limit of SCSI.

Applications include both direct and shared use of a wide variety of controllers and devices, as well as tightly coupled Little Board networks. For example, one or more Little Boards, a SCSI Winchester controller, and modules providing calendar/clock,serial port expansion, RAM disk, etc. might all coexist on the same SCSI/PLUS bus.

The 17 bidirectional I/O signals of the SCSI/PLUS interface may also be used as general purpose, software controlled digital I/O lines, without SCSI compatibility. In this case, the boards's 8-bit SCSI bus ID input register can serve as an additional 8 bit input port.

OEM PRICE LIST
AMPRO Z80 LITTLE BOARD

Manufactured under license by Davidge

HARDWARE

A60060-2	Ampro Series 1B Little Board Plus Computer	250.00
A60060-3	Ampro Little Board without SCSI	240.00
A60156	Project Board/80	75.00

SOFTWARE

A60101-1	CP/M and ZCPR3 (5¼", 40 track disks)	65.00
A60101-2	CP/M and ZCPR3 (5¼", 80 track disk)	65.00
A60101-3	CP/M and ZCPR3 (3½" disk)	75.00
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A60103-2	CP/M, ZCPR3, BIOS Source (80 track disks)	100.00
A60103-3	CP/M, ZCPR3, BIOS Source (3½" disk)	110.00

LITERATURE

A74010	Little Board/Plus Technical Manual	15.00
A74025	Project Board/80 Technical Manual	10.00
A74006	Z80 System Software User's Manual	15.00
A74015	Z80 Hard Disk Software User's Manual	15.00
A74022	Z80 Hard Disk Backup Software Technical Manual	10.00
A74011	CP/M 2.2 Manual	15.00

REPAIR SERVICE

Flat rate repair for any serviceable Little Board	75.00

VOLUME DISCOUNTS

10-24 units - 5%; 25-49 - 10%; 50-99 - 15%; 100+ - 20%

Prices are in US dollars. All products shipped FOB Buellton, CA. Prices effective 10-1-90 and subject to change without notice. All orders are shipped UPS Blue, C.O.D. unless other arrangements made at time of order.

Davidge Corporation 94 Commerce Drive, P.O. Box 1869, Buellton, CA 93427 (805) 688-9598 FAX (805) 688-3306

Physical Track and Sector Tables

The following tables list the physical track and sector organization of YASBEC-formatted disks. For single-sided disks, logical and physical track and sector numbering is identical.

48 tpi Single-sided, Physical Disk Format

Track	Sector
00	01 02 03 . . . 08 09 0A
01	01 02 03 . . . 08 09 0A
02	01 02 03 . . . 08 09 0A
.	. . . .
.	. . . .
25	01 02 03 . . . 08 09 0A
26	01 02 03 . . . 08 09 0A
27	01 02 03 . . . 08 09 0A

96 tpi Single-Sided, Physical Disk Format

Track	Sector
00	01 02 03 . . . 08 09 0A
01	01 02 03 . . . 08 09 0A
02	01 02 03 . . . 08 09 0A
.	. . . .
.	. . . .
25	01 02 03 . . . 08 09 0A
26	01 02 03 . . . 08 09 0A
27	01 02 03 . . . 08 09 0A

48 tpi Double-Sided Physical Disk Format

Side 0		Side 1	
Track	Sector	Track	Sector
00	11 12 13 . . . 18 19 1A	00	11 12 13 . . . 18 19 1A
01	11 12 13 . . . 18 19 1A	01	11 12 13 . . . 18 19 1A
02	11 12 13 . . . 18 19 1A	02	11 12 13 . . . 18 19 1A
.	. . . .	.	. . . .
.	. . . .	.	. . . .
25	11 12 13 . . . 18 19 1A	25	11 12 13 . . . 18 19 1A
26	11 12 13 . . . 18 19 1A	26	11 12 13 . . . 18 19 1A
27	11 12 13 . . . 18 19 1A	27	11 12 13 . . . 18 19 1A

Logical tracks are numbered 00H through 4FH, with even numbered tracks on side 0, and odd numbered tracks on side 1. Logical sectors are numbered 00H through 0AH.

96 tpi Double-Sided Physical Disk Format

Side 0						Side 1					
Track	Sector					Track	Sector				
00	11	12	13	14	15	00	11	12	13	14	15
01	11	12	13	14	15	01	11	12	13	14	15
02	11	12	13	14	15	02	11	12	13	14	15
.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.
4D	11	12	13	14	15	4D	11	12	13	14	15
4E	11	12	13	14	15	4E	11	12	13	14	15
4F	11	12	13	14	15	4F	11	12	13	14	15

Logical tracks are numbered 00H through 9FH, with even numbered tracks on side 0, and odd numbered tracks on side 1. Logical sectors are numbered 00H through 05H.

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2. CP/M Version 2.2 **$25**
Bought the hardware, and don't have the operating system? Lambda is now an official distributor of CP/M. If I have the boot disk for your machine, I will supply CP/M in that form; otherwise, get the boot disk from your user group, but buy the license from me to make it legal. (DRI)

3. MagicIndex Version 3.00 **$100**
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5. Eagle Computer Users Group newsletter July 87 to October 90 **$15**
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6. *The Z-Letter* (back issues) **$3/issue (US, Canada, Mexico), $5/issue (elsewhere)**
Past issues of our newsletter for the CP/M and Z-System world. Issues 1-6 are available both in the original 5½ X 8½" format, and enlarged to the 8½ X 11" format of issues 7-present, until copies of the older format run out. (Lambda)

7. *The Z-Letter* (subscription) **$15/year (US), $18/year (Canada & Mexico), $45/year (all other)**
Published monthly. (Lambda)

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

9. Z-Fonts **$2 per font plus $2 per disk**
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I can copy most soft-sector (both single- and double-density) 5¼" CP/M formats, including Apple II CP/M; also 8". Sorry, no hard-sector formats except Northstar, no 3½" formats, and no Commodore CP/M formats yet. Copies can be CP/M to CP/M, CP/M to MS-DOS, or MS-DOS to CP/M; specify the format of the disks you send, and the format in which you want the copies. Both originals and copies will be returned.

