

Saving Our HEATH Eight-Bit Machines!

# SETHO JOURNAL

Volume III, Number 1

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We're 2 Years Old This Month!

# SEBHC JOURNAL

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## Betcha Didn't Know THIS!

Getting the Bugs out of Heath Software  
and Other Nice Things To Know

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After carefully reading current and back issues of the SEBHC JOURNAL, I realized that there is still a great deal of H8/H89 information which many of us take for granted and which many more of us either don't know about or truly understand.

R Kenneth Strum mentioned in his "Anapro's Z-System Explained" article that the Microsoft M80 assembler has problems running under Z-System. There are many reasons why this happens under Z-System. Nearly all of them are related to the Heath-specific code contained in Microsoft products sold by Heath/Zenith for the 8-bit machines. While it is true that CP/M's BDOS serial number disappears when Z-System is running, the Microsoft products do not look at or care at all about it. (The Digital Research MOVCPM programs are another story we'll explain later.) For those of you who care, the Z-System ZRDOS serial number is actually "ZRDOS" in ASCII.

Let's discuss a little history. When Heath contracted to sell Microsoft products (those for use under CP/M), Heath wanted to sell them at a price lower than what Microsoft was selling the same products to the public for. Microsoft agreed to Heath's lower price only if Heath would modify the programs so that they would not run on any non-Heath equipment. Thus, if you owned a Kaypro or Osborne and managed to get a "borrowed" copy of MBASIC from your H8 or H89 friend, you would be quite surprised that the only thing it did when you typed MBASIC was whirl the disk a few seconds and give you the A> prompt back.

The code which Heath added to the Microsoft products had to somehow find out if the program was running on an H8 or H89 and abort itself if not. The CP/M operating system running on an H8 or H89 does not contain anything special or different about it to differentiate it from CP/M running on a non-Heath computer. More importantly, the subtle differences could be "simulated" on a foreign computer. What was needed was a way to verify the computer hardware was really Heath's.

Enter the Boot ROM. Back then, all Heath 8-bit computers (H8, H88, and H89) had a ROM, affectionately and variously known as PAM-8, XCON-8, MTR-88,89 and 90 among others. These ROMs contained the software required to bootstrap their respective computer from a cold start, either by cassette tape or various floppy disk systems. Under HDOS, this ROM (or its contents) was always present and occupied memory space. Its routines were accessed by HDOS for many system

functions. Under CP/M, the ROM remains in memory only until CP/M is loaded. Code in the CP/M BIOS operates a hardware electronic switch (sometimes referred to as the ORG-0--Origin zero--modification) which switches out and disables the ROM as soon as CP/M signs on. At the same instant, regular RAM is switched in and enabled at the old ROM address. This is how the maximum Z80 memory allocation of 64K is attained while not having to count the 2K or 4K of memory space which the boot ROM would have taken away from the system. CP/M no longer refers to any code in the boot ROM after CP/M is loaded. It's gone anyway. This technique is called "bank switching" or "shadow ROM".

In the Microsoft products, Heath added code to detect the presence of a Heath computer by taking advantage of the computer's ability to switch this boot ROM in or out by a software command. It is actually done by outputting the correct byte to the general purpose port at 0F2H. The Heath code in the Microsoft product will first disable interrupts so that nothing unanticipated could happen while the code is doing its thing. Next the code switches the memory bank select line 0 on the general purpose port. This will cause the boot ROM to suddenly appear again. Then the code examines the first few bytes of the boot ROM to see if it is in fact a Heath ROM. It switches the ROM back out and enables the RAM which was there before (still retaining its' previous contents). Now it remembered if it found a Heath ROM and it will permit the program to run only if the test was good. If not, it just causes a warm boot and returns to CP/M.

Enter the Heath H-100 series. Guess what? The H-100 boot ROM didn't look anything like the H8 or H89 ROM! Furthermore all those neat 8-bit Microsoft products wouldn't run on the H-100! That's why we saw version 5.22 of MBASIC for the H-100. But we've never seen updates of any other of the many Microsoft software products to permit their operation on the H-100!

The Capitol Heath Users Group published a set of patches for 8-bit Microsoft products to defeat the hardware-testing routines. It was printed in the club's newsletter, Volume 4, Issue 10, for June 1983. I personally worked out the last two patches for M80 v3.44 and BASCOM v5.35 (which didn't appear in that article). The information was published to permit H-100 owners to use their old H8 and H89 software on their new system. Today, our need for this information is even greater--we're now experimenting with exotic hardware and software which our forefathers never dreamed we would try to fit into our humble 64K systems. Here is the patch information for the Microsoft products.

Use DDT or an equivalent utility to perform the patches. You type in the underlined portions. Be sure to make backup copies of the originals just in case something goes wrong!

## More "Didn't Know"

(Version 5.21)	(Version 4.83)
DDT MBASIC.COM<cr>	DDT OBASIC.COM
NEXT PC	NEXT PC
6100 0100	4F00 0100
- A5F08<cr>	- A4D3A<cr>
5F08 JMP 5F5C<cr>	4D3A JMP 4D8E<cr>
5F08 <cr>	4D3D <cr>
- ^C	- ^C
A>SAVE 96 MBASIC.COM<cr>	A>SAVE 78 OBASIC.COM<cr>

(Version 5.23)	(Version 3.4)
DDT BASCOM.COM<cr>	DDT F80.COM<cr>
NEXT PC	NEXT PC
7D00 0100	6C00 0100
- A40F9<cr>	- A2C38<cr>
40F9 JMP 4151<cr>	2C38 JMP 2C90<cr>
40FC <cr>	2C38 <cr>
- ^C	- ^C
A>SAVE 124 BASCOM.COM	A>SAVE 107 F80.COM

(Version 3.4)	(Version 4.01)
DDT M80.COM	DDT COBOL.COM
NEXT PC	NEXT PC
4C00 0100	7200 0100
- A4392<cr>	- A6199<cr>
4392 JMP 43EA<cr>	6199 JMP 61F1<cr>
4395 <cr>	6198 <cr>
- ^C	- ^C
A>SAVE 75 M80.COM	A>SAVE 114 COBOL.COM

(Version 3.44)	(Version 5.35)
DDT M80.COM<cr>	DDT BASCOM.COM<cr>
NEXT PC	NEXT PC
5000 0100	8400 0100
- A4713<cr>	- A48BE<cr>
4713 JMP 47C9<cr>	48BE JMP 4974<cr>
4716 <cr>	48C1 <cr>
- ^C	- ^C
A>SAVE 79 M80.COM	A>SAVE 131 BASCOM.COM

Now let's go to the various MOVCPMs. These programs are distributed by Heath/Zenith as MOVCPM17.COM, MOVCPM37.COM, MOVCPM47.COM and MOVCPM67.COM, and are used to generate new CP/M systems for use with the H17, H37, H47 and H67 disk systems respectively. You needed different versions of MOVCPM because each one copied different information (the cold start loader) onto the system tracks depending on which disk system was being used to boot CP/M. For the benefit of the less-experienced, MOVCPMnn.COM is actually a complete

CP/M system (excluding the Heath BIOS). It also contains a program which has the ability to create this new CP/M system almost anywhere in memory, typically between 20K and 64K. In the old days, computers only had 32K or less of memory. When you first received CP/M from Heath, it booted as a 32K system. This 32K system was created so that CP/M would boot on almost everyone's computer, (at least, everyone who had 32K or more of memory). If you had 64K of memory, you would run MOVCPMnn to create a new CP/M system which would use all of the available memory. After you ran MOVCPMnn you had to immediately run SYSGEN to transfer the new CP/M system in memory to the system tracks of the disk. Then you would re-boot to bring the new system into operation. If, for example, you had a 32K system and later added 16K more memory, you would use MOVCPMnn 48 to create a new 48K CP/M system.

