

PORT TO PORTAL —Editorial

A very young publication is what we are, folks, but only Issue #5 remains before us in 1987, so I think today is an excellent time to pause, step back, and take a good look at The STAUNCH 8/89'er: What We Are, Where We've Been, and Where We're Headed. There's stuff here you'll want to know!

In 1986 I saw clearly that unless somebody acted, there would someday be virtually nothing left for us to read, "us" of course being computerists who want to hang on to their excellent Heath 8-bit machines — to paraphrase a reader: "the Real Man's Computers"! (Anyone who tries to keep up with the industry, or with the state of the art, eventually learns it **can't be done**; how consoling, then, are our great H-8's and H-89's! We may have found the optimum jumping-off point.) But as I was starting to say, the major Heath-related periodicals were running more stuff for the masses, and less for the (so-called 8-bit) programmer, hobbyist, or hacker types. I saw a ripe, wide-open field that looked like it was going to **stay** that way, so I gritted my teeth and jumped in with this newsletter. Since that decision I see some competition, and that's good for the 8-bit world. The more attention we "8-bit'ers" get — via software writers (large or small), via publications, etc. — the less likely we'll be to part with our machines.

One of my ideas was that my publication could be a mainstay for the various H8/89-type machines. I believe people will see, more and more, that the purpose of STAUNCH is to compensate for the wide 8-bit gaps in the major periodicals, with an objective of becoming the principal dedicated 8-bit communications medium. Then, accordingly, contributors will start submitting their 8-bit articles to STAUNCH preferentially. For STAUNCH is a thoroughbred, our own, and it's growing. More than a year is needed for a newsletter to get a strong foothold. We're not yet so widely known as we should be, and that's partly why **reader-submitted** articles haven't been plentiful. Our rolls, while numbering beyond expectations, are not yet large enough. All that (and more) will definitely improve, and I am confident that it is going to be The STAUNCH 8/89'er that will be "**where it's at**" for us, in time to come.

As you know, STAUNCH is starting off as a quarterly, and at a very modest price. From the outset, whatever else this venture has been, it was also an experiment. But now that it has taken root, I, together with my friend, Kirk Thompson, have new plans for it! We will be able to announce details in the next STAUNCH 8/89'er, Issue #5. Right now, you should know that yearly subscription rates will go to \$8.00 for the 1988 season. (You probably wondered how we did this on \$5.) However, if (and only if) you renew **on or before** December 1, 1987, you can do so at the old \$5-per-year rate. We don't want to "grow" in the wrong direction! Back when I set the rate of \$5.00 per year, I said if that didn't make it I'd supplement it out of my own pocket. Well, we did survive, but after four issues now, I'm better

able to zero in on a more realistic figure, namely, the \$8.00 per year. Please consider that your editor/publisher may still net only "slave wages" for this endeavor. The increase will also help finance our planned changes (and postal rate changes). We don't plan to change the active word count or the quarterly status, in 1988. Further growth is needed before we step up frequency of publication.

Let me cap this with a brief sales pitch! I **greatly** appreciate the kind words STAUNCH readers have sent in and I offer my thanks to all of you. Please, let's keep hearing from you, for better or worse. I think we have a very good quality rag going here. As for the quieter readers among you, there's no better way to tell us we're on the right track than to stay with us. There is no warmer compliment than a renewed subscription.

Every STAUNCH issue is unique. I think they've been pretty diverse and unpredictable, which is **good**. Because with sufficient **variety** no one is disappointed. We try to write intelligently, thoughtfully, and clearly. We strive (hard!) to be both literate and technically accurate. But possibly the single most outstanding virtue of The STAUNCH 8/89'er is that **variety**. You can never easily guess what will be next; you have to stay tuned!

—Hank Lotz

THE EIGHT-BIT R/W —Letters

HDOS Software for Printer & for Speed Mod

[From Adolph P. Stumpf, 507 E. Palm St., Litchfield Park, AZ 85340]... I have noted with interest that the Smith-Corona TP-1 printer is being sold in a toy store [from STAUNCH #3, page 1 -Ed]. I can assure you it is definitely not a toy. It is an extremely rugged and reliable machine; mine has been in continuous use for over four years with no problems. [Editor's Note: Ron Nelson's letter, on page 1 of issue #3, also acknowledged the TP-1 as "very well made" and "built like a tank".]

With the TP-1 becoming available at bargain prices I want to mention that I have written an HDOS device driver for the TP-1 with an RS-232 serial interface. The driver utilizes all TP-1 functions with SET commands for page length, line length, port address, baud rate, etc. Also included are programs which will make the TP-1 operate in a typewriter mode, display the current SET options, and an MBASIC prologue. Everything, including source code and documentation, is available on a hard-sectored disk for only \$10. Connecting the TP-1 to a serial port on the H-89 is simple and instructions are included.

You may have read the letters by James Pilarski and W. K. Clarkson in the May-June '87 issue of Sextant. I do not want to get into an argument on the subject. Mr. Clarkson has a good point when he states that he is a believer in the free enterprise system. However, support for the 8-bit machines is dwindling and I feel that making utility-type programs available free is one way to help 8-bit vendors continue with their product support.

