EDITOR: Ed Jenkins

AUTHORS: Ron Mitchell, Patricia Herrington, Keith Jefferson, Stan Wong, Aaron Hamlett, Barry Wilson, Steve Major, Richard Lefko and Ed Jenkins.

NOTE: If you have some information about the ADAM that you would like to pass on to other members, please write. We will welcome your contributions to ADAM'S ALIVE, any information such as: articals, programs, reviews, comments, hints, complaints, etc. With your help, we can help other ADAM owners to get full use from their computer.

Please, unless you are the author, do not send any listings of copyrighted software. Except for programs with a signed release, all program listings printed in each issue must be public domain.

PROGRAMMERS/HACKERS: If you have a program or utility that you think is good enough to have published, please send us a review copy. We will market all software that we feel is good enough for publication.

THANKS

The Editor wishes to thank Mr. Barry Wilson and the Adam News Network for contributing several articles that we used in this newsletter. The hard work of the authors and distribution by Mr. Barry Wilson is greatly appreciated.

INDEX

REVIEWS

FROM THE EDITOR'S DESK:

What happened to ADAM'S ALIVE? I sent in my membership, but have only received one issue. Do you plan on producing any more issues? Did my letter get lost in the mail?

These are just some of the questions that we have been getting from members lately. The answer to all of them is: no your letter did not get lost. As you can see, ADAM'S ALIVE is back after several months. Due to severe family problems and a very hecktic work sehedule, I was unable to produce another issue until now.

My family problems have recently been resolved, and my work schedule has been reduced slightly. By reducing to publishing bi-monthly, I feel that I will have no more trouble in keeping up with the publishing dates. I hope that you understand my situation and will bear with me.

Several of you have sent in requests for refunds or credit for software and hardware. For those of you, we have a very special deal this issue. So much of a deal in fact, that we feel that it will more than make up for the delay.

ADAM NEWS & ANNOUNCEMENTS

● Due to time limitations and the recent loss of our low cost printer for this newsletter. we have reduced the publication to bi-monthly. All members will receive their number of issues remaining on their membership.

● Soloman Swift and Tony Patterson (The Softworks Factory) have parted ways. It seems that Mr. Swift has decided to once again go it 'on his own'. What will happen to DEI and Mr. Swift's Nibbles and Bits Newsletter? Only time will tell.

● We have made the installation of our MegaRAM memory expansion card a lot easier. Our latest shipments of Parallel Interfaces and Addresser cards have a red wire attached to the memory location and our latest shipments of MegaRAM cards have a micro clip attached to the required MegaRAM wire. To install our MegaRAM to our Interface or Addresser is as simple as attaching the clip to the provided red wire on the Interface or Addresser card. Our older version required soldering. Now, any Adamite can easly install MegaRAM.

● Due to finding two bugs and having a slight problem with the author. we have dropped 'Lord Simon's Castle' from our product list. If you purchased this product. please return it to the dealer you purchased it from for a refund or exchange.

● Tony Morehen (AJM Software) should be releasing his new version of CP/M shortly. This exciting new package. TDOS 4.0. is literally packed with features. TDOS 4.0 will be available to all ADAM owners in our public domain section shortly.

● Walters Software recently released their first SmartDSK Cartridge. This fantastic utility contains their SmartDSK operating system that sets up any size memory expander as a high speed drive. Look for a complete review of this fantastic product in this issue. Member price: $27.95.

● Walters Software is currently working on a new version of their already popular SmartDSK cartridge. This new version will use drop down windows and dialog boxes. It will contain the most advanced set of machine language utilities ever released for the ADAM. These utilities will replace those found on their SmartDSK III package. The user can choose to use their new SmartDSK operating system. or use the standard EOS if they so choose. The cartridge will use the expander card (any size up to ONE MEG) as drive D7. The user can also use tape drive #2 as the Ram Disk, this will allow the use of programs that only support standard drives (such as ADAMCALC). The user can use the standard ADAM printer or an Epson compatible dot matrix.

● Walters Software can now supply any version of SmartBASIC on a cartridge. No longer will you have to wait while your copy of Basic loads. Simply pull the cartridge RESET and almost instantly Basic is ready to use. When ordering. you will need to specify which default drive you wish the cart to use. The default drive will be the one that Basic looks for the HELLO or 'boot' program. Member price only $19.95

● Reedy Software has released a new graphic game for the ADAM called "DRAGON: The Chinese Challenge". Look for a complete review next issue.

● Reedy Software has also release a fantastic package for use with PowerPAINT. PowerTools contains over 90 files. These files contain an assortment of 10K PowerPaint files. Clip Art Files. Font Sets. Sprite Sets and an assortment of paint brushes. Look for a review in this issue.

● Trisyd Video Games will soon release two exciting hardware items for the ADAM. The Dynamite Sound Digitizer (DSD) allows you to capture and store any type of sound to a disk or tape. These sounds can then be used in your programs for some great sound effects. The user need not have the DSD to play back the sound. Trisyd will also soon release their new SmartClock. The clock can be user installed into the ADAM. or installed in the DSD. Look

for a one page advertisement in this issue. We will review these new products as soon as they become available.

● Trisyd has just released a new 320K Extended Data Pack. E. & T. Software will be the sole U.S. manufacture and distributor. They are 20% faster than the standard Coleco data packs. By decreasing the length of the storage blocks, these new 320's have an additional 64K of storage space. They are compatible with SmartWRITER, SmartBASIC and several third party software programs. If you plan on using a block copy program, you will need to slow down the speed of one of your tape drives. This needs to be done because the length of the blocks have been reduced. The speed of your drives can easily be adjusted by using the SPEED TESTER program found in our public domain section. As with our standard Data Packs, we warrant them to be free from factory defects for a period of ONE YEAR. Member price for these new high quality Extended Data Packs is as follows: 1-9 $2.00 each, 10 or more $1.80 each.
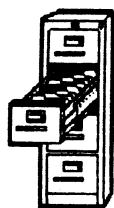
STORE MORE
PROGRAMS & FILES
WITH OUR NEW 320K
DATA PACKS.

● Three new public domain packages have been released that are simply outstanding. These are: DaVince, Coleco Graphics Processor (CGP) and MacADAM. Imported from France, DaVince is a very nice graphics design program written in Z80 machine language. CGP is a program written by Coleco to design Super Game screens. This one is a MUST HAVE for all ADAM game designers, or for those of you who just want to play around. MacADAM is a Z80/EOS Assembler for the ADAM. If you already know how to program in Z80 machine code, or are wanting to learn, this one is fantastic. A MUST HAVE for all programmers.

● Six (6) additional public domain programs have been released as follows:

CHESS SOLITAIRE - This public domain program has been contributed by Al Roginsky. This is a Chess game in which the player trys to guess the next move of a chess game played by the masters. A total of 15 classic games are included. The program uses great graphics to display the board and sprites are used for the chess pieces. As a BONUS, Knights Tour (a chess puzzle) is also included. The puzzle challenges the player to more the knight in such a way as to touch the squares of the board. Complete instructions are included for both games.

MEDIA MATE - This is a collection of media editors by D. L. Ewing, Brent Lymn and Guy Cousineau. This set of programs allows for the disassembly of selected sections of a data pack or disk (or memory). This set of utilities allows the user to recover data from a bad directory or even patch or customize programs to your chosing. This package is recommended for experienced ADAM users ONLY. Complete instructions are included on the media.

ARTILLERY DUEL - TOMARC THE BARBARIAN - WORD FEUD - All three of these new games are unreleased cartridge games by K-TEL (XONOX). Great fun for the entire family. We will have complete discriptions of theses programs next issue.

MR. T YAHTSEE - Play Yahtsee on your ADAM. Released into the public domain by Mr. T. Software, this game contains 13 rounds, each allowing three rolls of the dice to score points. Up to nine players can play the game. Scoreboard keeps track of the best scores. Complete instructions are included. This could pass for a commercial game.