Since MOVCPMnn has the ability to generate (clone) CP/M systems, it was possible that it might be used to mass-produce illegal systems. Digital Research added code to MOVCPMnn to do some serial number checking. If you ran MOVCPMnn and the serial number within your MOVCPMnn did not match the serial number of the currently running CP/M system, your computer would lock up after MOVCPMnn displayed that cryptic "SYNCRONIZATION ERROR" message. (Digital Research spells "synchronisation" that way.) This was more of a nuisance than an effective security measure because if you gave your friend a copy of your bootable CP/M disk along with your MOVCPMnn programs, he could "clone" up as many illegal systems as he wanted anyway. In the early days, many people didn't realize the value of having the MOVCPMnn programs and usually did not include them with illegal copies. Thus, when someone having an illegal copy eventually needed to create a different system, he was stuck. If he didn't obtain the original MOVCPMnn program which had the same serial number as his currently running CP/M system, he would get SYNCRONIZATION ERRORS and lockup.

Enter Z-System. Z-System is a CP/M enhancement/replacement which offers a new world of power and excitement to 280 computerists. It consists of a replacement Console Command Processor module (CCP) called ZCPR3 and a replacement Basic Disk Operating System (BDOS) module called ZRDOS. You may wish to use MOVCPMnn to create a new, plain CP/M system while you are currently running under Z-System. Many times I needed to run MOVCPMnn to change the size of the system so that I could later create a new Z-System based on the modified system size. Guess what? MOVCPMnn does not find its matching serial number in the running BDOS module. Instead, it finds the letters "ZRDOS". BOOM! SYNCRONIZATION ERROR!

The following patch--using DDT or an equivalent--can be applied to all the Heath versions of MOVCPMnn.COM to disable SYNCRONIZATION ERRORS for mismatched BDOS serial numbers.

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## Yet More "Didn't Know"

(Please note: MOVCPMnn will remain sensitive to the BIOS version. You will still get a SYNCHRONIZATION ERROR if you attempt to use a version of MOVCPMnn.COM which came from a different version of CP/M distribution disks. For example, if you are running CP/M 2.2.04 and use a MOVCPMnn from the 2.2.03 disk set, you will still get the error.)

Be sure you have backup copies before you type in the codes shown below:

```
DDT MOVCPM17.COM (or another, MOVCPM37, MOVCPM47, etc.)
NEXT      PC
2800      0100
-A234<cr>
234 NOP<cr>
235 NOP<cr>
236 NOP<cr>
237 <cr>
-A2CB<cr>
2CB NOP<cr>
2CC NOP<cr>
2CD NOP<cr>
2CE <cr>
- ^C
A>SAVE 42 MOVCPM17.COM<cr> (or MOVCPM37.COM, etc.)
```

Use this procedure to patch Magnolia MOVCPM.COM:

```
DDT MOVCPM.COM
NEXT      PC
3500      0100
-A243<cr>
243 NOP<cr>
244 NOP<cr>
245 NOP<cr>
246 <cr>
-A2DB<cr>
2DB NOP<cr>
2D9 NOP<cr>
2DA NOP<cr>
2DB <cr>
- ^C
A>SAVE 52 MOVCPM.COM<cr>
```

While we are on the subject of Z-System, permit me to go off on a tangent for a moment to say that I am a big fan and supporter of Z-System. I have created many manual-installed versions of Z-System for Heath and other popular systems. Lately, my attention has been devoted to the latest and greatest addition to the Z-System family of enhancements. It is called NZ-COM (New ZCOM). NZ-COM is a set of programs which create full-featured Z-Systems without requiring the user to have any special knowledge or systems. Z-System is created under plain unmodified CP/M 2.2. (NZ-COM can be discussed in detail in a future SEBHC JOURNAL if you write us.)

In a recent SEBHC JOURNAL, author Strum in "Ken's Column" said, "Thoughtline doesn't work well under ZCPR3". Ken, I'm not trying to pick on you today, but being as intimately involved in Z-System as I am, your words took three years off my life! I admit that my complaint is a technicality but I just wanted to set the record straight so that those newcomers who are thinking about ZSystem won't be scared off. Your statement should have read: "Thoughtline is a memory hog!" or "Thoughtline doesn't work well without lots of memory."

It's not the fault of ZCPR3 that Thoughtline bombs if you try to run it with a small TPA (user memory). Wordstar-4 is also a memory hog but there are two neat things about Wordstar-4. First, it can be configured to run with less features and require less memory (WSCHANGE for minimum buffer sizes). I can run Wordstar-4 in a 47K TPA. Second, Wordstar-4 will not bomb if there is insufficient memory. It will simply say so and return to the operating system prompt.

All of Thoughtline's problems lie within Thoughtline. It requires a large TPA. It assumes that there will be a large TPA available and it can not cope with a small TPA should it encounter one. I admit that Z-System and ZCPR3 systems reduce the size of the TPA. NZ-COM addresses this problem by being able to dynamically size new systems instantly. You could, for example, have two complete Z-System setups. One full-featured version which reduces the TPA, the other a minimum system which supports many of the desirable Z-System features and all of the necessary features while only reducing TPA size by less than 1K! An infinite variety of systems can be created and swapped in and out of memory at lightning speed. Have I wetted your appetite?

Before I get down from my soapbox, permit me to offer one more item. Not everyone knows about the ability to use extended density format on H37 disks. If you format an H37 disk using Heath's FORMAT.COM, you are likely to get a 48 TPI disk which can hold 304K or a 96 TPI disk which can hold 624K if you answered "D" for the question "S-Single D-Double" and selected double density.

Did you know that if you use the FORMAT.COM program which came with CP/M 2.2.03 you can format your disks for extended double density format and get extra disk storage free? When you get the question "S-Single D-Double" just type "E" for extended double density. Your 48 TPI disk will now hold 382K, an increase of 78K and your 96 TPI disks will now hold 782K, an increase of 158K! You will also notice that the H37 disk system works faster with the extended density disks. This is because the number of physical sectors changed from sixteen 256 byte sectors per track to five 1024 byte sectors per track. When the extended density disk is being read or written, the BIOS can do so using bigger chunks at a time. Everything runs faster.



**"Didn't Know" end - Disc Labeller**

To take advantage of Extended Density, you must use CP/M 2.2.03's FORMAT.COM. CP/M 2.2.04's FORMAT.COM won't work because the E-D feature was removed. In the 2.2.03 version, it was an "undocumented feature". Using the patch below, you can patch your 2.2.03 FORMAT.COM so that it will actually display the E-D feature in the message thus:

'Which Density? (S-Single, D-Double, E-Extended Double)\_'

Whether you make the patch or not, the "E" selection will work anyway. The patch simply displays the hidden option.

Make a backup, then enter the changes given below:

```
DDT FORMAT.COM
NEXT      PC
1780      0100
-S7A6<cr>
7A6 D1 94<cr>
7A7 13 .<cr>
- ^C<cr>
A>SAVE 22 FORMAT.COM<cr>
```

Note: If CP/M asks "DELETE FILE Y/N?" after you've made any of the changes presented here, answer Y, otherwise the modified file won't be recorded and your work surely will be lost!

I hope you have enjoyed my ramblings. Please let me know if the information I've presented here is new or useful to you, or if it is "just a re-hash of old stuff". If you have any suggestions for future articles (NZ-COM, MAKEBIOS, H8/H89, CP/M, etc.) please write me or Lenny and I'll do what I can to satisfy your requirements.

---

[Editor's comment: I tried Rick's MOVCPM17.COM, MOVCPM37-.COM, and FORMAT.COM patches on my plain-vanilla CP/M 2.2.X03 version AND THEY WORKED! Then I tried patching my Livingston Logics Labs' BIOS-80-modified CP/M 2.2.03 working MOVCPM17, '37, and FORMAT.COM files, AND THEY WORKED TOO! I did find that the BIOS-80-modified FORMAT file starts at address 1800 instead of 1780, but S7A6 showed D1 ok, and the patch "took". But when I attempted to patch my DG-Super89 FORMAT.COM file (which our ERRORS.COM utility INSISTS is CP/M 2.2.03!), I couldn't find a suitable location for Rick's patch. This is no big thing because I've been using FORMAT.COM's "undocumented" E for so long with D-G Electronics Super89 CPU card in my H89A that it's second nature. (I wonder how Ray Livingston got his S89 BIOS modification to change CP/M-80 version 2.2.04 into 2.2.03?) In any event, please let Rick and the rest of us know how interesting or useful (or both) his article is. And we certainly thank Rick for sending us this most-practical article. (Check your mailing label on this issue Rick--you should be pleasantly surprised.) -- l.e.g.]