I am mentioning this because the latest upgrade

to my H-89 was the Speed Mod by Micronics Technology. With help from Darrel Pelan of Micronics I was able to get the Speed Mod working. The following programs are available from me for the cost of a long SASE:

- Modifications to the HUG HDOS SY: device driver for the Speed Mod operation.
- An HDOS program to implement the Speed Mod with the CDR Super RAM board.
- An HDOS program to display and select CPU speed.

The Speed Mod is an excellent product and the increase in speed for compiles, spreadsheets, etc., has been amazing.

Agriculture, Anyone?

[From Daniel Gilbertson, Rt 2, Box 314, Richland Center, WI 53581]... If anyone needs info on using spreadsheets for dairy ration balancing I can provide help, including how to solve simultaneous equations with spreadsheets. [Sincere thanks for your willingness to share your expertise. -Ed.]

Praiseworthy Software

[From Terry Hall, Wheaton, IL]... I want to commend to everyone the helpful programs available from Kirk Thompson!

Peesacake!

[From Bill Sutton, 1 Pidgeon Drive, Wilbraham, MA 01095]... Recently, a friend loaned me [copies of] The STAUNCH 8/89'er, and I was absorbed with the material I found. I'm happy to see a newsletter again with H-89 orientation....

Kirk Thompson's comments about secondary booting from soft-sectored drives prompted me to give it a try. This is something that I have always wanted to check out and do... Imagine my surprise to find out that D-G Electronics has made it pure duck soup! One single simple command, PUTSYS A: TO D: copies BIOS and everything. Wow!

And speaking of D-G Electronics, that SUPER 89 board has to be the absolute greatest! Price is down to a bargain too [\$349.95 including shipping]. Maybe there are not many left, but the Chicago store was still able to get some. The store and contact in Chicago is: Heath/Zenith, 224 W. Ogden Ave., Downers Grove, IL 60515, Attn: Brian Cipriano. [Sorry, no phone no. -Ed.] A call to the Chicago store revealed there were none left, but they could order one. I told them to [and] UPS had it to me the following week.

[It has] 4MHz clock speed, expansion to 256K, plus two additional serial I/O ports, on-board real-time clock, and provisions for AM9511 arithmetic processor. Fully wired and assembled -- just slide out the old CPU board and slip this one in. It appears identical to the Heath CPU board, except for a sort of piggyback 4- or 5-inch-square memory board mounted up on about half-inch spacers. Absolutely beautiful! Manual too, and a diskette with software. All kinds of jumper settings to do just about anything... But if you are not doing something outlandish and operating pretty much conventional, none of the multitude of jumpers need

to be changed.

The board comes half populated. I ordered two banks of 64K chips from another great outfit (Microprocessors Unlimited, Inc., 24000 South Peoria Avenue, Beggs, OK 74421), and for an additional \$30, expanded from 128K to 256K RAM. The chips arrived UPS Blue a couple of days later.

Out with the old board; in with the new. 4 MHz and 256K, running beautifully! A small patch to the HDOS disk driver; and, for CP/M, stick in their BIOS.

Patches were made and everything worked great, except the printer was not handshaking. ...I had overlooked a direction in the SUPER 89 manual that said if I use the serial I/O board instead of their serial port, to move a printer option jumper to position one. With that, it worked fine.

Under HDOS: 4 MHz operation, clock, and greatly enhanced monitor commands. Under CP/M: that, plus several software utility goodies, including ZCPR, the public-domain enhanced console command processor; resident 44K printer spooler; and either a 128K or 171K "RAM disk" depending upon whether the spooler is activated or deactivated. Everything runs at either 2 MHz or 4 MHz, but one never switches back to 2 MHz. It's simply great, and the boys at D-G are more than helpful.

Vendor Support

[From Adolph P. Stumpf, Litchfield Park, AZ]... I would like to comment on the support of the few remaining H8/H89 suppliers. In magazines and newsletters we are constantly urged to support these suppliers and I agree. But I also expect support from the suppliers when the product does not perform as claimed or if I have difficulty getting it to work. I refuse to buy from anyone who thinks support stops with the sale of the product.... On top of my list of vendors we should be supporting are Henry Fale [QUIKDATA, INC.], [and] Software Toolworks.... [My list concurs on both counts! -Ed.]

Help for that "Lonely" H-158

[From Ron Pannatoni, Franklin, NC]... This is a response to the query from Ron Nelson in Issue #3 about software for transferring files from an H-158 to an H-89. I have been using a program with my Z-151 and H-89A that probably will work with an H-158, too. It is called "File Transfer Utility" and is a product of The Soft Firm / P.O. Box 1125 / Picayune, MS 39466 / tel. (601) 798-0740. I obtained this program directly from The Soft Firm in February, 1986. At this time, however, The Soft Firm indicated that it was discontinuing sales to end users; I think their outlet was going to be Generic Computer Products / P.O. Box 790 / Marquette, MI 49855 / tel. (906) 249-9801.

