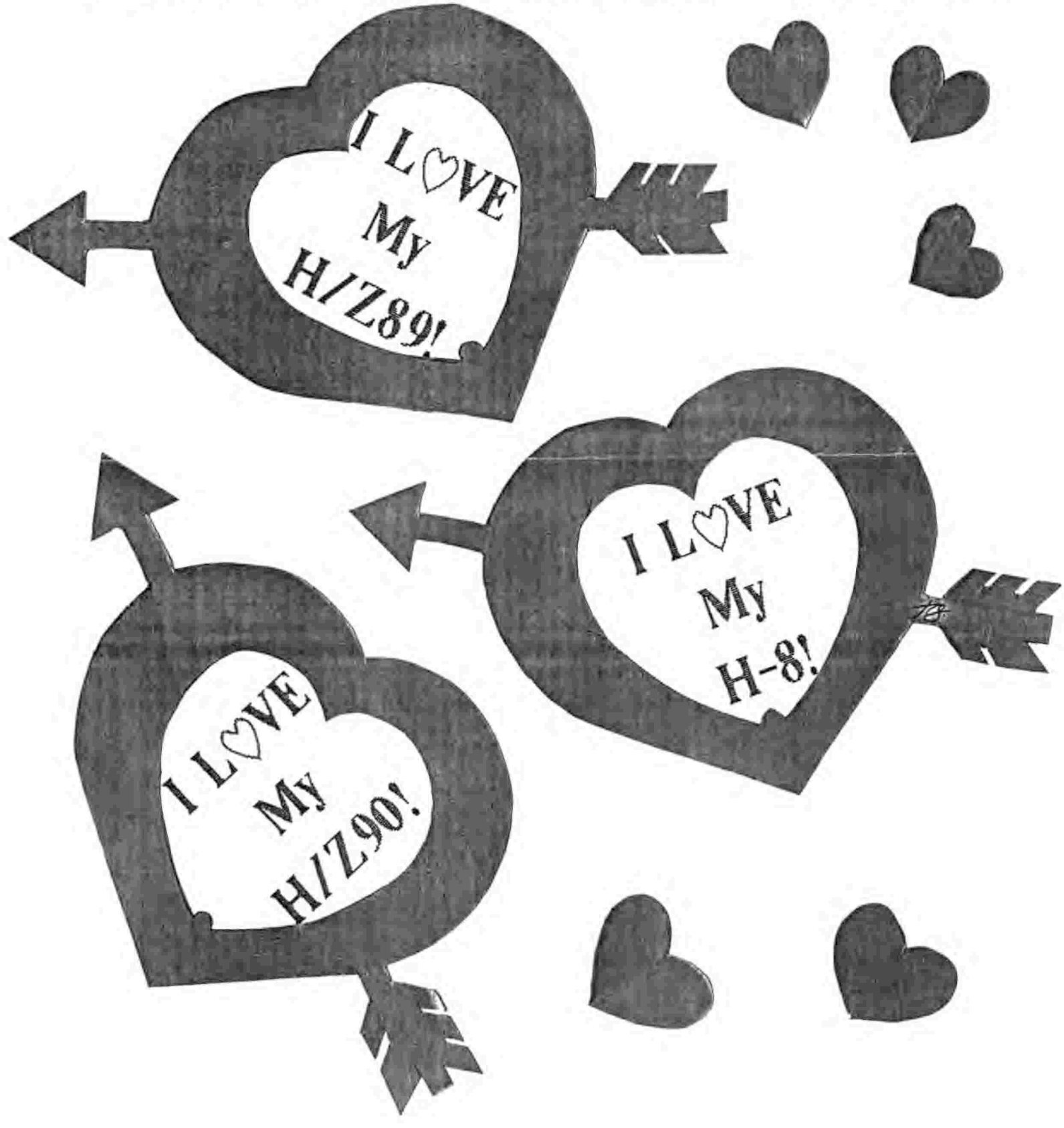
Saving Our HEATH Eight-Bit Machines!

SEBHC JOURNAL

Volume 1, Number 7 *$2.50 a copy, $15.00 a year* *February, 1988*



SAD 8-BIT NEWS - READER'S LETTERS

* EIGHT-BIT RELATED NEWS *

Lee A Hart, president and chief engineer of TECHNICAL MICRO SYSTEMS, Inc. (T.M.S.I.), dedicated supporter of the Heath/Zenith-89s since 1980 recently announced that T.M.S.I. changed from a closely-held corporation to a sole proprietorship as of 30-Nov-1987. Mr. Hart asks that anyone interested in keeping their H/Z 8-bit machine working properly or wanting to update it, or simply needing information about anything in connexion with these machines to please get in touch with him at his new address:

TMSI c/o Lee Hart
P.O. Box 134
530 W Walnut Street
Kalamazoo, MI 49005

Call 616-345-2960, Monday through Friday between 4 & 6pmEST, anytime on weekends.

Mr. Hart tells us he is filling orders for his old firm's Superset kits from stock. He says further that he has Z89-37 softsector controller boards, Flicker-Free kits, Low-Power kits, Write-Hand Man software packages, and some unpopulated H-1000 boards still available. Mr. Hart says, "My new business policy is quite simple: I do not accept any C.O.D. orders; any item ordered must be paid for by MC/VISA credit card, check or money order, and if we don't have everything you ordered in stock we will promptly contact you and get your permission to make a partial shipment of what's available. In such cases we shall refund the part of your payment covering the portion we can't fill. We will promptly inform you as soon as we are able to complete your order and you can then send the balance due."

NOTE: To avoid any delay in communications, the JOURNAL requests readers to kindly send any and all remarks about the old Technical Micro Systems, Inc., *DIRECTLY TO* Mr. Hart at his new address printed above. Letters or orders sent to his old firm address in Ann Arbor are quite slow in getting to him, and even could possibly never make it all the way.

[Editor's Notes: We sincerely regret having to print news about the passing of T.M.S.I. into the dim mists of history! This company made one of the most inovative products to ever appear on the H/Z 8-bit scene, the H-1000 dual microprocessor, 1mBit, 10Mc/s replacement for the standard H/Z89/90 CPU boards. We hope that Mr. Hart--a most prolific contributor of highly-appreciated cartoons and articles to our H/Z 8-bit JOURNAL from its' very inception--will eventually be able to create order out of chaos and get back to producing even better hardware and software items for the H/Z 8-bit community! To Lee, we say, "Good Luck! And may the Force be with you!" -- l.e.g]

--=:<<8>>:=--

READER'S CORRESPONDENCE

Dear Mr. Geisler:

This refers to an article in BUSS and/or REMark. It said that you are offering a new journal for the 8 bits computer user.

Please find enclosed the money order in the amount of $15 US in order to cover the fee for receiving this monthly journal.

I have a H-89 with both floppy controllers (hard and soft), a modem and an Epson printer. I plan to continue to use my dear old computer and will like to keep contact with other similar users.

Your journal was recommended to me by Mr. K.L. Thompson.

Thank you for the opportuneness to keep these old computer in usefull usage.

ROGER F DUPUIS, 978 Francis, Longueuil, PQ J4J 1E4 Canada

[Welcome to you, M. Dupuis, our fourth Canadian subscriber! We have one other in Shanagan, Province Quebec--M. Maurice Desmeules. Our other two Canadian subscribers live in (or near) Vancouver, BC. I hope you have received our January issue by now, and that it lived up to your expectations! Kirk Thompson (H8/89er editor--our friendly "competitor") has our gratitude for telling you about the SEBHC JOURNAL! We hope you will be able to give us "State-siders" a report on what you and other H/Z 8-bit machine users are doing with your computers, it isn't often that we get correspondence from north of the boarder. -- ed]

Dear Lennie,

I want to tell you that I am delighted with your publication. I received my [back-issue] copies on Thursday and have had my nose in them ever since (today is Sunday). I have never understood how to make two H89s talk to each other. But the mystery is solved since reading your answer to Andy Borsen's letter in Vol I, No 10, page 3. I made up a null-modem cable according to your instructions, and using the communications program CPS, had the two computers talking to each other in no time.

