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H8SCOOP

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BITS AND PIECES

Things are looking up, for H8SCOOP and for the H8 combo. I have received lot of information and programs, especially good graphics for the H19. The only problem is, it was all from a few H8ers, and they all have the disk system, which kind of leaves the tape users out! Remember, you have to contribute if you want this to be a good source of info.

With all the bits and pieces I have received, it is extreemely hard to just stick certain things under certain headings, so this issue, as may lot of others, may appear to be not too well organized. I'll do my best to keep things seperated, but sometimes that's impossible.

One thing I have figured out awhile ago, if you want something for the H8 that is not presently available, WAIT. The popularity and support of the H8 is picking up at a rapid pace. Things that were not available 6 months ago are now plentiful.

I have given up on the talking H8, because the technology is changing too fast. I know of several individuals who are working on the talking H8, who have more resources than myself, and I think it is in the very near future. I have a device made by TI called "speak and spell" which talks with remarkable clarity. PERCOM puts out an interface for that device for about $70 to interface it to a computer, the TRS-80 presently. While it could probably be adapted to the H8, I want to hold off. TI also manufactures chips with a chosen vocabulary on them. All you have to do is wire them in, address them, and they will give speech out. This I feel is the way to go for the future, rather than the synthesis method, which is more difficult and expensive, and also requires a greater memory and program overhead to run. See BAD GUYS.

The point is, wait long enough, and it will be available. There are several color boards out NOW that will interface with ANY computer(reportedly). DIGITUS is sending me the RAINBOW for evaluation. It uses RS-232 serial port for communication. The Electric Crayon has one out that will interface with parallel ports. I have information comming on that. Hopefully, I will be able to give a report next month on at least the DIGITUS board.

I got some information from Joe Abbruscato on a low cost 1 chip clock for computers. I feel this may be the answer for a hardware clock for the H8, and I will shortly persue this route and report on it. For those who don't want to wait, the chip is $11.35 in single quantities ($4.80 in 100), and manufactured by OKI semiconductor, 1333 Lawrence Expressway, Suite 405, Santa Clara, CA 95051. The phone number is (408) 984-4840. The chip is the MSM 5832.

For those that have been interested in controlling the BSR X-10 wireless remote controller with the H8, there have been several that have done this using my 16/32 channel ON/OFF controller. I will try to report on this next month and have info available. I know of an individual who is making a board that fits inside the H8 to do the same thing. I'll keep you informed as I get the info.

There's too much happening too fast, and I'm having a hard time keeping track of things, sorting, compiling, and getting it in print, and keeping it timely!

Response to my offer of technical help and guidance has overwhelmed me. I will continue this policy, but ask that anyone wishing a reply either give me a number to call COLLECT with the time they can be reached, call me, or send along postage to cover at least the return mail. My long distance phone bill and postage costs above and beyond H8SCOOP postage is reaching astronomical figures! Please help me out.

It has come to my attention that HUG's and others are purchasing one H8SCOOP and passing it around to many others. I can't make money that way! I request that each individual reading the H8SCOOP subscribe themselves. Only as the subscriptions keep comming in and the numbers increase, can I continue to give the best service to my readers, and try to keep H8SCOOP top quality without raising my prices, which I don't want to have to do! I realize it's nice for HUG's to only have to purchace one, as far as the members benifiting, but think what it does for me! You'll only be hurting yourselves in the long run. Enough said!

On last months Technical Forum on Chip Failure I suggested installing line filters. Readers have written in for more details. I suggest you leave the H8 Buss alone! Install line filters on the equipment line plug which you wish to protect. This could include video terminal, H8, Floppy, and printer. The device which I use is the General Electric, GESP 752, which is a line spike protector capable of clamping voltage

spikes to 500 volts, and is rated at 15 amps. Ted Mieske reports the GE-MOV which is also a spike protector. Both of these should be available at most TV supply type stores for about $5.