This program ["File Transfer Utility"] can be used to transfer files through the serial ports between any two of the following computers: H-8, H-89, H-100, H-150. It has worked very well in my applications, which have involved only ASCII files.

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THE 8-BIT IOWAN

by Kirk L Thompson

Hello from steamy Iowa,

It's only early summer and the weather is already turning into a scorcher here. But most shocking was the **earthquake** which shook the midlands on the 10th of June!

Keyboard Overlay. And the physical conditions outside my place give some indication of what's going on inside: torrid and earthshattering. For instance, I have a number of commercial software packages (8-bit **PeachText** and **ED-A-SKETCH** are examples) which use the function keys but don't label them on the terminal's 25th line. Since some of these programs are only used occasionally, when I bring them up I also have to dig out the manuals to discover what the top row of keys on the keyboard are used for.

No more! I've developed a keyboard overlay (or template) for the H/Z-19/88/89/90. One of my design decisions was to make the thing "generic." It has space for you to mark in the purposes of the special function keys, keypad key functions, and the name of the program it's used with. It extends across the top of the keyboard and wraps down and around the keypad. It's also printed on cardstock and die-cut to keep the cost down.

That was another of my design decisions. I couldn't see much point in charging an arm and a leg! If you're interested, you can order it directly from me for \$5.00, postpaid, for a half dozen. (That should give you enough for your current needs and even leave a few spares!) Iowa residents **must** include 4% sales tax. Order item KO-19. And if you aren't sure just how useful it is, look it over at August's International HUGCON in Chicago; I expect to be there as a vendor!

Public-Domain Software. Correspondence from Terry Hall suggests a desire for 8-bit public-domain software. Years ago, when I accessed CompuServe, the HUG Special Interest Group had scads of it. I suspect, though, that most has now been overwritten by IBM-compatible materials. And while CP/M-oriented bulletin boards still supply some, HDOS software, both commercial and public-domain, is much, much harder to find. But some users' groups still maintain their 8-bit libraries and I think it would be worthwhile knowing which do and how these materials could be distributed more widely.

If yours does and will, write me or Hank and we'll include that information here. If you can, please include name and address of the group, contact person, whether membership is required for your library's access, the amount of the dues (if so), and additional costs (such as mailing). This information could open up software sources to us who choose to stick with discontinued equipment.

As a starter, my own "local" group, Omaha Heath/Zenith Users' Group, is just now opening its libraries to nonmembers at my suggestion. The HDOS library contains 57 hard-sector disks and goes back

to 1980, while the CP/M section, also on hard-sector, numbers 76 disks. Write to:

Club Disk Librarian
OMAHUG
Box 777
Bellevue, NE 68005

This change is so recent (June meeting) that many details are still up in the air. They should, however, be resolved by the time this reaches print and I'll let you know what they are next time.

CPU Speedup Mods. One of the most significant ways you can improve the performance of your microcomputer is to double the frequency of the system clock. This clock controls the rate at which the system performs its basic computational functions. In the Jan/Feb/Mar issue (#2), Hank listed **REMark** articles for those of you who have some facility with board construction and trace-cutting. For those who are more fumbly-fingered, like me, I'll concentrate on commercial products here. I'll also try to keep my treatment on a practical level, although discussion of hardware will be inevitable because increasing the clock rate of the machine requires modifying the hardware in some fashion.

But one thing to remember is that the design of Heath's 8-bit systems, while having some benefits, has one drawback. When you increase the speed of the microprocessor (CPU) board, the terminal logic board is not affected. To get the most out of your system, you should also make one or two changes to that board. I'll have more to say about this after covering the pros and cons of doing it to the CPU board.

Based on my research, there've been four speed-ups available for the '88/89/90. For the H-8, while there may have been more, only **one** is still available. I include a bibliography and vendor list at the end of this article and recommend you read the vendor-specific information there before you buy. And I'll turn, first, to the negative side of the affair.

Negatives. Problems to be overcome when speeding up the CPU board fall into four general areas: the hard-sector controller; the speed capabilities of your RAM and monitor ROM chips; utility program performance, especially communication, drive testing, and disk formatting; and applications software.

The most significant of these is the hard-sector drive system. Unlike soft-sector, the controller for hard-sector takes its timing pulses (at least on the H-89) from the CPU board. If the clock rate of that board is doubled, the hard-sector controller is unable to locate **anything** on disk!

For the H-8, I don't think you need worry about this problem. Clay Jackson, in a review of Trionyx's Z-H8 Z80 CPU board in **Sextant**, noted that a completely new board is the only convenient way of doubling the clock speed on the H-8. And apparently he had no difficulty with the hard-sector board in his upgrade.

But the case for the '89, regrettably, is not so simple. As I mentioned, four products from as many vendors have provided increased CPU clock rate. So far as I can tell, most have taken a slightly different tack from the others when navigating around this problem. Anapro Corp.'s (formerly Analytical Products) **4MHz MOD** software automatically switches the CPU speed down whenever hard-sector drives are accessed and kicks it back up when the read or write is complete.