Please note that this is a service provided to the CP/M and Z-System community. I assume that you are honest, and that you are the legal owner of material you ask me to copy. I refuse to accept any responsibility should this turn out not to be the case.

Note also that the price quoted above is for software you purchase elsewhere, or data diskettes you own. **There is no charge for copying software you buy from me in the format of your choice!** Software bought from Lambda will be sent to you in the disk format you request at no cost but the price listed for the software, so don't order Spellbinder and send me extra money for disk copying.

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SCRIPT OF THE MONTH CLUB

Scripts for using Backgrounder ii
by Jay Sage

Last issue I presented some scripts for dealing with Bridger Mitchell's DosDisk program. In that column I mentioned Bridger's other program, BackGrounder ii (or BGii for short). When loaded, BGii allows you to have two active CP/M tasks (called the upper task and the lower task) plus an additional background task in which only special BGii commands can be used.

The first script this month is the one I use to load BGii. This is a somewhat complicated one; I will present it first and then explain its parts.

```
BG,ON
  QUIET ON;
  PATH /d=bg;
  /mkswap;
  IF ~EX a0:!!bg.swp;
    ECHO n%>o room for swap file;
  ELSE;
    LoadBG;
  FI;
  PATH /d=;
  QUIET OFF
```

I normally keep the Z-System quiet flag turned off, because I prefer to see status messages from the programs I run. My terminal is fast enough that the time required to write the messages is not an issue, and the appearance of the messages does not disturb me. While BGii is loading, however, I prefer to keep down the clutter. As I write this, I am no longer sure why I care in this case, but that's how the script stands in my ALIAS.CMD file.

The second line sets up a ZSDOS search path to the BG: directory, which is where I keep my BGii files. Instead, I could log into that directory to load BGii, but then, even if the script later returned to the original directory, this would affect only the upper task; the lower task would still be in the BG: directory. There would be other ways to get around that, but using the ZSDOS search path solves the problem nicely.

The next command in the script calls the alias MKSWAP. BGii requires what is called a swap file. This contains a lot of information about a task, including the complete memory image. When BGii swaps tasks, it swaps the data in the swap file as well. MKSWAP attempts to create an initialized swap file if one does not exist already. Here is the MKSWAP script:

```
MKSWAP
  IF ~EX a0:!!bg.swp;
    PutBG -d=a -k=92;
  FI
```

I don't remember why I keep it as a separate script. It may be that the command line became too long if I included its commands in the main BG script. It is often necessary to break long aliases into smaller pieces to avoid command-line overflow.

MKSWAP first checks to see whether a swap file (its name is !!BG.SWP) already exists on the RAM disk (A0:). If it does not, then the BGii utility PUTBG is invoked and told to create the file on drive A with a size of 92K. My SB180 has a very small RAM disk, and I specify a swap file a little smaller than the default size so that I have enough room for other critical files on the RAM disk, such as ARUNZ and ALIAS.CMD. This slightly reduces the TPA available in the lower task.

When the main BG script resumes, it checks to see whether MKSWAP was successful in creating the swap file (or at least in making sure that one is present). If the RAM disk did not have room for the 92K swap file, then PUTBG would have terminated without making the file. If the file is still not there, an error message is given. Otherwise the script continues with the LOADBG command. This is the central command of the script; LOADBG brings BGii into operation. BGii then runs its own stand-alone startup alias (which we will not discuss here). When that is complete, control returns to the commands in the BGii

script, at which point the ZSDOS search path is cleared and the quiet flag is turned off.

In case you are wondering why the BG script did not first check to see whether BGii was already running, the answer is that BGii provides a resident command with the name **bg** that shows the BGii commands that are available. So, if I try to use this script to load BGii when it is already running, I will get the BGii help screen instead.

Although I generally leave BGii running all the time on my system, there are occasions when I want to remove it (it does reduce my TPA by 2.75K). For that I use the following script:

```
OFF=BGOFF
  IF ~bg;
    ECHO BG%>ii not running;
  ELSE;
    BG OFF;
    IF ~bg;
      ShCtrl c;
      JetLdr b0:sys rcp.zrl;
      ZErr;
      LSh;
    FI;
  FI
```

If BGii is not running, then a message is displayed. Otherwise, the BGii command **BG OFF** is run. BGii then begins removing itself from memory. If there are tasks running at the time, then it issues a warning and gives the user a change to change his or her mind. The next command in the script tests to see whether BGii has actually been removed from memory. If it has, the script restores the default operating environment. It clears any shells that were running under BGii (such as the BGii history shell). It then uses JETLDR to reload the resident command package (RCP). Since BGii already provides all the commands in the RCP, I allow BGii to reclaim the RCP space for itself. Otherwise I would have lost 4.75K of TPA when BGii was running. The last step is to reload the LSH history shell.

If you followed all those scripts, your mind must be quite weary by now, so I am going to end the column with a simple script. Sometimes I forget whether BGii is running or not. The following script takes advantage of a feature introduced with ZCPR33. Essentially all illegal commands, such as those with question marks, asterisks, or explicit file types, are passed on to the extended command processor (ARUNZ in this case). This allows me to use the very logical name **BG?** for this script.

```
BG?
  IF bg;
    ECHO bg%>ii is running;
  ELSE;
    ECHO bg%>ii is %<not%> running;
  FI
```

This script just echoes one of two possible messages depending on whether IF.COM detects the presence of BGii.