Requests have also come in as to how I installed my fan. I'll make this very brief. I purchased a muffin type box fan from Radio Shack for about $30, not their $12 cheapie. Any muffin fan which fits should work. Then I drilled holes in the H8 left side cabinet panel(it may look like wood, but it's plastic) for a saw blade, and after marking the fan I cut the proper hole with a saber saw.

I wired the fan to the computer switch so it would go on with the computer. I used duct tape to tape the left most row of holes on the top panel cover, and the bottom plate, so the air would be forced to be drawn in through the far end, over and through the circuit boards, and out through the fan, which incidentally is faced to exhaust air OUT of the cabinet, not in.

That's all there's to it, in a nutshell. I feel it is well worth the effort.

Individuals have also been inquiring as to the adaptablilty of my H8 clock for disk to the tape system. The fact is, that the tape system can make use of the H8 clock better than the disk because interrupts are not dissabled as in the disk system, thus more accuracy can be obtained. Refer to REMark issue 4, Pg 5, for a clock for the tape system that can be used and called from BASIC programs. It tells basically how to configure and do this. This article was the start of my disk clock. I suggest for those who have the tape system and want a real time clock, to start here and experiment.

NEW STUFF

Where do I start? I'll start with the H8 prototype board from MULLEN Computer products, Box 6214, Hayward, CA 94544. This is an excellent board which can be used for lot of prototyping ideas, quite different from the Heath Board, in that there are no IC sockets, addressing, decoding or anything else like that. There is room for 3-5V regulators and filter capacitors.

This is NOT the board for building and tearing down, because of the hard wire-solder technique to be used. There are holes with .1" spacing with power and ground busses(you jump select) running throughout. It is more of a board for building something you KNOW works and you want permanent. A good buy for $46, and the same high quality as the H8 extender board that Bob Mullen came out with about a year ago. I will report more on this board next month.

It is reported by Jan Norman Johnsen, that DG Electronics is comming out with a Z80 processor for the H8 computer. DG already has a 32K memory board for the H8(see H8SCOOP issue # 2).

Jan also tells me Heath stores will soon be offering HUG STUFF to HUG members with a membership card.

Looking for sprocket feed mailing labels? Try radio Shack. These are the ones I use for mailing H8SCOOP. Radio Shack also has a nice plastic storage case which will hold about 50 diskettes. It has a smoked type plastic cover and looks quite nice.

NORTHWEST COMPUTER SERVICES, INC., 8503 N.E. 30th Ave., Vancouver, WA 98665 now has out more upgrades for the H9 video terminal. Besides GRAFIX to give the H9 graphics capabilities(H8SCOOP # 2), they also have CURSOR CONTROL with 8 functions($30), and a 4800 BAUD FLICKER FREE kit for $70. I do not have any info on these latter two, write for details.

Two new H8 related articles appeared in the May issue of MICROCOMPUTING. "An H8 in the Darkroom", by Robert Morgan. This article describes how to program the H8 so the front panel LEDS are used to display time for darkroom use. The speaker is also used for audible effects. The article is 4 pages long. Robert told me this article was over 2 years old, and he now has a better version out.

"Expand Your H8", by Larry Spani and William Seely, deal with using a second H8 to expand and house the new buss. This article is the first I have seen which uses buffer/drivers on the address lines, and on some of the critical control lines, but not the DATA lines. It is 5 pages long. MICROCOMPUTING pulls through again!

Heathkit should be offering a PROM to replace the one presently on the H8 CPU board, allowing for 1 button BOOT using the H17 disk system. It will replace the MK3000, and still allow you full control of the front panel. This item should be available in July as H-8-9 for $20. Watch for it in the next Heath catalogs. It sure beats the hardware circuits previously described. I already have one in my computer, and it's super, especially for the wife.

I have info, that a new chip will be released soon for the H19/H89 to give more graphics to the terminal. It will replace the character PROM on the

terminal board. Stay tuned for more information as it becomes available.

Heathkit to be releasing a mod for the H17 to allow 3 drive operation, which HDOS already supports. You should see it advertized in the summer catalog, and the price is expected to be less than $50. This mod and an extra drive will get you up and running with 3 drives(if you had 2 before!)