Thanks so much for taking the initiative to keep us "eight-bitters" informed and educated and for helping to create a market out there for the companies who still sell us hardware and software. Were it not for folks like you, we really would have dinosaurs on our hands!

Dick Shotwell, Twin Falls, Idaho 83301

[You're quite welcome! The SEBHC JOURNAL stands everfast to keep all H/Z 8-bit computerists--such as yourself--in happy communion with their faithful--non-extinct--machines. Let's keep those cards, letters, and articles coming! -- ed]

LETTERS, Continued

Dear Len,

Please renew my subscription--payment enclosed. I have some ideas for articles, such as describing how to combine KEYMAP, SUBMIT files, and dBaseII memory variables. This combining technique has eliminated lots of typing for me. I also use a variation of it with an outline processor, "Out Think". But I don't seem to ever get time to write it up!

Thanks for all the good information you keep printing in the JOURNAL! And I'm looking for information on an H89 RAM disc which was once advertised by TD Engineering. I haven't seen any TD ads, or for that matter, ads for CDR's Super RAM lately. Has any reader used TD Engineering's Herby product, and can they tell me if it is any good?

(This started out as a short note; I should have used the computer to write it instead of a pen!)

DANIEL GILBERTSON, Rte 2, Box 314, Richland Center, WI 53581 --608-647-3375

[Hey, Dan! It'll be great if you will MAKE time to write up those "combining" how-2 notes! We'd be delighted if you can send us something really soon which might help other 8-bitters solve their problems. -- ed]

Dear Mr. Geisler:

I received the two discs I ordered from your JOURNAL today. Something is wrong with them--I can't read either one. I can read the directory on both the HDOS and CP/M disc, but I can't read the files!

When I tried to read the READTHIS.1ST file on the CP/M disc, about half-way through I got a "BDOS error, bad sector" report. I tried it again with the same results, then on another drive--also no go. Then I tried to TYPE one of the '.DOC files and got a screenful of garbage. I'm running CP/M 2.02.03; is that causing the problem?

I also tried to TYPE the READTHIS file on the HDOS disc and got a bad sector, read-failure report.

In checking out both discs there were all sorts of clicking sounds coming from my drives--sounded as if I was running TEST17! At first I thought my controller card had gone nuts but since I'm typing this on the same H89A I tried the discs on, the controller is obviously ok.

What can I do? The programs (what I was able to make out) look good, and I'd like to be able to make use of them.

By the way, do you [or some reader] know where I can get CP/M 2.02.03 hard-sector format M8ASIC?

KARL G RULING, 83 Lawrence St., Wilkes-Barre, PA 18702

[Karl, I checked out the two discs you'd returned with this letter and they misbehaved for me exactly as you described! When I checked them both out with SZAP, I found lots of garbage in randomly-located sectors on various tracks. Rather than try to patch the discs, I bulk-erased them both and rewrote the original data back and returned them to you. It has been nearly 3 weeks and I haven't heard further from you--they must be ok! To be perfectly frank, I have no idea how they got messed up so badly. Perhaps the Post Office mishandled them somehow--this has happened once or twice with other reader's discs and I'm beginning to feel it might be worth the extra expense and trouble of wrapping discs in mu-metal foil or equal to keep random magnetic fields from upscrewing them! Regarding your not seeing any ads for CDR's RAMDISC product--they've discontinued manufacturing it! I've seen notes here & there which say CDR does have a few blank p-c boards for the RAMDISC but you'll have to contact them directly to get any authentic news. Suggestions please from our resorceful, imaginative readers! - ed]

Dear Lenny,

In my last letter, dated January 1, I mentioned completion of the Z80 mod for my H-8 and attempts at getting the WH8-37 soft-sectored controller to work with it. I am delighted to now report that the controller is fully operational. After diligently comparing the schematics for my [plug-in] modified H8 CPU with the HA8-6 schematic, I found one small difference that prevented interrupts from working with the soft-sector controller.

WITHOUT the H-37, interrupts are processed on the CPU board using the internal data bus while disabling the read buffer for the external data bus. But, with the H8-37, interrupts are processed on the H8-37 and passed to the CPU board over the external data bus. To solve the problem, the read buffers must be enabled during an active low-INTA.

To use the H8-37 board with the 8080 CPU board with ECO and Pat Swayne's Z80 [plug-in] Mod, make these additional modifications to the CPU board:

1. Parallel the ROM chip to provide an additional 4K ROM socket.
   a. one ROM socket, containing PAM-37 (444-140) must be selected by ROMEN AND A812.
   b. the other ROM socket, containing XCON-8 (444-70) must be selected by ROMEN AND A812. This ROM contains the H17 ROM image. The H17 ROM itself was disabled during installation of the ECO.

2. Lift pin 3 of IC207 (pin 2 should have already been lifted during installation of ECO). This will enable a total of 8K of ROM, Hex addresses 0000-0FFF for PAM-37 and 1000-1FFF for XCON-8.

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**************************************************************
* NOTE:  The following steps are necessary for operation     *
* of the WH8-37 interrupt circuitry.                         *
**************************************************************
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3. Remove IC215 from its socket, bend out pins 2 and 11, and reinstall.

[continued overpage]

LETTERS, Continued

4. Install an AND gate (74LS08 or equal) and wire as follows:
   a. +5 and ground (of course).
   b. Input pin 1 from IC216 pin 8 or pin 2 of IC215's socket (BUSAK).
   c. Input pin 2 from INTA (output from Z80 adapter to hole L2).
   d. Output pin 3 to pins 2 and 11 of IC215 (NOT to its socket--see Figure 3, page 5).

5. Disconnect jumper between holes L1 and L2 and reinstall between L1 and L3.

6. Install jumper between IC217 pin 9 and L2.

7. Remove chip from socket IC217 and install interrupt jumper cable from WH8-37 into this socket. Make sure that pin 1 on each end of the jumper cable are properly aligned.

As far as the DIP switches on the ECO board are concerned, they are set up EXACTLY as specified for the Z80 board in the H8-37 documentation.

I built my H8-37 up from a bare board which I purchased from Henry Fale at QUIKDATA, Inc. [2618 Penn Circle, Sheyboygan, WI 53081, 414-452-4172]. I also purchased the PAM-37 and a few special parts, such as the heat sink, card edge connectors, and PALs from QUIKDATA. I ended up buying a few resistor networks from Heath, but the remainder of the parts I got through JDR Microdevices and JAMECO Electronics. Bear in mind that this controller was not intended as a kit and the documentation does not tell you how to assemble it; if anyone is contemplating such assembly, please contact me for assistance.

I have sent a letter to Pat Swayne thanking him for the support he's given me in this endevour, and requesting permission to use his Z80 mod article as source material for a full construction article on converting an 8080 based CPU board with ECO for use with the H8-37 soft-sectored controller. If there is ANY interest, I would be willing to provide full construction plans including wire wrap component layout, assembly procedures, and schematic.

GARY S MELANDER, 460 Garrison Place, Virginia Beach VA 23452

[Thank you very much indeed for all this extremely useful H8 technical data! I know several of our subscribers have 8080 CPUs in their H8s will be delighted with all the information you have provided. And I am personally delighted! Now I've enough information that I'll be able to get my "spare-parts" H8 up and running in Z80 mode! My next project for it is a wire-wrap version of Tyronics' H8 X/2 Memory Bank Select card (mentioned in a REMark article, July, 1987, pp27-28 -- "WH-8-64 Memory Replacement With 64k Chips", by Ed Rockwood of Portland, OR). As so many HUGgies, I've tried to get in touch with Tryonix and either buy their X/2 card or a schematic of it, but to no avail. (Maybe some SE8HCer will sell me a diagram?) I bought an H8 wire-wrap card way back when; I believe it is quite feasible to use data from Rockwood's REMark article and construct a 256k memory and bank switcher on it. Presently this H8 has three memory cards which total 64k. Getting rid of two cards and increasing memory size might enable me to dedicate this computer for a SE8HC JOURNAL BBS--now wouldn't THAT be neat?! -- ed]

Dear Len,

Just a short note.

