

Saving Our HEATH Eight-Bit Machines!

SERVO JOURNAL

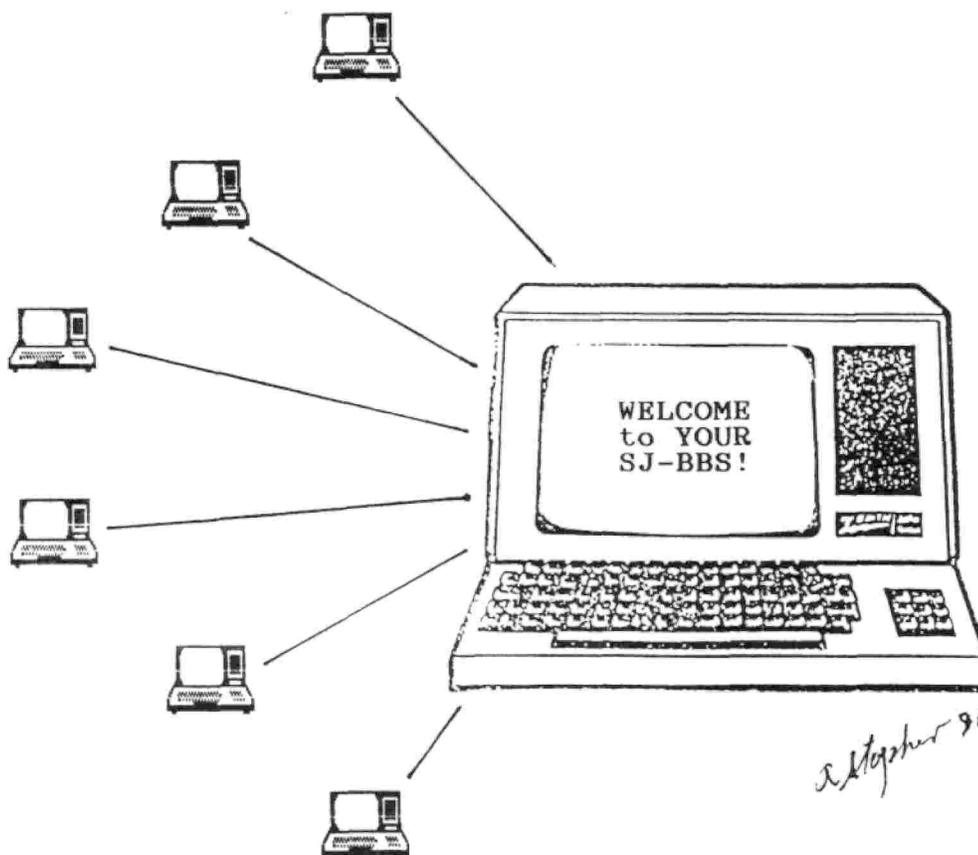
Volume IV, Number 8

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THE SJ-RBBS IS COMING!

SEE PAGE 7 FOR STORY!!



SEBHC JOURNAL

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The Readers' MAILBOX

Dear Lenny,

Just got my Jan 1989 issue (that's what it said, but I think it's 1990) of the JOURNAL and realised that both the Nov 89 and Dec 89 issues you mailed on Dec 20, 89 were never received by me. Could you please send replacements?

I've dumped all my 8-bit computers but [still] enjoy the SEBHC JOURNAL and will continue to try to answer hardware questions. And I still have my manuals. Hope to send some tips shortly.

BRIAN L HANSEN

315 Roast Meat Hill Road, Killingworth, CT 06417

[Thanks, Brian, for keeping in touch! Too bad you didn't get those issues, but your replacements are on the way. We're having a difficult time here keeping up with all the non-JOURNAL demands on our limited (24hr day) time. As the old saying goes, "If I were twins I'd have four times the trouble I now have!" We're working very hard to get this month's edition out to the P.O. together with the Feb edition--it wasn't done until 3-Mar! In a way this helps because we've lost enough subscribers (one even had the nerve to up & die on us!) that we must send about 7 copies to ourselves (OCCUPANT) to make the bulk-mail minimum. Not losing you as a subscriber (and associate editor) helps tremendously with that.... -- ed]

