

Saving Our HEATH Eight-Bit Machines!

SETHU JOURNAL

Volume III, Number 5

\$2.50 a copy, \$17.50 a year

December, 1988



Warmest Season's Greetings to All!

RIBBON REFILLS -- NZ-COM REBUTTAL

HOW-2 INSTALL A RIBBON REFILL
(MPI Printer, Model 99G)
Allie Lingo, Associate Editor

The first thing I did upon receiving the ribbon refills for my MPI 99G printer was to read the instructions on the package. Then I inspected an old cartridge to see how to go about opening it (without rendering it into junk). This cartridge is moulded plastic in two pieces, the bottom shell --which holds the ribbon coil--and a top plate. Sticking out of the top plate at one end is a knurled shaft which extends through an opening in the shell bottom. This is part of the ribbon advancing mechanism which engages with a splined shaft inside the printer. If the printer is turned off or the cartridge is not installed, one can rotate this shaft to advance the ribbon.

I found the top plate was held firmly to the bottom shell but there was a thin gap between top and shell. Figuring that I could take the cartridge apart fairly easily, I spread newspaper on the desk and then inserted a thin pocket-knife blade into the gap between shell and plate and gently pried upwards while working the blade along the gap. Eventually I got the top off with a minimum of damage (there were a couple of pins which must have been glued in place because they broke). These and other pins plug into matching holes along the shell's top edge and hold everything together. (Despite having broken off some pins there still were enough left to secure the cartridge upon reassembly.)

After having removed the top plate I studied the cartridge interior and noted how the ribbon and advancing mechanism looked before removing the ribbon. Next, I put on the plastic gloves which came with the refill pack (something called a "zip box") and removed the old ribbon from the cartridge. As I did this I found there is a gear moulded on the knurled winding shaft which meshes with a spring-loaded toothed idler gear and pawl assembly. The ribbon threads between the gear and idler and the pawl keeps things from going backward. I'm glad I had those gloves on; despite the ribbon being old, it still held ink and I would have looked pretty grungy without those gloves!

The cardboard refill "zip box" has arrows printed on it and is held together with rubber bands. The directions said to tear off one end of the box, remove the ribbon tray from the box, place tray inside cartridge shell and then thread the ribbon into the cartridge through the former ribbon's path. This took some effort because the spring-loaded parts wanted to jump out of the shell. Eventually I got the ribbon pack into the shell with a loop going out one end through a friction tension assembly and back into the other end between the idler and main gear pair. Once that was done I gingerly withdrew the ribbon tray from the cartridge and put the top back onto the shell, taking care that all remaining pins and the winding shaft were properly relocated. A couple turns of the winding shaft tightened the external ribbon enough that I was then able to install the cartridge in my printer.

After cleaning up the mess on my desk, I turned the printer on and ran its' internal test function. Whaddayknow! It worked "just like new"!

This may appear to be a rather tedious way of replacing your printer's ribbon, but after you've done it once, the next time is quite easy. It's a whole lot cheaper than paying \$10 or more for a ribbon (plus tax). And it is much better because many ribbon cartridges I've bought in the past have been rather stale and dried out. The refill packs have never disappointed me.

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NZ-COM Operating System and the H89
--The Other Side of the Coin--
L Van Hemelryck
16514 14th Avenue SE
Mill Creek, WA 98012

Rick Swenton gave a very good presentation covering the NZ-COM Operating System in the SEBHC JOURNAL for October, 1988. Having been personally involved in the continuing fine-tuning of ZCPR implementations on the H89, I agree that installation of Z systems may at times seem complex, but I do not consider such installations to be frightening ordeals, rather as challenges which carry their own reward.

While the automated installation programs such as NZ-COM and Z3PLUS certainly provide easy access to features provided by the latest version of the Z-CP system, the process removes some freedoms which I had come to appreciate. The restrictions stem from the installation program, not from the ZCPR-3.4 Command Processor. Because the 3.4 version of the CP, which adds provisions for type-4 utilities, is thus far not available with an assortment of configuration libraries, it is going to take me longer to import it into my system than the 3.3 version.

A truly under-utilised capability of ZCPR is the IOP system segment. While a few keyboard re-definition IOPs have been developed, these are only scratching the surface of what an IOP can really do. The initial concept of the IOP is to extend the ability to dynamically reconfigure a system's I/O. This can be achieved by re-organising the I/O byte decoding, or by loading--or replacing--the drivers linked to the standard CP/M logical devices, or all of these actions. Locating the drivers in the IOP allows one to remove them from the BIOS. This not only alleviates the need to carry a number of unused drivers in the BIOS, but gives access to any imaginable driver--or combination of drivers--just by reloading a system segment.

The Heath drivers refer to the Configuration Table which Heath installed in the BIOS Header Section immediately following the BIOS Entry Jump Table. I have found it convenient to relocate the Heath Configuration Table to the IOP where it can be pre-initialised for each application. This conforms to an extension to the Original IOP Concept, as described and

ARTICLE concluded -- BBS/SIG NEWS

adopted [sic] by R. Conn in his "Tutorial on Input/Output Packages for the ZCPR3 User". He proposed allocating the code section immediately adjacent to the IOP identifier (at offset 35H) to an IOP Name, optionally followed by a special buffer. In this manner, there is no need to invoke CONFIGUR to re-adjust the system configuration when an IOP with different requirements is loaded. By automatically installing an IOP which does not respect this extension, NZ-COM denies us this option.

I take it that our [mutual] interest in Heath's 8-bit machines is at least partially motivated by a desire to "know how things are done" and "how they can be streamlined". More than just providing an upgrade for CP/M's CCP, R. Conn introduced a practical modular assembly technique which is quite ably supported by modern assemblers and linkers. *If I really want to be held by the hand and be told at each step which key to punch without knowing what is happening, I can just as well buy a peesee.* [Our italics! -- ed] NZ-COM certainly will make Z-3.4 accessible to many, and I appreciate the effort which went into it--and into a good manual--but I regret that Z-3.4 isn't available in "raw" form.