Jon Hodge, of Micro Information Systems, 3585 S. Benzing Rd, Orchard Park, NY 14127 (716) 662-7122, has available for the H8 with H19, or the H89 a fantastic word processor package called WORDSTAR! The normal going price for this package is $400-500, but John is making it available for $350, which is quite a deal. It runs under CP/M. I'll try to have more info on this next month. For the time being, if you are interested, contact John.

Last month under software, there were some products from J. J. Thompson, 281 Warren Ave., Kenmore, NY 14217. He writes me that he has more available. Due to the lack of available space, I will briefly tell what he has, contact him for more info.

CPMMOD.HEX for $15 is a mod to be merged with CP/M to allow the system to handle 4 disks with a 2 drive or 3 drive system.

RECOVER.COM(CP/M) and RECOVER.ABS(HDOS) $17.50 each, $30 for both, will recover otherwise unreadable disks, by ignoring sector address and checksum and reading data from a bad disk so the data is recovered.

H19TDA.ASM and H19TDA.HEX for $20, is a terminal definition program to be merged with the POLYVUE program by Lifeboat so the cursor control keys on the H19/H89 can be used to control the program. JJ States that all CP/M format programs are for the 4200 Hex origin modified version of CP/M sold by Lifeboat Associates.

WHO'S WHO

Ted Mieske writes to offer his hardware expertise to H8SCOOPers. Ted works in a Heath store and knows the hardware end of the computer products fairly well. He will do his best to answer any questions you may have, or have not had answered previously. His phone numbers are (214) 826-4055 at work, and (817) 282-5784 at home. 741 Oakwood Ave, Hurst, TX 76053.

Ted says Gene Bellingers Basic Translator really works! "It will take a piece of PASCAL or FORTRAN and turns it into BASIC. No Kidding!!" Ted also has over 300 disks full of programs, 10 of which contain MBasic graphics for the H19, and is willing to share, swap, trade, or whatever. He also has designed a 24 line mod board for the H9 terminal. I will be making the artwork for these available to those interested, in a future H8SCOOP. Ted also has the artwork for the origional MORS8 circuit, if anyone is interested, contact me.

D.C. Shoemaker, 2000 A Foxridge, Blacksburg, VA 24060 (703) 552-5764 would like to exchange programs via MODEM. He also wants to hear from H8ers who are applying the "subtle techniques" of MBASIC and doing H19 Graphics. D.C. runs H8COMM, MODEM and MCS, mostly H8COMM.

Earl Albin (502) 937-6143 has MCS and H8/H89COMM and a modem. He is willing to exchange software via phone.

Charles Ballinger (509) 448-9727 has HUG's MODEM package and wants to exchange software via phone.

I have H8/H89COMM and MODEM, and the CAT MODEM and would be interested in trading software via phone. The best time for me would probably be Sunday evening after 6. The rates are best then too.

CLASSIFIEDS

H8-4 4 PORT SERIAL BOARD FOR SALE. Assembled and Tested, I'll ship. $200. Ed Freeman, 8628 Swiss Pl., Anchorage, AK 99507. (907) 344-5954.

WANTED--8K Memory boards in good working condition. Will pay up to $75 per board. Ted Benglen, 822 E. Country Rd. 30, Ft Collins, CO 80525.

TRIONYX ELECTRONICS, Box 5131-A, Santa Ana, CA 92704, (714) 830-2092, offers 64K memory boards for the H8 in various configurations. All boards can be configured up to 64K, even if purchased with lesser amounts of memory. 64K Board with 64K $750(Assembled), $650(kit). With 48K $615(Ass.), $525(kit). With 32K $480(Ass), $400(kit). With 16K $345(Ass), $275(kit). PC Board only with Documentation $50.