Dear Lenny,

Thought I'd write and let you know that I'm still breathing and well. I've been busily puttering around the shop, installing and servicing radio equipment, but I have finished the Nov, Dec, and Jan editions of the JOURNAL. There has been quite a bit going on inside those covers...quite a bit of how-2 and lots of reference information. [You're doing] an absolutely great job! Here's wishing you and the JOURNAL loads of success in the last decade of the 20th century.... [Romans had no zero, so 1991 is the first year of this century's last decade! -- ed]

Recently I linked up with Henry Fale's QUIKDATA bulletin board (BBS phone 414-425-4345, evenings after 6pm CST) and downloaded some info on QD's new or discounted stuff they have for the H/Z computers. I noted in QD's BBS "Current News" item that ZDS is at it again! This time ZDS have dropped all independant H/Z dealers because some dealers do mail-order business. Hope that we don't lose QD's support because of ZDS's raw deal!

Another note: Attached is a software list of items which don't match my needs. If you'd like to add them to the JOURNAL's inventory, I'm willing to donate them for sale, the proceeds of same would go toward the "SEBHC BBS" fund. I've

been house-cleaning and could really use the space this stuff takes up!

Know you're busy too...gotta go now!

ALLIE C LINGO, P O Box 188, Dierks, AR 71833-0118



[Hey, Allie! Thanks for keeping us informed! Regarding ZDS and their kookie top brass, obviously they've been outside in the Chicago smog too long and it's affected those few brain cells they have which still click. Or, maybe they're trying to kill off ALL popular respect for ZDS's products?! There's no accounting for what passes for constructive thought amongst the brass hats! Now about that software--sure, send it along! Our other subscribers surely will find something we need, and we definately need cash to keep us going on the BBS project. I've checked out that batch of BBS software our friend, Bill Hall--former A+SQR+HUG member--so kindly donated to the SEBHC JOURNAL late last year. It's a pretty straight-forward package

for our H120 and I believe it could be up & running about the end of April. I'm thinking that we could turn the system on every Friday at about 9pm (Saturday, 03:00 GMT) and let it run until sometime Monday morning, say 7am (13:00 GMT). If any of our subscribers have suggestions on how to go about setting up a members-only SEBHC-BBS, please write us! We'll be printing full details of our final plans Real Soon Now in the JOURNAL; keep tuned! -- ed]

[Hey, Allie! Since talking with you and writing the above answer, I received the software you talked about. Thank you Very Much! Once upon a time I bought a copy of TEXT from Ray Dotson but have yet to use it. Also bought an HDOS version of the CP/M SQUEEZ utility from Ray. (I think it uses the Hamming code to compress ASCII files and thus conserve disc space.) Since I've often heard of REACH but have never used it I may try it out on GENie or CompuServe Information Systems (CIS) Real Soon Now.... By the way, a telephone solicitor called me the other day and talked me into trying out PROTOGIE for 30 days at no cost. And if I like it I can then subscribe to it for real, or forget them--at no cost for the 30 days. Since I do most of my work on our Classic Computers, using Vintage Software, I don't think I can give it much of a try-out, especially since it's intended to work with ibm or compatible boxes. On the other hand (or keyboard, if you will) I could try it on the H120--if I can figure out how the Weltec modem works on a single phone line with a two-line phone cable! Maybe I'll try a different extension phone cable--that may do the trick.... Let you all know what happens in our next issue! -- ed]

---<<[8]>>---

Our "ASK RICK" Column

by
Associate Editor
Rick Swenton, Bristol, CT

Hi, Rick,

Y'know, I have a bad habit of hollering before I'm hurt sometimes. Well, I STILL hurt, but I did find out a few things on my own!!

Just as I was going thru the MAKEBIOS procedure for the second time (with negative results, I might add), I received your latest letter. It confirmed what I had pretty well dug out of the Heath CP/M manuals on my own. Hence my above statement. Only problem is that I can't get that d@## MAKEBIOS thing to finish the job.

Al Bjorling sent me some info about a week ago which got me to looking further and studying the manuals. The Heath manual for CP/M version 2.2.03 is--as you know--practically worthless for someone who don't all ready know how to handle the system. So, having been given (can you believe it?) the manual when Heath so graciously sent me the distribution discs for version 2.2.04, I started perusing it. I found that someone had really done a job on it, and it was almost understandable--even for me.

Using the instructions in the 2.2.04 manual and my old 2.2.03 discs, I proceeded to attempt making a system for the older version. Everything went fine until that stupid MAKEBIOS came along. The first time through--after getting crosseyed from switching discs over a hundred times--the thing went sour, crashing with a "PHASE ERROR" message! Next trip, it balked after the second ASM B:AAZ, printing "OUTPUT FILE WRITE ERROR". Third time, the same thing!