Micronics Technology's **Speed Mod SM89** works in the same fashion. However, William Clarkson describes some problems which he encountered with it and includes assembly-language patches in a very thorough article in **Sextant**. On the other hand, Chuck Hansen mentioned by letter that he had no problems. And neither did Mick Topping in his article here, last issue. I'll have more to say about this apparent conflict in my recommendation.

I can speak from personal experience about Kres Engineering's product, **DSM-240**. This, the most sophisticated of the hardware, lets me select accelerating just the microprocessor or microprocessor and buss. (The other mods switch **both** CPU and buss, only.) The former, under HDOS, gives me access to hard-sector drives while running the CPU at 4 MHz. However, under Magnolia's CP/M 2.24, I have to drop the clock rate to the stock 2 MHz manually to do the same thing. The reason is my peculiar hardware configuration, but I regard this as a minor inconvenience since my main mass-storage medium is soft-sector. Under Zenith's 2.2.03, this finagling is unnecessary.

Finally, for the sake of thoroughness, there was one other vendor, Najay Systems, who sold a speedup mod. Unfortunately, it's no longer with us. But its approach to the hard-sector problem was to go after the cause of the trouble! A new chip for the controller board, with the 2-MHz-dependent code replaced, was available from it for a very modest sum. Personally, I regret Najay's demise and if anyone knows of another source for this chip, please let me know!

A second problem you are likely to encounter when you install a speedup mod is slow RAM and monitor ROM chips. The stock 4116 RAM and MTR-88 and -89 chips in the '89 are not rated to run at 4 MHz. In almost all cases, the monitor chips may not be a problem since most speedup products give you the option of booting at 2 MHz and kicking the speed up to 4 with an auto-executing program. You are, however, likely to have problems if your software accesses the monitor chips for any of its routines. If these chips are flaky at the higher speed, the system could crash. But if you're already running soft-sector drives, you shouldn't experience any speed problems since MTR-90 chips will run at 4 MHz.

But the biggest headache you will have is with the RAM chips. You may have to replace the entire set! All of these speedup packages include memory test software, so it's an easy matter to determine which chips won't hack the higher clock rate. However, I strongly recommend you include the cost of a new set in your budget for the speedup, just to be on the safe side. The only alternative to this is adding something like C.D.R.'s **SuperRAM 89** RAMdrive system at the same time, as I did. This

hardware lets you reserve 64K from its board(s) for working memory and you can pull out all of your old, slow 4116 chips.

Moving on, some of the utilities which come with your operating systems, and others you are likely to add, won't run trouble-free at 4 MHz! For example, Paul Mikkelsen mentioned in his response to my "request for assistance" last time that a 4-MHz version of the CP/M disk formatter he has creates media which are incompatible with standard CP/M when using Zenith's extended-density soft-sector option. I've discovered that the drive test programs (TEST17 and TEST37) under HDOS 2.0 lock up my system when run at the higher CPU speed. My recommendation, in this situation, is to do **all** disk formatting and testing at 2 MHz. You aren't gaining much by running at 4 with these operations, anyway. Compared with the CPU, floppy disk drives are snails!

Other utilities, especially communications software, also may not function properly at the higher clock rate. For example, the CP/M version of CPS locks up my system at 4 MHz, while the HDOS version doesn't. But like disk formatting and testing, you're gaining very little if you run a typical 300- or 1200-baud modem. The only time I might suggest kicking up the clock rate is if the program specifically includes a 4 MHz option while configuring. Of the ones I have, only Hilgraeve's excellent **ACCESS** (for CP/M) has that.

Finally, you may have problems with some applications. I count myself lucky because only one exhibits any on my system. This is Software Toolworks' **SPELL** proofreader under CP/M. Like CPS, it locks up my system at 4 MHz, while the HDOS version doesn't. But if my experience is an indicator, these will be few and far between. Which will and which won't you'll have to discover after you install the speedup. As Hank points out to me from time to time, each user's system is slightly different from every other!

Positive. What kind of performance can you expect? In general, almost all programs you run will execute twice as fast. For example, this can make a package which is sluggish because it runs under the MBASIC interpreter, such as Jay Gold's **HOME FINANCE SYSTEM**, almost fly.

Assembly language programs can also derive a significant improvement. As an example, sorting a 218-record database file under Hoyle & Hoyle's **QUERY13** takes 25 seconds at 2 MHz on my system (with C.D.R.'s RAMdrive), but 11 seconds at 4 MHz. Another example is Software Toolworks' **MYCALC**, which normally requires about 22 seconds to insert or delete a line in a healthy-sized spreadsheet. At 4 MHz, that drops to a tolerable 12 seconds.

But there can be surprises, too. Lindley Systems' **UPC** graphics printer drivers (for both HDOS and CP/M) take about three and a quarter minutes to convert a Software Toolworks **ED-A-SKETCH** graphics file to a graphics dot-matrix printer. But this timing is also **independent** of clock rate. The same applies to Spectre Technologies' **Rembrandt** business graphics package for CP/M, which I recently brought up. The reason, I think, is the relatively slow communications rate typical of a serial printer. As I suggested above,

the peripherals you run will effect performance and may, as in the case of a modem or printer, control it.

