

EXPANDABLE COMPUTER NEWS

Issue #16

September/October 1986

\$3.00

ECN

An Independent Publication for users of the Adam Computer
COPYRIGHT 1986 - SAGE ENTERPRISES

**CP/M
POKES**
**HACKER'S GUIDE
ADAM RESOURCE**

BASIC

**SYSTEM
CALLS**

STAGE FRIGHT

MAGE QUEST

HARDWARE PROJECT

ISSUE 16

COPYRIGHT 1986 SAGE ENTERPRISES

\$3.00

Table of Contents

Ramblings From the Ridge	3	High Scores	10
Industry Observations	3	User Group News	10
Beginning Basic	4		
Interfacing with ADAM - Part I	5	<u>REVIEWS</u>	
Using SmartLogo	6	Stage Fright	13
Unusual Pokes	8	Hacker's Guide	13
ADAM System Calls	8	Mage Quest	14
CP/M and You - Part 5	9	The ADAM Resource	14
Bulletin Board	10	Atari 520ST	15
ADAM Suppliers	10	Atari 7800	15
		Programs	16

Expandable Computer News (ECN) is published bi-monthly by Sage Enterprises. Subscription rates are \$12.00 per year (6 issues) U.S. and Canada; \$18.00 foreign. All subscriptions payable to Sage Enterprises in U.S. funds only. Send all correspondence (subscriptions, ads, reviews, orders, articles and products) to: Sage Enterprises, Expandable Computer News, Rt. 2, Box 211, Scrivner Rd., Russellville, MO 65074. Telephone 314/782-3448 from 9 am to 4p m CT Monday, Tuesday, Thursday, Friday.

Staff: Editor - Darrell R. Sage, Associate - Shirley I. Sage, Assistants - Carol Quinn, Cover by Ted Gocal

NOTE: The views expressed by contributors to ECN are not necessarily those of the publisher. ECN and Sage Enterprises are not in any way affiliated with Coleco Industries, Inc.

We welcome contributions of original articles, programs, reviews, comments, questions, etc. We are unable to pay for such contributions at this time. Please include a signed statement giving us authorization to use your contribution. We would like to thank all of our subscribers for their assistance—without them this publication would not be possible.

Coleco, SmartBASIC, and other Coleco products are registered trademarks of Coleco Industries, Inc.; other trademarks apply to titles of products and are held by those companies referenced.

Sage Enterprises has available for sale a number of products for the ADAM Family Computer System as listed below. To order any of these products send check or money order payable to Sage Enterprises in U.S. Funds to the address listed above. Missouri residents please add sales tax. All prices include shipping and handling.

<u>ITEM</u>	<u>Foreign Price</u>	<u>U.S. & Canadian Price</u>
Blank Data Pack (Loranger)	\$8.00 US	\$5.52 US
PACKCOPY software copier	\$45.50 US	\$41.50 US
CONVERT CP/M Disk Transfer Program	\$40.95 US	\$36.95 US
Program Library I, II, III (price each)	\$13.30 US each	\$9.95 US each
Program Library 4 (ddp)	\$10.00 US	\$7.00 US
Program Library 4 (disk)	\$7.00 US	\$5.00 US

ALL SOFTWARE NOW AVAILABLE ON DISK OR DDP



Ramblings From The Ridge by D. Sage

This is the first issue that I have written from my new office. The office isn't quite finished, but as soon as it was close, my wife started moving me out of the house. Not that she was trying to get rid of me, she was just getting tired of looking at all of this stuff in the living room, dining room, kitchen, pantry and anywhere else I could find an open space to put something. Our house now looks like it was unoccupied. My office is pretty big, but not quite big enough. I have five Computers and two game systems hooked up to seven monitors and TVs, and six printers. I have four computers that I haven't found room for yet and another three or four printers.

My wife suggested that I might consider counseling as a means of ridding me of computeritis, but I doubt if that would work. If they had had affordable computers and game systems when I was a kid, I would never have saved enough money to buy a car. It's not that I'm addicted. After all I haven't bought an Atari ST or an Amiga or even a PC compatible yet. A real addict would have been on the waiting list for these.

Will the current surge of interest in video games cause Coleco to get back in the business? In the past they have followed an opportunistic approach to marketing new products. I'm not sure that current interest is sufficient to make even Coleco get back in. When pong first game out they tried to market a system, but had a variety of problems. Since ADAM has died a number of people have tried to resurrect the rumor that Coleco was building a new system. Although that is still possible, I doubt if their stockholders would be happy about it. Coleco's stock has been having recent difficulty due to declining sales of their Cabbage Patch products and their inability to follow up on that product's success.

If you call Coleco's hotline, you won't get much help. More than likely they will refer you to us or one of the other large groups that still support the ADAM. If people think that there is a lack of support for the ADAM they need to get a copy of "THE ADAM RESOURCE", second edition. The support is there, but if sales don't pick up there is unlikely to be much in the way of new development.

Much of this problem is caused by ADAM owners unwillingness to buy through the mail. I have heard of people who bought ADAMs at discount prices and shelved their systems shortly after they bought them because they couldn't find software anywhere (in a store). Apparently many ADAM owners do not even

know that mail order support exists. Other buyers have no desire to use their ADAM for anything other than word processing. I also get calls from non-subscribers asking for help with a problem. Typically the problem they are having has been covered in ECN.

As some of you know, Joe Blenkle has sold his ADAM. He has offered to continue to keep track of the Hi-Scores, but will no longer be submitting his Telecommunications column. His columns will be missed. He has done much to further the cause of ADAM owners and ECN by sharing his ideas with all of us. If anyone is interested in writing a Telecommunications column please contact me. I just don't have the time to do much telecomputing anymore. There are only so many hours in the day and night, and sometime I have to eat, sleep and spend time with my family. ECN is a product of shared information. I greatly appreciate those of you who have made contributions either through articles or simply information submitted to me. We welcome those contributions and urge others to send in their programs and experiences.

Mountain View Press, P.O. Box X, Mountain View, CA 94040, ph. 800/321-4103, is now advertising FORTH for the ADAM. The package includes books, software and documentation and is available from them for \$175. Yes this price is a little steep for most ADAM owners, but it is the same price that they charge for versions for other systems. If you are interested in learning and using FORTH then you may want to consider this or wait for a public domain version. We hope to have some information on a public domain version of FORTH by next issue.

This issue contains most of our regular columns as well as reviews of some new software. We also have a LOGO program submitted by David Jacksch.

We have fewer ads this time, but that is to be expected with the current state of software sales. To compensate for this we will be carrying a listing of some of the companies that sell ADAM products. I hope you find this issue enjoyable.

Industry Observations by D. Sage

What's new. Well not a lot has happened since the last issue. All is relatively quiet on the home computer front, but it doesn't appear as if that situation will last long. IBM is rumored to be readying a new computer for home and educational use. This system is supposed to be manufactured at the new facility that has been producing the IBM PC transportable (clamshell). The system is designed to utilize LSI chips to minimize cost. It will be essentially compatible with other PCs except that it will not

support networking. The retail cost is rumored to be \$1395. Great price for a home computer. I wonder what kind of keyboard this gem will have.

In the meantime Sears has signed a deal with Franklin to start selling the Franklin PC8000, which happens to be an IBM compatible. The price is \$949.99 for a system that includes 512K, color graphics adapter, composite color or monochrome output, parallel and serial interfaces, two double sided disk drives and MS Dos 3.1. The monitor is additional. The system also has joystick ports built in.

Now if you could buy the Franklin system with Sears reputation for product support, why would you want to buy the new IBM PC home computer? With many comparably equipped quality clones on the market, I doubt if IBM will sell many unless they start cutting prices.

What with the Nintendo game system being a success and Intellivision making a comeback, it looks like everyone is jumping on the band wagon. Sega has now introduced a system with many of the same characteristics as the Nintendo system. It comes with a light gun and runs two different kinds of cartridges, one of which is the size of a credit card. If you own a Nintendo system and want a little surprise, take a look at the bottom of your system. You will find a removable panel that conceals an interface that ultimately will be used to attach a disk drive and other devices.