● Micro Innovations has released their new Hard Drive system for the ADAM. Shown at ADAMCON01 this unit is simply GREAT. Look for a two page advertisement in this issue. Look for a complete review of this excellent product in this issue.

● ADAMcon 01 was a great success last year in Florida. So much of a success in fact that ADAMcon 02 has been scheduled for August 15th - 18th of this year in Toronto Canada. Look for complete details next issue. Monte Neece (who did such a great job of organizing ADAMcon 01) recently went to Toronto and visited with MTAG members to help get things started. It has been decided that Mr. Terry Cairns will be acting chairman for this coming event. We plan on going and hope that every Adam's Alive member can attend as well.

● Z-Delta Software (Solomon Swift) has released a colorful graphic board game called 'PITY'. One to four players can play. Based on SORRY and TROUBLE, this one will give your family hours of entertainment. Look for a complete review next issue.

● Steve Pitman (ADAM BOMB, GHOST ZAPPER, MIND OVER ADAM, etc.) has just release an exciting new game called 'BRAINSTORM'. Look for a complete review in this issue.

● Mr. Mihn Ta, working with S & M Video, has released ADAMMOUSE II. This new mouse plugs into the ADAM just like a game controller. It is completely compatible with all ADAM software that utilizes the joystick port. Selling for around $65, this new mouse is much easier to install than any other mouse system yet available for the ADAM. For ordering information, contact:

S.M. Video
P.O Box 3189
Oakton, VA 22124
(703) 620-4485)

● Our Defender Game (on Data Pack or Disk) is now available to members for only $3.00 each. This is a great game by Atarisoft that any avid game player would want in his/her game collection. This is a bargain that you should not pass up. Great fun for the whole family. Our current 25% discount does not apply to this product.

● We have no news to report on the release of Gary Bowsers' ADAM Image Maker. We have been told he has been working hard on projects for the TI 99/4A. Hopefully he will have time in the near future to finish this long awaited video enhancement for the ADAM.

● Graftex Software has also released a program called 'SmartBASIC Construction Set'. This package is designed for the novice Basic programmer. Look for a review next issue.

● Chris Brayman has just about completed work on his MIDI serial interface. This new product allows ADAM owners to connect to a synthesizer. With this new product and a synthesizer, the ADAM can play some darn good music. More details as they become available.

● Graftex Software has released a new graphic adventure game for the ADAM called 'The Abominable Snowman'. This is a great starting-level adventure game. Look for a review in this issue.

● Several members have complained that we have not continued our articles on SmartBASIC programming for some time now. Rest assured, WE WILL start back up these columns next issue.

● We had planned to include a program in this issue, but we ran out of room. We will continue our printing of programs starting with the next issue.

● Due to popular demand, beginning next issue we will be offering the fantastic new video game system from SEGA called "GENESIS". This system uses 16-bit technology to bring you the ultimate in game play fun and excitement. Your video gaming will never be the same again oncve you've experienced Genenis's high definition arcade quality graphics, stereo musis and sound effects, realistic voices and unsurpased game play. Member price $189.95

● To go along with Genesis, we will offer a good supply of the most fantastic home video games you have ever seen. Prices will range from $41.00 to $60.00 each. Look for a complete listing next issue.

Micro Innovations of Reston, Virginia is pleased to announce the immediate availability of their new Powermate line of expansion products for the Coleco ADAM computer. The Powermate 2 and Powermate 4 products are add-on stand-alone subsystems that provide single or dual 10, 20, or 30 MB hard disk drives, single or dual 360K or 720K floppy disk drives, an ADAM-compatible parallel printer port, two RS-232 serial ports, and an ADAM-compatible expansion memory board port.

The Powermate 2 consists of an attractive and compact external cabinet (which houses up to two disk drives), an interface board (which mounts in the center expansion card slot inside the Adam), and all necessary cables and software. The Powermate 4 offers a four drive external cabinet in place of the standard two drive cabinet. Both models have sufficient power supply capacity for their full complement of disk drives, as well as an internal fan for effective cooling. Installation of the Powermate requires no modifications to the Adam.

All Powermate units come standard with two RS-232 serial ports - one set up for a CRT terminal or serial interface printer, and the other set up for an external modem. Also standard are an ADAM-compatible parallel printer port and a memory extender board port for an Orphanware or E & T memory expansion board. The serial ports are addressed so that they do not interfere with existing Adam expansion products. All ports are fully supported by the included TDOS software.

Both models come standard with a single 10, 20, or 30 MB hard disk drive. Powermate 2 can accomodate a second drive - either a hard disk or a floppy disk drive. Powermate 4 allows a second hard disk drive as well as one or two floppy disk drives to be added. The supplied software fully supports up to four Powermate drives - 2 hard disk drives and 2 floppy disk drives, along with the four ADAM floppy disk and tape drives.

Micro Innovations supplies two operating systems with each Powermate unit - TDOS release 4.0 and EOSHD release 3.3, both from AJM software of Ottawa, Canada. TDOS is a significantly improved replacement for the Digital Research CP/M operating system and EOSHD is the standard Coleco EOS operating with Powermate hard and floppy disk capability added. Full support is provided for all Powermate capabilities - both serial ports, the parallel printer port, the memory expander port, and up to two hard and two floppy disk drives.

Utility programs are provided to perform disk and tape formatting, set hardware parameters (to change floppy disk formats, serial port defaults, and IOBYTE assignments), backup and restore hard disk data, and park the hard disk heads. In addition, many public domain programs are provided, including Z80 assembler, debugger, text editor, archiving, de-archiving, and communications packages. Also included are patches to allow common EOS applications programs to execute from the Powermate hard disk(s), and a custom version of AJM Software's popular File Manager to perform the patching.

To install Powermate, the user simply plugs the interface board in to expansion slot #2 (the center slot), connects the external disk drive enclosure to the interface board, inserts the boot disk or tape, and pulls the reset switch. Both TDOS and EOS are pre-installed on the hard disk. As delivered, TDOS is the default operating system. To go to EOS, type "EOS" and hit the return key. To go back to TDOS, hit the "Wildcard" key. Instructions are included for the user to make an EOS boot tape or disk, if desired. Also, software is provided for the user to change the size or number of EOS or TDOS partitions.

Micro Innovations is currently shipping the 10 and 20 MB Powermate 2 versions. Introductory pricing for orders received before January 1, 1990 is set at $399.00 for the 10 MB unit and $499.00 for the 20 MB unit. The 30 MB Powermate 2 configuration and the Powermate 4 units are expected to be available in January of 1990. Floppy disk drives (either 360K or 720K) can be added to either product for an additional $100.00 when ordered with Powermate. All units come with a 90 day warantee and are completely assembled, tested, and ready to run. The component parts of the Powermate products are not available separately. A hard disk BOOT ROM, either in cartridge or ADAM CPU plug-in form, will be available in first quarter 1990.

To place an order or for additional information, contact Mark Gordon on the AWAUG BBS or write or call Micro Innovations at 12503 King's Lake Drive, Reston, VA 22091, (703) 620-1372. Normal office hours are 6 to 10 pm, Monday through Friday. A telephone answering machine takes messages at all other times.

SUPERCHARGE YOUR ADAM!