Thanks for the advice on drive repair. I got in touch with Heath and they gave me a telephone number in Colorado; I decided to go with Sherwood Computer [in Ann Arbor].

I sent my drive to Sherwood on 22-Jan and got it back on 28-Jan; how's that for turnaround? I used the drive long enough to find that DUP does NOT WORK! I got that corrected and the drive started giving problems again. I took out the disc and found a pad stuck onto the media! I lost DUP and other projects I was working on, so the drive went back to Sherwood on the next UPS!

BERNARD HELMS, Berrien Springs, MI 49103

[Bernie, I got in touch with Mike at Sherwood the day after he'd received, fixed and returned your drive. He said he couldn't explain why that pad had fallen off, but that he'd used some extra-strong stickum to put a replacement on with; you shouldn't be having that kind of problem again! Mike is pretty darn good with Heath-type drive repairs. He's been trying to contact some competent person at Heath Company about getting Sherwood put on their list of authorised repair facilities. I certainly hope he can! Mike had seven of my own drives in his shop a couple weeks back and I have had trouble with only one of them. It was no problem because Mike had told me what he'd done to make it read and write again--just unstuck the head-select solenoid armature with an extra-fine jeweler's screwdriver. Most other service folk wouldn't let you in on that kind of inside data. Watch for Sherwood's ad in the JOURNAL, they're Good Guys! -- ed]

EDITOR's GOSSIP: Picked up a couple Z19 terminals at the University of Michigan's Property Disposition Office recently for only twenty-five bucks each! One works peachy keen, the other (a Z19A which I'd hoped to make into another H89A with my "spare" CPU board!) has something queer going on in the keyboard ROM--prints either blocks of dots (NOT graphic "1"s) or very skinny /s from 50% of letter keys, NO others! Eventually I'll find out if it's a bad ROM or if some one at the UofM made a special ROM for driving a scoreboard or some other silly, equally inane purpose. Meanwhile, the good Z19 is getting to know my "spare" H8 better and I hope to set it up in an 8-bit BBS-dedicated basement corner, Real Soon Now!

LETTERS Continued

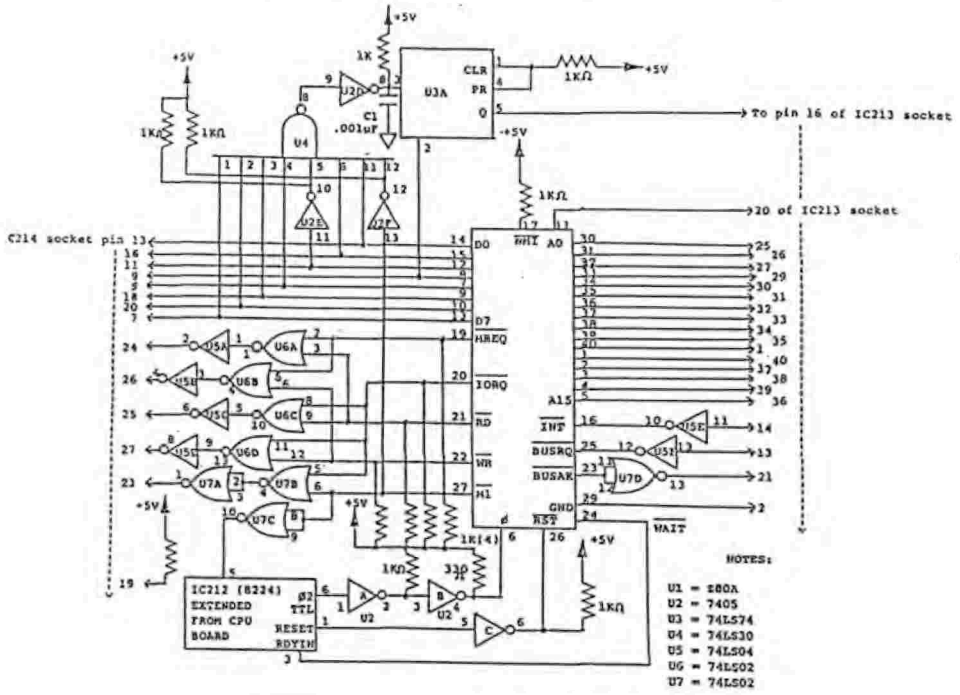


FIGURE 1 – Z80 CPU ADAPTER (Compliments of Patrick Swayne - HUG)

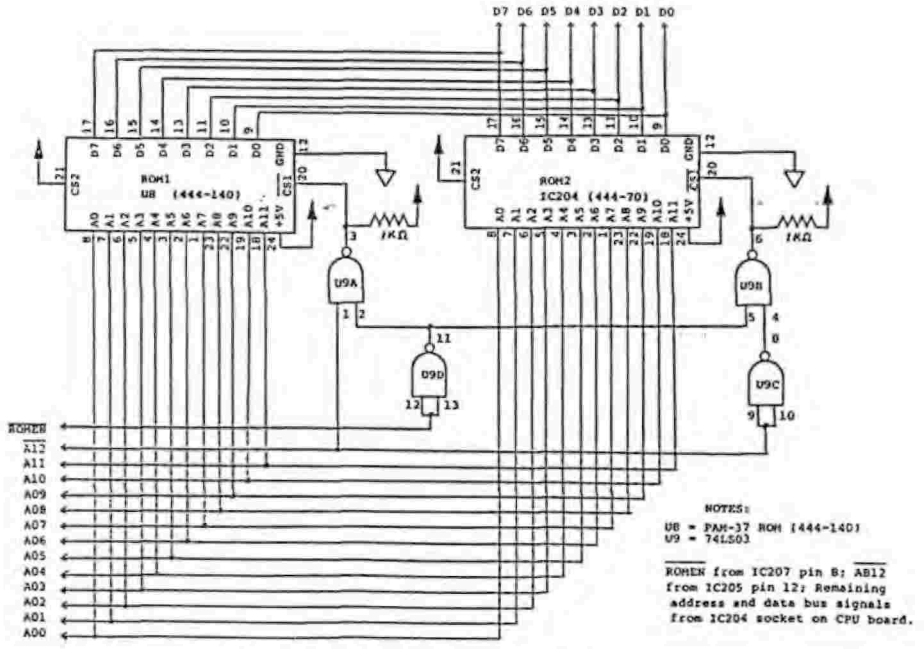
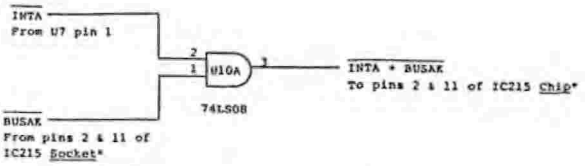


FIGURE 2 - ROM SOCKET MODIFICATION FOR PAM-37



* There must be no direct contact between IC215 pins 2 & 11 and its socket.

FIGURE 3 - MODIFICATION TO ENABLE READ BUFFERS DURING INTERRUPT ACKNOWLEDGE

MISC. NEWS, &c, For Sale

[We received this information sheet with a cover letter from Bill Derby asking that we run it in our next JOURNAL. Here it is, Bill! -- ed]

CLE Command Line Editor
for a CP/M 2.2 system

Until recently, both mainframe and micro operating systems have been notoriously unforgiving of the user who makes a mistake while typing system commands. A command line typically consisting of up to 80 characters must often be retyped in its' entirety--all because of one little error. Unfortunately, the longer the command line, the more likely it will be entered with errors in it. Overe the years this has resulted in untold hours of frustration; there must be a better way.

