

Saving Our HEATH Eight-Bit Machines!

# SEBHO JOURNAL

Volume III, Number 2

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## Reader's LETTERS

Dear Mr. Geisler,

Perhaps your readers might be interested in the following solutions to hardware technical problems we experienced while operating five H/289s twenty-four hours a day under contract to the EEC in Bruxelles, Belgium between 1982 and 1985. We also ran three Z67s and two Z47 accessory drives. All five 89s were equipped with dual Mitsubishi MF504A drives. (Although we now own other computers, we kept two 89s for word processing here in Florida. Magic Wand, run under CDR's Super RAM, dumped to our Diablo 1640 printers proved charter-dominated proportional spacing with right and left justification which our customers claim must have been produced on laser printers.)

### H/Z89 TECH TIPS

#### \* Symptom One:

Keyboard lockup or inability to reset computer (SHIFT-RESET) after warmup.

Cause: Capacitor C422 on Terminal Logic Board has too low voltage rating and develops leakage from power turn-on spikes.

Solution: Replace capacitor with one rated at 47uF and 15 working volts. Use a titanium "orange drop" type which won't be so tall as to interfere with the CPU logic board.

#### \* Symptom Two:

Hum bars (or tearing of video display) floating down the screen from top to bottom.

Cause: Deteriorated bridge rectifier BR-1 on Power Supply regulator heat-sink assembly.

Solution: Replace with high-quality 50-PIV, 25-Amp unit. You may want to add a small radiator for improved cooling.

#### \* Symptom Three:

Intermittent loss of video, or jumping, or blinking of entire video display.

Cause: Gradual deterioration of wave-soldered joints of connectors P201, P202, P203, and P204 on Video Circuit Board. Solder fractures can be seen under low magnification (4X) as distinct rings.

Solution: Resolder all connector pins with high tin content ("60/40") rosin-core solder.

Note: A similar problem sometimes is caused by the dirty shaft of brightness control R1 which may be corrected by rotating shaft while applying a high-quality, silicone-based TV tuner contact cleaner.

#### \* Symptom Four:

Fictitious characters generated by keyboard in both on- and off-line modes.

Cause: Terminal Logic Board U444 Keyboard Encoder running hot due to ventilation blockage by TLB-Keyboard ribbon cable.

Solution: Fix a Wakefield or similar integrated-circuit radiator on the encoder IC and re-route cable if practicable.

### GENERAL H/Z89 NOTES

Aside from the well-documented direct connection of power leads to BR-1 (bypassing the connectors) we didn't experience any other hardware faults with our hard-working 89s. On the other hand, the Z67s gave us continual thermal-sensitivity troubles which we were never able to completely resolve.

The eternal 89 heat problem had little affect on our machines in Belgium, but here in Florida we finally eliminated it by mounting power-supply regulators U101, U102, U103, and BR-1 on a 14x6-inch radiator fixed to the back of the cabinet's top shell.

Also, we regularly clean and spray all contacts and connectors every six months with a good quality silicone spray. We use Sears Solder Seal. [Or "Blue Shower", obtainable from any good HI-FI or TV repair shop. -- ed]

While working with the ECC, we developed a number of programs for converting dBase-II DBF files to run under Magic Wand's PRINT program. These include formatting commands recognised by DIABLO 1640/50 printers. Additionally, we developed assembly-language device drivers for Diablo and Xerox printers, and for reading and manipulating the CDR clock from within dBase-II. We're willing to share these programs with SEBHC JOURNAL readers if there's enough interest.

### HELP NEEDED!

Can any of the JOURNAL's readers supply information on an inexpensive replacement Z-25 printer print head? Zenith asks \$90 plus the old one but we left our old print head in Belgium (it had been damaged by re-inked ribbons) so we don't have one to exchange!

JOHN PERATA, 408 Sorrento Drive, Osprey, FL 34229

[Ah-ha! Now I know why my H19 video display occasionally appears to "breathe"; it is C422 doing that nasty leaky act! Thank you John, for those valuable data bits. You're helping us to keep our eight-bit lovelies alive and well. -- ed]

Dear Mr. Geisler,

Enclosed is my cheque for renewal, the indicated discs and back issues. Since I inherited my system two years ago, I've been living in a virtual [information] vacuum. I appreciate your producing the JOURNAL. Thanks.

I notice that HDOS 3.0 has been released into public domain. Can you tell me how to get it? Also, does anyone still make soft-sector controllers for the H8? I see that there's still hardware support for H89s, but I've not seen anything for the H8.