See you all next month!

Alpha Systems Corporation

711 Chatsworth Place, San Jose, CA 95128, phone (408) 297-5994

1. TURBO Pascal Version 3.0 **$60**

This is the CP/M version of the compiler that changed the standard for Pascal. No longer available from Borland directly. Comes with loose-leaf Reference Manual for insertion into a 5½ x 8½" binder.

2. NZ-COM Version 1.2d **$70**

Once 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 BBS, edit them, and assemble them to a binary file. NZ-COM spares you this. The MKZCM program included combines the BIOS of your CP/M system with ZRDOS 1.9 and ZCPR 3.4 to make a dynamic Z-System for you automatically. Then you 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. If you're running CP/M 2.2 or a static Z-System, you need this.

3. ZCPR 3.4 (Source) **$50**

The assembly-language source code for the latest version of the Z-System command interpreter is available for anyone who wants to customize his system the old way, or customize the command interpreter itself.

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Our input/output recorder redirects output that would otherwise go to the console or the printer to the files CONSOLE.FIL and PRINTER.FIL, respectively. This allows you to send the console or printer output to a file, even if it's a CP/M program that doesn't have that option. The console and printer functions are turned on and off separately. 1.5K IOP segment, ZRDOS required.

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A PROGRAMMER CORNERED

Keeping a data base of subscribers

The last installment of this column was in issue 13. I apologize for the delay, but I've been a bit too busy *using* the customer data base to write about it! Here, as promised, is a description of it.

My data base is divided into two separate files, CUSTOMER and ZLTRSUBS. The reason for this is that a single customer can have any number of subscriptions; for instance, his current subscription may run from issue 7 to issue 18, and he may have already renewed with a $15 check for issues 19 through 30. Each of these is a separate transaction, and to represent them in the CUSTOMER file by, for instance, an EXPIRES field is to throw away information. Conversely, if the fields of ZLTRSUBS were put into CUSTOMER twice, to allow for two subscriptions, the extra space would be wasted for most customers and would not be enough for any customer with more than two subscriptions. Taking such items that can occur any number of times and putting them into files of their own, linked to the original file, is called *normalizing the data base.*

Here are the fields in CUSTOMER and ZLTRSUBS, filled in with data for an imaginary customer:

CUSTOMER

K	SUOMINETAAVE50
NAME	Taavetti Suominen
COMPANY	The Lion's Library
ADDRESS1	149 W. Hilliard Lane
ADDRESS2	Eugene OR 97404
COUNTRY	
PHONE	(503) 555-8610
DATE	19910415

ZLTRSUBS

K	SUOMINETAAVE50
BEGINS	7
ENDS	18
AMOUNT	1500
DATE	19901216

The CUSTOMER file could be further normalized. A customer could have any number of phone numbers, such as a home phone, an office phone, a car phone, a fax number, and a BBS number. To normalize this, we would eliminate the PHONE field from CUSTOMER, and create a file PHONE with fields K, NUMBER, TYPE (where type could be home, office, BBS, car, FAX, or other values identifying the purpose or location of the phone number), and DATE.

All files should have a DATE field. For files which represent a transaction that occurred at a particular time, such as the exchange of money that paid for a customer's subscription, the DATE field records the time of the transaction and does not change. For other files, the DATE field records the last time the information in each entry was verified. In the case of our imaginary subscriber above, he paid for his subscription on December 16, 1990. The date in the CUSTOMER file, however, shows that the address and phone number given were accurate at a later date of April 15, 1991, possibly when he called, sent a letter, or ordered something. Without a DATE field, we have no idea how current the information in a record is.

The files CUSTOMER and ZLTRSUBS are linked by the field K, which is a key field in both files. K is derived from the first seven letters of the last name plus the first five letters of the first name plus a number from 00 to 90, default value 50, which is used to distinguish keys when coincidences occur which would otherwise create identical keys. This form of key was chosen to be easy to remember and to alphabetize the records by last name and first name when they are retrieved in order by the key, as discussed in issue 12. For every entry in CUSTOMER there can be any number of entries in ZLTRSUBS, from 0 on up. In computerese, we say there is a *0-to-many relationship* between CUSTOMER and ZLTRSUBS. There would be 0 entries in ZLTRSUBS for a customer who did not have a subscription to *The Z-Letter*, but was in the file

CUSTOMER for some other reason. Just because some entries in CUSTOMER are subscribers doesn't mean they all are; the file CUSTOMER can serve as the name, address and phone-number record for any number of data bases.

Programs that deal with our subscription data base should deal with both files at once. While we could type the information into each file separately, this invites errors such as putting a different key in one file, or updating one file and not the other.

When entering the data for a subscription, we should have a program that lets us type in the customer data and subscription data all at once. This program would then generate the key field K automatically and check to see whether such a key already existed in either CUSTOMER or ZLTRSUBS. If the key already existed, the program should display the customer record for the existing key and ask us whether we wanted to replace the displayed information with the new information, or create a new record. If we answered the latter, the 50 in the K field generated should be replaced by 25 or 75, depending on whether the new name precedes or follows the old name, then the program should look for that key, etc., until no matching keys are found or we tell it to replace an existing record with our new one. Then the program should update both the CUSTOMER and ZLTRSUBS files with the new information.