**DL - MAKE YOUR OWN DISK LABELS**

by

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Recently, while trying to find one program on a series of semi-labelled diskettes, it occurred to me that I really should get organized. Normally, I use a cataloging system and can find just about any file in my extensive collection. However, I always keep a few working diskettes which accumulate files by type (.ASM, .BAS, .DAT, etc.) until they fill up. Then I assign it a volume name and number and add the files to my master catalog. In order to find files on these uncataloged diskettes, I really needed a program to quickly and easily produce labels showing their contents. Additionally, after adding the diskette to the cataloged portion of my library, I wanted to be able to print up a label showing what was on the disk, the sectoring (I have both H17 and H37 controllers), whether the disk was bootable, and so on.

The program I wrote to print out these labels, DL.BAS, is shown in listing 1. Although it appears rather trivial in many respects, it works quite well and has saved me both time and frustration.

The program is quite straightforward. After clearing the screen, dimensioning the file name array (F\$) and setting some constant values, the program asks you to enter the desired volume number. I chose this method because I usually assign a group of volume numbers to a particular type of file --for example, all my .ASM files reside on volumes 151-175, all my .BAS files on volumes 201-250, etc. Trying to keep track of the next number for each series would have complicated things too much for a "simple, quick program"! The program's execution can be ended at this point by entering a volume number less than zero.

After asking for the volume number, the program asks if the disk is bootable or not and whether it is hard or soft sector. Depending upon the answer to these questions, certain values are initialized. Next, the title is entered--note that it is limited to a maximum of 15 characters. If the diskette is a "master" diskette, no further information is needed--the program assumes that the title itself will tell you the disc's contents. If the disk you're labeling isn't a "master", the next prompt asks if you'd like to list the files or describe them as a group. If you decide that you'd like to list the files, the program prompts you for up to nine file names--it's limited by size of labels used, in this case, 4"x1.75". Group file description is done similarly with three lines of 18 characters each. These lines can contain any information you want to appear on the label.

Once all this information has been entered, the program

## Disc Labeller end

prints the label you have just built and returns to the volume number request. Again, entering a volume number less than zero will end program execution. Note that there are no restrictions on volume numbers--they can be as many digits as your catalog program will accept. Also note that you can produce as many or as few labels as you'd like in a single sitting--you're not locked into telling the program how many labels you're going to make before you actually make them. Both of these features make the program easy to use and reasonably efficient.

DL.BAS is written in Heath CP/M Microsoft BASIC for a Gemini 10X line printer. Changes for any other printer can be made if you know its control codes for double-width and single-width character shifts.

In the year or so since having written and used DL.BAS, I've found it to be invaluable in helping me keep track of my uncatalogued files. I hope that you too will find it useful. If you have further questions, please feel free to write, including a large SASE for my reply. Enjoy!

=====

```

10 REM      *** DISK LABEL PROGRAM VERSION 1.1 (DL11.BAS) ***
20 REM      *** WRITTEN IN MBASIC V5.21 ***
30 REM ** by TOM BOHON, PO BOX 5154, ALBUQUERQUE, NM 87185 **
50 REM THIS PROGRAM IS DESIGNED FOR QUICK 'N EASY DISK LABEL
  PRODUCTION. ALTHOUGH WRITTEN FOR A HEATH HB/H19/GEMINI 10-X
  SYSTEM, IT DOESN'T REQUIRE ANY SPECIAL EQUIPMENT AND SHOULD
  BE TRANSPORT ABLE TO JUST ABOUT ANY SYSTEM WITH A PRINTER.
60 REM *****
140 REM      *** BEGIN BY CLEARING WORK SPACE AND INITIALIZING
  CONSTANTS ***
160 CLEAR 10000
170 PRINT CHR$(27)+"E":CLEAR:DIM F$(9):N1$="NON-":B9$=
  "BOOTABLE"
180 S2$=STRING$(15," ")
190 BIG$=CHR$(27)+CHR$(87)+CHR$(1):NRM$=CHR$(27)+CHR$(87)+
  CHR$(0)
200 C10$=CHR$(27)+CHR$(66)+CHR$(1):C17$=CHR$(27)+CHR$(66)+
  CHR$(3)
210 M6$="\          \":M6$=M6$+M6$+M6$
230 REM      *** SIGN ON AND SOLICIT LABEL INFORMATION ***
250 PRINT "DISK LABEL PROGRAM":PRINT "    Ver 1.1":PRINT
260 INPUT "VOLUME #":V:IF V<0 THEN 800
270 V$=STR$(V):IF LEFT$(V$,1)="" THEN V$="0"+RIGHT$(V$,LEN
  (V$)-1)
280 IF LEN(V$)<3 THEN V$="0"+V$:GOTO 280
290 INPUT "BOOTABLE DISK (Y/N)":B$
300 IF LEFT$(B$,1)="Y" OR LEFT$(B$,1)="y" THEN B$=" " +
  B9$ ELSE B$=N1$+B9$
310 INPUT "HARD OR SOFT SECTORED (H/S)":S$
320 IF LEFT$(S$,1)="H" OR LEFT$(S$,1)="h" THEN S$="HARD"
  ELSE S$="SOFT"

```

```

330 IF S$<>"SOFT" THEN 350
340 INPUT "40 OR 80 TRACK":TR$:S$=S$+" (" +TR$+ ")"
350 INPUT "TITLE (15 CHARACTERS MAXIMUM)":T$:IF LEN(T$)>15
  THEN 350
360 T=15-LEN(T$):T=INT(T/2):T$=LEFT$(S2$,T)+T$
370 INPUT "IS THIS A MASTER DISK (Y/N)":M$
380 IF LEFT$(M$,1)="Y" OR LEFT$(M$,1)="y" THEN M$=
  "MASTER DISK":GOTO 650
400 REM      *** NOT A MASTER DISK SO NEED TO EITHER DESCRIBE OR
  LIST FILES ***
420 INPUT "DESCRIBE OR LIST FILES (D/L)":F2$
430 IF LEFT$(F2$,1)="L" OR LEFT$(F2$,1)="l" THEN 550
450 REM      *** THREE-LINE DESCRIPTION NEEDED ***
470 PRINT:PRINT "ENTER THREE LINES OF NO MORE THAN 32
  CHARACTERS EACH:"
480 LINE INPUT "LINE 1: ";L1$:IF LEN(L1$)>32 THEN 480
490 LINE INPUT "LINE 2: ";L2$:IF LEN(L2$)>32 THEN 490
500 LINE INPUT "LINE 3: ";L3$:IF LEN(L3$)>32 THEN 500
510 GOTO 650
530 REM      *** SOLICIT FILE NAMES TO PRINT ON LABEL ***
550 INPUT "HOW MANY FILES (9 MAXIMUM)":N:IF N<0 OR N>9
  THEN 550
560 PRINT "ENTER THE ";N;" FILE NAMES AS 'FILENAME.TYP'..."
570 FOR I=1 TO N:PRINT "FILE #";I:INPUT " ";F$(I):IF
  LEN(F$(I))=12 THEN 610
580 P=INSTR(F$(I),"."):WK$=LEFT$(F$(I),P-1)
590 FOR J=LEN(WK$) TO 7:WK$=WK$+" ":NEXT J
600 WK$=WK$+RIGHT$(F$(I),LEN(F$(I))-P+1):F$(I)=WK$
610 NEXT I
630 REM      *** NOW PRINT THE LABEL ITSELF ***
650 PRINT:PRINT "PRINTING LABEL...PLEASE WAIT";
660 LPRINT BIG$;V$;:LPRINT NRM$;
670 LPRINT TAB(12);S$;TAB(22);B$:LPRINT:LPRINT BIG$;T$
680 IF LEFT$(M$,1)="M" OR LEFT$(M$,1)="m" THEN LPRINT:
  LPRINT " ";M$:LPRINT:LPRINT:GOTO 780
690 LPRINT NRM$
700 IF LEFT$(F2$,1)="D" OR LEFT$(F2$,1)="d" THEN LPRINT
  L1$:LPRINT L2$:LPRINT L3$:GOTO 780
710 LPRINT C17$;
720 Y=0:FOR I=1 TO N STEP 3:LPRINT " ";:LPRINT USING
  M6$;F$(I),F$(I+1),F$(I+2)
730 Y=Y+1
740 NEXT I:IF Y=3 THEN 760
750 FOR I=1 TO (3-Y):LPRINT:NEXT I
760 GOTO 780
770 LPRINT
780 LPRINT:LPRINT C10$
790 GOTO 170
800 PRINT CHR$(27)+"E":PRINT:PRINT:PRINT "PROGRAM ENDS"
810 LPRINT NRM$;C10$;:STOP

```

---

[Editor's Note: This program can be re-written for HDOS and will be just as useful there as under CP/M! (You should see the huge quantity of discs I've accumulated...) -- l.e.g.]