Why did Atari wait so long to finally move the 7800 Pro System from the warehouses? The 7800 also runs 2600 games. Since Atari had a large inventory of 2600 systems that they wanted to move, it wouldn't make sense to sell the 7800 until the 2600s were almost all gone. With the price of the 7800 being only \$79.95, it would have competed directly with the sales of the 2600 which varied from \$29.95 to \$59.95 depending on the store. Will the new system be supported? Maybe, but only if it sells really well. If Atari doesn't sell enough to go back into production of the system, then it isn't likely that you will see any cartridges developed other than those already in production. Nintendo already has too big of



a jump on everyone else and is beginning to garner a good deal of third party support and interest.

My main complaint about the 7800 is that it doesn't have a hook up for a monitor. To use it with my monitor, I run it through my VCR which has composite video and audio outputs.

A while back Yamaha announced that disk drives and additional software were now available in the U.S. for the CX5M MSX music computer. They



continue to focus their efforts at primarily the music composition market although they now have available word-processing and telecommunications software. MSX

systems are still fairing well in Japan, but appear to be on the decline in Europe. At this point in time the concept is unlikely to catch on in the U.S.

If the computer market is going to heat up any, it should do so by September. Anyone not announcing products by then will have considerable difficulty marketing their products for the coming Christmas season. Most of the Christmas catalogs are well into print by August or September. Sears starts mailing theirs usually in August, which means it was in print by June or July at the latest. Products that fail to make it into the catalogs of the more reputable mail order firms will have difficulty establishing themselves in the market unless they spend considerable amounts on advertising.

I will keep my eyes and ears open and try to have any new developments ready for the next Issue, which will be the last before Christmas. If you hear of anything worth printing let me know.

Beginning Basic

by D. Sage

In this issue I will cover some additional uses for the PRINT statement and some additional statements. In Basic, PRINT can be used in immediate mode (typed in without a line number). When accompanied by a mathematical formula, this feature allows you to use ADAM as a calculator. As an example type in the following:

```
PRINT 2+2 [RETURN]
```

Provided you have turned ADAM on and loaded SmartBasic, you should get the answer 4. You can enter fairly elaborate calculations using this method, provided you enter the formula correctly. You could type in PRINT (197.8 * 27.2)/556 + 12 and ADAM would give you the correct answer. In this mode you can use all of the mathematical capabilities of the ADAM. So if you need to know something quickly and

you have ADAM turned on, just use this feature of the PRINT statement to do the calculations for you.

Remember that calculations are performed in a specific order. Multiplication and division are done before addition and subtraction. If you use parenthesis () to enclose an operation, then that operation will be completed before any that exist outside of the parenthesis. If you aren't sure what is going to take place, then use the parenthesis to insure the order of calculations that you want.

Even if you never plan to program in Basic, SmartBasic has some features that you will need to use in order to manage your data pack files. The most important of these is the INIT command. This command allows you to reinitialize a data pack. No it will not reformat the data pack, it only erases the current directory and creates a new one that appears to make your data pack blank like a new one. This command should only be used on data packs that contain files that you no longer need. To use 1t you should type 1n something like the following:

```
INIT MYPRGRAM, d1
```

Make sure that you have a data pack in drive one that you wish to initialize. The drive will spin and the old directory will be erased. You can use any name in place of "MYPRGRAM" and you can use drive 2 (d2) in place of d1 if you wish to initialize the data pack on your second drive.

To DELETE a file from a datapack you should use the DELETE command, NOT the DEL command. The DEL command is used to delete lines from a program. It is important to remember which of these commands does what. Also NEVER delete a file that is opened. DELETE can be used within a program or as an immediate command. To DELETE a file simply enter the following:

```
DELETE MYFILE, d1
```

This will delete the file "MYFILE" on data drive 1. To delete other files, enter the name exactly as it appears in the CATALOG and enter the appropriate drive number.

The RENAME command can also be useful. To use it you have to specify the old and new file names and the drive number. The following is the correct format for this command:

```
RENAME MYFILE, NEWFILE, d1
```

In this case "MYFILE" is an old file that exists on a data pack on drive #1. Its name will be changed to "NEWFILE" on drive #1.

These features of SmartBasic will let you use your ADAM to better manage your data packs and disks and take advantage of some basic math powers that are available through your ADAM without learning to program. Those of you who use ADAM primarily for word processing should give these a try. I'm sure you will find them helpful.

Interfacing With ADAM

by John Moore

Computers tend to fascinate and even scare people. In fiction, they are seen almost as electronic Gods, omniscient and omnipresent. Reality is different. Even a BASIC programmer quickly learns how little the machine "knows." Getting the computer to actually do something is a frustration all of us have faced (or are facing).

This is the first in a series of articles on connecting ADAM to the outside world. You will not have to be an electronics wizard or an electronics engineer to be able to use the information, but you will have to have some knowledge about electronic parts and computer programming.

In order to actually build the circuits I shall describe, you will need to be able to assemble a circuit from a schematic diagram. If you don't have these skills, ask around, visit a local college or technical school, check with any amateur radio operators in your area. You may find someone who will help you, or is willing to build the circuits for you for a reasonable fee!

I would like to get the legalities out of the way immediately. The circuits that will be given in this series have been built, tested and do work. The projects do involve interfacing with delicate electronic circuits, and if work is performed as described, neither you or ADAM are in any danger. Since neither the author nor ECN have any control over how well you follow instructions, neither can be held responsible for any damages that may result. (Editor's Note: Installing any devices may void your warranty. The construction or modification of any ADAM is the sole responsibility of the owner. Sage Enterprises accepts NO responsibility for any such alteration or modification.)

In order to connect (or interface) ADAM to the real world, we must make use of certain signals available inside the machine. Fortunately, those signals are available at two fairly convenient points: the Expansion Port and Slot 2. Slot 2 is the middle socket inside ADAM. It is also referred to as J6. The Expansion Port is the big connector on ADAM'S side.

To use Slot 2, you will have to prepare a PC card-edge connector. To use the Expansion Port, you will need a 60 pin socket. These are often available

at surplus houses, and usually cost \$5. "Ribbon cable" is best with these. Please note: all of the 60-pin sockets I have seen number the contacts with all odd numbers on one side and the evens on the other. ADAM does not do this!

On ADAM, one side contains pins 1-30, the other side contains 31-60. Be very careful and do not let these two numbering schemes throw you off! The following table shows the names and pin numbers of the signals we will need. Definitions follow.

<u>EXP. PORT</u>	<u>NAME</u>	<u>SLOT 2</u>
14	BD0	25
12	BD1	23
46	BD2	21
3	BD3	20
13	BD4	22
48	BD5	24
17	BD6	26
16	BD7	28
47	BA0	27
18	BA1	29
20	BA2	30
44	BA3	32
21	BA4	33
23	BA5	35
24	BA6	37
25	BA7	42
8	<u>BWR</u>	9
53	<u>BRD</u>	3
40	<u>BIORQ</u>	12
54	BMREQ	15
1	GND	43
58	+5v	44

Looks like Greek? The signals aren't that hard to understand. First, let's note that a "B" in front of a quantity means that the signal has been "buffered" so we can safely hang another device on the line without causing problems. If a signal has not been buffered, we would have to check various electrical specifications to insure that we could connect to it.

A line drawn over a quantity means that it is active when the voltage is low (near zero). It can be read several ways. MREQ could be read "MREQ not" or "MREQ bar."

Now, let's examine each of these signals. BDO-BD7 are the "Buffered Data lines." ADAM sends and receives data over these lines. Since data can move in both directions (to and from the computer), the lines are often referred to as "bidirectional" data lines. Each line carries one bit of data. There are 8 lines. This makes ADAM an "8-bit" computer.

Lines BAO-BA7 are the "Buffered Address lines." Actually, there are 16 address lines in a Z-80 computer like ADAM. For what we are doing, the first 8 will be all we are interested in. Incidentally, the number of address lines determine what is the greatest amount of memory that a computer can "directly" address.

Computers do all their work in the Binary number system. We have 16 address lines in ADAM. The smallest number we can represent is zero. The largest number would be represented by all the address lines going high (+5v) at the same time. This is the number FFFF in Hex. That is 65535 decimal, and many of you will have already recognized the number as being the top of memory (64K) in your computer.