Then I formatted a set of discs, copied all three distribution discs (what a procedure!) and started all over [again]. I got through the seventy-five B/C switches, then got the phase error again. It came back to MAKEBIOS B:3 C:, and then "ERROR IN EXECUTION OF MAKEBIOS". What a pain.

Back to the '03 manual, but all it says is to follow the disc instructions, which exactly I was doing. Infamous is [almost] right; useless is more like it! What do I do now, daddy?!

Thanks for the WordStar info. I want to try that some day when I get a moment. I wanted to get my second H89 up & going with CP/M 2.2, and start using NZCOM on it, as well as try to get ZSDOS installed on it; I doubt very much that I could use ZSDOS with CDR version 2.91. It's too bad that CDR the BIOS is so big as it allows for quick making of new bootable discs without going through all the above macinations. I guess that's how it got so large--all those added conveniences....

One more question: According to the Heath configuration manual and the 289-37 controller manual, "all drives connected to the 289-37 should be of the same type--either 48tpi or 96tpi". Seems to me I read somewhere that you could mix them using that controller--yes or no? If 'no' I have to decide which I want to use and get at least one more.

So all I have to do now is get that fool MAKEBIOS to work, and I can use the information you gave me about the MOVCPM utility. Hope I get to that point before long, this thing is getting on my nerves. Thanks for th offer to do the job for me--I really appreciate that! Al also made a similar offer to help me. I really wanted to use the extended density option of '03's FORMAT utility because Pet Shkabara seems to think that's better than the '04 version's FORMAT.

Anyway;, if I [ever] get to the MOVCPM point I will surely need your input, as the manual doesn't say anything about the problem you've described. [There would be] more hair torn out if I hadn't known about it. What's your opinion, version '03 or '04--any major difference than [the FORMAT] point mentioned above?

Incidentally, Al mentioned that you are also a [radio] HAM (I seem to recollect your having said something about that in one of your SEBHC [JOURNAL] letters--or somewhere. Greetings from K6MAC, originally W7INH.

I doubt that you are very active [as a ham] what with work and all the characters such as me bothering you with a million stupid question. [But, if you are] let me know; I have a KLM beam [antenna], and can get out on 10, 15, 20, 40, and 80 [metres] single side band (don't do much CW any more). [Contacting you via ham radio] would be a quicker way to get my questions answered.

Al has been promising to get on but I guess he's overly busy too. He and I have been doing a bit of disc swapping. I inherited about three hundred 8-inch discs, along with an old parts-only type H89 from a Heath type who jumped ship a few years ago--went to work for ibm--after getting me saddled with the CDR system. There are hundreds of programs on those discs--most of which are no longer sold (their originators long since having quit the business, or gone to messy dos). Of the three hundred discs about 200 or more are blank, both single and double-sided. I run 'em through FINDBAD, and if there are no problems, give them a double format, and they seem to work ok. Most of them are made by ibm.

So, thanks again for the dope. Now that I've come to understand the fool CP/M system somewhat, I can't get it to work. Such is the life of an H/Z owner! I should [wish to] be saddled with a clone that has NO info available?!

Your treatise was simple enough that even I could understand it, and it will help--if 2.2.03 will [deign] to cooperate.

Afterthought: It would surely be nice if I could use my H17-1 [drive] on the H37 controller. That [too] would help a bunch.

Hope you don't give up on me for a while yet....

BOB EVANS/K6MAC

RICK'S REPLY:

Hi, Bob--

Your letter is filled with opportunities for more discus-

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More RICK SWENTON

cussion of a variety of related topics. I hope that I can answer each of your questions fully without randomly jumping around from one thought and topic to the next!

