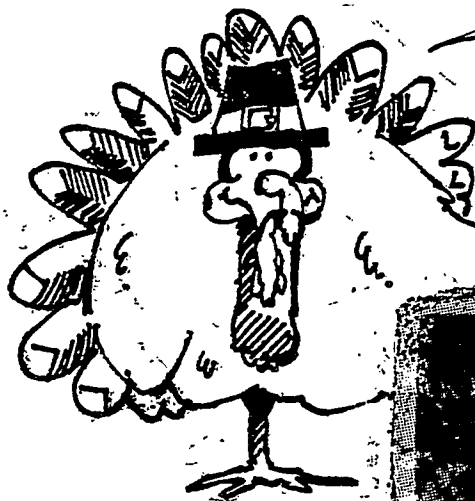


SETHO JOURNAL

Volume 1, Number 4

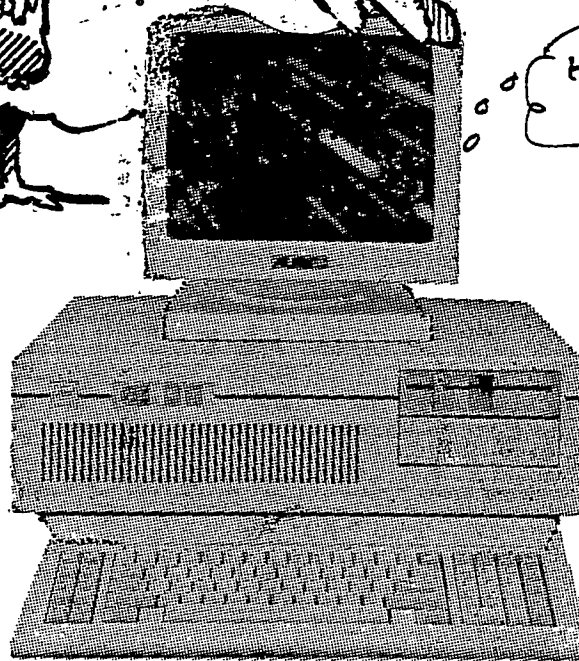
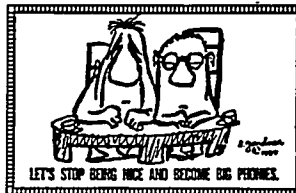
\$2.50 a copy, \$12.50 a year

November, 1986



MEET Our "City Cousin" - The only turkey who needs a Clown Spokesman!

He's got a mean BYTE!



KLAKITY
TAP
KLAK

Whirrrrrr...
Klunk!
THUNK!

Which came first?
The clown, or the
hamburger?

That clown won't
never sell as
many as Ronald
has! HAH!!

Besides, live
turkeys are
happier than
stuffed ones!



a. Staphen '86

LETTERS, ETC.

"Dear Sir:

It seems as if us 8-bit computer users are rapidly being flushed down the drain to oblivion. I believe this because of the terrible response to my advertisement of CHECKBOOK MANAGER DATA BASE software in the latest Buss Directory.

I sold only one copy!

CHECKBOOK MANAGER is a carefully-designed program and will provide years of valuable service to its purchaser.

But advertising an 8-bit computer product in magazines aimed predominately at 16-bit users is just a waste of time and money. I hope something good will happen with your JOURNAL; maybe we can convince people that 8-bit computers are still very much alive and that there are vendors still providing good products to those who otherwise now feel they've been abandoned.

Russell M. Spencer"

Russell, you hit the advertising nail right on its pointy little head! One "H/Z-Oriented" publication recently surveyed its' readership about what type computer they owned and were using. Of those who responded, the majority were still using H-8s and H-89/90s! The remainder were roughly evenly divided between newer Zenith 16-bit clones and H/Z-100s. Obviously the magazine is thumping their drum to attract 16-bit software and hardware vendors at the expense of 8-bit'ers.

Publishing a "slick" magazine takes more money than subscriptions provide, so they're charging roughly \$1k for a full page. If you were to place a quarter page ad in their next issue at about \$250, you'd have to sell over seven \$39.95 copies of your software just to pay for the ad. And you still haven't met production costs! To make money you'd have to sell 10 or more copies! Because the main editorial thrust is concentrated on 16-bit articles, most subscribers would never see your ad!

Hope you'll have better luck with us Russell!

"Dear Mr. Geisler,

I enjoyed the first two issues of the SEBHC JOURNAL. I hope you receive enough interest from H/Z 8-bit owners as well as paid subscriptions so you can continue publishing. I'd like to see Zenith continue support of discontinued products by providing upgrades and enhancements. A letter-writing campaign to Zenith from H/Z 8-bit computer owners certainly wouldn't hurt and might result in some positive action.

You're off to a good start; I wish you continued success in your endeavor!

James O. Hamilton"

Thanks for the nice comments and valuable suggestion! Let's start sending ZDS those cards and letters NOW!

"Dear Len,

I too, am committed to sticking with my H-89s and am eager for a newsletter like yours that is specialised for 8-bit computers. It's discouraging to have to wade through other magazines 16-bit reams in order to discover an occasional useful 8-bit nugget. Please send me a subscription to the SEBHC JOURNAL and bill me for it.

Terry Hall"

Terry, your subscription blank has been mailed. Hate to tell you this, but we're working so close to the vest that we can't afford to fill subscriptions first and bill later! Also, many others who saw the little blurb in H-SCOOP (thanks, Henry!) are asking for copies of issue #1. Unfortunately they're all gone, but I'll be delighted to provide reprints of any issue at \$2.50 for each copy ordered. Please make cheques payable to L. Geisler rather than the JOURNAL or PES as the bank is unfortunately giving me static about those names!

"Dear Len,

Just got word of your organisation from Ron Strong, a fellow OMAHUG member. I've been running a continuously-upgraded H-89 for nearly seven years now and have NO plans to retire it in the foreseeable future. Why? It still does what I bought it for!

Given that Heath discontinued the '89s about two and a half years ago, I am pleasantly surprised that a good number of 3rd-party vendors are still producing hardware for it. Although CP/M is alive and reasonably well--no thanks to Digital Research--software sources for HDOS have all but dried up, and hardware replacements are virtually impossible to get. I'm worried that insurance can't replace something which is no longer being made if something catastrophic happens to my computer.

In any case, could you send me information on your group; we 8-bit'ers have to band [and stick] together!

Kirk L. Thompson"

Kirk, I hope you've subscribed to the JOURNAL by the time this is printed. People like you are the reason we started this endeavor in the first place!

"Dear Mr. Geisler:

Thank you for the opportunity to advertise our software in the SEBHC JOURNAL. We like the CP/M market, it is where CompuMagic got its start with a program called MANYKEY for the Osborne 1. And we continue to write software that we use ourselves to keep our own CP/M machines working as well as they can.