Similarly, a program that generates mailing labels for a given issue n should retrieve entries from CUSTOMER in order by K and by COUNTRY. For each entry, it should search ZLTRSUBS by key to find a record with a matching K. If no such record is found in ZLTRSUBS, it goes on to the next record in CUSTOMER. If a matching record is found in ZLTRSUBS, it still must have a first issue of n or greater, and a last issue of n or earlier; that is, subscriptions that haven't started yet, or which have already expired, don't count. If such a record is found, and there is more than one, the expiration information should be taken from the latest record, so that a customer whose current subscription expires with issue 18, but who has renewed for issues 19-30, will be sent a label that says his subscription expires with issue 30, not issue 18.

Such programs are significantly more complex than the ones I've shown so far, because they open more than one input file, and read them in order by key, not just from the first record to the last. In the next installment of this column, we will look at such a program. Meanwhile, if you want to write such a program and send it in, I will be glad to use it as another example.

SOUND POTENTIALS CP/M PUBLIC-DOMAIN SOFTWARE CATALOG

We publish a catalog that lists the titles of 720 CP/M library files from which you can pick and choose. The titles are current up to 1990. The catalog lists each title, author, date, size of library, and a description. We charge you a copying fee of only five cents per 1K of library file copied. We can format for over 180 5¼" disk formats, both 48- and 96-tpi, and we charge you no extra for your format. We offer discounts for large orders if your disk format holds over 300K. You receive your selections plus our catalog on disk and a library utility to remove the files.

We also offer a data-copying service to copy data between any of the formats we support. Full details included with the catalog.

As a special introduction to the public domain of CP/M, we have put together a Sampler of some of the best utilities and word processing programs. This large collection is available on your disk format for $10.00 plus $4.00 shipping and handling. We throw in the printed catalog for $1.00 more ($15.00 total). If you just want the printed catalog and other info, send $2.00.

SOUND POTENTIALS, BOX 46, BRACKNEY PA 18812

THE STAUNCH 8/89'er
--> Generic CP/M Software <--

ACANAL (By Gary Appel) $6
An electronic analysis program to perform AC nodal analysis on an electronic network. Element types may be: resistor; capacitor; inductor; transconductance; transmission line, open line stub, and shorted line stub; coupled inductors (transformer); quartz or ceramic resonator; two-pole monolithic resonator; and transistor (hybrid PI model). Various input/output and gain parameters permitted. Calculations are single-precision.

dBASE II PROGRAMMER'S NOTEBOOK (By Steven G. Meyerson) $6
Originally published as a booklet in '83 and '84, this is a collection of tips and routines for using dBASE II and writing applications in its command language. Included are hints for using FIND, DO CASE, QUIT TO, semicolons, justification, report column headings, the STR and TRIM functions, terminal and printer commands, sorting, debugging, displaying logical fields, linking database files, two-column printing, menus, error checking, and even a flashing display using H/Z-19/89 terminal codes. As a bonus, it also includes S-MAIL, a mailing list package for dBASE II that features menu-driven operation; adding, listing, deleting, reviewing and altering records; printing labels; and archiving deleted records.

FILEBASE (By Tom Markowitz, EWDP Software) $6
A "variable-length field" database manager which EWDP is releasing as shareware. Fields are in "comma-delimited ASCII" format, such as those created by BASIC and other higher-level languages or WordStar's MAILMERGE add-on. Defining field length or type (character or numeric) are therefore **not** required when setting up a database. Functions include adding fields, appending records, calculations, indexing, joining existing fields, restructuring the file layout, sorting, and printing reports and/or labels. Registration information for support and a printed manual is embedded in the program. But the package is menu- and prompt-driven, so you may never need the manual.

LUCIDATA PASCAL (By D.Gibby and L.Reeve) Version 3.8 $25
A substantial subset of the Pascal language, the compiler translates your ASCII source code into a file of p-code ("pseudo"-code). That file is then interpreted by a run-time system (PRUN or RUNCOM). This results in a language package that is faster executing than conventional interpreters, yet the p-code file is generally smaller than equivalent code produced by a conventional assembler. If independence from the run-time system is desired, a command-line pragmat can combine the run-time system with your p-code file. If execution speed is critical, a p-code program included with the package will translate p-code files to source code for Microsoft's M80 assembler and linker. Not as extended as Borland's **Turbo**, nor as fast during compile. Includes a 100-page hardcopy manual.

MAGIC WAND/PEACHTEXT HELP (By Kirk Thompson, Randall Stokes, and Hank Lotz) $6
This package for Magic Wand, PeachText 9, and PeachText 5000 word processors has three parts. One is menu-driven online **HELP** set up as an **include** file. This is a command reference to both EDIT and PRINT. Another is PROCESS, a print preprocessor. This program lets you directly support the custom features of your dot-matrix printer (such as underlining and italics). The program, as supplied, supports Gemini printers. Instructions are included for editing the ASM file and assembling a custom version for your own printer. The third part of this package is SALVAGE, a utility for recovering a MW/PT file from memory after an abort, BDOS error, or system reset.

MCOLS (By Hank Lotz) $6
A utility that creates multiple-column listings from a single-column input file. The user specifies the number of columns (2 to 13), space between them, effective page width and length and horizontal pitch, and the record to start at. It also lets you direct the output to a disk file as well as console or printer.

The Staunch 8/89'er General Software Catalog $6
Staunch's holdings are too extensive to list here. An on-disk catalog of software for CP/M and HDOS is available. Much of the software has been released to **Staunch** by various vendors or **Staunch** subscribers.

Note: Prices include first class shipping in the continental U.S. Supported disk formats are Heath/Zenith soft-sector (H-37) and 10-hard-sector (H-17); most 40-track, single- or double-sided, soft-sector CP/M (such as AMPRO, Cromemco, Kaypro, Osborne, Televideo, or Xerox); and PC-XT.