REQUESTS

Does anybody know how to convert the Heath assembly language game tape to load and run on the H17 disk system? I understand there's a program to do it, if you have it, write in and let me know. Lot of our H17ers want to run this game

Cont Pg 6

F E A T U R E

THE GAME OF BOGGLE

This is a game the whole family will enjoy. It is a simple BASIC program, which executes in BH Extended BASIC, and makes use of the H8 real time clock. This program will run on ANY terminal, H9, H19, or whatever--a good example of last months editorial, GENERALIZE. I could have made this graphic, or used page erase features instead of scroll off screen, but that would have left the H9ers out. This program will run equally well on DISK or TAPE systems.

Most of the program is self explanitory, and documented with REMark statements, and will not be covered here. Only lines necessary to clarify will be covered in this description.

The fast baud is used to get the screen filled fast so the game can start. Line 30 clears the screen by scrolling, and causes the instructions to be printed on the screen via GOSUB 1900. Line 40 sets up 2 arrays, one to hold the alphabet, A$(), and the other to hold the screen array, X$(), which builds 5 across and 5 down. Lines 70-100 build the array by randomly selecting the alphabet letters from A$ and placing them in X$. Note the data lines, because to form words you need to have vowels appearing more than one time, they are proportioned to appear 3 times. This way when the array is build, there is usally enough vowels to make lots of words.

Line 140, the GOSUB 2100 simply prints the letters on the screen. Line 150 transfers program control to GOSUB 4000, which is the timer sub. Here the system clock, which is at 8220 decimal(040.034), is reset and read. The time is converted to seconds and after about a 4 second pause, the time on the screen is erased and updated. Line 40040 erases the previous time by forcing a backspace(4 times), and printing the new time.

The screen is cleared so no more making words takes place between players, and when all players have compared and scored, a RETURN is hit, which takes the program from the PAUSE (Line 170).

That's all there is to it. Simple, and effective, and that's the name of the game.

```
00001 REM LISTING OF FILE BOGGLE, PROGRAMED BY HENRY FALE
00002 REM 2918 S. 7TH. ST., SHEBOYGAN, WI 53081 (414) 452-4172
00003 REM COPYRIGHT C 1979 BY HENRY FALE
00004 REM TERMINAL BAUD SHOULD BE AT LEAST 2400
00005 REM TERMINAL COMMUNICATION SPEED SHOULD BE AT LEAST 2400 BAUD
00010 PRINT :PRINT :PRINT
00020 INPUT "12 OR 24 LINE TERMINAL DISPLAY?    ";L1
00030 FOR L=1 TO L1:PRINT :NEXT L:GOSUB 1900:REM CLEAR SCREEN
00040 DIM A$(50),X$(5,5):REM CREATE ARRAY OF PROPORTIONED LETTERS
00050 FOR A=1 TO 50: READ A$(A):NEXT A:PAUSE
00060 REM BUILD DISPLAY ARRAY LIST
00070 FOR A=1 TO 5
00080 FOR B=1 TO 5
00090 X=INT(RND(1)*100):IF X<1 OR X>50 GOTO 90:REM RANDOMLY SELECT LETTERS
00100 X$(A,B)=A$(X):NEXT B:NEXT A
00110 REM PRINT DISPLAY
00120 FOR L=1 TO INT(L1/3):PRINT :NEXT L
00130 PRINT TAB(25);"READY. . . HERE'S THE LIST":PRINT :PRINT
00140 GOSUB 2100
00150 GOSUB 40000:REM DISPLAY LETTERS & TIME FOR 2 MINUTES
00155 REM CLEAR SCREEN TO CHECK WITH OTHER PLAYERS
00160 FOR L=1 TO L1:PRINT CHR$(7):NEXT L:PRINT
00170 PAUSE
00180 REM REDISPLAY FOR VALIDITY CHECK
00190 GOSUB 2100
00195 FOR L=1 TO INT(L1/4):PRINT :NEXT L
00200 LINE INPUT "ANOTHER GAME?    ";A$:IF LEFT$(A$,1)="Y" GOTO 70
00210 END
01000 DATA "Z","X","O","K","A","Q","I","E","T","D","P","C","U","M","A","S","B"
01010 DATA "G","E","W","N","I","H","F","V","Y","R","A","P","O","C","T","D","S"
01020 DATA "E","F","O","G","I","L","J","V","Y","R","U","B","M","N","H","W"
01900 PRINT TAB(20); "THIS IS THE GAME OF BOGGLE"
01910 PRINT "THE OBJECT IS TO MAKE AS MANY WORDS OF ANY LENGTH AS POSSIBLE"
01920 PRINT "OUT OF THE SQUARE IN 2 MINUTES TIME AS DISPLAYED BY THE TIMER."
01930 PRINT "AFTER THIS, THE LETTERS WILL DISAPPEAR UNTIL YOU HIT RETURN"
01940 PRINT "DURING WHICH TIME YOU COMPARE YOUR WORDS WITH THE OTHER PLAYERS"
01950 PRINT "AND ADD UP THE SCORE.  EACH WORD IS WORTH IN POINTS THE AMOUNT OF"
01960 PRINT "LETTERS IN THE WORD.  LEGAL MOVES ARE THE FOLLOWING FORMS:"
01970 PRINT "   XXXX    XX     X     X"
01980 PRINT "            X     X      X"
01990 PRINT "            X     X      X  (UP, DOWN, ACROSS, ADJACENT, DIAG.)"
02000 PRINT "TO START THE GAME, PRESS THE RETURN KEY.":RETURN
02100 REM PRINT DISPLAY ON TT SUBROUTINE
02110 FOR A=1 TO 5
02120 FOR B=1 TO 5
02130 PRINT TAB(30);X$(A,B);"   ";
02140 NEXT B:PRINT
02150 NEXT A:PRINT :RETURN
40000 REM TIMER SUB FOR DISPLAYING TIME ON BOTTOM OF SCREEN
40010 PRINT :PRINT "TIME REMAINING     ";
40020 POKE 8220,0
40030 A1=INT((250-PEEK(8220))/2):IF A1<=3 THEN RETURN
40040 PRINT CHR$(8);CHR$(8);CHR$(8);CHR$(8);A1;:PAUSE (2000):GOTO 40030
```