But we see a disturbing trend. Most CP/M machine owners are not buying new software. [cont'd next page]



"My machine works OK, and what can you expect from a CP/M system anyway," seems to be the prevailing view. That attitude will eliminate many CP/M software suppliers, as we can't continue to spend advertising dollars and time to reach those few people who are willing to invest a little time (and money).

One of our most excited customers this spring was an H-8 owner who'd "never seen programs like these" for his machine. The programs are out there (CompuMagic isn't the only company producing them) but they won't be, without more support from people like those reading the SEBHC JOURNAL.

Marcia R. Dresner"

Right on, Marcia! We of the Society of Eight Bit Heath Computerists have banded together for the purpose of slowing, if not halting entirely the unwarranted demise of H/Z 8-bit machines and worthy vendors such as your firm. The H/Z 8-bit machines are not going the way of the Edsel if we can prevent it! Hence our policy of printing advertisements free.

A WORD FROM THE EDITOR:

Got a problem? Have something to gripe about? Feel you've been "shafted" by a vendor? Have some praise for an honest vendor or something you bought for your 8-bit machine? Had an 8-bit article you wrote which you think was rejected capriciously by REMark or Sextant and want to see it in print anyway? Developed a program but have trouble getting it to run the way you had intended it? Have hardware trouble you need help with? Want to buy, sell, trade or give away computer stuff?

If the answer to one or more of these questions is "YES", phone or write us, or send a message to us on the HUGPBBS, CIS, The Source, or PLINK! The JOURNAL is here to help all perspiring H/Z 8-bitters!

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HOW TO SEND ELECTRONIC MESSAGES TO THE JOURNAL:

* On CompuServe (CIS) -- '8 HEATHUSERS' To: LEONARD GEISLER 72345,236, GENERAL INTEREST

* On The Source -- 'POST HEATH' or 'POST ZENITH' To: LEONARD GEISLER BDY074

* On HUGPBBS -- To: LEONARD E. GEISLER

* On PLINK (American People/Link, information 1-800-524-0100) -- To: OMS082 -- Note: Look for SEBHC General Notices on "PUBLIC AREA BULLETIN BOARDS" part of that service.

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FILE: AUTO TEXT A1 GENERAL MOTORS RESEARCH LABORATORIES

Subj: Programming Languages as Automobiles

Exp: 9 November 1986

The following appeared in the September 1986 issue of

"SIGPLAN Notices" (Volume 21, number 9):

Selecting a Programming Language Made Easy

Daniel Solomon & David Rosenblueth

Department of Computer Science, University of Waterloo
Waterloo, Ontario, Canada N2L 3G1

With such a large selection of programming languages it can be difficult to choose one for a particular project. Reading the manuals to evaluate the languages is a time-consuming process. On the other hand, most people already have a fairly good idea of how various automobiles compare. So in order to assist those trying to choose a language, we have prepared a chart that matches programming languages with comparable automobiles.

- | | |
|---------------|---|
| Assembler | -- A Formula-1 race car. Very fast, but difficult to drive and expensive to maintain. |
| FORTRAN II | -- A Model-T Ford. Once it was king of the road. |
| FORTRAN IV | -- A Model-A Ford. |
| FORTRAN 77 | -- A six-cylinder Ford Fairlane with standard transmission and no seat belts. |
| COBOL | -- A delivery van. Its bulky and ugly but it does the job. |
| BASIC | -- A second-hand Rambler with rebuilt engine and patched upholstery. Your dad bought it for you to learn to drive. You'll ditch it as soon as you can afford a new one. |
| PL/I | -- A Cadillac convertable w/ automatic transmission, a two-tone paint job, white-wall tires, chrome exhaust pipes and fuzzy dice hanging in the windshield. |
| C | -- A black Firebird, the all-macho car. Comes with optional seat belts (lint) and fuzzer (escape to assembler). |
| ALGOL 68 | -- An Austin Mini. Boy, that's a small car! |
| Pascal | -- A Volkswagen Beetle. Small, but sturdy. Was once popular with intellectuals. |
| Modula II | -- A Volkswagen Rabbit with a trailer hitch. |
| ALGOL 68 | -- An Astin Martin. An impressive car, but not just anyone can drive it. |
| LISP | -- An electric car. Simple but slow. Seat belts are not available. |
| PROLOG/LUCID | -- Prototype concept-cars. |
| Maple/MACSYMA | -- All-terrain vehicles. |
| FORTH | -- A go-cart. |
| LOGO | -- Kiddie's replica of a Rolls Royce. Comes with a real engine and working horn. |
| APL | -- A double-decker bus. Takes rows and columns of passengers to same place all at same time. But it drives only in reverse, and is instrumented in Greek. |
| Ada | -- An army-green Mercedes-Benz SS staff car. |



SOME RATHER ODD BITS

It's All In The Beholder's Eye!

The next time you blame your video display terminal for your headache or poor vision, consider the fact that you may be at fault.

According to researchers at the University of Calif. at Berkley, and the Lawrence Livermore Laboratory, VDTs by themselves have little to do with users' physical ailments. In tests on 35 volunteers at the university's lighting laboratory, researchers found that green, amber and white display screens have just about the same affect on users' performance and comfort. The same was true whether the rooms were lighted by incandescent, standard, or high-frequency fluorescent lamps.

Researchers note that people developing eye problems or chronic headaches are doing something wrong. Most likely users are sitting too near the VDT, setting its' brightness too high, wearing glasses not suited for VDT use or working in the glare of a window.

HANDY HOUSEHOLD HINT

Ever get ball-point pen ink on your favorite garment and then wonder how to get it off? Fret no more! Just use hair spray on the spot. After the ink dissolves, blot it up or wipe it away with a clean cloth or paper towel. NOTE: For washable fabrics only.

DOCTOR LEARY ANNOUNCES 'PSYCHO-ACTIVE' SOFTWARE!

-- "Heady" stuff for your ibm-pc! --

[Rather fits, don't you think?]

Dr. Timothy "Acid Head" Leary has recently announced a new software package he has developed for "pc" users. Called "HeadWare", it's supposed to put an operator into psychedelic communication with the computer "on a higher plane of existence, transcending time and space as we know it," according to Leary. [Wonder if you will want to rush out and buy a new ibm pc after trying out a demo copy of ole Acid Head's software at your friendly local ibm franchise's head shop!? -- ed.]

NEW PUBLIC BULLETIN BOARD

Save money & have fun!

A new public bulletin board was recently announced on CompuServe through private-accessed MCI Mail messages. It's "PLINK" (American People Link), 3215 North Frontage Road, Suite 1505, Arlington Heights, IL 60004, 800-524-0100. They're cheaper than other nets, \$4.25/hr Mon-Fri 6:01pm - 7am, Sat-Sun 24 hrs, and \$11.95 to 16.95/hr for prime hours between 7:01am to 6pm. All times are CST. No extra charge for 1200/2400 baud. Cheques, American Express, Visa and MasterCard. Sign up via 300 baud modem, toll-free, 1-800-826-8855. [Try it, you may like it! I do!]

