

Saving Our HEATH Eight-Bit Machines!

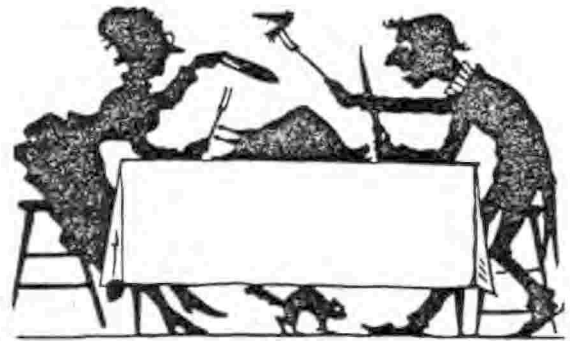
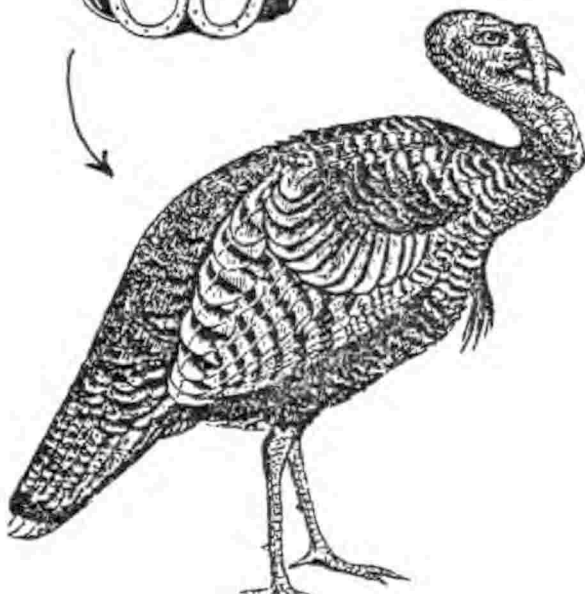
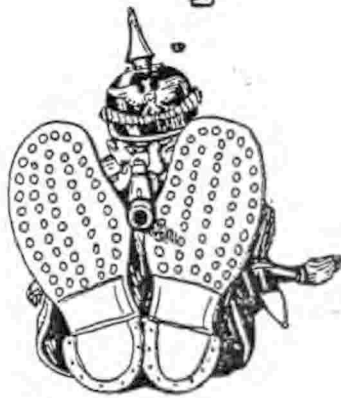
# SETHO JOURNAL

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November, 1988

REMEMBER: If You Didn't Vote, YOU Deserve Whatever Government WE Got!



*a Stephen '88*

# SEBHC JOURNAL

Volume III, Number 4, Page 2

## BULLETIN-BOARD HOW-2

Remote CP/M Systems (RCP/M)  
The Computer Club PBBS Remote Access System  
An Overview

Presented at The Computer Club meeting on November 2, 1988  
Copyright 1988 by Rick Swenton

### Introduction:

What we know today as "Bulletin Board Systems" (BBS) actually had their beginning in 1978 in Chicago. Ward Christiansen and Randy Suess started a dial-up CP/M computer system to support local hobbyist's activities. They used a North Star computer which employed Intel's 8080 CPU. Their floppy disk capacity was 70k on each drive. The BBS software was called CBBS (Computerized Bulletin Board System) and it was written in 8080 assembly language. Its' ability to transfer files from a remote system to the user started out as a secret feature known only to a few friends of Ward and Randy. To support this feature, Ward created "MODEM", the first modem program to support file transfers. As word spread, many computerists asked to buy CBBS to set up their own systems. Keith Petersen modified Ward's original MODEM program and created a special version to run on the remote system. He called it XMODEM. With MODEM running at the user's end and XMODEM running at the unattended remote end it was possible to exchange files with virtually 100% error-free accuracy. The XMODEM protocol became the de-facto file-transfer standard. It is supported to this day.

While all this was going on, Dave Jaffe was working on a program called BYE. Ward's system was not very secure. When you called in on Ward's modem, you actually connected to his console port and you attained absolute control of Ward's computer. With BYE, the computer supports the modem port without losing the local console. BYE asked the caller for a password and limited his access time. BYE also controlled disc access and other system functions. Likewise, it allowed the system operator (SYSOP) to see what the remote caller was typing and even "chat" with him.

With BYE and a BBS program like CBBS we had the birth of a national phenomenon called RCP/M's--Remote CP/M Systems. By mid-1983 there were more than a hundred RCP/M systems operating in the U.S. Remember that all this took place before the birth of the IBM-PC!

### Evolution:

Over time there were many BBS programs written specifically for CP/M use. A full-featured system called RBBS (Remote Bulletin Board System) was written in MBASIC. This version was generally compiled to run as a COM file. RBBS running under the MBASIC interpreter was just too slow. Another popular BBS program was MBBS (Micro Bulletin Board System)

which was also a compiled MBASIC system. METAL, also released as Z-MSG--found on many of the ZCPR3 Z-Node systems--was written in C. Finally, there is PBBS (Public Bulletin Board System) which we use on our system. PBBS was written in Z80 assembly language.

All the above systems and many others basically did the same thing. They allowed users to read and write mail to each other and offered other services like news and information as well as access to CP/M for performing file transfers.

### CP/M versus MS-DOS Systems

There is a big difference in operation of a BBS on a CP/M system compared to running one on an MS-DOS system. One MS-DOS BBS I've used is RBBS-PC. It is a compiled basic BBS and is very similar in "feel" to RBBS which runs under CP/M. With RBBS-PC, you perform file transfers from within RBBS-PC. The BBS software handles the file transfers. With this system, the caller remains forever under the control and limits of RBBS-PC.

With a CP/M BBS file transfers aren't done by the BBS program. To do a file transfer the BBS program sends you right to the CP/M operating system "A>" command prompt. Normally this would be a problem since plain old CP/M is rather awkward and clumsy in use. CP/M's actually a hindrance. But the real benefit comes when you replace CP/M with Z-System.

Z-System is an advanced Z80 operating system which replaces CP/M. Z-System allows named directories which appear in the command prompt. Let's say--for example--that you're browsing around on our hard disc utilities storage area. You will see a prompt which looks like this: [20:12] C0:UTILITY>. The first digits give the 24-hour local time. C0 means drive C user area 0 and UTILITY is the directory name. Remember that you are at the operating system (OS) level. It's as if you are sitting at our BBS computer's console. In order to get to this disc area, you might also have typed C0: or UTILITY:. Since you are at the OS level, you could type DIR to see the directory of that area.

On our system, if you typed C1: or just 1: plus WORDPROC:, you'd see this prompt: [20:12] C1:WORDPROC> where the word processing files are located on the hard disc. The system command files are in A0:COMMAND>. Running DIR while you are in A0: will show all the available commands like DIR, PBBS to re-enter the BBS, MAP to display a chart of the drive/user areas where files are stored, MENU and VMENU to run full-screen single-letter command menus, MSDOS - CPM - TEXT which change your major area of interest, NEW and FOR to list the newly uploaded files and what they do, and many other commands.

There is also a program called XMODEM--or more recently

## BULLETIN-BOARD HOW-2 Continued

KMD (KMODEM)--which is the utility responsible for file transfers. KMD supports XMODEM, YMODEM and YMODEM batch modes. ZMODEM protocol support is available from the public domain but has not yet been installed on our system. The features and facilities of Z-System are simply too vast and are beyond the scope of this presentation.

## The Computer Club PBBS

The way our BBS was set up is fairly typical of how many other CP/M systems are installed. You first need a computer. (Ours is a standard Heath H89, with Z80 CPU and 64k memory.) The computer needs a serial port for the modem and a battery-backed time-of-day clock (to keep track of users' time limit and time/date stamp messages). You can run a BBS with only floppy disks but it is very limiting. You really need a hard disc and all necessary hardware and software to integrate it into your system. We had to add a hard disc interface board, a XEBEC hard disc controller and a Shugart St-225 20-MB hard disc. And you need appropriate BBS software.

There are three important programs you need. Their exact names will vary depending on your choice of BBS. For our system, we chose PBBS as the BBS program. Next, you have to select a version of BYE. BYE.COM is that special program which allows the computer's modem port to operate in tandem with the computer's console port while maintaining security over activity on the modem port. BYE is the interface between PBBS.COM and the operating system. Finally, you need a file-transfer program. KMD.COM--as does PBBS.COM--also goes through BYE to interface to the operating system. All three of these programs, in many varieties, are available from Remote CP/M (RCPM bulletin board) systems across the country.

Now comes the fun part. How's your skill in Assembly Language?

Unlike hardware-dependent MS-DOS systems CP/M systems have no hardware standards. This means that for all the different CP/M computers which have ever existed, an equal number of BYE programs also exist.

