NEW YEAR'S RESOLUTIONS

1 - LEARN .ASM!
2 - WRITE RITE
   WRITE .ASM!
3 - SEND ARTICLE
   TO THE JOURNAL,
   NOW — !!!
4 - HAVE FUN
   in '91
Dear Len,

I've been involved with Rick Swenton, and to some degree, Lee Hart of TMSI in resolving a method to overcome incompatibilities of Lee's SuperSet terminal EPROMs and the SASIX.COM program included with Henry Fale's Quikstor hard-disc subsystem for the H89 and H8 (machines). The incompatibilities [surface] when the subsystem is set up to present the BOOT TABLE from the hard-drive's master boot tracks. The code uses an 'auto baud' routine which steps the computer's serial 8250 ACE from 19200 baud down to 380 baud. When the terminal baud setting matches the computer ACE setting, operation starts. This routine works with the original Heath terminal monitor ROM, but doesn't work with TMSI's terminal code.

Henry Fale reprinted Rick Swenton's patch to SASIX.COM in his H-MCP #126 (Nov-90) which was sent [earlier] to the SEBHC JOURNAL. This is where I first heard of it and, so immediately contacted Henry Fale and Rick Swenton, informing them that the patch doesn't solve the H8 problem. To be brief, I can say that the collective efforts of all [concerned] that the H8's problem solution was also found, albeit more complicated (than with the H89).

Rick Swenton asked me to send you a copy of the final solution [which I had] sent to Henry Fale. I [also] sent Henry a list of the necessary steps, and a coded EPROM containing a patched version of PAM-37 (the last H8 panel monitor code). I've enclosed [copies of] all my documentation which you may use as you see fit.

JOHN TURLEY, 327 Villa Avenue, Buffalo, NY 14216

Here's John's letter to Lee Hart:

"Dear Mr Hart,

"As you remember I've been troubled by problems with Henry Fale's QUIKSTOR software in writing the boot track and partition table (SASIX.COM) and the SuperSet ROM set for the H19/-H89. I was elated to see your patches via Rick Swenton to you and published in your "COMMENTS FROM LEE" in H-MCP #126 (November). After making some changes in both my H89 and H8 systems, the results were the same; it didn't work.

"The patches Rick showed simply removes the "OUT" instruction to the 8250 ACE when the MSB and LSB values are being sent to program the baud-rate generator. Without these instructions, the rate remains at whatever it last was (to start with, anyway).

"In the H89 case the 8250s are programmed through the monitor ROM (and dip-switch settings, 0=9600, 1=19200) at power-up, which in turn activates the 'H' prompt. Then the relocated hard-disc boot code loads the program (from SASIX) and then begins to loop, first setting the baud (rate) at 19200 and sending out ANSI code. In the loop (via an ALC--rotate bit through carry-instruction) the original LS DIVISOR latch value increments up to step the 8250 baud-rate generator through 19200, 9600, 4800, etc. Something [then] has to signal back from the H19/89 terminal that baud rates have matched, but I haven't yet been able to determine what this is (I don't have any source code).

"In Rick's patch, the baud rate match is made, but a continuous stream of "*" [tilde] characters are displayed across the screen's top. In an effort to bypass this loop, I prevented a CALL at 323h (see attached IOT listing) and tried both a value of 59h and 44h stored at location 2780h. The result was that the loop doesn't happen, but the terminal didn't initialise correctly in ANSI mode. The line printed then [verbatim] is:

"I recognised what appears to be corrupted ANSI terminal VT52 sequences, and the terminal is found to be in ANSI mode when checked but a pointer probably wasn't set when I did this.

"In the H8 with Quikstor case, Rick's patch complicated things worse. The H8 PAM-37 front-panel monitor doesn't initialise the 8250 ACE at powerup. The H8 operating system has to test for an 8250 ACE at port 3580 or an 8251 USART at 3720, then initialise [whichever one] it [finds]. The reason [that] the SASIX boot code worked was that IT DID initialise the 8250 ACE, but the patches remove it." [What did he want that last sentence to mean? -- ed]

"I got around this by simply setting the MSB to 0140 and replacing the ALC instruction with NOP, so no matter what the ACE is programmed for 9600 baud, but the results now were the same as [with] the H89 above.