Along similar lines: I read with interest Jay Sage's explanation on generating a .PRL file in 'The Computer Journal' #34. It looks very much as if the Heath PREL utility is being resuscitated! We certainly got a good package when we bought our H8(x). All this said, ZCPR is great stuff, and the SEBHC JOURNAL articles are presenting it very well. And, with our H89/90s, we have systems which can exploit it to the fullest extent.

Author's note: I most strongly suggest that we add 'The Computer Journal' (190 Sullivan Crossroad, Columbia Falls, Montana 59912, phone 406-257-9119) to our sources of information about the latest ZCPR developments.

----<[[8]]>----

PROMINENT COMPUTER AUTHOR IS NEW H/Z-SIG SYSOP ON COMPUSEVE!
(Department of Signs & Portents)

Early November, 1988, Joseph Katz--prominent columnist in REMark and frequent contributor to Sextant magazine--contacted the JOURNAL and announced he had assumed management of CompuServe's Heath/Zenith user's forum. He has started a drive to recruit new members for the SIG, and is extensively reorganising the HUG library files available for downloading by anyone interested in obtaining such data, including former H/Z 8-bit users who had been shoved aside by the 16-bit crowd. (The 8-bit HDOS and CP/M data library had been removed to HUG's Bulletin Board System in Benton Harbor, something which made it virtually impossible for 8-bit machine users to download data files of "historical" interest/value.)

SYSOP Katz has asked the JOURNAL to advise its' readers of the new state of affairs and to encourage them to contribute new 8-bit programs and instructional material to the SIG's data library. By doing this authors are assured their output

will receive the widest-possible distribution. Also, members of the SIG will once more be able to obtain most--perhaps all--the 8-bit files which HUG yanked from CompuServe (CIS).

Joe Katz has been active on CIS for a long time. He is an English professor, author and editor (in other words, a professional communicator) and knows what a valuable service that CompuServe's HEATHUSER forum provided in past years.

Mr. Katz told us he is in the process of updating the new ZENITH SIG's services and wants to expand its' activities. He can do this only if we 8-bit users get fully behind him. Many of the JOURNAL's subscribers have wanted an exclusively-8-bit BBS set up by the JOURNAL. But here's an opportunity to restore our "obsolete" machines to full membership in the computing community. The SEBHC JOURNAL heartily applauds Joe Katz and congratulates him on his new stewardship! We recommend that all subscribers not currently subscribing to CompuServe seriously think about signing onto that network in order to make use of the software and information potential available to them there.

Many subscribers needlessly fret about "the high cost of connect time". This isn't as important as it might appear when you have the facts: CIS charges only \$6.25/hour for connect time if your modem runs at 300 baud, and \$12.75/hour for 1200 or 2400 baud. Sometimes there is an extra charge made by a local communications firm--such as TYMENET--for connecting you with CIS, but this is at a fixed-time rate; it doesn't apply to modem baud rates. And it's usually lower than a long-distance phone call for the same period. In some cities or localities where there's no TYMENET "node" you may find there's only one telephone access number.

Usually CIS charges the same connect fee for 300 baud 24 hours a day. On the other hand, they charge more than double for a higher baud-rate connection during business hours. So you can save money by signing on at--say--1200 baud after 6pm local time if you like.

Most CIS connect time is spent browsing thru the library catalogues during the first couple weeks after you've joined. During this period you should be using 300 baud so that you are not overwhelmed by seeing text seem to scroll irretrievably off screen.

Once you've learned how to use the system you'll put most all your on-line time to use in downloading files or leaving messages on the SIG's bulletin-board. Now it's time to switch over to 1200 baud because it takes only a quarter the connect time to download a file than at 300 baud. There's where you save money. And if your modem works at 2400 baud, you can save even more!

How to sign up with CompuServe? Radio Shack has a CompuServe Information Service Subscription Kit for \$29.50 plus sale tax. This includes a \$25 usage credit which works out to about four hours "free" on-line at 300 baud. Or phone CIS toll-free at 800-848-8199 (614-457-0802, Canada and Ohio) and order their package for \$39.95 (delivered by UPS).

----<[[8]]>----

READER'S MAIL BOX



Dear Mr Geisler:

Recently I purchased your [HDOS Programmer's] CARE [Package] Disc #0. Has no one reported any "errors" to you? I can't believe that you would sell a product that is so defective--but [I assume] most computer business is caveat emptor. In one sense I am not complaining. I had a lot of fun and gained experience while debugging your files. My H89 was purchased in 1980 with an H14 dot-matrix printer and HDOS (upgrad-

ed later to version 2.0), 2 hard sector 5.25 inch dsdd drives and Jim Teixeira's SuperSysMod2 enhancement [package].

I used Heath's PAGED, somewhat primitive, but it does what I tell it. On October 11 I ordered your Text Processor DEMO and HDOS GAMES Disc #1. They haven't arrived yet...

I printed out the README.DOC file [from HDOS "Programmer's CARE disc] and here are my observations from the top [of that file] in alphabetical order:

*** BCM.DVD I renamed as instructed, but SHIFT + keypad ENTER didn't give a sign-on message, but showed the list of function keys. And SHIFT + keypad 0 did nothing. [Also] the [special function] keys did NOT produce the output indicated in the listing [resulting] from CTRL + keypad ENTER:

Menu listing	Actual definition/action		
GREY key - END	WHITE key	Nothing	
Keypad 3 - INPUT	Keypad 3	END	
4 - OPEN	4	END	
5 - CLOSE	5	"Basic Command Softkeys Program"	
6 - EOF(6	CHR\$(27)	
7 - LEFT\$(7	LINE INPUT"	
8 - MID\$(8	INPUT	
9 - RIGHT\$(9	OPEN	

*** BH2MBAS.BAS is listed in the directory as "BH2MBAS.BAS". I ran it and got a syntax error on line 890. The line should be changed thus:

from 890 C\$=MID\$(Y\$,R+1,LEN(Y\$)-R)

to 890 C\$=MID\$(Y\$,R+1,LEN(Y\$)-R)

The next run gave "Type mismatch in 320" which [when checked]

should be changed:

from 320 X\$=MID\$(X\$,1,E+9)...

to 320 X\$=MID\$(X\$,1,E+9).... It will now run ok.