Note that this is the maximum only in direct addressing. There are ways to "indirectly" address much more memory. This is how people like Buck Rogers can make huge RAM disks available.

BIORQ-not goes low whenever ADAM is conducting an input or an output operation. The letters are short for "Buffered Input/Output Request." BMREQ-not is "Buffered Memory Request." It goes low if ADAM is reading from or writing to memory.

If the ADAM operation is a read, BRD-not ("Buffered Read") goes low. If ADAM wants to write (send out) some information, the low will be on BWR-not ("Buffered Write"). We will use these signals to tell us what ADAM wants to do.

I would suggest you start assembling the parts you will need for these projects. You will need an 8255A (programmable peripheral interface), a 74LS30 (8-input NAND gate), 2 - 74LS04 (hex inverters), a 74LS02 (NOR gate), and a RTCM 32.768. All are available at JAMECO Electronics, 1355 Shoreway Road, Belmont, CA 94002. You will also want to get a board to which to wire, sockets for the IC's, and perhaps a battery clip for 2-AA or AAA cells, a couple of diodes, 20 - 10K resistors (1/4 watt), and a 10 mf capacitor (10 volts or higher).

Using SmartLogo by Mike Degner

In the last issue I gave you two procedures to play with. If you missed them here they are again.

```
TO INSPI :SIZE :ANGLE
FD :SIZE
RT :ANGLE
INSPI :SIZE (:ANGLE + 10)
END
```

```
TO POLYSPI :SIZE :ANGLE
FD :SIZE
```

```

RT :ANGLE
POLYSPI (:SIZE+1) :ANGLE
END

```

Both of these work by calling themselves and increasing one of the variables. You can take control over both of these by making the increase in the variable. This allows you to set the size of the increase.

```

TO INSPI2 :SIZE :ANGLE :INC
FD :SIZE
RT :ANGLE
INSPI2 (:SIZE (:ANGLE + :INC) :INC
END

```

```

TO POLYSPI2 :SIZE :ANGLE :INC
FD :SIZE
RT :ANGLE
POLYSPI2 (:SIZE + :INC) :ANGLE :INC
END

```

For the rest of the article I am going to give some more procedures that are variations of these two. Remember to give the right number of inputs after the procedure name when you call it.

```

TO POLYSPI4 :SIZE :ANGLE :DEC
IF :SIZE §1 STOP
FD :SIZE
RT :ANGLE
POLYSPI4 (:SIZE - :DEC) :ANGLE :DEC
END

```

```

TO POLYSPI5 :SIZE :ANGLE :DEC
IF :SIZE §1 STOP
PU FD :SIZE
PU FD 1 BK 1
RT :ANGLE
POLYSPI5 (:SIZE - :DEC) :ANGLE :DEC
END

```

```

TO 2POLY :S1 :A1 :S2 :A2
FD :S1 RT :A1
FD :S2 RT :A2
2 POLY :S1 :A1 :S2 :A2
END

```

```

TO SWITCHPOLY :SIZE :ANGLE
FD :SIZE
RT :ANGLE
IF HEADING = 0 STOP
SWITCHPOLY :ANGLE :SIZE
END

```

```

TO STAR :COR :LEN
REPEAT :COR/2 [FD :LEN RT 360/:COR FD :LEN
RT 180-360/ :COR]
END

```

```

TO STAR1 :LNG :CRN
REPEAT :LNG [FD :CRN RT 360/ :LNG FD :CRN LT
180-360/ :LNG]
END

```

The next procedures call another procedure so make sure that you have both typed in before calling the main one.

```

TO SCISSORS :SIZE :ANGLE
RT :ANGLE
FD :SIZE
LT 2* :ANGLE
FD :SIZE
RT :SIZE
END

```

```

TO POLYSCI2 :SIZE :A1 :A2
SCISSORS :SIZE :A1
RT :A2
POLYSCI2 :SIZE :A1 :A2
END

```

```

TO POLYSCI :SIZE :ANGLE
SCISSORS :SIZE :ANGLE
RT :ANGLE
POLYSCI :SIZE :ANGLE
END

```

```

TO TRIANGLE :SIZE
REPEAT 3 [FD :SIZE RT 120]
END

```

```

TO POLYTRI :SIZE :ANGLE
TRIANGLE :SIZE
FD :SIZE
RT :ANGLE
IF HEADING = 0 STOP
POLYTRI :SIZE :ANGLE
END

```

```

TO SPIRO :SIZE :ANGLE :NUMBER
IF NUMBER = 0 STOP
FD :SIZE
RT :ANGLE
SPIRO ( :SIZE + 10) :ANGLE ( :NUMBER -1)
END

```

```

TO SPIROLATERAL :ANGLE :NUMBER
SPIRO 10 :ANGLE :NUMBER

```

SPIROLATERAL :ANGLE :NUMBER
END

To stop some of these you have to press the escape key. You can change the variable to anything that is convenient for you and experiment with using these to make your own procedures. In the next issue I will discuss using different turtles and the shape editor. If you have any questions, comments, neat procedures, programs, or something you want discussed, send a SASE to Mike Degner, Rt. 2, Box 293, Shell Lake, WI 54871.

Unusual Pokes by D. Jacksch

Here are a few unusual pokes:

Horizontal Hold - POKE 17047, X:TEXT

X = 55 - simulates a TV "Sync." failure or a rainbow effect. X = 0 is the default.

Alien Language - POKE 17065, X:TEXT

X = (150,200,210...) changes all screen characters to odd shapes. X = 0 is the default.

Text Glitch - POKE 17067, X : TEXT

X = 1 - screen full of assorted characters, flashed for .25 seconds, each time "TEXT" command is used. X = 62 is the default.

White Out - POKE 17131, X : TEXT

X = 0 - sets whole screen inverse. X = 16 is the default.

Screen Flash - POKE 17164, X : TEXT

X = (0 to 255) - whole screen flashes ASCII character of your choice. X = 32 is the default.

Blink Mode - POKE 17180, X : TEXT

X = 200 - the text in rows 1 to 6 "blink" regardless of computer operation. X = 0 is the default.

Rainbow Border - POKE 25465, X : HGR

X = 255 - fancy top border. X = 0 is the default.

Sync Fail - POKE 25432, X : HGR

X = (less than 255) - fluttering bars. X = 255 is the

default.

Graffiti - Poke 17215, X : TEXT

X = 100 - produces a screenful of assorted characters. X = 200 produces colorful graphic characters in place of ASCII characters. X = 224 is the default.

NOTICE: 1). These commands show the power of machine code. You will find out that ADAM won't warn you if you mistype a number (it's easy to "crash"). So, when experimenting with PEEKs and POKEs, remove all disks and data packs from the drives and boot up SmartBasic 1.0 with no programs in memory.

2). Some of the above pokes make the text unreadable, so type "GR [RETURN]" to enter lo-res graphics and see what you're typing.

3). Change your poked address back to the default code before entering another one. The default codes return ADAM to normal operation.

4). You may be wondering what anyone would use these for. Check out the "Mission E.V.I.L." text adventures, where I have used most of these for easy, surprise effects.

ADAM System Calls by D. Sage

This is the sixth in a series of articles covering ADAM'S system calls.

CALL FCC6\$ (64710) - Reset a file (rewind back to first byte). File number in A register. Error code returned in A. Zero indicates no error.

CALL FCC9\$ (64713) - Create a file. Creates a directory entry. A = device #, HL = file name location, BCDE = file size in bytes (0000 allocates last available space). Error code returned in A.

CALL FCCC\$ (64716) - Find a directory entry. A = device number, DE = address of file name string, HL = address to place directory entry if found. On completion A = error code, BCDE = file's start block.

CALL FCCF\$ (64719) - Update a directory entry. A = device number, DE = current file name location, HL = address of buffer for new file name or entry. Error code is returned in A. If an error occurs no change is made to directory.

CALL FCD2\$ (64722) - Read data (bytes) from a file into user's buffer. A = device number, HL = buffer address, BC = number of bytes requested. Error code is returned in A, actual number of bytes transferred is stored in BC.

CALL FCD5\$ (64725) - Write data (bytes) to a file. A = device number, BC = number of bytes, HL = starting location of data. Error code is returned in A.