INTRODUCING **POWERMATE**™ - THE ULTIMATE ADAM UPGRADE

Features:

- Self-contained external enclosure - 2 or 4 disk drives
- Plug-in interface board (goes in expansion slot #2)
- 10, 20, or 30 Megabyte hard disk drive(s) - up to 2
- Optional 360K or 720K floppy disk drive(s) - up to 2
- Two RS-232 Serial ports - one DCE and one DTE
- One standard parallel printer port (ADAM compatible)
- Memory expansion board signals (compatible with Orphanware and E&T boards)
- TDOS Version 4.0 operating system (much improved CP/M replacement)
- EOS operating system (including SmartBasic for HD and patches for popular applications programs)
- Installation and utility software
- Public domain software (including already-patched communications programs)
- All necessary cables (2 RS-232, 1 Centronics, 1 Disk)
- Easy to follow installation instructions
- Assembled and tested - ready to plug in and run!
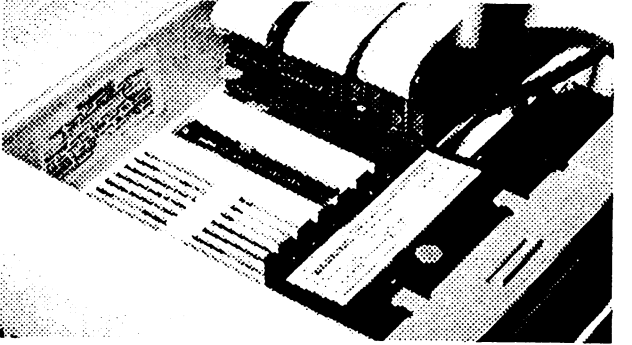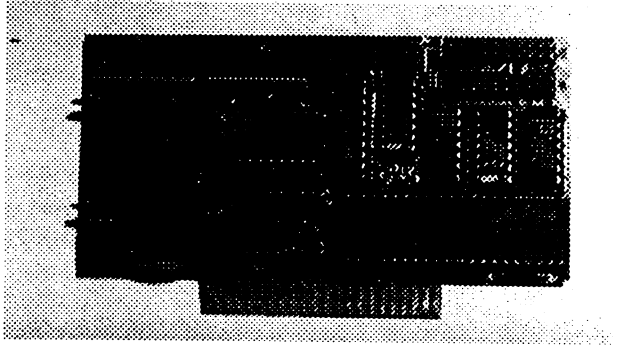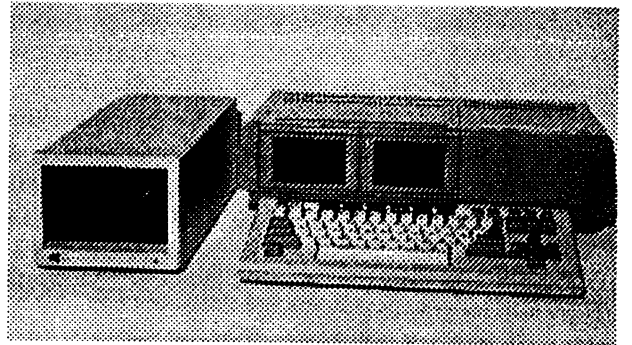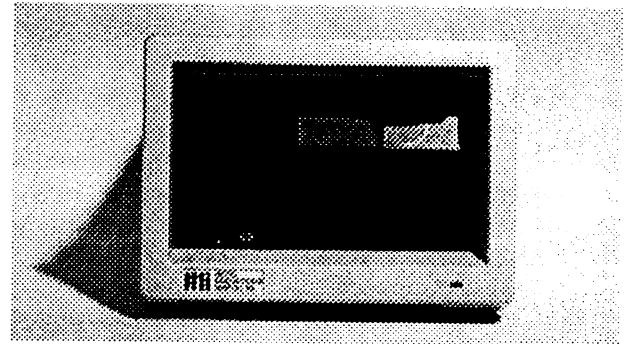
The basic **Powermate** product consists of the Powermate interface board, a 2 or 4 drive external disk drive enclosure, all necessary interface cables, and all software needed to operate the Powermate with the ADAM. The interface board (which mounts in ADAM expansion slot #2) contains two RS-232 serial ports, a Centronics compatible printer port, the expansion memory board port, and the external disk enclosure interface port. The Powermate 2 external enclosure contains the disk subsystem power supply, the disk controller board, a hard disk drive, and space for mounting a second disk drive (either a second hard disk drive or a floppy disk drive). The Powermate 4 external enclosure includes all the standard features of the Powermate 2 but has provisions for adding a second hard disk drive and up to 2 floppy disk drives.

Introductory Pricing (for orders placed before 12/31/89)

Model	Description	Price
2/10	Single 10 MB Hard Disk	$399.00
2/20	Single 20 MB Hard Disk	$499.00
2/30	Single 20 MB Hard Disk	$599.00
4/10	Single 10 MB Hard Disk	$499.00
4/20	Single 20 MB Hard Disk	$599.00
4/30	Single 20 MB Hard Disk	$699.00
360K	Add-on 360K Floppy Disk	$100.00
720K	Add-on 720K Floppy Disk	$100.00
10M	Addtional 10MB Hard Disk	$125.00
20M	Second 20 MB Hard Disk	$200.00
30M	Second 30 MB Hard Disk	$275.00

MICRO INNOVATIONS

12503 KING'S LAKE DRIVE, RESTON, VA   (703)620-1372

Using Apple and IBM BASIC Program Listings
by Ron Mitchell

From time to time, you'll come across a magazine program listing that looks interesting, and you'll decide to try it out on ADAM. This sort of exercise - and it can be just that, exercise - can be simultaneously satisfying and frustrating, depending on your knowlegde of BASIC, your patience, and your willingness to see the project through. One thing can be stated with certainty. There is no better way to improve and exercise programming skills than the study of someone else's working program, assembler or BASIC, warts and all.

I've done some of this, and there are a few things I've picked up in the course of such efforts. It seems like information worth sharing. Since most of the listings I come across are written in either Applesoft or BASICA, we'll deal with those two. If anyone has tried converting a program written for the Timex Sinclair, the Commodore machines, or for the Macintosh, I wouldn't mind hearing from you.

APPLE

Applesoft BASIC is very close in syntax to SmartBASIC. One of the reasons for your buying ADAM may have been Coleco's claim that it was Applesoft compatible. To a point, the claim is true, but only to a point. Apples have 40 or 80 column displays. ADAM has only 32, unless you have an 80 column card, or you're using a 40 column conversion program. Beware of HTAB and VTAB commands in an Applesoft program that will take you beyond the limits of your screen. Depending on the application, a considerable amount of reformatting is often necessary. Undertaking this task implies that you have thoroughly reviewed source program flow, and that you now exactly what it's going to put on the screen, and where.

Applesoft high resolution graphics are written for a screen of dimensions 280 by 192 pixels (HGR2). Again, reformatting is required to fit a screen into our smaller 256 pixel width. Frequently, Applesoft will use PEEK and POKE commands to accomplish tasks for which SmartBASIC has commands. For example, our command ERRNUM(1), used in error trapping routines has no counterpart in Applesoft. Apples use PEED(222) and you'll see this often in their programs. Another common discovery for readers of Applesoft programs is the use of PEEK(-16384) and POKE -16368 to read and reset the keyboard. Our keyboard reads address in 64885. There are many other Applesoft PEEKS and POKES which programmers use to carry out various functions such as setting the graphics page, ringing the bell, and setting the left and right margins. When converting this type of code, you must know what a given PEEK or POKE is intended to accomplish, find the equivalent SmartBASIC command, POKE or PEEK and use it instead.

Ken Clark's Apple to ADAM Conversions handout, available through the club, presents a list of some of the more common differences in this area, and can be a valuable reference in the conversion process. A routine written in machine language, embedded within an Applesoft program, will not work on ADAM. Stay away from routines of this nature unless you're familiar with 6502 Assembly language and convert the routine to the corresponding Z-80 code. The two microprocessors are quite different.

Abikoff and Cornell's book The BASIC ADAM, a Self Teaching Guide, warns of some serious differences in file handling methods between the two BASIC's. Our OPEN command does not set the file pointer. In Applesoft it does. On this, I'll relate one of my own experiences in converting a program where writing to a data file was called for. Using the Applesoft code unchanged, the process worked the first time. When any attempt was made to add data to that file, however, the program crashed. It was Guy who set me straight on this one. Either delete

the previous version of the file, and write a new one, or use the APPEND command. The Applesoft listing had made no such provision, and I had to add additional coding before the program would work. Applesoft also allows you to open up to 16 file buffers with the MAXFILES command. ADAM has provision for only one file to be opened at a time. This latter restriction has not been a serious handicap in any of the programs I've tried to convert so far.