BYE needs direct port and memory access, and you need to provide this information to BYE when you configure it. Fortunately, there is a collection of BYE configuration files, called overlays, which have been written for almost every CP/M computer ever created. Using a text editor, you have to merge the overlay for your computer into the BYE.ASM file. After editing BYE.ASM to select your desired options and memory locations (YOU have to know which memory locations are safe to use) you will assemble BYE into a COM file. For that you have to be able to edit a file over 100K long, merge the overlay, and then have and be able to use a CP/M assembler such as ASM or MAC, a loader such as LOAD or MLOAD, and

get a working BYE.COM file. All this you must do...just for BYE!

Next you must configure PBBS. For that job you will edit two configuration files to select your options. Unlike BYE which is written in 8080 assembly language, PBBS is written in Z80 assembly language. In order to assemble PBBS you need a Z80 Assembler such as M80 or Z8OASM (SLR180) plus a linker such as L80 or SLRNK. If you don't have these assemblers, you are out of luck. None of this software will run "out-of-the-box". There are probably 20 files you'll need to create for PBBS and you need to place these files within the drive/user areas you specified when you edited the PBBS configuration files. You really need to be organized. You also need a thorough understanding of the relationships between CP/M, BYE and PBBS. It's a job not recommended for the light-of-heart to attempt.

Finally, you need to get the KMD file-transfer program up and running. This is a bit easier. Just edit the options and assemble. Since KMD heavily interfaces with BYE, all the hard work was already set up within BYE.

## The Rewards:

The rewards after successfully bringing up a PBBS system are readily evident. It's a very fast, full-featured system. With Z-System at the helm, the bulletin board becomes versatile while remaining powerful and very easy to use, albeit hard to learn if you know very little about MS-DOS or CP/M. I have even emulated many MS-DOS commands using Z-System Aliases. With our full-screen menus, you could move a cursor to point to a file in a directory list that you want to download. Any invalid commands automatically invoke the on-line help system. The help system is also menu driven. There are CP/M utilities for accessing MS-DOS archive (ARC) file contents. You can display a directory of the member files. You can type member documents and you can download individual member files. The same is true for CP/M library (LBR) files.

## Conclusion:

A Bulletin Board System running on a CP/M computer is much more than hardware and software. It is almost a personal expression of the system's integrator. Given the hundreds of permissible configuration and system options it's obvious that no two CP/M BBS's are completely alike. It requires a keen insight into all the pieces working in harmony. You almost have to know what it is that you want before you actually try to do it. It is not an overnight process. It is not uncommon to hear of those who required a week or more of nights before our modem answered the first call.

[continued]

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## B-B HOW-2 -- MAIL BOX

Installing BBS software on a CP/M computer isn't a job for just any user. You need tools. You need an editor, assemblers, linkers, loaders and debuggers and you need to know how to use them. You need to know some details about your hardware, such as: Are there any free memory locations at the bottom of RAM? What ports does your clock/calendar chip use? What ports are assigned to the serial I/O chip attached to the modem jack and what bits are used to test for status?

The only hope for an average CP/M user to run a BBS is for him to obtain an exact copy of all files from an existing BBS running on an identical computer with identical hardware, options and accessories. I am confident that for every BBS which was set up from scratch, another additional system went online with the exact same hardware and software of the original system.

There are many Remote Access Systems such as ours which not only support CP/M files but also support MS-DOS files. On our system, we have separate hard disc areas to store CP/M and MS-DOS files. Many MS-DOS-only users have expressed the opinion that our system is easier to use than systems running on PC's and clones. On the other hand, other MS-DOS-only users have said that our system is harder to learn initially. (Sigh!) Can't please everyone...

### CONNECTIONS:

The Computer Club (TCC) PBBS Farmington, CT. (203) 673-8752 300/1200/2400 BPS 24 Hrs.	The Dallas Connection RCP/M PBBS HQ and Distribution Palo Alto, CA (415) 964-4356 300/1200/2400 BPS 24 Hrs.
Potpourri RCP/M BYE and KMD Distribution (408) 378-7474	Decibel RCP/M NuBYE and Nukmd Distribution (404) 288-6858
Z-Node #3 (Boston) Z-System Support (617) 965-7259 300/1200/2400 BPS 24 Hrs.	Z-Node #1 (San Jose) Z-System Support (408) 432-0821 300/1200/2400 BPS 24 Hrs.

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NTED... DESPERATELY WANTED... DESPERATELY WANTED... DESPER

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Used WORKING MAGNOLIA Soft-sector controller board for H/Z90.  
Got one? Contact: Al Bjorling, K8YJG, PO Box 917, Melville,  
NY 11747, phone 516-420-3328 days, 516-424-8843 evenings.

=====

ATELY WANTED... DESPERATELY WANTED... DESPERATELY WANTED...

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Dear Lenny,

Finally replaced my old Heath H14 printer with a Star NX-1000. With the new printer's capabilities I went back and re-read your TXTPRO article (SEBHC JOURNAL II:12:4). Sounds good--please send a CP/M DEMO copy. Enclosed is \$2.50.

Some difficulties have come up using the NX-1000's printer control commands on my H89, CP/M 2.2.04 and MBASIC-80. The NX-1000 [is said to] emulate the EPSON LX-800. For example, for the command 'Set line spacing to n/72 inch - <ESC>+"A"+n' MBASIC sends the printer a series of seven spaces instead of the printer-control hex code 09 if it was inserted at 'n' in the above command string. Similar difficulties arise when the hex code represents LINE FEED and FORM FEED. The problem is still there even if the control command is embedded in one string.

Do any other readers have a solution to my problem?

JOHN C CLEMENT, 6940 E Girard 205, Denver, CO 80224

[Dunno, John! I looked up the various control codes for my Epson MX-80 and LQ-800, and NEC Pinwriter P2200 printers to see how they went for MBASIC. Also looked through the MX-80 trouble-shooting guide to see if there was anything mentioned there similar to your problem, but no joy... Are you using the correct MBASIC hex-code syntax when you write a command string? For example, LPRINT CHR\$(12) says "do a form feed". Also, LPRINT CHR\$(80C) says the same thing but in hexadecimal. If you leave out the '&' sign, BASIC throws a curve! Did you buy a copy of our CP/M GAMES DISC #0? It has a SETMX.COM file which lets you set line spacing. You can look up the way this utility does it in SETMX.ASM and perhaps alter the code to do what you want. It's worth a try. Meanwhile, READERS: WILL YOU \*PLEASE\* HELP JOHN? -- ed]

Dear Lenny,

Still enjoying your SEBHC JOURNAL and find myself waiting for the new issue to appear at my P.O. Box.

When I last wrote you about a 'WANTED' ad you printed it in the June 88 issue. Both items I was looking for I now have, thanks to your running the ad. Thanks you, and especially those great folks who wrote me in response to my ad! I have been very pleasantly surprised too by the great response and offers of help and support. Really, 8-bit enthusiasts are A Great Bunch!

Thanks, and keep those great issues coming!

AL BJORLING, P O Box 917, Melville, NY 11747-0917

[Y'all'ur welcome! Glad to have been of help. And thanks to all our helpful readers, too! -- ed]

Dear Lenny,

Using information obtained from the National HUG BB I sent Bill Parrott \$30 for HDOS 3.0 on 8-Apr-88, but I never got my stuff!



## MAIL BOX continued



Then I talked with Richard Musgrave on the CPS BB and was told, "I haven't seen Bill in a year; don't know if his address is still valid". Finally, I started a Postal Money Order search since I used a P-O Money Order in payment to Bill. I also wrote him notifying him of the search.

Yesterday I received a refund for the Money Order. It was not cashed or lost.

And my letter to Bill was returned as "Return To Sender, Not At This Address".

Now I'm getting the two operating system discs from the National HUG and Richard Musgrave tells me he's busy with improvements to HDOS 3.0.

BRIAN L HANSEN, 315 Roast Meat Hill Road, Killingworth, CT 06417

[Do \*any\* of our readers know what happened to Bill Parrott?! Write At Once if you find/know anything! (Amazing how so many formerly Gung Ho H/Z specialists Just \*Vanish\* Into Thin Air!) -- ed]

Dear Len,

Saw the yellow marker stripe on my address label for the September 88 issue (yup, just received it!) & quickly checked my cheque-book [register]. I found that cheque #787 has been cashed so I have to assume US Snail "crossage".

I've been working on both the 8: drive on my Z90's H37 system and an internal hard-sector drive on a Z89. Drive problems seem to haunt me. The Z90 has H77 and H37 plus H17 internal soft-sector drives. The Z89 has an H37 [external soft-sector] and an H17 internal hard-sector drive. I'm trying to maintain ALL media capabilities here in "Paradise".

Thank goodness we have a guy by the name of Army Curtis who has built ten or 12 Z89 kits, is an EE and knows these machines WELL!

Keep the SEBHC JOURNAL coming!

