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ON MISCELLANEOUS SUBJECTS

by Burks A. Smith of DATASMITH
Box 8036, Shawnee Mission KS 66208

I would like to thank those of you who wrote with
nice things to say about this column. I have been
experimenting with direction, first offering ar-
ticles on programming style, then technical details
about BASIC, and most recently offering comparisons
between Micropolis-based software and CP/M-based
software. My purpose in presenting information on
CP/M software was one of perspective. I thought it
would be interesting to examine the differences in
the software for the two systems in a general way.
Hopefully, this information will be of value if you
want to get programs intended for CP/M to run under
MDOS. I wasn't trying to turn the MUG into a CP/M
user group.

I would like to cover topics of interest to every-
one, perhaps trying the "clinic" approach now and
then. Anybody got any questions? If so, send them
to me at the address above and I'll see if I can
help. I'll start this month with those letters
that Buzz didn't answer in last month's newsletter.

THE DESTRUCTIVE BACKSPACE

How many of you have a backspace that just prints a
little arrow or line instead of actually backing up
and erasing the previous character? The idea of
changing a backspace into a printable character is
to make the system compatible with a teletype mach-
ine, which can't perform a backspace. This "fea-
ture" is in the standard Micropolis source listing
of the RES I/O area, but has been widely changed by
users and manufacturers.

There are many versions of the RES I/O area and the
only code these versions have in common are the
addresses of the jump tables to the various rou-
tines. This means that patches that work on the
Micropolis source code won't necessarily work on
everyone's computer. The best solution is to
reassemble the entire area with the modifications
and overlaying the old routines. My computer
consists of a vintage IMSAI chassis with flashing
lights and everything. I have abandoned the orig-
inal IMSAI processor and I/O board and substituted
a 4 Mhz CompuPro Z-80 processor and memory, plus
Vector Graphic video and I/O. I even bought a
genuine Vector monitor ROM, so my hodgepodge of
equipment acts exactly like a Vector and can use
all of their software.

During the course of all this modification, I have
had to reassemble the I/O drivers at least a dozen
times and maintain several different versions for
different physical equipment. As a starting point,
I use the Vector Graphic source code, which is
fully commented, available on disk and can be
easily modified for non-Vector machines. The code
is very similar to the source code in the MDOS
version 3 manual, and is superior to the Micropolis
version 4 code, in my opinion. It will run on
either version 3 or version 4 MDOS. Perhaps what
the MUG needs to do is to adopt a "standard" RES
I/O module, perhaps with LINKs to routines for
different types of terminals and printers. This
way, our members could have a common reference for
modifications. The "standard" would include des-
tructive backspace. I can provide routines to
auto-select centronics printers and provide a
print-check pause instead of an error exit. I also
have XON-XOFF printer drivers for Diablo printers
with large buffers that take advantage of their
maxumum speed. I think most of the pieces for this
project are already in the MUG library in various
places. Maybe someone can consolidate them.

BASIC TIDBITS

Gene Riding wrote to ask for some simple routines
in BASIC, which are included here. To center a
heading string H$ on a page of width W% is not
difficult. Just TAB over half the number of spaces
you have left when you subtract the length of the
heading from the width of the page:

PRINT TAB((W%-LEN(H$))/2);H$

To strip trailing blanks from a string, the brute
force method is required:

100 IF RIGHT$(A$,1)=" " THEN A$=LEFT$(A$,LEN(A$)-1):
    GOTO 100

To pad the string S$ with blanks to a length L%,
use:

S$=S$+REPEAT$(" ",L%-LEN(S$))

ASSEMBLY LANGUAGE

I was a little surprised at the interest expressed
in assembly language programming. Two people asked
for articles on a fast assembly language sort for
BASIC arrays. Next month, I will start a two-month
series of articles on sorting in general and assem-
bly language sorts for BASIC arrays in particular.
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64K STATIC RAM = $400

by Zot Trebor

Losing your memory? Getting forgetful? It happens
to all of us. My salad-bar of memory boards fin-
ally got the best of me. Seven different boards,
five different manufacturers, different switch
settings, board organizations, power require-
ments... I scrapped them all and replaced them a
single 64K board.

"Sixty-fours" have been around for a long time but
unless you owned a bank you couldn't afford them.
Now you can, even it you still own a bank. The
introduction of the CMOS 2k x 8 static memory chips
(same organization as the 2716 ROM) allows a neat,
compact design that can interlace RAM and ROM on
the same board. The 2K x 8 memory chips (TMM 2016
or HM 6116) use a single voltage; 5VDC, and their
power consumption, like all CMOS chips, is
incredibly low -- half an amp or less for a full
64K of RAM, a bit more for the ROM's.

I purchased my board from Digital Research Compu-
ters (of Texas), folks who have been around a while
and who have a fine reputation for honesty as well
as engineering. The board uses Augat sockets for
the RAM chips, and Augat socket-pins to strap each
socket for either RAM or ROM, although the lower 16
K is reserved for RAM only. The board I received
was hand soldered, not wave-soldered, carefully
packed and delivered two weeks ahead of schedule.
Nothing special in that, DRC gives themselves the
time to do things right; quoted three weeks and
delivered in less than two. The board is drilled
for removal-levers on the upper corners, something
those of you who have professional card cabinets
should appreciate. The levers aren't provided.

I suspect the board is targeted at the multi-
processor customer. It has extended addressing --
up to 24 lines -- and both full and half phantom
capability. The board is designed for the full 64K
but allows you to shut off the upper 8K in 2K-sized
bites. If you bought just the circuit board,
installed only 32K and had other RAM on the buss
addressed between 32K and 56K, you'd have problems.
You can't disable addressing between 32 and 56K.
Of course, if you only wanted 32K it would work,
but I think a pair of used "Sixteens" could be
bought for less money.

Instructions are sparse but adequate. The board is
silk-screened, including the switch identifiers.
The two eight position switches are for board
addressing (S1) and the multiple functions (S2);

phantom, upper RAM disable (in 2K increments up to 8K), and half-phantom (allows only the lower 32K to be disabled). Since I need only the lower 56K -- video memory, monitor (executive routines) and disk bootstrap are in top memory -- I simply shut off the top 8K.

There's a little LED down on the lower right hand corner of the board. I assume it tells you when the board is selected; I can't find any mention of it in the instructions and each time I peek over there... sure enough, the little sucker is on. But it's a devil of a place to put it; why not the top edge?