First, let's examine the basic differences between Heath's CP/M 2.2.03 and 2.2.04. In general, if you know how to run '.03 you can run '.04. But '.04 does have a few enhancements compared with the older version. The newer BIOS supports the H89-11 Serial/Parallel I/O board while '.03 doesn't. There's also a hardware difference between the standard 3-port serial I/O card and the H89-11, consequentially there are software differences in '.04's BIOS and CONFIGUR.COM which was changed to support the H89-11 board. Next, '.04's BIOS was rewritten with longer H37 routines which are now more forgiving of errors, re-testing six times before flagging read errors. The older version was more strict, re-testing only three times. Note that '.04 DOES support H37 extended density, but its' FORMAT.COM doesn't! [Pfui! Why can't people leave well enough alone?! -- ed] Version '.03's FORMAT formats discs in extended density but its' sign-on screen doesn't show it. You must answer the question, "(S)ingle or (D)ouble Density" with an 'E' for extended density. There's a patch for that which was published in the SEBHC JOURNAL, Vol III, No 1, page 4. A patched FORMAT prints all three choices in its' sign-on message. [Note: There's a bonus with Extended Density-FORMATED discs; they can be read and written to in H/Z100 drives which can not be used to Extended Density format soft-sector discs! -- ed]

About the question of H37 drives having to be all the same type, I searched my Heath documentation diligently and found that statement in the Configuration Guide. Somehow I seem to have overlooked it! I was surprised to read it because I had been mixing drives without problems. Looking back, I found that the BIOS had been written to accommodate the old Wanco and Siemens drives which needed a full second to come up to speed and go on-line. Today that's no problem as most drives are usually ready in a quarter-second or less. The only exception is the newer Tokyo Electro-Acoustical Company (TEAC) drives which may be classified as "slow to be ready" (about one second). But even that is no problem because the newer '.04 BIOS error-recovery routine usually catches errors and gets past them during spin-up. I've never had any trouble mixing drives on the H37. I must caution you to make sure that there's only ONE line-terminating resistor pack installed and that it's located in the drive farthest away from the H37 interface card.

High capacity (96tpi) drives are known to have problems if installed inside the H89 cabinet if inadequately shielded. Because their read/write heads are perforce smaller than in 48tpi drives, head read current is much lower. This means any Electro-Magnetic Interference (EMI) radiated by the terminal horizontal flyback transformer and switching transistors will jam drive signals. This isn't a problem with an H/290 because the drives are well shielded by a newer, re-designed box-like mounting assembly.

If you want to be sure of your H37's reliability, don't

forget that soft disc errors are counted and stored in memory. (Soft errors are saved in different places in the two BIOS versions.) HUG's ERROR.COM utility displays error-counter contents when called. Normally the error count displays zeros, but if not it's time to investigate. I've reworked that program to automatically run under both CP/M versions and report BOTH H17 and H37 soft disc errors. Let me know if you're interested in it.

Now let's get on with your MAKEBIOS problems. Not having used MAKEBIOS for many years, I'm a bit rusty--together with some friends I converted the original BIOS.ASM file into Z80 language and began heavily customising it. The version we now use is configured during the assembly process, and BIOS.SYS is created with one assembly and linkage. But to do this it's necessary to purchase an SLR Assembler and Linker.

Here's what's contained in the distribution copy of MAKEBIOS.SUB (this is from version 2.2.04):

```
$2MAKEBIOS $21 $1
ASM $2BIOS.AAZ
REN $2BIOS.HX0=BIOS.HEX
$2MAKEBIOS $22 $1
ASM $2BIOS.AAZ
REN $2BIOS.HX1=BIOS.HEX
$2PREL $2BIOS $1
$2MAKEBIOS $23 $1
```

Let's try running this manually, a step at a time so that we can see when a problem occurs, and more importantly WHERE it happens. Assume that we have two drives, A: and B: and that we've put ASM and PREL on the disc in A: and BIOS.ASM and MAKEBIOS.COM are on the disc in B:. We'll use the imaginary drive C: to accept our new BIOS.SYS file.

Start by typing B:MAKEBIOS C:1 B:. When you get the BIOS menu, select option "E" for H17 and H37 drives. This part of MAKEBIOS will actually write some information into the BIOS.ASM file to specify the drive types.

Next, type ASM B:BIOS.AAZ. The CP/M assembler will create BIOS.HEX. Now rename BIOS.HEX with the command REN B:BIOS.-HX0=BIOS.HEX.

Now type B:MAKEBIOS C:2 B:. This will change another line in BIOS.ASM so that the next assembly will be addresses to start 100H higher in memory.

Assemble again with the command ASM B:BIOS.AAZ. The CP/M assembler will create another BIOS.HEX. This one we rename REN B:BIOS.HX1=BIOS.HEX.