## FROM OUR READERS



Dear Lenny,

Enclosed is an ad for your next issue. There are also some comments on what's new for the H89, and more info on the California Digital H89s.

-- TMSI NEWS --

Quikdata is now a dealer for my Write-Hand-Man, the 289-37 soft-sector controller and the Superset products. Quikdata has been a supporter of the H8/H89 since the very beginning, and has an excellent reputation for good service & quick delivery.

Please note: the Superset price is now \$69.95 due to increased cost of memory chips. The Superclock and Superfont kits remain at \$29.95 each.

I have a couple new products. My SUPERKEY is a replacement keyboard encoder for the H19 terminal or H89 computer. The keyboard operates normally with CAPS LOCK key up. But when CAPS LOCK is down the SHIFT keys produce a "typewriter shift" action. The period, comma, and '=' key do not typewriter-shift since they are normally used unshifted. This makes it much easier to type CP/M and BASIC commands; no shift keys are needed to type "PIP A:=B:\*. \*" or "LET A\$="HI"+CHR\$(13)".

Second, I now have a version of Heath's MTR-90 monitor ROM which replaces the 19200-baud option with 38400 baud. This lets you boot systems equipped with the Superset at 9600 or 38400 baud.

Superset continues to grow. I've recently added a second page of screen RAM, "windows", local editing, and improved SCROLL key operation. The window functions copy a user-sized window between the screen and off-screen RAM. The window can be any height and width, and may be located anywhere on the screen.

Windowing is hundreds of times faster than rewriting portions of the screen, and requires much less program development. On-screen and off-screen windows need not be in the same position. This makes pop-up help messages which restore the screen, pull-down menus, and fast animation practical.

I have an updated version of Write-Hand-Man available which uses these new Superset features. It's smaller and faster, yet does perfect screen save/restores, including graphics and reverse video. It even has a new pop-up full screen editor which works much like PIE. With it, you can capture the

screen from any program, edit it, print it, save it to disc, and even return the changes to the interrupted program!

-- CALIFORNIA DIGITAL's H89s --

As you know, California Digital has been advertising brand new H89s for \$179, and I thought your readers might like to know a little more about these machines before they buy.

They really are new Zenith 289 computers, fully assembled and still in the original box. But they were extensively customised by Zenith for a contract with Carterphone. They will not run CP/M or HDOS without modification.

As received, the machines have a hard-sector controller, one internal 80-track Siemens FDD-121 drive, and a non-standard three-port I/O board. They have 48k RAM, plus a custom 32k memory card. The CPU board has been heavily modified. The terminal portion is stock except for the OFF LINE key having been removed. There is only one hole for an RS-232 connector on the rear panel, and manuals and software are NOT provided.

The 3-port board has one normal RS-232 port and two custom ports for serial TTL data. If one RS-232 port is adequate, you're OK; otherwise you'll need a Heath 3-port board.

The custom ROMs on the CPU board must be changed; you'll need to replace the ICs at U516, U518, and U550 (my LP001 low-power kit has them all--for \$29.95). There are lots of cuts and jumpers for the 32k board's strange memory map. Unless you're quite handy with a soldering iron your best bet may be to buy another CPU board from Quikdata, Al Davis, or someone else.

-- ZENITH IS IN THE NEWS --

Zenith appears to be on the brink of a hostile takeover. Brookhurst Partners--a firm of "corporate raiders", including associates of Ivan Boesky--has quietly become Zenith's biggest stockholder. The normal strategy of such [corporate raider] firms is to buy a company's stock cheap, then break the company up and sell the pieces for a quick profit.

Zenith has put its' consumer divisions up for sale, and so far has received bids from Thompson CSF of France, Daewoo and Samsung of Korea, and an unnamed Japanese firm. It's unclear whether Heath or Veritechnology are included, but Heath has had half a dozen owners in its' history--it may be time for yet another!

LEE A HART, 28612 Middle Crossing Road, Dowagiac, MI 49047

[Looks as if you're getting along fairly well now, Lee! The advertisement you enclosed is on page 11. With any luck, I might be able to get over to your "digs" before snow flies; I'd like to see those Super-kit mods at work--might be tempted into buying something! (Also, I've sent you another royalty cheque for ACES.BAS sales; you should have it before you read this!) -- ed]

Dear Lenny,

In connexion with the problem you mentioned in the June JOURNAL, "not having enough time and energy remaining for



# SEBHC JOURNAL

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## More FROM OUR READERS

straightening out my computer room...", I found a solution which works--at least for me--in cleaning up the 'ole' computer room: Find where I misplaced my May JOURNAL. I believed I received it, but it seems to have vanished. In the process of looking for it, I found time to clean up my library also, but it still hasn't appeared! Because I've not yet found the missing copy as of this writing, I've enclosed a cheque in the amount of \$2.50 for a replacement copy of the May '88 (Vol II, #10) JOURNAL. I hope you still have some left!

Note: I decided the other day to try Newline Software's HDOS 2.0 Text Processor (TXTPRO) with my HDOS 3.0 system. Thus far I've not found any incompatibility problems with TXTPRO and HDOS 3.0; in fact, I'm using the combination in writing this letter.

One last item: Be sure to let us know when the JOURNAL'll make the CP/M-80 Programmer's Helper Disc #0 available so I can send for it!

**\*\* THE SEBHC JOURNAL \*\***

**Where The Best Keeps On Getting Better!**

ALLIE C LINGO, P O Box 118, Dierks, AR 71833-0018

[Yay, Allie--thanks for them there kind words! Your errant copy of the JOURNAL is probably in your hands by now. We bulk-mailed the May issue during the first week of July and yours certainly was in that batch of 290-odd plastic baggies. Let us know if it ever does come straggling in; we like to point out such erratic moves to the postal "service" whenever they happen! And about the CP/M-80 Programmer's Helper Disc; we're working--I said working!--on it at every opportunity we can capture. We'll let you know, Real Soon Now. -- ed]

Dear Lenny,

There seems to be a slight misunderstanding about the expiration date of my subscription. On 8-Mar-88 I renewed for one year, also ordered a disc from you. The disc has long since come, but where's my subscription?! I've enclosed a photocopy of my cancelled cheque and the mailing label of the last issue I received.

Just to make sure I don't miss any issues, I've enclosed another cheque for \$15. Please extend my subscription for another year with this [new] cheque to total two years. Any questions, call or write me...

BRIAN L SPRULES, 141 Main Street, West Orange, NJ 07052

[Well! We did it again! Somebody didn't note that your subscription was set to expire as of May, 1989. They just stuck that "RENEW NOW!!" message onto line 3 of your data field! Your subscription will now expire in 1990... Hope you can find it possible to forgive us? -- ed]

Dear Mr Geisler,

Sorry that I've not been in touch more. But getting up at 5:15am and coming home at 6pm daily didn't leave much time

for optional things.

I've enclosed an article about "computer viruses". If you haven't seen or used it before, it might be of value to other readers if you printed it in the JOURNAL.

Recently I completed construction of the serial-to-parallel converter (described in the REMark April, 1984 issue) for use with my H8/Smith-Cornona TP-1 combination, and am planning to write an article about that project. I'll send it along to you as soon as I've written it.

I just received the June JOURNAL with Mr. Ball's request for a parallel device driver. Perhaps the serial/parallel converter mentioned above might work for him without trying to find any fancy stuff? It works great for me although I've not tried anything spectacular such as underline, backspace, or the like. Just having my printer respond to basic inputs sure helps.