DRC offers the bare board ($55 with documentation), a kit of support IC's and caps ($17.50) and a kit of all sockets ($14.50). I ordered the board assembled, populated with 56K. It cost $391.85 including shipping and insurance. I think it's good value for the money. For you guys and gals who need the whole bolt (64K), it should cost $441.85. They charge $40.00 for assembly so you can pocket that if you've the time to put one together right. The extra money allowed me to open the box, plug it in and run. My ulcer appreciates that. Based on a month of use, the board appears to be bullet proof. DRC offers the usual 90 day warranty and speaking from experience, they are honest. They print their warranty on a big sheet of yellow paper and if you're a novice assembler, I recommend reading it before you put the pedal to the metal and roar off in all directions.

If anyone is using this board in a bank-select mode it would be of interest to me and I'm sure to other MUGgers as well. Howabout it? Grab your pen and jump right in.
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PROTECT YOUR COMPUTER!
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by Paul Boon
PSC Box 356, APO Miami FL 34002

This article was brought on by an incident that has caused me considerable trouble in the last couple of weeks and may possibly affect some other main-frame users. I am still using an "old" IMSAI main-frame with its PS-28D power supply. When we had a power fluctuation recently, the whole thing went up in smoke. The fluctuation was rather drastic, resulting in frequency deviations from 10 HZ to about 170 HZ and with voltage swings from 85 volts to somewhere near 190 volts and it lasted about 30 seconds. Fuses blew in almost everything that was on except my mainframe, where the toll was taken in filter caps, diodes, and three terminal regulators.

During the course of troubleshooting how much dam-age would require repair, I asked myself if there were a way to prevent this kind of thing from hap-pening again, without resorting to a regulated power supply (and the bunch of bucks that they cost). Fortunately, there is a solution that will take care of most of the troubles that could occur. Although it takes a little bit of experimentation, it will easily and inexpensively prevent any seri-ous damage from occuring as a result of wild power deviations.

The principle behind this little mod is that of a "crowbar circuit" to overload the input power fuse if the output voltage exceeds certain limits. In my case, I am using a 1N5068 Zener diode to trigger an SCR if the unregulated 8-volt power supply exceeds 11 volts. This, in turn, should blow the input power fuse before anything melts. Almost any 11-volt Zener should do, and the SCR should be rated for current approaching or exceeding the output capabilities of the power supply. The idea is to cause an increase in current drawn sufficient to blow the fuse. The IMSAI is generously fused at 5 amps, and when it is operating with its current card load, mine draws about 2 amps. A 2-amp fuse will not work, though, because of the current surge encountered at turn-on.

This is where the experimenting comes in! The idea is to find the smallest fuse that will operate your system while it is running. I have done this with other items by putting a small fuse in the system and jumpering it with a switch. I close the switch and turn the system on and then open the switch. If the fuse blows, I try a larger one. If the fuse doesn't go, I try a smaller one.

Calculating a starting point is reasonably easy if you count the regulators and figure the wattage they are capable of handling. In my case, I have 19 7805-regulators (+5V) for a potential of 19 amps used. In most cases, they do not operate at much over 50% of their capacity but a 60HZ transformer only operates at about 50% efficiency so we can effectively figure that we are about even. Nine-teen amps at 5 volts yields 95 watts. That 95 watts should be about .85 amps at 115 volts so I would start with a .8 amp fuse (fast blow) to begin experimenting. Since I wired my terminal and disk drives to the main power switch, I have to account for their power consumption also. Remember that if you have peripherals wired into main power (after the fuse), you must do this also. They should be "on" when you do your testing.

After having decided what the smallest fuse that will operate your system is, the next step is to replace it with the same value in a "slow blow" variety. That should take care of the turn-on surge. If not, try going up one step at a time until you get a value that doesn't blow when you turn your computer on.

Now it is time to install the Zener/SCR in the output of the power supply. I chose only to crow-bar the 8-volt supply, although it could be done to all the supplies. I tested the crowbar using a small power supply to find the true voltage when it tripped, and found that it was 11.6 volts, which was close enough to satisfy me. Now I can sit back and wait for my regulators, diodes, and caps to come in so I can get "up and running" again.

+8V (unreg)   to Computer

11 V
Zener   SCR

Gate

1K
1/2 Watt

Ground (Common)

....
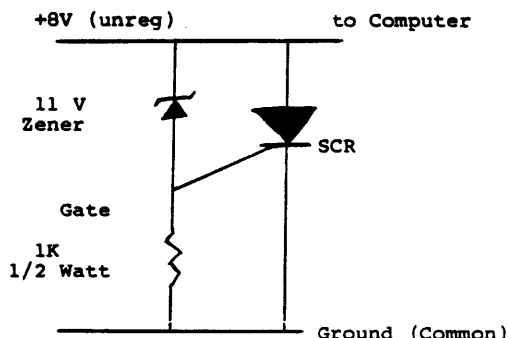
MORE MUG RESPONSE
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While it is difficult for me to point to any speci-fic benefit I have derived from MUG over the last year, the MUG Newsletter gives me a unique oppor-tunity to see how others are using their computers and what problems they are having.

If there is a future to the organization it has to be based upon the common hardware of the members, namely the Micropolis drives. I am using CP/M exclusively and I suspect that most Micropolis owners are doing so.

One function MUG could perform would be the ex-change of the user's experiences with specific hardware and software. I would suggest that it would be most appropriate to survey the membership to determine exactly what hardware they have and what software they are using.

Rick Bierman, Grinnell IA.

Rick: While most Micropolis owners may indeed use CP/M exclusively, those owners don't belong to the MUG. I've had many inquiries which end in no-interest because we are MDOS oriented. As you may have noted, the MUG newsletter is no longer exclusively MDOS.

I'd like to see more articles on the guts of the operating system. Even though the system works, I feel helpless not knowing WHY it works. Forth looks interesting, keep it going.

Martin Wertz, Phoenix AZ

I think you should try to keep the coverage of CP/M in the newsletter to a minimum, i.e., things peculiar to Micropolis disks. Whatever information you can get from Micropolis about the inner workings of MDOS would be great. I also think DAMAN is a good idea as there aren't many places around where one can buy software that runs under MDOS. How large is the readership of the MUG?

Dave DeDene, St. Clair Shores MI

Dave: There were 337 MUG members in July. It dropped to around 200 for the first month of the new MUG year, but the renewals are still comming in.