Now we have two BIOS hex files: BIOS.HX0 and BIOS.HX1. We use PREL to convert them into a relocatable file. The addresses in BIOS.HX0 start at zero. The addresses in BIOS.HX1 start at 100H. PREL compares the two files byte by byte. If the bytes match, they are not address-dependent. If the bytes differ by 100H, they are address-dependent. PREL keeps a table of all the bytes and writes that table to the end of the output file it generates. This is how one BIOS.SYS can be loaded anywhere in memory. The BIOS loader

"ASK RICK" end / ELSEWHERE STUFF

looks at the byte table (the relocation bit map) and determines if it needs to add a constant to a byte or leave it alone and load it as is.

Type PREL B:BIOS C:. This will create BIOS.PRE on drive C:. We're almost finished. BIOS.PRE is BIOS.SYS but without the BIOS loader program inside.

Type B:MAKEBIOS C:3 B: This will cause MAKEBIOS to write the BIOS loader into the BIOS.PRE file and rename it to BIOS.SYS.

YOU'RE DONE!

I only hope I have my drive letters (source, destination, etc.) correct or you may be pulling your hair out in frustration.

PREL has a known bug which limits it to creating BIOS.PRE files no larger than 16k (one CP/M extent). It means that if the resultant BIOS.SYS file is going to be larger than 8k, PREL will generate a PHASE ERROR. Usually, only large custom BIOS.ASM files will cause this error. H17 and H37 combined in one BIOS should be under 8k. Peter Haas discovered this error years ago and printed it along with the fix in the BUSS newsletter. [If necessary, we can look it up and supply you with a photocopy. -- ed]

An OUTPUT FILE WRITE ERROR is generated from ASM and usually indicates a full disk.

An ERROR IN EXECUTION OF MAKEBIOS is a catch-all error and is designed to warn you of the least little thing which may make your BIOS.SYS file corrupt or defective.

On the Ham Radio questions, yes, I am one. I was licensed as a sixteen year-old Novice in 1970 as WN1LMV. As WA1LMV, I hold an Advanced Class license. I have never been that much into the low bands (shortwave). I do have several older tube-type HAM and general coverage receivers to complement my old radio collection but right now I don't have any shortwave transmitters. Almost all of my hamming is done on the VHF/UHF bands where I run a repeater here in central Connecticut. The repeater operates on six meters (52.01/53.01 MHz) and in tandem with a UHF system (442.925/447.925 MHz with 110.9 Hz PL). You are right about not having time to HAM it up. There are so many things I want to do and so little time to do them.

And then there are the little ones ... girls ages 4 and 7 ...but that's another story.

Good luck and keep me posted.

RICK SWENTON, Bristol, CT

[Rick has done his usual bang-up job of answering a reader's specific questions, in the process giving readers a pretty good understanding of what's happening within their operating systems. Not only the WHAT, but the WHY as well! The JOURNAL ran a MAKEBIOS how-2 article by a former subscriber--Ross Towbin--some time back, but it was rather similar to a standard peanut-butter-cookie recipe-type article. Rick's MAKEBIOS coverage is much more thorough and professional. MANY THANKS & KEEP 'EM COMING, RICK! - ed]

The SEBHC JOURNAL routinely exchanges courtesy copies with other newsletters. We sometimes extract quotes (editing to fit our page layout as and when necessary) from these sources and print them for our subscriber's benefit. Here's a condensed, pessimistic tidbit from the Nov '89 edition of San Diego HUG's DUP & DUMP:

"EIGHT-BIT EXCHANGE by Al Brengle, Editor

"For some time now I've wanted to start a new column in DUP & DUMP. Originally I intended the column as a kind of 'blue book' for eight-bit hardware. [To get some ideas] I bought a 'Computer Blue Book' published by the National Association of Computer Dealers (NACD). Each semi-annual issue was an inch thick, yet--though I studied it carefully--I failed to find anything in it that I didn't already know! [And] it appeared to be written so smoothly that a used-car salesman could slide nicely right over to sharp-dealing in computers without having to shift mental gears or outlook. ("Used-car salesman: The kind of guy who uses the Kelly automobile 'blue book' to depress your trade-in's value and inflate prices of what he's selling. If your machine isn't listed in the blue book, 'obviously' its' value is zero!)

"I figure maybe I know as much as anyone else what used Heath hardware is 'worth'. [But] for starters, let's check some prices...A plain-vanilla H/2-89 with 48k RAM and one hard-sector single-sided 48tpi drive will currently bring about \$10 to \$15 in (in my judgement) a falling market. Sure --I've heard of them bringing more (say \$29); also heard of them being given away (value=\$00.00). I'm too painfully aware of what they cost new, and I can attest that (unlike an automobile) the only parts prone to wear out are disc drives, keyboards, and occasionally a CRT burns out....