Tell everyone you read about it in the SEBHC JOURNAL!

MECHANICAL NOTES FOR H19/H89 OWNERS

Keep Your Terminal/Computer Cool!

Heath's engineers slipped up when they designed the "grey box" by failing to take into account how hot the terminal and CPU board regulators can get. The terminal board is crammed so far back in the cabinet that air can not flow across the board's top. And in a "full house" H89, the blocked-off box fan can hardly breath!

There have been numerous articles in REMark and Sextant about how you can increase cooling in the '89, some of which involve drastic, expensive and irrevocably-ugly surgery on the cabinet top.

But nobody yet has seen that it's easy to reduce the internal temperature considerably through two very simple, inexpensive and unobtrusive cabinet modifications. The best part of this is that cabinet appearance and integrity doesn't get changed at all. Read on!

I suggest you measure the exhaust air temperature and make a note of it before proceeding with the following steps:

1 - Get four oil-free 24Tx10 hacksaw blades, "super glue" and some 3/4-inch wide masking tape. Stack the four blades together with the teeth all pointing in the same direction (toward yourself), then wrap the near end with tape so as to form a handle about four inches long. Fan out the blades at the far end and put a little super glue between their faces, then press them all together, forming a 1/8-inch wide rasp blade. (Clean up any super glue spills with acetone or nail-polish remover.)

2 - Remove the cabinet top, dismount cooling fan and mounting hardware from inside and save for reuse.

3 - Set top upright and stick a 3/4-inch wide strip of masking tape across behind the ventilating slots. Be sure tape is straight and flush with top's back edge.

4 - Lay top back onto something soft with latch pins facing away from you, taped edge down. Make sure of fan mounting post locations before proceeding.

5 - Insert hacksaw-blade rasp into a slot and carefully enlarge slot downward until rasp just touches masking tape. Use light but firm pressure while cutting and do cut straight down! Cut all the remaining slots except those abutting fan mounting posts.

6 - Vacuum up dust and chips, replace fan mounting hardware, and then secure fan so it blows INTO cabinet rather than out. If you like, colour cut slot edges to match cabinet paint, then reconnect fan and replace top in its normal position, completing the work.

Turn on power, wait about half an hour, then measure exhaust air temperature at the left-hand slots. It will be twenty to 50 degrees cooler than noted before slot modification. You will find regulator flanges beneath the fan are now cool to the touch, a VAST improvement!

Tell everyone you saw it in the SEBHC JOURNAL!

REVIEW

SOFTWARE REVIEW

by A. Stapher

Program Name: CHECKBOOK MANAGER DATABASE
 Vendor: Russell M. Spencer
 54 Bateswood Drive
 Waterbury, CT 06706
 Price/Payment: \$39.95, personal cheque or money order
 Description: An inexpensive CP/M database for management of home finances using the checkbook as the primary source of information for domestic accounting.
 Ease of use: Excellent (might convert computerphobes to computerphiles!)--needs only 1 drive
 Computers: H-8 with Z80 CPU card, or H-89/90
 Disc Format: Single-sided 40-track hard-sector only
 Instructions: Disc .DOC file. Eight pages of rather wordy text (see Comments)
 Installation: Quick and simple (see "Bummers")

Reviewer's Comments

Once I figured out how to install CKMGR, it was quite easy for me to transfer data from my cheque book into the database. It gives you more information about your finances in two minutes at the computer than you can get in two hour's worth of hard pencil, paper and calculator effort! There's the similar HDOS MBASIC program copied from REMark I've used for a couple years which I like, but it can't hold a candle to Checkmanager! In all, Checkmanager is a pretty nifty program for the absurdly-low price of \$39.95. But there are a few things about the package that gave me lots of trouble. I've listed them below.

Installation (CKCONFIG.COM) "Bummers" --

1 - There's NO WAY you can gracefully back out of CKCONFIG once into it except by hitting the BREAK key or doing a hard reset (SHIFT-RESET). Then you have to re-start from scratch because nothing got saved.

2 - The program is rigidly designed for exactly nineteen "accounts" categories which MUST be entered. If you have less than that number you are forced to fill in unused IDs with nonsense letters and "Blank" for descriptors. Not clearly spelled out in the .DOC file.

3 - Keyboard is locked; you can access only letters, RETURN and space bar--no dashes, punctuation marks, keypad keys or CTRL-C. Also not explained in .DOC file.

4 - Can't use lower-case letters for ID codes--MUST use upper case. Also, MUST use a capital for first letter of account name. NO numbers allowed--see 3, above.

5 - No call-up "help" file in the program.

6 - CKCONFIG has a primitive editing function to let you change ID codes and descriptors. But it won't let you re-assign a code to a different descriptor or edit just the descriptor without changing ID. Not explained clearly why in the .DOC file. Can it be fixed?

7 - When finished, CKCONFIG leaves a blinking block cursor on screen. Annoying, if you prefer the underline cursor as I do. This needs fixing.

Running it (CKMGR.COM) "Goodies" and "Bummers"--

1 - Attractive Main Menu graphics display. Tells you number of records on file. No carriage return needed on item number entry. I like that.

2 - Hardly need instructions to make data entries but a callup "help" display would be very nice (there's room if the .DOC file is rewritten).

3 - Any function chosen from main menu lets you break out without changing anything if you made a wrong selection. A very nice touch. Needed in CKCONFIG.COM!

4 - If you make any kind of error, the program gives an excessively-long blast of the console "bell" while displaying the appropriate error message, then returns to the error point for re-entry. There must be an easy way to shorten that annoying bell to just three or four brisk attention-getting beeps!

Conclusions --

I worked through several days of distracting interruptions to finally get Checkmanager running, but I feel the effort was worthwhile. This program does everything its author says, runs well and never crashes or trashes files. It won't let you make mistakes. You HAVE TO do what the program wants, not what you THINK you want to do. Some people might say it's an unfriendly program, but I don't, except for the configuration part and documentation. Those, I feel need a little more work.

This software obviously is the work of a master assembly-language programmer. I haven't tried looking at the code with SZAP yet, but it must be *VERY* compact to do everything in so little disc space. Hope I can do as well someday.

Recommendation --

If you're having trouble with your personal cheque book or you're starting or operating a small business this is just the software you need. For small business expense accounting, the limit of only 19 categories is probably something you'd have to use subterfuge to get around. But this efficient, inexpensive program does the best job I've ever seen! Buy it; you'll LIKE it!

Checkbook Manager Data Base

An Inovative Program

That Simplifies Work & Eliminates Tedium!

Here's the program you've been searching for!
AND at a price you can't afford to refuse.
With Checkbook Manager you can file cheques
by payee or categories you set up yourself.