CALL FCD8\$ (64728) - Store the date (this is output as the last three bytes of a directory entry. B = day, C = month, D = year.

CALL FCDB\$ (64731) - Retrieve date. Error code is returned in A (error exists if date has not been set). B = day, C = month, D = year.

CALL FCDE\$ (64734) - Rename a file. A = device number, DE = pointer to old filename, HL = pointer to new filename. Error code returned in A, zero means no error.

CALL FCE1\$ (64737) - Delete a file. A = device number, HL = address of file name to be deleted. Error code 1s returned in A.

CP/M And You by John Moore

We've already examined CP/M, and discovered that most of the "commands" you give the system are really calls for the system to load and run a program by that name. This time around, let's look at the CP/M text editor, ED.COM. The filetype .COM tells us that this is a runnable program.

In my last column on PIP, you may remember that it is possible to use PIP to place text in a disk or tape file. The command is PIP filename=CON:. The drawback that there is NO provision for correcting typos, or for changing anything you put in the file. What we need is an editor. That's why you have ED.COM!

When you call ED, you must specify a filename. This could be an existing file, or a new file. If it is new, ED will tell you so. If the file exists, ED simply prepares to operate on it.

Actually, ED does the same thing in either case, it opens a file with the name filename (the one you gave it), and the type of \$\$\$\$. CP/M uses that extension for partial files - files that are having material put into them, but which aren't finished yet.

If the file exists (and ED informs you), you will need to bring part (or all) of that file into the new file so that you can work on it. This involves use of the 'A'ppend command. You can put an optional number before the A. This is the number of lines to read. #A is the command to read all the lines in the file.

The reason for this circuitous procedure is to protect your original file! ED actually takes NO action on the original until the edit has successfully ended. At that time, it renames the original file to type .BAK, and changes the work file from filename.\$\$\$ to whatever type you specified in the input command line.

This means that if the power goes off, or some other disaster occurs you may lose a lot of work, but your original file will be intact!

There are commands which force ED to put the

main file and the .BAK file on different drives so that you can work on a disk that would not normally have room for a .BAK file that will, of course, be almost the same size as the source file itself! See your Coleco manual for details.

ED is a fairly primitive editor, but it does provide the functions necessary to work on text files. The problem comes in from the fact that ED's commands are somewhat difficult to remember, and you must remember that you may not be where you think you are in the file. All lines in ED are numbered when they appear on your screen. These numbers are not in the file, but provide a convenient way to move the "pointer."

When you input a command, that command is in effect from the line in the "pointer" toward either the bottom or top of the file. The pointer can be positioned anywhere on a line. KNOW WHERE YOU ARE!

B moves you to the [B]eginning of the file buffer. A -B gets you to the bottom, -n or n will move the command pointer n lines backward or forward and show you the line. 0lt (zero-L-T) will always show you the line at the current pointer position.

I gets you into [I]nsert mode. Control-Z gets you out. In [I]nsert mode you do not "type over" material, your new input is squeezed into the file, but no material already there is replaced!

nK or -nK will [K]ill n lines from the current pointer position. Remember to use 0lt to find out just where you are before you start killing lines.

If you know where a line is, you can move to it with the command n:. If you know something that is on the line, you can [F]ind it by commanding FstringCntrl-Z. If you want ED to print the line once it finds it, type the extended command FstringCntrl-Z0lt.

There is a [S]wap command. The syntax is Sdeletedstring-Cntrl-ZinsertedstringCntrl-Z. If you put a "0lt" after, it will display the new line. If you put a number before, it will perform the swap that number of times, if possible. If you position the pointer at the [B]eginning of the file (B) and put a I before the S command, it will swap the two strings completely in the file. Just like SmartWriter's "REPLACE ALL" command.

There are many other commands available in ED. I refer you to the Coleco CP/M manual or any good CP/M book. Note that ED is a "line-oriented" editor. This is probably because the earliest computer terminals were teletypes, and it was convenient to work with lines rather than moving a cursor on a screen under an error and correcting it.

Because of the changes in the way people work with computers, many more text editors have been created which are often more convenient to use, but

ED is still serviceable and does what it was intended to do: create and edit text files.

P.S. - A friend pointed out a possible reason why so many CP/M copy programs list the destination file first and the source second instead of (what seems to many) to be a more logical command to copy FROM a source TO a destination.

It occurred to him that Assembly Language Instructions work that same way. That is, MOV E,A is the command to move the contents of register A to Register E.

It does seem possible that programmers who were used to (and comfortable with) that usage would find nothing strange at all in listing a file destination first and the source last!

Bulletin Board

The Bulletin Board is a free service available to ADAM owners.

You may advertise, ask for help or correspondence from other owners. We cannot include ads for the commercial sale of software, but will include ads for the sale of public domain software.

■ **NOTICE:** For anyone who has purchased any of my public domain disks or is thinking about it. I am no longer offering them as I have sold my ADAM. They may now be obtained from Dan Orlando, P.O. Box 30527, Middleburg Heights, OH 44130. These include MEX, LOGO Programs, UTILITIES/Graphics, Games, CP/M Programs, More Basic 1, Basic 2. Disks are \$5 each, DPPs \$10 each or \$7.50 each for two or more in the same order. Dan has lots of other programs too, so write for a list. Thanks and Farewell - Joe Blenkle.

■ **FOR SALE:** CP/M 2.2 - \$28.00, SmartBest V1.0 - \$10.00. Contact: David Kennedy, Bldg. 844-6-J, Governors Is., NY 10004.

■ **FOR SALE:** ADAM (complete), SmartLogo, SmartFiler, Telly Turtle, KopyKat, Blanks, \$300 or offer. Contact: Mike McCain, 5330 Spanish Trail, Ocean Springs, MS 39564.

■ **NOTE:** Anyone with questions comments or improvements on the "Mission E.V.I.L." text adventures, please contact: David Jacksch, 480 W. 1500 N., Apt. M, Layton, UT 84041. I have maps of "E.V.I.L., Part 3", for \$25 plus a S.A.S.E.

■ **FOR SALE:** Complete ADAM, w/dual DDP drives & a spare, plus lots of software ddps and cartridges, \$500. Contact: Ralph Jacobsen, N483 Highway C., DeForest, WI 53532, ph. 608/846-4205.

■ **WANTED:** New or Used - disk drive, printer and interface or other hardware; pascal software and any public domain programs. Contact: Mike Degner, RR 2, Box 263, Shell Lake, WI 54871, ph. 715/468-2407.

ADAM Suppliers

The following is a list of a few of the companies that sell ADAM products. To obtain a catalog from these companies, send them a self-addressed stamped envelope.

Alpha-1, 1671 E. 16th St., Suite 146, Brooklyn, NY 11229, ph. 718/336-7612. They carry a wide selection of ADAM products - hardware, software, supplies, etc.

DO NOT STAMP SOFTWARE, 2608 West 600 South, Roy, Utah 84067. Software.

Elliam Associates, 24000 Bessemer St., Woodland Hills, CA 91367. CP/M Software.

Eve Electronics, 2 Vernon St., Suite 404, Framingham, MA 01701. Hardware, CP/M Software.

Extended Software Co., 11987 Cedar creek Dr., Cincinnati, OH 45240. Software.

M.W. Ruth Co., 510 Rhode Island Ave., Cherry Hill, NJ 08002, ph. 609/667-2526. Wide selection of ADAM hardware, software, & supplies.

Orphanware, 5665 Myers Rd., Akron, OH 44319, ph. 216/882-4720. Hardware & software.

Reedy Software, 10085 60th St., Alto, MI 49302. Software.

The ADAM Depot, 419 Ridgway Ave., Johnsonburg, PA 15845. Hardware, Software & supplies.

This list is not intended to be comprehensive, nor is it intended to be a specific endorsement of any one company. Nevertheless, in our dealings with these companies, we have found them to be reputable and generally prompt in filling orders.

High Scores

by Joe Blenkle

Anyone wishing to add their name to the high score list should send the game, score, and level to Joe Blenkle, P.O. Box 41746, Sacramento, CA 95841. Due to space limitations, all games may not be listed in every issue of ECN. For a complete list send a SASE to the above address.