CHARLES E F LISS, 9607 Columbia, Redford, MI 48239--

[Heck, yes! Send that article along Real Soon Now. We need good, practical stuff which will help our readers use their H/Z 8-bit machines more efficiently and economically. We'll try to get that "Virus" item into this issue if at all possible. Meantime, heaps of good luck with your job hunting! -- ed]

Dear Lenny,

Please find enclosed my money order in the amount of US\$15 for my renewal to your JOURNAL. I really enjoy reading it and wish you continue for some years... Since it is a good place for comments and requests, here is mine:

I'm looking for the dBASE-II program for my dear H89. Can we find it at a reduced price? Or is there something quite similar (since I used it at work on a "peesee", both dBASE-II and dBASE-III) [which is available]? I would like something which the user can program to get specific reports (such as home inventory, etc.). I have done quite some programming at work, so I would [like to] do the same for my [own] machine. What about FOXbase?

If they don't mind, I'd like to get in touch with other Canadian subscribers. We could save some duty fees on software sent back and forth...

I'm looking for a program specialised in genealogy for my H89. I understand that ROOTS/M was the one... Is there an other or does it have some upgrade? Is there a ROOTS-II version for the H89, or a CP/M version of the PAF (Personal Ancestral File) from the Church of Jesus Christ of Latter-Day Saints--for US\$35 in MS-DOS? I may have to use the "peesee" at work...

[If any such program is available for the H89] I can use it with either CP/M or HDOS operating system.

Read you again soon, with [I hope] some replies from other readers...

ROGER F DUPIS P Eng, 978 Francis, Longueuil PQ J4J 1E4 CANADA



## And More FROM OUR READERS

[Thanks for extending your subscription, Roger! One of our Michigan subscribers' wife is doing some work in genealogy, but I'm not sure if it is by hand or computer. He's also presently trying to set up something along that line using Condor's Database Management software, but I have not yet heard from him if he's been successful or not. If none of our other subscribers can't help you it might be worthwhile to look at Hoyle & Hoyle's QUERY!3 software package for our H/2 8-bit machines. It is very well written in assembly language, is extremely flexible, and runs quite fast. In fact, I'm doing a review of the CP/M version of QUERY!3 "in the background", part of which may possibly make it into this very edition! You might like to know that we use the HDOS version of QUERY!2 (plus CALC and REPORT) for our subscriber address list. Other Canadian subscribers--I'm quite sure--will be delighted to write you. Maurice Desmeules in Shanagan, PQ may see this and might write or call you... But in any event, please do keep us informed. -- ed]

Dear Lennie,

Enclosed find my cheque for \$45. Please extend my subscription to the JOURNAL for 3 years from my current expiration date.

As you know, I purchased an H1000 ['89 cpu upgrade] from Lee Hart. After some trials and tribulations (not all Lee's fault) I've installed it and am pleased with the results. It took a long time. I've also finally gotten MS-DOS from Lee (the ITT version, not IBM's). Due to some minor health problems, I've not gotten too far into exploration of same, but plan to do so shortly.

How about some names and addresses of other H1000 users? Maybe we might trade on each other's experiences and get some real productivity from these boards, especially from the software standpoint. I'm sure we can count on Lee for hardware support; he sure helps me whenever I request it.

Read Alex Bodner's letter in the June issue. Sure don't need another H89 right now, but certainly would like to know what software was included with the one advertised, and wonder if copies of same and documentation might be available.

That's all for now--but keep up the good work!

JIM FRANK, 1761 King George Drive, Kissimmee, FL 32743, phone 407-847-6071

[Hey, Jim! Wondered why we hadn't been hearing from you recently. And extending for THREE years, WOW!!!! Can you read our future that clearly?! Now about those 289s, see Lee Hart's letter on page 7 for details. I feel they're way overpriced because of the labour required to undo those kooky mods and make them into REAL '89s! Now that you have a "surplus" '89 CPU board, it might be worth advertising it in the JOURNAL; someone else may be thinking of buying one of those strange 289s for a second computer. You other H1000 users: Contact Jim Right Away; you NEED each other! -- ed]

Hi Len

Remember the old adage, "if something seems too good to be true, it probably is"? Well, I reconfirmed it by ordering the '\$179 H89' advertised in BYTE (also mentioned by Alex Bodnar in your last issue of the JOURNAL--wonder if you have heard from him yet). Anyway, I'll give you as much info as I can now about this deal. I sure can't complain about delivery time. I ordered it on Monday and it came on Wednesday (3 July). I've only had a few hours to look it over, but I don't think I can recommend anyone else buying it. It appears that some company bought a bunch of bare-bones H89s and modified them for their specific application. Here are some of the problems I've found thus far:

1. The only documentation I received were a few reduced & mostly unreadable Xerox copies of some of the modifications. Even if they were more readable they're pretty useless. No Heath documentation at all.
2. Several keys have been changed on the keyboard, and I suspect the terminal ROMs have also been altered.
3. It appears that some changes have been made to the CPU board. I also think a few chips may have been changed and the CPU ROM may have been replaced.
4. The terminal board has a small attached modification board.
5. There are three cards plugged into the CPU board and I don't think any are Heath parts. There's a 32k!! memory expansion board, a 3-port serial board, and a disc controller board.
6. I was told the internal disc drive is single-sided, single density, 80 tracks
7. Absolutely no software came with the machine.

I ordered the H89 manuals from Heath--came to about \$40. I think I might be able to rescue this thing but I have the feeling that I'll have to build a Heath-compatible disc controller board. The serial I/O board may be useable with some [major] modifications. I haven't a clue about that weird memory expansion card. Someone said it was bank switchable, so maybe it could be of some use, but I doubt it. I hope there aren't too many of our 8-bit friends who may get stung by this thing. Personally, I don't feel too bad about it as I have the time to try to get this beast up & running. Even if I can't make it into a real H89, I can always use it as an H19 terminal. My second H8 would really like to have an H19 instead of his current, old & rusty H9. I'll let you know if I come up with any important [conversion] information about this thing.

BOB OLSON, 24450 Kirby Street #146, Hemet, CA 92343

[Your letter backs up what Lee Hart told us about these "H89" bargains on page 7, that they were modified to Carterphone's specs. Maybe you should try talking Zenith into giving you a full-size set of diagrams for all those special cards. Then you might un-modify the 3-port I/O, and disc controller card. Thanks for writing, keep us posted, and good luck! -- ed]

# SEBHC JOURNAL

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## Even More FROM OUR READERS

Dear Len,

Here's my reply to a response my letter printed in the JOURNAL last May brought. I got many replies, but the one from Mark Buckingham of Teaneck, NJ was the best.

"Dear Mark,

I'm not a procrastinator, but I do apologise for the long delay in responding and will spare the sordid details. Your letter had a wealth of information, no doubt useful to many H89A MMS CP/M users.

The COM program you sent works great and saves much time. You may notice that I used ASM and started at ORG 0100H. Below is the program:

```
0100          ORG    0100H
0100 310002    LXI    SP,0200H
0103 211701    LXI    H,MESSAGE
0106 7E      LOOP: MOV    A,H
0107 87      ORA     A
0108 CA0000    JZ     0000H
0108 E5      PUSH   H
010C 5F      MOV    E,A
010D 0E05    MVI    C,05
010F CD0500   CALL   0005
0112 E1      POP    H
0113 23      INX    H
0114 C30601   JMP    LOOP
0117 1B1E07B1FMESSAGE:DB 27,30,7,27,31,10,0
```

I also tried your MBASIC program to test the IOBYTE:

```
10 PRINT "cc/cl/lc/l1? "; : A$=INPUT$(2) : PRINT A$
20 IF A$="cc" THEN POKE 3,(PEEK(3) AND 252 OR 1)
   ELSE IF A$="cl" THEN POKE 3,(PEEK(3) AND 252 OR 2)
   ELSE IF A$="lc" THEN POKE 3,(PEEK(3) AND 63 OR 64)
   ELSE IF A$="l1" THEN POKE 3,(PEEK(3) AND 63 OR 128)
30 PRINT "THIS IS TARGETED FOR THE CONSOLE."
40 LPRINT "THIS IS TARGETED FOR THE PRINTER."
50 POKE 3,(PEEK(3) AND 60 OR 129) : GOTO 10
```

It gave me a SYNTAX ERROR at 20 which I have not yet figured out, but I tried the commands PRINT PEEK(3) AND 252 OR 1, etc., and they all come out on the console with the proper decimal numbers. The program listed below is the one I used to determine whether I could access IOBYTE with an MBASIC program. The program runs, but it all comes out on the console but not on the printer.

```
20 PRINT "MAKE SURE THE PRINTER IS READY --OK;:INPUT A$
30 PRINT "THIS OUTPUT SHOULD APPEAR ON THE CON: DEVICE"
40 IOBYTE=PEEK(3): TEMP=IOBYTE AND 252 OR 2
50 POKE 3,TEMP
60 PRINT "THIS OUTPUT SHOULD APPEAR ON THE LST: DEVICE"
70 POKE 3,IOBYTE
80 PRINT "NOW OUTPUT SHOULD BE BACK ON THE CON: DEVICE"
```

The last page of your letter I am sure is the answer, for my CP/M has the ICON module installed ("type ahead") on the original distribution disc. All my sysgened discs have it on, and my problem is to remove it somehow from one disc so IOBYTE will work with MBASIC programs.