But is the speedup worth it? Undoubtedly! I sped up my "Neanderthal" a little over a year ago and won't go back to a standard 2 MHz system. I regard the improvement in performance to be significant and the expense fully justifiable.

Recommendations. Now I get down to the nitty-gritty: which one should you buy? But I must make one remark before I turn to that. The three products I have information about appear to be software-compatible. The only difference of consequence I can determine is that Kres lets you toggle just the CPU speed up and down, independent of the buss clock. With that exception, all the control software does the same thing in the same way! And I mean that quite literally. My principal clue for this is Anapro Corp.'s **KRESMOD** package. In this set of replacement BIOS's for Zenith CP/M's, the same files support automatic 4-MHz operation on cold boot for Anapro, Kres, and Najay speedups. And Peter Shkabara of Anapro suggested they should also work with Micronics' hardware.

So your decision really comes down to grading six factors: price, reliability, documentation, installation, vendor support, and your abilities or inclinations. The most recent prices (these are always changeable, of course) that I have are as follows:

Anapro Corp.'s **4MHz MOD**: \$45 plus \$3 shipping; HDOS software, \$5 extra.
 Kres Engineering's **DSM-240**: \$99 (including shipping); HDOS software, \$10 extra.
 Micronics Technology's **SM89**: \$34.95 (assembled), \$24.95 (kit), plus \$2 shipping; ask about software.

For reliability, I don't think you need worry. All the information I have suggests it's not a problem with any of these products. Installation of the three is also easy; these are all plug-in modules (no trace cutting!) and include the faster Z80A chip. But the rest of the factors are a mixed bag.

In terms of documentation, Kres appears to do the best job. Its manual gives you instructions very reminiscent of Heath's. But for vendor support, Kres is the worst! I cannot, in good conscience, recommend you order Kres's package directly from them. Order, instead, from Quikdata.

The last factor is the one which you will have to judge for yourself. If you are on a limited budget and willing to patch code, if necessary, per Clarkson's article, then by all means, buy Micronics. But I would check with this vendor about the present state of its software! If you are not so disposed, the middle ground is Anapro Corp.'s product. While the manual is not up to Kres's standard, all the information you need is there. (Interestingly, this item has never been reviewed; but I've gotten very positive input, including a loan of the documentation, from Chuck Sohmi.) And although Kres gives first-rate engineering and doc, even I think it's pricey despite my having one!

Finally, I return to a topic I mentioned early

on, speeding up the terminal. This hardware modification can be made by increasing the board's clock rate from 2 MHz to 3 and/or doubling the baud rate. And since no additional hardware is required (except a piece of wire), you can do it even if you don't accelerate the CPU. But neither of these is trivial. The first requires cutting a trace and adding a jumper to the terminal board. The second requires setting up new bootable disks or patching present ones, then setting hardware DIP switches.

If you're interested in doing this, I recommend writing to CHUG (Capitol Heath Users' Group) for information, as suggested by Topping in the last issue. This club is the source for many of the finest upgrades available for Heath/Zenith 8-bit machines. And the increased terminal response is worth the effort; take my word for it! And if you need further information, don't hesitate to write; just include a self-addressed, stamped envelope.

In the Queue. As Hank notes on page one, there are some changes coming for STAUNCH. I think you'll like them. As of now they have not been finalized, but next time I'll devote column space to them. This last year has been an eventful one for the 8-bit community: the final release of HDOS 3.0; appearance of the 8-bit-oriented newsletters, SEBHC Journal and The STAUNCH 8/89'er... In fact, the next issue will mark STAUNCH's first birthday!

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 Janowski, "The Eight-Bit World," #24 (Sept./Oct., '86), p.25 (Micronics).
 Clarkson, "Four Upgrades for the '89," #26 (Jan./Feb., '87), p.37 (Micronics).

STAUNCH 8/89'er article:

Topping, "The Enhanced H-89," #3 (Apr/May/Jun, '87), p.5 (Micronics).

Vendors Mentioned

Anapro Corp/ 213 Teri Sue Lane / Buellton, CA 93427
 Capitol Heath/Zenith Users' Group (CHUG) /
 7409 Rhondda Dr. / Lorton, VA 22079
 C.D.R. Systems, Inc. / 7210 Clairemont Mesa Blvd. /
 San Diego, CA 92111
 Hilgraeve, Inc. / Box 941 / Monroe, MI 48161
 Hoyle Hoyle Software, Inc. / 111 Sparrow Dr. /
 Isle of Palms, SC 29451
 Jay Gold Software / Box 2024 / Des Moines, IA 50310
 Kres Engineering / Box 1268 / La Canada, CA 91011
 Lindley Systems / 21 Hancock St./ Bedford, MA 01730
 Micronics Technology / 449 Barbados Way /
 Niceville, FL 32578
 Quikdata, Inc. / 2618 Penn Circle /
 Sheboygan, WI 53081

Software Toolworks / One Toolworks Plaza /
 13557 Ventura Blvd. / Sherman Oaks, CA 91423
 Spectre Technologies, Inc. / Suite E /
 22458 Ventura Blvd. / Woodland Hills, CA 91364

My thanks to Chuck Hansen, Paul Mikkelsen, Peter Shkabara, Chuck Sohm, and the article writers enumerated above. Without their assistance, this survey could not have been written.