DAVE HAUBE, P O Box 23076, Seattle, WA 98102

[Glad you like the JOURNAL! Try contacting your Seattle HUG; someone there either may have a copy of HDOS 3.0 or can help you get one. Or write to Bill Parrott, 7010 Caenen Avenue, Shawnee, KS 66216 and either enclose a \$25 cheque and seven hard-sector discs to hold the files, or ask him about his new "\$50 deal". (I phoned Clay Montgomery of SigmaSoft and Systems to get Bill's address and he mentioned that "deal".) My own copy of HDOS 3.0 came to me on some 80trk ds,dd soft-sector discs but without any "help" files or instructions; I can neither help you, or do anything with it myself. Good luck, and keep us informed! -- ed]

## Reader's LETTERS continued

Dear Lenny,

In connexion with your comments in Vol II, No 11, page 10, about using Query! for a magazine database, I am sure that Query, dBase, or any of several other database programs would work fine for cataloguing REMark articles. But if we sold a database of REMark articles based [solely] on one of those programs, the database purchaser would also have to purchase the software to run our database on.

We figured that it would be better to keep everything "at home", so Jim Buszkeiwicz (HUG Manager) asked me to come up with a computer catalogue of REMark articles which would not require any outside software. As I developed the project, it became clear that it was just as easy to develop a [universal] database program which could be used with any magazine as it was to make one just for REMark, and so MagBase was the result.

It also became clear that the program itself would be completed long before a database of 10-year's worth of REMark articles could be compiled. For that reason we decided to make the MagBase program a separate HUG product [apart] from the complete database. If you're interested in getting MagBase, contact HUG and order p/n 885-1249[-37] at about \$25.

PATRICK SWAYNE, HUG Software Engineer, Heath User's Group, PO Box 217, Benton Harbor, MI 49022-0217 -- 616-982-3463

[Thanks for your letter, Pat. It arrived while the missus and I were out West, "doing the National Parks grand tour". (A most arduous journey--I was constantly short of breath and had numerous severe headaches because we were usually at altitudes ranging between 7000 and 12000 feet!) Thanks for the ordering information (which I tacked onto the end of your letter above). I'm sure many of our readers will be interested in getting their own copy. -- ed]

Hi Len,

I have an update on my experiences with the "\$179 H89". I'm happy to say that my initial reaction was overly pessimistic. There were a couple [hardware] bugs on the CPU board (a cold solder joint on the ROM socket and a flakey 8250 UART IC) which took a week for me to find and fix. But after that all the news was good.

The three plug-in cards, while not made by HEATH/ZENITH, appear to be completely compatible. The disc controller card is evidently a clone of the Heath H17 hard-sector disc controller. The memory expansion board seems to work fine with both HDOS 2.0 and CP/M. The 3-port serial board will require some modification. Only one port has an RS232 output; the other two are TTL outputs (although they have 8250 UARTs installed) and need additional ICs installed to make them into RS232 ports.

The keyboard will probably turn out to be the most expensive part of the project (next to the cost of Heath manuals). There are almost 30 keytops which will have to be replaced to make it identical to an H89. I guess a touch-typist might

not bother, but I get really confused if the keys aren't labeled correctly. There are also five keys which have been disabled (OFF LINE, RED, BREAK, ESC, and SCROLL). It will be necessary to buy some parts to make them operational.

I've had HDOS 2.0 up and running with both 40 and 80 track drives using the HUG SY.DVD with no problems so far. I've also brought up my version of CP/M on a 40-track drive ok. It seems that whatever modifications which were made to the hardware haven't hurt the running of Heath software. But I haven't run many applications yet, so that can't be taken as written in stone.

To sum up, I guess this was a pretty good buy after all. For someone who already has the H89 documentation and needs another system and is willing to spend a little more money and some time on re-modifications, it probably is a very good buy.

808 OLSON, 24450 Kirby Street, Hemet, CA 92343

[Hey, Bob! Thanks for all that practical news! We also got a letter from another (new) subscriber who also bought a California Digital '89. But he was lucky enough to get a set of poorly reproduced diagrams and other documentation with his machine. He very kindly sent us a duplicate of his documentation. With a little judicious pencil work, I may be able to make them contrasty enough that they'll be legible. If so, I'll announce in an early JOURNAL that repros of Cal-Digi's "documents" will be available to anyone willing to pay repro and shipping costs. Now about those keyboard repairs: You can buy a standard set of keycaps (or just replacements for missing ones) from Ken Kaplan at ARKAY ENGRAVERS, Inc., 2073 Newbridge Road, Bellmore, NY 11710, phone 516-781-9859. Ken does good work at reasonable prices; I had him make a set of WHITE keypad keycaps for my H8 and they're beautiful! As I remember it, a set of 16 keycaps cost about \$35 several years back. Best you call Ken for an estimate. (Be sure to mention us!) You also might try calling Henry Fale (pronounced "fall, eh?") at Quikdata and see if he has any H19/89 keyboard parts available. His phone is 414-452-4172. -- ed]

Dear Lenny,

Here's something which has been bugging the heck out of me for a long time: Why, oh, WHY do authors of programming (and other) articles put the type of operating system in the last [\*CENSORED\*] paragraph, for example as in "Disc Labeler"? I read the entire thing before I found out it was for CP/M!