"I don't know if Rick was testing on a non-Heath system or terminal, but I'm curious to know why my configuration didn't work. In both systems I'm using your 101-402 EPROM, 101-422 keyboard EPROM, the SUPERFONT 181-431, and the SUPERCLOCK at U43c. I thought maybe his SUPERSET was a different version, or some other segment of the SUPERSET used in mine is different that Rick's.

"Henry Fale suggested that I write you again in the hope that you could test this patch (copy attached) on a system there. But you would need the Quikstor, because the code relocated from the boot track is not used when SASIX.COM is run directly from the TPA."
"READER'S MAILBOX" continued

"You know and remember that I have been unable to use the
SUPER CLOCK in my H19/80 since I purchased and installed it 15
months ago. The hardware-paged EPROM you sent, also the
paged keyboard EPROM which I made (for some reason for which
I'm sure you know that the original ROM code wouldn't work
with your 101-422 EPROM, so I had also to page it) does allow
me to boot QUIKSTER with boot-table presentation, then switch
to new terminal code, reset, and go. But time and date
[either] do not load correctly or at all from the MOSTEK
clock and RAM IC (SUPER CLOCK).

"I'd still like a solution to getting UltiMeth's SASIX
working with SUPERSET or would be satisfied in getting SUPER-
CLOCK to load date and time upon each terminal reset (which
latter item you did promise you'd look into sometime back)."

/s/ John Turley

And here's the patch as done with ZDT as mentioned above:

A> ZDT SASIX.COM
ZDT VERS 2.0.00 - CPU IS 9-80
NEXT PC
2F00 0100
-L300
0300 INX B
0301 LLI D.296A
0304 LHLD 3863
0307 MOV A,L
0308 ORA H
0309 JRNZ 033F
030B PUSH D
030C MVI C,03 ;03h sets 8250 LS latch start to 00000011b
030E XRA A ;zero A
030F OUT EC ;b250 modem register sets DTR & RTS to zero
0311 MVI A,9A ;line ctrl reg set DBA=1 value 10011010b
0313 OUT EB ;initialise Divisor Latch access
0315 XRA A ;zero A for Divisor Latch MS value
0316 OUT E9 ;send MS value
031B MOV A,C ;move in 03h starting LS value
0319 RLC ;shift bit left through carry A=06h
031A MOV C,A ;save in C for later bit shift
031B OUT EB ;send LS value, baud gen=19200
031D MVI A,1A ;line cntl reg set DBA=0 value 00011010b
031F OUT EB ;set initialise Divisor Latch access
0321 IN EB ;empty Rec buffer register
0323 CALL 3A5E ;go do rest of auto-baud stuff
0326 JRC 0311 ;return w/carry, go back & lower baud rate
0328 MVI A,59 ;some kind of ID for terminal type?
032A JZ 032E ;if zero flag, 59's ok,
032C MVI A,4E ;otherwise 4E is the value
032E STA 2780 ;store here
0331 MVI A,08 ;value to set DTR, RTS, and OUT 1 on.
0333 OUT EC ;let's do it.
0335 LLI H,3861
0338 LDI D,207B

Here's John's letter to Rick Swenton:

"Dear Rick,

"Thank you so much for the new PAM37-coded EPROMs. The
solution of relocating the 8250 initialisation routine from the
MTR-90 into the PAM37's free space did indeed work here,
and all problems mentioned are gone. I'll send a copy of
this letter to Lee Hart to release him from working unneces-
arily.

"Henry Fale has asked that I forward my experiences and
results to him for inclusion in the next H-SCOOP. You'll be
given full credit for the solution. This problem has been
nagging me since October 1989. I'm amazed by how simple a
solution it was. If I'd had success with the H89 I probably
[would] have gravitated toward initialising the 8250 in the
H8. Since I'd somehow goofed when testing in the H89, I
was convinced it wasn't the path to take. As for the H89, I've
not yet had the opportunity to test again, but I'm sure I
must have done what you suggested and didn't re-write the
boot table. If it works here on the H89, it absolutely must
work on the H89.

"I did latch onto a bug in your patch, although [it's] not
serious. It came up when I attempted to use the return-to-
monitor-ROM option from the boot table (25th line option,
White Key). The H8 crashed every time I tried that. The
solution comes from the fact that PAM37 is written into RAM
after powerup. The routine which does that is "XINIT-Extend-
ted Initialisation" at [address] 0480h. When you added code
at [address] 0800h, you essentially increased the size of
PAM37. It works initially, since the jump to 0C80 happens
before the EPROM [code] is written to RAM, but the SASIX
option seems to use the level-0 reset interrupt vector, and
that jump to 0C80 send [the EPROM code] to no-code hell. The
cure is to change the value at byte 0435h from 07eh to 08eh,
and the length of PAM37 [code] in RAM, and preserve the
H89 patched-in routine. I burned a new EPROM, and all is
[now] well.