See you next time,

Kirk L Thompson
 #6 West Branch Mob Hom Vil
 West Branch, IA 52358

HATS OFF to DERBY

by Hank Lotz

Well, the Derby CP/M Utilities look solid and bug-free, a great buy as far as I have seen. These are the programs from Bill Derby; we talked about them last time, in Issue #3. I must admit, right off, that I didn't try the one called **SUB** which is a replacement for **SUBMIT**. My reason for this is that, unfortunately, I never picked up the habit of using **SUBMIT**. But I use the other three Derby programs and they work as advertised: beautifully. This won't be a full-fledged review; I'll just report what I like most (and least) about the package.

The documentation fills five 8-1/2 x 11 pages, single-spaced. There are some examples (more would be welcome), and the write-up covers all the information. The instructions are terse, but adequate if you read thoughtfully.

I use **SD** all the time because it's better, faster, and smaller than **STAT.COM**. I only wish that it **left-justified** the file names. The output list is alphabetical but my eye has to dart in and out from the left to find the names, and that slows me down. **SD** lines up the periods but that's of secondary importance. The rest is all positive. **STAT** listings scroll off the screen if you have too many file names on a disk, unless you're quick on the **CTRL-S**. But with **SD** it doesn't matter. You can split the list into as many as four columns across the screen. So far a two-column configuration has been adequate for me. (Lately my screen fills sometimes, so I'm almost due to switch to 3.) For me, **SD** replaces **STAT** for everyday use. I plan to put **SD** on most of my disks. Another nice feature about **SD** is that it tells you how many unused sectors you have in each file.

I like **COPY**'s ability to (optionally) erase a preexisting destination file before doing the copying. I use this when backing up large files that would not fit on the disk otherwise. To perform its tasks, **COPY** constructs a CP/M command line and passes control to it. (Sounds like a capability other programmers would like to harness.)

CMP (compare program) is one I was going to write "when I got time". If I had to choose one, this is the program in the package I would not do without. I have no substitute for **CMP**.

Bill Derby is an ace programmer and his stuff is

not overpriced. Good job, Bill, may you sell dozens of these packages. Send \$12 to W. S. Derby / P.O. Box 2041 / Livermore, CA 94550. Specify whether you want 48-TPI hard- or 48-TPI soft-sectored disk format. He pays postage.

A CP/M TIMING PATCH FOR DRIVE MOTORS

by Hank Lotz

If you don't bother to wait for a floppy to stop rotating before removing it from a drive, you may forego reading this. I long ago picked up the habit of waiting (even after heads unload) for the drives to stop rotating. I figure a "spinning member" can't scratch a diskette when it isn't spinning. But waiting for drives to stop strains one's patience. I used to wait 9 seconds before the drive motors stopped. (You can forget half your life in 9 seconds.) I reduced this time to 5 seconds with a quick patch to the BIOS.SYS file, using **SUPER ZAP**. (Any disk-dump/patch utility can be used.) The above timings are just clocked from the time I hit **RETURN** after typing "DIR". The patch cuts the waiting time to a tolerable level.

The patch works on my 64K CP/M system with 3 hard-sectored drives, for versions 2.2.03 and 2.2.04. Before making the patch, clear the write-protect flag on the BIOS.SYS file with **STAT** so it is not R/O. To do this, type:

STAT BIOS.SYS \$R/W

after the **A>** prompt. Restore the flag after making the patch (type: **STAT BIOS.SYS \$R/O**). Now for the patch. With your disk-dump utility, look at the 13th 128-byte sector of the disk file BIOS.SYS. (This will be Sector Number 12 if your utility starts the sector numbering at zero as **SUPER ZAP** does.) In version 2.2.04, look at bytes 0041H and 0042H of that sector (where byte numbers start at 0000H). You will see the hex values 0F and 06, respectively. The first byte (0F) controls motor timeout; the next byte (06) controls time before head unload. These same hex values appear in version 2.2.03, but are located at bytes 003D and 003E (in the same sector). After some experimentation I changed the 0F and 06 to 07 and 05, respectively. Smaller values were less satisfactory. Too-short head unloading times can be undesirable when you run certain programs. And apparently if you make the first byte too low without changing the second byte, the motor will stop before the head unloads, and then the head will in fact not unload at all. With the 07 and 05 values, the head unloads for me about 1 second before the motor cuts out.