Why not put into the opening sentence what operating system (HDOS, CP/M), BASIC dialect (B.H. BASIC, MBASIC, etc.) the article otherwise left to the last paragraph? That would save everyone a lot of unnecessary reading if they didn't have the required software and so on.

Otherwise, the applicable articles you're printing in the JOURNAL are extremely interesting.

D R DROZ, 1251 Canton Drive, Miltipias, CA 95035

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[Well, Dave, guess we're just human and error-prone! I agree with you that authors (and editors too, for that matter) should let the reader know what operating system and runtime software is required for an article concerned with any programme listing. Usually, I can catch such omissions before the text has been set up in page form, ready for printing. It's a tossup whether we have to hand-type an article from hardcopy or edit text someone sent us on disc. In either case, we must go through and edit it into a form which fits our two-column page layout. Usually we'll edit the first paragraph to show that vital information, or we'll put it in the page header. But sometimes we overlook this important step by random error, and for that we apologise! In a, you have a legitimate gripe and one that our contributors must faithfully observe whenever they henceforth submit articles to the JOURNAL. -- ed]

Dear Len,

Thanks for another great issue of the JOURNAL!!! It's one of the greatest things to come to my [mail] box!

I've enclosed a soft-sector HDOS-initiated disc [48tpi] and a cheque for \$2.50. Please send me a copy of TEXTPRO [DEMO]. If the program is defunct, why can't you make available the whole thing? I'd like to get the full program and all its' documentation. If you can't supply same, perhaps you could insert a notice in the next issue for another reader to help me with same. Thanks!

Here are some other items I need help with (to run in your next issue):

(1) I'm looking for a driver to run a laser printer from an H89. Tom Snoblen (1218 City Drive, Ann Arbor, MI 48105) has the same for an Apple Writer according to Lee Hart, but I get no response from Tom to my letters. Can anyone else [who sees this] help me? I just want to be able to set type that I can paste up for overhead transparency production. I don't need to see an H19 terminal graphics layout.

(2) I'm trying to locate a source for the FUG HDOS collection (FUG=Frazer User's Group). I have half of this collection, and need the last 20 or so discs. I believe there are 40 in all. Bob Todd of the old SIG/M has them, but I get no response from him. Help!

TERRY HALL, 516 East Wakeman, Wheaton, IL 60187, phone 312-665-4594

[Terry, about the TXTPRO DEMO disc. Check the directory and then type the README.1ST file. You'll find the answers to most of your questions there. And Allie Lingo out in Dierks, AZ has supplied us with an HDOS disc-file of TXTPRO.DOC which may eventually find its' way onto both HDOS and CP/M DEMO discs. 'Nuf said?! Now about your other questions: I tried to reach Tom Snoblen by telephone but he either doesn't have one or it is unlisted, or maybe he's living with a group and is using the "group" phone there. I do know he once did laser printing for about \$12/page from text sent to him on a

standard H/Z soft-sector disc. That's about all I can say. maybe our readers can help? -- ed]

Dear Lenny,

I'm on vacation at Hilton Head, SC and am using some of my time to read back issues of the SEBHC JOURNAL I didn't have a chance to read before when they arrived. I enjoy the articles and letters and I thank you for doing a great job.

I consider myself a novice when it comes to utilising my H89 with my Smith Corona TP-1 printer. I still use my internal hard-sector disc drive but recently placed in operation a Zenith dual-floppy, external drive box. It has been working quite well for me for the past few months.

Is it possible to upgrade the external drives for use with a soft-sector controller? What is required and approximately how much capital is needed?

Again, thank you for the extremely interesting, useful and well-presented SEBHC JOURNAL.

EUGENE A DUCHESNEAU jr, 9786 Kinglet Drive, Baton Rouge, LA 70809, phone 504-292-4314

[Yes, you can easily upgrade your system to run external soft-sector drives by installing the WH89-37 disc controller card and replacing the hard-sector drive ROM with an all-purpose MTR-90 ROM and some other chips and stuff which is available, complete with instructions and some operating system software, from Henry Fale (his phone number is on page 3). Lee Hart also has a similar upgrade package for roughly the same price (a little under \$350). Call Lee at 616-xxx-xxxx.

Dear Mr Geisler,

Please renew my subscription to the JOURNAL for one more year. Also, please send me a copy of the TXTPRO DEMO disc for CP/M in hard-sector format. Like you, I also have Skycastle Computer's Calligraphy-II package, and I think it is an excellent program.