"I sincerely doubt that there are many systems such as
mine still in use. But I'd like to make available this solution
through H-SCOOP and the SEBHC JOURNAL to anyone with
an H8 and QUIKSTOR HD subsystem, and the TMSI SUPERSET. I'm going to send documentation to Henry; thanks again.

/s/ John Turley

Lastly, here's the text of John's Q88S letter to Henry Fale:

Msg#: 2274 #MAIL #01-01-91 22:45:18
From: JOHN TURLEY
To: HENRY FALE (Rcvd)
Subj: FINAL SOLUTION PART I

Henry, this is the best solution to resolve that nagging problem of mine between the QUIKSTOR SASIX boot table auto-baud routine, the TMSI Superset ROMs for the H19/H89 and the H8. Here's a recap of the problem:

1) The SASIX boot table auto baud routine uses ANSI mode instead of Heath mode on the terminal. I imagine that LLL wanted to market this to other than strictly Heath users.

2) The SASIX routine begins by setting the B250 serial ACE on the computer side at 19200 baud then cycles down to 300 baud and back continuously. After each initialization the terminal is tested for some response at the set baud rate. To be completely honest, I never discovered what the routine was doing at this point. Whatever it is, the original Heath H19 ROMs provide it, but the SUPERSET EPROMs do not.

3) The patch from Rick Swenton published in HSCoop #128 disables the programming of the B250 ACE during the cycle mentioned. The ACE is at the power-up configuration on the H89 and is already matched with the baud of the TBL. So it appears that as long as you satisfy the auto baud routine initially on first test then all is well. This works OK for the H89 only because the MTR99 monitor initializes the B250 ACE either at 9600 or 19200 baud depending on the setting of position 6 on the dip switch SW501.

4) Now on the H8 the PAM37 Monitor ROM doesn't initialize the B250 ACE. Since PAM37 was for the front panel on the H8 and the terminal could be non-existent on port 3720 (H-9-5) or 3580s (H-9-4). Rick Swenton solved this by patching in the B250 initialization routine from the MTR99 code into a free area of the PAM37 code and jumping to that routine first. By using a new EPROM and installing on the H8 280 CPU card solves the problem for the H8. However now the status port switch position 6 on the HA-9-6 CPU card represents initializing port 3580 at 9600 (switch=1) or 19200 baud (switch=0) and must be set correctly and the terminal must be set and ready at the same baud setting.

Here is the routine from the MTR99 which is placed in the PAM37 EPROM at location 0CB0h to 0CAF. All values are in HEX.

- OC80 MVI A, 80
- OC82 OUT EB
- OC84 LXI H, 0CA0
- OC87 IN F2
- OC89 ANI 40
- OC8B RRC
- OC8C RRC
- OC8D RRC
- OC8E RRC
- OC8F RRC
- OC90 ADD L
- OC91 MOV L, A
- OC92 MOV A, M
- OC93 OUT E9
- OC95 INX H
- OC96 MOV A, M
- OC97 OUT EB
- OC99 MVI A, 03
- OC9B OUT EB
- OC9D MVI A, 00
- OC9F OUT E9
- OCA1 LXI B, 3EB0
- OCA4 DCR C
- OCA5 JRNZ 0DA4
- OCA7 DJNZ 0DA4
- OCA9 JMP 040E
- OCAE DB 0
- OCAF DB 06

Here's the hex dump for above code added to PAM37:

- OC80 0E 0F 05 06 07 0E 03 29 23 7E 03 EB EB 03 03 EB 3E 00 0D
- OC88 0E 09 01 00 0D 20 0F 1B 0C 0E 04 00 0C 00 06
- OC8B FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

At location 003h JUMP is changed.