Ideally, it should be possible to correct errors detected anywhere in a command line before it is processed, and recovery of a command line should be allowed for correction of errors before re-entering the line for system processing. The Command Line Editor provides these and other capabilities in a simple and straight-forward way, with minimum impact on already existing system conventions. Three command-line buffers have been included to provide the most-needed editing and recovery facilities within a minimum of space. These buffers hold the current command line, the most recent command line, and a command line selected by the user.

The installation program for CLE allows it to be installed in memory any where it does not cause conflict with any other system elements. CLE operates at a system level which allows editing of both program input and normal command lines. To provide needed control for cursor positioning and command-line recall, some control characters' functions have been extended in a natural fashion. Because CLE was written with 8080 control codes, it may be assembled with the CP/M .ASM utility supplied with your system.

When installed, CLE communicates intimately with the BDOS code standard in any CP/M 2.2 system. All functions of the CP/M system are undisturbed by the command line editor's presence, and since the CCP is unaffected, CLE will also work in systems--such as ZCPR--which replace the CCP. A special H89 CLE version is available in which the editor is incorporated into the BIOS.

The Command Line Editor package is distributed with a well-commented assembly language source and an automated installation program which lets you install it above or below the BIOS in an existing CP/M system. BIOS.SYS files, which include the CLE program for six standard H89 systems, and a SUBMIT file to facilitate CLE inclusion in non-standard systems are also available. All versions come complete with step-by-step installation instructions and a full set of CLE operating instructions.

More descriptive information on the Command Line Editor, and on the earlier Derby CP/M Utilities (SUB/SD/CMP/COPY) is available from the author. The CLE and documentation is priced at $12 (postage prepaid in the U.S.). The Derby CP/M Utility package is also available at $12, but if you buy both, the combined price is only $22. Please specify any standard H89 hard or soft sector 48tpi CP/M disc format. **Send order to M S Derby, P.O. Box 2041, Livermore, CA 94550,** phone 415-443-1741.

[Here's a letter we ran across in "CodeWorks" #15, Jan-Feb, 1988. It was interesting enough that I called the writer to find out more about the problems with her H89. If any of our subscribers live reasonably near Ms Nolting, get in touch with her because she is becoming so disenchanted with her 8-bit machine that she is considering junking her H-89 & replacing it with a (Arrgh!! GAG!!!) peesee clone! - ed]

"I have a Heath H89 and added a Magnolia 10meg softsector [w/driver card]. I had two DSSD hardsector drives which can now be used for hard or soft sector. My problem is I can run all my old hard sector discs, but can't get printout in the programs I did before. I've checked the configurations and everything seems to be okay. The programs I have tried were HDOS or MBASIC. Also, I haven't figured out how to copy my hard-sector discs to soft sector--or can't one do that? I'd really appreciate someone helping me as I live in an area where no one has a Heath computer.

/s/JUDY NOLTING, 550 S 10th St, Bird Island, MN 55310"

[Let's all get in touch with Ms Nolting, give her encouragement and turn her into an enthused, informed, and dedicated H/Z 8-bit user! Remember, just because your H/Z 8-bit machine works is no excuse for throwing it away. -- l.e.g.]

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FOR SALE... WANT AD... FOR SALE... WANT AD... FOR SALE..

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For Sale -- Two H89s, used (and poorly maintained) in an extremly hostile environment but still in working condition! Standard 64k, one internal sssd hard sector drive, bunch of basket case Siemen's drives w/standard H/Z grey, slope-front cases & power supply, misc H89 documents & some used discs. No software (although there may be something on the discs). $250 if you pay for packaging & shipping or $425 if we do it. NO plastic or C.O.D.s! Call 313-769-6052 after 7pm EST, ask for Lenny. NOTE: Proceeds of this sale go toward leasing of a new copy machine for the SEBHC JOURNAL.

For Sale -- Two H8 16k memory cards, $16 each, one 32k card, $32. All working when removed from our extra H-8. We pay shipping. Send cheque or money order to SEBHC JOURNAL, 895 Starwick Drive, Ann Arbor, MI 48105. NB: Proceeds of sale go toward leasing of a new copy machine for the JOURNAL.

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EIGHT BIT STUFF OF GREAT VALUE

by Ron Eggemeyer, 2209 N 17th Ave., Phoenix, AZ 85007

If you ever have used CP/M on an eight bit computer and have now changed to a 16-bit machine you may want to see what's been evolving in the 8-bit world. Or, if you currently run a "plain vanilla flavored" CP/M, adding what I am describing here will put "topping, whipped cream, nuts, and a cherry" on your operating system!

I feel the most important upgrade to Digital Research's CP/M to come along in some time is what is called ZCPR3 (Z-80 Command Processor Replacement #3). CP/M can be divided into three main sections BIOS (Basic Input/Output System), BDOS (Basic Disk Operating system) and CCP (Console Command Processor). What ZCPR3 does, is replace the CCP. What is gained by doing this? I am glad you asked! Some major advantages are:

MULTIPLE COMMANDS on the command line. You can have up to 200 bytes on a single command line with only a semicolon separating commands (example: DIR;DIR B:;ERA *.BAK;DIR).

NAMED DIRECTORIES help organize files. If you use different disk/user areas (A0:,A5:,A15:,B3:,B14, etc.) to separate word processing from games, and another area for assembly-language programming and so on, then this feature can be very helpful. If you (like me) are forgetful, you sometimes find it hard to remember in which disk/user area you put what. With Named Directories you might call drive B: user area 2 (B2:) WP (for word processor). Then from the operating system command line just enter WP:, and the command line prompt will look something like this: B2:WP>. No need to enter USER 2<RETURN>, then B:<RETURN>. Entering B2: also produces the same effect. Or you can change Named Directories by using the system resident command of CD (example: CD WP:), and if a file named ST.COM exist in the WP: disk/user area, it then executes. The file ST.COM could be a setup program which you generated with an editor or word processor to customize your system--in this case, word processing. It's quite like running an auto executive batch file each time you enter a different disk/user area.

SEARCH PATH can also be installed. No more "FILENAME.EXT?" echoed back to the console whenever you request a file which isn't in the currently logged drive/user area. A search path tells the operating system to follow a specific sequence of disk/user areas when looking for a file. A search path can be made absolute (ex: A1:,B3:,B11:), or relative, referenced to the currently logged drive/user.

FLOW CONTROL package (FCP) gives your computer ability to make decisions. You can write a file using memory resident command such as IF, ELSE, FI, XIF, EMPTY, ERROR, EXIST, INPUT and NULL.

RESIDENT COMMAND package (RCP) contains commands which stay in the system's memory. They get loaded into memory at startup and can be exchanged with a different set of resident commands when desired by using the loader (LDR.COM) to install them. Some of these commands are:

CLS	Clears screen
CP	Fast file copy (DU:NEWFILE.EXT=DU:OLDFILE.EXT)
ECHO	Sends output to system CRT
ERA	Erase files
H	Displays what the current resident commands are
LIST	Sends desired file(s) to the system CRT
P	Peeks into memory. Typing P 0500 will display data at address 0500 and the next 256 bytes in both HEX and ASCII
POKE	Will change a byte(s) in memory starting at the address you supply
R	Resets the disk system
REN	Renames a file (DU:NEWNAME.EXT=DU:OLDNAME.EXT)
TYPE	Sends desired file(s) to the printer

One advantage of using ZCPR3 is its' tremendous flexibility to conform to different hardware environments. Part of that ability comes from ZCPR3 employing a section called the ENVIRONMENT DESCRIPTOR which defines the hardware environment. The environment descriptor loads into a specific memory location at startup and it contains information the system needs to function. A file which is part of the environment descriptor--is called Terminal Capabilities (TCAP). TCAP provides the ZCPR3 system with information about a terminal's particular operating characteristics (escape sequences or control codes) needed to perform "intelligent" functions. It also contains information about buffers used for definitions of other peripheral devices. Within these peripheral definition buffers you may define two terminals (CRTs) and 4 printers. Many Z-System utilities (ex: PAGE or PRINT) read the environment descriptor so that they can invoke special characteristics of a peripheral device connected to your computer.