You can easily correct errors, verify missing items,
and keep tight rein on all personal finances. Never be
left in the dark again; the program never forgets
a cheque--even if YOU forgot you wrote it!

ORDER YOUR COPY -- TODAY!

Send \$39.95, cheque or money order to:

Russell M. Spencer
54 Bateswood Road
Waterbury, CT 06706

for

Z-80 H-8 or H/Z-89 w/64k RAM & One
Standard 40trk Hardsector Drive

Soft-sector distribution discs available soon.

Read Program Review on Page 5.



SOFTWARE REPAIRMAN

Chuck Ott

It was just one of those days. I was late for work, somebody beat me to my favorite parking place, and there were no jelly donuts left by the coffee pot. Worse, when I got to my desk Harry was sitting there like an expectant pelican.

"Gail, where is the Figby report?" he demanded. "I told the boss we'd have them finished today at the latest!"

In Harry's vernacular, "we" meant "me". "Don't worry," I countered. "I've got it all on disk. Just let me clean things up a bit and I'll print the final report."

I fired up the system and had the disk booting even before the screen warmed up. As soon as the "A>" appeared, I typed in the command to start editing the Figby file. But after a moment, the message "FIGBY.TXT does not exist" appeared.

Hum. Wrong disk? Painfully aware of Harry's icy glare, I double checked. Nope, right disk. Yet a DIR command revealed no such file, only one ominously called "FIGBY.###". I poked around for a couple of minutes, but there was no trace of my last few day's efforts.

"Move over," he grumbled. "Looks like I'll have to bail you out again."

Harry was always fiddling with my machine. He thinks he's the office computer wizard. Actually, he's just the only one to have read the manuals. This is because he takes them all home with him and "forgets" to bring them back.

"I don't understand it," he said after repeating everything I did at least 3 times without success. "The file's there! I can type it, and rename it, but I can't edit it. What's the matter with this thing?"

"I told you it's been acting up lately," I said.

More specifically, I thought, it's been acting up ever since Harry had "improved" my disks again.

"Well, it's obviously a hardware problem," he declared, giving my computer a heavy whack on top. "Call Maintenance and get somebody up here on the double."

Well, I called. They said they'd send someone right up. Sure enough, before I even finished my coffee, in walked a guy with a plastic disk case in one hand and a lunch pail in the other. His appearance is certainly not what I expected. He was maybe 50 and rather overweight, with thinning blond hair and a droopy moustache. He wore thick soled engineer boots, blue-striped overalls, and of all things, a blue railroad cap.

"You're the repairman?", a skeptical Harry asked.

"Ya, hey sure ya betcha," replied the man with a thick Swedish accent. "Yust call me Sven. They say yuh got trouble wit yur system. Vell, ve fix er up good, ya betcha."

"I think it's a memory problem," said Harry. "Since you didn't bring any parts, why don't you just take this one downstairs and bring us up another one."

"Hold yur horses, sonny." Sven replied. "First ve check the diagnostics. You did run the diagnostics, didn't you?" he said, looking at Harry.

"Er, well no, actually," said Harry. "But see, I know these machines pretty well, and it looks like a memory problem to me."

"Oh, so ve got two experts." replied Sven. "Py yiminy, dey read a book or two and everybody tinks he's an expert. I ban got to verk twice as hard ven some fumble-fingers been tellin me my job. Forty years I been learnin dis stuff. Why I remember..."

"OK, OK, you're the repairman." said Harry. "So fix it already."

This is going to be fun, I thought. Anybody who calls Harry "sonny" can't be all bad. Sven sat down at the console, and pulled out his disks. He quickly started running a battery of diagnostics. While they were running, he noticed the scuff marks on the cabinet.

"Wot's dis? Hyuh been abusin dis machine?" he declared indignantly. "Ya, dey kick their poor dog around, and den

howl ven he bites dem. Dot's OK, boy." he says, patting the computer, "Old Sven vill take care of you now."

As if it understood, the message "ALL TESTS OK!" popped up on the screen.

"Ya he's a good boy, yuh betcha. So ve got software problems. Now ve take a look at your disks."

I handed Sven my disks and explained the problem. He booted them up, and sure enough, got the same results I did. He then loaded the debugger and started hunting around.

"Now look at dis! Somebody been tinkin around in da operating system. Vat's all dis stuff?"

"That's ZCPR", Harry said proudly. "I put it in myself."

"Yah, dat's fur sure. Yuh put in duh ZCP an left out the R. Who you tink you are, Gary Kildall?"

"But CP/M didn't have all the features we need."

"Sure, and hyuh t'ink yuh can do better dan yer elders. Py jiminy, if yah don't know wot you're doing, you better verk with those who do!"

Harry just glared and practiced his scowling and muttering. Sven hunted around a bit more, apparently without success.

"Ya, dis is more mixed up den my knucklehead brother-in-law." he finally responded. "Ve better use yur back-up disks."

"Here they are, but they're almost a month old", I replied sheepishly, "the new office policy says..."

"A month old! Py jiminy, I ban seen better maintenance on IBM systems dan dis!"

Harry couldn't resist defending the policy he had worked so hard to create. "But excessive backups are a waste of time. They use up valuable disks, add extra wear and tear on the equipment, and besides, the computers don't really fail that often!"

"Ya, so why am I here now? Py damn, you tink old Sven got nottin to do all day but clean up odder people's messes? Yust look at dis dusty screen," he said, staring closely. "Yuh probly got paper clips in da keyboard, an... bugs in the disk drive!" he said, chasing a spider out of the drive. "This job's gonna cost a bunch 'o money, you betcha."

"But Sven, isn't there anything you can do?" I pleaded. "We've just got to recover that data or the boss will have our heads."

"Vell now, don't you vorry, old Sven won't let yuh down. Yust get me a cup of coffee, a box uh blank disks, and some 3-in-1 oil."

"3-in-1 oil?" Harry asked.

"Yah, dis squeaky chair is yust driving me nuts."

"That does it," said Harry. "I'm calling Zenith."

Sven got right to work at rebuilding a new set of disks, and recovering the damaged files. He hunched over the keyboard, typing furiously, and singing softly to himself.

Harry returned with a dejected look on his face. "It only took fourteen trys this time. They said they're busy this week, next week's a holiday, and they don't work weekends. But they'll fit us in next month for sure, or maybe the month after."

Sven taps the keyboard with a flourish, and laughed triumphantly.

"Ah, hah! I tol' you I fix it up goot. All fixed, you betcha!"

Sure enough, the missing file was back. I loaded it into my word processor, and everything checked out just fine.

"That's great!" I exclaimed.

"Just what did you do?" asked Harry impatiently.

The repairman stretched, and got comfortable in his chair. Producing a pipe, he began filling it and looked like a man ready to launch into a long-winded yarn.