I bought my computer in what I considered the birth of Home Computers, in August of 1978. At that time there were only the Apple I, TRS-80 Model I, Commodore, Altair, IMSAI and a few others. My evaluation (which proved me wrong) was, that IMSAI was going to become the leader and the best disk system available was Micropolis. My goal at the time was to use the Computer in doing statistical analysis for my hobby, the stock market. I found that the Micropolis basic was pretty much limited and that other home computer buyers were not buying Micropolis. Therefore I felt pretty much alone in that I could not exchange software and/or get help. As you know, IMSAI is no longer in business and one does not see or hear too much about Micropolis.

I was very happy a year ago when Micropolis told me about the MUG. I find most of the newsletters informative, although some articles do not apply and others are above my head, but that is the nature of a newsletter. My goals for MUG would be to be able to exchange programs, teach each other shortcuts, share utilities, and see if we could improve execution time. I am interested in expanding the capabilities of my system at a very low cost (impossible?) such as the ones you mentioned; S-100 products, voice, sound boards, printer buffers, disk-on-a memory, graphics, color, etc., but I like to see it explained or discussed in layman's terms. I do not think that there should be subsets of membership, but I do think that when articles are written about a CP/M or Basic/S-Z, they should include a full program as an example, so that others can evaluate or compare Micropolis Basic with i.e., Basic/S or Z.

One suggestion I might make is that maybe we should all try to meet at one of the National Computer Shows, like ACM Convention, or the National Computer Show or the Personal & Business Computer Show which they have throughout the year in different cities, and maybe get Micropolis to have a representative so we can all exchange ideas personally.

Mauricio Gluck, Miami FL

Mauricio: Are you aware of the Fischer- Freitas Corp., 910 81st Ave, Bldg 14, Oakland CA 94621, (415) 635-7615? They are still producing IMSAIs.

I personally program in CBASIC because it permits

you to write in a structured form without paying a price in memory. (REMs don't go with the RUN file). I would like to see a continuation of the language evaluations you have done for MDOS, and expand it for CP/M as you have with the article on S-BASIC.

I do not think we should have subsets of membership for newsletter purposes.

Charles Stoen, Richmond VA

I am mainly interested in UTILITIES or how to use Micropolis MDOS/BASIC better.

I feel I've had my money's worth from your newsletters - Thank you. The 'date' routine - use of the 'format' statement and ability to change from a one drive to a two drive environment and other hints, remind me constantly of you.

One thing I would like to know more about is how to use LISTP better. Because my statements often exceed 64 characters my program listings never fit on a 66 line page.

I like to leave 8 lines or so top and bottom in my print-outs so that they can fit into a top folding folder without having to dig down into the gutter. I would like to vary the LISTP counting statement to--
     a) count carriage returns,
     b) to be variable in its count.

Could you explain the statements ENDPAGE & PAGESIZE which I don't understand from the Manual.

Eric Paine, N Balwyn, Victoria, Australia

Eric: Micropolis says the problem with LISTP can't be patched. "Can't" is a strong word. Has anyone figured this problem out?

For whatever it may bring, I think you are doing a tremendous job. I believe I memtioned that I have had the pleasure of editing newsletters before. I am humbled by your bravery. But at the same time I see the newsletter and we MUGgers as a vital resource. Micropolis, like all profit-oriented firms, has taken our money and moved on. Their interest in us is minimal unless our systems keep pace with their own corporate goals. In their wake we castaways must sink or swim by our own efforts. They have tossed us a life-ring in the form of some excellent hardware, but are rapidly steaming on to new ventures. The quad-density disk drive is the ultimate hardware for most of us. We'll never see Micropolis again. Long live the MUG.

Few newsletters last more than a year or two - fact of life. The very best of them lose their editors to commercial publications, the worst founder by their own efforts to be all things to all people. Be cautious about spin-offs, they often are precursors of disaster.

I'm willing to help with the MUG if you think my efforts will be of value. I think my contributions so far will speak for themselves. It's not an ego thing - I want the MUG to survive for those little gems that I can knuckle out of it. I should be able to give you some words each month on areas you might direct me towards, and on areas of my own preference.

And now for the complaints. I was upset to see you scatter disk 6. In effect you quadrupled the price of the original offering. There are several MUGgers in this area and I might resort to piracy as a result of the scattering. End of complaints.

Do you think` another survey of the MUGgers is called for? Are we mostly businesses or private users or what? Do we have any hardware hackers out there?

Zot Trebor (address unknown)

Zot: I'll surely accept your offer of help with the newsletter. Your articles are a riot to me, and well received by the group. Anyone else who cares to explain his favorite topic is welcome to contribute, also. I'm quite willing to expand the size of the newsletter to accomodate additional topics. I'm particularly interested in CP/M on Micropolis, and Vector Graphic support. From my "spin-off" stand-point, there's a closer attachment to DAMAN selling some software.

Indeed, I may be trying "to be all things to all people". I'm certainly pursuing some "spin-offs". Yet I have no desire to let the MUG drop. While it's true that I never have time to do anything right anymore, I can't tell if the MUG is suffering or not. You'd be a better judge of that. (I should also assure you that no major publication has tried to whisk me away as their editor.)

Did I really quadruple the price of library disks? I didn't mean to go quite that far. My intent wasn't to do so, though I admit the price structure moved in my favor. The intent was to (1) ease my job of servicing MOD I owners, and more important- ly, (2) to separate programs into catagories. Other than the above reasons, I don't know how to answer you.

How should I organize things? What should I charge? My concept of what the library should be is both a tool for developers and a set of useful, immediate- ly operable programs for the novice or business user. Styles and capability of programming vary. I've tried to pull some of the more interesting and useful (to me) software together into "standard", user-friendly packages. I'd personally like all the library to conform to a "standard" so that the member could easily configure to his system. Then I'd like an index and cross-reference so that one can find an applicable program in a hurry.

If anyone has some answers, let me know. I'm not trying to get rich off the MUG. Nor am I willing to give my time away.

By the way, I don't consider the trading of MUG library disks as piracy. Members may copy or ex- change with no ill will from me.

I am pleased at your decision not to raise the dues for the group. I certainly understand how much time and trouble such a venture as a newsletter is, for I once was an editor of a similar thing.

I feel that the newsletter must be a melting pot of thoughts. Yet, when anyone asks a question, those knowing the answer must respond. Further, if the group could decide on a single project, make a list of objectives, then those who can contribute, do so; those who cannot, read and learn. Knowledge cannot be forced, participation cannot be forced; but interest can be inticed!