/s/Dale Chidester

THIS IS PRINTED WITHOUT MT.COM  
PROGRAM SENT TO THE PRINTER. IT  
ALSO TAKES MORE SPACE ON A PRINT  
ED PAGE. THANKS AGAIN!"

[Ok readers, now you have just about all the notes you need to make MMS CP/M run ok on your system! Please note that we had to scrunch the last lines of the above copy to fit our page layout. The original was in two full-width (80) column lines. Thanks to Dale, Mark and all the rest of you who took time to discuss this subject. We're here to serve you! - ed]

Dear Lenny,

Like to thank you for the recent June '89 issue. But THREE copies of it?! Two were subscription-dated 9.89 and the third 8.88. I didn't know renewing could be so much fun. By the way, any idea as to when the back issues I ordered will show up?

SPRING SMITH, San Luis Obispo, CA

[We had a whole bunch of confusion here in the computer shack during July! I had a service job over at Tonawanda, NY in a very dirty, extremely hot and terribly noisy factory during the 11th & 12th. When I got home the night of the 12th I took a shower and hit the sack, staying there for the next 40 hours (heat exhaustion and a nasty "summer virus") with temperature of 102 degrees most of the time. Thursday I managed to put together a set of instructions for my reasonably computer literate oldest daughter so she could take care of the SEBHC JOURNAL subscriber's database updates, etc. Friday I got up at about half-past dark so the missus & I could make it to the airport in time to catch our flight to Salt Lake (start of our 9-day "vacation" tour). During the tour we climbed (never descended) on foot every 6% or steeper trail in every one of the National Parks from Yellowstone to Mateo Teepee, always during the hottest times of every day (temperatures ranged from a low 85 to 103 degrees in the shade!). We got back on 24 July. I spent Sunday and Monday working on financial records and database. I finished the week with issue (#12) and got it & a bunch of other stuff to the Post Office before month's end. Somebody somehow up-screwed the subscriber data--but the cheque book balanced ok! Your back issues'll be there before you read this! -- ed]

[To Principal WhiteBeard: Your comments have duly been noted and appropriate corrective action has been taken. Check your mailbox regularly. Thanks; D&D copies arrive monthly! -- ed]

## LONG LIVE THE H8/H89

Maybe you're the proud owner of a classic H8 and H19 terminal, lovingly built and maintained. Or perhaps you just purchased a used Zenith Z90. In any case, you already know what a great computer you've got.

I'm an electrical engineer, and fell in love with the H89 years ago. But like most engineers, I'm always looking for improvements. These products are the result. They're all compatible with any H8+H19 or H89 system. I use them myself, and personally guarantee your complete satisfaction or your money back.

### CPU BOARD ACCESSORIES

- Z89-37B SOFT-SECTOR CONTROLLER, assembled and tested ..... \$195.00  
Exact replacement for Heath, but takes 1/2 the power. CPU board must have MTR-90, 444-61, 444-83, or equivalent (LP001).
- Z89-37U SOFT-SECTOR CONTROLLER with LP001 and all off-board parts and cables. \$245.00  
Includes everything needed to upgrade older H8/H89s.
- Z89-37B SOFT-SECTOR CONTROLLER bare board, PALs, and manual ..... \$50.00
- LP001 LOW-POWER KIT supplies MTR-90, 444-61, 444-83 in low-power CMOS parts .. \$29.95  
Includes MTR-90, cuts power by 250mA. Specify if non-Heath ROMs at U516-U520
- LP002 MTR-90A Monitor ROM (Heath MTR-90 with 38400 baud support) ..... \$10.00  
Use with Superset to boot at 38400 baud for 4x faster screen operation.

### TERMINAL LOGIC BOARD ACCESSORIES

- FF001 FLICKER-FREE kit, the one that started it all! ..... \$29.95  
Eliminates screen flicker and cuts power by 250mA for cooler operation.
- FF002 SUPERSET, the ultimate screen upgrade ..... \$69.95  
Stock H19, HUG/Watzman, Super19, and UltraROM all in one! Includes FF001, four fonts (H19, VT-100, GT-PROM, math/greek), 38400 baud, screen saver, on-screen clock/calendar, help menus, reverse screen, and more.
- FF003 SUPERFONT adds IBM-PC, H29, VT-100 special symbols, 160x100 graphics.... \$29.95  
4 more fonts plus special symbols, double-wide characters, super/subscripts
- FF004 SUPERCLOCK adds battery backup for clock and 2nd page screen RAM ..... \$29.95  
Adds screen save/restore, user-defined menus, fast animation, and windows!
- FF005 SUPERKEY uses Caps-Lock key to select "typewriter shift" operation ..... \$15.00  
Don't need SHIFT key in BASIC, CP/M commands. Specify Superset or stock H19

### SOFTWARE (specify disk format)

- WHM01 WRITE-HAND-MAN, a "sidekick" for CP/M ..... \$49.95  
Hit BREAK for instant access to a calculator, phonebook, notepad, calendar, view files, disk directory. NEW Superset version can capture screens from interrupted program; print, save, or edit and return them to your program!
- WHM00 WHM upgrade to latest version ..... \$10.00
- AP002 Source codes for all WHM applications ..... \$29.95  
Modify, write your own applications, or convert existing programs into memory-resident utilities. Requires Microsoft MAC80 assembler.
- SS003 SUPERFONT Source code to create your own fonts..... \$10.00  
Return changes on CP/M disk with \$10 for a custom Superfont ROM.

I am proud to announce that Quikdata is now a distributor of TMSI's Z89-37 Soft Sector Disk Controller, Write-Hand-Man, and Superset products. Henry Fale of Quikdata is one of the earliest supporters of the H8/H89, and has an excellent reputation for fast delivery, good pricing, and great service. For MC/VISA customers and quick delivery, order these products from Quikdata Inc, 2618 Penn Circle, Sheboygan WI 53081, phone 414-452-4172. All others, order from me directly!

# SEBHC JOURNAL

Volume III, Number 1, Page 12

## All About Computer VIRUSES

### ABOUT THIS ARTICLE

This article was put together by Micro Systems Services to keep you informed about computer viruses, so that you may take any necessary precautions to protect your data. Micro Systems will update this file as we learn more about the various strains. These updates will be appended to the end of this file.

### COMPUTER VIRUSES

A computer virus is a new type of program which attaches itself onto other programs and system files. Once a program has been infected, it may show symptoms ranging from occasional beeps to the destruction of files on your disc. Similarly to biological viruses, computer viruses are designed to spread and infect other programs which they come in contact with. The most common source of viruses are bulletin board services, such as CompuServe, The Source, and the numerous local BBS. Computer viruses are not limited to one type of computer. They have been found on the Apple Macintosh, the IBM PC and compatibles, the Commodore Amiga and many other computers. The following discussion is particularly oriented towards the Apple Macintosh.

### SYMPTOMS

Once your program or system is infected, it can exhibit a wide range of symptoms. Because of the diversity of these viruses, only some of the known symptoms from existing viruses are listed here. New strains of viruses may exhibit different symptoms. The existing viruses can be classified into the following three categories.

#### 1) Non-destructive

The symptoms exhibited by this class of virus are, occasional "beeps", unusual messages displayed on the screen, or speech, or both messages and speech.