"Wasn't notting too bad," he began.

"You yust had the file system all muddled up. First I yust empty out da bit buckets. Den I get out the GOTO's dot I don't know where dey go to. Den I fix yur ZCPR so all da letters is in. Oh yah, den I unmix up all yur files an put dem back in the directory. Now I tell you yust how I do it. You know what a file cabinet is? Goot. Vell, the disk files is yust like your paper files. You gonna put files into it, an den take files out of it, yah? Well..."

At this point, Harry couldn't stand it any more. "Look, this is all very

interesting, but we really have to get back to work. Are you finished?"

"Vell, if you goonta keep up like you ban goin, I batter show you da whole chob or I be back real quick, I betcha."

"Oh, all right. What do you want us to do?" said Harry.

"It work real goot now." said the repairman, patting the computer fondly. "But no more cheap-chack patch-ups in da operating system."

"OK, I'll leave the operating system alone," said Harry reluctantly. "Now will you leave?"

"Yah, and you vill backup yur disks like a goot boy?"

Harry turned to me and said, "From now on, backup your disks at least once a week, or daily if you think you need to."

"Hey, an get a dust cover. Ve got enough bugs in da system witout 6-legged ones!"

"Done. Is that all?" said Harry stiffly.

"Ya you bet! It's been goot ta meetcha, and a pleasure for sure..."

"Excellent. Goodbye, and I hope we don't require the pleasure of your company again soon." Harry turned and walked swiftly toward his office.

I waited until Harry was out of earshot.

"Well," I said, "I'll bet he won't mess with my computer again. The plan worked perfectly. Thanks uncle Max."

"My pleasure, sweetie. I enjoyed it. Just let me know if he needs another treatment." Sven, the computer repairman left the office, softly whistling an Irish jig.

CodeWorks



"His keywords are shut up and get out of here."

INPUT INPUT FORM

FOLLOW INSTRUCTIONS CAREFULLY: Use Form 7 to input inputs into the system. Information input here will be used by the user to use the user's previously input inputs to generate the necessary updates. These updates will be updated according to the updated update codes as entered on Input Form 5. The user may use this form to input any desired input (see Appendix Q).

ENTER THE FOLLOWING ENTRIES:

- | | |
|--|----------------------|
| A. Company Code — As entered on Input Form 1. | <input type="text"/> |
| B. Remark Code — As entered on Input Form 6. | <input type="text"/> |
| C. Code Code — A three (3) digit code to identify this code. | <input type="text"/> |
| D. Description — Maximum 45 characters. | <input type="text"/> |

New Low Priced Products for both CP/M & MS/DOS computers!

TWIST & SHOUT!

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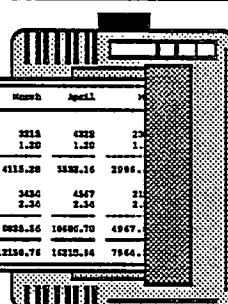
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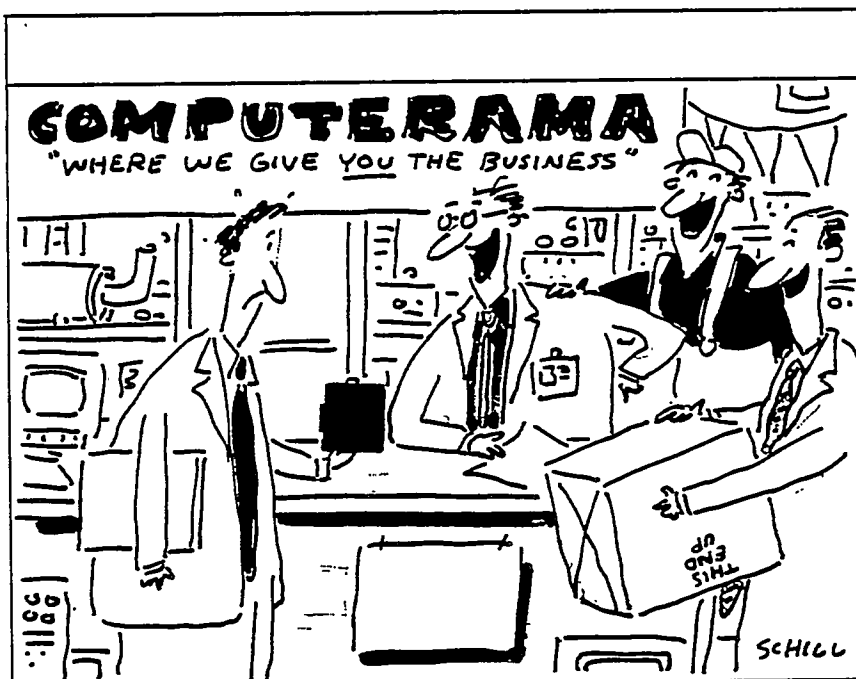
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* Read Program Review in December Issue *



"You want to make it do WHAT?!!!"

OOPS!

The H/Z89 has been around long enough that just about anything that could go wrong has been seen before. Many of the following hints have been published before. But maybe you're new to the H/Z89, or missed the earlier notices. Or if you're like me, maybe you just forgot, and a refresher course would be helpful. So here is a list of my 10 favorite "fixes" for the H/Z89.

1. Computer was working fine; now suddenly dead.

Make sure the "OFF-LINE" key isn't latched down. I've forgotten this so many times you'd think I'd have learned by now.

2. Computer "swears" at me.

When a known message turns into "fxfxxf xf fxf fxf" or "mllo**od", it means the CPU and terminal are at different baud rates. The "fxf" stuff usually means the CPU is at 19200 baud, and the terminal at 9600. Nonsense messages with extra line feeds usually result when the CPU is at 9600 and the TLB at 19200. You can get around this by going off-line and manually changing the baud rate with "ESC r L" for 9600, or "ESC r M" for 19200 baud.

3. Screen has a slight vertical "shake" or jitter.

I'll bet the Terminal Logic Board is set for 50Hz operation (or an Ultra-ROM is set for interlace mode). Check SW402 section 7; it should be set to the "0" position. This switch often gets hit inadvertently when replacing the CPU board.

4. Dark band moving slowly up the screen.

Bad bridge rectifier BR1, or the famous "french-fried connector" at P101. Check connector P101 at the rear edge of the power supply board, under the fan; there should be no yellow wires. If there are, cut them and reconnect to the orange wires (AC input) of BR1, at the lower rear corner of the vertical metal heat sink assembly. If this doesn't do it, BR1 is probably bad.

5. I put the power connectors on wrong. Now what?

If you power things up with the power connectors at P514-P515 on wrong, the computer will "pass" the smoke test (i.e. smoke!). Look for a trace that was burned open on the CPU board between connectors P514 and P515. If so, add a wire to replace it. Second, check the -12v regulator U568 on the CPU board. Luckily, that's usually the only harm done.

