

The Independent Newsletter of Heath Co. Computers

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Heath® Sets Plans for Higher 5.25" Disk Capacity

As reported in the October 6th BUSS, Heath Co. has been considering several options to increase the storage capacity of 5.25" floppy disks for the H8 and H89. On January 19th Barry Watzman told me a new disk controller is in the works to double the capacity of existing drives. The soft-sector controller may also be capable of handling industry-standard 8" drives. No price has been set; the new board may be in the \$400 to \$600 range. The current production goal is July, but this "might not be realistic."

Barry said Heath® is in touch with manufacturers of double-sided 5.25" drives with storage density of 96 tracks per inch (rather than 48). The projected controller would give each of these a capacity of 700K bytes. He put the drive price in the \$500 to \$600 range. Heath has no plans to support use of such drives with the existing controller. But a user might be able to modify HDOS 2 device driver source code to get 400K bytes per disk.

As a mass storage alternative, Heath is also working on offering hard disks in 1981.

In October the Heath Co. computer product line manager explained why a soft-sectored format would be desirable for higher capacity 5.25" disks. Reliable storage at 96 tracks per inch requires better dimensional stability than is currently available in hard-sectored diskettes. While Heath/Zenith could arrange for a media supplier to punch holes in its premium soft-sectored disks, this would lock users into a single source.

\$95 HDOS Pascal

"Polybytes announces that it is now offering an HDOS compatible adaptation of the very successful Pascal system originally developed for 6800 systems by the Dutch firm Lucidata. Version 2.8 of Lucidata Pascal offers the following features:

- * Fully compatible with all HDOS files and devices.
- * Random and sequential disk file access.
- * Assembly language user function support.
- * Simple interface to non-HDOS device drivers.
- * Virtual memory operation for execution of programs that are larger than the available memory space.
- * 16 bit integer and 9 digit floating point arithmetic.
- * Z80 optimized run time system available.
- * Typically 2-10 times faster than BASIC interpreters.
- * Comprehensive 60 page manual clearly describes those features of P-8080 Pascal that do not conform to the ISO standard.

"Lucidata P-8080 Pascal will operate successfully on 24K HDOS systems, but 40K is recommended to achieve maximum compilation speed.

"Lucidata Pascal is available with a single user license for \$95 from: Polybytes, 325 19th St. S.E., Cedar Rapids,

Iowa 52403. Documentation is available separately for \$25. Dealer inquiries are invited."

"The system is distributed on a 5.25" floppy which includes the compiler, run-time system for both 8080 and Z80 systems, and 14 demonstration programs." Larry C. Reeve

HDOS Software for MBASIC or HDOS BASIC

"Mailing List -- Stores 1000 names on SYO: disk. Selectable printing fields. Files stored alphabetically. Price \$15.00.

"Payroll -- Runs on Microsoft, dual drives, 48K, printer. Handles 50 employees. Prints quarterly, weekly, year-to-date reports. Price \$19.00.

"Recipe Book -- A way to get your wife and your computer together. Includes 20 of Patti's (my wife) favorites. Easy to use. Price \$9.00

"Re-call -- Takes care of all the pertinent information on your valuables such as model no., serial no., date of purchase, etc. When the insurance company calls, you have the data. Price \$9.00.

"Electrical Estimator -- Bids residential new construction jobs. Can be modified to your specs. Prints out proposal ready to submit. Price \$15.00.

"All of the above can be used on single drive systems, but may operate better on dual systems. Payroll is very limited on one drive. Available in Microsoft or Heath BASIC.

"When ordering specify number of drives and which language. When ordering more than one, subtract \$3.50 for each program over one (included in each price is \$3.50 media charge)."

"Calendar (FREE with any order -- program included -- need 132 column printer for additional copies)."

"Coming soon: Electrical Load Calculator (res. service up to 400 amps); Drywall Estimator; Stucco Estimator; Concrete Estimator; General Contractor Job Estimator." Phil M. Smith, Reddi-Software, 9141 E. Grandview St., Mesa, AZ 85207.

CP/M Software and H89 Mass Storage from Magnolia

"As of January 1, 1981 we reduced the price of our CP/M™ 2.23 (with modification board) to \$199 and the price of our 16K RAM board to \$149. The two products may be purchased together for \$299. The prices are competitive with Heath catalog prices. OEM (quantity) and dealer discounts are available.

"We are sending a mailing to all registered end users of CP/M 2.2 to offer to upgrade their software to 2.23 (offering some significant improvements over our early shipments of this product). We ask only that the end user return his original CP/M 2.2 diskette to us for upgrading;

no charge is made for the upgrade. However, many customers have not returned the registration sheet to us."

"Interfaces and software are currently available to support two forms of hard disk -- Corvus 8" Winchester technology (10 MByte now, 20MByte coming in approximately one month) and Cameo's DC-500 Controller for various fixed and removable cartridge drives. We are also shipping our 8" floppy drives with our own interface boards. All three of these storage devices (plus single and/or double sided mini-floppy drives in either 40 or 80 track versions, and the H/Z 47 8" drives) may be combined on a single H/Z '89 under our CP/M. This allows the user to determine the appropriate storage mixture for a particular application.

"Finally the Microsoft products under CP/M are available through Heath/Zenith distribution channels for the H/Z '89 (at least BASIC-80, BASIC Compiler, and FORTRAN-80) at much lower prices. Previously supplied information from Heath was incorrect -- it is necessary to make a simple change to use the packages with Magnolia CP/M. (The packages test whether they are being run on Heath/Zenith equipment by rearranging memory twice -- a change the latch in our modification board prohibits.) We are supplying a disk which fixes the Microsoft software packages to all customers purchasing the packages from us, as well as to each Heath store. ... Effective immediately, this utility will be included on all new CP/M disks shipped (and 2.23 upgrades). Other registered users of our CP/M may obtain the disk with this utility for a \$5 handling fee. Of course, the appropriate COBOL-80 fix will be available as soon as this product is released.

"We recently added several new CP/M software packages including proofreading dictionaries (such as SpellGuard) and a communications package (from Micro-Call Services). We have many CP/M packages available, and will try to supply whatever is requested. Please let us know what you are looking for.