Joe Callaway, Birmingham AL
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GROUP PROJECT - DATA BASE
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As you have read in the MUG responses, two items kept being repeated. One was the concept of a group project. Many members feel that the MUG should develop a software project from start to finish with various MUG members taking responsibility for specific sections of the code. All decisions should be discussed so that members can see the trade offs. The second item was information on MUG members - what are their interests, what is their equipment, etc.

OK, I'm game. Let's try it. Since a data base manager can be customized into specific applica- tion programs, such as inventory management or accounts payable/receivable, that seems like a reasonable project.

Where do we start? Is the project meant to produce a commercial program to compete with dBaseII, or is it to teach the concepts and let the individual member expand it to his/her particular application? What system do we use - MDOS or CP/M? What langu- age - Mp Basic, Basic/z or Forth on MDOS, or Basic- 80, Cbasic2, Forth, Pascal or whatever on CP/M? On what hardware will the system run? Will we require 64K, terminals that support protected fields and 25 x 80 displays?

As Project Manager of this venture, I'll set up a strawman and you can tear it down and build up an alternate. Here's my proposal.

(1) The MUG Data Base Manager (DBM) should be a teaching/learing project. If we teach well, indi- vidual members should be able to expand it into a commercial application if they wish.

(2) The lead system should be MDOS and the language Micropolis Basic, perhaps with assembly language subroutines for speed. Most of the MUG members have that, though some don't. We should try and run alternative languages and systems in parallel. I would like to also develop code for BASIC/Z (usable in both MDOS and CP/M). If there are members who are versed in other languages and will volunteer their services, I'd suggest BASIC-80 and Pascal - perhaps Forth or any other language - but this task isn't for me. If we go about this côrrectly we can see why people are adamant about the capabilities of their favorite language. Some- how, be it by me or by others, we must evaluate the alternatives in terms of ease of coding, memory and disk utilization, and execution speed.

(3) The hardware requirements should be minimum.
     (A) 48K system (or should it be 32K)
     (B) 16x64 character CRT display
     (C) Clear screen and home cursor capability
     (D) Two MOD I drives (or should it be one).

Here's what you members need to do. Call or write me if you'd like to participate. I'll try and stay in touch with participants so we can all be working a month ahead of the newsletter. Also let me know what (and why) we will try to produce. Some of the questions we must answers are:

(1) Is it menu or command driven
(2) How many fields will we allow
(3) How many characters in a field
(4) Do the fields have sub-fields
(5) What sort ability on fields or sub-fields.

I assume the system will have the basic ability to:

(1) Input a record
(2) Display a record
(3) Modify a record
(4) Print in various ways
(5) Analyse data and produce reports.

OK, your move, fellows and gals.
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LETTERS
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COMMENTS ON THE CHEAP COMPUTER

I have been reading Zot Trebor's articles on build- ing the "Cheap Computer" with a great deal of in- terest, since his efforts parallel mine over the last six years, although it seems that he had more direction before he started than did I. I will make an assumption that he was using the SSM CB-1A CPU, and if so, I might ask him if he thought about leaving the controller addressed at F400 and add- ressing his video board at F800, and the on-board memory for the CPU at FC00. I have found that an isolated patch of memory (the CB-1A has 1K) can be very useful for such things as a cassette operating system, machine language subroutines for Basic pro- grams, or an independent stack area for other mach- ine language programs that I am using.

MICROPOLIS AND LARGE MEMORY

Since I am anticipating the arrival of a CPU-Z (Godbout) in the near future, I wonder if anyone has successfully managed to implement the use of a large (say 96K CP/M) memory system under either MDOS or CP/M. It looks as if I will have the capability soon and I have had some troubles in the past by trying to keep very large arrays in memory. I guess I could try to use my disks more effectively, but I am still having a hard time figuring out how.

MOD IV CP/M

It is about the time of the year that I can make additions to my computer without raising my wife's hackles too much, I am also curious if you have heard anything about CP/M for MOD IV systems. I would also like to know if you know of someone that is retailing the "Rigid Disk" subsystem by mail and possible if the MOD IV and the "Rigid Disk" can co-reside in the same system.

THANKS TO SMITH & TREBOR

I would also like to take the time here to ask you to pass along the word to Mr. Smith and Mr. Trebor that I have found their articles most informative and interesting.

Paul Boon
PSC Box 356, APO Miami FL 34002

Paul: I don't know a thing about bank-switching, which I assume is the feature that CPU-Z supports. Perhaps one of the members could explain whether the operating system needs to be different, or the user language (e.g., Basic) needs to be different, or both. I'm also assuming you mean an eight-bit system, not sixteen.

Memory and disk management for arrays and other data is somewhat more my style. I never know whether my methods are great or just passable, but I've certainly had situations of overflow which I've solved. Next month I'll show some of my methods.

More and more people are becomming interested in the MOD IVs. There is no CP/M for them, to my knowledge. I've had the investigation of this item on my "list of things to do" for months, but haven't accomplished anything. You can run the MOD II CP/M with the MOD IVs. If there is, or ever will be, a MOD IV CP/M, it most likely will be able to read a MOD II formatted disk, as do the new Vector Graphics. I guess one also has to think of CP/M 3.0 these days. Not much sense spending a lot of money for 2.x if it will be outdated in two months.

There are two forms of the "Rigid Disk". Both come from Priority One. One uses the Micropolis controller and includes OSM, Micropolis' multi-user DOS. You can run CP/M on this by buying Lifeboat's micro-disk expansion CP/M, which I have done. It works OK. The second uses a Sierra controller and comes with a CP/M. Since Micropolis admits that there are bugs in OSM and that they aren't really interested in polishing their software, the Sierra system may be a better buy. I have not seen the system, however, so don't take this as a real recommendation. The floppies live on in the Lifeboat system (as drives M: and N:, and O:/P:, if you have 4 drives). I don't know about the Sierra.
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COMMUNICATIONS

I purchased a Hayes Smartmodem several months ago. It seems to be extremely versatile. I have written a dumb terminal routine which allows me to work on my company's computer. However, I would like to have a very versatile communications package for the smartmodem, and for Micropolis, which would allow me to be able to use my computer from work, or to transfer information between another computer and mine, or simply to act as a dumb terminal. The

manual that I received with the Smartmodem gives certain conditions in which the modem needs to be reinitialized, i.e., some people have experienced problems with the auto answer turning off when the other modem hangs up, If no one has such a communications package, maybe everyone could write in suggestions and we can write one together. To be totally useful, it will need to be operative with MDOS, BASIC, BASIC/Z, BASIC/S, FORTH, etc., and just files in general.