package on disk!

Charles Ballinger has a problem with his H19 generating large amounts of RFI on channels 4 and 6 of his TV. Any ideas on how to reduce this? I know my H8 does the same thing, and I sometimes am not popular with the wife and kid. Address this info to H8SCOOP, as I want to make this available to all.

Earl Albin would like to see hardware/software necessary to operate his H14 with the option of also displaying on the TT CRT. He has placed these in parallel already, and says he gets good results up to 600 baud. If anybody has information on this, address it to H8SCOOP, and I will make it available to all.

If anybody has the ALBASE assembly program up and running properly for the H17 disk, from Heath's Assembly Language Course, please let me know! My version is up and running about 90% right. It still has some bugs in it, and I would like to know the fix so it runs like the course says it will.

Ralph Munroe Jr., 359 Miami St., Park Forest, IL 60466--is having some problems with the H14 ribbon. Sometimes when the ribbon gets to one end or the other, there's not enough motion to get the reversing mechanism to function. Anybody know of a fix for this?

TIPS

Last month I reported on running the H19 at 19200 BAUD by typing ESC-r-M. I did not have an H19 then, so I didn't know if it would work or not. I do have an H19 now(I want to try to stay as compatible as possible with the H8ers) and I found it did not work on mine. I also received mail from others saying it did not work on theirs. Did someone give me some bad info? NO! I called the Heath Technicians, and they told me that some H19's would run at the faster BAUD and some would not. The earlier ones probably would. The H19 ROM has been changed since then because they have discovered that some of the functions would not operate during the time of the faster BAUD. So you'll have to try it for yourself to see if it works on your terminal or not.

For those H19's capable of 19200 BAUD, try setting SW 401 for BCD 13, or left to right, 1011. Ted Mieske says this works with some H19's. D.C. Shoemaker reports his H19 will run at this speed by setting the switches for 0100.