<u>GAME</u>	<u>PLAYER</u>	<u>LEVEL</u>	<u>SCORE</u>
War Room	Jay H. Wald	-	1,000,077

High Scores as of Sept./Oct. 1986 Issue

User Group News

The list of users' groups continues to grow. If there isn't one in your area to join - start one!

NATIONAL GROUPS

#1 Adam User's Group
P.O. Box 3761 - Attn: Jay Forman
Cherry Hill, NJ 08034

LOCAL GROUPS

James E. Gilbert
4608 Lakeview Dr.
Huntsville, AL 35810

Victor L. Watford
P.O. Box 777
Russellville, AL 35653

Richard Bains
7210 Bulen Drive
Anchorage, AK 99507

Danny Levitt
4525 S. White Pine
Tucson, AZ 85730

Robert R. Marentes
9425 N. 38th Ave.
Phoenix, AZ 85021

Brian Stranahan
So. California ADAM Users
8580 Buggy Whip Rd.
Alta Loma, CA 91701

Frank Fleisch
13381-19 Magnolia Ave.
Corona, CA 91719

Central Calif. Adam User's Group
James Turner, Jr.
20110 Ave. 19
Madera, CA 93637

San Diego Adam Users Group
Dr. Harold Alexander
37 Catspaw Cape
Coronado, CA 92118

AUG of San Diego County
868 N. 2nd St. #242
El Cajon, CA 92021
ph. 619/445-2400

Bay Region ADAM Information Network
550 27th St. #202
San Francisco, CA 94131
ph. 415/282-3056

Inland Empire Users Group
Ann Quetel
6644 Seine Ave.
Highland, CA 92346
ph. 714/862-5807

Denver ADAM User's Group
1416 Lipan St.
Denver, CO 80204

ADAM Users Group #305
John F. Busby, II
6634 SW 41st St.
Davie, FL 33314

Playground Area ADAM User's Group
Howard Pines
812 Pinedale Rd.
Ft. Walton Beach, FL 32548

Robert J. Niemeyer
292 Boca Ciega Point Blvd. N.
St. Petersburg, FL 33708

ADAM User's Group
Michael G. Graham
217 Albert St.
Winter Springs, FL 32709
ph. 305/327-1387

ADAM Support Group
John Moore
1870 Fisher Tr. NE
Atlanta, GA 30345

Hawaii AUG
Harlan Fletcher
2335C Apollo Ave.
Honolulu, HI 96818
ph. 808/422-4019

Donald R. Lager
5415 N. 2nd St.
Rockford, IL 61111
ph. 815/877-7786

Kansas Adam Users Group
David E. Carmichael
1325 N. Meridian, Apt. 201
Wichita, KS 67203

KC Users Group
Joe Reardon
1513 Tauromee
Kansas City, KS 66102
913/371-7491

Greater Cincinnati Adam Users Group
c/o Keith Bowman
P.O. Box 434
Alexandria, KY 41001

ADAM Network
P.O. Box 85
East Detroit, MI 48021

Bill & Nancy Rahn
12426-15th St. S.
Afton, MN 55001
ph. 612/436-6577

Outsider's Users Group
Donald Viltiard
P.O. Box 771
Starkville, MS 39759

Omaha ADAM Users Club - Norman Castro
809 West 33rd Ave.
Bellevue, NE 68005
ph. 402/291-4405

Al Roginski
4327 Thorndale Pl.
Las Vegas, NV 89103

Metro Adam User's Group
Russell Williams
414 W. 149th St.
New York, NY 10031
ph. 212/208-0645 (9am-5pm M-F)

Genesee Valley Adam Users
Donald K. Zimmermah
5132 Jordon Road
Silver Springs, NY 14550

ADAM-X-Change (New York & Canada)
Wade Rowley
12863 Washburn
Wolcott, NY 14590

Tri-Angle Adam Users - Gary E. Hill
L-5 Oak Grove
Chapel Hill, NC 27514
ph 919/968-0299

Mutual ADAM Users Group
Matt Esterak
412 Bettie Street
Akron, OH 44306

Lake Erie Adam Users
Jonathan Fligner
2110 W. 36th Street
Lorain, OH 44503
ph. 216/282-8467
between 4:30pm & 8pm EST

Portland Adam Users Group
Craig Frerichs
P.O. Box 1081
Portland, OR 97207

The (717) Adam Users - Steve Chamberlain
120 E. 4th ST.
Bloomsburg, PA 17815

Midsouth ADAM Users
Roger Burford, Lot 142 NAS MHP
Millington, TN 38053

Adam Users of El Paso
Dick Lewin
6308 Falling Star
El Paso, TX 79912

Houston AAUG
c/o Thomas Rutan
1805 14th Ave. N
Texas City, TX 77590

Norfolk ADAM Group - Gerald M. Steen
1000 Rockbridge Ave. #144
Norfolk, VA 23508

ADAM Users Group of Central Virginia
Thomas J. Kelly
3B, Rt. 664
Earlsville, VA 22936

ADAM Washington D.C. Users Group
Jim Tyson
1811 St. Roman Dr.
Vienna, VA 22180

Puget Sound Adam Network
Valorie Zimmerman
22607 SE 322nd
Kent, WA 98042
ph. 206/886-1167

Dave Sandahl
USNH, Box 2844
FPO Seattle, WA 98778

CANADA
Robert Dunstan
95 Harland Crescent
Ajax, Ontario L1S 1K2

Derek Townsend
Box 820
Claresholm, Alberta T0L 0T0

J.A. Girard
1420 Ave. Langevin Sud
Alma, Quebec G8B 6B1

Mike Laurier
7350 Roi Rene
Anjou, Quebec H1K 3G6

Mr. G. Hibbert
P.O. Box 10
Mistatim, Saskatchewan S0E 1B0

First Canadian Adam User's Group
P.O. Box 547 Victoria Station
Westmount, Quebec H3Z 2Y6

Winnipeg Adam Users Group
David Fordyce
729 Government Ave.
Winnipeg, Manitoba R2K 1X5

Metro-Toronto Adam Group
P.O. Box 123
260 Adelaide St. East
Toronto, Ontario M5A 1N0

AUSTRALIA

The Bendigo Colecovision Club
W.R. Oldacres-Dear
C1-2 Fenton St.
Bendigo, VIC 3550, Australia

ADAM Owner's & User's Group
Frank Ellis
4 Norman Street
Deakin, ACT 2600, Australia

Product Review: Stage Fright by D. Sage

Product: Adventure Game

**Manufacturer: Mike McCauley, 1442 Sorrel Street,
Simi Valley, CA 93065**

Media: Disk/DDP

**Requirements: ADAM Price: \$29.95 disk or ddp
from manufacturer. Review copy supplied free by
manufacturer.**

Stage Fright is a text adventure game by Mike McCauley. It is his first entrance into the ADAM software market and has indicated that it took two years to develop.

The game takes place in an old theater where you find yourself trapped falling asleep during auditions. The goal is to find your way out. This is not easy since the game has 240 rooms and requires the use of many objects and other information. The game is



composed of three games. Once you find your way out, you are confronted with two additional levels that involve finding a treasure and carrying out a rescue. Naturally the addition-al levels

are more difficult than the first.

The game uses both text entered at the keyboard and commands entered through the special function and Smart Keys. Instead of typing GO WEST you simply press the right cursor key. Other commands can be issued with those keys. Unlike simpler parsers, this one understands both upper and lower case commands.

I have not had the time to make much progress with this game, but will keep trying as it is interesting and challenging. If you like text adventures this one is recommended, it is clear that the author has put a great deal of effort into Stage Fright.

Product Review: Hacker's Guide To ADAM Volume 2

by D. Sage

Product: Manual (110 pages)

**Manufacturer: Peter and Ben Hinkle, 117
Northview Road, Ithaca, NY 14850**

**Price: \$13 from the authors (review copy supplied
free of charge)**

The Hinkle's have spent a lot of time working to provide all of us with technical information on the ADAM's operating system and features. This volume reflects that effort. This publication is generally more polished than their previous efforts and provides a detailed look at the internals of SmartBasic.

The material is well organized and relatively easy to follow. They have done an excellent job of attempting to make this technical information available to all in an understandable and useful manner. Explanations of the various routines and memory locations used by Basic are detailed from interrupts to I/O to graphics.