Kirk L. Thompson
Editor, **The Staunch 8/89'er**
P.O. Box 548, West Branch, IA 52358
Voice: 319-643-7136 (eves and weekends)

COMPUTER CLASSICS

The Pied Piper

The Pied Piper computer is in most respects an ordinary CP/M system, except for its appearance and disk drive(s). Its CPU is a standard 4MHz Z80, and the Pied Piper has 64K of memory. The applications bundled with it were Perfect Writer, Perfect Speller, Perfect Filer, and Perfect Calc.

Most computers of 1983 vintage are all in one piece, packaged either in a squarish case with the keyboard on the inside of a fold-down lid (such as the Kaypro and Osborne models), or have a configuration like a terminal with monitor and drives on an upper section, and the keyboard on a lower section that juts out (H-89, TRS-80, Eagle, etc.). A few even put monitor, keyboard, and drives in three sections joined by cables, such as the Epson QX-10 and Morrow computers. The design of the Pied Piper harks back to the configuration of computers like the Apple II and Commodore 64 (see the top and front illustrations on the cover of this issue).

The Pied Piper CPU, keyboard, and a single DSDD 96-tpi (780k) floppy-disk drive come in a sturdy case 19.75 inches wide, 10.5 inches deep, and 3.75 inches high at its tallest point. This latter qualification is needed because the keyboard is set in a slanted section that is only 2 inches high at the front. This basic unit weighs about 12.5 pounds, and has a retractable handle at the rear. Carrying the Pied Piper by this handle makes it look a bit like an older model boom box. The keyboard section can be covered by a flimsy plastic cover whose hinges fit into two slots on the top of the machine, with a beak that locks into the square hole at the left lower front. Of the five Pied Pipers I've seen, two had the hinges broken, one of those also had the beak broken off, and one was missing the cover entirely. The left and front views show the cover attached and shut; the top view shows the cover removed (the cover cannot be seen from the right, as the floppy-disk drive hides it).

For console output, the Pied Piper could be attached to a TV, and if so attached displayed 24 lines x 40 characters. It could also be attached to a monitor, which could be purchased from its manufacturers, or a standard monitor could be used; two Pied Pipers that I purchased for $50 each came hooked up to COMREX CR-5500 monitors. Attached to monitors, the Pied Piper displays 24 lines of 80 characters. An article in the July 1983 issue of *Microcomputing* speaks of an LCD display of 2 lines x 80 characters being available as an option, but I haven't seen one and have no idea whether this ever came to pass.

The back of the Pied Piper is the location for the power cord, power switch, and reset button. The standard ports are a parallel printer port and jacks for TV or monitor. Three other cutouts in the back of the case are protected by push-out plastic covers, to be removed when the options were installed. The one in the center of the case, above the standard ports and partly underneath the pull-out handle, was for either of two serial options. One was a board with a pair of RS232C serial ports; the other was a card with a single RS232C serial port and a 300-baud direct-connect modem.

A second floppy disk could be purchased in a case that looks like the part of the Pied Piper case that contains the original drive, complete with styling, logo, and ventilation slots. This attached by cable to a floppy-disk port which was installed in place of the upper push-out plate on the rear of the original drive, and the operating system was set up for two disks all along, so you could use it as soon as it was hooked up. The power supply in the Pied Piper supports both drives.

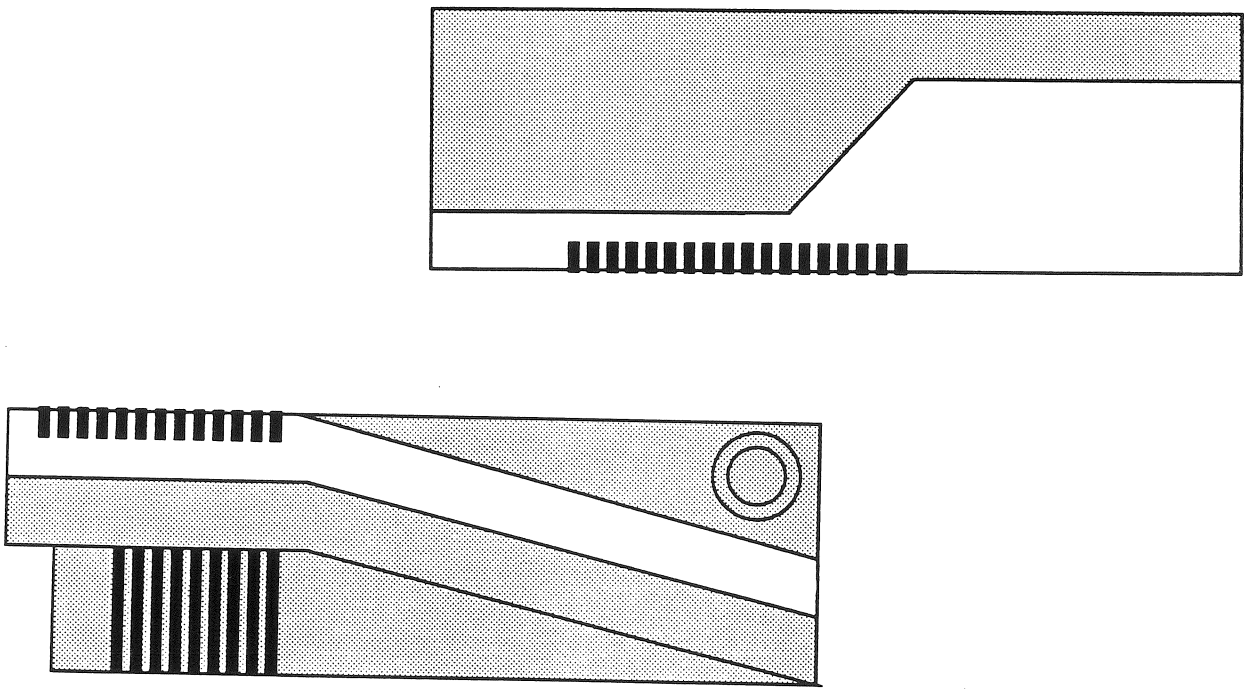
I have found nothing that proves that a hard-disk unit was ever sold for this computer. A price list contained in company literature from 1984 lists a Pied Piper Professional ($1999) as well as the Pied Piper ($1299); judging by the prices listed, the Professional came with the monitor and second disk drive, which were extra with the original model. The lower of the

two push-out plates on the back of the built-in floppy-disk drive may have been intended for a future hard-disk unit, but no hard disk is listed in the 1984 price list for the CP/M models.