"Here's my rationale for the above valuation: A bare-bones monochrome peesee w/256k RAM and two 360k floppies sells for around \$500 [with DOS]. Auto junkyard operators (euphemistically called 'automobile recyclers') have a basic rule which states, 'Used hardware in good condition will sell for about 1/2 the current price of a new replacement'. Simply put, used equipment must be a *TREMENDOUS* bargain or most people will buy new. Thus the [resale] value of a peesee or functionally-equivalent used computer is about \$250.

"The replacement-parts costs for your working, completely-upgraded H/289/90 runs about \$60 for a 2-sided 48tpi drive and a like-new soft-sector controller cards goes from \$200 to \$150. So one H/289 drive and controller card cost more than a 2nd-hand peesee clone. Never mind boatloads of software, an '89 can't duplicate everything the peesee clone does....

"Sure, every piece of hardware--used or 'obsolete'--has some basic value. And I'll be delighted to hear from anyone who can help improve our H/289/90 pricing and evaluation structure. Write me, Al Brengle, D&D Editor, c/o San Diego Heath User's Group, P.O. Box 33046, San Diego, CA 92103-0340. Many thanks!"

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Make Moola With Your Micro

MAKING MOOLA WITH YOUR COMPUTER
[EOF]

by Contributing Editor A. Stapher

Thus far we've given you a number of general ideas and suggestions on how to make some cash with your computer. Now we'll give you a couple more definite scripts. If you try one (or both) and something works profitably for you, please write up your experiences and send them in to us for publication. Our other subscribers certainly will enjoy reading about your trials, tribulations, and triumphs!

SPARE-TIME WRITING

Unfortunately, most commercial computer magazines have dropped anything pertaining to older 8-bit machines. But if you are diligent and imaginative you should try writing semi-fictional technical articles which will not only entertain readers but educate them as well.

We do not think it is a good idea to write and submit an outline to a publication's editor UNLESS it is asked for. When submitting anything be sure it's typed double spaced, with a full one-inch margin all around. This makes it easier for the editor and proof readers to prep your article for printing. Put the page number, article name, your name, and address in the upper right-hand corner of each sheet, including page one. This helps identify your submission if it is "accidentally disassembled". Also include a self-addressed return envelope with correct postage on it.

Many publications now are quite willing to accept manuscripts in ASCII format on floppy discs, either 5-1/4 or 3-1/2 inch. Phone or write and ask if they do, and what format they accept (of course, most want everything peesee compatible). Also sound them out about your submitting text via modem and if they do, get FULL details. Modem transfer is much better and quicker than the Postal Service. Also, most publications have a writer's guide free for the asking; get one from every publisher you contact. Do not, under any circumstances, submit the same article to more than one publisher at the same time! Understand that most publishers buy all rights to your article. Go to the local library, ask for and read references on copyright law if a contract has been hinted at BEFORE you sign anything!

There are many types of articles you might consider working on. Novel microcomputer applications make good material. Describe how you or someone you know are using computers in the home or at work. Short programs, or programming techniques you have developed can be the seed for profitable articles. It doesn't have to be all about computers! Fiction, or interesting computer user's profiles are good. Tutorial articles on various applications of personal computing are salable if well done. Try developing new and imaginative teaching approaches for this kind of story.

Let your imagination run barefoot in the grass but carry a notepad and pencil to jot down any ideas stirred up....

MAKE YOUR "SURPLUS" EQUIPMENT PAY ITS' WAY

Recently, while shopping at our local supermarket I paused at the community bulletin board the store maintains inside the entry-way. Customers are encouraged to tack up personal ads of every type imaginable, such as, "Needs a good home: Adorable kitten, playful, trained, loving, tiger-style upholstery--Phone xxx-xxxx"!

After a brief chuckle, I browsed onward and found this imaginative listing: "Rent, Rent-to-buy, Buy Outright! Classic Computer, Letter-Quality Printer, all with Vintage Software to Fit Your Specific Application. From \$50/month. Negotiate with 'Shelly' any time after 6pm, xxx-xxxx."

That's the best idea I've yet seen! But it has an inherent problem if your is a computer-saturated town with many university pupils and students: Everybody, but *EVERYBODY* wants a peesee! If I were to try something along this line, I'd also print up a few reams of one-sheet "FREE, TAKE ONE" flyers and put them in every high-foot-traffic location imaginable. The flyers must be FUNNY and ENTERTAINING but filled with information about what you're offering.