"We have also added a toll-free telephone line to order hardware and software. Please call (800) 426-2841 anytime from 8 am to 5 pm, Monday through Friday (Pacific Standard Time). We are also open on Saturdays from 10-4, but with a reduced staff.

"Numerous other projects are in the works and we will try to do a better job of keeping you informed when they reach the shipping stage. Several times recently we have found ourselves to be unable to keep a product in stock, and have failed to let the rest of you even know of its existence. We'll try to do a better job in 1981. We intend to continue our policy of not announcing products until they are ready to be shipped. If you have a specific interest, please call and let us know what you would like to see." Kay Gjerding, Magnolia Microsystems, 2812 Thorndyke Ave. West, Seattle, WA 98199, 206/285-7266.

Program Eases Single-Drive CP/M

"We have written a program which should be of interest to single-disk H89 owners running CP/M. It solves the problem of having to keep compilers, assemblers, editors, or any other programs on the same disk with the source files that they operate on, which severely limits the useful free disk space. This program (called XX.COM) relocates itself to high memory, loads the given program, requests that the user switch disks, then executes the program normally. For example, if the user wishes to do a FORTRAN compile on a large source file and produce REL and PRN files, he would insert the compiler disk and type: XX F80 = SOURCE/L

After loading F80 into memory, XX would output to the console:

CHANGE DISKS AND HIT RETURN

The user then inserts his source disk, hits return, and everything proceeds normally. Another use would be to do a STAT function on a disk which doesn't contain STAT.COM. The user would insert his system disk and

type:

XX STAT *.*

and get the full disk catalog of any other disk.

"The program is available with source on 5.25" diskette for \$8.50 plus \$1 for handling and first class postage. Currently set up for Magnolia (o org) CP/M -- will try to accommodate other configurations. Hardcopy source listing only -- \$5.00. Jim Reece, MRZ Data Systems Inc., P.O. Box 2571, Warminster, PA 18974."

H89 I/O Expansion Kit

"This is a 4 square inches board plug into U550 I/O decoder on the H89 CPU board. This extension kit decodes additional 64 ports (0 to 77Q) and supplies a socket for another 64 user defined ports. Microflash Co. will announce a 2716 EPROM and 74S470 decoder burner in March '81; this burner also can be used as parallel I/O (2 of 8255A). For information please call or write to Microflash Co., 4916 B Carol, Skokie, IL 60077, (312) 677-4928."

"The price for H89 I/O expansion kit is \$39.95. We offer 10% discount before May 31, '81." Kan K. Cheng

HDOS "Invasion" Game

"I have just completed a game for the H89 and H8/H19 systems. "Invasion" is a fast machine language variation of the popular "Space Invaders" arcade game. The object is to prevent the invaders from landing on earth while avoiding their bombs and radioactive wreckage. The game makes extensive use of H89/H19 graphics, has a selectable skill level and a demonstration mode. It is a lot of fun to play and is quite a challenge.

"Requires HDOS 1.6 and 32K. The price is \$17.50 on disk." Dave Murry, 400 E. Remington D-316, Sunnyvale, CA 94087.

HDOS Home Finance System

"I am offering an extensive Home Finance System for sale and would like to describe it to you.

"This system keeps track of all your banking activities. All of your checks and checking deposits, as well as your savings activity (for up to two banks) may be recorded on a single floppy disk. The system also allows you to define recurring payment accounts (like credit cards, utilities or department stores) that send you regular bills. When you pay bills, you can enter the billing data once, and the data will be stored in your check register and in a detailed record of your transactions to that account. When you are done, your checks will be printed out on your printer for you if you wish. Just sign them and pop them in your envelopes!

"All of your checks have a code that you define. You may then examine your monthly expenses according to this coding system. I have provided extensive display and printout functions to help evaluate your financial activity.

"I have designed this package particularly for the user who wants the computer to perform a task, but who may not be a computer expert. The 109 page, loose-leaf manual that accompanies the program disks is written with a minimum of computer jargon. It explains first in general terms, and then in considerable detail, all the functions of the system. Extensive error handling is incorporated in the programs so that the novice should not be concerned that slips of the fingers would bring catastrophe.

"Additionally, the programs are designed to be as convenient as possible. So, for example, while you are paying your accounts, you have the option of viewing all of your past account activity for the year in the same program. It is also designed for those of us who might make a mistake now and again. Extensive editing features allow you to correct all your mistakes.

"This Home Finance System requires the H8/H19 or H89

computer with two 5.25" drives, 48K memory and either the H14 or H44 (Diablo) printer (please specify which printer when ordering). The System consists of a 109 page users manual in a loose-leaf binder, and four disks. Over thirty BASIC and assembly language programs reside on the first three disks. The fourth is a Sample Data Disk that allows the user to experiment with the system before committing his or her own data to it. I am offering this System for \$85.00 plus shipping. The manual may be purchased separately for \$17.00 plus shipping, and this amount will be credited towards purchase of the complete system." Jay H. Gold, M.D., P.O. Box 2024, Des Moines, IA 50310.

Heath/Zenith Seen Passing Commodore in 1981 Sales

At least two microcomputer industry observers have forecast sales of Zenith and Heath® computer products will pull ahead of Commodore's in 1981. The predictions came in the January 19 issue of InfoWorld: The Newspaper for the Microcomputing Community (530 Lytton Ave., Palo Alto, CA 94301, 415/328-4602).

Dr. Jim Rudolph of Gnostic Concepts, Inc. commented: "The new kid on the block that is going to start coming on strong will be Heath. Heath will probably overtake Commodore." Rudolph sees sales of these firms beaten only by Apple and Tandy, in that order.

InfoWorld Associate Editor Thom Hogan took up half of page 8 with his forecasts. "First is a prediction about the finishing order of the micro horse race: Tandy out on top by two or three lengths, Apple making a strong second place finish (but pulling up lame), Zenith/Heath surprising everyone with a brilliant stretch run, and Commodore finishing out of the money spots, but nevertheless in the race most of the way."