I have an Okidata 82A printer which I upgraded with the "PC-Writer" kit, also from Skycastle. This printer has both standard serial and parallel inputs and is easy to connect to an H89 with serial I/O, and to a pee-see via its parallel I/O interface. I use the [printer's] front-panel selection [keys] to chose either computer for hard copy.

Please note that I'm interested in obtaining a data-base program for my H89 (CP/M, hard-sector, 2-48tpi double-sided drives).

JAMES D HAMILTON, 127 City Place, Jacksonville, IL 62650, phone 217-245-7528

[Jim, your demo disc has been sent. Did you get all the Calligraphy-II font sets? Their NEAT newest one (\$5, \$19.95) is "Vines" and works great on Epson MX-80s, but on a 24-pin type it prints longer-than-standard pages. Skycastle says not to

## Reader's LETTERS continued

easy to fix, just send your original GTF.COM disc back to them and they'll upgrade it with two double-density patches. Also, you can set the form length in your original graphic.-GTF file and get hard copy which fits the standard 11" form length. About that database: We ran the first part of a review in the August '88 issue (Vol III, No 1) of HOYLE & HOYLE Software, Inc's QUERY!3 database system. (If there's room, part II will be in this issue!) The basic package (QUERY!3) sells for \$99.95. It'll do a lot of stuff for you. If you want to do any fancy bookkeeping, their CALculator add-on package is \$49.95 and will let you do a lot more. See their ad on SEBHC JOURNAL page 16, Vol III, No 1. Of course there are lots more database packages out there, but I've used H&H's ever since it was first offered; maybe I'm a bit prejudiced. Give a call--phone number is 803-886-5802--and tell 'em that Lenny sent you! -- ed]

Dear Len:

I've been quite pleased with the SEBHC JOURNAL, as apparently have most of your subscribers, judging by the mail. But one thing puzzles me--as it has since my introduction to computing with the purchase of my first H89 in July of 1980: That is the apparent fascination with CP/M [software]. Most of your content seems to involve CP/M discussions. What's the matter with HDOS?!

When I first started and joined our local HUG I often asked about the differences. I was told that there was a vast reservoir of software "out there" for CP/M computers which was not available for HDOS, as it is limited to the Heath community. Then I didn't let that influence me, as I couldn't see any need for me to tap the CP/M supply. Within a year or two I had acquired Software Toolworks' PIE editor and ZENCALC. I also got a copy of Jim Texieria's SuperSysmod-2. These served me quite satisfactorily for a few years, then I added CDR's 256-k Ram Drive, Hoyle & Hoyle's QUERY!3, and a few other bits of software which I must admit I rarely use. The above-named programs have provided me with a very solid package for all my [operating] needs.

PIE is the easiest and fastest editor I can imagine. For me it has only one drawback: its inability to write a file to disc and clear the memory, ready to start a new file. For many years I worked as a sales engineer selling major capital equipment, moving orders from \$250K to \$3M, and spent countless hours writing equipment specifications and compliance reviews of my customer's specifications. PIE served me well. I never used TEXT FORMATTER (although I had it) as I found it easier to hit the TAB key as many times as needed to put text where I wanted it (manual indent). I don't like justified right margins, and centering is a snap when needed--merely insert or delete the appropriate number of spaces.

PIE has no menus, and therefore you can go instantly to work. And I do mean instantly! For example, it took less than three seconds from the time I hit RETURN for PIE to load from RAMdrive and pull this letter's text from storage to the file's starting to appear on-screen. I honestly don't see

that the "big ones"--such as WORDSTAR--can offer that much more, especially at their cost in both dollars and memory.

ZENCALC also is a very powerful spread-sheet for 8-bit machines. It isn't a "1-2-3", and it also has no menus. You just hit a few easily-remembered keys to do what you want. I can do a rather full 8-1/2 x 11-inch page with lots of calculations.

The most powerful item I own is my CDR RAMdrive. It works better than a hard drive. When I boot up, I load the single internal H17 drive and the two external H17 drives. A PROLOGUE automatically copies a pre-selected group of programs into RAMdrive memory for instant access whenever wanted, then automatically dismounts the two external data discs. I'm then ready to do anything I want.

Talk about speed! ZENCALC loads in about two seconds; PIE virtually instantly. No noise, just FAST action. When what once was disc access to overlays is required, again no noise, just instantaneous action.

I can't imagine a better system for an 8-bit machine. The only program I use which has a menu is QUERY!3 and that's required to allow for selection of the many routine choices in the data-base software.

Recently I acquired a new DOTS-PERFECT ROM chip for my Epson RX-80. It gives me regular 9-pin output, or can you can set the printer for Near Letter Quality (NLQ). [It's hard to tell the printing from a 24-pin LQ printer's output! -- ed] The only disadvantage I have found is that it won't print in NLQ in compressed mode. [My MX-80 with D-P does; read the manual again! -- ed] DOTS-PERFECT is well worth the \$69 that Dresselhouse is asking for. My system ain't no desk-top publishing rig, but it sure comes in handy for writing of technical text which will be run through the office copier.