BASICA

IBM's version of BASIC is noticeably different from both Applesoft and SmartBASIC. There are many different commands, and I've not yet tried to convert BASICA's graphics. Again, someone familiar with the IBM graphics setup might wish to enlighten us. But even with normal text programs there are enough differences to contend with. Despite all this, I have found it easier in some cases to convert a BASICA program to run on ADAM than an Applesoft program. This might lie in part in the fact that BASICA does not rely too much on POKES and PEEKS, so at least the commands are readable.

If you have Microsoft BASIC to run under CP/M, you'll find it's a fairly straightforward process to convert an IBM program to run on ADAM. The biggest drawback is again the difference in screen width, 80 columns versus 32. However ADAM's virtual screen under CP/M helps to compensate somewhat, if you don't mind not seeing the entire layout at once.

Some specific command differences.

PRINT USING

In Microsoft BASIC or BASICA, this command will allow you to format a column of figures so that they all line up, and there are the required number of leading and trailing zeros for the format you're using. For example if you want dollars and cents, you can so specify with the PRINT USING command. You can even specify a dollar sign if you wish. BASICA even allows you with this command to add a column of figures with a single command. We have no such counterpart, and neither does Applesoft. It is possible to achieve the same effect. I know I've done it, but it requires some rather complicated string manipulation and conversion of numerical values to strings and then back numbers again.

CLS

Read HOME. In Microsoft BASIC there is neither CLS nor HOME. You clear the screen with a PRINT CHR$(12) command, or if you're really intricate, 24 linefeeds - PRINT CHR$(10) 24 times.

DEFINT A-Z or DEFINT
followed by something.

Defines the variables beginning with the letters in the arguement as integers. In SmartBASIC, there's no need to make such a declaration, but you can save memory by using the % sign after a variable; ie. a% instead of a. The % sign declares the variable as an integer and thus it requires fewer bytes for storage.

KEY OFF

Ignore it. All it does is turn off IBM's version of the Smartkeys.

LPRINT or LPRINT USING
Read PR#1.

LOCATE 3,5,0 or LOCATE
followed by two or three numbers.

Same as VTAB HTAB. Positions the cursor. The third figure can be either a 0 or a 1 and turns the cursor on and off. Our POKE 16953,(value) takes care of the cursor.

ON ERROR

Same as our ONERR

INSTR

BASICA has a way of looking for strings within strings. It's followed by brackets within which is specified the string you're searching, the sub-string you're looking for, and where to start searching in the primary string. It operates in similar fashion to the MID$(x$,3,5) command available in both dialects. The one application I saw INSTR used in was to pick out which of a group of function keys had been pressed, and specify branches to the corresponding sub-routines. Getting around it in conversion was a simple matter of using logical expressions instead. (See Guy Cousineau's handout on the subject of logicals in BASIC).

MOD

Determines the remainder of a division operation. We don't have it.

BEEP

Does just what it says. One beep to the speaker. In SmartBASIC, you can always specify that BEEP$ = chr$(7), then when you want to BEEP you simply say PRINT BEEP$.

DATE$ TIME$

IBM's have clocks that you set on startup, if you wish, so BASICA reserves this string to tell you what the date is. If you want the same facility in SmartBASIC, you'll need to define it. With Guy's Hello, you can do so for the time. For the date you would simply include a statement: DATE$ = "881029", or whatever.

THE IBM CHARACTER SET

Why there should be any differences here between one machine and the next is beyond me. Quite literally, there ought to be a law, but there isn't. The letters, punctuation marks and numbers are always more or less standard, but if you're dealing with ASCII values below 32 or above 126 it's every man for himself. The "HOME" control character on the Xerox is 26. On the ADAM it's 12. On the IBM it's 11. And that's only one function. More importantly however, if you look at the IBM character set between ASCII values 169 and 223 you'll find a complete set of graphics characters. This is what enables BASICA to draw those neat screen boxes around the data displays in a given program, and cause it to look finished and professional. There are also numerous accented letters and mathematical symbols in the upper half of the IBM character set.

There are other differences in command and features. I have not covered the sound routines, nor have I included some rather obscure things such ad DEF SEG, OPTION BASE and COLOR. We'll have to leave these and others for another time. We haven't touched file handling either where our PRINT CHR$(4); "OPEN "...etc is replaced with something like OPEN T$ FOR INPUT AS #1 or CLOSE #1. This doesn't even resemble Microsoft where it's OPEN "I",#1;t$ (or something like that, I always have to look it up). At any rate, file handling in itself would be enough for a separate article.

CONCLUSIONS

The process of converting a program from one dialect of BASIC to another can be a challenge to say the least. It's often easier, depending on the program involved, to start from scratch and write your own SmartBASIC program to accomplish the same functions as the one you're trying to convert. In other instances, programs can be easily converted, and can provide some first rate software for a minimum investment in time and effort. One payoff you will certainly derive if you undertake such a task is the satisfaction of learning exactly how and why a program works and better yet, the discovery of ways to improve it.

"CONGRATULATIONS ON YOUR NEW DISK DRIVE!"

by Patricia Herrington

I promise you this... you are going to LOVE your new disk drive! Not only is it super-fast and convenient, but you are going to save a lot of money on media. I'm sure you've already thoroughly read your manual, but I'll bet you still have questions. What else do you need to know as a proud new disk drive owner?

Well: When you unpack your drive, SAVE THE STYROFOAM CONTAINER. It will be handy later when you need to transport your drive for some reason (like to ADAMCON2!) And when you do have to move your drive, the experts advise you to insert a disk and close the drive so that the head doesn't rattle around and get damaged. (Please note: it is exactly the opposite for double-sided drives. With a DS drive, insert a disk but leave the latch OPEN so that the heads don't knock against each other.) . Turn your disk drive on BEFORE you turn your computer on. This ensures that your drive is properly "logged on". Some software will not recognize the drive otherwise. SmartWRITER (the built-in word processor) is a prime example. If this is your SECOND disk drive, be aware that SmartWRITER will NOT recognize it. Ever. Coleco wasn't planning that far ahead in the beginning. But that's the only "program" you're likely to find which refuses to recognize your second drive, so take heart.

Always remove any disk in the drive before shutting it off. A neat trick to help you remember that your drive is occupied: Place a thin strip of fluorescent tape on the top ledge of the latch. You won't be able to see it when the drive is open, but it will be visible when the drive is closed, and will remind you to remove your disk.

Go down to Radio Shack and purchase a disk head cleaning kit. This usually consists of a special disk with cutouts exposing a material that you soak with some liquid (alcohol?) which is included in the kit. The kit is good for several cleanings. You don't need to clean your drive very often; depending how much you use it, every six months or so should suffice. If you get read errors, try cleaning your drive before you panic.

If, when you insert a disk, the light comes on and you can hear it whirring but it doesn't stop, remove the disk. Chances are good that you put it in upside-down, or that it has not been formatted. You MUST format your disks before using them.

Your drive comes with a formatting utility. It works, but I don't like it much. There are LOTS of format utilities out there, and most of them are far superior. Walters Software, Orphanware, and many others have some really superb disk management utilities. Backup+3.0 works fine for standard formatting. A VERY GOOD, and very cheap, choice is the PD contribution by Digital Express called "One Minute Formatter". If you just purchased a SECOND disk drive, you can't live without this utility, which can format disks in BOTH drives at once. It also gives you choices for directory size, etc.

If, when you try to store something on a disk, you get a "CANNOT WRITE TO THIS FILE" message, check to see if you are trying to store to a disk with a write-protect tab on it. If so, remove the tab (or change disks.)