SHELLS are programs which allow a computer operator full access to all operating system functions without having to know the commands or correct syntax to carry out a particular task. This is accomplished with MENUS. When a shell is installed, all an operator needs know is what is to be done, locate the desired function on the menu or menus, enter the corresponding single key stroke and the shell takes over from there. The shell translates that single key stroke into the proper syntax to perform the chosen function.

ALIASES are script files which contain filename(s), or operating system commands which are created with the Alias program (somewhat like a standard submit file generated with an editor). Then it's given a name which implies the purpose of the function it performs. Certain symbols may be written into the alias, such as $n (where n is 1 thru 9) parameters from the command line. Or $Fn (where n is 1

Eight-Bit Stuff, Concluded

through 4) filename.typ of system files. It could be used something like this: You've been compiling some "C" source code, making changes, and then recompiling it. If you're using Aztec C, you've been entering "CZII FILENAME.C". Then, after compiling finishes, you'd enter "AS FILENAME.-ASM" and wait until the assembler finishes. You'd then enter "LN FILENAME.O". After the linker finishes, you would--or should--have the desired FILENAME.COM, along with a few unwanted temporary files generated by the assembler/-linker. You would want to erase these files, so you'd enter "ERA FILENAME.ASM" and "ERA FILENAME.O". An easier way to accomplish the same task would be to generate an alias. We could give it an arbitrary name such as C.COM and it might contain this script:

```
CZII $1.C
AS $1.ASM
LN $1.O
ERA $1.ASM
ERA $1.O
```

To execute this alias, just enter "C FILENAME". This brief example uses only one FILENAME and one $n. But you could write a script that contains as many as nine $n. In that case the command line may look something like this: "DO-IT FILENAME1.EXT FILENAME2.EXT FILENAME3.EXT", and so on. The use of aliases can make routine jobs more automatic. Alias size is limited only by the size of the command-line buffer. For larger and more complex jobs other utilities or tools such as ZEX would be used.

INPUT/OUTPUT REDIRECTION gives the system the ability to send output of any file to any output device you desire. Likewise, input may come from any input device you designate. Custom I/O drivers may be added without making any changes to the BIOS (a very nifty feature).

PASSWORD CONTROL in ZCPR3 lets the computer operator assign a password to any disk/user area, or to the entire disk. This makes it easy to protect any data you believe should be secure.

ONLINE HELP is an enjoyable advantage of using a computer running ZCPR3. The amount of online help which is just a keystroke away can be a definate advantage when you're not sure what options are available. An extensive tree structure help system may be created to serve most any need you might have. The utilities and tools provided with the ZCPR3 system have comprehensive help menus built in. An excellent example is the VTYPE.COM utility for viewing text files. When VTYPE is invoked, all you need do to review available options is to enter "/". This clears the CRT and displays the options list. Enter another "/" and you return to the text file at the exact location from where you called up the options list.

CUSTOM MENUS--mentioned above--lets one build a complete TURNKEY SYSTEM. Your own menus allow access to all computer functions, and lets you run an application program by entering only a single keystroke.

In summary, I believe that adding ZCPR3 to your CP/M system is a most worthwhile project. Although ZCPR3 is in public domain, you definately need a FULL understanding of both your system and of CP/M before attempting to install it in your system. After reading numerous stories written by people who have that "full understanding" about the weeks of work they put in, installing ZCPR3, I decided to check out an organization named ECHELON. After a pleasant telephone conversation with them, I ordered Z3-DOT.COM an auto-install fully-equipped version. Z3-DOT.COM did--in three minutes--what I am sure would have taken me at least a year to do!

Echelon supports ZCPR3 in several ways. They sell the most up-to-date ZCPR3 utilities and programs, and they publish a great newsletter called Z-News. Z-News informs its readers of the latest additions or updates to their current software offerings, and notes about possibly better approaches to solving programming situations. Also each issue contains a editor's comentary section which talks about (what I would call) the state of the condition. It's usually given from a pleasantly-different viewpoint. Another helpful part of the ZCPR3 community is the network of Z-NODES (Bulletion Board Service) that span the country. These help distribute software and provide current information about ZCPR3. The Z-Node sys-op can generaly answer questions you might have about a specific problem. And Echelon even sells a replacement for your BDOS called ZRDOS. ZRDOS has many enhanced features not found in standard BDOS--here are a few:

Automatic logon when changing disks (no more warm boot).
File archiving is supported.
Read-only disk status is kept after warm boot.
Enhanced error handling.

With your system running both ZCPR3 and ZRDOS, you never have to fight for support from Digital Research or your computer's maker. Help is as near as your telephone! For more information contact: ECHELON Inc., P.O. Box 705001-800, South Lake Tahoe, CA. 95705, (916)577-1105. ZNODE CENTRAL, call (405)432-0821

CREDITS:

* Z80 is a trademark of Zilog Corporation
* CP/M is a trademark of Digital Research, Inc.
* AZTEC C is a trademark of Manx Software Systems
* ZCPR3 was created by Richard Conn
* ZRDOS was written by Dennis Wright
* Z3-DOT.COM was created by Richard Conn, Dennis Wright and Joseph Wright.

PORTABLE CP/M COMPILER -- Part 6

Confessions of a Game Hacker

by Tim Brengle

In this final installment your friendly neighborhood game hacker returns to offer his views on:

* computer gaming in general
* the state of the Infocom world
* a couple of systems for writing games

We hope his opinions and impressions might be of some value to you. At the very least, they are valuable to the author and your editor!

COMPUTER GAMING

My job is programming computers for a big company. At work I have the use of a state-of-the-art computer workstation with high-resolution graphics, lots and lots of disk space, a very high speed processor, a local area network, and so on. It runs the UNIX operating system. It's a real hacker's paradise. And what do I use it for? Creating language compilers.

At home I have an H-89 with hard sector disks. It runs the CP/M 2.2 operating system. What do I use it for? Mostly games. Playing games. Writing games. Creating game systems. Working on utilities that make those things easier.

There, I've said it.

There are those who have politely suggested that I am being frivolous with my time. Possibly. But I firmly believe that computer games serve some important purposes. Certainly, playing games is pleasurable. It can also be thought-provoking because most adventure-like games are wonderful exercises in problem solving. Then there is the manual dexterity required in order to master arcade-type games. For me as a game designer and implementor, there are also the programming skills necessary to make a playable game.

Suppose you wish to introduce someone to the world of computing. Would you put them down in front some spreadsheet program? Perhaps your favorite compiler? Maybe a modem program? I would set them down with either Adventure or one of Infocom's games, tell them that they need to press the return key, and then stand back and watch. I am convinced that well-crafted computer games are the surest cure for computer phobia.

So don't let anyone tell you that your machine should be used for some "higher purpose". Go ahead and play games on your computer. And feel good about it!

INFOCOM NEWS

The people responsible for some of the best computer games available are at Infocom. The company was started by the MIT people who first developed Zork (then called Dungeon) for MIT's big timesharing systems. Much more recently, Infocom was acquired by Activision of Atari 2600 fame.

Titles offered by Infocom include: the Zork trilogy, Deadline (a murder mystery), Planetfall (a science-fiction adventure), Hitchhiker's Guide to the Galaxy (by Douglas Adams), Leather Goddesses of Phobos (a satire), any many many others.

The good news is that they are all available for MS-DOS and Z-151 compatible machines.

The bad news is that Infocom has stopped selling them for all CP/M machines.

I found that out by attempting to order a large quantity during their recent "funeral sale for obsolete machines". But things are not entirely bleak. I have discovered that most of the Infocom game files are in a common, machine-independent format. These files are then interpreted by little programs which are specific to particular operating systems and hardware. Thus, game files from (say) MS-DOS computers could be used on CP/M machines.