*** BHFILES.BAS is a bummer! There are only 24 lines there, and it does nothing! I listed it and it refers to REMark #18, p25, but there's no such program in that issue! Your original source disc was also only 24 lines!!

*** CHECKBOOK.BAS is labelled CHEQUES1.BAS on the listing. Since it is BASIC, I gave it to BH2MBAS.BAS which converted the word FILES in lines 1330, 1340, and 1350 to O, N, and O, respectively. My BH2BASIC doesn't contain the word or description "FILES", and my MBASIC doesn't know what to do with the translation. [Of course! That's a Microsoft BASIC, NOT Benton Harbour BASIC programme so "Translating" it just screwed things up thoroughly. -- ed] I got a "NEXT without FOR" error in 1150 but the listing shows a valid FOR in line 1130?! The heading labels in line 850 don't match the rows printed by line 590, defined in line 100 USING F\$, but that is [a trivial item] to fix. And why didn't you also include the BALANCE.BAS check-balancing program from REMark #42, pp 33 - 35?

*** DEVICES.ABS ran OK but I don't see much need for it.

*** DISSASEM.ABS you indicated in README.DOC to "let us know how to use it". It really wasn't too hard since it [actually] "works rather like ASM but in reverse". So I went back to my original HDOS [manual], Chapter 5, ASM (p5-53) which says, "at the * prompt enter the command line in the form:

<binary fname>,<listing fname>=<source fname>"

(that is, output file.ABS,listing.LST=input file.ASM)

So I just turned that command string around and fed DEVICES.-ABS to DISSASEM with this command line:

* DEVICES.ASM,DEVICES.LST=DEVICES.ABS

It worked [ok] long but good. COPY TT=DEVICES.LST (or LP:=) gives a four-page listing of the assembly-language code on terminal or printer, respectively. I don't know much ASM, but it looks OK on paper; anyway DISSASEM.ABS works!

*** EXTRACT.BAS works OK as advertised.

*** FOGINDEX.BAS is labelled WRITER.BAS on the listing. It crashed with a "Type mismatch in 590" so I changed that:

from 590 ...;Z1=INPUT\$(1)

to 590 ...;Z1=VAL(INPUT\$(1))

and it ran OK until [I got] a Syntax error in 891 which I changed:

from 891 ...=LEFT\$(S\$(Q))-1)

to 891 ...=LEFT\$(S\$(Q),LEN(S\$(Q))-1) as in the end of line 890

and it flew to completion OK.

*** HC.ABS: I read HC.DOC, ran assembler to output file HC.-DVD, all OK. But, when I tried to load HC: it taught me two things: 1-Turn on printer BEFORE LOADING, 2-You must NOT load LP: before LOAD HC: is done. On my keyboard, CTRL-SHIFT UP-ARROW is the same as CTRL-SHIFT-6 (^). This's a neat program which I shall be using a lot.

*** MBSORT.ASM stopped with Direct statement in file" and nothing worked--since it was not .ABS-compiled yet. When I did

More MAIL BOX

compile it with ASM MBSORT.LST showed four "U" errors:

```
U line 00014      XTEXT  HDOS
U line 00022      CALL   $HLIHL
U line 00035      INVALID CALL $TYPTX
U line 00036      DB      BELL,NL,'Bad MBSORT call',ENL
```

Since I've never written any assembly-language and only today did my first compile, I haven't the slightest idea what these mean or how to correct them. Neither \$HLIHL or \$TYPTX are on my list of Heath software tools.

*** NEWLABEL.ABS worked fine, but I hardly know when I would want to use it.

*** OUTLINE.BAS worked fine, but again is of limited use.

*** RENUMBER.BHB was renamed RENUMBER.BAS and given to BHB2HBAS.BAS to convert to MBASIC. [You WHAT?!! That is for use ONLY with Benton Harbor BASIC for renumbering BHBASIC programmes NOT Microsoft BASIC! -- ed] But when RUN, it gave "Type mismatch in 320" which I fixed by changing:

```
from 320 X$=MID$(X$,1,E+9)...
to 320 X$=MID$(X$,1,E+9)...
```

Then it stopped with "File already open in 250". Adding "235 CLOSE #1" allowed the program to run but it renumbered only one line in every file presented to it... I've temporarily given up on it.

*** SD.ABS referred me to "Read SD.DOC" which really is listed as SDV55.DOC in the directory, but this program worked excellently. I expect to use it a lot once I'm more acquainted with its' options. (In line 4 of dev-- in SDV55.DOC: "SY") should be "SYO").

*** SEARCH.BAS worked fine in searching but gave a syntax error in line 480. After I changed 480 from Y\$-):... to 480 LINE INPUT Y\$:... it worked, but I learned that the "target programme name" had to be complete[ly spelled out]: i.e., FNAME.EXT, not just FNAME.

*** SYSCHECK.ABS worked great; NEAT!!

*** SYSERR.ABS gave a syntax error in 57890 which LISTed garbage, followed by lines 210 to 510 concatenated from SEARCH.BAS! When I go to SYSTEM and COPY TT:-SYSERR.ABS it prints only the ABS lines for SYSERR.ABS but none of the SEARCH.BAS lines now. I recopied SYSERR.ABS from the source disc and got the same results...

*** YNKEYS.BAS did what it was supposed to do, but I wasn't overly impressed. It ends in an infinite loop which can be exited only with CTRL-C.

If I were a neophyte I would have been angry to have received such a [garbled] disc, but as I said earlier, it was a good exercise which restored some of my confidence. Please "fix" the discs you send out in the future!

HAROLD W BRETZ, 1215 East Castle Avenue, Indianapolis, IN 46227

PS: Does anyone know what I need to run my H89 with a Panasonic Penwriter RK-P400 with a serial RS232C connector? I guess I must rewire cable pins, and need a device driver, but which ones? [Readers, do you think Hal can be helped? -- ed]

[Harold, by now you've read my inserted comments. Obviously you received a badly damaged disc. Please return it; we will send you a new one with nothing but good stuff on it! We've had only three other HDOS discs returned by purchasers who ran into similar problems, but they didn't try to fix anything, just returned the bad discs with remarks enclosed. After we verified the discs were as described, we immediately replaced them at no charge to the customer. That is NOT Caveat Emptor in our book! But thanks for writing, it shows us you're interested, and that's not so bad! -- ed]

Dear Lenny,

I sent you my subscription in July, 1988, but I was having trouble with my Post Office box until it was cleared up late in August. I didn't get the Volume II issues, and I didn't get Volume III, #1. My subscription was paid by two cheques, one of which was for the bound Vol II. I indicated that I'd buy Vol. I later.