CORKY KIRK--W6ORS, 270 Kapualani, Hilo, HI 96720; 808-959-3888

[Y'know, Corky, we'd like to have someone like Army Curtis 'round these parts! I'm completely smothered with malfunctioning H/Z89s (mostly some which I bought "surplus" from the University of Michigan and a few legitimate units which came in for REAL service) and I Need Help! For example: My brother's H90 has a severe case of non-communication between the TL8 and CPU. He dragged it here all the way from Sarasota (FL), let it sit outside in our "cool" Michigan weather (c.a. 20deg F!) overnight, then schlepped it down to my workshop. On power-up the H: prompt immediately showed, accompanied by the usual two cheerful beeps! "Ah-ha!" we exclaimed, "It's heat related!" Fifteen minutes later we had the Z90's guts exposed and were spraying both sets of interface I/O chips on the TL8 and CPU with "FREEZIT" to find which one or ones were guilty of going AWOL, but absolutely without any luck. We also substituted four known-good I/O chips (two on each board) and found that they didn't do anything. Anybody got any Real Information about how to locate and eliminate this problem? If possible Corky, would you Please ask your chum--Mr. Curtis--if he's ever run into and fixed a similar complaint?! -- ed]

OD... GOOD NEWS... GOOD NEWS... GOOD NEWS... GOOD NEWS...

This just in from Henry Fale of Quikdata in Sheboygan, Wisc: "Please let your subscribers know that we still are in the H/Z-8-bit works! We have 'tons' of spare parts for the H8s and H/Z89/90s, and can give virtually over-night service on most 8-bit circuit boards. We also can repair your H/Z89 or '90 but want you to know that you should chose some other method of shipping these models rather than rely upon UPS. UPS is quite inexpensive, reliable, and quick, BUT they do not seem to know how to handle H/Z computers. We have received many units with the CRT assembly torn away from the front panel mounts and rattling around inside the computer case. Obviously these units must have been dropped more than a foot--maybe even TOSSED! UPS usually pays for the damages, provided you insured the computer with them before shipping it, but I wouldn't trust them 100%. Please call 414-452-4172 for a copy of our latest catalogue, or leave a message on our bulletin board--414-4524345."

[YO, Henry! I've received many item through UPS with the package rather bruised and dog-eared, but never anything which was broken through bad handling. Occasionally our UPS man borrows my folding airline-stewardess-type luggage cart to bring in something which is hard to handle, and that helps somewhat. Maybe your clients should pack their computers in TWO containers stuffed with at least 2 inches of Solid-Packed "plastic peanuts" in the gap between on all six sides, plus carrying handle(s). They just might make the trip ok. -- ed]

-----THANKS HENRY!-----

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## MAIL BOX, continued

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LETTERS BETWEEN READERS... LETTERS BETWEEN READERS... LETTE

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To: Rick Swenton, From Anthony Musnick

Dear Rick,

Your article in the August issue of SEBHC JOURNAL--"Betcha Didn't Know This!" proved your point. Many thanks and please continue to keep us novices informed of your interesting revelations!

My immediate interest is in obtaining a formatted hard-sectored 40-track disc in double density so I can use a BIOS-80 (80-track) disc I got from CalDig for their one-sided 80-track drive. I do not have a CP/M 2.02.03 FORMAT.COM, but do have a 2.02.02 version (in addition to the 2.02.04 version). Running FORMAT.COM on DDEU.COM, this version also has the E-D feature included but undocumented.

The E-D feature is skipped when running FORMAT.COM. The patch in your article does not work on 2.02.02, giving the following response:

DDT FORMAT.COM

NEXT PC

0A00 0100 (vice 1780)

I have enclosed both the DDEU and DUMP outputs for FORMAT.COM on CP/M 2.02.03.

Any suggestions to bring up the E-D feature will be much appreciated.

Enclosed is a stamped, self-addressed envelope for your reply.

/s/

ANTHONY P MUSNICK, 222 Marple Road, P O Box 136, Broomall, PA 19008

To: A Musnick, From Rick Swenton

Dear Anthony,

Your letter describes problems which many people will have over time. Unfortunately, I no longer use hard sector disks in any of my Heath systems so I will have to do some deep thinking 'way back to an earlier time.

I probably should define a few things first which may help you to understand things. Doing this should also help you to know if I understood your questions too.

First, when you talk about "density", there are two things to consider. You can go from a 40 track drive (48 tracks per inch) to an 80 track drive (96 tracks per inch) and double the amount of storage available on the disk. This happens because you doubled the track density. The track size was halved and the number of tracks were doubled. The other way to increase the storage capacity is to increase the amount of data stored in each sector. This is similar to the way your printer can print more characters per line by increasing the line pitch from 10 characters per inch to 15 characters per inch. You can fit many more characters per line but the characters are also much smaller (and they're hard to read). On a disk, the data is written in concentric circles called

cylinders. The cylinders are divided like you would slice a pie. These "pie pieces" are called sectors. If you increase the number of bytes stored in each sector, then you have increased the density.

The standard Heath Hard Sector H17 format is single sided, single density. All three standard Heath FORMAT.COM programs from CP/M 2.2.02/03/04 can format this H17 format. The standard H17 single sided, single density (SSSD) format is the only hard sector format supported by Heath utilities and BIOS versions.

Years ago, Ray Livingston of Livingston Logic Labs developed a new BIOS which supported double sided and double track drives. This means that you could replace your single sided 40 track drive with a double sided 40 track drive and go from 90k to 190k of storage per drive. If you wanted more, you could replace it with a double sided 80 track drive and get 390k of storage. To do this, you needed to purchase Ray's BIOS-80 package. This product included a new BIOS and patches to some of the Heath utilities to support double sided operation. Ray provided an automatic procedure for his patches to be applied to your standard Heath utilities.

To my knowledge, double density format was never available for the H17 format. In order to increase the track density, you needed to write the data onto the sector much faster than in single density. The 2 MHz H8 and H89 and the H17 disk controller simply could not read and write the data fast enough at 2 MHz. This means that there are only four possible H17 densities with BIOS-80. You can increase the number of sides, the number of tracks, or both.

Here is a little history about the Heath CP/M versions:

\*CP/M 2.2.02 only supported H17 Hard Sector 5-1/4 inch floppies and H47 8-inch floppies.

\*CP/M 2.2.03 supported all Heath Disk formats. H17 Hard and H37 soft sector 5 1/4 inch floppies, H47 8-inch floppies and the H67 Hard Disk. It also supported an interrupt-driven keyboard which permitted type-ahead operation.

\*CP/M 2.2.04 supported all of the above as well as the H89-11 serial/parallel board. It also included a comprehensive automatic system-building set-up disk to help the novice get his options running quickly.

Getting back to your letter, you said you needed a hard-sectored, 40-track disc in double density so you can use a BIOS-80 80-track disc in an 80 track drive. There is no such thing as a double density hard sector disc. The most you can do with a 40-track drive is go double sided. Also, you can't do anything (except single-sided, 40-track standard) unless you already have BIOS-80 implemented and running on your computer. You need Ray's special BIOS to support the second side or more than 40 tracks. You also need Ray's patches to the Heath utilities like FORMAT.COM to allow FORMAT to work on the second side and more than 40 tracks. I believe BIOS80 is still available from Henry Fale at Quikdata. It's worth the price and Henry is a champion when it comes to supporting the Heath community with products, support and fast service.

As you can see, your attempts to patch the various

## MAIL BOX, continued

versions of FORMAT to support double or extended double density formats are futile since these densities only apply to soft-sector formats.

Here is a chart to help you understand the various densities and storage capacities available on 5 1/4 inch formats.

I hope this helps you and feel free to let me know if you need further help. I have sent your letter and this reply to SEBHC so that we can share this information with the community.

RICK SWENTON, 106 Melinda Lane, Bristol, CT 06010-7176

## Heath/Zenith H17 - H37 Disk Formats under CP/M

Drive Types	Sides/Density	Storage Capacity
80 track, 96 TPI	DSED Soft Sector	782 k-bytes
80 track, 96 TPI *	DSDD Soft Sector	624 k-bytes
80 track, 96 TPI *	DSSD Soft Sector	388 k-bytes
80 track, 96 TPI	SSED Soft Sector	386 k-bytes
80 track, 96 TPI *	SSDD Soft Sector	308 k-bytes
80 track, 96 TPI *	SSSD Soft Sector	190 k-bytes
40 track, 48 TPI	DSED Soft Sector	382 k-bytes
40 track, 48 TPI *	DSDD Soft Sector	304 k-bytes
40 track, 48 TPI *	DSSD Soft Sector	188 k-bytes
40 track, 48 TPI	SSED Soft Sector	186 k-bytes
40 track, 48 TPI *	SSDD Soft Sector	148 k-bytes
40 track, 48 TPI *	SSSD Soft Sector	90 k-bytes
80 track, 96 TPI #	DSSD Hard Sector	390 k-bytes
80 track, 96 TPI #	SSSD Hard Sector	190 k-bytes
40 track, 48 TPI #	DSSD Hard Sector	190 k-bytes
40 track, 48 TPI *	SSSD Hard Sector	90 k-bytes

Legend: DSED - Double Sided, Extended Double Density  
 DSDD - Double Sided, Double Density  
 DSSD - Double Sided, Single Density  
 SSSED - Single Sided, Extended Double Density  
 SSDD - Single Sided, Double Density  
 SSSD - Single Sided, Single Density

\* = Standard Heath Formats

# = BIOS-80 Format

[Thanks to Anthony and Rick for supplying us copies of their correspondence. We are sure that other JOURNAL readers will find the above information quite valuable to them. -- ed]

Dear Len,

I'm writing this to request help with several problems I have encountered.