The manuals for the Pied Piper are hard to find, but I have managed to get a set, and will make copies. The three manuals I have are the User's Manual, Peripherals Guide, and Modem Communications Manual. The price list mentions a Technical Reference Manual; if it ever existed (no price is listed), and a reader has one, I would gladly buy it or a copy of it.

The Pied Piper was built and sold by Semi-Tech Microelectronics Corporation of Toronto, Ontario, Canada. The US branch was STM Electronics Corporation in Menlo Park, and in Europe they were Semi-Tech Microelectronics Limited of Surbiton, Surrey, England. Manufacturing was done at a facility in Hong Kong.

The September 1984 price list includes, besides the CP/M models and options, various models and options for the STM PC. These came in every combination of portable or desktop, 48- or 96-tpi drives, 256k or 512k memory. 10- and 30-Mb hard-disk units were available, but no second floppy-disk drive unit is listed. The STM PC portable that I've seen had the same basic configuration as the Pied Piper. The keyboard cover was much sturdier and contained the actual keyboard; the recessed space that contains the keyboard on a Pied Piper was occupied by a 25-line LCD flat-screen display. An external monitor was available. The CPU on the STM PC I saw was an Intel 80186.



Top: View of the Pied Piper from the right side. Bottom: Left view.

LETTERS

October 23, 1991

Dear Mr. McGlone,

Thank you for the complete set of *The Z-Letter*. The articles are well written, and quite informative to those of us at Sydex who don't know the Z-System saga.

We also appreciate the listings of CP/M products available from Lambda Software Publishing and other sources. We hear a lot from customers in search of software for their CP/M machines, and we'll be happy to refer searchers to Lambda Software Publishing.

For your records, we've included an invoice for your 22DISK 1.37 update diskette. We just finished yet another revision, mostly because we received a rather strange Galaxy3 GEMINI diskette from the United Kingdom, and it required some tweaks in 22DISK. Please accept the enclosed 22DISK 1.38 update diskette with our compliments.

As always, we appreciate your interest in our products.

Sincerely,
Miriam St. Clair
Sydex
P.O. Box 5700
Eugene OR 97405
(503) 683-6033
FAX: (503) 683-1622
BBS: (503) 683-1385

Thank you for the 22DISK update, Miriam. Jerry Davis recently added a MicroSolutions CompatiCard IV to my Tandem 6AX, and I can now read 8" disks. I haven't yet figured out how to install the Beta version of Uniform-PC that they sent me, that's supposed to work with the CompatiCard to enable the 6AX to read single-density and 8" drives, but, fortunately, I don't need to. After we made the hardware changes (the Western Digital dual floppy and hard-disk controller is now the controller only of the hard disk, the CompatiCard is the primary floppy-disk controller, and the MatchPoint card is the secondary floppy-disk controller), I copied the 22DISK 1.38 you sent me to the hard disk, and ran 22DINST. After it ran, I corrected its display that showed two extra HD drives E and F to a single 8" drive E, and that was all it took. I can now read the 8" disks I have!

November 5, 1991

Dear David,

Your YASBEC review in *The Z-Letter* #15 was most interesting. You must be in love. That's the only way I can account for such a glowing review of a product that doesn't even work yet.

Please, let's be objective! The YASBEC reviews so far read like the worst kind of blatantly self-serving promotionals. The creators themselves are writing articles in *The Computer Journal*. You are saying "I urge you not to wait, but order a YASBEC and proceed on your own" even though you don't even have it working. This is stuff that even *Byte* or *MacUser* wouldn't have the nerve to print with a straight face.

I am very interested in YASBEC, but I want facts, not hype. Where does the necessary software come from? Software compatibility? What are the actual performance benchmarks? What parts are needed to finish it, and where do they come from? What is the real (not estimated) total cost?

So far, I think YASBEC is well named; yet another single-board computer. Hundreds have preceded it, and hundreds will follow. It's an unknown board, sold without support by an unknown supplier. It doesn't work as received, and it isn't clear where the missing hardware and software will come from (or whether they are even available). It's sold as a kit, but uses surface-mount ICs, which a hobbyist cannot install or replace. Its performance advantages over the Micromint board are based on nonexistent parts.

I urge you to stop trying to sell us a YASBEC, and simply report how your board progresses: what you spend, how long it takes, where you got the missing software and ICs, how hard it was to assemble and debug, and how it performs compared to other CP/M machines.

Yours truly,
Lee A. Hart

Every time I think I've learned my craft as a writer, along comes a letter like this which totally misunderstands something that I've written. It's very humbling! Let me try to clear the air a bit . . .