- 003 JMP 0CB0 (was JMP 0404) This causes jump to initialize B250 via new code
MAILBOX BOTTOM... VENDOR DIRECTORY

<table>
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<tr>
<td>0000 11 00 00 C3 00 0C FF FF CD 5A 00 16 00 C3 81 00</td>
</tr>
<tr>
<td>0010 00 5A 00 1A C3 A4 01 FF C3 25 2A 5D 61 6D 33 37</td>
</tr>
<tr>
<td>0020 C3 2B 28 28 2F 53 41 50 2F C3 2B 28 28 5F AF C3 63 82</td>
</tr>
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</table>

At location 0434h change value in instruction:

<table>
<thead>
<tr>
<th>0434 LXI B,0CB00 (was LXI B,0C74) This allows new code to be written to RAM. BC0Bh</th>
</tr>
</thead>
</table>

| 0440 C2 3A 04 01 00 08 11 00 1A 12 13 00 7B B1 |
| C2:.................. |
| 0450 49 04 3A 20 F6 20 32 3b 20 D3 F2 11 F9 03 21 |
| I:6 . 26 ..... |
| 0460 0B 0A 20 C3 3B 00 D3 2E 35 BE 7B D3 F2 EB E9 |
| C6 . ......5.x. |

Now BEFORE the EPROM is installed use patch from Rick Swenson on SASIX.COM and REPLACE the master boot track on the Quikstor Hard Disk. Then install new EPROM, set status switch for serial baud rate and all should be well for HB.

If you like I can send you a ready to go modified PAM37 E PROM which you can duplicate from and supply with QUIKSTOR for HB. OR- I can upload INTEL HEX file of changed PAM37 code.

And that's the end of that tune!! // J.T., Buffalo, NY.

<<SIGH>> Take pity on us old codgers; don't make us hand-enter everything, but rather send your text to us as ASCII disc files! And that's the "deep nitty gritty" of how John Turley and Rick Swenson unscrewed the inscrutable problem of making the H19 & HB and H89 screens operate identically with Henry Fale's Quikdata hardsector disc drive and SASIX.COM disc utility! The more data we publish about any subject, the happier our readers will be! -- ed

Dear Leonard,

I see you still have Heath software available. Do you or any reader have any ASSEMBly language instruction material as good as, better, or easier than Heath's EC-1108 course? I am willing to buy what's available--if it isn't too "heavy".

ROBERT E STOHJ, Rte 1, Box 51, Shelby, Iowa 51570

[Ok, readers, here's your chance to help a fellow 8-bit computerist! Do It Right Away, y'all hear?! -- ed]

===[[{{(B)}<]]==
Part Two -- Structured Programming
by
Editorial Assistant A Stapher

In Part One we presented some of the more important points
about outlining Modular Programmes. Now we'll do the same
thing with Structured Programming's major points.

The four main structures are:

1 - Sequence structure where one operation is carried
out after another until all are finished
2 - Decision structure where a True-False test checks
and chooses either operation A or operation B then
proceeds to the finish
3 - Loop structure where an operation (or a series of
operations) repeat until a parameter has been met
a - if condition is tested first, it's called
   a DO-WHILE loop
b - if condition is tested last, it is called
   a DO-UNTIL loop
4 - Do-case structure, in which any one of several
operations (or series of operations) is performed
depending upon the value of a variable or expres-

Learning to recognise and understanding how to use these 4
structures results in three advantages:

1 - Program composition, testing, and debugging time
   is reduced
2 - Program modification is simplified
3 - Program clarity is enhanced

Point three is very important because if a program is ex-
pected to be useful, "live" a long time and allow changes by its
various readers, it MUST be clearly written.

An Algorithm is a step-by-step sequence of instructions for
solving a particular problem. It must be

- unambiguous--that is, it must not leave any room for
doubt as to what has to be done next
- effective--that is, it must solve the problem
- finite--that is, it must do so expeditiously

The following is an example of an algorithm for soft-boiling
an egg:

1. Fill a pot half full with tap water
2. Gently place egg in the water
3. Place pot on a range burner
4. Turn on burner
5. Wait for water to come to a boil
6. Turn off burner and cover pot with lid
7. Wait three minutes (use a timer)
8. Take pot with egg and water to sink
9. Drain hot water, rinse egg with cold water
10. Congratulations! You have soft-boiled an egg.

This algorithm demonstrates the three properties listed
above: The procedure is effective, because if you follow it
precisely you will soft-boil an egg. It is unambiguous to the
point of being somewhat simple-minded, and it is finite,
because steps five and 7 limit the amount of time for cooking
the egg. And your perfect soft-boiled egg will have a firm
white, but soft yolk.

Note: If you wish to hard-boil an egg, simply re-write
step seven as, "Wait six minutes", and you'll get a perfect,
and thoroughly hard-boiled egg. (If you're really picky,
change line 18 to read: "Congratulations! You have hard-
boiled an egg.")