6. Overheating problems.

Lots has been written about coping with heat, from sawing holes in the case to adding fans. But unless you've added a LOT of accessories, nothing this drastic is really necessary. The hottest spot is the power supply heatsink, so it needs the coolest air. Mount the fan so it blows air DOWN. Be sure the power supply heatsink has the 3 black finned coolers installed like H/Z89-A's. Bend the top edge of the heatsink to the right about 1/2" (remove the power supply board screws while doing this). This puts the heatsink under the fan, where it gets some good from the airflow. Finally, be sure air isn't escaping around the edges of the top cover; it should be a snug fit, or sealed with a foam gasket.

7. Trouble booting from 80-track drives.

Check the monitor ROM at U518; if it is a 444-84, it should be replaced with a 444-142. The earlier part has a bug that gives it trouble booting from an 80-track drives.

8. Internal 1/2-height drives.

You can mount two 1/2-height drives in place of the full-height internal drive. Newer 1/2-height drives take about 1/2 the power of the original, so there is no extra load on the power supply. You need a crimp-on 34-pin edge connector, and a 4-pin power connector with terminals and wire. Crimp the edge connector onto the existing ribbon cable. Wire in the 2nd power cable just like the existing one. Drill two holes in the top of the disk drive mounting hardware, and mount the 2nd drive. With a Z89-37 soft-sector board, add a 2nd jumper at J4-J7 for the new drive. No software changes are needed. Voila!

9. Just added/removed my Z89-37 board; now no "Hi".

The Z89-37 installation requires that you remove U557 and U558, and replace them with a jumper and cable. When you remove a Z89-37, the chips must be put back. If you forget to do this, the computer "beeps" but displays no Hi prompt.

10. Unreliable disk operation.

Check for too many or too few terminating resistors. Each disk drive ribbon cable must have exactly 1 terminating resistor, preferably at the end of the cable. If you constantly re-arrange disk drives, try getting some higher-value terminating resistors. This way, accidentally using two won't kill the system, and having one with a higher value still works OK.

by: Lee A. Hart
366 Cloverdale
Ann Arbor, MI 48105

PROGRAMMER TIPS

BASIC DEBUGGING TECHNIQUES

SAVE THIS!

A useful "structured" method of locating and correcting MBASIC program malfunctions or "bugs". Commands are shown in upper-case *italics*.

BREAK -- function is tied to keyboard input. Type CTRL-C to stop a program (keyboard **MUST NOT** be disabled by program to use it). As soon as program stops enter next command, below.

PRINT -- a "direct command" in MBASIC which can be used to find what a particular program variable value is at moment program stopped.

STOP -- the STOP command placed anywhere in a program halts it when command is reached. Then you can use PRINT to examine variables. Because STOP is a statement, it usually is encoded in an IF test. For example, if your program seems to be acting oddly in a routine whenever X is negative, plug this code line in where it can test X's function:

```
(line number) IF X < 0 THEN STOP
```

If the program stops, you'll have a chance to fix this particular bug.

CONTINUE -- lets you resume program execution after a BREAK or STOP. If combined with STOP and PRINT command you can look at every cycle of a loop, examine its' variables and resume execution. Here's a typical application example:

```
1000 FOR I=1 TO 50:READ D
1010 GOSUB 10000'      Calculate A
1020 GOSUB 20000'      Calculate B
1025 STOP'            Here's our loop cycle STOP
1030 NEXT I
...
```

When run, the program will stop at line 1025, and you may PRINT D, A, and B to see if the two sub-routines are working correctly or not. If they are, type CONT<CR> and let the program cycle again, until you find a D which causes A and B to "bomb".

TRON -- this tool lets you follow a program as it runs. "Trace On" prints each line number as the program steps along but it produces gobs of line numbers, rapidly filling up the screen. Since printable parts of your programs are mixed with the numbers, TRON may obscure

legitimate program printout. To avoid this put 'TRON' inside the on a temporary line of a suspected bug, and 'TROFF:STOP' where you want to examine variable(s). This lists line numbers only within the 'bug area'. Type CONT to resume loop operation. (With CP/M MBASIC you can get a printout as well as the too-transient screen display by entering CTRL-P before running a program with the TRON-TROFF debugging tool--some HDOS LP.DVDs do it too.)

DEFINING A PROBLEM -- To properly debug a malfunctioning program, the problem must be well defined. You have to answer these questions as thoroughly as possible in order to effectively locate and correct the problem:

- * What does the program do?
- * When does it do it?
- * What was it supposed to have done?
- * What do you think it was supposed to have done?

If you can't answer these questions, you've lots of work ahead; reading through the program listing won't reveal many clues about what's wrong. And if you didn't write the program or the instructions (if any) are cryptic, or excessively wordy, you've a bigger problem! But if you can clearly answer any three of the questions, you're on your way! Defining it as thoroughly as possible often helps you view a problem differently, and often suggests a new approach or a different way to debug it.

DEFINING AN ERROR -- A program is a series of interlocking units or modules which individually follow this general pattern:

1. Sequential processing
2. Conditional (loop) control
3. Repetitive processing of loops

Here's a short program which uses all of the above:

```
10 INPUT Q
20 FOR K=1 TO Q
30 PRINT K,Q*Q
40 R=R+Q*Q
50 NEXT K
60 PRINT R
```

Lines 10 and 60 are sequential processing or initialisation commands, 20 controls a loop, 30 and 40 are repetitive loop processors. Classify your 'bug' according to the general pattern I've given above to help you find out where the bug "lives".

1. Sequential processing or initialisation errors. If a variable is not set correctly before execution of

TIPS continued

repeating statements, it may cause resulting fixed-amount errors, or the logic may not take major branches, as shown below:

```
1000 T=0:F1=1:W1=1
1010 FOR X=1 TO 50
1020 IF A(X)<0 AND W1=0 THEN GOSUB 1500
...
...
1500 W1=1
...
... (etc.)
```

Line 1000 calls for special processing when the first negative value of array "A(..)" appears. But line 1000 sets W1 to 1 and the GOSUB of line 1500 is never executed. If you use TRON, you may see that line 1500 never appears. You could edit the program so line 1500 reads thus: 1500 STOP:W1=1. Then, if the program doesn't STOP at 1500, you can rightly assume the program never gets to line 1500 because either there was no negative A(X), or W1 was not set correctly.

2. *Repetitive errors.* This bug gives wrong results for a set of entries. A program segment which should round off dollar amounts in an array might look like this:

```
250 FOR I=1 TO N1
255 A(I)=INT(A(I)+.05)
260 NEXT I
```

Problem: All entries in this array with a cent amount less than 95 will not round off properly. Where do you think the repetitive-processing bug lives? Hint: If 51 cents it's \$1; if 49 cents, zero.