I did not review the YASBEC in issue #15. A review requires a finished product which the reviewer can put through its paces. What I did was reprint all the documentation which comes with the YASBEC, with the permission of the author, Paul Chidley. I put a page and a half of my own before this material; the paragraphs in this material say, in summary (a) history of the YASBEC so far, (b) disadvantages of the YASBEC, (c) my estimate of the cost of a complete YASBEC system, (d) my intention of putting together a YASBEC system, and a promise to keep the readers informed as the project progresses, (e) two paragraphs listing what you get when you order a YASBEC, (f) the information that the cover, other illustrations, and the rest of the article is the documentation that comes with the YASBEC, (g) what I intended to put in the next installment, (h) some suggestions for selling the YASBEC and using it as the basis for a Z-System laptop.

I'm not trying to sell anyone a YASBEC; I don't sell hardware. I did not print a glowing review; I devoted a whole paragraph to disadvantages, and made it clear just what you get when you order one, and what work remains. Questions about software, etc., will arise as I work on the system, and will be covered in the appropriate installments.

Your point that a working YASBEC system does not yet exist is well taken, if a bit exaggerated. People I trust have told me that they saw working YASBECs at Trenton. Granted, these were prototypes. But, since there is no company putting together and selling YASBEC systems as a commercial venture, every YASBEC will be, to some degree, unique. I still urge anyone who is interested to get one; in our present "CP/M marketplace", the opportunity to buy one could disappear tomorrow. This is especially true if everyone hangs back waiting for everyone else to be the first! If a lot of people get them and start looking for the parts, and send me lists of what they've found and where, it will be easier for all of us. A chip that is not available here may be readily found where you live, and vice versa. Prices may also vary.

With all that said, thank you for writing. Most of the letters I get just say, "You're doing a great job, keep it up, here's my subscription renewal." Such letters are very welcome, but they don't give me anything to print in my letter column.

11 November 1991

Dear David:

Could you do me a favor? The *Support for CP/M* flyer of mine that you are running is quite dated and I haven't had a chance to update it. In particular, I find that with Z-SUS and TCJ, I just don't have time to make special disks anymore. Can you pull/edit/update it? Thanks!

Keep up the good work!
Chris McEwen

I will pull the ad for now, Chris. Send me a replacement when you have one ready. Meanwhile I've printed your letter to explain why the ad has disappeared, and to let readers know you've discontinued your offer of special disks.

Art Credits

The top and front view of the Pied Piper on the cover, and the left and right views on page 31, were done by Deborah Snavely on her Macintosh IIsi (a great little machine for graphics, even if it does babble).

PERSONAL ADS

Eagles for sale

I would like to sell two of my computers and a hard disk as follows: (1) One Eagle II computer, (2) one Eagle III computer, (2) one Eagle File 40 external hard-disk unit. $350 for all three items. Contact Donald C. Calvello, (408) 947-8117 (daytime) or (408) 377-7129 (evenings).

Eagle PC+ XL for sale

Late-model Eagle PC includes 640K RAM, turbo speedup kit. Best offer. Call Pat Pacholski, (510) 449-1377.

Eagle IV for sale

Make offer to Bob Serrano, (415) 586-5000 (days) or (415) 469-9666 (evenings), or write to 6029 Mission Street, Daly City CA 94014.

Laser printer for sale

H-P LaserJet IIp, Adobe PostScript cartridge, Epson/IBM cartridge, 2.5 Mb RAM. Total page count about 2500. $1100. Bob Kowerski, (415) 574-6262.

Computers for sale

Osborne 1, $50. Dynabyte MP/M computer with 8" drives and VT-100 terminal, plus operating system and manuals, $75. Kaypro II with all disks and manuals, $150. Prices negotiable. Contact R. Olivarez, (408) 985-2268.

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To keep prices down, we also sell non-working or untested boards. Our loss is your opportunity to experiment, modify, and tinker! Another cost saving is our lists of 3rd-party S100 equipment! If we don't have to stock it we can save you money!

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Herbert R. Johnson, 1519 Mt Everett St,
Colorado Springs CO 80909 (719) 578-0997

Layout by Night Owl Computing (719) 578-0997

MAGAZINE ARTICLES

The following magazines were received in approximately the last month. Articles relevant to the CP/M and Z-System community, if any, are listed for each magazine. Where a magazine is generally of interest to our community, its subscription address is listed, along with the U.S. subscription rate, whether there was a relevant article this issue or not.

Computer Monthly, November 1991. No articles from FOG this month. *CM* has a regular CP/M column, called "Fearless Computing", by Nancy A. Black; emphasis is on CP/M on the Commodore 64 and 128, but much in the column applies to any CP/M computer. Regular columns for Coleco Adam (ADAMCON 03, an annual convention for Adam users, is reported this issue), Commodore 64 and 128, Apple II (development rumors from Apple), and TRS-80 (hard disks and help) are still present; these machines either run CP/M or can run CP/M in addition to a proprietary operating system of their own. Bulletin-board listings and ads are also of interest. $15.95 per year from Computer Monthly Subscriptions, P.O. 7062, Atlanta GA 30357-0062.

The Staunch 8/89'er #25, July/August 1991. As always, full of news and contacts for owners of Heath/Zenith CP/M machines. Regular contributions by Kirk L. Thompson, Pete Shkabara, and Hank Lotz. Ongoing discussions on creating diskettes formatted for both CP/M and HDOS, and designing a portable H-89. See the ad elsewhere in this issue for subscription information.

Silicon Valley Computer Society Journal, November 1991.

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EAGLE COMPUTER USERS GROUP

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

Meeting place

ECUG meetings are held at Tandem Computers Incorporated, 10435 North Tantau Avenue, Cupertino. To get there, take 280 to the Wolfe Road exit; turn left at Vallco Parkway; turn left at Tantau; go over the bridge; and turn in where it says "Tandem Computers" on the left. Try to arrive on time, so that I can let everyone in at once, on months when Tandem has not arranged for a guard.