- I've tried to not been able to make them work. The one I'm interested in is 'START'. I want to begin printing at a specific page of a \*.PRN file and can't get it to work.
- I have obtained a copy of the MBASIC compiler (ver 5.23) and cannot get the printed output to look nice on paper. Is that the way it is, or does someone have a patch or suggestion on fixing it?
- The Microsoft COBOL compiler (ver 4.65) has a problem with page overflow starting with page 13. It seems that, whenever I generate a program listing more than 12 pages, I have this problem. Does anyone know how to fix or get around this problem?

One more item: Does anyone have a software product called BACKREST? I would like to obtain a copy but Quikdata Inc no longer stocks it. It runs under CP/M and is used to back up and restore from a hard-disc system.

Also: FOR SALE - H19A, \$75+UPS; H14 printer, \$75+UPS. Contact me at below address or phone any time after 6pm Central Time.

JARED FREEMAN, 600 Ginger Trail, Lake Zurich, IL 60047 - fone 312-438-0513

[You other readers help Jared make those Microsoft programs behave--I know NOTHING about them! NEWPIP.COM (from our CP/M GAMES DISC #0) is Heath's PIP.COM with a 'help' file patched by DDT into an area at its' head end, courtesy of Lee Hart. Your CP/M 2.2.04 Reference Guide (pp 2-243, 2-244) tells you how to use PIP to start printing from within a file rather than print a whole file. Let's say your plain text file has several paragraphs which you want to extract and send to your printer. The first word in the first paragraph might be "Voraciously" and the ending word of the last paragraph is "victoriously". You'd enter these commands:

A>PIP

\*LPT:=(dev:)(filenam.ext)[SVoraciously^ZQvictoriously.^Z]  
 Everything after that is automatic. Hope this helps! -- ed]



## MAIL BOX, continued

Dear Leonard,

I noticed your letter in the September 1988 REMark, and support your efforts toward keeping [H/Z] 8-bit machines and their owners operative and in communication. The isolation was rather severe even in the days when our computer were "new" because computers themselves were rare. Now [that] we live in a computer age of MS-DOS, 1-2-3, plus unsettling hype about OS-2, CD-ROM, artificial intelligence, LAN systems, and viruses, the 8-bit isolation, although different than before, is still an unavoidable fact of life.

But there are several advantages. I never really thought much about what it would be like to live on a desert island, and why many people dreamed of such as [an] escape. [But] now I know, because we stubborn misfits using Old Clunkers are on our own computerised desert island. We can shut out the outside MS-DOS world and let nothing disturb us. No hype, no "throw away your favorite software and use this new package instead". There is a stability, a serenity totally unknown in the MS-DOS world.

There is one area where Old Clunkers are simply way ahead of the new equipment, and that is in keyboard arrangements. Some modern keyboards may have slightly better key actuation, and H/Z90 keyboards were a "step down" from the H/Z89s. But having a CAPS LOCK key with detente in the right place, keys which say RETURN rather than ENTER, or BACK SPACE rather than <-- is a real blessing. The letters on the key caps are large and in the middle, not pinched and off in the corner of the key. IBM gave us the masterful Selectric keyboard, and then utterly screwed up their ibm-pc and pc-jr offerings. Their constant efforts to "improve" their keyboards have gotten them to the point where they are about half way equal to my Z89's keyboard.

As a school teacher I have experience with 3 different varieties of ibm keyboards, Apple IIe, Comodore 64s, and Zenith [keyboards]. I'm probably the only teacher in my state using a CP/M computer in the classroom, and most probably the only one in the country using a CP/M computer with hard-sector discs. Several years ago I laid in a supply of over 300 [hard-sector] discs, expecting "the end of the world" when [such] discs would be hard to come by. I have a dealer a mile from me who was weaned on 89s, so my repair anxiety level is minimal. With dual disc drives and access to my trusty old 1981 vintage Epson MX-80 printer, who could complain? I am limited for graphics and size of spreadsheets, but I find Old Clunk (one of my 8th graders made a sign to fit the front panel) is very good for group demonstrations of spreadsheets, and there are a few keys which do "wacko" things--such as PgUp, PgDn, NumLock, and CapsLock.

Even for an 8-bit computer user, my interests are unavoidably limited to hard-sector drives and CP/M. Please send a copy of the March 1988 SEBHC Journal and a hard-sector CP/M GAMES DISC #0. My cheque for \$6.16 is enclosed.

STEPHEN H KAISER, phd, 191 Hamilton St, Cambridge, MA 02139  
[Thanks for your order and letter! Howcum you're not a JOUR-

NAL subscriber? What with using "ole clunkers" in the classroom and running what those supercilious yuppies sneeringly refer to as "obsolete" CP/M, seems to me that you'd want to lay hands on all the hard-copy H/Z 8-bit reference material available! And just think what some of your smarter classroom occupants might find of value in JOURNAL back issues! I'll bet you a ripe bannana to a dozen fresh guavas that you didn't know that Heath has released HDOS to the public domain! And you can get HDOS 3.0 (also public domain) for \$25 if you send seven hard-sector discs (plus return postage) to hold all the files. Man, you don't know what you're missing until you run HDOS on "Old Clunk"! It loads in one-quarter the time that CP/M takes to load, has a built-in help file, is easier to learn how to use, and there are "scads" of CP/M programmes which will run under CP/M after being filtered through HUG's CTDH utility. And you can even reverse the process by sending an HDOS program through HUG's HTOC.COM! Try out the CP/M disc and then get in touch with me; maybe I can do something to induce you to explore what you've already missed! Check Bruce's letter below to get an idea of what I mean! -- ed]

Dear Lenny,

Decided to drop you a short note along with my renewal cheque. I just wanted to give you a pat on the back and say, "Keep up the good work"! Every month I really look forward to my issue of the JOURNAL. Even though I've had my '89 for over four years it seems that I still have a lot to learn about it, and the JOURNAL is a BIG help.

There is one thing which I wish YOU could do which would help me [at home and in my business]: I've noticed that you use Skycastle's CALLIGRAPHY software to do your ads. I've had this program for quite a while now, and although I am able to use it somewhat, I never seem to be able to master getting all the commands in [their] right places. It would be a big help if you could do a piece with some example of how to get the crazy thing to do all those headers and fancy [boarder] overlays as it is supposed to do!

BRUCE HEVNER, 216 Mulberry, Anderson, SC 29625

[You bet, Brucie Baby--Look for something on CALLIGRAPHY-II in our next issue! And we don't just use CALLIGRAPHY for ads but the entire issue. The front page banner and page headers are all done with Calligraphy. The last two pages of each issue also are done entirely with it (saves file space and hard-copy time). Requests such as yours make more work for me but in the long run can help lots of other folks. Thanks! -- ed]

Dear Lenny,

About your comments on my letter and "bum" discs in October's JOURNAL: I think I know of the company you hinted about. I had thought of ordering some discs from them but thought their claims and prices were too good to true so I



## MAIL BOX, continued

stuck with a firm that I've done past business with, JDR Microdevices, 110 Knowles Drive, Los Gatos, CA 95030, toll-free 800-538-5000. They sell Nashua discs for 49 cents each in lots of 50 or 39 cents each in lots of 250. I'm sure this is about twice what you paid for yours but I haven't yet had any bad ones, and I've used over 100 of them thus far. I think the "upscrewed" one I sent you for the software must have suffered damage somehow from the US Postal Service. I reformatted it after you returned it (with the software I'd ordered on another disc) and found it had no errors.

The JDR people have been square shooters with me in the past few years and they ship promptly. They also have some pretty good prices on disc drives and cables, ICs, and the like.

Good to get your recent phone call, and I hope you got the HDOS 3.0 discs in good shape.