Regarding operating systems, I've never had any problems with anything called "BIOS", as I don't even know what that is, or what it does. Nor do I care! HDOS is a system which works much like MS-DOS. (I've used that a bit at work.) Of course HDOS isn't as powerful as MS-DOS, but I haven't had need for such things as "tree directories" in my own work, especially as I don't have a hard disc. There really isn't much need for branches when you can store only 100k on a floppy disc.

In my opinion, "PC" users have typically been enamored by vast stores of "FreeWare" available from something called a "Bulletin Board" (of which there are hundreds), and I'm quite sure that most of those "pee-see-ers" have vast stores of their own unused software taking up vast amounts of disc space. It seems to eventually boil down to whether one wants to USE a computer, or PLAY with it.

I certainly want to see more output from your HDOS-using subscribers!

JACK WERT, 21 High Road, Levittown, PA 19056

[Jack, you've left me textless! Thanks for the kind words and the fonts sample you enclosed with your letter. You are

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a good example of what I have often said, which is, the average compute user/owner doesn't need a bushel of software to quite adequately handle a whole bunch of routine jobs. On the other hand, you must admit that there are many different software packages which do the same routine jobs often better than older packages can and with a lot less fuss. Although I "grew up" with HDOS and was quite happy running it, there was that ever-expanding world of "public domain" CP/M software which tempted me even though it wouldn't run under HDOS. Eventually I bought a CP/M package from Heath and spent far more time in getting it to run for me than I had ever put in on HDOS. Why? Because HUG's CTOH.ABS utility let me read CP/M files and convert them to run under HDOS. And for the most part this works pretty good. The only exceptions are MBASIC programs which have been compiled into machine language form; nobody can do anything with those! Heath's CP/M does have one good thing going for it and that's its' ability to use all 64k of RAM. HDOS 2.0 locks out 8k (of which, by much fooling around, one can use 4k). HDOS 3.0 is supposed to have gotten around that problem but I haven't had time to get my copy up & running, so I can't say anything about it! So keep up the good work! -- ed]

Dear Lenny,

Is TEXT PRoCessor available for use under MS-DOS? If so, where can it be purchased? What is the cost? What is it called?

Tom Hopper jr, 11256 Byron Road, Howell, MI 48843

[Tom, Newline Software did have a version for use on the H100 and H/2150 machines advertised last year in Sextant magazine. I think they've renamed it to something else for Zenith's peesee clone line, but you'll have to look it up in your Sextant back-issue files (mine are buried under a half-dozen "broken" '89s waiting repairs). Good luck! -- ed]

Dear Lenny,

Thought I'd drop you a note letting you know how much I enjoyed the July JOURNAL. I especially enjoyed your article on Newline Software's TeXt PRoCessor (TXTPRO).

I have the HDOS version and indeed I have enjoyed using it --I guess mainly because it didn't take weeks to learn, and that it also worked the way the documentation said.

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

[Thanks for the ROUND TUIT you enclosed with your note! It is much prettier than that bushel basketfull I have stashed out behind my garage. Think I'll put some Velcro on it and stick it on one of my computers! Also, thanks for sending me the TeXt PRoCessor instruction manual on disc. I recently had to set up a rental H89 computer plus printer system for someone who has a lot of writing to do for university courses. She rarely cracks open the book to find out how to

do something ("when all else fails to do the job, read the instructions!"), so if she can read the manual onscreen, just maybe she'll make use of it. I'll let you know how it goes later. -- ed]

Dear Lenny,

I want to add my voice to all the good words being [recently] said about Mr Lee Hart. He is a real asset to our H/Z eight-bit community. Wish I could make off with a small amount of his engineering and programming abilities. Don't think he would miss either one because he is so very gifted.

If any readers have hesitated to order the SuperSet/SuperFont/SuperClock combination, please note that you're missing out on a product which gives our computers innumerable new abilities. But be sure to order all three ROMs if you want a most useful and impressive addition to your system. I ordered them and promptly installed a capacitor in the wrong place but Lee got things straightened out in no time flat. I highly recommend him and his products.

Lenny, I thought I was the only person in the world using Newline's TeXt PRoCessor (TXTPRO). It's my favorite, and Alice (my sister-in-law) wrote her thesis with it. It is worth mentioning that if you have only the HDOS version [and want to use it with CP/M] it will run just fine using CP/M 2.2.03 with HUG's HRUN. There's really no need to have both versions.