In the following example of program-writing, we're assum-
ing that our readers have a nodding acquaintance with MBASIC.
For those who are completely unfamiliar with HDOS or CP/M
MBASIC, we still have some copies of Heath's Continuing Edu-
cation Course, "Programming in Microsoft BASIC" available
plus companion HDOS MBASIC copies (see page 6). Note that
you can adapt our example program (below) to B-H BASIC with
a little "skull drudgery".

Listing 1 -- The main program

REM CANDY.BAS MBASIC Ver 5.2 (CP/M)
7 REM ACCOUNT PROCESSOR FOR FUND-RAISING CANDY SALES
8 REM Set up all variable names
10 C$=CHR$(27):UP$=C$+"*":Bl$=C$+"D":Y$=C$+"y":J$=C$+"j":K$=
   C$+"k":EEL$=C$+"*":EL$=C$+"j":F$=C$+"*":S$=C$+"j":P$=C$+
   *":P$=C$+"g":X$=C$+"x":Y$=C$+"y":Y$=C$+"y":S$=C$+"y":Y$=
   C$+"y":J$=C$+"j":K$=C$+"j":L$=C$+"j":N$=C$+"j":O$=C$+
20 DEF FND$(V,H)="Y$+CHR$(31+V)+CHR$(31+H):CL$(N)="E$:
   PRINT CL$;
30 DEF FND$(B,C)=(B-C)/2;WIDTH B;WIDTH LPRINT B;
40 PT$=" CANDY ACCOUNT MANAGER *":Z$="####.####
50 C$=LEN(PT$)="PRINT FND$(B,FND$(B)";PT$)="";
   PRINT FND$(10,32); by Raymond Dotson";
   PRINT TAB(30)*"214 S. Berkeley Blvd. *;
   PRINT TAB(30)*"Boldsboro, NC 27513 *
   PRINT TAB(30)*"(919) 778-4112 *;
60 PRINT J$X$X$X$FND$(25,34)="HIT any Key!*B$;
   A$=INPUT$(1);PRINT Y$Y$Y$K$G$CL$;
70 PRINT FND$(4,27)=" TALLY FOR THE GIRLS *Q
   B$="PRINT FND$(6,20)="L";LINE INPUT *# BOXES OF REGULAR CANDY *;
   BO$=
90 IF BO$=" THEN PRINT CL$;GOTO 100
   100 BOX=VAL(BO$);BOX$=BOX$+BOX$+PRINT FND$(6,19)BOX
   "Boxes at $24.00=":PRINT TAB(31)USING Z$;BO$=TO
BASIC(ally) FINIS...FREEBIES!

110 PRINT TAB(20);LINE INPUT *$ BAGS OF 100 GRAND *$;BAG$  
120 BAS=VAL(BAG$);BAGTOT=BAG$*7.5;PRINT FND$(7,19);BAG$  
*Bags at $7.50*;PRINT TAB(31);USING ZZ$;BAGTOT  
130 PRINT FND$(6,28);*LINE INPUT *SHE HAS PAID? *$;PAID$=PAID=  
*VAL(PAID)*  
140 PRINT FND$(6,32)*  
*;USING ZZ$;PAID$  
150 PRINT TAB(28);STRING$(28;"=");TAB(46);STRING$(9;"=")  
160 OWES=(BAGTOT+BOXTOD)-PAID;PRINT FND$(18,20)  
*FOR the PRINT FND$(18,20)  
170 PRINT:PRINT:A$=INPUT$(1);GOTO 170  
180 PRINT TAB(28);STRING$(24;"=");TAB(46);STRING$(9;"=")  
190 PRINT FND$(6,28);EL$;*LINE INPUT *$ CASES OF REGULAR CANDY*  
190 BOX$  
200 IF BOX$="" THEN PRINT CL$;END  
210 BOX$=VAL(BOX$);BOXTOD=BOX$*24;PRINT FND$(6,19);BOX$  
220 PRINT TAB(28);*LINE INPUT *$ CASES OF 100 GRAND *$;BAG$  
230 BAS=VAL(BOX$);BAGTOD=BASE+22.5;PRINT FND$(7,19);BAG$  
240 *Cases at $22.50*;PRINT TAB(31);USING ZZ$;BAGTOD  
249 PRINT TAB(28);STRING$(28;"=");TAB(46);STRING$(9;"=")  
250 OWES=BASE+BOXTOD-PAY;PRINT FND$(9,20);"SHE ows";PRINT TAB(30)  
*USING ZZ$;OWES$  
260 TAX=OWES*0.5;PRINT TAB(28);"Tax";TAB(46);STRING$(9;"=")  
270 PRINT TAB(28);STRING$(28;"=");TAB(46);STRING$(9;"=")  
280 TOTAL=OWES+TAX;PRINT TAB(28);"TOTAL";TAB(46);USING ZZ$;TOTAL  
290 PRINT:PRINT:A$=INPUT$(1);GOTO 190  