Joe Callaway, 205/925-8169
1728 51st St. W., Birmingham AL 35208

Joe: There is a modem package of Bob Barnum's on MUG Library disk 1. Perhaps Bob could furnish an updated version of that to the MUG. I hear he's been using it alot over the last two years. In any case, I don't think your proposed task is trivial. You'd need to set up a specification for what this program was to accomplish. Then I believe you'd have a lot of trouble with the multitude of UARTs and modems. It's worth thinking about, and maybe worth a try. We could all learn a lot about assembly language programing (though it might be coded in BASIC/Z) and I/O hardware in the process.
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CLASSIFIED

WANTED: If anyone has upgraded to MOD II or IV drives and has a working MOD I drive for sale, please send info & price by mail.

Jon Fant
758 D, NMSH, UAF, Fairbanks, AK 99701
. . . .

MUG LIBRARY DISKS

In an attempt to clear up the mess I've made with the library, I'll start publishing the contents of some of the disks each month until I catch up. The following disks have not changed since the listing referenced.

Disk #	Title	Issue	Page
01	Miscellaneous	16	6
02	Miscellaneous	16	7
03	Games	16	8
04	Membership List	16	8
05	S/W Vendors	16	9
06	System Utilities	21	10
	(Except add LINEEDIT51, an additional LINEEDIT enhansement by Carl Singer.)		
07	Miscellaneous	21	10
08	Business and Games	18	11
09	System Utilities	21	11
	(Except add BCOPY. See following story.)		
10	MDOS Catalog System	18	12
11	System Unique	21	11
12	Technical & Household	21	12

MDOS BOOT-TO-PROGRAM PATCH ($LOADGO)

by Robert Dodds
41985 Park Avenue, Hemet CA 92343

This is a patch to MDOS that gives a boot-to-program capability for a Type 18 (executable user file) program. It does this by modifying @MDOSRETURN so that, instead of printing the MDOS sign on message, it points to the name of the program to be booted (located where the sign on message was located) and then jumps into the executive routine. The result is that MDOS thinks that you typed the name of a Type 18 program into the MDOS executive. To implement this patch:
1) enter the name of the program to be booted into line 1140 of $LOADGO,
2) assemble it (assume as LOADGO),
3) assign it Type C (overlay) and then proceed as follows: (> is the MDOS prompt)

>LOADGO - This loads the patch and jumps back to @MDOSEXECUTIVE Now insert a new initialized disk.
>SAVE "RES" 2B1 1598 3 - This is right out of the manual.
>SAVE "MDOS" 1599 2AFF C - This saves the new MDOS. Now transfer the program to be booted to this disk.

After this patch has been implemented a jump to @WARMSTART (4E7) or @MDOSRETURN (2000) will result in the program being re-booted, therefore I use it only to run my own programs after they have been de-bugged. Using DEBUG with this version does not seem to run properly although I have not been able to figure out exactly why. I do not know what the result of trying to run any other of the associated programs (LINEEDIT, ASSM, etc.) will be.

There is a bonus to this patch. If you want the program which is running to load and execute another program only three lines are necessary:

```
LXI     H,NEWPGM+1
JMP     LOADGO          ; 02006H
*
NEWPGM DTZ 'newprogram'
```

where 'newprogram' is the name of the new program to Type 18 program.

I use a similar technique to load the program I am going to use after using this patch to load my MENU. I have MENU list the programs available, @CILINE to get the name of the program, then:

```
LXI     H,@INBUFF+1
JMP     LOADGO
```

which loads and executes the program.

The LOADGO program is on MUG MDOS Library Disk 16.
. . . .

BLINKING CURSOR ($CURBLINK)

by Robert Dodds
41985 Park Avenue, Hemet CA 92343

In one of the newsletters someone inquired about a patch which would keep the cursor turned off or would give a blinking cursor. Here is a patch to RES that will privide a blinking cursor. It will work with either MDOS or MpBASIC.

This is written for my system which uses a Vector Graphic FLASHWRITER II video board with a 24 line by 80 column display and a video driver written by Steve Zook. It generates the cursor by using the reverse video (8 bit high) of the contents of the cursor address.

The patch consists of the following:

A change to @CIN which aborts its normal function and calls CURBLINK instead.

CURBLINK which times the blink rate (approximately 1/second), gets the input through @CDBRK and, if there is an input, completes the processing through CIN (not @CIN).

REVCUR which changes the setting of the 8 bit at the cursor address each time it is called.

VECFIX which converts the relative cursor address into an actual address. I use a subroutine of the same name located in my video driver.

Two labels which need defining:

VIDBLK is the address where the relative cursor location is stored with the column in VIDBLK and the line in VIDBLK+1.

VIDORG is the address of the start of the memory mapped video.

The patch operates as follows:

1. Any time @CIN is called it jumps to CURBLINK.
2. CURBLINK then:
    a. Calls REVCUR which turns the cursor off.
    b. Sets the timing loop counter.
    c. Uses @CDBRK to check if there is an input.
    d. If there is an input it exits to CIN+3 (NOT @CIN+3) to complete processing the input and returns to the routine which called @CIN.
    e. If there is no input it decrements the timing counter.
    f. If the timing counter is not zero it returns to c.
    g. If the timing counter is zero it returns to b. and restarts the timming loop.

For those who think they want no cursor at all I don't recommend it. I find that it is very easy to loose track of the location of the cursor, particu-larly if you are deleting characters and any spaces are involved. Hint: the cursor is under the last character which is visible. If you want to try it with no cursor then CURBLINK can be written as follows:

```
CURBLINK CALL REVCUR
         CALL @CDBRK
         JZ   CIN+3
```

and thats all there is to it.

The remaining question is where to locate the patch.   IT MUST BE LOCATED ENTIRELY WITHIN RES. Other than that it dosen't matter where you put it. As written I have located it immediately preceeding @CIN.   In the unconfigured version of RES there are 102 bytes open between LDINIT and @CIN.

The CURBLINK program is on MUG MDOS Library Disk 16.

. . . .