WILLIAM J "Bill" VELTEN, 569 South Ridge, West Helena, AR 72390 -- 501-572-5438

[Yep, TeXt PRoCessor V4.1 for HDOS definately will work under H/Z CP/M with HUG's HRUN.COM. But some folks don't know that or would rather have BOTH versions "just to be safe" In my own experience, HRUN works quite well, but it takes quite a bit more time to load CP/M, HRUN, and TXTPRO than it does to use the barefoot HDOS version under HDOS. In fact, with HDOS you can set up a prologue file which loads TXTPRO immediately upon bootup. You can do it with CP/M's auto-run feature, but have you ever noticed how L-O-N-G it takes CP/M to load, compared with HDOS on the same computer? Nearly forever! -- ed]

Dear Leonard,

Just received the August '88 issue today (1-Sep). No, the back issues didn't reach me before this issue did--HA! I did think about calling and waking you up on a Saturday morning (early), but the only way I could accomplish that would be for me to not go to bed at all the night before.

In regards to genealogical software, here are some sources for the readers:

COMMSOFT, Inc, 2257 Old Middlefield Way, Mountain View, CA 94043 (they might still have ROOTS89 {HDOS} or ROOTS/M {CP/M} available).

QUINSEPT, Inc., P O Box 216, Lexington, MA 02173 -- 617-641-2930 (FAMILY ROOTS for CP/M & others)

COMPUSErv's Genealogy Forum --ROOTS, in Library 4--has two

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files, both "shareware", FT117.LBR (binary, 108k complete) and FT-117.DOC (documentation).

I've sent a copy of this information to the reader up in Canada.

SPRING SMITH, 6055 Gary Place, San Luis Obispo, CA 93401

[Thank you for this valuable information. We have a subscriber over in Plymouth, MI whose wife is into the ROOTS bit; she'll probably be bugging him to get her at least one package for her "for Christmas". Hey, I'm the one who called YOU at seven aye-em Pacific Time from our Eastern Time zone! Be aware that my brain engine was running on only three of its' 24 cylinders that day! We'll figure out some way I can make it up to you, Real Soon Now. -- ed]

Dear Len,

Congratulations on your two-year birthday issue. But I thought the article on viruses somewhat out of place. That's because I have NEVER heard of any viruses, or Trojan horses, or worms, for that matter on eight-bit systems (with one minor, deliberate exception).

I believe one reason was that there never was a standard [floppy] disc format back in the days when Heath/Zenith, Kaypro, Osborne, Radio Shack, etc., were originally designed. While many of them used Western Digital's disc-controller chip set--as Heath did when it manufactured the Z89-37--exact disc layout was pretty much left to individual manufacturer's discretion. Hence the need for software such as Anapro's EMULATE to read a variety of formats. The ONLY standard was single-density, single-sided eight-inch--conceived by big bleu. It was the first floppy disc type then available. But in any case, without a standard format the worst thing a virus you designed could do was destroy the media of friends or, or someone writing software you might want to use sometime in the future. It wasn't particularly chuckle or belly laugh producing!

Another reason was the absence of a single standard operating system. True, [generic] CP/M came closer than anything else, and entry points into the BIOS are available at the bottom of memory. Again, as with disc formats, BIOSes were hardware specific because each manufacturer customised it that way. Code layout couldn't be relied upon to be uniform from one system to another, so there was no way one could write a virus to do some specific dirty work across a number of systems. Also not conducive of high-jinxery.

A third reason is that hard discs hadn't generally worked their way down from mainframes and minis to become a staple component of every desktop machine. Nine years ago when the '89 was first introduced, their price was well beyond the computer hobbyist's budget, maybe even the bank he patronised. The best a virus could then do was destroy a few floppies [which could be bulk-erased, reformatted & reused]. BIG DEAL!

Finally, a fourth reason is certainly the increasing "ma-

turity" of programmers. One factor was the development of "core wars" where one small program would battle another in a computer's memory, tracked and supervised by a "score-keeping" programme. These small, warring programmes were designed to replicate themselves in memory and were described some time ago in Computer Language and Scientific American. But that technological "feat" aside, I'm speaking more here about the emotional maturity of both programmer and employer, once Apple and IBM established hardware and operating system standards [peculiar to their own machines].

Software manufacturer's paranoia encouraged not only pirate-prevention schemes (with other programmers writing routines to defeat these nipping at their heels), but the occasional inclusion of virus "precursor" messages in the code. And--although the latter did little damage beyond startling or angering the user--they served as progenitors to the near-epidemic we now see in the 16-bit world.

I shall say one thing to your readers: Count yourselves lucky. Although the tide of computer technology may seem to have left you high and dry, you don't have to worry about the sharks out there. And, because almost all software available to your system is years old, its' reliability is assured. Finally, the few programmers still writing for our 8-bit machines aren't the juveniles who're programming for those "other ones".

Frankly, I wouldn't worry about computer viruses, Trojan horses, or worms infecting your H/Z 8, 89, or 90. The only one you're likely to run encounter is a worm, disguised as a complex RAM-testing utility.