Other than being annoying, this class of virus will not normally cause any loss of data or interfere with the normal operations of your computer. But it can turn into the next class of virus because its operation may be dependent on the hardware and system software. This means that if you upgrade your computer or system software, your system or applications may crash because the virus cannot operate in the new environment. Sometimes, the program will crash simply because the virus is not compatible with the program.

#### 2) Non-destructive but interferes with normal operations

This class of virus will not normally cause any loss of data, but it has been known to cause system crashes and programs to abort immediately after launch.

#### 3) Destructive

This class of virus is destructive and has been carefully

engineered to destroy data on your disc. This is usually done by erasing the disc directory, rendering all the files on the disc inaccessible and unrecoverable.

### HOW IT OPERATES

When you launch an infected program, the first thing to happen is that the virus will take control of your computer before your program even starts. Once the virus has control, it will check your system file to see if it has been infected. If your system file has not been infected, it will then install itself onto your system file, thereby infecting it. While it has control, it can also execute the code that is the essence of the virus, whether it be displaying a message, or destroying the disc directory. An infected system file can also infect a program in the same fashion, since the infected system is instructed to execute the virus before launching the program. Some viruses have a dormant period, during which it will spread, but your program will function normally. This delayed effect is designed to help the virus spread. Since you don't know that your system has been infected until some time has passed, you will continue to use it and unknowingly infect other programs. Within a short time, most of the commonly-used programs on the hard disc will be infected. Because the virus must be executed the same as any other program, only the system file and applications can be infected. Documents cannot be infected, but they can be damaged by an infected application.

### HOW YOU CAN PROTECT YOURSELF AND YOUR COMPUTER

Since you only need to run an infected program on your system once to acquire the virus, some precautions should be used in protecting your data. The following is a list of steps which may help protect your files:

- \* Back up your data files regularly. If your disc becomes corrupted, you can recover your data files from the back-up since they are not infected.
- \* Lock all your applications if possible, by choosing the Get Info item from the File Menu of the Finder and making sure that the "Lock" check box is checked. Note that some programs will not run properly if locked. These programs generally write information, such as user preferences, back into themselves.
- \* Avoid downloading software from local bulletin board services (BBS) and other information services, such as CompuServe or The Source. BBS have been the main source of viruses.
- \* Avoid exchanging programs with others. They may not know that their programs have been infected.
- \* Run suspected programs using a write-protected startup disc, preferably a floppy disc, since it is not possible to write-protect most hard discs. Keep in mind that some viruses have a time-delay period. Running an infected program successfully once doesn't mean it isn't infected.



## VIRUSES ended -- A TXTPRO Trick

Help is on the way as developers are beginning to write antivirals and vaccines to detect and neutralise viruses. But in the meantime, it's up to individuals to protect their own data.

### WHAT TO DO IF YOUR COMPUTER HAS BEEN INFECTED

If your computer exhibits one or more of the symptoms described above, you may have acquired a virus. In order to protect your data and prevent the virus from spreading any further, follow these steps to destroy the virus from your hard disc:

- 1) Back up all data files, but not the system or programs.
- 2) Re-initialise your hard disc.
- 3) Reinstall the system from a new system disc from your LAN administrator.
- 4) Reinstall applications from your master discs. Remember to lock the application if possible.
- 5) Copy your data files back onto the hard disc.

Your hard disc should now be free from the virus. Do not install programs received from bulletin boards unless you are sure that they are not infected. If you are using floppy discs, you can follow a similar procedure to the above, but to each of your system and applications discs. To prevent further spread of the virus, trace down the source of the virus--if possible--and please be sure to notify anyone who has copied any program or system files from your hard disc.

George Lee . Dept. BU12

[Editor's Note: This article, although specifically intended for Apple Macintosh machines tied into a Local Area Network (LAN), contains enough practical information that anyone should be able to verify if their computer has become infected or is operating oddly for some other, more ordinary reason. (Whenever my system gives me a BOOT ERROR message I immediately dig out my HDOS 2.0 drive-testing disc and a fresh, non-abrasive drive-cleaning disc. It's amazing how just cleaning the drive heads perks up your computer!) We are most grateful to Charles Liss for having sent us this article. It seems to me that anyone unwittingly downloading an infected program from one of the various services (including GENIE!) and then discovering that it has happened should immediately contact whomever is in charge of the service and notify the service that it is harbouring an infected software item. It also seems that it might be possible to bring legal action against the service if it refuses to track down and expunge the infected program. Although I personally have not had the "pleasure" of coming into contact with a computer virus, I know they exist. And anyone discovered to have mischievously written and promulgated such a program should be force-fed 64k-worth of inoperative integrated-circuit chips! Readers knowing of viruses infecting H/Z 8-bit machines, please rush us all your facts for publication. -- l.e.g.]

### IF YOU'RE RUNNING TXTPRO V4.1 AND HAVE AN EPSON PRINTER

by Your Editor

Most of our readers know that we prefer TXTPRO (and COL-UMNS.COM) to the complexities of word processors. Some of you even know we like our Epson LQ-800 because it prints better than low-end laser printers do--at about an eighth of the laser's cost. If, like us, you're running TXTPRO and any dot-addressable printer and can't get your printer to switch type styles after you've formatted your text, be of good cheer. We experimented with the text files of "VIRUSES" to see if we could successfully underline the paragraph heads and found how to make it work!

Here's how you do it:

1 - Get out your printer manual and turn to control codes listing. Select and note down the codes you want to use. Example: ESCape-1 (select underlining) and ESC-0 (turn off underlining).

2 - Load your formatted text file into TXTPRO. Don't fret if every line has a big X in column 80, that's how TXTPRO shows the line is more than 80 columns wide.

3 - Step the cursor down to the first word you want to underline (or do anything else to, such as italics, etc.).

4 - Press the OTHER (f5) key. See SPCINS above RED key. Press SPCINS (RED) key and see 'Enter key' in screen lower left corner. You are now ready to insert a control (SPCINS) code, example, CTRL-[ (same as ESCape).

5 - Hold down CTRL key and press '[' key. You'll see the normal 25th line return and a reverse-video '[' heading your word. Again press OTHER key and then RED key.

6 - Now enter next part of the control sequence by pressing hyphen key. This character appears in normal video but is actually "invisible" when printed.

7 - Enter last character in sequence with OTHER, then RED key, then ']' key.

Congratulations! You've just entered the invisible control code to make your printer underline something! Now you must tell the printer where to stop underlining: Move cursor over to end of underlined phrase (or word) and repeat steps 2- thru 7- above, but substitute numeral zero for the numeral one.

"But how do I underline stuff hidden by those big exes?!", you exclaim. Easy! Just run cursor over to the appropriate spot preceding a big X and either press RETURN, or SHIFT-IL. This pops the part you want to work on down between lines below where the cursor was. Now go ahead and insert the appropriate control codes--don't worry about text shifting to the right, it'll all come out ok on the printer, the codes are "invisible", remember?

After entering final control code in this line, put cursor back at end of line above this one, press SHIFT-DL. See coded line portion immediately resumes its normal line location. When you're all finished, save the file as usual (you'll also get a '.BAK file) then print it. Enjoy your work, genius!

## Hoyle & Hoyle's QUERY!3 & CALC

A REVIEW OF AN EXCEPTIONAL SOFTWARE PACKAGE

by Leonard E Geisler

Before going further, I admit to being highly prejudiced in favour of Dr Hughes B Hoyle iii's QUERY! and CALCulator package! I've been using QUERY! under HDOS 2.0 from almost its' inception, back when QUERY! took nearly 15 hours to sort a list of 150 businesses. Since then, QUERY! has been greatly improved, each time having a superscript number added to the name indicating which version it is. And each version became increasingly easier to use! Originally, QUERY! came with a rather unimpressive "eks-rocked" instruction manual, but it now comes printed on quality paper in a neat 1/2-size, 3-ring loose-leaf binder.