PROGRAM BCOPY (Revision 2 of BATCHCOPY)
====================================

By Carl J. Singer
6049 N. Morgan St., Alexandria VA 22312
Tel. (703) 354-2904

BCOPY is a program that permits file copying in batches. It is called in one of two ways:

METHOD 1

[unit:] BCOPY <number of files; maximum 63>

Each copy will be prompted by an asterisk, and is entered in the standard FILECOPY manner. Example:

    BCOPY 5
    *"AMOS" "1:ANDY"
    *"LINEEDIT" 1
    *"1:UTILITY" "FUTILITY"
    *"2:BIG" "3:LITTLE"
    *"2:WHEATIES" 1

During file entry, syntax errors or other errors detected will cancel the line involved, and request that it be re-entered.

After the last scheduled entry, the routine will caution the user to engage all required disk units; then it will make the requested copies, in order. Typographical errors in the first filename or a duplicate of the second filename on the destination disk will abort the copy being worked on (yielding an error message) but previous copies will not be affected and subsequent ones will be made.   Other disk errors will abort the current copy and return immediately to the MDOS Monitor.   All previous copies will be O.K.

If your terminal has a bell, it will ring when all of the copies have been made.

METHOD 2

[unit:] BCOPY "[unit:] <filename>"

In this case, a file must have been previously prepared in LINEEDIT, and saved.   Each line in the file should be entered in the normal FILECOPY manner. The data in the example of Method 1 would produce a file that looks like this:

0100 "AMOS" "1:ANDY"
0110 "LINEEDIT" 1
0120 "1:UTILITY" "FUTILITY"
0130 "2:BIG" "3:LITTLE"
0140 "2:WHEATIES" 1

If the file contains more than 63 lines, only the first 63 filecopies will be made.

If the name of the above file were SUBMIT, the command BCOPY "SUBMIT" would read in the file, caution the user to engage all required disk units, and proceed to execute the filecopies. If a syntax error is discovered on any line, or if the copy cannot be made because the first file is not found or the second file already exists on the destina- tion disk, an error message containing the offending line number is sent to the terminal. In all these situations the offending line is aborted and processing continues.   Successful copies will be listed on the terminal.

System disk errors other than those mentioned above will terminate the program and return to the Monitor.

The BCOPY program is on MUG MDOS Library Disk 9.
. . . .

MUG MDOS LIBRARY CATALOG
Last Update: 09/25/82

MUG MDOS Library Disk 13, Revision 04, APR 82
MUG NEWSLETTER INDEX - 23 tracks

NAME	TYP	RV	SZE	CAT	DATE	AUTHOR/DESCRIPTION
MUGDOC	DOC	01	01B			Findlay, K.
						Documentation for MUGINDEX files and MUGFM program.
MUGFM	BAS	01	00B			Findlay, K.
						Program for maintaining the MUGINDEX.
MUGINDEX	DAT	02	05A			Findlay, K.
MUGINDEX1	DAT	02	030			Findlay, K.
MUGINDEX2	DAT	02	02A			Findlay, K.
FBRECS	BAS	00	005			Findlay, K.
FBCODE	BAS	00	017			Findlay, K.
CONVERT	BAS	00	003			Findlay, K.
S/SORT	BAS	00	011			Findlay, K.
SORT	BAS	00	00B			Findlay, K.

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MUG MDOS Library Disk 14, Revision 00
MISCELLANEOUS - 19 tracks

NAME	TYP	RV	SZE	CAT	DATE	AUTHOR/DESCRIPTION
DATABASE	BAS	00	005			Valk, D.
PROGRAMS	BAS	00	004			Valk, D.
CREATE	BAS	00	022			Valk, D.
MAINT	BAS	00	021			Valk, D.
DELETE	BAS	00	009			Valk, D.
SORTFILE	BAS	00	015			Valk, D.
REPORT	BAS	00	01B			Valk, D.
PRINTER	BAS	00	00C			Valk, D.
RECOVERY	BAS	00	006			Valk, D.
EXPENSES	BAS	00	00B			Riding, G.
AMORT	BAS	00	00F			Risley, D.
DAYS	BAS	00	004			Risley, D.

. . . .

MUG MDOS Library Disk 15, Revision 00, APR 82
Z80 ASSEMBLER - 28 tracks

NAME	TYP	RV	SZE	CAT	DATE	AUTHOR/DESCRIPTION
ASMDOC	SRC	00	020			Manderson, R.
ZASM	SYS	00	017			Manderson, R.
ASS	SRC	00	00E			Manderson, R.
ASS1	SRC	00	02C			Manderson, R.
ASS2	SRC	00	020			Manderson, R.
ASS3	SRC	00	026			Manderson, R.
ASS4	SRC	00	016			Manderson, R.
ASS5	SRC	00	02D			Manderson, R.
ASS6	SRC	00	024			Manderson, R.
ASS7	SRC	00	013			Manderson, R.
ASS8	SRC	00	00C			Manderson, R.
Z80	SRC	00	01B			Manderson, R.
SYSQ3	SRC	00	00C			Manderson, R.

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MUG MDOS Library Disk 16, Revision 01, SEPT 82
SYSTEM PATCHES/ENHANSEMENTS - 23 Tracks

NAME	TYP	RV	SZE	CAT	DATE	AUTHOR/DESCRIPTION
$MDOSPATCH	SRC	00	00D		0482	Singer, C.
						Patch to DUMP to provide ASCII width. Patch is to FILES as well as two-column list.
$PASS	SRC	00	00F		0482	Risley, D.
						Implements a security code into your system. User selectable size & contents of code.

LDOUT   SRC 00 00A   0482 Hall, L.
             RES mod for Diablo 1610 or 1620 and SIO-
             2 board.
MILLER   DOC 00 00B   0482 Miller, W.
             For   a   VDB   8024 Video Card   and
             Dataproducts   2310   printer. Contains
             Control-P trap for switching output from
             screen to printer. Contains an EDIT-P
             function for using 256 characters.
MILLRES   SRC 00 016   0482 Miller, W.
$S/IO.DOC   DOC 00 00F   0482 Callaway, J.
             Documentation for S/IORES, S/M & VECTOR
             REX.
$VECTORRES   SRC 00 026   0482 Callaway, J.
             For Version 4 of Vector Graphic Sys B.
             Contains true RUBOUUT (Replaces with
             blank). Contains an auto load which
             automatically runs S/M file while in
             MDOS. Also autoloads for BASIC.
$S/M   SRC 00 003   0482 Callaway, J.
             The autoload program for VECTORRES.
#S/IORES   SRC 00 030   0482 Callaway, J.
             For ALTAIR 8800B. Contains S/W driver·
             for 3-port parallel Diablo Hytype I.
VIDEO   SRC 00 031   0982 Trabor, Z.
#LOADGO   DOC 00 009   0982 Dodds, R.
$LOADGO   SRC 00 004   0982 Dodds, R.
#CURBLINK   DOC 00 00C   0982 Dodds, R.
$CURBLINK   SRC 00 007   0982 Dodds, R.
                  . . . .