QUIT SMOKING, or at least don't smoke around your disk drive. Big John loves to point out to me that my smoking is as bad for my electronic equipment as it is for my own health. I confess I haven't attained the state of grace required to follow this advice, but maybe you will.

There are a few programs that do not translate well from datapack to disk, including some of Coleco's original software. Your SmartBASIC datapack, for example, will continue to search for the default tape drive as the number one drive. Some programs, such as Recipe Filer, won't work, period. To get a disk version of

BASIC, you can use a number of tricks. If you have Backup+ 3.0, use the 'copy BASIC' option. (This will give you a modified version of BASIC; just be aware that it's not "plain vanilla". There are now so many disk versions of BASIC that it's not worth trying to describe them all. We have Gregg Noblett's "Plain Vanilla BASIC for Disk" if you need it.

For disk versions of such programs as Recipe Filer, check your catalogs for patches designed by Walter Software. Ron Collins has also converted many programs to disk, notably "Cabbage Patch Kids". Digital Express contributed a PD patch to convert Troll's Tale to disk. And there are many others. For the most part, though, you will have no trouble running your software from disk. Almost everything that's come out in recent years will run fine.

Your drive does NOT require any kind of special disk. You can use any brand you like. Some people have favorites, but ADAM isn't fussy. They are called 5 1/4" floppy disks (or diskettes.) Most these days are DS/DD (Double sided, double density) but you can also use SS/DD (single sided, double density.) They DO have to be double density, but then, I don't think I've ever seen a single density disk! Disks are usually packaged in boxes of ten.

Don't pay $10 for a box of disks. Most generic disks work like a charm. You can get them really cheap by mail, particularly if you order in quantity. Sometimes the quantity disks are packaged in plastic only (no individual boxes.) If this matters to you, check the ads carefully or ask the sales clerk. Almost all companies include disk sleeves (these may be paper or Tyvek) and color-coded labels in the price of the disks. Most also include write-protect tabs. All these items are sold separately (cheap.)

I have ordered disks from about a dozen different companies. The larger suppliers of disks all have 800 numbers, they guarantee their products and their service, they accept charge cards, they have great prices, and they are prompt. I guess that's why they are large!) I

do, however, avoid buying disks at flea markets. You never know where those disks came from or how they've been treated. Until you hook up with a mail order house, buy your disks at a computer store or a department store.

If you've ever tried to back up a tape and accidentally switched the source and destination, you will appreciate the advantage of write-protect tabs for your disks. To prevent accidental erasure, all you have to do is put the tab (a small piece of paper with adhesive backing) over the square notch on the side of your disk. You can then read the disk, load it into memory, and copy it to another medium, but you cannot change the information on the disk itself. If you want to write to the disk, simply remove the tab.

Disk organizers come in many sizes and shapes, from small plastic boxes to huge cabinets, and even notebook inserts. They are available locally, but the best price I've found is from MEI/Microcenter. MEI also has the very best prices on stiff cardboard disk mailers, preprinted with all the standard "handle with care" notices. These are a super buy at only nineteen cents each, in lots of fifty.

Organizing your disks is easier with color-coding. Besides colored labels and containers, you can also get colored disks. The best source for these is DISKS & LABELS TO GO. They carry * SEVENTEEN * colors, including yellow, red, orange, tan, pink, light and dark green, three shades of blue, lavender, two shades of grey, white, brown, maroon... even fuchsia! They are sold in lots of 20 (one color per lot) and cost just 41 cents each.

For years, people have been putting extra notches in their disks so that they can use the back side of the disk, too. In order to do this, you make a cardboard template or use an old disk as a pattern, and then cut out a second square notch on the second side of the disk. That's the easy part. The hard part is to take a hole punch and punch two more round holes close to the hub of the disk without ruining the disk. According to all the experts, YOU ARE

NOT SUPPOSED TO DO THIS. But it's practically irresistible. One of the big advantages is that you can mail two disks for the price of one when you trade disks with a friend.

It is also very handy to put two programs that belong together on the same disk. For example, I have PowerPAINT on the front of a disk and CLIPPER on the back; I also have SpritePOWER on the front of another with FontPOWER on the back. Obviously, you would not want to do this with any important files UNLESS YOU HAVE MADE BACKUPS. I've never had trouble, but you never know.

On the other hand, this homemade notching business is time-consuming, and it's possible to destroy a disk if you are not careful with the hole punch. In short, it's a pain! I have better things to do with my time, so I stopped double-notching disks years ago. I used to have a source to buy them, but that source dried up. I have been trying to find more ever since. On a hunch, I checked with DISKS & LABELS TO GO, and guess what! That's right, you can buy them from that company for 42 cents a piece. (Ask for "flippy" disks.) It beats the tar out of doing it yourself, IF you are going to ignore the experts and do it anyway. The choice is yours... but at least you have a choice.

MEI/Micro Center: 1100 Steelwood Road Columbus, OH 43212-3972 1-800-634-3478

Disks & Labels To Go: Route 206, East Hampton Business Park Mt. Holly, NJ 08060 1-800-426-3303 (Tell Lisa I said "Hi!")

WHAT MAKES A GOOD PROGRAM?

ARTICLE BY RON MITCHELL, PRESIDENT OF AUFG (Adam User Friendly Group) of Ontario Canada.

Surveying the many programs available for Adam, or any other computer for that matter, often begs a question.

What makes a good program?

How often have you paid good money for a piece of software that disappoints you or that you felt was overpriced? Or perhaps you've written a program or two yourself, left them for a while, and returned sometime later to find your masterpiece is not nearly as brilliant as you'd first considered it to be.

The truth is, there's no single easy answer to the question. It may well be that one group of target users will criticize software that has completely pleased another. The variance of preferences can be infinite, but there are some general rules. One author, Edward Yourdon, sums up his view of a good program this way:

- It works. - It works according to specifications. - It is ready on time. - It has no bugs. - It is flexible - The bugs, which are inevitable, can be fixed quickly. - It is well documented. - It executes quickly. - It makes efficient use of memory.

A few pages later, the author has elaborated on this criteria somewhat, and throws in another rather interesting set of criteria which he calls "devious, perverse, illegal and immoral programming practices.

- badly commented or uncommented code.

- use of assembly language when a high level language will do as well.

- misuse of (language) instructions.

- programs that modify themselves.

- sharing temporary memory storage and variables amongst several subroutines.

- excessive use of macros

- excessive use of "goto's".

- non-nmemonic variable names

Much is written about knowing exactly who you're writing for. One rather interesting charactization of so-called 'professionals' reads as follows:

- They know little about computers.

- They are not interested in knowing about computers, in fact, they may not even like them.

- They know how to turn the computer on.

- They (probably) know how to load the program and bring up the first menu.

- They have probably not read any program documentation.

- They cannot be expected to remember anything that is not presented within the context of the program.

- They will consistently ignore screen prompts, and will enter data that have inappropriate type, format, length, and other characteristics.

- They are motivated to accomplish the function the program was designed to serve.

- They resent it when things go wrong and will blame it on you.

- They will write data to the program disk, if possible.

- They will attempt to load data from an empty disk drive.

Take that for what it's worth. The same author, Henry Simpson, actually provides a definition of user friendliness.

"....a "user friendly" program is one with features that acknowledge human factors......ie. the various characteristics of people which influence their performance - memory, ability to see and hear, motivation, motor skills, and so on."

"In general, a user-friendly program is easy to use, tolerant of operator errors, easy to learn, and acknowledges that human beings are imperfect creatures."

Let's deal with some other features.

As a user, you might have a preference for menus. You want the program purpose to be stated 'up-front', and you want full guidance as to how you'll reach your destination - the job to be done. The opening screen should present you with a series of choices, clearly and concisely stated in an opening format that is both readable and pleasing to the eye. At this point, choices should be selectable with a single keystroke, or at the very most, a single word.

Depending on the complexity of the program, there may be branches at this stage to other menus.