If you want to see the effect of this patch before you actually alter the BIOS.SYS disk file, you can use **DDT** to change just memory, then see how it behaves. In my 64K system, described above, the memory addresses of the pertinent bytes are F341H and F342H. These are for the 2.2.04 version. I didn't make a note of the 2.2.03 locations, but I'd try looking a few bytes earlier for them, since they're a bit lower in the BIOS.SYS file, as mentioned above. (Perhaps F33D and F33E?) Of course, don't forget to use junk copies of everything when you go messing with the system like this, until you get it working and gain some confidence (or at least

until you get it working). If you do patch the BIOS.SYS on disk, then you **must do a system reset and a cold boot** for your newly patched information to be loaded. A simple warm boot (CTRL-C) is **not** sufficient since the BIOS is loaded only during a cold boot.

Incidentally, there's a useful implication in that latter fact: your data disks, which don't normally contain the BIOS.SYS file, will still be **warm-bootable** (for example, for a momentary swap into drive A) if you put CP/M on their system tracks. And putting it there will not reduce available file space on the disk.

MISCELLANY

Okay, It's MY Move: In STAUNCH #2 on page 4 (under "Your Move"), I asked readers if any chess software could deliver the long checkmate with Knight and Bishop. If such software exists I still haven't found it. I have since purchased MYCHESS from Software Toolworks for \$34.95 plus shipping. (Their **new address**, with phone, is on p.8, col.2, STAUNCH #3.) No, the game apparently doesn't deliver that complicated checkmate (probably not even at level 9, which I'm not about to try). But I can now advise this: if you haven't acquired MYCHESS because you doubt it can beat you, BUY IT unless you are a "licensed grandmaster"! I was **astounded** at its intelligence! And **really** nice graphics too, on the H19/H89 terminal!

Drive Repair: William E. Haivala has used the repair services of a firm in Minnesota, and they provided satisfactory service. They repair Siemens drives for \$49 plus parts. They are: Proto PC Inc., 2424 Territorial Road, St. Paul, MN 55114, (612) 644-4660. Incidentally, Mr. Haivala also wrote that he plans on living to at least 135 years old so as to be able to complete all his various projects. I can identify with that, and I think he picked a reasonable limit, as most of us start to wear out beyond that age.

New Disks or Old: Terry Hall is looking for, among other things, someone who sells colored ribbons for a Diablo 630 printer. He prefers red and blue and wants to be able to buy them singly rather than in quantity. He's also looking for a large quantity of 8" DS DD disks, new or used, at a reasonable price. Also, if you know of a Keymap-type program in HDOS please let Terry know. Heck, let us all know! This would allow function-key definition within application programs. Some of Terry's other quests are: an HDOS program (.ABS or .MSB doesn't matter) that will alphabetically sort files larger than memory; a supplier for tractor-feed computer paper without the perfs every 11 inches (for making banners); a supplier for a bright yellow computer paper (with or without perfs); source code on disk for EDIT-19 (created by S. and K. Robbins, but now in public domain), disk format doesn't matter. And, he claims, "EDIT-19 won't run with HDOS 3.0. EDIT-19 must overlay part of the operating system because I can call it up, but then it crashes the system. Has anyone been successful in modifying either EDIT-19

or HDOS 3.0 to make them compatible?" Contact Terry Hall, 516 East Wakeman, Wheaton, IL 60187. (312) 665-4594.

And, Fourth, there's a supposedly excellent new book on FORTH. Don't have price info but I was given this description: A 100% superb book on what FORTH is, with specific details on how to use it. Title, FORTH: A Text and Reference, Authors: Kelly and Spies (Prentice-Hall 1986).

Still Another Hard-Sectored Diskette Source: This came to my attention and I was going to write, but didn't. You may want to look into it. (If you do, tell us what you learn.) This place is purported to sell 5 different brands of hard-sectored diskettes: LYBEN, 1050 E. Maple Road, Troy, MI 48083, (313) 589-3440.

Credit Where It's Due: Anytime you order **anything at all** that you read about in STAUNCH, please mention The STAUNCH 8/89'er with your order. This not only helps STAUNCH, but also gives feedback to the advertiser. You'd be amazed at the subscriptions we've processed and wondered where the person got the info! Thanks to those who told us when ordering!

Overlays from Kirk: The keyboard overlay (that Kirk Thompson offers in his 8-Bit Iowan this issue) fits like a glove over an H19/89 keyboard. In fact, I have it installed as I write this. One thing Kirk didn't mention: His overlays provide spaces for both the shifted and unshifted entries for each top-row key. In KEYMAP, for example, the function keys are **shiftable** but, practically speaking, the 25th line can give only **one** label. See Kirk's write-up for ordering instructions.

SEBHC Update: As the readership of The STAUNCH 8/89'er grows, many new eyes will be scanning our back issues. On page 4 of Issue #1 see our piece about the SEBHC Journal. Here's an update to that notice: SEBHC Journal subscriptions are \$15.00/year, and checks or money orders should be made out to L. E. Geisler. Lenny has reported still getting orders at the old price, so I hope this will help save him and his new subscribers some grief.