Include phrases such as, "Reliable, easy to operate machine", "Software the average first-grader can use", "Your choice: daisy-wheel printer or Near Letter Quality dot matrix printer", "Modem and communications program lets you access school mainframe at any time", "We will deliver, set up, and provide hands-on instructions if desired", and so on. Do remember to include your name, phone number, and hours you accept calls. (Even collect calls if you can afford it.)

If any caller insist he or she want an "ibm compatible", "apple", or "mac", point out that you don't carry those brands, but that one system you have does text, scientific and financial computation, and even basic desk-top publishing. Also that you have systems which can do other useful things. Never try to pressure anyone, but diplomatically explain you are providing folks with a chance to SAVE money by NOT being forced into buying a computer. Carefully explain that you'll give them a working demonstration of your rental system(s) at your place (then, if they're not satisfied they won't feel cheated).

This also shows people that you are really trying to help them and insures that you'll have at least one operating system ready to go at a moment's notice. CAUTION! DON'T say anything about other equipment you may have "in the back room". This makes you sound like a junk dealer. Also, don't badmouth the ibm freaks, no matter how much you dislike them! Don't volunteer prices; wait to be asked, and then be specific. Keep a printed price list for the systems you're offering handy. If someone's presently using one of your systems, arrange to use that person as a reference, but DON'T mention it unless specifically asked--this option can easily be overworked.

If you correctly prepare yourself and equipment you should soon be making money and gaining an enviable reputation. On the other hand, if you go off half-cocked, it's on YOUR head!

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The JOURNAL'S CATALOGUE Page

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

Item	H/Z cat #	Description	Price
SJ-1	EC-1101	Programming in FORTRAN	* 39.95
SJ-2	173-57-1	MICROSOFT FORTRAN v3.4 (demo)	* 39.95
SJ-3	173-66-1	Programming in COBOL	* 29.95
SJ-4	173-58-1	COBOL-80 v4.0 Demo w/documents	* 29.95
SJ-5	EC-1110	Programming Microsoft BASIC	* 29.95
SJ-6	HMS 837-1	CP/M MBASIC-80 softsector (wty)	* 39.95
SJ-7	HMS 817-1	CP/M MBASIC-80, hardsector "	* 39.95
SJ-8	173-56-1	MBASIC-80 (CP/M) demo w/manual	* 29.95
SJ-12	173-60-1	Softstuff CPS modem pgm (demo)	10.96
SJ-13	173-67-1	"Micropro" SUPERSORT for Wordstar	29.95
SJ-14	173-91-1	M-Pro MAIL MERGE w/warranty	29.95
SJ-15	HDR-837-3	M-Pro DESPOOLER w/warranty	29.95
SJ-16	173-201-1	MICROSTAT database wty, manual	49.95
SJ-19	HRS 817-37-1	Peachtree GENERAL LEDGER	39.95
SJ-20	HRS 837-37-1	Peachtree ACCOUNTS PAYABLE	39.95
SJ-22	173-61-1	Clark GENERAL LEDGER (PT equal)	21.95
SJ-23	173-62-1	Clark INVENTORY (PT equal)	21.95
SJ-24	173-70-1	DATASTAR (w/warranty)	21.95
SJ-27	SF9110	MYCHESS w/wty, manual (1 only)	19.95

- 1 - Prices include shipping inside continental U.S.A. only.
- 2 - We WILL NOT accept opened returns.
- 3 - All "Demo" software packages work EXACTLY as warrantied versions except manual pages are red over-stamped. (They're readable through red cellophane.)
- 4 - Some programs may not work on non-Heath machines, but usually can be patched to run ok.
- 5 - If requested we'll convert between hard- and soft-sector formats, between H/Z 5.25" and 8" formats (KAYPRO ss, sd 5.25" discs on special order) at \$5 each 5.25" target disc. Original distribution disc(s) will be included with converted discs. (Caveat: Some Heath Terminal escape codes aren't Kaypro 8-bit-machine compatible.)

Contact Gus Bakalis at D:KUG.DOC, 313-755-2060, or L Geisler at SETHC JOURNAL, 313-662-0750 for more information. Note: Profits from any software sales made thru D:KUG.DOC go toward D:KUG.DOC's operating expenses.

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