As was true with volume one, the Hinkle's have included listings of a number of useful utilities that are intended to solve some of the problems and shortcomings of SmartBasic. They have included fixes for additional spaces in REM and DATA statements. In addition they have included listings that allow you to use 40 columns video, define Basic functions with the various Smart Keys, add sound and sprite commands and more. All of these features are combined in a Hello program listing which they include. This allows you to add the Hello program to

your SmartBasic tape or disk that will automatically install the additional features at start up time.

For those of you who have been looking for schematics for the ADAM, these are included in the appendices.

If you program in Basic on your ADAM this is a must buy. I only wish that it had been available when ADAM was first released. Highly recommended.

Product Review: Mage Quest

by D. Sage

Product: Graphic Adventure Game

Manufacturer: Reedy Software

Media: Disk/DDP

Requirements: ADAM w/joystick

Warranty: 90 day

Price: \$15.95 ddp - \$13.95 disk/\$2 postage.

Review copy supplied by manufacturer

Mage Quest is a graphic adventure game that was written by Brian Miguel. Your job is to recover the "Wards", powerful weapons, that have been hidden in the dark catacombs of a castle. In your search you collect various spells that you will use to ward off the various demons that you encounter.

The game is played with the joystick and key-board. You move an onscreen figure (similar to the man in Frenzy) that is done quite well. You move your man from room to room searching for the



"Wards." Once you find the "Ward" on one level, you are automatically transported to the next level. It is wise to collect as many spells as you can because they are necessary to fend off a variety of enemies. The spells are executed by pressing the fire button. Without them you don't have a chance.

In order to exit through a locked door you must have a key. If you don't have the key, then you have to go back until you find it. Unfortunately, your spells are not permanent, but the beasties are and they

return to haunt you again.

The instructions to this game are quite clear and the game play is easy to follow, although not easy to master. Once you are killed by a beastie, you have to start all over again. I did not manage to progress very far initially, but with some practice I did improve some.

The disk does not stop with this adventure game, but includes three more "solo" adventures. These additional adventures more than make this software a worthwhile purchase. In addition Reedy plans to release additional "solo" adventures that may be used with the Mage Quest game disk/ddp. The additional games are more difficult than the initial one.

The games use sound and graphics well. Although the graphics screens are not overly complex, they are certainly well done. Just what I needed another game that I can't put down. Oh well, maybe if I stay up a little later I can master this one. Recommended to all game players.

Product Review: ADAM Resource Directory - 2nd Edition

by D. Sage

Product: Resource Directory

Manufacturer: Keith Burrow, The ADAM Resource, P.O. Box 90-E, Seelyville, IN 47878

Length: over 100 pages

Price: \$14.95 from manufacturer

The ADAM Resource Directory is a must buy for all ADAM owners.

It includes comprehensive lists of software, ADAM suppliers, books, publications, and much more.

In addition it includes lists of user groups and ADAM owners, as well as tips and information that will be useful to many ADAM owners.

I was pleased with the first edition of this publication, but the second is even more outstanding.

In addition to the inclusion of a variety of technical information they have included a section on Apple/Adam equivalents. Also included is information on taking care of your ADAM and a list of Honeywell Service Centers.

This book is exceptional and reasonably priced. Buy It. Recommended highly.



Product Review: Atari 520ST

by Joe Blenkle

Product: Computer system

Manufacturer: Atari Corp.

It was with much sadness that I finally sold my ADAM computer. I was one of the original ADAM owners, first with an expansion module and then with a stand-alone unit. My ADAM no longer met my needs, however, and with no improvement in sight, I had to make the decision to sell it in order to finance another computer.

The computer I chose to replace ADAM was an Atari 520 ST with a color RGB monitor. While I'll always miss my ADAM, the Atari ST can do everything the ADAM did and much more.

The ST comes with four programs: ST BASIC, ST LOGO, NEOCHROME and 1ST WORD. Basic and Logo, are just the ST's version of those languages. Neochrome is a painting program that is very easy to use and 1st Word is a full feature



word processing program.

With the amount of writing that I do, I was in desperate need of a good word processor with an 80 column display. I didn't want to pay another \$300 to get one for the ADAM. That's the basic reason I switched to the ST.

With 1st Word, what you see on the screen is what you get on the paper. The ST has a parallel printer port which allows me to hook up my Epson RX-80 printer directly via a standard printer cable. Bold face appears as bold face on the screen, as do underlined words, italics, etc...

Function keys are used to implement the various features, making it very quick to type in a document just how you want it.

While I have yet to use either ST BASIC or ST LOGO, I'm very impressed by the Neochrome painting program. The colors on the ST monitor are so rich, it's a pleasure to look at. Drawing is done via the ST's mouse, as is color selection and various other functions such as brush size, text, etc...

Thus far, I have only purchased one game for the ST. Sundog: The Frozen Legacy is an outer space adventure that boasts great graphics and play. I haven't proceeded very far in the game yet, but I'm very impressed with what I've seen so far.

To summarize, I miss my ADAM, but I felt it was time to move on. If I had been able to afford it, I would have kept ADAM as well, but in my brief experience, the ST is a fantastic machine with a lot of



potential for future development. A complete b/w system can be bought for what ADAM originally sold for and a color system for only a hundred dollars or so more.

From what I understand, the ST has outsold Commodore's Amiga two-to-one and appears to dominate the battle between the two rivals. Large chain stores are now selling the ST components separately. At Toys R Us the computer goes for \$349, color RGB monitor - \$339, and 3.5 inch disk drives for \$139. I've seen color systems advertised mail order for as low as \$788. If you ever decide on another computer system, I would highly recommend the Atari ST computer.

Product Review: Atari 7800

by Joe Blenkle

Product: Video game system

Manufacturer: Atari Corp.

Price: \$79.97 at Toys R Us

Rating: 8

It's been some time since the old Atari Inc. was purchased by Jack Tramiel and became the new Atari Corporation.

Now the new Atari has raided the old Atari warehouse and released the long awaited 7800 Videogame Pro System. I'm far from an expert on the subject, but I must ask myself again, "Why did Coleco discontinue ColecoVision?" The videogame market certainly isn't dead. Atari 7800's are selling

out in my area as fast as they can be put on the shelves. The new Nintendo system is selling almost equally as fast.





The Atari 7800 is slightly smaller than a Colecovision console. It comes packaged with two ProLine controllers and a Pole Position II cartridge. It can also play all Atari 2600 compatible cartridges. Unlike its cousin, the Atari 5200, the 7800 is compatible with most conventional joysticks, although some games use two fire buttons for various functions.

For those of you who have seen the Pole Position II arcade game, you will be impressed. Graphics are very close to the original, complete with four different tracks, scenery sets and flying tires when your car crashes. I feel, however, that they could have done better with the sound effects of the game — the sound as a whole on the game isn't all that great.

On a whole, graphics on the 7800 are probably better than Colecovision's, equal to or better than Nintendo's and definitely better than the Atari computer games. My only complaint is that your race car looks, much like they do in TV or movies, as if one scene has been superimposed over another. It's almost as if your car is real and it's sitting in front of a movie of race action.

The 7800 controllers are very easy to use, with two fire buttons for different functions (right and left) and a joystick in the upper center of the controller. They are a definite improvement over the old 5200 controllers and are compatible with other standard game systems.

While I've heard there are about a dozen cartridges in release or about to be released, as of this writing only three were available, Ms. Pacman, Joust and Deluxe Asteroids.

Graphics are improved over the Atari computer versions and all are a lot of fun to play. Asteroids uses shading on the asteroids to create a 3-D look to the game. All cartridges are currently selling for \$9.97 at Toys R Us.

In all, I think Atari has a winner with the 7800 system. I have not heard, however, if they plan on continuing their support or whether they are just

dumping the system and the cartridges on the market to get rid of them. The system box bears the Atari Inc. Copyright 1984, while the game boxes are Copyrighted 1986 Atari Corp.

Supposedly in release or about to be released are games such as Food Fight, Desert Falcon, Xevious, Ball Blazer and Rescue on Fractulus (from Lucasfilm), Centipede and Dig Dug.

Only time (and sales) will tell the future of the 7800 system.