ALLIE C LINGO, P O Box 118, Dierks, AR 71833-0118

[Yup, got the HDOS 3.0 discs, tried the boot disc--whatdya-know, it worked! Thanks, greatly!! I made some duplicates of the discs and play with HDOS 3.0 every now & then to become more familiar with it. Pity that I don't have time to write up something about it, but I shall try to do so, Real Soon Now! Thanks for the tip about JDR Microdevices. Here's one for other "DIS-Coverers": Miriam Campbell of DISK MOVERS, 8534 McCormick Blvd., Skokie, IL 60076, phone 312-679-3727, also has HARD SECTOR discs for our 8-bit machines at the almost absurdly-low price of 89 cents each with sleeves and in boxes of ten, minimum order of five boxes. I'm sure that she will give you an even better price if you buy ten boxes (100 discs). When I last spoke with her she said her hard-sector discs are in red jackets, but if willing to wait I could get other colours. (My "other" hard-sector disc source, Lyben Computer Supply in Troy, MI, has only model-T Ford black discs!) Her OEM-supplying manufacturer is on the West Coast. Give her a call--tell her Lenny sent you! -- ed]

Dear Len,

Recent letters from Charles Liss and a phone call from James Jewell [JOURNAL subscribers], expressing interest in the Lucidata PASCAL I announced in your October '88 issue, suggests that some of your subscribers would like more information about this language package. I should say at the outset that version 3.8 which I offer is the latest which Polybytes produced, and was introduced in 1982 - 83. Further, I must note parenthetically that the HDOS version of this package should run properly under HDOS 3.0. Although I haven't made a thorough check of this, the short validating program and the configuring utility included with the system compile and execute flawlessly. I'll have more to say about this below. But my reason for writing to to explore some of the language package. My discussion may wander a bit, but that's because I'm keying remarks as I browse through the manual.

With some exceptions, Lucidata PASCAL is an important sub-

set of the ISO standard. The widest departure from that standard--essentially hidden from the user--is that disc I/O emulates terminal I/O for a consistent user interface. And, like its' "successor"--Borland's TURBO PASCAL--it is also extended beyond the ISO standard specifications.

This includes two additional pre-defined data types in the compiler. These are BYTE (the integer subrange 0...255) and ALPA (an 8-character array). The latter is both a modest and an important enhancement to standard PASCAL. One of the deficiencies in Niklaus Wirth's original was of handling ASCII character strings. Turbo provided a STRING type with variable length which had to be declared before use. Lucidata occupies middle ground between standard and Turbo--that is, it provides a fixed-length (8-character) array for string data. Any string data larger or smaller will have to be declared as an ARRAY of CHAR. This is one reason why--if you're new to PASCAL--you should purchase a book on the generic language. There are considerable differences between Lucidata and Turbo, even though PASCAL is often touted as a "portable" language at the source-code level.

Besides these predefined types, Lucidata also provides for the declaration of scalar (or enumerated) types, SETs, ARRAYS, pointers, and RECORDs. But there is one restriction on the last item; a logical record may occupy no more than 255 bytes of disc storage. And, unlike the ISO standard, this implementation also has facilities for random disc-file access. Standard PASCAL--on the other hand--only recognises sequential files. The maximum number of random records in a Lucidata data file is 32,767, which means that most systems will be limited by disc storage.

Other departures from Standard are the HALT and OVERLAY procedures. HALT prematurely terminates program execution. OVERLAY permits overlaying of program segments so that extremely large programs may be written. As in MBASIC, open files remain open when overlaying occurs. And the usual DISPOSE procedure for garbage collection in dynamic memory (when using pointers) is NOT implemented. Instead, MARK and RELEASE, also used in early versions of Turbo, are used for handling the heap. As with Turbo, Lucidata also extends the CASE statement to handle selections not included among the labels, but with OTHERWISE, not ELSE.

One of the things reader Liss was particularly interested in are arithmetic functions lacking in Lucidata's previous release (V2.8) which he has. This version includes: ABS, SQR, SQRT, EXP, LN, SN, COS, and ARCTAN. Other non-standard functions are UNPACK for shifting, masking and ANDing integers, and CARD, which returns the number of elements in a [number] SET.

One important subject I missed while preparing the news release I sent you is that stand-alone programs which do not require the run-time system can be created without resorting to TRANSLAT and Microsoft's M80 assembler. This is done [by] using the "\$G" command-line pragmat (directive) on a compiled file.

During my experimentation under HDOS 3.0, I tried this on

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## MAIL BOX, continued

the short (17-line) VALIDATE.PAS program included with the Lucidata system. The binary file generated by the compiler was one sector (256 bytes) long. The "\$G" directive ballooned the stand-alone version to 45 sectors or 12-1/2k-bytes. Apparently the run-time package takes up something on the order of 12k-bytes. If you adequately program your error trapping, you should be able to dispense with moving the run-time error-message file around with your programs. But if the error-message file is omitted, a fatal error results in an error number being displayed, and you must look the number up in the manual's appendix.

Further, some improvement in speed can be gained through improved hardware. On my soft-sector system, running a 2MHz and under HDOS 3.0, compiling CONFIGP.PAS (the configuring utility composed of 592 lines of code) took 18 minutes and 36 seconds. At 4MHz that time dropped to 13:51.

If you are running a standard hard-sector system, whether HDOS or CP/M, you MUST have a minimum of two drives in order to compile. Moreover, Lucidata PASCAL is apparently runnable under HDOS 3.0 because it uses NO interrupts. But, when using this package under HDOS 3.0 you MUST NOT set the CONFIGP ULMEM option ON. This allows the compiler access to any RAM which may be installed in the '89/90 low-memory monitor. Because these memory locations are part of HDOS 3.0's operating system it is quite possible for the system to crash. NOTE: I didn't try it!

One further observation before I close: That is that there appears to be p-code compatibility between the HDOS and CP/M versions. While doing my explorations (described above) I also transferred the system configuring utility .BIN file to CP/M and then tried to run it. It executed fine up to the point where the drive name defaulted to SYD:, whereupon it dumped me back to the system prompt! This indicates there is a strong possibility that one can write applications under one operating system, move them over in p-code form and run them on the second system. All that would be needed is BOTH versions of Lucidata PASCAL. Not even MBASIC provides this kind of convenience!

Finally (as I stated in Vol. III:3) this is an exceptional value for the PASCAL programmer still running HDOS and CP/M. Indeed, this is an excellent package for beginning programmers. There is a movement afoot among secondary school and college educators to make PASCAL the first computer language taught to pupils because it requires structured programming techniques, and because of its power. Actually, this is what PASCAL's creator originally intended. And I've found that even my novice-level knowledge of the language has improved my BASIC code's readability. But, unlike Turbo, Lucidata's manual IS NOT a tutorial. So you will have to purchase any of the large number of books on generic PASCAL, or try to locate a copy of Heath's old home-study course (EC-1111). [Was EC-1111 released to Public Domain? - ed] My own favorite among the large selection of Pascal books is a two-volume, hard-cover set: An Introduction to Programming and Problem Solving with Pascal by G Michael Schneider (1982, 2nd

ed.) and Advanced Programming and Problem Solving with Pascal (1981), both published by John Wiley and Sons.

KIRK L THOMPSON, Ed., Staunch 8/89er, #6 West Branch Mobile Home Village, West Branch, IA 52358

[Thanks for this very enlightening information! I inherited a "surplus" copy of JRT PASCAL from a former member of our now-defunct A\*SQR\*HUG. I have often thought about trying to learn how to use it to write some programs for my H8's colour monitor, but I have yet to do anything in BASIC along those lines! All the software which came with my New Orleans General Data colour card are done either in assembly, or PASCAL. The PASCAL routines run great but I can't get into them to make alterations. I'd like to add a "sound track" such as "Around the World in Eighty Days" for the rotating globe program, for example. Just maybe, your Lucidata PASCAL package might let me do that! You've given me hope, Kirk. -- ed]

Dear Mr Geisler,

Thank you for the sample copy of the SEBHC JOURNAL. It was quite interesting. Most of my computer work is done with MS-DOS now, but I still keep the old H89 around and use it occasionally.

I wrote ACANAL, a circuit-analysis program which was originally written for CP/M but which has now been converted over for HDOS and MS-DOS. And I have enclosed my advertisement for it which I hope you will run in the SEBHC JOURNAL. It may be of interest to other H89 users.

I've also written an article on using interrupts with C80 running under HDOS. I submitted the article to Sextant, but I've never received a reply from them. Perhaps you'd be interested in running it in the JOURNAL.

My cheque for \$22.50 is enclosed. Please send me a copy of Volume I.

Thank you for your continued support of the Heath 8-bit computer-owner community.

GARY A APPEL, 1318 Old Abbey Place, San Jose, CA 95132

[You're quite welcome! The copy of Volume I is on the way & should be in your hands about the same time as you're reading this. Perhaps it will give you sufficient inspiration that you will subscribe to the JOURNAL. Without contributors such as yourself, the SEBHC JOURNAL is hard-pressed to scrounge up sufficient material for twelve editions a year. Please send us your C/80 article Right Away; I'm sure we can fit it into an early issue. Of course, we can't pay you--We're Operating On a Borrowed Shoe Lace--but we'll gladly extend your subscription--no charge--for another year if we accept & publish your item. I'm sure that if you asked Sextant to return your article "for revision" they will do so. Then rewrite so it don't read or appear exactly the same as previously, and re-submit it to them. (Sextant wouldn't reprint our version.) You may get Real Money for it; nice?! -- ed]

## ACANAL: AC Analysis Program

ACANAL is an electronic analysis program written to perform an AC nodal analysis on an electronic network over a specified frequency range. The output format has been selected primarily for use in analyzing radio frequency circuits, but lower frequency circuits can be analyzed as well.