Opening instructions displayed on the screen should state in a concise manner the purpose of the program and the essential things that the user needs to know in order to operate the program. It is not likely, as we have seen, that the average user will be willing to refer to documentation, so don't assume that the book has been read. Provide a few well worded hints to prompt the user from the beginning.

There should be a method of bypassing the initial instructions once the user has become accustomed to the program. Menus can be shortened to provide only essential prompting and the more routine program functions can become automatic. The SmartWRITER program has been criticized in this regard for being almost too user friendly. The persistent question "Are you sure?" can become a source of annoyance to those who know exactly how the "delete" key functions.

The average user expects a certain amount of forgiveness in the area of command or data entry. Some programs will simply return you to the beginning when incorrect data formats or commands are entered. Others seem to be endlessly patient. Suffice it to say that the user should have at least one chance to foul things up without crashing the program. After that, a certain amount of assistance should be available in the form of a 'help' command. It follows then, that the program should be capable of error checking to some degree.

In the matter of color and fancy screen layouts, preferences are so diverse that it is difficult to state any hard and fast rules. Some prefer a plain black screen with standard white letters; others may be using a monochrome monitor and will want colors that show up well on it. Others may expect all the colors, flashing, and other bells and whistles that the computer is capable of, and be willing to sit through whatever form of entertainment display the programmer cares to provide. The answer would seem to lie in

making your program as flexible as possible. Provide choices.

Screen layouts are important. Some Adam programs sacrifice clarity and readability by cramming too much information onto the screen at once. Others provide so little information that the user has difficulty following. Flashing data can be distracting and hard on the eyes. In there is little distinction between one section or screen of the program and the next. These are all aspects which require careful consideration.

Documentation is another important area. There should be sufficient information provided in a .doc file or in written form to permit the user to learn how to use the program, and what to do if something doesn't go quite as expected. We'll be reviewing the characteristics of good documentation in a future article.

REFERENCES: Design of User-Friendly Programs for Small Computers. Henry Simpson - McGraw Hill, 1985.

Techniques of Program Structure and Design. Edward Yourdon - Prentice Hall, 1975.

NEW MEMBERS

We would like to thank the following new members for their support:

Richard Taake	Richard Hance
Arthur Hammell	Jean Farrow
Wayne Lewis	Richard Whiting
Jackie Day	Jeffrey Peters
Becky Green	Jim Freeden
Gene Welch, Jr.	David Barnett
Charlene Snelling	Bill Harms
Andre Stull	Melissa Firmin
T. Robert Trier	Roy Dilcher
Patty Medina	Kevin Campbell
Garey Dougan	Karl Eklund
Elvern Firkins	H. Hendel
David Moore	Dennis Fleenor
Napoleon Martin, Jr.	Donald Swift
Benny Butler	Jack Lingard
W. M. Williams	George Streich
Norman Walley	Rod Frank
Serge Fortin	Daniel Hofmann
Gary Hayes	Bill Winn
Dale Smith	Dennis Morgan

MORE MEMBERS NEXT ISSUE....

"GAME TIPS"
By Keith Jefferson

TARZAN: To get rid of the crocodile just run and jump on top of him. You will also gain extra energy for this. If you are low on energy and at the campsite just keep punching the hunter until you are at full strength again.

STAR TREK: If enemy vessels are chasing you from behind...then warp a ways from them then turn around and return fire. This is so you won't waste precious shields.

Time Pilot: Never attack ANY enemy head on. It could mean sure death.

FORTUNE BUILDER: Build as many lodges and ski-lifts as you can even if you have to borrow a little. You will quickly get your money back for they make big profits in the winter months. In the meantime, keep the beaches filled with tourist by having Hotels boardwalks and other places to go to for your summer income.

ZAXXON: Instructions say to kill ZAXXON you have to blast at robots, then at missile in Zaxxons side, a quicker way is to just shoot the missile. o do this simply place your fighter 3 levels high, using altitude indicator and shoot at a missile.

VENTURE: Move Winky into a room, move him back out, then in; keep doing this to see what happens.

PITFALL: It is possible to walk thru a wall. To do this you have to make Harry jump at a wall. You will have to try this many times before you get it right. Don't stand right next to the wall when trying. I think one under- ground scene passes three on the top.

ADVENTURE GAMES FOR ADAM

By Stan Wong

From the Edmonton ADAM Users Group newsletter, the ADAM's LEAF. Distributed by ADAM News Network.

How many times have you sat at your desk at work or at school and wished that you were off in a distant galaxy fighting off hostile aliens and creatures of unspeakable horror? Well, for those of us who own computers, these fantasies are only a keyboard away. Adventure games form a unique genre that allows the player to more fully participate in the game than most of your run-of-the-mill shoot 'em ups. Some are all text and allow you to assume the key character in a story. Others combine text with animation. But the key difference between these games and others is that strategy is a major factor in winning the game. It is brains and not reflexes that save the day. And there is also the ole-playing aspect of these games.

Whether the scenario is set in deep space or back in the distant past, YOU become the hero. You make the decisions that will either spell glory or death for your character. This is why people find these games so captivating.

Unfortunately, as owners of a discontinued computer system, we are limited in the number of adventure games available. Many of the highly acclaimed third-party games, such as the Ultima series, Bard's Tale, Phantasie, etc., are simply not produced in ADAM format.

So what are our alternatives? We are fortunate in that the original Adventure game is available for us in CP/M. This is the grand-daddy of them all. This is the first all text adventure game that places the player in a huge cavern and challenges him to make his way through, capture all the treasures and stay alive. This game was the forerunner of the Zork series. Adventure has a simple parser that understands two word sentences i.e., a verb and a noun. It is full of puzzles and surprises and can keep one occupied for hours. It is public domain and can be picked up through almost every ADAM users' group.

Speaking of all text adventures, since ADAM is a CP/M computer, we do have access to the best text games around. I am, of course, referring to the Infocom series. Most of their classic games are available in CP/M format which can be converted over to ADAM CP/M format (for example, by Canada Remote Systems) for a small fee. Examples include the Zork trilogy, the Enchanter trilogy, Planetfall and Starcross. These games have a sophisticated parser that will accept whole sentences. The stories are generally well written and the puzzles hard enough to keep the most avid gamer enthralled for hours on end. However, they are usually more expensive than other programs available for ADAM. It is sometimes a good idea to wait for Infocom to have a sale, buy your game direct from them, then send the disk to Canada Remote Systems for conversion. Turn around time to get your disk back is about a week and a half.

There is also a very good public domain Dungeons and Dragons game written in Basic for ADAM. It is a complex game that allows you to create a character and enter a dungeon maze in search of treasure and glory. The maze is shown little by little as you go along (the walls being drawn with ASCII characters) and you confront many creatures, forcing you to decide whether you should run or fight. This game has most of the features that one expects from the commercial adventure games, including saving your position in the maze if you have to stop the game for some reason. It is quite a sophisticated game, and one is highly advised to read the documentation file that goes with this game before even attempting to play it. Highly recommended for those on a budget. The author of this game writes that although this game will run from tape, it makes frequent drive access, so he recommends that it only be run from disk. However, it CAN be played from the data drives.

Fast Ed's Software produces a comparable game entitled Demons and Dragons. Again, you get to

create a character and enter a maze. You can actually produce several characters and send a party of up to 6 into the dungeon. Once there, groups of monsters pop up at random and again you are forced to either run or fight. The maze is drawn on a HGR screen and you must search it in order to find the stairway to the next level of the dungeon. As you accumulate experience points and gold pieces, you can "upgrade" your character by either moving up to the next character level (provided you have sufficient experience points) or by outfitting him to do new tricks. And you have more than one life. It's not a bad game, but again, it is not a particularly sophisticated game. Strategy, however, is more important than reflexes in this game and this is why I have included it here.