Programs

The following LOGO program was submitted by David Jacksch. After typing this in and saving it. Reload LOGO and then type: LOAD "WET.PET [RETURN] and the PETPIC1 picture will load automatically.

```
TO BEGIN
FIX.SCREEN
SETBG 5
CREDITS
WINDOW
LOADPICT "PETPICT1
SET
ANIMATE
END
```

```
TO FIX.SCREEN
ERDS RECYCLE
THAW WRAP
TELL ALL CS PU HT
SETTEXT 0
END
```

```
TO CREDITS
SETCURSOR [12 9]
PRINT [WET PET]
WAIT 100
SETCURSOR [9 14]
PRINT [BY D. JACKSCH]
END
```

```
TO SET
PUTSH 20 :FIN1
PUTSH 21 :FIN2
PUTSH 22 :FIN3
PUTSH 23 :BUB1
PUTSH 24 :BUB2
PUTSH 25 :BUB3
PUTSH 26 :MOUTH
TELL 1 SETSH 23
TELL 2 SETSH 24
TELL 3 SETSH 25
TELL [1 2 3] SETC 1
```

TELL 4 SETSH 26
 SETPOS [53.38951 -0.8995518] SETC 1 ST
 TELL 5 SETSH 20
 SETPOS [20.226562 -27.0625]
 SETC 8 ST
 END

TO ANIMATE
 AIRPUMP
 IP 0 = RANDOM 4 [PAD]
 IP 0 = RANDOM 8 [BREATHE]
 IP 0 = RANDOM 2 [BUBBLE]
 ANIMATE
 END

TO BREATHE
 TELL 4
 SETC 5
 WAIT 50
 SETC 1
 END

TO PAD
 TELL 5
 SETSH 20
 WAIT 8
 SETSH 21
 WAIT 8
 SETSH 22
 WAIT 8
 SETSH 21
 WAIT 8
 SETSH 20
 END

TO AIRPUMP
 NOISE 2 4 0 0 0
 END

TO BUBBLE
 TELL (1 + RANDOM 3)
 IF 0 = RANDOM 2 [SETPOS [80-112]] [SETPOS [-87
 -112]]
 ST SETSP 25
 WAIT 150
 TELL [1 2 3] SETSP 0
 HT
 END

MAKE "STARTUP [BEGIN]
 MAKE "NOTE [I HOPE YOU ENJOY MY LATEST
 PROGRAM. NOW YOU CAN HAVE A RARE EMERALD
 - CROWNED

ORPHAN FISH, AND YOU NEVER EVEN HAVE TO
 CHANGE THE WATER!
 MAKE "MOUTH [0 24 112 112 24 0 0 0 0 0 0 0 0 0 0
 0 0 0 0 0 0 0 0 0 0 0 0 0 0]
 MAKE "BUB3 [96 144 144 96 0 12 18 18 12 0 0 0 3 4 4
 3 0 16 0 0 0 32 0 0 0 12 18 18 12 128 128 0]
 MAKE "BUB2 [14 17 36 40 32 17 14 0 1 0 128 7 12 8 8
 71 0 0 128 128 128 6 9 9 6 0 0 0 128 128 128 0]
 MAKE "BUB1 [0 0 0 0 14 17 17 17 14 0 0 48 72 72 48 0
 0 12 18 18 12 0 0 0 48 48 0 0 140 18 18 12]
 MAKE "FIN3 [3 3 3 7 7 7 15 15 15 15 15 15 15 7 0 0 255
 255 252 252 248 248 240 240 240 224 192 192 128 0 0
 0]
 MAKE "FIN2 [3 3 3 7 15 31 31 63 63 63 62 28 0 0 0 0
 255 255 254 252 24 8 240 224 192 128 0 0 0 0 0 0 0]
 MAKE "FIN1 [3 7 15 31 63 127 127 255 254 252 120 0 0
 0 0 0 255 255 252 240 224 192 128 0 0 0 0 0 0 0 0 0]

EDITOR'S NOTE: Whoops, I goofed. I don't program
 in LOGO so didn't notice. David Jacksch tells me there is
 a problem with the "wet.pet" LOGO program.

The "BEGIN" procedure attempts to load and draw
 "PETPICT1", but you will get an error unless the file
 exists on the disk drive or data drive.

HOT NEW BOOK!! THE HACKERS HANDBOOK
 Everything you wanted to know about modems
 and telecomputing...\$12.95

The ADAM Depot
419 Ridgeway Ave.
Johnsonburg, PA 15845
(814) 965-2487

HOT NEW PROGRAM!! MULTI-WRITE FROM
STRATEGIC SOFTWARE...\$38.95
 a 64 column word processor for the Adam. No
 need for expensive 80 column unit. (dp) only.

Let the ADAM DEPOT be your one stop computer center for all your ADAM computer needs.

Adam Disk Drive.....\$219.95
 Adam Link Modem.....\$79.95
 Speech Synthesizer.clock calender.....\$109.95
 Fully adjustable tractor feed for Adam printer.....\$79.95
 Eve Serial-Parallel Interface unit.....\$139.95
 Eve 64K Memory Expander.....\$59.95
 Eve Power Supply (eliminates need for Adam printer)..\$69.95
 Extra Digital Data Drive.....\$29.95
 3 piece brown dust cover set with Adam logo.....\$17.95
 Super Sketch Graphics Tablet...\$32.95
 Flip N' File 50 (holds 50 5.25 diskettes).....\$14.95
 6 outlet spike protector.....\$24.95
 Daisy Wheels for Adam printer (11 styles).....3 for \$14.95
 Adam Printer ribbons.....3 for \$14.95
 Loran brand blank data packs.....3 for \$12.95
 Nashua blank 5.25" diskettes.....10 for \$14.95 / 30 for \$39.95
 Adam monitor cable.....\$8.95
 Family Feud.....\$19.95
 Adam Calc.....\$34.95
 SoftSync Personal Accountant....\$24.95
 Super Special-Nashua Blank Disks...100 for \$99.95

Back up+ 3.0 (dp) or (d).....\$29.95
 Address Book with Auto Dialer (dp).....\$29.95
 SmartLogo (dp).....\$39.95
 Dragon's Lair (dp).....\$19.95
 Power Print (dp) (allows right justify & center margin)..\$23.95
 Paintmaster (dp) create & save beautiful images...\$23.95
 Smart Speller (dp) or (d) (spelling checker program)...\$38.95
 Smart Filer (dp) (filing program).....\$29.95
 Video Tunes (dp) (music composition program).....\$29.95
 SmartBasic Bonanza (dp) or (d) (Martin Consulting)...\$29.95
 Fantasy Gamer (dp) or (d) (Martin Consulting).....\$29.95
 Extended Basic Utilities (dp) or (d).....\$19.95
 Diablo (dp) or (d) (all graphic game).....\$19.95
 World Geography (dp) insight into the world....\$14.95
 America at War (dp) learn facts about 6 wars.....\$14.95
 Adam's Companion book (good all around book).....\$9.95
 Adam Depot brand blank data packs.....10 for \$29.95
 Baseball cap - "I Love my ADAM computer".....\$4.95
 Tractor fanfold paper 8.5" x 11"....1,000 sheets for \$14.95
 TurboLoad (speeds up loading programs 1000%)...\$29.95

NOW AVAILABLE: Infocom games for Adam (cp/m 2.2 required) Zork I, II, III, Wishbringer, Hitchhiker's Guide to the Galaxy, etc.....\$CALL\$\$
BISA/MC ACCEPTED SHIPPING \$2.50 per order CATALOG \$.25 CANADA SHIPPING \$5.00

CP/M PUBLIC DOMAIN FOR THE ADAM

In addition to our other products we carry a growing portion of the CP/M Public Domain library in the ADAM CP/M format. While we have tested much of this software we cannot guarantee that it is all bug free; however, most of this software has been around for some time and has gone through a number of revisions to eliminate any bugs that have appeared.

All prices are given in U.S. funds. Canadian orders should be in U.S. funds or equivalent. Orders to other foreign countries add \$2 for each disks and \$3 for each data pack to cover overseas shipping.