Off and on I was having trouble by not finding mail in my P.O. box. I lost a lot of magazines and other mail, some was even first class. After I complained to the Post Master for the third time he put a watch on my box. He checked with us daily to see what we had in our possession after we'd picked up our mail [from the box]. The first day he checked us we found that we'd not gotten the mail he'd listed, so he went out in the lobby and found our missing mail in the trash can[!]. He thinks that the previous holder of my box still had a key and was trashing most of my mail. The Post Master kept the watch on the box, but wasn't able to catch anyone [in the act]. Now he's changed the lock on our box so that we are now getting all our mail, even the junk mail which I request by "bingo card". Can you replace my missing issues? [Done! -- ed]

Another subject: Recently I was able to buy another H89 for \$50. It won't boot a disc, but the keyboard works, as I can type on-screen with the keyboard OFF LINE toggled. When the OFF LINE key is up all I get is the blinking underline cursor. If I hit right-SHIFT-RESET, the drive starts up, but I don't get the H: prompt. The drive now won't stop until I power down. Perhaps another reader can give me a clue about how to fix this problem?

I still have my first H89, and my Very First computer, an H8 with an H9 terminal. I want to run Packet Radio on one of them and still use the other one for other computing chores. I have two outboard drives on my original H89 and I have a 237 soft-sector controller board to install as soon as I get the necessary H90 chips to upgrade it. I'd like to transfer some of my H89 programs to soft-sector discs to run on my H100. I also use an A-B switch to shift my H125 printer between the two computers and I'm getting the necessary wafers



More MAIL BOX

together so that I can build my own A-B-C switch. This will let me choose between three computers. Centralab produces the wafers and switch parts to make what I want.

ROBERT W SLOAT, K4VON, P O Box 1319, Ft Myers, FL 33902

[Bob, until you get your "new" H89 fixed, why not just make a short 40-conductor null-modem cable and transfer files between your "old" H89 and the H100? Use a suitable HDOS or CP/M modem program on both computers but don't try to run the two computers through a telephone-type external modem. You can use HUG's HTERM.ABS on the H89 and possibly convince your H100 that it can run HTERM on the 8-bit side. Or you can use HUG's TERM.COM (CP/M) on both of them. HUG's MAPLE for both HDOS and CP/M will do the same thing. I've never tried it--don't have a '100--but I've heard other folks (whom I trust implicitly) say this works for them. Of course, if you have the H100 version of either modem program, you're home free! This method works just fine between my H8 and D-G Super89 because they work pretty much the same electrically. With CP/M I don't even use a modem program, just PIP stuff out port 320Q at 9600 baud to the other beast's port 320Q. Sometimes I run HDOS on one computer and CP/M on the other. If I want, for example, to convert an HDOS MBASIC program to run under CP/M MBASIC I save it in ASCII form, then just run it through HTOC after I make the transfer between machines. Of course, after the conversion process I must change any HDOS line printer (PRINT #1), commands to LPRINT, but with the file being in ASCII format I use TXTPRO's FIND-DELETE-REPLACE sequence and the entire file's done in a matter of seconds. It also works from CP/M to HDOS. This subterfuge may work work for you too. -- ed]

Dear Sir:

Here's a request for help--I don't have anywhere I can get H89 assistance here in Barrow, Alaska!

I just purchased an 80-track, double-sided, full-height 5-1/4-inch drive and I'd like to buy another. The label is half gone, but the part remaining shows a part number (SA-460) and a letter S is visible. Could this drive possibly have been made by Siemens?

So, 1--does anyone have a similar drive for sale, and

2--can anyone give me Siemens Company's address?

Also, I've heard of an EXTENDED ASCII character set. I'd like very much to lay hands on a copy of that. It is reportedly used by scientists, technological types, and other folk. If anyone knows of this character set, would they kindly send me a copy of it, or would they please let me know where I may obtain it from the people who've established this standard.

You [folks in the "lower 48"] may be interested to know we saw our last sunset a day or two ago. The sun rose at 13:06 and set at 13:18. No more sunshine until after the first week in January. Of course the ocean has been frozen for several weeks with slabs and ice mountains sticking up everywhere. But NOW things start to get COLD!

MARK HUNT, RN LT, US Public Health Service, USPHS Alaskan Native Hospital, Barrow, AK 99723 -- phone 907-852-6718

[Long time no hear, Mark! We thought you'd abandoned us after we got your change of address card about the time your subscription expired. Let us know what you want to do about that, please. Regarding that floppy drive, if it has a drive belt on one side it's probably a Siemens. If you have access to 'The Computer Shopper' there're plenty of similar "like new" units available for \$50/ea & up. Or look up a recent copy of 'Radio Electronics' or 'Popular Science', you should find surplus computer supply ads in the back of these magazines. For example, American Design Components, 62 Joseph Street, Moonachie, NJ 07074 (toll-free 800-524-0809--in NJ use 210-939-2710) shows a Tandon #TM100-2 "or equiv." full-height, ds 40trk drive at \$79ea, or 2 for \$150. I've occasionally bought stuff from them and never had any problems. NOTE: They also advertise a half-height 1.2-Megabyte drive. DON'T BUY ONE! I got a similar--brand new--1.2MB floppy locally and couldn't make it work with ANY of my H/Z machines. Seems these drives require a special controller board and software to make the disc motor run at 360rpm rather than our "standard" 300rpm. (If some reader knows how to make these 1.2MB drives work, please write!) Mark, that EXTENDED ASCII character set may be part of Lee Hart's H19/89/90 Superset terminal character ROM upgrade kit. I've an early version in my Super89 TLB and it has all kinds of neat Greek/math characters which I may call up onscreen--but it won't print them out as hard copy (drat!). Write Lee Hart at 28612 Middle Crossing Road, Dowagiac, MI 49047 (phone 616-782-3980); perhaps he can meet your needs. And do wear your mukluks and parka whenever you go outside for even "a few seconds"--we don't want any SEBHC popsicles around! -- ed]