A variety of lumped and distributed elements can be included in the network. Transmission line models and crystal models have been included to simplify the analysis of radio frequency circuits.

The analysis frequency can be swept over several frequency ranges in a single analysis. Each frequency range sweep can be selected as a linear sweep,

logarithmic sweep, or a single frequency.

The network response consists of an input parameter, output parameter, and forward transmission (gain or loss) parameter. The response parameters are displayed in tabular format at each analysis frequency, and can be echoed to the printer or a disk file. In addition, the MSDOS version of the program can plot a single parameter on the system display. If a graphics screen dump program has been installed (ie, graphics.com), the plot can be dumped to the system printer.

The circuit is described by an element list consisting of element types, values, and nodal connections.

The frequency ranges are described by a frequency range list consisting of sweep type (linear, log, or single frequency), start and stop frequency, and linear step size, or number of logarithmic steps. Only the start frequency is provided for a single frequency.

The source and load values and connection nodes are selected independently of the circuit description. The resulting network is analyzed as a two port, with the source and load nodes as the two port input and output ports.

The lists are edited using a simple line editor incorporated into the program. The entire network description can be saved as an ASCII file, and retrieved for analysis at a later time.

### Element Types

- Resistor
- Capacitor
- Inductor
- Transconductance
- Transmission Line
- Open Transmission Line Stub
- Shorted Transmission Line Stub
- Coupled Inductors (Transformer)
- Quartz or Ceramic Resonator
- Two Pole Monolithic Resonator
- Transistor (Hybrid Pi Model)

ACANAL is especially well adapted for analyzing RF filters, impedance matching networks, and impedance matched amplifiers. Included in the manual are examples of four different filter networks, and a transmission line matching network.

To Order, specify version. Send check or money order for \$50.00. California residents include \$3.00 sales tax. (Charge cards are not accepted at this time)

### Input/Output Parameters

- Impedance
- VSWR
- Return Loss
- Reflection Coefficient
- Mismatch Loss

### Gain Parameters

- Transducer Gain
- Voltage Gain
- Current Gain
- Transconductance
- Transimpedance

### Versions Available

**MSDOS:** 8087 coprocessor supported. Parameter plotting supported. Graphics dump to printer if RAM resident screen dump program installed. (Not provided)

**CGA:** 640 x 200 resolution. Dump plot with GRAPHICS.COM

**EGA:** 640 x 350 resolution. Must have EGA screen dump program to dump plot to printer.

**Z100:** 640 x 225 resolution. Use standard graphics print screen program to dump plot to printer.

**Z100:** 640 x 448 resolution (Interlaced). Graphics dump to printer not supported.

**CPM:** Plotting not supported. This version will run on the H89, Z100, or H8 using an H19 terminal. Available only in soft-sector (H37) format.

**EDOS:** Plotting not supported. This version will run on the H89, or H8 using an H19 terminal. Available only in soft-sector (H37) format.

**Note:** At the present time the hard-sector (H17) format is not supported. If the number of sales for the H89 versions is high enough, hard sector support will be added in the future.

Gary Appel  
1318 Old Abbey Place  
San Jose, CA 95132



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## MAIL BOX, continued

Dear Lenny,

The "Garage Sale" SEBHC JOURNAL [issue] just arrived and I couldn't resist commenting on the reader's letters. Something very profound happened to me after I read some of the mail. I realised there are people out there with H8s and H89s who use HDOS! In my closed, narrow, isolated world, what else is there other than CP/M?

Jack Wert's letter was the one which especially got me to thinking. It made complete sense from his point of view and could understand why he thought that way: "Do what works for you"!

My evolution with the H89 was very different from the typical HDOS user. Possibly, if I share my experience with you as Mr Wert did with us, you may also develop a different perspective.

I guess you could say that I was a late starter. I purchased my H89 in 1982. I started with 64k of RAM and two 90k hard-sector drives. By then Heathkit was including free software packages with the machines. I chose CP/M, MBASIC, and BASCOM.

I decided that my new computer had to run CP/M. Then some of the other popular computers were the Xerox 820, Osborne, Kaypro, Morrow, plus the older die-hard S-100 bus systems such as Cromemco and many others. All those systems ran CP/M. If I had a CP/M system--[my reasoning ran]--I would have some degree of commonality with the other systems. Little did I know how important that [software] compatibility was, as I later learned that I could tap into the CP/M public-domain software library by calling the many Bulletin Board Systems via modem. In 1982 the CP/M Users' Group had over 90 disc volumes in their library, and a similar group--SIG/M--had around 50 volumes. And both libraries were growing rapidly. I've now lost count of the current libraries' status; I believe that they exceed 300 volumes.

On the other hand HDOS ran only on the H8 and H89. HDOS still is a very fine operating system. Software vendors of application programmes needed to write special versions specifically for HDOS. Not too many vendors were willing to create a special version which would run only on two computer models from one company. For example, Wordstar and dBASE-II were never available for use under HDOS. These two programmes were the most-widely heralded applications programs for CP/M. They could run on virtually dozens of CP/M systems.

Another thing I disliked about HDOS was that it was dependant upon ROM-based routines (i.e., the MTR-nn and H17 ROMs). CP/M was completely RAM-resident and had access to the [machine's] entire 64k RAM.

I started with two hard-sector drives and later added a 3d 90k drive. Now the urge to hack at my hardware was overpowering me. I did Pat Swayne's CPU 4MHz modification from REMark as well as installing the Watzman ROM in my Terminal Logic Board, and then boosted the TL8 to run at 4MHz also. I wanted to run 38400 baud on the CRT and be able to switch between 2 and 4MHz without side effects. This involved BIOS changes. Arrgh..BIOS! Mr Wert, you're probably right in not

caring about the BIOS, because, quite frankly, it's a pain in the neck (and a few other places too)!

Then I upgraded my BIOS with Ray Livingston's BIOS-80. This allowed dynamic 2 or 4MHz support, as well as support for extended disc-drive capacity. Purchasing a 96tpi double-sided drive, I could store 390k on a single hard-sector disc. A side benefit of [using] BIOS-80 was the ability to install something called ZCPR, the command-processor replacement which might be compared with installing SuperSysmod-2 in an HDOS system. (ZCPR was a very early predecessor of ZCPR3--found in Z-System.) ZCPR added many useful commands, including drive and user-accessing features not available in plain CP/M.

Later, I upgraded my system to soft-sector operation. My 390k drives now could hold 782k using Extended Double Density. After more BIOS modifications, my system was sporting FOUR quad-density drives which gave me a total storage capacity of over 3MB!

Sometime in late 1986 I noticed that [H/Z 8-bit] hardware was getting scarce. I bought an H67 interface board "just for fun" and because it was priced at only \$20. It sat on the shelf until a friend wanted to sell me a standard SASI XEBEC hard-disc controller. Guess what; that H67 board together with the XEBEC board, a standard hard disc and Qwikstor's software and my H89 now had a 10MB hard-disc system! I defied ALL odds and asked for trouble by running all three, the hard disc, its' controller, and the H67 interface board INSIDE my H89's enclosure from the INTERNAL POWER SUPPLY! I did have to reverse the fan to blow onto the regulator heat sink, otherwise it would boil water. It has been running for several hour a day for over a year now. Some days the smell of burning varnish is noticeable, most days it isn't...

While my hardware was going through its' mutations, software was evolving as well. I went through the cycle from ZCPR to ZCPR2, on the ZCPR3, and finally to NZ-COM. CP/M isn't that good, and HDOS is far better in many respects. But a Z80 computer with a version of Z-System (ZCPR3) is superior even to MS-DOS. (I've covered this earlier).

Currently, my H89 still has four floppies and a 10MB hard disc. The CPU and TL8 both run at 4MHz and console baud rate is 38400. Everything I use or need is on the hard disc. I back up the hard disc to floppies every week which is quick to do as I transfer only those files which changed from the last backup need copying. My disc is partitioned into logical drives A:, B:, and C:, and user areas 0 to 15 are available in each of those. Drive A1: is declared as public with Wordstar and dBASE-II in that area. This means they are available from any other drive or user area and you don't need a separate copy of them located in the same drive/user area you're logged into.

I'm running a keyboard redefinition program under Z-System. Since most standard CP/M programs recognise the "Wordstar convention" for control keys, I configured the keyboard redefinition program to translate my keyboard's special-function keys into Wordstar-compatible control codes. This means



## MAIL BOX, continued

that when I hit the ERASE key--the character at the cursor is erased. Likewise, when I press the Up-Arrow key, the cursor moves up. Whether I'm in Wordstar or dBASE-II my keyboard function keys remain unchanged between applications.