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

[You must admit that the article does underline a very fragile aspect of nuzzling up to "big bleu". Our readers are--as you say--well back from the churning waves of the "big bleu sea". And one other thing which separates us from that aspect of Trendy and Conspicuous-Consumerism Yuppydom is the fact that publications such as yours and mine are here to keep our machines functioning correctly--probably well into the next century. Thanks for your refreshing and edifying remarks. Sorry I couldn't get to CHUGCON; July was one of those "grodie to the max" months for me! -- ed]

Dear Len,

I was surprised by the comments in the August issue concerned with the need to change ICs and make other alterations to make the CALIFORNIA DIGITAL '89 run CP/M and HDOS.

Just as a number of your other readers, I ordered the Cal-Digital "H89". It was delivered a few days ago, with a 40trk 1/2-height drive (installed and tested - \$50) and another, uninstalled (\$39). They'd removed the 80trk drive and enclosed it with the other stuff.

Within minutes after unpacking it, I ran numerous CP/M and HDOS programs with pleasing results. I did have to reset the

## Reader's LETTERS continued

brightness control--it's factory-set to zero. The only thing one might consider a "problem" occurs with the HDOS ZENCALC spreadsheet programme. For some reason it requires the shift key be held down when moving from cell to cell when using the arrow keys. Not a big thing except that this isn't needed with my other standard Z89s. And I didn't have to use the arrow keys when I ran TEXT PRO and typed this letter on the Cal-Digital machine.

The floppy disc controller board is quite a bit larger than a standard H17 board, but it works just fine.

CP/M's CONFIGUR found 64k memory and 3 serial ports. There may be a 32k memory add-on but CONFIGUR didn't find it, only the standard 64k.

The only problem I now have is interfacing it with a printer and a modem. There is only a big 50-pin connector provided for interfacing, although the serial I/O board's wiring diagram indicates there is one RS232-standard port, plus those two TTL ports. It appears that I shall have to either try to find a special female 50-pin connector and make an adaptor, or remove the internal 50-pin male connector and replace it with a standard rear-panel DB-25 connector wired to the serial board. Being limited to only one RS232 port will work a hardship on me when I want to use either the printer or modem.

I haven't had time to make any I/O wiring changes yet, but a preliminary review requires the following connections:

Carterphone 50-pin con	Function	RS232 25-pin connector
-----	-----	-----
3	TX Data	2
4	RTS	4
13	DTR	20
5	RX Data	3
7	DSR	6
11	CTS	5
9	RLSD	8
1	GND	7
2	GND	1

My machine was shipped without the 80-track BIOS, required to put it into 80-track use. After a call on CalDigital's 800 number they said they'd forward it separately.

Because I have two other working Z89s, I don't expect to make this change for awhile. If you or any of your [other] readers have any suggestions or comments I shall appreciate receiving them.

On the whole, I think California Digital is getting a bad rap [from some of us]. Their offer is still a great bargain.

ANTHONY "TONY" P MUSNICK, 222 Marple Road, P O Box 136, Broomall, PA 19006

Dear Mr Geisler:

The article by Rick Swenton in your August issue is super.

He obviously knows his H89, and that's where the fun is in using one: It is an excellent tool for self-exploration. A number of us most likely have travelled the same path as Rick, and will recognise some items while maybe being able to provide some additional insight.

I consider the original Heath software to be quite valuable, well-documented, and worth analysing. I would gladly exchange notes with Rick on the CP/M BIOS, the BLDR, MAKEBIOS, PREL, CONFIGUR, and the BIOS.SYS organisation, and more.

I contend that a leaner, more-efficient ZCPR system can be built, once the original software is understood and well-integrated. Automated installations, which do not eliminate unused, obsolete, or duplicate code, are to blame for the loss of TPA in most implementations [of ZCPR]. I am about to evaluate N2-COM.

I wasn't aware that the Extended Double-Density format was available in [CP/M version] 2.2.03 FORMAT.COM. Anapro provides a FORMATM.COM with their 6MHz upgrade, which may well be a patched '.03.

Please let Rick Swenton know of my interest in [reading] more of his "Betcha Didn't Know" feature.

L VAN HEMELRYCK, 16514 14th Avenue, SE, Mill Creek, WA 98012

[Your letter re-reinforces my own opinion of Rick's article! I tried the '.03 FORMAT patch and found it worked ok (although I've been using the un-patched version). I recently installed Rick's patch in an acquaintance's FORMAT so she won't have to make a special effort to remember to use Extended Density. And note that CP/M 2.2.04 can't tell the difference between soft-sector discs formatted in any of the three (.03) densities--other than number of sectors available. I too hope that Rick will find the time to send us some more goodies we can use and publish "for the common good"! -- ed]

Dear Mr Geisler,

On reading July's JOURNAL I found my reply to Dale Chidester's letter which [had] appeared in the May, '88 issue quite garbled. His letter described his method of sending command strings to the printer under CP/M with MBASIC.