This means that once someone had the correct interpreter for their machine and a little knowledge about what to patch with DDT, other Infocom games would work...assuming that one could get other data files.

I created a little assembly program that automates the patching process (which I will be happy to make available), and so I can make the interpreter for Hitchhiker's Guide to the Galaxy think it is playing Deadline or Zork I or ...

GAME WRITING SYSTEMS

In case you couldn't tell from the foregoing, one of my main passions is for Adventure-like games. There have been any number (of wildly varying quality) created in the past few years. There are even a number of books about them with reviews, commentary, and even solutions. What has been missing heretofore is a reasonably convenient way for the average programmer to create one of from scratch.

A recent issue of BYTE magazine (May 1987?) had a pair of interesting articles concerning games. One was about AdvSys --a system for writing Adventure-like games. The other told about various things which make an Adventure-like game interesting, and how one might create an enjoyable version.

COMPILER Finis — .ASM, HDOS & CP/M

Because I had been working with a good friend for about two years, I felt rather like a scientist whose pet theory had been published by someone else--on the day before his own paper was about to be sent to a major journal!

The morbid part of me had to examine AdvSys carefully to see if--and how badly--we had been "scooped". We read the article, then my friend made a long-distance call to Massachusetts (at great expense!) so he could down-load the source code. Only after examining the entire thing carefully were we able to breathe sighs of relief. AdvSys is a good system, but it lacks a large number of those features which make our Adventure Definition Language system so powerful and (we hope!) easy to use.

Possibly the best part of all this was that it forced us to get our act together and clear up the last details necessary before we felt we could distribute ADL. ADL is now available (for Z80s running CP/M 2.2) from the San Diego HUG, P.O. Box 33046, San Diego, CA 92103-0340, Attention: Tim Brengle. The entire package includes: the ADL compiler and run-time system, several sample games, *-complete-* documentation, and even the source code for everything!

[We are deeply grateful to Al Brengle, editor of San Diego HUG's "Dup and Dump" newsletter, for sending us Tim's ADL programming series, and allowing us to print it for the benifit of--and enjoyment by SEBHC JOURNAL readers and subscribers. When enquiring about ADL from SDHUG, please mention that you found out about it in the SEBHC JOURNAL! -- ed]

--::<<8>>::--

Dear Mr. Geisler:

Enclosed you will find a check for fifteen dollars so that I may begin my subscription to the SEBHC JOURNAL.

I had received a free issue after requesting more information from SEXTANT and with my first copy I was pleased with your publication.

I'm very fond of my 8-bit computer and I don't want to give it up. My system evolved through time, starting way back with an H8, 32k RAM, one disc drive in an H17 and an H9 terminal. It wasn't long before I purchased a 32k Dynamic RAM board from D-G and was up to a full 64k. I sold my H8 and obtained an H19, and, before I knew it, I was buying all sorts of goodies for my computer. [Does this ever sound familiar! -- ed]

Today I stand with my H8 loaded with a Trionyx Z-H8 [cpu] board, 64k (with at least another 64k of RAM boards laying around), Micro Widgets' clock/port board, and an H17 modified to hold three hard-sector drives, an H19 with a Cleveland Codonics' graphics board and an Epson FX-80 [printer]. I've purchased all sorts of software, modified everything, and am writing more.

Don't get me wrong; I'm not an old-timer hung up on my H8 system. I'm twenty-eight years old, do Dbase programming on an IBM at work, and maintain Intel 310's for a living. But it is always nice to come back to my H8. [Know what ya mean --my H8 and I fit like a comfortable pair of old shoes...ed]

About two years ago a very special lady came into my life and since then, except for an occasional letter, I barely run my H8 any more.

I've enclose printouts of several programs I wrote which other SEBHC JOURNAL readers may enjoy. I hope you like them too.

FRANK CEPULKOWSKI, 4523 S Richmond, Chicago, IL 60632

[Well, thank you very much indeed, Frank! The first of your several listings follow. (Hope I typed it correctly!) We'll print more every month--until we run out of everything, and I'll assemble, try, and report on them along the way! -- ed]

Listing 1 -- HDOS H8 Assembly-Language "Password" Utility

```
* COMBOH8.ASM
* THIS IS A COMBINATION DISC ENTRY PROGRAM.
* IT SHOULD BE NAMED PROLOGUE.SYS AND PLACED
* ON YOUR SYSTEM DISKETTE.  WHEN RUN, IT WILL
* DISABLE THE CNTRL-Z AND ASK FOR THE PROPER
* ACCESS CODE TO BE ENTERED IN FROM THE H8
* KEYPAD.  THE SYSTEM DISKETTE MUST BE SET
* TO HDOS STAND-ALONE.  THIS PROGRAM CAN BE
* MODIFIED TO ACCEPT ENTRY FROM THE TERMINAL
* KEYBOARD INSTEAD.  THE 'CODE' CAN BE CHANGED
* TO WHATEVER IS DESIRED.  THE NUMBER OF 'DIGITS'
* IN THE CODE CAN ALSO BE CHANGED, ALSO THE NUMBER
* OF 'ATTEMPTS' BEFORE THE SYSTEM CRASHES CAN BE
* CHANGED.  IF AN INCORRECT ENTRY IS TYPED, JUST
* PRESS (*) CANCEL AND RE-ENTER.
*                \   /
*       WRITTEN BY  CEP
*                /   \
*              24-DEC-83

$TYPTX  EQU     31136A
RCK     EQU     3260A   H8 KEYPAD ROUTINE
INIT    EQU     073A    MASTER RESET IN PAM-8
ATTEMPT EQU     2D      # OF TRIES
DIGITS  EQU     4D      # OF DIGITS
WBOOT   EQU     40100A
.DMOUN  EQU     201Q
.MONMS  EQU     202Q
.CLEAR  EQU     055Q
.LOADO  EQU     010Q
.DMNS   EQU     203Q

START   ORG     42200A
```

(continued on next page)

.ASM; HDOS & CP/M, Continued

```
* THIS ROUTINE DISABLES HDOS CNTRL-Z BY REMOUNTING SY0:
        MVI     A,0FFH
        SCAL    .CLEAR          CLEAR CHANNEL
        XRA     A
        SCALL   .LOADO          OVERLAY 1
        MVI     A,1
        SCALL   .LOADO          OVERLAY 2
        LXI     H,DRIVE
        SCALL   .DMNMS          DISMOUNT SY0:
        LXI     H,DRIVE
        SCALL   .MONMS          REMOUNT SY0:

* COMBINATION INPUT ROUTINE
        CALL    $TYPTX
        DB      7D,12Q,'PLEASE ENTER PASSWORD ON H8 KEYPAD',
212Q
        MVI     C,ATTEMPT
AGAIN   LXI     H,CODE-1
        MVI     B,DIGITS
        MBI     D,0
CHECK   INX     H

* THIS ROUTINE MAY BE REWRITTEN TO ACCEPT TERMINAL ENTRY
        CALL    RCK             GET NUMBER FROM H8
        ADI     48D             MAKE IT ASCII
        CPI     60D             (+) CANCEL LAST ENTRY
        JZ      AGAIN

        CMP     M
        CNZ     WRONG
        DCR     B
        JNZ     CHECK
        MOV     A,D
        ORI     0
        JZ      GOOD
        JNZ     AGAIN

* THIS ROUTINE WILL CRASH THE SYSTEM FORCING YOU TO REBOOT
CRASH   CALL    $TYPTX
        DB      12Q,'ACCESS DENIED!',7D
        DB      12Q,'REBOOT SYSTEM FROM H8.',212Q
        JMP     INIT

WRONG   INR     D
        RET

CODE    DB      '8080'

DRIVE   DB      'SY0:',0
GOOD    CALL    $TYPTX
        DB      12Q,'PASSWORD ACCEPTED!',212Q
        JMP     WBOOT

        END     START
```

End of Listing 1.