MUG MDOS Library Disk 17, Revision 00, APR 82
MDOS DISASSEMBLY - 35 Tracks

NAME	TYP	RV	SZE	CAT	DATE	AUTHOR/DESCRIPTION

MDOSTEXT   TXT 00 00C   0482 Manderson, R.
             This,   and   the   next   file,   have
             documentation for the 9 files which
             follow. Loads of info on the operation
             of RES and MDOS, both here & in the
             comments in the source code modules.
MDOSDOC   TXT 00 032   0482 Manderson, R.
LOADER   SRC 00 00C   0482 Manderson, R.
RESIO   SRC 00 021   0482 Manderson, R.
RES1   SRC 00 036   0482 Manderson, R.
RES2   SRC 00 034   0482 Manderson, R.
RES3   SRC 00 020   0482 Manderson, R.
MDOS1   SRC 00 03A   0482 Manderson, R.
MDOS2   SRC 00 037   0482 Manderson, R.
MDOS3   SRC 00 035   0482 Manderson, R.
MDOS4   SRC 00 023   0482 Manderson, R.
                  . . . .

MUG MDOS Library Disk 18, Revision 00, APR 82
SYSTEM DISASSEMBLIES AND DOCUMENTATION - 8 Tracks

NAME	TYP	RV	SZE	CAT	DATE	AUTHOR/DESCRIPTION

#MDOSDOC1   DOC 00 009   0482 Rusczyk, R.
             Questions to Manderson about separating
             RES & MDOS.
#MDOSDOC2   DOC 00 02A   0482 Manderson, R.
             Answers to Rusczyk's questions.
#MDOSDOC3   DOC 00 005   0482 Rusczyk, R.
             Further problems and comments. .
$FILECOPY   SRC 00 00E   0482 Singer, C.
             FILECOPY disassembly.
SYSADDR   SRC 00 009   0482 Findlay, K.
                  . . . .

MUG MDOS Library Disk 19, Revision 02, SEPT 82
GAMES - 22 tracks

Name	Typ	Rv	Sze	Cat	Date	Author/Description

WUMPUS   BAS 00 018 GAM 0682 Harrison, J.
WUMPUS2   BAS 00 024 GAM 0682 Harrison, J.
STREK   BAS 00 066 GAM 0682 Harrison, J.
BIO   BAS 00 010 GAM 0682 Harrison, J.
BACKGAMMON   BAS 00 02D GAM 0782 Risley, D.
SCORES   DAT 00 001 GAM 0782 Risley, D.
             Holds scores for BACKGAMMON.

STARTREK   BAS 00 01D GAM 0782 Risley, D.
             Has onboard comguter enhansement.
HOROSCOPE   BAS 00 016 GAM 0982
                  . . . .

VECTOR GRAPHIC 'BREAK'

by Susan Kleinmann
15 Hastings Road, Lexington MA 02173

Recently, I signed on to the Source, but had great
difficulty using it effectively, because every time
I tried to send the BREAK character, the computer I
was using (a Vector Graphic System B under CP/M)
got stuck in a loop. The BREAK characters accept-
able to the Source were 3H (control-C) and 10H
(control-P). Apparently, these codes were being
intercepted by the Vector CBIOS, and were never
sent to the .serial port to which my modem was
connected.

The solution to this problem was to inhibit the
printer in the USRCONF byte.at DD00H. This can be
done in two ways: one is to run the CONFIG program
and, when asked whether a program should be run on
Cold Boot, Warm Boot, etc., one should answer by
typing only Control-E. This fact is undocumented
in the Vector literature, and is only apparent when
CONFIG (and the Vector CBIOS) are disassembled.
Alternatively, one can OR the byte at DD00H with
10H (thereby setting its BIT 4 to 1), and POKE it
back into DD00H. This solution, is of course, not
a permanent change to the CBIOS.

Once this modification is installed, one can not
only access the Source, he can also run Wordstar,
and other programs that make use of the software
using Control-Ps.
                  . . . .

DAMAN & SUPERSOFT

DAMAN is honestly quite pleased to be able to offer the complete SuperSoft line at new reduced prices. The following price list superseds all previous MUG quotes, specifically the price list of 8/28/82

	LIST	NORM	CASH	SHIPPING
ADA	300	240	228	5 NA, 15 foreign
C COMPILER	250	202	201	5 NA, 15 foreign
C-8086	500	395	375	5 NA, 15 foreign
C with BCD	400	318	302	5 NA, 15 foreign
LISP	150	124	118	5 NA, 15 foreign
BASIC COMPILER	200	163	155	5 NA, 15 foreign
BASIC (Z8000)	500	395	375	5 NA, 15 foreign
FORTRAN	275	221	210	5 NA, 15 foreign
RATFOR	100	85	81	2 NA, 9 foreign
FORTRAN/RATFOR	350	279	265	5 NA, 15 foreign
MACRO I	80	70	66	2 NA, 9 foreign
FORTH	200	163	155	5 NA, 15 foreign
TINY PASCAL	85	69	66	2 NA, 9 foreign
Z8000 ASSEMBLER	500	395	375	5 NA, 15 foreign
C CROSS COMPILER	500	395	375	5 NA, 15 foreign
DIAGNOSTICS II	125	100	95	2 NA, 9 foreign
DISK DOCTOR	100	81	77	2 NA, 9 foreign
SYSTEM CHECKER	75	61	58	2 NA, 9 foreign
DISK EDIT	100	81	77	2 NA, 9 foreign
SCRATCH-PAD	295	236	225	5 NA, 15 foreign
DATA-VIEW	200	163	155	5 NA, 15 foreign
STATS-GRAPH	200	163	155	5 NA, 15 foreign
OPTIMIZER	200	163	155	5 NA, 15 foreign
INVEST'T TAXPAC	200	163	155	5 NA, 15 foreign
TERM II	200	163	155	5 NA, 15 foreign
UTILITIES I	60	50	47	2 NA, 9 foreign
UTILITIES II	60	50	47	2 NA, 9 foreign
ELINK	250	202	191	5 NA, 15 foreign
ENCODE/DECODE	100	81	77	2 NA, 9 foreign
BCD	300	240	228	5 NA, 15 foreign
NEMESIS	45	38	36	2 NA, 9 foreign
DUNGEON MASTER	40	34	32	2 NA, 9 foreign
ANALIZA II	50	42	40	2 NA, 9 foreign
STAR-EDIT	225	182	173	5 NA, 15 foreign
TFS	85	69	66	2 NA, 9 foreign
CORRECTOR	200	163	155	5 NA, 15 foreign