Hogan told BUSS January 23rd that he'd predicted the finish order in terms of sales dollars rather than units sold. He sees the H89 as the right product at the right time at the right price. Hogan stressed that Zenith is aggressively pushing the Z89 to distributors, computer stores, and OEMs who add a bit of custom hardware or software to reach a specialized market at a juicy profit margin.

The InfoWorld editor indicated to me that he sees 1981 microcomputer action centering on the desk top computer market at the business machine level. He pointed out the importance of being able to run CP/M software using 8" disks -- as I had at a meeting of the Heath Users' Group during Personal Computing '78 in August of that year.

Being a member of the same corporate family as Computerworld, InfoWorld accepts subscription orders at 375 Cochituate Road, Framingham, MA 01701. Annual subscription is \$18 in the U.S.; \$35 (U.S.) to Canada & Mexico; and \$65 elsewhere.

New Keyboard Studio Products

"Here is some information on some new products that we now carry, all at discount prices!

Z(H)89-7	Upgrade ROM for origin o	\$ 48
Z89-7	ZDOS rev. 1.6 (3 drive)	125
Z89-21	MBASIC 4.7	125
H8-40	Electronic typing software	270
ZOS-817-2	CP/M 2.2 on 5" disk	125
ZOS-847-2	CP/M 2.2 on 8" disk	125
ZMS-817-1	MBASIC 5.1 on 5" disk	150
ZMS-847-1	MBASIC 5.1 on 8" disk	150
	Magnolia CP/M 2.2 board	210
	Magnolia Magic Wand CP/M	265
	Magnolia proto board for Z89	32
	Corvus drive Z89	4300
	3M 5" head cleaning disk	24
	3M 8" head cleaning disk	24

The above prices include shipping and handling. Allow 3 weeks delivery.

"Also, currently under development is a Sound Generator board for the H8 bus. This board plugs directly into the mainframe and was designed to generate a variety of synthesized sounds all programmable under BASIC or assembler languages. Based on the Texas Instruments 76477 chip, this interface can be used in games, business (as unique signaling prompts or warnings), or just for fun and experimenting. Also on the board are the following:

- 4 decoded ports (selectable)
- 2 port sound generator with on-board amplifier and speaker
- 1 dedicated diminishing frequency astable oscillator
- LED output status indicators
- 1 user defined 8 bit input port (logic probe, ext. monitor)
- And more user defined areas

Bare board with manual and complete kit will be offered.

"As this will be a limited production item at this time, persons with an interest in this board should send a note to us to either reserve a board or receive more specific details, and price information. The final price will be as low as possible in keeping with Keyboard Studio's pricing structure." Ray Massa, The Keyboard Studio, 125 Aspen, Birmingham, MI 48009.

Super RTTY for HDOS

"A comprehensive ASCII/BAUDOT RTTY operating system for the Heath® H8/H89 computers. Super RTTY uses the full disk/graphics capabilities of the H89 or H8/17/19 systems. Features tri-level screen display, on-screen clock, auto log-keeping, full disk I/O support for 1, 2 or 3 drives, hard copy print and more..."

"Uses standard RS-232 interface, no special hardware required (H8 must have H8-4 I/O). Supplied on two disks, includes source and object code with complete documentation. Requires HDOS with 24K of memory."

"Super RTTY is shipped air mail first class anywhere in the USA for \$39.95. Florida residents add 4% sales tax. Foreign orders add \$5.00 for air shipment." Quantum Communications Systems, 13195 - 87th Place North, Largo, FL 33542, 813/397-2018.

Single Voltage Converter for Trionyx H8 RAM

"This letter concerns the compatibility of our M-H8 64K dynamic memory board for the Heathkit H8 computer with the new Heath HA-8-3 color graphics board.

"Several of our customers have now obtained the color graphics board and are using it with our memory board without any problems.

"There seems to be widespread concern, however, about the capability of the H8 +18 volt power supply to supply both the memory board and the graphics board.

"We ... are now offering a voltage converter kit for the M-H8 memory board which will convert the M-H8 to a +8 volt only memory. This voltage converter kit will consist of a tiny pc board and some parts and will sell for \$19.50. The converter will fit neatly on the M-H8 pc board in place of the existing +12 volt and -5 volt regulator circuits.

"The converter uses the +8 volt power supply to generate both +12 volts and -5 volts for the memory chips. The standard 3-voltage 4116 memory chip is fundamentally more reliable than the +5 volt only memory chip which will be used by the Heath Co. on their new 64K dynamic memory board.

"The 4116 memory chip is also less expensive and easier to obtain than the +5 volt only dynamic memory chips. Many of our customers prefer to obtain their own memory chips.

"The voltage converter design approach adopted by Trionyx is certainly superior to the use of +5 volt only memory chips from a technical standpoint. It is also more cost effective. We cannot understand why the Heath Co. did not do it this way." Bill Perry, President, Trionyx Electronics, P.O. Box 5131, Santa Ana, CA 92704.

In BUSS #30 Bill put the M-H8 use of +18 volts at under

100 milliamps. Maximum HA-8-3 requirement is quoted at 250 ma. The H8 power supply is rated at 500 ma. Rick Lutowski has done some figuring which indicates his H8 CPU, H8-4, and H8-5 should have at least 165 ma.

The worst-case figures indicate there could be a problem with some system configurations. Other systems might well have enough +18 volt power to support the HA-8-3's optional 9511A/9512 math chip (at 50-95 ma) -- especially if certain ICs operate closer to the 'typical' than to the 'maximum' levels.

Roy S. Reichert's H89: "Almost Total Silence"

"I removed the cover, dismantled the fan and retired it for another use some other day. I then proceeded to cut a 4 inch diameter hole in the rear of the cover, located directly behind the power-supply regulator heat-sink. (This is not a job for anyone that doesn't have the proper tools. Structural foam is tough to cut and it is sensitive to heating from the cutting tool. If you can't do the job neatly, don't try it!)