My letter described how I use an MBASIC program only once to create a printer-command FILE. Then I simply enter PIP LST:=PRINTER.SET whenever I want to set the printer.

Here is the correct CP/M MBASIC listing:

```
10 OPEN "0",#1,"PRINTER.SET"
20 PRINT #1,CHR$(27);CHR$(30);CHR$(7)
30 PRINT #1,CHR$(27);CHR$(31);CHR$(10)
40 CLOSE #1
50 END
```

Your editorial changes to my letter indicate that you apparently misunderstood the nature of my described approach.

[Continued]

## Reader's LETTERS concluded

Please print the correct (original) listing from my letter in your next issue!

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

[Yes, I DID misunderstand your letter. I've never seen CP/M MBASIC used this way to create what is essentially a '.COM' file. (I simply assumed you must first run BASCOM and compile an MBASIC interpreter-type programme to get <filename>-.COM. Your method seems to eliminate the need of BASCOM.) In fact, there isn't anything in the original Heath MBASIC home-study course on how to perform this unusual trick. Have you discovered something different? Because your listing looks quite like MBASIC Version 4.82 protocol I incorrectly assumed the listing was for HDOS MBASIC. And I made another honest mistake by typing "COPY LP:..." (a HDOS command string) rather than CP/M's "PIP LST:=filename.ext" or "PIP LPT:=filename.ext". Your corrected listing's printed on page 8. I tried it and I regret to say that it didn't work on either of my printers (one an Epson, the other an NEC which is Epson "compatible") as you'd written it. But after I wrote a similar programme in CP/M MBASIC which I then RAN IN MBASIC both printers responded correctly! Here's my version:

```

5 REM          TESTSET.BAS   I.e.g. -- 10-Sep-88
10 E$=CHR$(27):REM   Define ESCape code
20 EPE$=E$+"E":REM   Emphasised Print ON
25 EPX$=E$+"F":REM   Emphasised Print OFF
30 EIO$=E$+"4":REM   Italics ON
40 EIX$=E$+"5":REM   Italics OFF
50 EW0$=E$+"W1":REM  Double-width ON
60 EWX$=E$+"W0":REM  Double-width OFF
70 LPRINT EPE$;EIO$;TAB(10)"Emphasised Italics!"
80 LPRINT EW0$;TAB(5)"Double-Width Italics!"
90 LPRINT EIX$;EWX$;TAB(20)"Normal printing."
100 LPRINT E$+CHR$(7):END: SYSTEM:REM  Beeps & exits
      from MBASIC back to operating system.
    
```

Other--similar--programmes let me change printer options by entering 'MBASIC <stylname>'. Once set, the printer stays put until I run a different <stylname>. It probably isn't as nifty as it might be, but it certainly works for me! -- ed]

Dear Len,

Here are the copies of California Digital's H89 schematics and a few snapshots which didn't turn out too well, but which I hope will give you some useful information anyhow.

As yet I have only the original hard-sector controller but I'm hoping to get a soft-sector one at the Striker's Grove Hamfest on 16 September. [He did! -- ed]

I'm looking forward to getting all those back issues with my subscription Real Soon Now! ["Its In The Mail! -- ed]

Do you know where I might get a hard-sector version of HDOS which I can use on this machine?

[Thanks for the packet of drawings and pix. On studying the drawings I noticed the C/D-89 is named "AQUARIUS TERMINAL". Looks as if the original customer was using it as a super-intelligent terminal rather than as a straight computer. That may be why there are two TTL I/O ports so as to avoid having to use a modem of some kind. Ver-r-r-y int-er-esting! Yes, the photos are a bit blurry, but I can see that the hard-sector controller extends forward by about a third more than a standard Heath part does. Obviously that's another reason for that odd-shaped bracket, the I/O card back-panel ribbon coming off its' top being the other. Also the drawings you sent indicates two I/O cards can be installed, although yours has only one visible in the photos. There are seventeen 4116s shown on C-D's Bank Memory Switching Expansion card diagram. A regular '89 has 23 4116s on the CP/U and 9 on the expansion cards. Check out your CP/U card and let us know if they've done something strange there! If your "CalDigi 89" CPU card has a full compliment of twenty three 4116s on it, you should have a basic 64k-total memory. That plus the extra 8 4116s doesn't add up to an extra 32k bank (I'm using standard "count-on-my-toes-&-fingers math")! I surely would like to lay an eyeball on that critter and see exactly what they've done! I'll try to fix up some of those drawings and put 'em in the next JOURNAL. I'll send your originals back. And I'm trying to locate a "loose" copy of HDOS 2.0 somewhere. Hope you can wait a little longer! -- ed]



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