Listing 2 -- HDOS Type-Ahead Buffer/Turnkey Utility

```
*       \   /
*        CEP
*       /   \
*     30-MAY-83
*
* THIS PROGRAM WAS ORIGINALLY WRITTEN IN BASIC.  SEE REM-
* REMark #19, pp 18 - 19.
*
* RUNS UNDER ANY VERSION OF HDOS LATER THAN 1.4; ALSO IT
* IS INDEPENDENT OF MEMORY SIZE.
*
* COMMAND DB '...' CONTAINS THE COMMANDS ENTERED INTO THE
* BUFFER.  IT MAY BE CHANGED TO ANY HDOS COMMAND OR PRO-
* GRAM NAME.  AS GIVEN HERE I AM USING IT FOR TURNKEY OPERA-
* TION.  EXECUTED FIRST, IT WILL LOAD BASIC AND RUN PROGRAM
* "MENU.BAS".

USERFWA EQU     42200A          MEMORY FIRST WORKING ADDRESS
STACK   EQU     42200A          STACK ADDRESS
LF      EQU     012Q            LINE FEED
BELL    EQU     007Q            TERMINAL BELL
.EXIT   EQU     000Q            EXIT
$MOVE   EQU     30252A          MEMORY MOVE
$TYPTX  EQU     31136A          TYPE TEXT

START   ORG     USERFWA
        LXI     SP,STACK
        LXI     B,000Q
        LXI     D,000Q
* FIND NUMBER OF CHARACTERS AND COMMANDS BEING ENTERED
        LXI     H,COMMAND-1
CHECK   INX     H
        MOV     A,M
MORE    INR     C               NUMBER OF CHARACTERS
        DB      0CB,79H         BIT 7,C (Z80 CODE)
        JNZ     ERROR           IF C>256 CHARACTERS
        CPI     LF
        JNZ     CHECK
        INR     D               NUMBER OF COMMANDS
        INX     H
        MOV     A,M
        CPI     000Q            IS IT END OF COMMAND?
        JNZ     MORE
        PUSH    D               T7 NUMBER OF COMMANDS
        PUSH    B               I  NUMBER OF CHARACTERS
TO      LHLD    8422D           S.DLINK
        LXI     B,10D
        LXI     B,10D
T4      DAD     B               BUFFER START IN (HL)
        POP     B               I NUMBER OF CHARACTERS
        PUSH    H               PUT T4 ON STACK
        MOV     E,M
```

(Continued overpage)

LISTING Concluded -- And A Letter

```
        INX     H
T8      MOV     D,M             START OF BUFFER
        PUSH    D               PUT T8 ON STACK
        XCHG
        LXI     D,COMMAND
        CALL    $MOVE           PUT COMMANDS INTO MEMORY
* T9                            END OF BUFFER IN (HL)
        POP     D               POP T8 INTO (D)
        XTHL                    EXCHANGE T9 FOR T4 ON STACK
        DCX     H
        MOV     M,D
T3      DCX     H               HEAD POINTER
        MOV     M,E
        POP     D               POP T9 INTO (D)
        DCX     H
T5      MOV     M,D             HIGH ADDRESS IN (D)
T2      DCX     H               TAIL POINTER
T6      MOV     M,E             LOW ADDRESS IN (E)
        DCX     H
        DCX     H
        DCX     H
T1      DCX     H               LINE COUNTER
        POP     PSW             POP T7 INTO (A)
BYE     XRA     A
        SCALL   .EXIT
ERROR   CALL    $TYPTX
        DB      BELL,LF,'COMMAND LINE WAS INCORRECT'
        DB      ' PLEASE CHECK AND REASSEMBLE',LF,212Q,0
        JMP     BYE
COMMAND DB      'BASIC',LF,'CHAIN "MENU"',LF,0

        END     START
```

End of Listing 2.

[Editor's note: The two other listings accompanying Frank's letter we'll print in next month's JOURNAL. One is a Micro-Widget clock utility which loads the clock driver, then displays day of week, time, and date. I wasn't able to check it out for my D-G Electronics Super89 CPU on-board clock because of different D-G clock port addresses. The other listing is a HDOS-like directory utility for CP/M.]

==========

JUST-RECEIVED CORRESPONDENCE

==========

February 14, 1988

Dear Lenny,

I received the January JOURNAL this past week. It gets better every month. By now you should have gotten the letter I wrote in January indicating that my H37 controller was up and running with the 8080 board (modified with Z80 chip). Let me know if you didn't get it. [See pp3-5. - ed]

In the January issue you asked how much I wanted for royalty on the REDIRect program. As I stated, I didn't write REDIR--it came from a PBBS so I certainly can't accept royalties for work which isn't mine. GASMLG.BAS was of my own design, and I will accept whatever is fair for it. Maybe about a buck a disk for it and STATECAP.BAS, the program I'm enclosing with this letter. [Sounds fair; we'll include these on CP/M GAME DISC #1, out in March '88. -- ed]

STATECAP.BAS is a game/educational program designed to provide drill on naming the state capital for each state. It should be run with the CAPS LOCK key down since operator entries are compared with data statements which have been entered in all caps. You will be asked to name the capital of a state. If you get it right, a flag will be set and you won't be asked about that state again during the session. But, if you get it wrong, an error counter will be incremented and you will be asked about that state again during the session, until you get it correct. At the end you will be given a score. [Your STATECAP listing runs just fine under both CP/M & HDOS MBASIC. It's less flashy than the Heath version (in their BHBASIC instruction manual), but it works similarly and with much less code. We've included the listing below. -- ed]

I really can't understand why those two 40 trk drives of yours won't work with CP/M, but will with HDOS, under control of the H37. The only thing I could think of is the CONFIGUR setup, but I'm sure you've looked into that. [I've just about concluded the problem is somewhere located in the drives themselves because they misbehave similarly with my Super89 soft-sector controller--now you tell me, what's up?! -- ed]

So far I've been running my H37 with an 80trk double sided drive in position 0 and a 40trk single sided in position 1 with no problems. As soon as I get my hands on another real-good-deal 80trk ds drive, I'll reconfigure the whole thing to have primary boot on the H37 side with two 80trk and one 40trk, all double sided drives; and I'll leave one 40trk double sided drive on the H17 side. All of these drives will be half height except for one.

Have you, or anyone out there, had any success running the HDOS version of CPS (Computerized Phone System) with XMODEM protocol? The CP/M version I have runs just fine, but the HDOS version will not cooperate. I thought maybe something was wrong with my H8 or the CPS distribution disk so I asked a friend who also has the HDOS CPS and he got the same bad results. Back when I used HDOS a lot, I only used it with no protocol, and that function still works. So maybe it never worked with Xmodem; any ideas?

GARY S MELANDER (address on page 4)

[Your above letter arrived just as we were making up these

STATECAP.BAS Listing Concluded

last few pages. It is so timely that we kicked out another couple pages of stuff to make room here! Regarding CPS, I have absolutely no experience with it. Perhaps Terry Hall (312-665-4594) can help. If not, maybe Pat Swayne can--he eventually gets to see the JOURNAL copy which HUG receives monthly. -- ed]