Coleco has its own unreleased adventure game, too. Troll's Tale has been released (sort of) into the public domain, so there's no reason not to have a copy. It has good graphics, but don't look to this game for a serious challenge. The game can be solved in 20 minutes or so. However, it does have a certain charm all of its own. Beware, however, that there is both a tape and a disk version. Some people have ended up with the disk version copied onto a tape and this will not run! Make sure you have the correct one for your system.

2010: Text Adventure was released for the ADAM from Coleco, but had limited distribution. It is a good game and different from other adventure games in that instead of using a parser, they put all your possible options on each screen using the Smartkeys. It takes a little getting used to. The game has sound effects and if you succeed in your mission (restoring power to the Discovery and sending it on its way back to Earth), you are rewarded with a fabulous graphics display. Well worth picking up, if you can find it anywhere. I believe it can still be ordered from NIAD.

There are also many other public domain adventures scattered throughout the various data libraries of the many ADAM users' groups. They are, generally speaking, written in Basic and are relatively short games that don't take too long to play. You will find some of these in our own data library. Some of these are quite good and are well worth checking out.

And there are still more out there that I haven't tried! Stage Fright, available from Reedy Software, is supposed to be a great text adventure. And I'm sure there are others that are out there that I haven't even heard of. But this is just a general overview of what's available. If you look hard enough, you can find what you're looking for! Most of the games listed above are available from M.W.Ruth. NIAD has some of them as well.

Now, if someone would only come out with a decent flight simulator!!

File Utilities, Block Editors, Copy Utilities
WHO NEEDS THEM?
by Ron Mitchell

Let's start with a quote....this from the first book-I ever read on computers - one which my wife bought me the Christmas before ADAM....she now says she regrets the purchase....(wonder why?).....anyway, the quote goes like this:

"Many hobbyists can't understand why anyone would not want to learn everything there is to know about computers. To the devout there is no middle ground. If you like computers, you really like them. It's hard for the hobbyist to understand that some people just want to use the computer as a tool, not adopt it into the family."

From "COMPUTERS FOR EVERYBODY" by Jerry Willis & Merl Miller.

To expand a little....

Members on the 'newsletter circuit' will have read vast and copious amounts on such programs as Uncle Ernie's Toolkit, Smartrix, Copy Magic, Backup Plus 3.0 and the like. o many of us a true ADAM enthusiast simply cannot do without such a program. And why is that? Well.....

CASE I

With any collection of disks and/or tapes, there is always house keeping to be done...yes, even with Smartwriter files. Sooner or later you will reach a point where you've run out of space on a Sunday afternoon when Canadian Tire is closed. You can't buy, beg or even borrow a datapack or disk. Chances are you'll have all sorts of them sitting around, but more than likely, they'll all be full of programs, files and other collectables that must not be touched. What to do?

You look through what you've got for a few 'k' of free space, and you quickly realize that most of your tapes and disks are taken up with backup versions of programs that have long since either been forgotten or sold for a million bucks. And you decide then and there to clean things up.

Fact is, you can't do it without a file copy program.

CASE II

You've pirated or otherwise acquired one of the neatest programs ever devised by man. You know it's neat because you saw it working on a friend's ADAM, but he has a disk drive and you don't. So you pleaded and whined until he made you a tape of it, and you chugged merrily on home to try it out. And.....it froze up...right?

Fact is, you need a block editor to boldly sneak into the program code and change a few numbers here or there so that the default drive is changed from disk to datapack. It's called hacking, and it can be addictive once you start.

CASE III....related to CASE I

You finally locate a datapack that contains dispensable garbage. You try the "init" command from SmartBASIC to clean the tape, and then you discover that some joker has copied BASIC onto that particular datapack. Of course, the "init" command will not work.

Fact is, with Filemanager or Uncle Ernie's or Backup Plus 3.0, you could init the tape no matter what was on there.

CASE IV...related to CASE III

You grow tired of having to boot up SmartBASIC before using your favorite program. You have to change tapes, and that's inefficient. Wouldn't it be nice to have BASIC resident on each of your disks or datapacks so all you have to do is load and pull the reset switch.

Same answer. You need a means of copying BASIC which doesn't even appear in your directory. But it's there. With a few changes by a block editor to block 1 of the datapack, it will appear in the directory as BASICPGM....28 blocks long. Most of the copy utilities listed above will permit you to copy your SmartBASIC onto another datapack.

So let's not belabor the point. There are a number of jobs which the hobbyist needs done from time to time, and this is where the file utilities become an integral part of a good software library. You can organize your programs and files, delete unnecessary duplicates or backups, free up space on a media, and generally keep your operation neat and clean.

There's more. You can also determine the specific location of your files on a given disk or datapack, and copy them to another in the order in which you want them. And most of all, you can enjoy the absolutely devilish fun of looking into someone else's locked program code even when the "list" command doesn't accomplish the task.

GAME TIPS
CONTINUED FROM PAGE 14

POPEYE: On round 3, position Popeye on the far right. You can do this on any of the 3 levels. Brutus will pass you & not kill you.

[Source of Tips...anonymous?]

TARZAN: It is easier to kill Histah by jumping on him & punching him at the same time when he hides in the undergrowth. You don't have to dodge or stun Bolgni to get past him, just run at him and jump when you are close to him, Tarzan will go thru him. Tarzan can destroy a bullet fired at him by a hunter by punching it.

FRENZY: When you get killed you may have a gap in the wall behind you. If you move back before the action starts, the Commando will run back-wards. If you let OTTO chase you, not killing him, another will appear. If you have not shot Otto on the feature cell -Big-Otto do it a run like hell. On the option screen * or # takes you back to the title.

SUBROC: When you get to the Command plane dodge everything it fires at you. Wait till the bonus gets to 1000. Then destroy it for 1000 extra points

HARD HAT MACK: As soon as you are able to move your man you press the "#" on the controller and you should get an endless supply of men. IF this does not work try the "*". The note sent me was hard to read but I think it is the #.

If after you drop the last block on screen three you immediately follow it thru the hole, you may become stuck on that level forever or until you re-boot.

WE WOULD APPRECIATE YOUR SENDING GAME HINTS, TIPS, TRICKS, ETC. TO US FOR PUBLICATION IN THE NEWSLETTER.

CHAOS CORNER
By Aaron Hamlett

This month I want to talk about quite a few things, give you some facts, some opinions and hopefully an interesting column.

If you have ever written a BASIC program that was very large, around 24 blocks long, you may have tried running the program only to get an "Out of memory error". You might use the FRE(0) command to find out how much memory you have left and discover that you have a few hundred bytes. How can it be out of memory if you have hundreds of bytes?

Besides the space required to store the actual program, memory is needed when a variable is given a value. Real variables or "floating point variables" take ten bytes to store a number. If you just name a variable with letters it is classed as a real variable, even if the number actually assigned to the variable is an integer. If an integer is all that is needed and no division is used then use an integer variable. The percent sign (%) is used to declare an integer variable. An integer variable uses only five bytes of memory.

The last variable type is the string variable and it is denoted with a dollar sign ($). These variables use at least five bytes and usually more since it requires one byte for each character in the string. One key item with variables, the variables K, K%, K$ are all different variables, whereas the variables KAT, KAY, and KANDY are really all the same variable since SmartBASIC only uses the first two letters of a variable name to keep track of it.

If you have ever heard Grace Hopper, an early computer pioneer and officer in the U.S Navy, talk about computers you have probably been introduced to her nanosecond, and microsecond. Like most people, she had a hard time understanding such small units of time. Even experienced computer users who toss around these terms may not really understand how small these numbers are really. She pestered the engineers until they presented her with some concrete examples.

What the engineers did was to calculate how far light traveled in a milli, micro and nanosecond. A millisecond is one thousandth of a second and in one millisecond a beam of light in space will travel 187 miles. A microsecond is one millionth of a second and a beam of light in space will travel 990 feet in that length of time.