"Next, I mounted a new 4 inch size "Whisperfan" on the back so as to draw air out of the cabinet. These "Whisperfans" normally sell for about \$25.00 but I got a brand new one at a flea market for \$8.00! Make sure it is labelled "Whisperfan"! There are many other models of 4 inch fans, but only this one is really quiet. The only possible concern with this modification is that you can block air circulation by pushing the cabinet back to a wall. This, however, is unlikely due to the cables coming out of the rear. There is probably less chance of blocking air flow this way than there is from laying papers on top of the cabinet and blocking the old fan system."

HDOS Word-Processing for \$60

"I have developed a program that I think some of your readers would be interested in. It is a word-processing package for the H8 and H89 computers. The program combines a full-screen text editor and text formatter in one package, so you can go directly from editing a file to printing it, or vice versa.

"The editor automatically adjusts text to fit within the margins as you type it in. As you type in more text, existing text moves over to make room for it. If you try to type over the margin, the last word you typed will be moved onto the next line. And when you delete, the text moves in to fill the gap. Editing commands include: Move Left, Right, Up, Down, to Next Word, to Next Tab, to Top of Page, to Bottom of Page, to Next Page, to Last Page, to Beginning, to End, to Last Change, Delete Char/Word/Line, Copy Char/Word/Line, and Insert Line. You can use standard 8-column tabs, or set up to 80 tab stops of your own. In "File Mode", you can read from or write to files other than the one you are editing. And in "Search Mode", you have a choice of 5 options, including global search and replace and a special "skim" option that lets you scan rapidly through a file to find all occurrences of a given string.

"The formatting part of the program does filling, justifying, centering, underlining, page numbering, headers, and footers. There are over 40 formatting commands, including user-definable characters (for sending escape sequences to printers) and the ability to include another file into the one you are printing. The program can be configured for use with many different printers, including the Diablo 630 and 1640, the LA34 and LA36 DECwriter, and the H14. On a Diablo, it will justify using proportional spacing (like in this letter).

"The program costs \$60, which includes a complete user's manual. It requires an H89 or H8/H19, H8-4 or H88-3 card, 48K memory and one disk drive." Jon Dart, SD Computer Enterprises, 9228E Regents Rd., La Jolla, CA 92037, 714/455-0892.

This text formatter does a better job of producing a

straight right margin than most in its price range. It uses the Diablo's ability to insert fractional spaces between words; many other programs simply insert full spaces, leaving uneven gaps across each line. My own feeling is that right justification is inappropriate for most text short of the formality of a book. I use it for BUSS only because my Qyx can remove fractional spaces between words -- thus getting more words per page when right justification is used.

Osborne BASIC Software on Cassette and Disk

"J. E. Brancheau Engineering has announced cassette and disk versions of the programs in the popular McGraw-Hill/Osborne books Practical BASIC Programs and Some Common BASIC Programs. Practical BASIC Programs includes many business planning and analysis programs such as Lease/Buy Decision, Financial Statement Ratio Analysis, Bayesian Decision Analysis, Critical Path Method to name a few. There are, also, useful home applications like Income Averaging, Home Budgeting, Musical Transposition and others. Some Common BASIC Programs offers a wide selection of programs from finance, mathematics, statistics, plotting and general interest. The cassette versions will load with any version of Extended Benton Harbor BASIC 10.02 or later. This includes all H89/H88 and H8 computers with cassette interface. The disk versions are for HDOS Extended Benton Harbor BASIC and come on 5 inch floppy disks (two disks per book).

"The prices are as follows: "Some Common BASIC Programs" (76 programs) \$16.00 cassette, \$23.00 disks; "Practical BASIC Programs" (40 programs) \$16.00 cassette, \$23.00 disks. J. E. Brancheau Engineering Co., Box 67, Trenton, Michigan 48183."

Naturally Osborne/McGraw-Hill hopes you'll find the software a lot more valuable if you also buy their books to have the explanatory material relevant to each program.

HT-11 XBASIC Enhancements

"The following is a list of changes I have made in my HT-11 operating system and the XBASIC program, which I am sure others may be interested in. They are: 1) Enable auto startup of XBASIC or any user SAV program; 2) Defeat lower case to upper case conversion in XBASIC and; 3) Load all functions for XBASIC without operator intervention. These changes require the use of the PATCH program supplied with the HT-11 system. While the program is easy to use it is suggested the changes be made on a back-up disk first.

"The first change to enable auto start of a user program is the easiest to make. The program BOOTUP looks for a file on SY: named SH.SAV. I used PIP to copy XBASIC.SAV to SH.SAV, which will now be loaded and executed at the conclusion of BOOTUP. SH.SAV will not execute properly, however, unless the Job Status Word (location 44) is changed to indicate that the program was chained to. This requires running PATCH to make the change in bit 8 of the JSW. Do this by typing 44/ to open the location. The computer should respond with the current contents, probably 0. Type in 400 and then return. At this point you can type E to exit or proceed with the other two changes.

"The next change to disable the lower case to upper case conversion might be useful for those interested in using XBASIC in certain word processing applications. In order to make this change it is necessary -- using PATCH -- to change location 546 from 20000 to 60000. This change enables lower case input, however commands must still be typed in upper case. For those with an H19 terminal that would like to allow ESC character input in XBASIC, the two following locations must be changed. Location 2016 should be changed from 1423 to 240 and location 2056 changed from 40 to 33.

"The final change will skip over the dialogue at the beginning of the program about loading the optional

functions and will load all functions automatically. Again this change is made with PATCH at the following locations:

Location	Old Contents	Change To
53060	4337	5237
53062	53642	52436
53064	5015	12700
53066	52110	101
53070	30455	137
53072	20061	53174

"If any of the old contents do not match, it is suggested that the changes not be made since it is probably a different version of X BASIC.

"In my disassembly of X BASIC, I found the word CALL in the keyword list. If anyone has any information on this feature or if it even works, I would appreciate hearing from them." Leonard R. Tucker, Jr., P.O. Box 1928, St. Augustine, FL 32084, 904/829-6541.

No Improvement Likely in Heath® Support of H11

The Federal Communications Commission's rulings on computer interference with television reception promise darker days ahead for fans of the H11. As reported in BUSS #28, Heath® has told the FCC: "The volume of corrective measures required and the severe technical specification limitation will result in a delay of the correction of one product group until mid-1981 and the probable elimination of another product group entirely."