I agree that many support packages for HDOS permit extended disc storage and printer support. I also agree that HDOS is a versatile and quite-useful operating system. Further, I agree that most home-style applications you don't need Wordstar or dBASE-II to do word processing or database management. But, if I had chosen HDOS for my operating system, I'd have severely limited myself to sharing only with other H8/89 users. With [the more universal] CP/M operating system, I can share software and information with dozens of other CP/M users. Many computers, such as the Kaypro, Ampro and SB-180 can read, write, and format Heath soft-sector discs as well as most other formats.

Standard CP/M is a rather poor operating system. But it was the first one available for personal computers, and it gained rapid popularity and acceptance. It did everything which was needed done in its' day. But it had an unforgiving and cryptic way of communicating to operators its' dislike of disc changes without CTRL-C having been entered ("Bdos Err on C:"). It was hard to interface with peripherals such as discs and printers. Most serious CP/M users today are using some form of Z-System. If you've never seen Z-System in operation, you should somehow find a way to do so. You won't believe what an "old 8-bit computer" can do with only a few dollars' worth of software!

Because of work done by CP/M users' groups and Special Interest Groups (SIGs) such as those supporting Kaypro and Osborne computers, many CP/Mers feel that our systems are--for the most part--collectively compatible. This year a writer (Ted Campbell) released through the CP/M Bulletin-Board networks a book entitled "UCPM Manual" (The Universal CP/M Manual). This book documents important details about many computer systems and terminals. Using information from this book I was able to convert a program employing Kaypro CRT escape codes to run on my H89. This tells me that the basic problem of compatibility between various CP/M systems is lack of user education. Very few CP/M users are asking questions (or don't know there are still people "out there" who are willing to help.

For all you HDOS users, I'm sorry that I don't have anything to offer. I faintly recall only a few things about HDOS--something about it being pitch dark and that I was likely to fall into a pit! I also used for a short time the USCD p-system; it was good but it was even more restrictive in regards to hardware compatibility. You were restricted to only three 90k drives, and that was it! Furthermore, other than programs which were distributed in ASM or PASCAL source code, everything you needed you had to write yourself.

Nothing new has been written by any commercial software house specifically for HDOS. But MicroPro has recently begun selling Wordstar Release 4 for CP/M, and rumour has it that Release 5 is under consideration. They allowed you to up-

grade any old copy of Wordstar for \$89 and gave users' groups a quantity discount. NZ-COM, the the auto-install Z-System was also recently released, and the public-domain software sources are still delivering quality programs "just for the fun of it". Mark Twain's quotation, "The reports of my death have been greatly exaggerated!" is quite applicable to CP/M. Recently CP/M users gained the ability to read, write to, or format MS-DOS discs as well as the ability to create MS-DOS archive files, and extract member files from existing files. And another recent public-domain release is a program called HMODEM-II, a new modem program for the H89. It uses the function keys and includes support for the latest and most-efficient file-transfer protocol, ZMODEM. Within weeks of its' release, HMODEM-II was re-written to support overlays for other popular CP/M system and it was released as ZMP.

Time for me to climb down from my soapbox and make a closing comment. The reason for so many letters and articles about CP/M is that, in many circles, there's still a flame a-flickering. There is nothing wrong with HDOS except maybe because it runs only on Heath computers. I may be wrong, but I personally don't see any glimmer left in HDOS. HDOS 3.0 has been available for some time now. But HDOS 3.0 only makes it easier for you to run the same old programs you were running before. It isn't much better in the CP/M world, but at least there's still something...

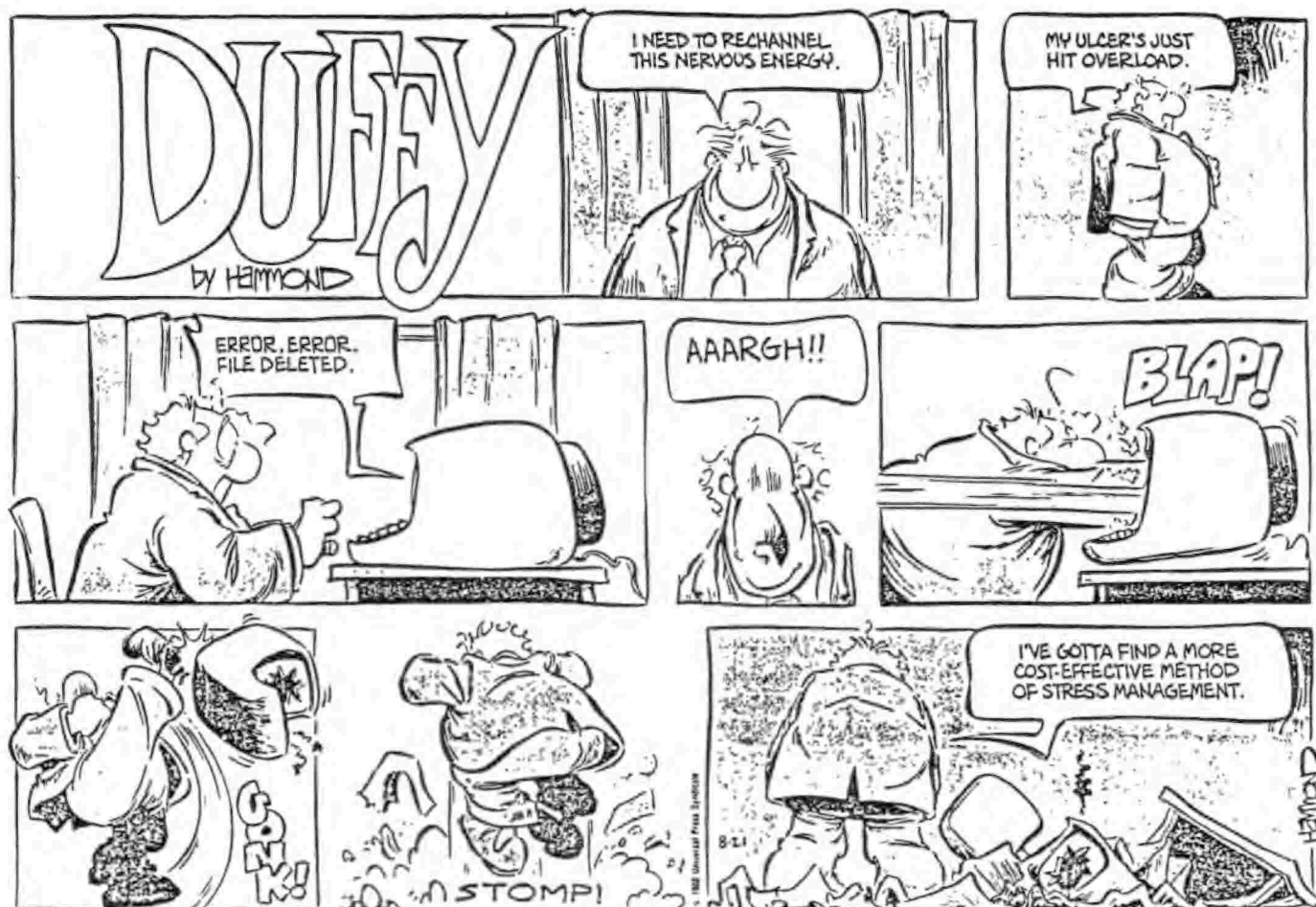
By the way, I just helped a friend install the TMSI Super-set and Superclock in his H19 terminal. I must say that it was a positive experience. We replaced the [original] 4k keyboard ROM with TMSI's 32k ROM. Clever tricks! Sound design! I was wondering how Lee Hart was going to fit all those features into this product! More to come...