I received feedback from Ted Mieske on Jim Czebiniak's problem of disabeling the form feed on the H14. Ted says "go OFF LINE and HOLD-IN TOP-FORM and FEED FORWARD for as long as you like to set whatever spacing you want between FEEDS". Heath has this info available. I don't know why they don't make it public knowledge.

For those H17 owners heres a REAL HOT TIP. I recently purchased many diskettes for a good price, and got good fast service to boot! CALIFORNIA DIGITAL, P.O. Box 3097 F, Torrance, CA 90503 (213) 679-9001 has a package deal of 10 diskettes(10 hole hard sector) for $24.95, which INCLUDES A PLASTIC LIBRARY CASE which holds 10 diskettes. These are MEMOREX mini-diskettes which you won't ever see for a better deal. At least I haven't as of yet. They accept phone calls only on VISA and MC cards. Call them fast, I don't know how long this sale is going on. At this price, even without the free plastic storage case, you can't go wrong!

Another HOT TIP if you are using or building memory using 4116 chips. DAL-COMP, M/O DIV. 2560 Electronic La., Suite 108, Dallas, TX 75220 has a toll free number, 800-527-5310, and takes charge cards, and COD's. They have amoung other things, DYNAMIC RAMS, 4116 250 NS or better, 8 FOR $55. This is a real good deal. At this price, you can get 64K worth for $220! Phone or write them for your order, or for more info!

GOOD GUYS and BAD GUYS

*#@ BAD GUYS LIFEBOAT ASSOCIATES. J.J. Thompson says to keep an eye on Lifeboat. Though they offer generally good products, their service and customer support leave a lot to be desired, with some of their dealings bordering on the illegal. JJ Purchaced the BASIC compiler which did not properly access sequential files. When he sent it back for an update that worked, he was charged $25 for the fix. This I feel should have been taken care of free, as there was evidentally a problem with the BASIC. When a company gets too big, these things have been known to happen.

* COMPUTALKER CONSULTANTS, and MOUNTAIN HARDWARE INC.--I wrote these two BIG COMPANIES December 6, 1979 for information on their speech synthesis packages for other computers for possible interface to the H8. I asked for documentation, schematics, and if possible a circuit to experiment with, stating that they would benefit if I came

up with an interface, by being able to capture the H8 market. I figured they would be more than willing to respond, and if nothing else, just send some documentation. It's now over 5 month latter, and I received NOTHING from either of these companies! Not even so much as a letter telling me to jump in the lake.

BIG COMPANIES like that, I want nothing to do with. When they get that big that they can totally ignore potential customers, that's bad news. However, COMPUTALKER evidentally seemed not to totally ignore my IDEA, as the next flyer I got ahold of from them a few months latter, in describing the CT-1 speech synthesizer said "A model CT-50 will be available for the HEATHKIT H8 computer", which was then lined out! I wonder where they ever got that idea?!?? Evidentally they figured it was a good idea, but ran into some snags. You see, BIG COMPANIES don't always have all the answers! Anyway, it's thumbs down on both of them. If they came out with something for the H8, I wouldn't support them, rather I'd wait for someone else to do it.

With customer relations like that, I wouldn't care to be STUCK with a product of theirs anyway. What happened to my talking H8 I mentioned long ago? Now you know the Rest of the story. Good day.

TECHNICAL FORUM--HDOS 1.6

It has come to my attention that many disk users are having many problems with the lattest release of HDOS 1.6. I have been told by the local HUG that nothing made under version 1.6 should be run on 1.6. It is configured totally different, and will cause problems. In fact, it won't run. I was told that the users should take 1.6 and stick it away in a file for some time in case they may need it.

Nothing that came with my HDOS 1.6 said anything like this, but I have received letters from users saying they can't run things on 1.6 that they created on 1.5 or earlier. Charles Ballinger writes that he tried to run SUBMIT and BAUD on 1.6. He said BAUD ran OK, but SUBMIT doesn't run, because the location of the FIFO buffer was changed.