SCRATCH-PAD 2.0

The Ultimate Spreadsheet

from SuperSoft

Never See "Out of Memory" Again

ScratchPad 2.0 begins the next generation of spreadsheets. Its advanced features and capabilities make ScratchPad the most powerful tool available for business planning, financial modeling, and decision making.

ScratchPad's matrix of rows and columns allow you to easily enter and change data. Not only does this flexibility facilitate the planning process, but it also enables you to create excellent looking reports. Reports can be generated to your screen, directly to your printer, or placed in a disk file for later merging with another report or document using virtually any word processing system.

ScratchPad 2.0 supports many advanced features not found on other lower quality spreadsheets. These features include:

* Every cell on the spreadsheet can be used. Don't be misled, other spreadsheets tell you how "big" the matrix is, but you can only use a very small portion. With ScratchPad's virtual memory feature you can use EVERY CELL!.

* Merge. Spreadsheets saved on disk can be included with the current spreadsheet.

* IF/THEN. The IF function expands the types of problems which can be solved with a spreadsheet program.

* Unlimited window splitting. This is a Scratch-Pad Exclusive! You can split the screen as many times as you want. This provides for unlimited flexibility and for title locking.

ScratchPad has a complete complement of built in functions, including:

    SUM SIN COS TAN SQR ABS INT IF/THEN

In addition to the built in functions, ScratchPad's distribution diskette also includes routines to calculate:

Future value	Regular Payments
Annuity	Regular Deposits

Of course ScratchPad allows numeric data to be displayed in a variety of formats, including:

    Dollars and cents   Commas

Also, ScratchPad's exclusive "Invisible" format makes it possible to hide intermediate values or sensitive data. This can help you keep your spreadsheet clean and easy to read.

Another important innovation from SuperSoft is ScratchPad's exclusive consolidation program. This special utility program supplied with ScratchPad 2.0 allows you to combine similar values from many different spreadsheets into a new "master" spreadsheet that contains either the sum or the average of the others. For example, monthly sales figures can be consolidated into one yearly spreadsheet. This feature makes ScratchPad virtually three dimensional!

Requires 48K CP/M.
                 ....

STATS-GRAPH

A STATISTICAL DISPLAY PACKAGE

Stats-graph can bring life and immediacy to your annual reports, monthly sales presentations, revenue projections, and any informational business papers. It was designed to let the business-person analyze the information which is available and present that information in a clear and forceful manner.

Stats-graph is a two-fold program. First, it performs statistical analyses on user data; and second, it provides graphic formats for displaying user data and the results of statistical analyses.

The graphic formats available under stats-graph include:

* Pie Graph
* Bar Graph
* Scatter Graph

The statistical analyses performed under Stats-graph include:

* Mean
* Median
* Minimum and Maximum values
* Standard deviation
* Regression analysis

Stats-graph is completely menu driven, which makes it very friendly. It also incorporates some helpful editing features. When deleting entries, for example, those entries to be deleted are marked and not actually deleted until the edit option is exited.

The output, including graphic displays and/or the results of statistical analyses, can be easily integrated into any document. NO SPECIAL GRAPHICS HARDWARE IS REQUIRED!

Requires 48K CP/M.
                 ....

NEW CP/M GAMES

Two types of games are now available for CP/M users, adventure and action.

The hottest adventure games are presently ZORK I and ZORK II. DEADLINE is a detective-type game which is getting good reviews. Another new adventure game is ORBQUEST.

Two arcade action games, also big on the Atari (I guess I can't mention names) are copied for CP/M users as CATCHUM and LADDER.

All six are configurable, but CATCHUM and LADDER require a 24 x 80 display. All six are immediately available only on Micropolis, Northstar, and 8". If you require another format, give me a ring. I'll see what I can do.

The costs to MUG members are:

	LIST	NORM	CASH	SHIPPING
INFOCOM				
ZORK I	50	48	46	2 NA, 5 foreign
ZORK II	50	48	46	2 NA, 5 foreign
DEADLINE	50	48	46	2 NA, 5 foreign
YAHOO SOFTWARE				
CATCHUM	40	20	19	1 NA, 3 foreign
LADDER	40	20	19	1 NA, 3 foreign
ALTERNATE WORLD SIMULATIONS				
ORBQUEST	40	35	33	2 NA, 5 foreign

For CATCHUM, you can assign your own keys for left/right, up/down. Most users select O/P, A/Z. It has nine levels of play, which equate to the speed and intelligence of those little devils. Intelligence? - you ask. Well, I don't dnow what else you'd call it. With level one you can move around the maze, or you can sit still, and the what-ever-they-are may just pass you by. On level 9 they gang up, cut off the corners, block the escapes - I mean, give it up - they are smart!

Needless-to-say, I like the game. By the way, I've seen those Atari ads which say something about video games being the one thing at which kids can always beat adults. So when I got CATCHUM, I challenged my 12-year old son. I could beat him! Sorry to say, that lasted for less than two days. Guess Atari knows best.

CATCHUM also lets you have 1 or 2 players, has a sound and random remarks options, hyperspace, and stores the five highest scores and names. It also has an installation menu for most 24 x 80 displays, and a user configuration routine for those displays not on the menu.

CATCHUM is a fine retort to your Apple and Atari friends, and is definitely addictive. No matter how high my score gets, I'm always trying to figure out how to outsmart those little bad-guys. If you take winning seriously, however, DON'T USE LEVEL 9!!
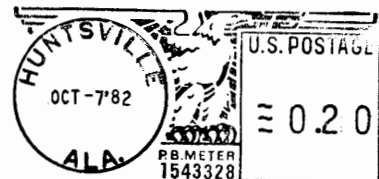
....

FIRST CLASS MAIL

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