Please note that author Ray Dotson wrote this program in a very compact and structured form. As an illustration of what you can do with MBASIC, it's great. But this listing is very complex and might frighten away some neophyte programmers. Therefore we are now preparing several brief program modules which we'll print in our next installment. These can be combined in a number of ways to accomplish many different tasks. Unlike Ray's listing above, ours will make use of 60SUBs rather than 60TOs. 60TOs are very rigid....

Meanwhile, if you copy and run Ray's program, please let us know how it works for you, and if you have made changes to it for your own application. Since Ray lives in South Carolina, he buried that state's sales tax figure somewhere in the program. Here's a neat exercise for you "Hot Rock BASIC" programmers: See if you can find where it is and then change it to fit what your state charges. (Of course, if you can figure out how to get your state to repeal its sales tax law, Write Us Right Away. We all need a program such as that!)

Remember, we need more of YOUR correspondence all the time, because the SEBHC JOURNAL is--after all--a NEWS Letter. What you send us is REAL News, and deserves the widest-possible distribution!

==><<[[B]]><==

A Whole Bunch (more than three, less than fifty) of 8-inch, single-sided floppy drives--manufacturers unknown. They may or may not be working, but think of all the *spare* parts! In this pile is just one HEAVY-duty, D-C, 25-amp, 24-volt analog power supply. No tech data available, but the entire lot is YOURS FREE if you pay packing and shipping costs! [ABSOLUTELY NO INDIVIDUAL ITEMS--YOU MUST TAKE ENTIRE LOT!]

Contact Lenny at the JOURNAL 313-662-0750, live between 9am & 5pm Eastern Time, recorder all other times--do please leave your name, phone number, & a short message.

=> DON'T LET THIS ONE GET AWAY! <=

================================================================
READER'S MAIL BOX, continued... READERS MAIL BOX, continued

Dear Mr Geisler,

I have a problem I haven't been able to solve but in reading the JOURNAL I think I may have found a way to put it to rest. I'd like to get my H-14 printer working with my (now, don't say this very loud!!) XT clone. (Whew! That was tough!)

I simply haven't had time to drag out my scope, breakout box, and so on to experiment with it, but as I was reading my JOURNAL, it came to me like a flash out of the blue (no, not Big Blue). I'd seen it so many times before, that it's amazing that it hadn't occurred to me. The possible solution? Ask Rick!

So here it is, Rick: What sort of wiring configuration & protocol setup do I need to get my H14 printer to work with my XT clone? I've (already) tried plugging it into the serial port, but that didn't work, suggesting that there's a communication problem between computer and printer. Any advice (you can give) shall be greatly appreciated.

CHARLES LISS, 3451B Warren St-131, Westland, MI 48185

OK, Rick, your work's cut out for you! As I remember my own H14 printer, lines RTS & DTR had to be high for it to receive data, and it had a very--very--small internal buffer (roughly 128 bits) capacity. Beyond lack of lower-case descenders all else I can remember is its voracious appetite for typewriter ribbons! It would regularly consume at least one every two weeks! Good luck, you guys, and please do write us. -- ed

[Editor's Note about Postal Rate hike: Anyone who subscribed at the old $17.50/yr rate DURING August, 1990 won't have to pay extra. If you renewed at the new $24/yr rate, you're still ok because we knew the rate hike was coming and allowed for it. Rest easy, we won't let you down! -- Lenny]
### Catalogue Page

**Discontinued ("Vintage") H/Z Eight-bit CP/M software in Original Factory-Sealed Packages. Warranties WILL BE HONORED by Heath. ALL "Demo" software runs EXACTLY AS WARRANTED PACKAGES DO, but updates aren't available (usually won't matter). Continuing Education (EC) packages are complete w/lectures on cassette & final (college-acceptable credits) examination.**

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