3. *Loop Control or Conditional Errors.* Usually simple coding logic or typographical errors--often the nastiest to debug. Here's one of the most common errors; an OR test with a Not Equal conditional:

```
320 IF B<>1 OR B<>2 THEN GOSUB nnn
```

Routine nnn will always execute, whatever B's value is! If B is 1, it's Not Equal to 2; if B is 2, it's 'B<>1'. Use TRON to see what's happening, or insert STOP in line nnn, and when program STOPS, enter 'PRINT B' to see the program enter the subroutine when it shouldn't! If the bug is buried in a FOR NEXT loop, you'll get an "infinite loop"--program executes the same instruction set forever! The computer will seem dead, or you'll get a screenful of the same item. CTRL-C breaks the loop but you'll be very lucky to land where the bug lives!

NOTE:

If your program has a keyboard lockout "feature", CTRL-C won't work. The only recourse is to re-boot, or open the disk drive doors and power down, then restart your system. Don't run the program again until you've fixed it so the bug can't deny keyboard access!

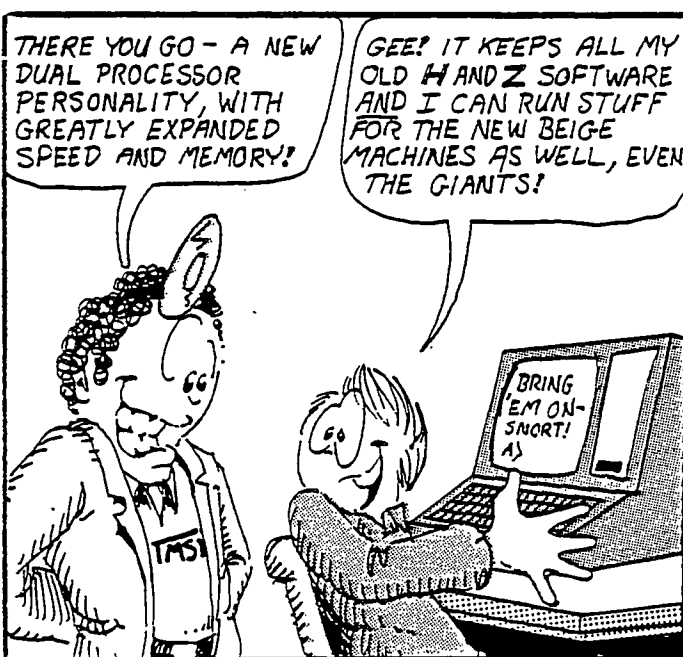
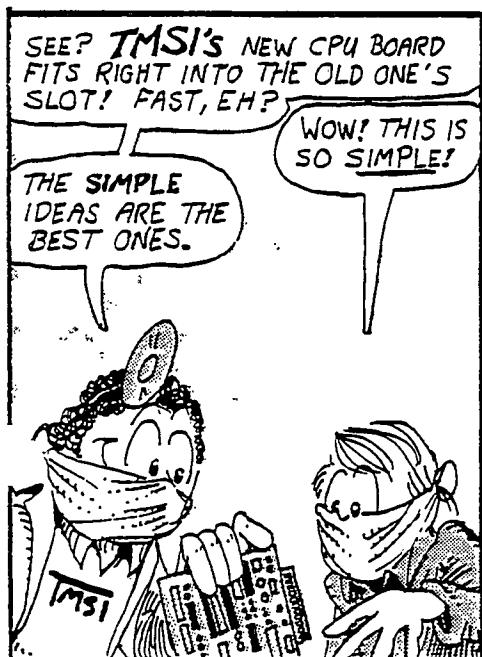
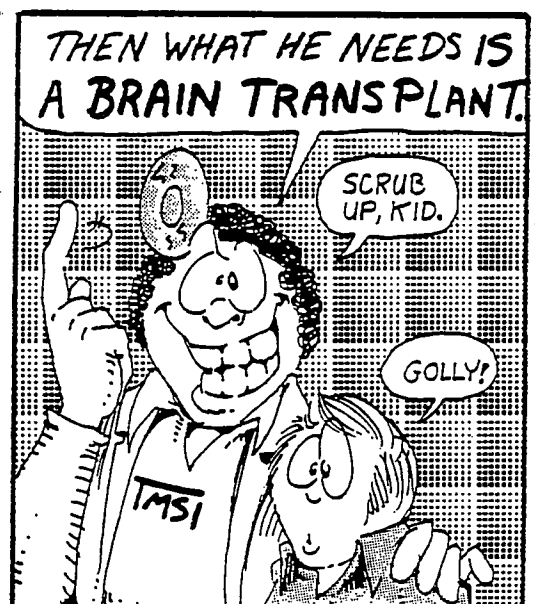
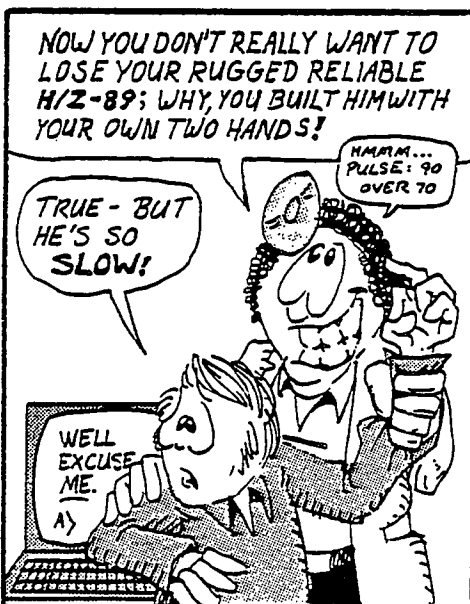
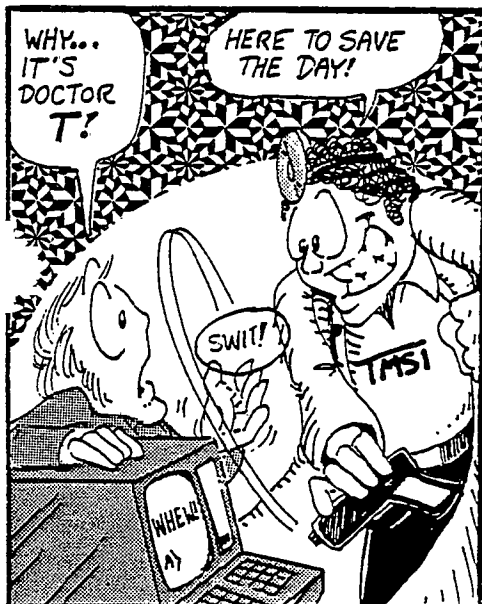
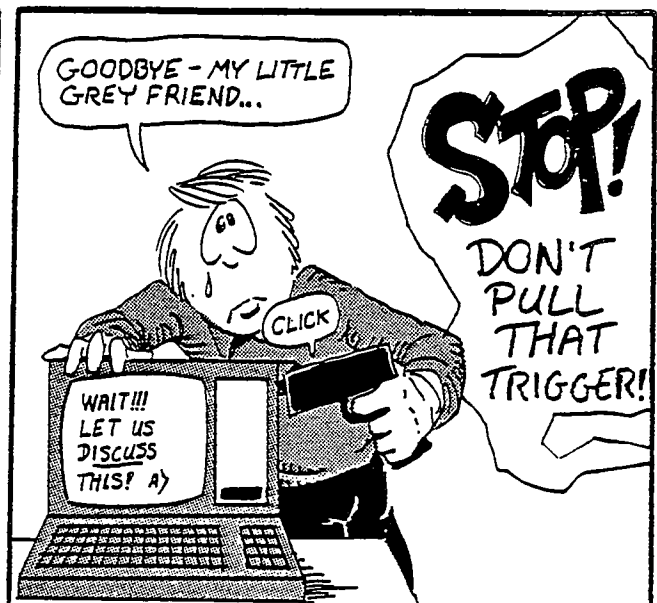
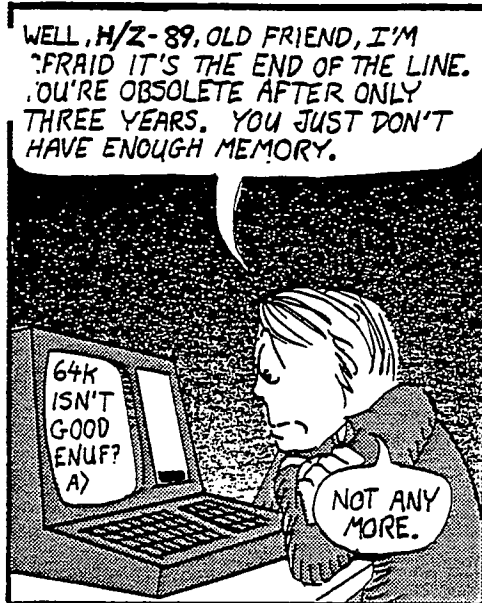
Once you've 'broken' the loop, PRINT all variables in the lines near and in it to find why you're not exiting. Usually one variable is controlling repetition, being modified by a statement or sub-routine within the loop. Here's an example of an infinite loop:

```
600 FOR K=1 TO L1
610 IF X1(K)=1 THEN GOSUB 4500 ELSE GOSUB 5000
620 GOSUB 6000
...
...
680 NEXT K
...
6000 FOR K=1 TO 25
6005 IF MID$(N$,I,1)=", " THEN J=1
6010 NEXT K
...
...
6100 RETURN
```