There is little doubt that the product group facing probable elimination is the H11 series. For one thing, Heath Co. is stuck with the current design of the CPU card, as this is purchased from Digital Equipment Corporation. Already, reports have begun to circulate of the imminent demise of the H11. These are somewhat premature. BUSS has learned that the current inventory should last for at least the balance of 1981.

Heath® has shelved plans discussed last August (BUSS #26) to provide RT-11 version 4 and a double-density floppy disk drive. H11 owners looking for increased mass storage with HT-11 compatibility are being referred to Data Systems Design. This firm has sales offices at 2560 Mission College Blvd., Suite 108, Santa Clara, CA 95051, 408/727-3163 and 51 Morgan Dr., Norwood, MA 02062, 617/769-7620.

CP/M Master Catalog Program and Text Formatter

"A few years ago I used a text formatter called RUNOFF and fell in love with it! It runs on most PDP-11 computers, but I was unable to find a relatively complete and inexpensive version which ran on my H8 under CP/M 1.43. My solution was to write a text processor in the language C as implemented by BDS. The end result is called "CTEXT", and I am highly pleased! CTEXT supports centering, paragraphification, sections, sub-sections, underlining, lists, nested lists, titles, sub-titles, alphabetized index, table of contents, page numbers, notes, etc. I have an H14 printer, but I realize that everybody doesn't, so there is support for printers which have true underline and other unique features. For example, CTEXT can send any arbitrary "escape" sequence to the printer to control such things as character width. The formatted text may be sent to the CRT, the printer, a disk file, or even to the PUNCH output!

"About the same time I was working on CTEXT, my good friend John (C.P.M.) Stetson was growing frustrated with the limited capabilities of available master catalog programs. (John has a lot of CP/M diskettes.) Rather than curse the darkness, John lit several candles, in the form of Microsoft FORTRAN and macro assembly language programs. He wrote CPMCAT, an extensive master catalog program. CPMCAT supports volume numbers and volume names which is no small trick under CP/M. The output may be to the printer, CRT or a disk file and may be sorted by file name, extension or volume number. In order

to speed inquiry, "wild cards" may be used in file names.

"Rather than keep these goodies to ourselves, they are being marketed through Cherry Engineering. Only \$40.00 buys both. Check or money order should be sent to Box 216, Laurel, Md. 20810. Additional documentation is available upon request. We can be reached by telephone at 301/596-4236 between 8:00 A.M. and 6:00 P.M. We realize that there is no such thing as a "perfect" software product, so we are willing to sell the full source code for an additional \$40.00. The code is well structured and highly maintainable. It should make good reading as well as allow the sophisticated user to add special features." Ray F. Cherry

Ray adds that those ordering should specify Lifeboat or Heath® CP/M. He says: "We... would be interested in marketing quality software by other authors."

More on TECO with H11

"Just I received BUSS nr 29. I like to answer Randall J. McClelland, M.D. (HT-11 Hints).

"I use TECO with all screen-editing possibilities on my H11 (32K words memory) as follows:

"Prepare a system disk with the HT-11 monitor and device handlers and (using PIP) copy on the same disk: TECO.SAV, LOCAL.TEC, EDIT.TEC, INSERT.TEC, SORT.TEC, VEG.TEC, and VT52.TEC. This becomes the TECO-system disk. It is wise to put a copy of PIP.SAV on the same disk.

"To prepare for editing: copy with PIP on the DK: disk VEG.TEC and VT52.TEC, and the program you want to edit (if there is one).

"Boot from DX0: in the normal way.

"Then after the dot has appeared, type: R TECO; after the prompt (asterisk), type: ERVEG.TEC (esc) YXZMZ (esc esc) and on the screen appears a diagram of the VT52 keypad.

"Enter the filename you want to create or back-up and CR, and go ahead, using the arrows on the keypad of the H19 to move the cursor and 'delete' to delete characters. Insertion of new characters or lines requires no special commands. Use the Red Key to go to Command Mode after editing and type EX (esc esc) to copy the new file on DK.

"You only have to save your TECO-system disk and copy the needed TEC.-- files to the other disk when you want to edit a file on that disk.

"I hope it will work on your system as good as on mine." Peter Vijlbrief, M.D.

"I have an improved TECO program upgraded by various DECUS members that does exactly what Dr. McClelland wants to do. After the primary R TECO command another single SY command loads all the macros, performs the command for scope editing, and prompts with the last edited file name." Martin J. Weitzman, Microsound Co., Box 1153, Loomis, CA 95650, 916/885-1854.

Bob Ryan Likes ESCON Selectric Interface

"I have just finished installing a printer interface that I think other readers might be interested in. The unit is the ESCON Universal Interface for converting any IBM Selectric typewriter into a high quality computer printer at a fraction of the cost.

"Probably like many others, I had been reading the ESCON ad in disbelief. I already had a regular Selectric and I needed a computer printer that had higher resolution than a dot matrix printer. I decided to try the ESCON unit. ESCON sells the unit for either serial or parallel interfacing. I purchased the latter, but not from ESCON. Mini Mico Mart has the same ESCON unit for \$61 less or \$514.00. The price might seem a little high, but look at the current cost of impact printers!

"The purchase price includes: ten electric solenoids that attach to holes already in the Selectric, ribbon cable, a

control box that converts ASCII into pulses to drive the solenoids, and some very good installation instructions (complete with schematics and illustrations).

"Though the installation takes about 6 hours to finish and adjust, it is really very simple and the results are amazing. The few changes made to the typewriter are all enclosed in the Selectric and in no way restrict its use as a regular typewriter. Flip a switch and the Selectric types a maximum of 12.5 characters per second under computer control!

"I highly recommend this unit to anyone who requires high quality output, or who has a typewriter they want to convert.

"For information contact: ESCON Products Inc., 171 Mayhew Way, Suite 204, Pleasant Hill, CA 94523; Mini Micro Mart Inc., 1618 James St., Syracuse, NY 13203."