Order No.	Description	Disk	DDP
cpm1	ADVENTURE - the original public domain game. Disk recommended.	\$5	\$7
cpm2	TINIDISK - a version of Tiny Basic. Includes STARTREK	\$5	\$7
cpm3	PILOT - Implementation of the PILOT language.	\$5	\$7
cpm4	POW2 - Text formatter	\$5	\$7
cpm5	EBASIC package (5 disks or ddp's) Includes HELP files. EBASIC compilers, source code and OTHELLO game.	\$25	\$35
cpm6	EBASIC GAMES - requires CPM5 above.	\$5	\$7
cpm7	EBASIC games - requires cpm5 above.	\$5	\$7
cpm8	EBASIC games - requires cpm5 above. (2 disks or ddp's)	\$10	\$14
cpm9	EBASIC games - requires cpm5 above.	\$5	\$7
cpm10	MADAM7 - Modem7 for the ADAM and other utilities.	\$5	\$7
cpm11	ASSEMBLER & DISASSEMBLER (2 disks or ddp's)	\$10	\$14

ADAM BASIC PROGRAM LIBRARY

PL1	Checkbook balancer, mailing list (prints labels), graphics and sound demos, picture drawing, grade calculations, envelope addresser.
PL2	Screen and text color changer, note player, sprite demo, filing system, games, statistics, grade point average, timer, and graphics demos.
PL3	Serpent, battleship, joinfour, checkers games, sprite editor, graphics, educational programs, tic tac toe, menu program, and an event scheduler.
PL4	Dungeons and Dragons game (elaborate), EVIL3 game, football game forcaster, and 8 ball fortune teller. A disk drive is required for D & D game.

PL1, PL2, and PL3 are available on either disk or data pack for \$9.95 each to U.S. and Canadian customers. Foreign customers add \$2 per disk or \$3 per data pack. PL4 is available for \$5 on disk and \$7 on data pack to U.S. and Canadian customers. Foreign customers add \$2 per disk or \$3 per data pack. Send U.S. funds or Canadian equivalent only.

See ordering instructions on page 2 of this issue.

COPYRIGHT 1986 SAGE ENTERPRISES

UNREAL UTILITIES

*Copyright 1986 Sage Enterprises
All Rights Reserved*

UNREAL UTILITIES is a menu driven set of utilities that will allow you to read and edit directory information for SmartWriter and SmartBasic files, delete and remove entries that will free up wasted directory space, fix corrupted directories, change file names and their characteristics and more; format disks; edit and dump blocks on disk or data pack; compare two copies of media to insure that they are identical; move blocks from one location to another on a disk or data pack; and RECOVER files and programs from a disk or data pack even if it has been INITed in SmartBasic.

These utilities are especially useful to anyone involved in the development of software for the ADAM.

U.S. and Canadian price - \$36.95 US funds.
Foreign price - \$40.95

CONVERT

*Copyright 1986 Sage Enterprises
All Rights Reserved*

CONVERT allows you to copy non-ADAM CP/M disks to Adam format, giving you access to data and programs that may not be available in Adam CP/M format.

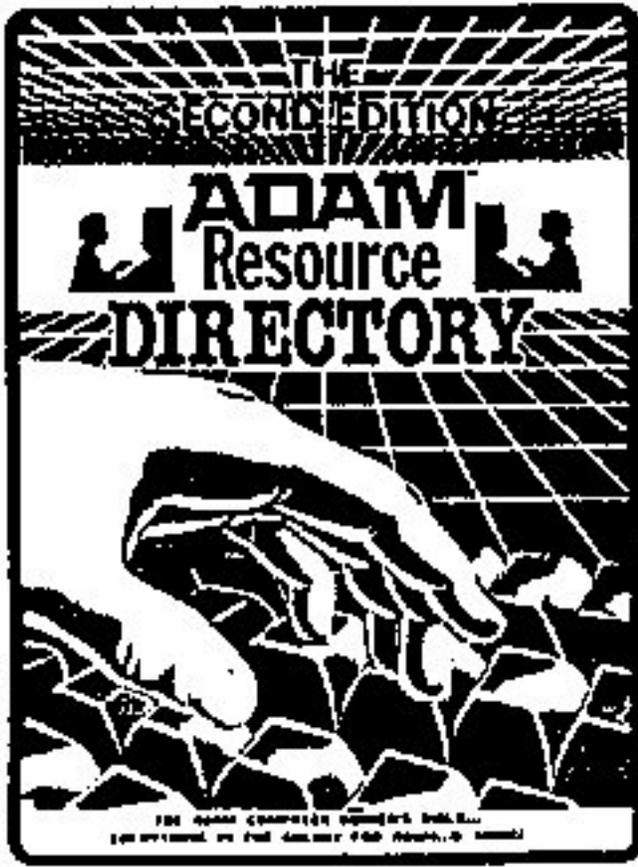
Convert accesses:
Zenith 100 CPM-85 SSDD disks
IBM PC CPM-86 SSDD disks
TRS80 CPM+ SSDD disks

System Requirements: Adam with at least one digital data drive and at least one ADAM disk drive, CPM2.2 and SmartBASIC.

CONVERT reads the three disk formats listed above and converts them to the ADAM format. In order for a CP/M program to run on the ADAM, it must be CP/M 80 version 2.2 compatible and must allow for configuration to the ADAM system. CP/M 80 version 2.2 software is available on the three disk formats listed above. To avoid confusion we generally recommend that such software be obtained on the Zenith format. Always make sure that the software you obtain to use on your ADAM is CP/M 80 version 2.2 or it will not run on your ADAM. Some examples of software that have been CONVERTed are Microsoft Basic, Turbo Pascal, ASCOM, and WordStar.

If you are considering buying CONVERT make sure you have a good understanding of the CP/M operating system. If you only have a need to CONVERT a few programs to ADAM format you may want to consider our software conversion service listed elsewhere in this catalog.

U.S. and Canadian price - \$36.95 US funds. Foreign price - \$10.95 US funds.



**THE ALL-NEW
2ND EDITION
IT'S NOW AVAILABLE!
WHERE TO FIND
EVERYTHING FOR ADAM
& MORE**

- * 110 PAGES ***
- * 2-COLOR PRINTING ***
- * FREE UPDATE SHEETS ***
- * SPIRAL BINDING ***
- * INDEXED FOR
EASY REFERENCE ***
- * JUST 14.95 POST PD ***

If you own an ADAM Computer, you need the all new 2nd Edition ADAM Resource Directory. We have worked months collecting a vast amount of info for ADAM users & have put it together in a practical, attractive, affordable package. If you don't have this directory you're not getting all you can out of your ADAM! Read below for details on what info we include then rush to the post office with your order.

- Software Section - 400 pieces listed and described. Software by category. CP/M Software Info. Public domain software sources.
- Hardware section - over 60 listings.
- Publication section - 50 ADAM books listed/ 12 ADAM Newsletters/Over 70 computer magazine listings. Over 30 CP/M books listed/21 Z-80 books listed.
- ADAM Retailers - Over 110 companies listed that carry Adam products/36 listings of mail-order companies that carry general computer products.
- User group section - Over 100 groups listed around the world.
- ADAM user section - Several hundred Adam users listed that want to be in contact with other users.
- Service information - All you need to know about caring for Adam/Complete list of Service Centers.
- Online section - Tons of info to use your modem/Adam BBS'/Compuserve/info databases & services/online publications/general BBS listings.
- General tip section - 8 full pages of valuable info for you.
- Hacker section - Advanced info section/Comprehensive POKE & PEEK charts/Adam System Calls/ Adam/Apple Equivelemts/Text color table/Hex-Decimal Conversions/Sprite info & more.
- The ADAM Shopper Section - 24 pages of nothing but ADAM ads from the leading ADAM companies. You'll find everything here!

Send \$14.95 today - Check or Money Order (US Funds Only)

THE ADAM RESOURCE
P.O. BOX 90-E
SEELYVILLE, IN 47878

All orders are usually shipped in 24-48 hours. We ship 3rd class US mail.
If you want yours sent 1st class priority, add \$2 to your order.

ADAM™

High Speed digital data pack
BLANK PRE-FORMATTED C-250



We stock Loran Digital Data Packs. These are available to subscribers for \$5.00 each, two for \$9.00, or ten for \$40.00. Foreign and Canadian orders include additional postage sufficient to cover additional shipping charges. Order according to instructions on page two of this issue.