Special Offer from CompuMagic, Inc.: [P.O. Box 437 / Severn, MD 21144 / (301) 969-8068] For \$60 (a \$15 saving), Heath Users can get a special package containing CompuMagic's 20-program Utility Package plus their SEARCH program, in CP/M or PC/MS-DOS. CompuMagic products are **not** copy-protected. (STAUNCH won't knowingly have anything to do with copy-protected programs.) Comes with excellent documentation. The Utility Package manual has over 50 pages, and is very well written. Software is available on Heath 5" hard-sector, eight different Heath 5" soft-sector types (contact CompuMagic for list), and 8" CP/M SSSD. VISA, MC, and personal checks are accepted. There's no shipping charge for UPS ground. MD residents add 5% tax.

The SEARCH program lets you find any string in any ASCII text or word processor text file. It searches multiple files so you don't have to do each

one manually. You can specify which files are to be searched, using the * and ? file-naming wildcards. With SEARCH you can look for up to 10 separate strings at a time. Wildcards can be used in the search strings, too, and so can operators like AND and OR. It can ignore soft hyphens and soft CR's in word processor texts. Output can go to screen, disk file, or printer, and you have control over what to display, when to stop searching, etc. Price for SEARCH alone: \$30.

Now the Utility Package. Its 20 programs are:
 CMCOPY -- very versatile file copy program
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 RENAME -- file renaming program
 SORT -- sorts files in ascending or descending alphabetical order
 WC (WordCount) -- counts words in 1 or more files
 DIR and MDIRS -- versatile alphabetical directory-list programs; can output to disk
 DISKDIFF -- tells what files are on one disk and not another
 DIRBAK -- special utility to list BAK files
 DIRSPACE and UDIR -- tell how many directory entries (not files) are used on a disk
 A.COM -- corrects typos like A;STAT (for A:STAT) and runs your intended prog automatically since you already typed the "A"!
 CMAUTO -- makes programs to load and execute others
 MINIERA -- erases one or more files and reports its action to you. Safeguards R/O files.
 R/O and R/W -- easier way to set files to R/O, R/W
 SCREEN -- writes an echo of screen output to a disk file [This alone could be worth the price of the package! -Ed.]
 TYPIT -- converts computer into simple typewriter; also can write to disk files
 Redirection is an important feature of many of these programs. Redirection can, for example, allow a program's output to go to a disk file. Price for the Utility Package alone: \$45. CompuMagic's programs are sold with a 30-day money-back guarantee.

QUESTIONS and ANSWERS

Q -- How do you use the modem (RS-232) port provided with the Z-89-11 parallel interface board? I have tried to use the port with modem and MPLINK program but it will not work.

A -- Almost all modem programs written for the H-89 are usable only with the 8250 chip on the standard serial board. We think the Z-89-11 uses the 8251 which requires different initialization procedures. An 8250 program would probably have to be patched extensively to use the 8251. We know of no conversion software which specifically addresses this problem.

Q -- I am strictly CP/M-oriented. Should I belong to one of the CP/M clubs that exist? Should I be running HDOS to be a part of the [STAUNCH 8/89'er] group?

A -- [The Editor replies:] These questions look simple till you try to put something into words. Maybe an answer will emerge from the following random thoughts. First on your HDOS question: I, too, am a CP/M-only person. My computer does what I want it to, but if I ran HDOS and not CP/M, I think the same would be true. There's HDOS software in the HUG catalog (and also some by independent vendors) that looks mighty good, so I lose out there. Then, too, there are the good hardware diagnostics written for HDOS, that have no counterpart (that I'm aware of) for CP/M. I know people with both CP/M and HDOS who actively use both systems, but some people with both favor only one. Also, there are bound to be those who, somewhere along the line, have shifted their loyalty from CP/M to HDOS (or vice versa). To my way of thinking, life is simpler if you can settle on only one system and be adequately serviced by it. (If you're interested in HDOS, this column's next question is related.)

As to joining a CP/M club, to me this primarily means access to the vast reservoirs of CP/M software that lie in public domain. Don't forget it can also mean contributing your own original software to club libraries. Also read Kirk Thompson's words on public-domain software, in this issue.

As a footnote, it was interesting that when readers listed their software in my survey questionnaire, frequent responses under utility software were: "many, many"; "tons"; "too numerous to mention." But what does that say for the remarkability of the software? It'd be better to distinguish 1 or 2 favorites, or list only what you use.

Q -- If someone has ONLY CP/M, and wants HDOS, would the public-domain HDOS 3.0 satisfy that? In other words, what all else would that person need BESIDES HDOS 3.0, to get it up and running from scratch?

A -- Just to bring up HDOS 3.0 requires nothing other than the distribution disks. No new hardware is needed. HDOS 3.0 provides almost everything for the first-time user: the operating system; device drivers for disk drives (including 8" and Bernoulli Box hard-cartridge); drivers for H14, H25, Diablo 630-compatible, TI, and MX80 printers; plus an assembler, and Extended Benton Harbor BASIC. Only the documentation is wanting, since the on-disk DOC file just compares it with HDOS 2.0.

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