RICK SWENTON, 106 Melinda Lane, Bristol, CT 06010-7176

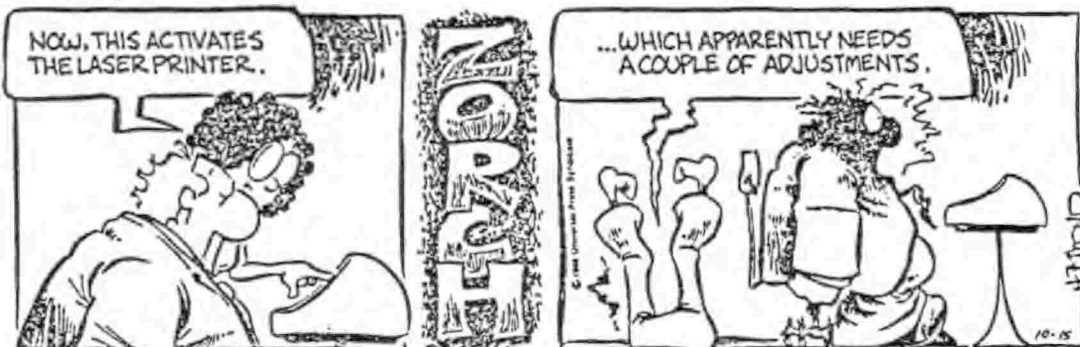
[Once there were only plain folks but now, in the computer world, there are two types: "Stinking, filthy-rich yuppies" (aka "conspicuous consumers") and "non-progressive, backward-looking clods". The former flock around purveyors of anything "new" (and therefore "better") and spurn last week's "new and better" product, calling it "old, outdated", "obsolete". But the latter feel they're "thrifty" and therefore wisely resist the blandishments of used-car-salesman-type big bleu propaganda mongers. Thus it ever was, and thus it shall ever be. Like you Rick, I'm thrifty and stick with what I've already spent a small fortune upon--i.e., my still properly-working H/Z 8-bit machines and software. Unlike you, I "grew up" with HDOS on my H8. When Heath announced discontinuance of H89s, I went into hock and bought a kit with CP/M 2.2.04 and one half-hearted, 40-track, hard-sector internal drive. Though I've come to where I can make CP/M work most of the time, I still prefer HDOS because it was designed for easy use by simpletons such as me. And, as Lee Hart's front-page cartoon (SEBHC JOURNAL I:3, Oct-86) H89 character said to the H8 crawling from its' grave, "There's still work to be done!" --for BOTH HDOS and CP/M, that is... -- ed]

## COMPUTER-ORIENTED LAUGHS

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### DUFFY



## MAIL BOX, concluded!

[Thanks for your 8-bit machine help offer, Gene! See the ad at bottom of next column about "previously owned" H/289s and '90s for Christmas. A gift subscription to the SEBHC JOURNAL should go with each machine, don't you think? And you other readers: Get in touch with Gene about HIS problems! -- ed]

Dear Mr Geisler,

Thank you for the June issue which I'd missed. I just received and read it straight through. After finishing I am sure I'd not received it earlier and then simply forgotten to file it.

My September copy arrived almost simultaneously with the June. I'm very sorry to learn that you weren't able to get my little MBASIC program to make a workable printer command file. After re-reading Dale Chidester's first letter in the May issue I think I know why the trick didn't work for you. The sample program included in my letters were designed to set the vertical and horizontal motion indices for an EXP-400 Silverreed daisy-wheel printer which Dale owned. I used those escape codes because they were what Dale had been trying to set. So, when you tried them on your Epson printer, it wasn't surprising that nothing happened. I should have been more specific in explaining that the PRINT statements (lines 20 & 30 in my listing) should contain those escape codes needed to make your printer perform a desired action. For example, for emphasised italics those lines would read:

```
10 PRINT #1, CHR$(27);"E"
20 PRINT #1, CHR$(27);"4"
```

I don't quite remember where I picked up this technique but think it was a logical outgrowth of the "zero-length" program for re-running a program. Originally, such "zero-length" programs were created through DDT. Well, if I can create a zero-length program with DDT, why not use it to create two or three-byte files for printer escape codes? But escape codes frequently call for a carriage-return/line-feed at the end of each line before the printer will act on them! Then came the light: Why not use a programming technique which automatically puts CR/LF at the end of each line? And that technique's an MBASIC sequential-write statement.

Once understood the technique can be a very powerful tool; for instance, use it to create terminal command files. Also, as I mentioned before, I use this technique to set my printer and monitor on my peesee at work.

Hope this clears up your problem with attempting to use my little MBASIC trick for creating a library of command files.

RICHARD J KIESSEL, 19100 Saint Johnsbury Lane, Germantown, MD 20874

[Well, colour my face red! Thanks for making it Absolutely Clear. -- ed]

Dear Lenny,

Found some more time to write you. Thanks for going to the trouble of redoing and returning my original software

disc. I checked it out and everything ran correctly this time. I looked further into your having found that FINDBAD locating an error and my curiosity led me to dig up your SEBHC JOURNAL CP/M GAME DISC #0. I located the NEWFBAD.COM file and now use it when FORMATTING CP/M discs. Incidentally, I found the bad block on that disc you'd returned in the same place, but after re-formatting the disc FINDBAD didn't report any errors. [Might be different head alignment? - ed]

There seems to be lots of interest in the TXTPRO Demo disc and I personally think that anyone trying the Demo will surely be "hooked"! I've tried the MS-DOS version of WordPerfect and, even though it will do more things than TXTPRO, there's more work to using WordPerfect than with TXTPRO.

There's lots more interest about HDOS as shown by the Sep-88 JOURNAL. I'd also like to see more "good stuff" for HDOS. Perhaps some of the "gurus" who've gone on to MS-DOS will consent to share their aquired knowledge of HDOS with us JOURNAL readers?

Ran into a puzzler about HDOS and making backup copies of system distribution discs: (Howcum the documentation didn't mention this?) In going through my HDOS discs and manuals, I found two of the original 3 discs had only 8 sectors allocated for the directory, but that I used 4 discs making backup copies with INIT because their directories had 18 sectors allocated. I've not found anything in Heath's documentation on how to reduce the directory size--I suppose this was a manufacturing trick to reduce the number of hard-sector distribution discs. But now that I'm using soft sector, directory size isn't a big issue.

About the PRINTER.SET file problem: I had no trouble with it, but was puzzled by not being able to TYPE this file on screen. It must contain "invisible" control codes the TLB can't reproduce. I did find that the program MUST be "RUN" and not "SAVED" or it wouldn't work.

Gotta go! I'm restlessly awaiting the next GREAT issue of the JOURNAL...

ALLIE C LINGO, P O Box 118, Dierks, AR 71833-0118

[Ok Allie, thanks for this news. Look for your "How2 Refill An MPI Printer Ribbon" item in the December issue. -- ed]

\*\*\*\*\*

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\*\*\*\*\*

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# SEBHC JOURNAL

Volume III, Number 4, Page 16

## FROM The STAUNCH 8/89er

Kirk L. Thompson, Editor  
#6 West Branch Mobile Home Village  
West Branch, IA 52358  
Phone: (319) 643-7136  
November, 1988

The **Staunch 8/89'er**, the quality quarterly newsletter for H-8 and H/Z-89/90 computer users is **extremely** pleased to announce that it begins **bimonthly** publication in January. Because of the increasing frequency of appearance, the annual subscription rate rises to \$12 per year (overseas please add \$4 for **air mail** delivery). But see below for a renewal special!

Becoming bimonthly was directly tied to an increase in circulation to 500. Projections to the end of this year suggest that this goal will, indeed, be achieved. **Staunch** would like to thank those individuals and organizations who contributed assistance in the promotional campaign. These are Lee Hart of TMSI, the national HUG, Peter Shkabara of Anapro Corp., and David Powers of Generic Computer Products, Inc. Without their support, increased publishing frequency could not have occurred.

**Staunch's** public domain and royalty software library, initially prompted by a generous donation by Peter Shkabara, continues to grow. We expect to issue a catalog in late winter or early spring. Recent acquisitions include more releases from Ray Massa of Studio Computers for both HDOS and CP/M and over 35 printer device drivers for HDOS, written by John Smith of THUG. Moreover, **Staunch** has commissioned keying in of the now-public-domain HDOS 2.0 manual! Dan Jerome and John Toscano, both members of SMUGH, are supplementing and updating this material. At the moment, the first two chapters (system configuration and the operating system reference) are available in **either** hardcopy or disk form.

Further, the staff of **Staunch** remains the same for the new year. Kirk L. Thompson continues as editor/publisher and Hank Lotz, the newsletter's creator, as contributing editor. **Staunch** is also pleased that Richard Streeter, author of system enhancements and printer device drivers for HDOS 3.0, is writing a quarterly column on the new HDOS. His third such will appear in the first bimonthly issue in mid-January.

As **Staunch** shifts to bimonthly publication, it also celebrates its second birthday. We would like to thank advertisers SigmaSoft and Systems, TMSI, and Generic Computer Products for their support during the past year. We also thank the increasing number of authors who have contributed so much to **Staunch's** pages. Of course, we continue to pay for articles; if interested, please write for our author's guide.

Finally, to celebrate the start of its third year, as well as increased publishing frequency, **Staunch** is including a **premium** with all renewals for 1989 received before 1 January. Subscribers may **select** either a terminal escape code/graphics symbol reference chart or any item of public domain software in **Staunch's** library. Back issues are also still available. These can be had for \$5 for the 1987 set (edited by Hank Lotz) and \$8 for the 1988 set (edited by Kirk Thompson). Please address all orders, subscriptions, and inquiries to the address above.



## LETTERS POLICY

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.

The SEBHC JOURNAL RESERVES THE RIGHT TO REFUSE TO PRINT any letter containing profanity, derogatory racist, or sexist remarks, specific political or libelous statements of any nature directed toward any individual or organisation. The JOURNAL will not knowingly publish malicious fabrications, lies, or distortions of fact, but will take appropriate legal action against any individual(s) uttering them.

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\* 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 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, 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 once coincided with HUGCONS, now the place and time will be announced in July JOURNAL issues. Advance registration is US\$25 by 15 May.

\* 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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