The initial cost of QUERY!3 (\$99.95) and CALC (\$49.95) in either HDOS or CP/M versions might be a turnoff to some folk, but I have never found anything quite as easy to use (once you become accustomed to its' rather unusual command structure and cryptic command "words"). In fact, I recently received a review copy of Condor Computing's CONDOR DATABASE MANAGEMENT SYSTEM Kaypro-written in "generic" eight-bit CP/M. Unlike a full QUERY! software package (three 5-1/4" discs), the CONDOR DBMS came on a single-sided 8-inch disc which took me over three weeks to get converted to our normal H/Z 5.25" discs! But Condor's manual cannot be faulted; it is very clearly written in simple English, as is the QUERY!3 manual. Condor also takes a lot longer to learn how to use than QUERY!3 and CALC combined.

In my opinion, QUERY! has a definite edge over CONDOR DBMS for the simple reason that Dr Hoyle is always willing to discuss any problem you may have with QUERY! and bends over backwards to make sure your questions are fully answered. By comparison, CONDOR's "help desk person" has virtually NO expertise with ANY 8-bit machine, let alone their own 8-bit software. Condor is HIGHLY ibm-oriented! Software is only as good as its' support, and that's what you get plenty of from HOYLE & HOYLE. (I'll get down from my soapbox now...)

QUERY!3 is a stand-alone database system. With it you can set up a simple name-and-address filing system or an elaborate library cross-indexing file scheme. However complex a system you set up, the number of individual records (file cards) is limited mainly by your disc capacity.

QUERY!3 consists of ten programs, called either from the menu or from the operating system's command prompt. The programs and what they do are:

**CREATE** -- lets you create (or design) a database and specify its' structure. Specifying the structure means you tell CREATE how many information items you want to store in each record & the space each item needs.

**ADD** -- lets you enter new information into your data-base. Gives new records a new serial number.

**VIEW** -- lets you examine any record in your database, change or replace any single field in it or flag records as "deleted".

**RECOVER** -- run whenever there are many "deleted" records. Restores to "active" all records in a single operation. Note: Can't recover deleted records after PURGE has been run.

**PURGE** -- permanently removes all deleted records from your database. Once run, PURGED records can no longer be recovered.

**SORT** -- very quickly re-arranges the order of records in a database. You can sort alphabetically or numerically or alpha-numerically.

**PRINTER** -- a special kind of "printer driver" which has a very flexible selection of mailing-label-printing options.

**SEARCH** -- finds database records which match your specifications. Has many search options and strategies. It takes some time to become accustomed to it because of its' unusual flexibility.

**REDESIGN** -- allows you to modify the structure of an existing QUERY!3 database, and to add, delete, or re-arrange the information items in the database without having to re-enter any information.

**WRITER** -- makes it possible for you to print database files in columns, or report formats, or to merge specific information from records into personalised letters.

Generally, these ten files will reside on your boot disc, unless it is 40-track, single-sided and hard-sector. In such a case you might want to leave off a couple less-used files.



## Hoyle &amp; Hoyle Review, Continued

Let's assume you just received your copy of QUERY!3 and are hot to trot. Before you do anything, READ CHAPTER 3, "GETTING READY TO RUN QUERY!3 IN CP/M", or "GETTING READY TO RUN QUERY!3 IN HDOS" (depending on the version you bought).

I'm assuming that you're smart enough to make duplicates of all the distribution discs (AFTER having put write-protect tabs on them). Chapter 3 also tells you the best way to do this because DUP.ABS or DUP.COM doesn't always read originals correctly. Once you've duplicated the distribution discs, put duplicates in the manual's pocket and the original discs in a safe storage place (where you can find them later). Now you're ready to make up a working system disc of the most-used QUERY!3 programs. Chapter 3 tells you how to do that.

Before I tell you how to go about setting up your own database with QUERY!3, I shall first tell you what a database is! Most folks are quite familiar with an old form of random-access database: the public library's card index system. Basically, it is a huge quantity of 3x5-inch cards on which a number of things are typed, such as Name of Author, Title of Book, Publication Date and Publisher, Stack Location, Catalogue Number, and so on. A single card can hold only so much information, just as any particular data-base Record can hold only the amount it was designed for. Each major item given in the file-card example above is called a "Field" in database jargon. And you can design a database to handle almost an infinite variety of specific information about almost any imaginable subject. Of course--just as with the limited size of file cards--your own database has certain size restrictions. And the more records you accumulate, the larger--and more unwieldy--it gets. But, unlike the older library card catalogue indexes, your computer data files generally will occupy only one or two higher capacity 5-1/4" discs which take up virtually no space at all, compared with a file-card system. One other thing about the electronic database is that almost all the tedious work is done by your good old H/Z 8-bit computer--and it's FASTER THAN THE SPEEDIEST LIBRARIAN!

Now let's try setting up our own personal QUERY!3 database, say for all our relatives and close friends. (We never can remember Uncle Joe's or Aunt Em's mailing addresses or telephone numbers, so we definately need a database!) First, we take paper and pencil and write down as many things about everyone as we can either remember or find out about later. Here's a sample list:

Name \_\_\_\_\_  
 Street address \_\_\_\_\_  
 City, State, Zip \_\_\_\_\_  
 Phone Number \_\_\_\_\_  
 Special Dates \_\_\_\_\_  
 Pet's Name \_\_\_\_\_  
 Hobbies \_\_\_\_\_  
 Dislikes, etc. \_\_\_\_\_

Your own list needn't be exactly like ours, rather you should make it up to fit your particular needs. For example, do several people have similar last names? Does everyone have the same zip code? And so on. Keep in mind that your database will be fed information in random order. Aunt Nellie may get put into her own record out of sequence with Aunt Mary. Later SORT can then look for whatever cues you give it as it runs through all the records, putting them in ascending alphabetical (last name, first name, initial) or numerical order (ZIP codes from 00000 through 99999), etc.

The Hoyles recommend that each record to be printed on standard (tractor-fed) mailing labels be restricted to thirty two characters/spaces. So when you do get around to setting up your database, break up the fields accordingly. For example, the JOURNAL subscriber's database is set up for FIRST NAME, LAST NAME, OTHER, MAILING ADDRESS, STATE, ZIP & COUNTRY, PHONE NUMBER, NOTES 1, and REMARKS. When we print out mailing labels, only FIRST NAME (includes middle initial), LAST NAME, OTHER (reserved for company name; if left blank, line is skipped), MAILING ADDRESS, CITY, STATE, and ZIP. The last field is set up to allow 9-digit zip codes plus 16 blanks for country (SWEDEN, CANADA, or GREAT BRITAIN, for example). In case this is too complicated-sounding, see Chapter 4, "Learning To Use Query!3 The Easy Way". You'll find a bunch of examples on how to calculate exactly how long each data field should be to suit your purposes.

One of the neat things about QUERY!3 is that you can correct errors in your initial database as you CREATE it. At every step there is a prompt line across the screen which gives you 3 choices: Record, Abort, or Change (R, A, or C)? Should you be dissatisfied with the way you've set it up, just enter A and the session ends without a permanent record. Now you can start all over and do it correctly this time. But if you only want to correct a typo, enter C and the program asks for the field number to make changes in. Enter the number, say 002, and RETURN. Now type the information properly.

Here's a partial example of our database as we were setting it up (Note: The program works almost identically under HDOS or CP/M-80):

B:SEBHCMBR.DTB		
FIELD NO.	LENGTH	NAME
001	020	1st Name
002	020	Last Name
003	032	Other
004	032	Mail Addr
005	020	City

When we were finally satisfied with our format, we entered R to send the Record file to disc. [ Continued next month ]



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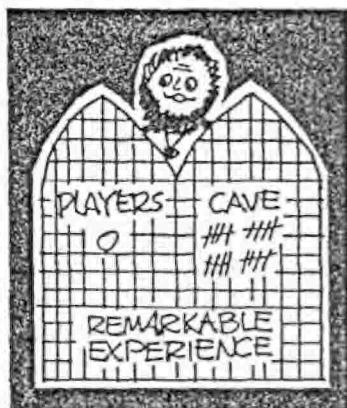
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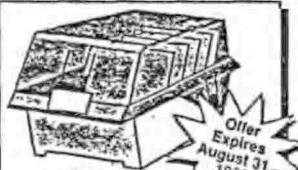
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\* The SEBHC JOURNAL is composed, edited and published by L.E. Geisler at 895 Starwick Drive, Ann Arbor, MI 48105. Phone 313-662-0750, 9am - 6pm Eastern Time, Monday thru Friday. Off hours, try 313-769-6052 (home).

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