Cooling the H17-3

"Even with the addition of a fan, the drives become hot after a lot of use. With 30 slots cut into the cover, the air was exiting out the rear slots instead of being forced forward across the drive units for cooling.

"Using masking tape applied to the underside of the top cover, I blocked off eleven of the fifteen slots in each row. This leaves the front four slots open in the two rows.

"This causes the air entering the rear of the enclosure to pass over and through the drive units and out the front and top of the enclosure. The drive units including the stepper motors now remain cool to the touch even after hours of use." Lloyd Richards

FOR SALE

H9 terminal, \$175. H8-5 serial/cassette interface, \$75. David Johnson, 1501 23rd St. S., Fargo, ND 58103, (701) 232-4027.

H89 with 48K RAM, H8-4 serial port, HDOS & MBASIC with misc. HUG software and disks. \$2k or best offer. Ken Shutt, 12433 Archery Dr., Baton Rouge, LA 70815, (504) 275-0330.

H8-1, H8-3 static RAM \$75. WH8-16 static RAM -- 2 @ \$150. All 40K for \$350. R. A. Cobb, 12202 Kingsford Ct., El Cajon, CA 92021, (714) 443-4772.

Stretch 8 + original parts from H8 CPU board, \$325. 8K static RAM, \$75. Godbout 12K memory, \$110. John Doak, (914) 679-8723.

H8 with 32K RAM, serial I/O, cassette recorder/player, H9 video terminal. All manuals, documentation, software included. Extras are dust covers and special program tapes. \$1100 includes shipping. Keith Morlock, Rt. #5, Box 263, Columbus, MS 39701, (601) 328-8880.

H8 (56K), H19, H17-3, H14; fully loaded including software. David L. Hurst, 2923 N. Wilson, Royal Oak, MI 48073, (313) 585-0359 after 6:00 p.m.

H9, \$150. Two H8-8 8K RAM, \$75 each. H8-5 serial/cassette interface (no cables), \$50. All for \$300. Peter Gilbert, Apt. 16B, 111 King's Way, Del Rio, TX 78840, (512) 774-4261.

H9 video terminal with new key caps, \$150. Will trade for 12K/16K memory board. Tom Roche, 29W476 Blackthorn Lane, Warrenville, IL 60555, (312) 393-2023.

H8, dual drive H17, H9 video terminal, three 8K RAM, serial/cassette interface, \$1500 (or sell in parts). Richard Berhain, 142 Jefferson Ave., Hasbrouck Heights, NJ 07604, (201) 288-1693.

H8 8K RAM, \$50 each or 2 for \$90. Phone (213) 374-3945 or days: (213) 641-4881. Allen Jayme, 257 29th St., Hermosa Beach, CA 90254.

H88/H89 cassette interface, \$10. H8 disk controller (assembled but not tested), \$50. David Ballard, 8080 Bridlewood Lane, Palo Cedro, CA 96073.

H89 parts: 73-92 5" foam strip, 73-166 edge strip, 75-790 insulator paper, 350-12 cement, 134-1100 flat cable assembly, 346-64 4" large sleeving, 205-1826-1 short cover plate, 490-185 solder removal braid. Any or all for cash or software. James D. Scott, 205 Steven St., Mason, MI 48854.

Get 14 More Sectors Per HDOS 5.25" Disk

"This .DOC gives directions for patching a newly INIT'ed disk so that the DIRECT.SYS only uses 4 sectors (instead of 18), freeing up 14 sectors for data, while still allowing up to 44 files.

"1. Insert a freshly INIT'ed disk in drive SY1: without mounting.

"2. Run the DUMP program (from HUG Disk VIII) and modify two sectors as follows:

a. Modify the file GRT.SYS to terminate the DIRECT.SYS linked list early and add the 14 sectors to the free list.

Track 23 Sector 8

Addr	Old	New
6D (careful!)	78	6E
71	6E	00
72	74	73
73	75	74
74	76	75
75	00	76
76	73	78

b. Modify the DIRECT.SYS entry in the file DIRECT.SYS to show the correct last group number, then mark this sector as the last sector.

Track 22 Sector 7

Addr	Old	New
DD (careful!)	75	71
FE	DC	00

"3. The disk is now ready to use. If you mount it and list the directory (with /S) you will find that DIRECT.SYS uses only 4 sectors and that there are 382 sectors free for files. This disk can also be SYSGENed.

"4. This information was developed by studying the disk with DUMP, and using Al Dallas's HDOS Directory Format article in Nibble 8." [See BUSS #30, p. 8.] K. Stephen Tinius

HDOS MBASIC Statistics Programs

"Three inferential statistics programs are available for the research worker. The programs are written to run under HDOS and Microsoft BASIC. INSTAT is a package of common parametric techniques through One Way and 2X2 Anova. NONSTAT is a collection of useful distribution-free tests. ANSTAT is a disk of five analysis of variance programs. Disks are \$19.95 each plus 6% tax for CA residents." M. H. Kellicutt, Ph.D., 679 Spindrift Way, Half Moon Bay, CA 94019, 415/726-5607.

Osborne Business Software for CP/M & CBASIC 2

Thomas R. Luck reports that Osborne business software for the H89 is available from Wisconsin Intelligent Systems Engineering (W.I.S.E.), 422 Third St., Baraboo, WI 53913, 608/356-9432. He notes: "Unlike other company's, the programs are available compiled, with the data files (CRT masks, account descriptions, etc.) initialized. This can save hours of entry if the end user wants to use the same

as shown in the Osborne manual."

Three packages are available: (A) General Ledger; (B) Accounts Receivable and Accounts Payable; (C) Payroll and Payroll Cost Accounting. Prices are as follows, with the number of disks supplied shown in parentheses:

	Manual alone	Unmodified source	Source for H89	Source & object
A	\$20	\$35 (1)	\$45 (1)	\$95 (3)
B	20	50 (2)	70 (2)	145 (5)
C	20	65 (3)	90 (4)	170 (8)
A,B,C	60	135	185	375

Requirements: CP/M and CBASIC 2, 2 drive 48K system, and a 132 column printer. Other versions on request for 80 column printer. "Specify operating system (CP/M or 0 Heath, Lifeboat, etc.) and disk size (5 1/4" or 8")."