If L1 is greater than 25, the exit condition in line 600 is never met. The subroutine at 6000 leaves K set at 25 when it exits, whatever K's value is when line 6000 is entered. Shown separated above, this bug is quite visible but in "real life" you'd also be looking at all the other subroutines and might never see the problem. TRON won't help, it only shows what statements are being executed and does not show where (or if) I is being reset. Best way to isolate and eventually kill this bug is to put STOP after each GOSUB command in lines 600 thru 620. Experimentation can often do the job when all else fails.

CONCLUSION -- I've taken you through enough BASIC DEBUGGING steps that you should be able to establish your own structured debugging techniques. Frankly, I'm not very good at debugging, often have to re-read this text, and it does help! I hope to become better, Real Soon Now. You should be able to also. Learn Your BASIC Tools, Define The Problem, Classify The Bug, Then Eliminate It. Now, does anybody have any ideas on how to use DEBUG for Assembly Language?

[Cribbed shamelessly from an article by R.D. Gates in Creative Computing of December, 1983. -- ed.]



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The H-1000 comes standard with 256K of memory. That's already double the memory of a fully expanded H89. But the H-1000 can be expanded to 256K, 512K, or a full megabyte on board. The 8086 can address the full address space directly, but the Z80 can normally only address 64K. To make this memory usable to the Z80, special paging hardware is included on the H-1000 which gives you up to 16 independent banks of 64K each. The "Ghost Disk" makes use of this feature to give you a disk in RAM.

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The H-1000 can use either CP/M-80 or HDOS to operate the Z80. It is fully compatible with your old H89 software and firmware. Just transfer the I/O ROM and the monitor ROMs to the H-1000 during installation and all your old programs will run with absolutely no modifications.

16-BIT OPERATING SYSTEMS

The 8086 gives you access to the rapidly expanding world of software written for the IBM PC and the Zenith Z-100. The 8086 will run that software twice as fast on your upgraded H89 as either of those machines for two important reasons: First, our 8086's clock is almost twice as fast as IBM's 8088 clock and second, the 8086 processor uses a full 16-bit bus. To use the 8086, TMSI will supply you with either MS-DOS or CP/M-86, 16-bit operating systems at no additional charge.

CP/M-86: If you prefer the CP/M-86 system, you'll find it extremely user friendly. There'll be no need to learn a new operating system. Important features include built-in help commands, fast boot-up and improved documentation. The system will search for commands under user "O" and has disk interchangeability with Heath's CP/M-80.

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OTHER FEATURES

GHOST DISK: With all operating systems on the H-1000, you get virtually all of the benefits of an additional disk drive, even if you only have one. Our "Ghost Disk" system loads your disk into the memory beyond the first 64K from the top down. This becomes the extra disk drive and leaves your real drive free for another disk. However, RAM is many thousands of times faster than even the best disk drive, so you get practically instantaneous access to that information. That's important for programs requiring frequent access to large data bases (or if you simply don't like sitting around while your computer talks to your disk drive).

DIAGNOSTIC AND UTILITIES: Included with the H-1000 is a diagnostic disk for checkout of the board. Also included are utilities for HDOS and CP/M-80 to set the Z80 clock speed and control "Ghost" disk operation.

COMPATIBILITY CHART

	8 BIT SYSTEMS		8/16 BIT SYSTEMS		16 BIT SYSTEM
	H89/Z89	DG SUPER 89	H-1000	Z100	IBM PC
Runs Z80 and 8080 code	yes	yes	yes	no	no
HDOS compatible	yes	yes	yes	no	no
CP/M compatible	yes	yes	yes	yes	no
Runs all H89/Z89 software	yes	yes	yes	no	no
Supports all H89/Z89 hardware	yes	yes	yes	no	no
8-bit clock	2MHz	4MHz	2/4MHz	5MHz	none
16-bit clock	none	none	8MHz	5MHz	4.7MHz
Maximum memory	64k	256k	1048k	756k	756k
Runs MS-DOS and CP/M-86	no	no	yes	yes	yes
Color graphics	no	no	no	yes	yes
Price/Performance	good	better	best	ouch	ouch

Technical Micro Systems, Inc.

Dept. H. 366 Cloverdale, P.O. Box 7227, Ann Arbor, MI 48107
(313) 994-0784