I was surprised, because in the past Heath stated to use EQUATES and the like rather than addresses to keep things compatible with up releases of HDOS. I began to play around with 1.6 and discovered my selectric interface won't run on 1.6. This I can't figure out, but am checking into this problem. So for those of you who have my selectric driver package, hold on.

As far as the problem of running SUBMIT, here's the solution thanks to a good friend of mine in Texas, who eats H8's for breakfast. Load from the system distribution disk a program called PATCH onto your disk with SUBMIT. I couldn't find any documentation in the HDOS manual on PATCH, but REMark issue 7 gave some hints.

RUN PATCH, and when it asks for a file name, type in SUBMIT, which of course must be on the disk! Then it will ask for an address. Type in 042253, and it will display the data which is 007. After the slash, change the 007 to 011. Hit RETURN to increment the address to 042256, and change the present data of 215 to 041, and hit RETURN. Type CTRL D to get out of the loop, then again to exit the mode, and again to exit PATCH and update SUBMIT. Now try running SUBMIT, and you should find it works.

I have run MBASIC and other ABS programs under 1.6 and all seems to work, despite the scare the local HUG threw into me. The only problem I have is with the selectric driver.

Here's a thing to try with the EDIT in 1.6. Normally you can display your text buffer to the Console TT by typing (sp)PRINT. How about being able to type it to an Alternate Terminal, or Line Printer? If you have these drivers active on the disk you are using, try this. Instead of (sp)PRINT type XOUT AT: for example, if you are using the AT:. Don't forget about command completion. You type XO(UT) AT: , the computer types the UT. Now type (sp)XP(RINT), and the file should go to the AT:. This may not work in all, but try it. If you have trouble, before giving up, try loading AT or LP first, depending on which you are using.

PROGRAMMING GOODIES

For you disk users that have an LP or AT. Did you know you can get a hard copy of a disk CAT on the LP or AT? Instead of doing a CAT, or CAT SY1:, do a CAT AT:=SY0:, OR CAT AT:=SY1:. Instead of the CAT going to the video terminal, it will go to the AT or LP, whichever you are using. You may find you have to do a LOAD AT: or a LOAD LP: first in some rare cases. You can do the same thing with PIP.

If you are running MBASIC you can to an auto input, in other words, get an input from the terminal without having to hit return. This is ideal for menu selection

or simple Yes and No inputs.

```
A$=INPUT$(2)
```

will wait for the user to type in two characters, then proceed. The input will be found in A$.

Example:

```
PRINT "ANSWER YES OR NO (Y or N)
A$=INPUT$(1)
IF A$="Y" THEN 200 ELSE 180
```

In this example, as soon as a character is entered, the program will proceed. No CR is needed. This is something like the CIN() function in BH EX BASIC, only much easier.

PEEKING & POKING

LET THE BUYER BEWARE

I recently purchased a CAT Modem from Heath. Much to my dismay, I realized I could not use it without 1) Software, and 2) a special cable, neither of which was included. Not only were they not included, but the catalog description never mentioned anything about the extras needed for operation.

The cable sells for $15, and the software for $18, a total of $33 EXTRA which must be spent to put the MODEM into operation! Ron Hansen called in a similar complaint to me last month. LET THE BUYER BEWARE!

I recently purchased HUG disk IX PN 885-1064 because of the system real time clock on the disk. Now I have come up with a disk clock long ago, but if lot of disk activity is going on, it looses time, because interrupts are dissabled. As far as I knew, there was no way around this. I figured I'd give this a try to see how it was done, if they did indeed get around this.

The description in the HUG materials never mentioned a limitation with this clock(which of course I do with mine). Lo and behold, after receiving the disk and reading the documentation, I learned I was no better than before, only $18 poorer. If limitations exist to a program, fine, that's the way it is sometimes. But LET THE BUYER KNOW before he shells out his bucks! LET THE BUYER BEWARE!

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JULY issue deadline--June 20

Subscription Rates--$12/Year ($16 overseas)

PHONE HOURS: 4PM-10PM Monday, Tuesday, Thursday, and Sunday. No collect calls

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