Bilofsky's MYCHESS Graphics, INVADERS, CP/M Versions

"A new video game, graphics for MYCHESS, and software for Heath and most other CP/M systems are now available from The Software Toolworks.

"INVADERS, a true video game for the H89 or H8+H19, has to be seen to be believed. Alien creatures try to land; you hold them off with your space cannon as you dodge their bombs. Play it as it comes, or customize with 23 user-variable parameters to increase the challenge; even design your own graphics. Requires H89 or H8+H19, 32K. \$19.95.

"In response to many requests, the MYCHESS Championship Chess Program now has a full H89 graphics chessboard display, plus a new self-play mode. For 48K H89 or Z80 CPU; still only \$34.95. Registered owners may update for the usual \$10; don't forget \$2 postage and handling on each order.

"We are pleased to announce Org o CP/M versions of most of our line of software tools and games. Now available on 5" (Heath format) CP/M or HDOS disk are the PIE 1.5 Full Screen Editor (H8 CP/M version requires H8-4; \$29.95), ED-A-SKETCH Graphics Editor (available February, \$29.95), MYCHESS Championship Chess Program (requires H89 or Z80 CPU, 48K; \$34.95), AIRPORT Air Traffic Controller Game (\$19.95) and Invaders Video Game (\$19.95). All of the preceding require an H89 or H8+H19.

"Available on standard 8" CP/M format for Heath or any other CP/M computer, or 5" (Heath format) CP/M or HDOS disk, are the C/80 Compiler (\$39.95), TEXT Formatter (\$34.95), UVMAC Z80 and UVMAC 8080 Macro Assemblers (\$29.95 each), PACK/CRYPT File Compression and Encryption (\$24.95), and LISP Interpreter (for 48K; \$39.95). The RATFOR Structured FORTRAN Preprocessor (requires Microsoft FORTRAN; \$39.95) will be available March 1981.

"Available only on 5" HDOS disk are the REACH Modem/File Transfer Program (H89 only; \$19.95) and the Catalog System/Utilities disk (\$24.95).

"Updates to the latest version continue to be available to registered owners for \$10 per program, but HDOS owners can not update to CP/M or vice versa.

"Ordering information: specify program and disk format (5" HDOS, 5" CP/M or 8" CP/M). Be sure program is available in desired format. Please include \$2.00 per order for first class postage and handling; \$3.00 if ordering 8" disks. Overseas orders add \$1.50 per item airmail postage. CA residents add 6% tax. Order from **The Software Toolworks**, 14478 Glorietta Drive, Sherman Oaks, CA 91423, or write for catalog.

"I got tired of waiting for ASM to assemble long files. Not only does it read one disk block at a time, it doesn't appear to hash its symbol table, so the more symbols the slower it runs. I generated AS, a stripped down version of UVMAC without the macros, and found it will run as fast as ASM on small assemblies, and more than twice as fast on large ones. UVMAC (Z80 or 8080) now includes a compatible AS as a bonus.

"My Diablo 630 (WH-54) never seemed to use its automatic bidirectional printing capability. Although there

is a 768 character buffer in the 630, the ATH44 driver sends characters in bursts of only 32, so the 630 never gets to look ahead very far. Increasing the burst count to 600 makes it go bidirectional almost all the time, increasing throughput about 5%, plus allowing the 630 buffer to keep the printer going when it used to pause for CPU computation.

"For sale: IBM Selectric I/O Terminal. Not a hybrid; 100% IBM, so they will service it. Comes working, interfaced to H89 for printing only, with HDOS device driver and source code, four type elements, 12 film and a cloth ribbon. \$800. You pick up." Walt Bilofsky, (213) 986-4885.

Supplier Update

"HFORTH is fully compatible with HDOS and uses named files for program and data disk I/O. Many new commands have been added to allow utilization of HDOS capabilities. A built-in editor is included. Price is \$29.95." Jim Teixeira, 62 Churchill St., Sudbury, MA 01776.

A new voice synthesizer design has been developed by M.I.-8, 822 E. County Rd. 30, Ft. Collins, CO 80525. HDOS support is available. The information Ted G. Benglen supplied me was missing the price sheet. If you ordered a demonstration cassette for the earlier version, you may return it for no-charge exchange for an improved voice sample. [Ted: see page 273 of the February Byte.]

Bill Richter has a design for a bus terminator that improves the performance of his STRETCH-8 (from Del Stanton). The initial production run was purchased by Del. Bill needs at least 25 orders to justify having more made. If you're interested you might send a self-addressed stamped envelope to Sunbow Electronics, P.O. Box 62001, Sunnyvale, CA 94088.

Micro Media Magazine (P.O. Box 402286, Garland, TX 75041) has three new products. SOFTKEYS, \$19.95, allows definition and labeling of H19 function keys under HDOS. SCAT is a "super catalog utility" allowing cursor editing of flags and files. Great Graphics Games by the author of REBOUND are for the H19. Disk #5 is due in early February.

Larry Plummer has left. He was director of computer products for Heath Company.

Heath Co.'s H8 Z80 CPU is nearing production, with the 64K RAM just behind. They may ship in May.

"REMark #13 is in the mail." HDOS 2 manual may be ready to ship February 6. Softstuff may have VisiCalc available in June.

Local Club Notes

The Southern California H11 Users Group set a meeting for Sunday February 1 at 2 p.m. in Glendora. The president is Dr. Mike DiGirolamo, 430 W. Highland Ave., Redlands, CA 92373, (714) 793-1470.

Interested in starting a club: Jim Christianson, 617 5th St. E., Bottineau, ND 58318.

There's a meeting first and third Saturdays at 3 p.m. at Heathkit Electronic Center, 1555 N. Orange Grove Ave., Pomona, CA 91767, (714) 623-3543 (Doug). February 7th Bob Chamberlain and Van Baker will speak on Heath systems and assembly language programming, respectively.