Meetings are the second Saturday of every month, from 9 A.M. to Noon. The remaining 1991 meeting is December 14. In 1992 our meetings will occur on January 11, February 8, March 14, April 11, May 9, June 13, July 11, August 8, September 12, October 10, November 14, and December 12.

November 9 meeting

The Haltek flea market is not yet as big as it was at Foothill, but the word has been spreading. Still confined to the Haltek parking lot, it can't approach the sheer area the other took up, but I have hopes it will regain its former glory. If I hadn't had some already, I could have picked up several H89s at giveaway prices from one attendee, or several Xerox 820s and an Onyx system from another. I also saw a Commodore 64, an Apple II+, and various terminals. All I bought this time was five books on Z80 assembly-language programming.

Attendance at our ECUG meetings this time of year is small, due no doubt to people getting ready for various holidays (it will probably be very small next month). Present were Dave Honkala, Bill Josephson, Dick Dethlefsen, Bob Kowerski, David Banoff, Shirley Welch, Jerry Davis, Pete Holden and two kids (the one who signed in is named Pablo Guardado), and myself. Several regular members, including Rudy Stefenel and Ken Thomson, had told us in advance they wouldn't be able to attend this month.

No actual program had been scheduled; members talked and worked on things. Dave Banoff answered questions Bill Josephson had on hard-disk formatting on PCs. Dave Honkala had brought in two Osborne Executives that had been acting up; Jerry Davis looked at them, and took one with a video problem home to look at and try to fix. Pete Holden had brought his Eagle II, and Dave Honkala showed Pete and the two youngsters how to write and run a BASIC program. I brought my Tandem 6AX, a pair of half-height 8" drives in a box, the Micro Solutions cable for joining them, and Jerry, with help and hindrance from Dave Banoff, Bob Kowerski, and myself, hooked them together and overcame all but the software problems remaining (I will be talking to Sydex and Micro Solutions about these; watch this space). Jerry also installed two double-sided floppy disk drives out of a box of such that I had brought, into one of my Eagles in place of the full-height single-sided drives that were already there, converting it from an Eagle II to an Eagle III. Pete, Dave Honkala, and the two kids watched this with some interest, and there were some jokes about "Kids, don't try this at home!" The Eagle in question originally had only one single-sided drive, so it's gone from a I to a II to a III.

December 14 meeting

9:00 Meeting begins. The ECUG print library will be present so that members may take anything they can use (see *ECUG library*, below). Also, Ken Thomson will be bringing a lot of brand new, light beige canvas printer covers in various sizes,

some monitor and keyboard covers, and some loose-leaf binders, all free for the taking. Come armed with the measurements of your equipment!

9:30 David McGlone will demonstrate 22DISK and possibly ANADISK on his Tandem 6AX computer.

12:00 ECUG meetings ends.

ECUG print library to be discarded

The Eagle Computer Users Group has a library of printed material, including Eagle PC and Eagle 1600 manuals, magazines, and books. Most of it was donated by members, the rest is stuff kept from what shows up in our P.O. box every month.

This resource has been used perhaps three times in the years I've been maintaining it. I have been asking since September for responses on the question of continuing to maintain it. No one has responded at all. Consequently, I am not going to continue to devote time and space to it. Some of the CP/M stuff will be returned to my library (where most of it came from), for the future CP/M museum. I will also keep a single set of the manuals we have for Eagle PCs and 1600s. The rest will be taken to the December meeting so that attendees can choose anything they may have a use for. The remainder will be listed here for a few months so that people can write and ask for it. Anything left after that will be thrown away!

Donated by Dave Banoff: *README.DOC*, newsletter of the Orange Coast IBM PC User Group, October 1991.

ECUG software libraries

ECUG has two software librarians. Anyone seeking CP/M or Z-System software should contact Ken Thomson, 71 Rosenkranz Street, San Francisco CA 94110, phone (415) 648-7550. For PC (MS-DOS) software, our librarian is Jack Morse, 7390 Rainbow Drive, #1, Cupertino CA 95014, phone (408) 252-6103.

Please note that, as ECUG is no longer a corporation, the officers of the club do not wish to handle money (except those, like Shirley Welch and myself, who have businesses and do so as part of the business). Therefore, when you request disks from Ken or Jack, send them the floppy disks and the postage to mail them. They will copy the software you request onto your disks and mail them back to you. That way no money changes hands, as would be the case if they continued to charge a fee per disk.

PC software received this month:

From Computer Specialties (Ray Zimmerman), P.O. Box 5694, Lake Charles LA 70606, (318) 474-4635, (1) The Maniac (a game), (2) Phone Book Elite, (3) The No-Can-See Scrambler, (4) The Hard Disk Floppy Cataloger, were sent us in September. On November 1 the same firm sent us (1) Save for College, (2) Label Maker Supreme, (3) The Financial Analyzer, and (4) The One Arm (sic) Bandit.

Quikzip! (according to the disk label) is shareware that "prints addresses from your data base, and adds new postnet bar code." From Westcoast Software, 976 Foothill Ste 344, Claremont CA 91711, (714) 624-1936.

TypeRight (336 Swain Blvd., Lk Worth FL 33463, phone (407) 969-3643) has sent us their programs before. This time it's a disk of assorted shareware programs, updated versions, and one with version 3.2 of their General Invoice Sales Tracker Plus and version 1.7 of Pop-Label.

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Sale Price <u>with</u> 14" VGA monitor and VGA board $1015.00

The above prices are current only thru the end of December 1991. The price shown does NOT include delivery, shipping, software installation, OS setup. The system will be burned-in and the hard drive will be bootable.

We will configure the Operating System and install your software for an additional $75.00.

Note: prices may change without notice.