CP/M or HDOS Computer-Aided Instruction Program Listing

```
100 REM         STATECAP.BAS   17-MAY-81 -- Gary S Melander
105 REM ** Run program with CAPS LOCK key down. **
110 DATA ALABAMA,MONTGOMERY,ALASKA,JUNEAU,ARIZONA,PHOENIX,
  ARKANSAS,LITTLE ROCK
120 DATA CALIFORNIA,SACRAMENTO,COLORADO,DENVER,CONNECTICUT,
  HARTFORD
130 DATA FLORIDA,TALLAHASSEE,GEORGIA,ATLANTA,HAWAII,
  HONOLULU,IDAHO,BOISE
140 DATA ILLINOIS,SPRINGFIELD,INDIANA,INDIANAPOLIS,IOWA,
  DES MOINES
150 DATA KANSAS,TOPEKA,KENTUCKY,FRANKFORT,TENNESSEE,
  NASHVILLE
160 DATA LOUISIANA,NEW ORLEANS,MAINE,AUGUSTA,MARYLAND,
  ANNAPOLIS,DELAWARE,DOVER
170 DATA MASSACHUSETTS,BOSTON,RHODE ISLAND,PROVIDENCE,
  MICHIGAN,LANSING
180 DATA MINNESOTA,ST. PAUL,MISSISSIPPI,JACKSON,MISSOURI,
  JEFFERSON CITY
190 DATA MONTANA,HELENA,NEBRASKA,LINCOLN,NEVADA,CARSON CITY
200 DATA NEW HAMPSHIRE,CONCORD,VERMONT,MONTPELIER,
  NEW JERSEY,TRENTON
210 DATA NEW MEXICO,SANTA FE,NEW YORK,ALBANY,NORTH CAROLINA,
  RALEIGH
220 DATA NORTH DAKOTA,BISMARCK,OHIO,COLUMBUS,OKLAHOMA,
  OKLAHOMA CITY
230 DATA OREGON,SALEM,PENNSYLVANIA,HARRISBURG,
  SOUTH CAROLINA,COLUMBIA
240 DATA SOUTH DAKOTA,PIERRE,TEXAS,AUSTIN,UTAH,
  SALT LAKE CITY
250 DATA VIRGINIA,RICHMOND,WASHINGTON,OLYMPIA,WEST VIRGINIA,
  CHARLESTON
260 DATA WISCONSIN,MADISON,WYOMING,CHEYENNE
270 DIM ST$(50):DIM CP$(50):DIM X$(50)
280 FOR X=0 TO 49
290 READ ST$(X),CP$(X)
300 NEXT X
310 X=INT(RND(1)*50)
320 IF X<0 THEN 310 ELSE IF X>49 THEN 310
330 IF X$(X)="X" THEN 310
340 PRINT "WHAT IS THE CAPITOL OF ";ST$(X);
350 G=G+1
360 INPUT AN$
370 IF AN$<>CP$(X) THEN 480
380 PRINT:PRINT "YOU ARE CORRECT!!!!! - NOW LET'S TRY
  ANOTHER.....":PRINT
390 X$(X)="X"
400 FOR X=0 TO 49
410 IF X$(X)<>"X" THEN 310
420 NEXT X
430 PRINT "YOU'VE GOTTEN THEM ALL!!!!!"
440 PRINT "IT TOOK YOU ";G;" GUESSES TO GET ALL 50 CORRECT"
450 P=(50/G)*100
460 PRINT "YOUR RATING IS ";P;"%"
470 END
480 PRINT:PRINT "SORRY - YOU MISSED IT - THE CAPITOL OF ";
  ST$(X);" IS ";CP$(X)
490 PRINT "LET'S SEE IF YOU CAN GET THIS ONE.....":PRINT
500 GOTO 310
510 END
```


Zenith Software for the HZ89 In Original Unopened Cartons

CP/M (8" only)	$60	BASIC-80 (MBASIC)	$60
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COMING ATTRACTIONS . . .

Coming next month is a very practical article by R. Kenneth Strum. Because this month is so short and Mr. Strum's article is quite long and detailed we are printing only his introductory paragraphs below. We know you'll want to read his entire article so, if you haven't yet renewed your subscription, do it NOW!

INTRODUCTION to "EIGHT BIT SURVIVAL IN A PEESEE WORLD"

Still have your old '89 or '90 running? Want to keep on using it? Tired of taking sneers from the PC "power users"? Well then, this series of articles is for you. (And you H-8 users, most of the software stuff I will be writing about also applies to you.) Here is what I intend to cover in this series:

1 - This month's introduction

2 - Next month:
- Use the H-89 in a "PC" world
  - CPC
  - CP/Emulator
  - Emulate
- Application tools the key
- Vendor support is critical

2 - Future topics:
- Hardware and software to help the tools
  - Hardware
    - Superset or Flicker Free kit
    - Super Ram 89
      - CP/M Super Ram 2.0
      - HDOS Super Ram 1.07
    - Real Time Clock
      - Datstamper
      - Clocks for CP/M and HDOS
    - Watzman ROM
      - Installing it
      - Using the Real Time Clock to set it
    - Cleaning the keyboard
    - Installing a new bridge rectifier
  - Software (CP/M)
    - Using Z-System to create a menu driven CP/M application environment
    - HUG's Keymap
    - Write-Hand-Man
    - File Management Programs
      - HFM
      - Datsweep
      - VFiler
      - disc77B
      - The PUBlic Patch for CP/M
    - H-DOS Programs on an AT!
- Some of the tools we'll explore:
  - Thoughtline
  - Newword and the Word Plus
  - Wordstar Release 4
  - Rembrandt
  - Long and Loud
  - Milestone
  - Query!3
  - Multiplan
- "Peripherals" which we'll cover:
  - Juki 6100 daisy wheel printer
    - Rembrandt lets you mix graphics with text!
  - Epson MX-80 (why is anyone still using the thing?)
  - The Heath PMK 121 switchbox for using two printers under CP/M
  - Hayes SmartModem
  - Disc drives
    - H17 expansion chassis
    - Adding a single hard sector drive
    - H47 Eight inch monster (it's not fast, but discs hold as much as a high capacity 5.25 inch AT drive)

Right now is a very good time to keep our older machines going. Why? Because we are in transition between DOS machines (CP/M, MS-DOS, etc) and graphic interface machines. Keeping your old machine alive for a couple more years will let you save enough cash to buy the latest Heath/Zenith Model xxxx with OS/2 operating system AND programs. . .

If you have any questions about what we'll be covering or suggestions for additional items to include in this series, please write me at 757 Titus Ave, Rochester NY 14617, enclosing a self addressed stamped envelope for fast response.

--=:<<[[8]]>>:=--

"UNCLASSIFIED" WANT ADS

WANTED--Software to drive a laser printer from an H89 or H90. Would like to get in touch with anyone who has done (or is attempting) this. Terry Hall, 516 East Wakeman, Wheaton, IL 60187 (312-665-4594)

WANTED--Patch code to change Heath's standard H47.DVD driver to recognise port 174 (instead of port 170 currently on distribution copy). I want to run my H47 dual-8" controller card along with my 5-1/4" soft-sector controller. Would also be glad to buy a disc with modified software if anyone has this. Terry Hall, 516 East Wakeman, Wheaton, IL 60187 (312-665-4594)

LETTERS POLICY

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The SEBHC JOURNAL's Back Page

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* The SEBHC JOURNAL is published twelve times a year and strains to get mailed the 22nd of the month. Editorial deadline: 10th of each month.

* All advertising is printed free of charge. Vendors will please submit B&W "camera-ready" ad copy, 7" wide by 9" high (one page/issue) no later than the 15th of month in which it's scheduled to appear. All Society members can run one free--new--250-word Want Ad a month.

* Subscriptions are $15/year in Canada, Mexico, the U.S.A. and its possessions (all others $25/yr) and start in month following receipt of application. Please make cheques or money orders payable to L.E. Geisler. Single back-issue copies by special order--allow 6 weeks for processing.

* Subscribers are automatically Society of Eight-Bit Heath Computerists members. Members' ID# and expiration follows the name on mailing label. The three member classes are: REGULAR (H/Z 8-bit user), ADVERTISING (one vote/vendor), ASSOCIATE (non-8-bit computerist, library, etc.). REGULAR members can vote and hold any Society office. ASSOCIATE members cannot hold office or vote in Society elections. The Society's official meeting coincides with HUG's annual conference; place and time announced in each July JOURNAL issue.

* The SEBHC JOURNAL is composed, edited and published by L.E. Geisler at 895 Starwick Drive, Ann Arbor, MI 48105. Phone 313-662-0750, 9am - 6pm Eastern Time, Monday thru Friday. Off hours, try 313-769-6052 (home).

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