Triad Heath Users' Group meets 1 p.m. second Saturdays in the Sears activity room, Hanes' Mall, Winston-Salem, North Carolina.

W. R. Leach's Patches to HDOS INIT

"Ever since I read about the first 'patch' to HDOS in BUSS I have wanted to make 'improvements' to the already excellent HDOS. I have made most of the 'patches' published in BUSS even if they were of no particular use on my system. Two of the 'patches' frequently listed and apparently very popular are the various 'patches' to allow the system to come up without the CR on BOOT or the TYPE SPACES TO DETERMINE BAUD RATE.

"As mentioned in several articles, this 'patch' will not carry over from a modified disk during a 'SYSGEN'. The reason is that 'SYSGEN' does not write Track 0. Track 0 is written by 'INIT'. The necessary mods to 'INIT' are given below in two forms. The first method assumes you can find 'INIT' and uses 'DUMP.ABS' from HUG P/N 885-1062. (This is easy if you initialize a disk, copy DUMP.ABS, SYSGEN.SYS, PIP.ABS, INIT.ABS. The sector 0 location will then probably be Track 1, Sector 6. In any event, the first six sectors of 'INIT' are nearly identical to the first six sectors of Track 0.) The easiest method is to use 'PATCH' (if you have modified 'PATCH').

Sector 0 of INIT

1B	0D/	1B	
1C	0A/	6C	
1D	0A/	8D	Eliminate ACTION? (BOOT)
1E	41/	C3	
1F	43/	22	
20	54/	23	

Sector 3 of INIT

98	00/	01	
99	00/	0C	Eliminate TYPE SPACES TO...
9A	C2/	C3	

"Using 'PATCH':

042.223	015/	033
042.224	012/	154
042.225	012/	215
042.226	101/	303
042.227	103/	042
042.230	124/	043

046.020	000/	001
046.021	000/	014
046.022	302/	303"

BUSS Bits

"Bought 16K RAM 4116 chips from California Digital (P.O. Box 3097B, Torrance, CA 90503, 800/421-5041) for only \$39.00. They arrived within 7 days of my mailed order -- and, while not quite as pretty as my Heath chips, the memory diagnostics say that they work. And they are guaranteed for a year unconditionally." Mark W. Hunt

Charles Sanborn notes that HDOS BASIC abbreviates "control" as "CNTRL"; the "N" was left out in BUSS #30, page 4.

"Has anyone interfaced the H8 to the remote home controller that Sears and Radio Shack sell? Through a serial port?" Donald Harms

Bridger Mitchell asks: "Does someone have a modification to the H89 that will cause each key to repeat as long as it remains depressed?"

Anthony E. Villante wonders "if anyone has the patches to cause DBUG to allow input/output in Hex instead of Split-Octal."

"The location of the byte that controls the turn-off time for the disk drives is in HDOS-SYS, and, using the DUMP program, change location H70 on Track 1, Sector 3, from H3C to H04 or 05. This will make the drive motors turn off in about 2 to 3 seconds. I have encountered no problems, and this is certainly simpler than making up a whole program as in the last REMark issue." William N. Tavalga

Bill Taylor has set up a computer bulletin board system "using a Heath H8 with a DG Z80 CPU along with the DG 64K memory board. The system is operating at a CPU speed of 4 MHz" under CP/M. The Princeton, New Jersey system is at (201) 874-6833.

Ray Cherry suggests that users of CP/M 1.43 from Lifeboat send 0 to port 362 after reset if the Extended Configuration Option is installed in the H8.

Don Carter notes that the H14 can be made to overstrike by ending the appropriate line with CHR\$(13) from BASIC to get a return without a line feed. Use the appropriate number of spaces to reach the word that is to be emphasized and then print it again. He says a double CHR\$(12) will clear the H89 screen.

Tom Barnham is using the LSI-11/23 in his H11 with RT-11 version 4. He describes the CPU as a "honey" that multiplies speed of operation by 2.5.

The April 7, 1980 BUSS noted "Heath Co. had a representative at a Satellite Private Terminal Seminar in Miami...." Now Electronics (Jan. 27) reports they'll offer a satellite TV receiver for under \$10,000. Think I'll stick to computers.

Pam Juram has started work on the March edition of The Buss Directory. She's contacted known suppliers and local users' groups. Any others who would like to be listed should contact her.

BUSS will be in booth 23 at the 6th West Coast Computer Faire April 3-5 in San Francisco. More on this show is available from 333 Swett Rd., Woodside, CA 94062, 415/851-7075.

"I have been using both sides of several of my disks without any difficulties. The "Flippy Disk" converter works fine. However, the new Siemens drive will not boot up the disks with the extra hole, and just ticks away merrily in the middle of the boot sequence. If you cover the extra hole, there is no longer a problem." William N. Tavalga

Microcomputer owners interested in being part of a project for family reunification of Indo-Chinese refugees are invited to write Family Reunification Services, 7203 Huntercrest Road N.W., Calgary, Alberta, Canada T2K 4J9.

Wayne Deniston passes on the report Microsoft is working on an XTEXT capability for the assembler supplied with FORTRAN for HDOS.

I managed to tear myself away from Robert Wesson's INVADERS from The Software Toolworks after hitting a high score of 660. The package cover shows a high score of 2960 so I've got some practice to put in. Woke up in the middle of the night thinking I know how he moves 50 alien creatures around the H19 screen. I don't care for video games, but this one is dangerously distracting.

The BUSS Bulletin Line has not been active of late because of the increased frequency of newsletter publication. The phone line may be put to another use February 1-10, so dial the number at your own risk.

Bradford Rehm has a few interesting tidbits on the H14 in the February Byte (starting on page 253). He reports the print head manufacturer recommends use of ribbon containing oil-based ink. And reveals the purpose of those little holes in the bottom plate. Seems they're part of a "flaming-oil quencher!"

If you'd like to demonstrate what you're doing with your personal computer at the National Computer Conference in Chicago May 4-7, contact Rex Burton, Thermark - Avery International, 650 West 67th Place, Schererville, IN 46375, 219/322-5030. He reports: "As in the past, we anticipate having sufficient prizes for each participant."

Charlie