MORE MBASIC "SET LP:" INTRA-MEMBER CORRESPONDENCE

To: J C Clement, Denver, CO

Concerning: your printer problem written up in the SEBHC JOURNAL--

Your problem is in MBASIC. My MBASIC Ver. 4.51 does the same thing with my NEC-P2200 printer, which also uses Epson codes. Compiling the program with BASCOM does not change the results. What's happening is that MBASIC is translating the tab character--CHR\$(9)--into spaces before sending data to the printer. One way to get around this is to send the setup data string to a file and then PIP the file to the printer. You can easily create an 8LPI.SUB file to do this! For example:

To set printer to 9/72" a line (1/8 inches a line), RUN this program in MBASIC:

```
10 OPEN "0",1,"8LPI"
20 PRINT #1,CHR$(27);"A";CHR$(9);
30 CLOSE 1
40 SYSTEM
```


More MAIL 'BOX

Now every time you want to set the printer for 8 lines to an inch,

```
PIP LST:=8LPI
```

Make this even easier by writing an 8LPI.SUB file with the above command in it. Then you enter SUBMIT 8LPI to set your printer to 8 lines/inch. Or, if you've renamed SUBMIT.COM to S.COM (less typing!),

```
S 8LPI
```

resets the printer to 8 lines/inch.

NOTE: If you don't have an ASCII text editor use this MBASIC program and create a .SUB file:

```
10 OPEN "0",1,"8LPI"
20 PRINT #1,"PIP LST:=8LPI"
30 CLOSE 1
40 SYSTEM
```

On the NEC-P2200 the ESC A n sequence sets line spacing to n/60 lines/inch. You can also set this printer's spacing in increments of n/180 (ESC 3 n) and n/360 (CHR\$(28) 3 n).

To: Allie C Lingo, Dierks, AR

Concerning your problem of not being able to TYPE the PRINTER.SET file on the CRT screen--

When you TYPE that file you're sending an ESC sequence to the terminal, which it then attempts to decode. In your example of 'ESC E CR LF ESC 4 CR LF'* which would make an Epson printer switch to enhanced italics, makes your H/Z terminal clear the screen (ESC E), then drop the cursor to the beginning of the next line (CR LF) and ignores ESC 4 which is an invalid terminal escape sequence. The second CR LF drops the cursor down another line and you end up with a clear screen and the A> prompt sitting on the third line.

Most [ESC] character codes with a value less than 32 will not display on the H/Z19-type screen. Here're a few samples:

```
BEL chr$(7) makes the terminal beep (BELL)
BS chr$(8) causes a Back Space
HT chr$(9) causes a Horizontal Tab
LF chr$(10) causes a Line Feed
CR chr$(13) causes a Carriage Return
ESC chr$(27) is the start of a terminal command code
```

* Without a semicolon (;) at the end of the PRINT line, MBASIC added a Carriage Return Line Feed sequence to the end of each line.

Hope this helps!

ROGER H BLISS, 7700 Clarks Lake Road, Chelsea, MI 48118-92420

[In behalf of J C Clement and Allie Dierks, "Thanks for this help, Roger!" This is what your SEBHC JOURNAL is all about, namely, Real People Helping Each Other, The Old Fashioned Way! By the way Roger, I now have an operating ASC-1 (Alspa) computer with a single dsdd 8-inch drive and can read "generic" CP/M 8-inch discs with it. But I haven't been able

to get it to work well enough to use it for transferring files between it and my H8 or H89. If you get a chance, drop by on your way home from work some day for a look-see. -- ed]

AND MORE INTRA-MEMBER CORRESPONDENCE!

To: Rick Swenton, Bristol, CT

Concerning 40/80-track floppies:

Thank you for the prompt response to my letter about 40/80 track floppy discs. Obviously I didn't make my situation clear. Specifically,

- Recently I bought a 289 from CalDig with a 40-track s/s drive (installed) and an H17 controller. Additionally, it came with the original s/s 80-track drive (removed).
- CalDig also sent me a Livingston BIOS-80 distribution disc to install the 80-track drive. Although it is in hard-sector format, I can't read this disc with my present configuration so I assumed it was in 96tpi format.
- The instructions which came with the BIOS-80 disc call for:

1. FORMAT a blank 40-track s/s disc. Label it "BIOS-80 System Disc".
2. SYSGEN a 32-k CP/M system onto the BIOS-80 System disc.
3. PIP "BIOS 0417.SYS" from the distribution disc to the system disc and rename it BIOS.SYS.

At this point I get "BDOS ERR on A: Bad Sector".

When I wrote you, I thought formatting the system disc for 96tpi would solve the problem. I see now that I was wrong. The Heath CONFIGUR documentation clearly indicates that a hard-sector disc cannot be configured/FORMATted for 96tpi. Also, it is very likely that I do have a bad sector on the CalDig BIOS-80 distribution disc.

The CalDig '89 works fine with 40-track discs and I have 2 additional '89s in working order, plus a 10-meg hard disc, so I have no real problem. I will try to get the distribution disc checked out so that I may experiment with the spare 80-track drive [so as] to expand disc space on one of the '89s.

I appreciate your thoughtful assistance.

ANTHONY P MUSNICK, P O Box 136, Broomall, PA 19008

To: A P Musnick, Broomall, PA

Concerning 40/80-track floppy problems:

It's tough to figure out exactly what's happening, based [only] on exchanging letters! Let's see if we can get to the bottom of this together. First, some more explanations about 96tpi and double-sided, hard-sector drives are in order.

You're correct about Heath's CONFIGUR not supporting 96tpi hard-sector discs. There's a program provided by Livingston Logic Labs in their BIOS-80 package named CONFIG80 which takes care of configuring H17 drives. With CONFIG80 you can select single/double-sided, 48/96tpi, and step rates. CONFIG80 is probably on your BIOS-80 System Disc.

More MAIL 'BOX

tributed with BIOS-80 because it will include a complete and modified copy of CP/M including your owner's serial number derived from your distribution MOVCPM17.COM file.

Now, regarding your worry about how to set drive select jumpers, keep in mind that the H17 hard-sector controller is BACKWARDS from the H37 soft-sector controller (which follows industry standards). [Heath's floppy-drive installation manual has a lot of confusing information about these differences! -- ed] With the H17 controller, Unit 0 becomes DS3, Unit 1 becomes DS2, and Unit 2 becomes DS3--exactly opposite to drive designations for a Soft-sector controller (H37). Also, for H17 operation, the following drive jumpers should be installed: HS and ONE DS jumper, depending upon which drive it is. These jumpers should be removed: HM and MX. With no MX jumper, more than one drive can share the same cable and can be selected by the H17 controller. The HM and HS jumpers determine when the head loads (contacts the disc surface). If the HS jumper is installed, the head loads whenever the drive is selected (preferred). And if the HM jumper is installed, all drives will turn and the heads will all load whenever ANY drive is selected. It is imperative that ONLY the HS jumper is installed, NOT both HS and HM.

Technically speaking, only one terminating resistor pack should be installed in the drive farthest away from the controller on the ribbon cable. But I have had no problem with installing the resistor pack in the internal drive. This way I can remove the external drive(s) without fear of the internal drive not being properly terminated. [DO NOT LEAVE A TERMINATING RESISTOR PACK IN AN EXTERNAL DRIVE IF ONE IS INSTALLED IN THE INTERNAL DRIVE. It can overload and burn up the H17 drive-controller chip! -- ed]

Regarding powering an external drive from the H89's power supply--you may be risking permanent damage to the power supply, especially if you have not yet upgraded the large bridge rectifier to a higher-capacity device, and have not directly soldered the two yellow wires coming from the power transformer to the two bridge rectifier lugs where the orange wires originally were located. Additionally, the power-supply regulator packages should have black, finned radiators installed on them to help dissipate heat from the regulators and bridge rectifier.

Personally, I'm a little insane when it comes to internal H89 power supplies. I actually have a half-height hard disc, and Xebec controller mounted internally on my H89, and everything is running on the internal supply! I did install a more powerful fan--blowing downward onto the heat sink. It's been that way for over a year now.

Good luck, and keep me posted.

RICK SWENTON, Bristol, CT 06010-7176

[Well, that's it folks! Next issue we'll print some drawings of how various makes of drives are jumpered for use with both types of disc controllers, H17 (hard-sector) and H37 (soft-sector). Our thanks to Tony Musnick and Rick Swenton for letting us bring their hard-ware type "soap" to public

view... Incidentally, your editor has stumbled upon some original H/Z Service Bulletins for our '89/90s. As time and space permits, we'll reprint the most valuable of these trouble-shooting and repair bulletins in future editions of the JOURNAL. Hope everyone approves! -- ed]

Dear Lenny,

I ordered the Heath Extended RAM Board ("Herby") RAM Drive --manufactured by TD Engineering, 13941 Olive Mesa Court, Poway, CA 92064, phone 619-748-8529 or 619-271-1077, back in February, this year. They found one in storage so I had them put the 1-meg memory in it and test it, all for only \$272. I don't know if they're still available or what the price may now be. (I've enclosed copies of some of their literature and documentation) I haven't had any contact with them since I received my Herby, but that's because I haven't had any problems! Hope this information is useful...

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

[Yeah, man! Thanks for the information! One thing which puzzles me--and I tried phoning TD Eng'g to clear that up, but they were closed for the week-end--is why the Herby RAM won't work with HDOS! I have a D-G Electronics Super89 CPU board in two of my H89As; they both have 256k RAM which is accessible from *BOTH* HDOS and CP/M. (Under HDOS you have a choice between a fast, low-capacity RAM disc or a fast CACHE memory feature. Under CP/M you have either a fast 147k RAM disc, or a smaller RAM disc and a 47k printer buffer. This last is pretty handy because the printer will be chugging away while you're already working on another file!) D-G uses a bank-switching scheme which appears to be quite similar to TD Eng'g's method. Maybe TD doesn't fully understand HDOS? Also, I'd like to explore the possibility of installing their ED-1 emulated disc for the H8 system and their H8 WH64 256k memory expansion. This appears to be what I've been looking for the last couple years. I'm sure our other readers appreciate your having sent us information on Herby. And I thank you for having returned my phone call the other evening. Please excuse my long-windedness "on your nickel"; it isn't very often I have a chance to talk with a Real Live Subscriber and hear about a different way to have fun or make a profit with and from our battered "Old Grey Boxes"! -- ed]

[EDITOR'S NOTE: More about the CIS ZENITH Special Interest Group from Henry Fale's H-SCOOP. Seems that--on or about Halloween--HUG SIG Sysop Jim Buszkiewicz left a message on their bulletin board that HUG would no longer be supporting the CIS HUG forum and allegedly "pulled the plug" by erasing all the library files as he went off line. This is a pity as we loyal H/Z users have been slowly losing support from both Heath and Zenith over the past few years. Most sales people in today's version of the Heath Electronics Centers don't even recognise what an H8, H89, or Z100 is! And Zenith has

SEBHC JOURNAL

Volume III, Number 5, Page 10

More MAIL BOX

reportedly disconnected--or don't answer--the Heathkit Technical Support telephones; it appears we've also lost another source of "official" support! But you SEBHC JOURNAL subscribers, don't feel overly dismayed. I glommed onto about 40lbs of not-so-old Heathkit service "Blue Book" update bulletins which I'm trying to get into some semblance of order. Eventually we shall condense and make them available for a reasonable price to any subscriber who needs them. Don't look for an announcement as these update bulletins are in terrible disorder and are quite redundant. It's going to take me "a week of Sundays" to go through them and make them ready for publication. Now, if there are any subscribers living within an hour or so of our HQ, with lots and LOTS of time, willing to volunteer they'll help me with this job, get in touch Real Soon Now! You'll be doing the entire H/Z 8-bit community a tremendous service. Oh, yes! Heath's Service Department is another one of those dog-in-the-manger-attitude groups; they absolutely refuse to even SELL the original H8 and H/Z89 and H/Z90 "Blue Book". Maybe Kirk Thompson should look into this new cause?Lenny.....]

Dear Leonard,

Here's my annual remittance for my JOURNAL subscription. Have enjoyed your articles on use of TXTPRO and PIE. I use both to publish an occasional article for our local radio club. I also use them for the monthly publication of the Experimental Aircraft Association Chapter 647 newsletter.

Unfortunately my versions are TXTPRO 4.0 and PIE 1.58, one earlier than those you described. I wonder if your version of TXTPRO has the bug removed which sometimes makes it come up with the numerical keypad and shifted functions reversed? This is somewhat disconcerting! [I have TXTPRO V4.1; don't own any PIE version (but some of our authors do). -- ed]

I hope that the '89 suppliers out there don't roll their tents up and steal away. We ain't the yuppies! Loose change comes far slower for us than we like.

Here's a payback for some of your writer's tips. [This is really nifty! And it's operating system-independent so it works whether you use HDOS, CP/M, or Z-SYSTEM. -- ed] If you have a hard-sector controller and three drives, you can run a disc rotational speed test on any drive as follows:

Turn on the '89 and insert a disc in the drive you want to check. Call up the built-in ROM by typing S (the computer fills in the rest--ubstitute). Now type 040100<cr> [<cr> means hit the RETURN key] and see that the screen shows 040100 xxx (where xxx are random numbers with which we're not concerned). Now, as each line comes up, enter the numbers from this list, concluding each entry by hitting the space bar (<spc>), NOT the RETURN key!

```
S(ubstitute) 040100<cr>
040100 xxx 041<spc>
040101 xxx 371<spc>
040102 xxx 006<spc>
040103 xxx 315<spc>
```

```
040104 xxx 100<spc>
040105 xxx 006<spc>
040106 xxx 076<spc>
040107 xxx 000<spc>
040110 xxx 062<spc>
040111 xxx 002<spc>
040112 xxx 040<spc>
040113 xxx 076<spc>
040114 xxx 022<spc> [See text below. -- ed]
040115 xxx 303<spc>
040116 xxx 255<spc>
040117 xxx 006<spc>
040120 xxx <cr>
```

Your screen will again show H:. Type P and see the words Program Counter displayed. Enter 040100<cr>, then G(o), then 040100<cr> and off you go. Here's what this looks like as it is typed:

```
H: Program Counter 040100
Go 040100
```

Drive A: is now being checked for rotational speed. Wanna check out drive B: Just S(ubstitute) 040114 xxx 024 in the above listing and the routine checks drive B:. To check out Drive C:, S(ubstitute) 040114 xxx 030 and away you go. No big deal, it just works. When you're finished checking your drives out DON'T exit with the usual SHIFT-RESET. This routine leaves you with an experience which YUKS! Rather, turn off the computer power, wait about 15 seconds and turn it back on again and proceed as usual.

This little-known code area of the '89 can be quite fruitful, but you must explore what it does before trying out anything other than what I've given you in it.

MARION R DAVIDSON, WABVXE, 30 Mill Road, Battle Creek, MI 49017

[Super! I checked my old Floppy Disc Drive Model H-17-1 documentation to see if there is anything similar to your test there and came up with the built-in ROM speed test, namely G(o) 7372<cr>. This will print "Disk drive rotational speed test" followed by "Drive speed =" and a series of numbers down the screen. Simultaneously the word "Working" will flash on and off at the screen home position and an octal drive speed number which should be as close to 200 as possible will update with each "Working" flash. The displayed value should be between 166 and 212. I remember having changed the drive addressing jumpers and checking out each drive as SY0:/A:, a rather clumsy business. Your method is much quicker and cleaner! (NOTE: I tried your routine on an '89 I'm working on and it signed on with "Drive rotational speed test" and "Drive speed =" similar to the "Go 7372" command does, except that "Working" doesn't appear. Maybe your routine duplicates something which is ROM resident?) Are there any more neat routines such as this lurking around out there? If so, SEND THEM IN! -- ed]

More MAIL 'BOX

Dear Mr Geisler:

I was looking through the old HUG Software Catalogues trying to figure out what to buy during HUG's December 30%-off sale when I found the answer to Mr Lingo's "puzzler about HDOS" (Mail Box, Vol III:4, p15). Mr Lingo found that some of his HDOS distribution discs had smaller than normal directories. As a result, Heath had been able to cram onto three discs what Mr Lingo had to put onto four.

The answer to what had happened to these discs can be found in the description of HUG's P/N 885-1120, HDOS "Whew" Utilities Disc. This disc contains a program called REDUC-DIR.ABS which "reduces the size of the file DIRECT.SYS on a disk to the smallest practical size, freeing up several sectors. If it is used on a disk that already contains several files, it will reduce the size of DIRECT.SYS only as much as the unused directory space will allow". There's another program on the same disc called REDUCE.ABS which removes the Patch History Table from HDOS system files. This reduces the size of these files by one, and sometimes two sectors. On a hard-sector disc reduction of a file size by just a few sectors can make a great difference in how many files can be crammed onto the disc. [In graphics:] PEACE ON EARTH - GOOD WILL TOWARD MEN - Merry Christmas to the Society Of Eight-Bit Heath Computerists

KARL G RULING, 83 Lawrence St, Wilkes-Barre, PA 18702-1541

[Thanks, Karl, for jogging my "forgettery". I've used REDUC-DIR.ABS for so many years that I rather assumed that most all HDOS users already knew about it! If Allie Lingo had just DUPed his distribution discs the smaller DIRECT.SYS file would have made the trip in unchanged form and he'd not been any wiser. Unfortunately, by the time he reads this, HUG's sale will have been long gone! But, whatever the cost, that disc of HDOS utilities is well worth its' price. Buy it! -- ed]

Dear Len,

My wife and I really enjoy reading the SEBHC JOURNAL when it comes. I have two H89s, one with an H17 drive and an MPI-99 printer, the other with an H17 and two H37s.

I sent \$25 to Bill Parrot a year ago for HDOS 3.0 and never heard a word from him. Apparently he's vanished into thin air. Anyway, I'd like to know where I can get HDOS 3.0. I don't have a modem, so I can't get it from a bulletin board. You said in the November edition that it could be had for \$25 on seven [hard-sector] discs, but you didn't say where from. Also, do you know where I can get a copy of the UCPM manual that Rick Swenton mentioned? I got several discs from Central Computer last year [which were] formatted in Kaypro CP/M, but half the text is off screen so I can't read the instructions to play the games I bought.

Keep up the good work, and happy holidays.

RICHARD C ROLLINSON, 15 Fort Hill Avenue, Shelton, CT 06884

[You're right! I DIDN'T say where anyone can get HDOS 3.0! It's too bad that Bill didn't bother to return your money or let you know when/if he'd be shipping your HDOS 3.0 system discs! We recently received a phone call from the programmer who had worked with Bill on HDOS 3.0 (what's his name?!). He said that he's debugged and revised the system to Version 3.1. We hope he'll be calling us again soon and give us more details which we can publish. Meanwhile, our Associate Editor, Allie C Lingo, is using HDOS 3.0. If you want to get that system from him, write him at P O Box 118, Dierks, AR 71833-0118. I believe the \$25 fee covers the cost of an appropriate number of HARD-SECTOR discs, otherwise there's a small service charge if you send him your own discs and have him put all the HDOS 3.0 files onto them. The entire system fits onto three single-sided double-density 40trk soft-sector discs. Or, if your system supports 96tpi double-sided drives, the entire system should fit onto not more than two dsEd 80trk discs (but I'm guessing about that). If Allie is too busy to do the job for you it is possible that we might --In The Near Future--be able to fill your HDOS 3.0 orders right here at the JOURNAL (correct, Allie?). Please keep in touch. -- ed]

Dear Mr Geisler,

October 11 (2 months ago) I sent a cheque for \$6.16 for a demo copy of Text Processor 4.1 and the HDOS GAMES DISC #1. I also included an initialised DSDD hard-sectored disc. You cashed my cheque on 24-Oct but I have not yet received anything. Have you "bitten off more than you can chew"?

HAROLD W BRETZ, 1215 Castle Avenue, Indianapolis, IN 46227

[No, Harold, it only SEEMS that way. We mislaid your mailer and disc and your order ended up in the "filled & sent basket"--don't ask me how or why! Our most sincere apologies--your stuff went out on 14-Dec-88 (two 40trk ssdd hard-sector discs). -- ed]

Dear Mr Geisler:

My H89 includes the hard disc system from SigmaSoft and Systems which provides floppy support in H37 format through a Western Digital Winchester/Floppy Controller. Since the Sigma system uses this non-standard controller, it is not compatible with software specifically written for the H37.

I've purchased the Sigma BIOS source code intending to contract for modifications as needed. Recently I contacted ANAPRO about having them develop an "EMULATE" modification for the Sigma BIOS. They said it would cost about \$50 an hour. [Obviously] it would be impractical for me to purchase this alone, but if I can contact others who've also bought the Sigma BIOS source, we can make a group purchase [from ANAPRO]. I encourage anyone interested in this project to contact me and to promote the project in user-group publications and on bulletin boards.

Also, there are four hardware products which I would like

Bottom of the MAIL BOX

to obtain from any of your subscribers who may have them for sale:

1. A SigmaSoft Interactive Graphics controller with/without the interface and power supply,
2. The Kress power-supply upgrade,
3. Magnolia Network controller cards and related products,
4. H8 to H89 buss converter cards to permit using H89 cards in an H8.

If anyone has one or all of the above, or knows where I may get same, please contact me at the address/phone below.

TONY VENTICINQUE, 536 Redwood Road, Bolingbrook, IL 60604 -- phone 312-739-5682

[Right on! You readers get in touch with Tony Real Soon Now, y'hear?! He's got some pretty ambitious ideas and needs all the help we can give him. By the way Tony, I have an extra D-G Electronics Super89 CPU equipped H89A which I recently bought. It came with a whole bunch of 8-inch discs full of very interesting software--including Magnolia's MPM (MULTI-USER!) BIOS, full documentation for same, a Magnolia soft-sector controller and a battle-ship-heavy dual WH47! Unfortunately, the Remex "slave" 8-inch drive gives "BDOS error on select" messages. This probably was caused through the former owner having replaced that drive's spindle bearings and re-assembling it improperly. Lee Hart had an article in the JOURNAL a while back on how he fixed one of his Remex drives. It sounded tedious but practicable for anyone slightly mechanically inclined... This system was set up to run with

an extra H29 terminal, but I'm not sure any of the interface stuff is inside the grey box--I'll have to check that out Real Soon Now! I also have about a bushel basket-full of other documentation for this machine, most of which goes with other software which came with it. I'm willing to look into the practicality of extracting just the Magnolia items from this package on a whenever-I-have-time-to-do-it basis for you if you want to buy them. I figure about \$95'd cover that, with packing, insurance and shipping extra. Contact me at your convenience... -- ed]

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Note that we've included the Text Processor DEMO disc on the order blank on page 13 to reduce ordering errors. Also note that we have both HDOS and CP/M versions available in both hard and soft sector format. Please be sure to specify operating system and disc format when ordering!

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Our READER'S LETTERS feature is provided as an open forum for the free exchange of H/Z 8-bit computer information between all subscribers and readers of the SEBHC JOURNAL. We ask all correspondants to keep their letters reasonably concise and preferably around 250 words maximum length (about six screens, 24 lines/screen of ASCII text). The JOURNAL shall exercise its' right to condense letters exceeding this recommended maximum unless that might destroy their intent or meaning. In such cases we shall contact the writer.

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The SEBHC JOURNAL's Back Page

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* All advertising is printed free of charge. Vendors will please submit low "camera-ready" ad copy, 7" wide by 9" high (one page/issue) no later than the 10th of month in which it's scheduled to appear. All Society members can run one free--new--250-word Want Ad a month.

* Subscriptions: \$17.50/year in Canada, Mexico, U.S.A. and possessions, first class and foreign US\$25/yr. Start the month after receipt of application. Please make cheques or money orders payable to L.E. Geisler. Single current-volume back-issue copies available--see order blank.

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* 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. Other times: 313-769-6052 residence.

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