A nanosecond is one billionth of a second and this speedy beam of light will travel 12 inches every nanosecond. The engineers that Grace Hopper was working with cut some wire to illustrate the nanosecond and microsecond. The cost of 187 miles of wire was deemed to high just to be used as a demonstration for the millisecond, besides it would be very heavy. What does this have to do with the ADAM? Well, just think of that 990 feet of wire whenever you write a program and waste a microsecond.

"MY GOD, I'M PREGNANT"; SAID THE QUEEN; "WHO DONE IT?"

by Barry Wilson

There in one title we have RELIGION, SEX, ROYALTY and MYSTERY. Hope it got your interest again.

Didn't think another article on Piracy would do it. So I went for a more interesting title.

This is NOT on the evils of piracy, as we all know it is evil, threatens the existence of Adam, drives programmers from our midst and may be a contributing circumstance to several unwholesome diseases.

What I am proposing here is not meant to encourage piracy, nor to give those criminal types who engage in piracy an excuse to continue it.

ALL SHOULD STOP SOFTWARE PIRACY NOW. NO MORE THEFTS OF SOFTWARE.

But for the pirated software you PRESENTLY have in your possession, I suggest the following:

IF YOU find yourself with some pirated software (perhaps it was forced upon you, planted in your home by a jealous ex-spouse or or whatever innocent reason) what I am proposing is that you determine the retail value of that pirated software (E & T, NIAD, Adam House, Ruth, etc. will be able to let you know) and then VOLUNTARILY SEND PAYMENT of not less than 60% of the retail value and up to 100% of the retail to the software producer or programmer involved.

You can do this without fear of anyone connecting you with it by purchasing a money order, make it payable to the software programmer but where it says FROM, list yourself as Peter Pirate or Polly Pirate. Use 1111 Main St. Honesty USA as your address.

Then you can sleep better at night, the software programmer gets some return for his efforts, does not abandon Adam, turns out the piece of software we have all been waiting for, and everyone lives happily ever after.

Seriously, I do feel that there is TOO much pirated software around and by those having it voluntarily make payments for it we can accomplish a lot for Adam.

I sent my money order yesterday.

If you live in an area where there is no other Adamite in hundreds of miles and your post mark will give away your identity, then follow the above instructions, make payable to the software programmer, etc. and mail to me. I will re-mail to the programmer for you and no one will be able to locate you from your post mark.

MOVING, OR PLANNING TOO?

If you are moving, or or planning to do so, please send us your new address. Don't miss an issue because we do not have your new address.

To avoid getting an issue late, please inform us of your new address as soon as possile.

REVIEWS

Powermate

Reviewed by Steve Major

Months ago I became very excited to learn that there finally was a hard drive available for ADAM. A short time later I was disappointed to learn that in order to install this hard drive I'd have to take my ADAM apart, cut holes in it, and then solder it into place. Needless to say with my experience in this area my ADAM would have turned into a hopeless pile of goo in trying to install it. I thought my days of seeing a hard drive were over since the creator of this hard drive said that there was no way for a plug-in hard drive to work.

Now comes the new PLUG-IN hard drive interface and it offers everything the first one does and a whole lot more. First we'll have a little back ground on it's creator. The owner of Micro Innovations is Mark Gorden. He is a professional hardware designed who applied his talents to ADAM when his son asked him to build a hard drive interface for ADAM, he did so and soon after Micro Innovations was born.

Lets get into talking about the Powermate itself. First thing that we should talk about is the interface itself. The interface is very well designd and very professional looking. To install it, just plug it into the center slot - that's it. Now what if you have a large X-RAM memory card there? No problem, just detach the wire from it and solder in onto the Powermate interface (complete instructions are included to do this, and even I did it).

Now what if you have a parallel interface there? Again no problem, you don't need it because the Powermate interface comes with one BUILT-IN, this is a completely compatible parallel interface that works great with all existing software.

Now, so far with all this you may have thought Mark would stop here - no way!! You also have two SERIAL ports on his interface as well!! The only problem with these is that they are not compatible with any ADAM software (although patches for this are available).

Second, let's talk about the Powermate hard drive. To plug it into your ADAM, just hookup the ribbon cable from the interface to the rear of the hard drive, it's much like hooking up a parallel printer or modem and the simplest thing in the world. The hard drive casing matches the color of your ADAM completely. To turn it on, just flip the switch in the back of the casing. It has it's own power supply and a cooling fan to keep the drives cool for extended periods of use.

There are several options for the size of your hard drive. The casing has room for two IBM type drives. One of these is of course taken up by the hard drive. The hard drive can be of three sizes: 10, 20, or 30 megabytes. The other spot in the casing can be taken up by: 1) nothing, 2) another hard drive, 3) a 360K floppy disk drive, 4) a 720K floppy disk drive. The latter drive is compatible with existing ADAM converted 720K drives and makes this a super bargain!

The prices range from $399 to $699 depending on what drive size you want or how many you need. To me Powermate gets a A+ for being the perfect addition for your ADAM. If you're just starting out, a tape drive will do. But once you get Powermate, you're on your way to bigger and better things.

What's in store for the future from Micro Innovations? Mark is almost done with his Powermate-4 which has space for four IBM type drives. That's right, you could have FOUR hard drives working with you ADAM. Another thing we may see are bigger hard drives available. One day I called Mark and he was working on a 50 Megabyte hard drive for his Powermate.

This company is sure to become a leader is the ADAM world for designing new and exciting hardware products for ADAM.

SmartDSK Cartridge

Reviewed by Ed Jenkins

SmartDSK Cartridge is the latest release from Walters Software Company. This fantastic software package is designed for those of you that are using some type of memory expander card. Since any size memory expander can be used (up to ONE MEG) this new package will work with a standard 64K card, an Orphanware BIG Memory Expander card, or E. & T. Software's new MegaRAM expander card. With this first version of SmartDSK Cartridge, four very useful programs are included. These are: SmartDSK (contains a new operating system that activates your expander as a high speed ram disk), AUTOLOAD and AUTOSAVE (to copy programs/files to/from the ram disk) and PrBOOT which allows you to 'boot' programs directly from your expander card.

Once installed in your ADAM's cartridge slot, you need only to pull the computer <CARTRIDGE RESET> to activate your expander card as a high speed ram disk (this process takes no more than a split second). Once activated, you can automatically copy your favorite programs/files directly onto the ram disk SUPER FAST, automatically save programs/files from the ram disk to tape/disk, 'boot' directly from the ram disk, 'boot' from any drive, or 'boot' SmartWRITER. As with their original AUTOBACKUP program package, programs/files can be copied to/from the expander card in ONE PASS. This feature greatly reduces the time needed for the copy process to complete. Another nice new feature is that the various versions of SmartBASIC need not be re-named to 'boot' correctly from the ram disk. (If you are using SmartBASIC +, a special patch is supplied in the manual that will allow this version of Basic to 'boot' from the RamDisk greatly reduces the time needed for the copy process to complete. Another nice new feature is that the various versions of SmartBASIC need not be re-named to 'boot' correctly from the RamDisk. (If you are using SmartBASIC +, a special patch is supplied in the manual that will allow this version of Basic

to 'boot' from the RamDisk.) Since all versions of Basic (except SmartBASIC + need not be modified first to work correctly, this allows you to copy your existing SmartBASIC media to the ram disk and then 'boot' from the ram disk without any modification what-so-ever.

SmartDSK Cartridge has been designed to work with Walters Software's other fine programs "The Print Works" and "The Label Works. By using the AUTOCOPY function, your favorite clip-art files can be copied directly to the ram disk. Once the copy process is complete, you can then 'boot' "The Print Works" or "The Label Works" and then access your clip-art files directly from the ram disk. This is a real time saver.

The various uses for this fantastic product are almost limitless. For instance, if you are using CopyCart + or CopyCart D2+, you can copy all of your cartridge games (limited only by the size of your memory expander) and then access all the games directly from the ram disk. The speed in which the games are loaded from a ram disk just has to be seen to be believed.

As with their original ram disk programs, all programs/files that are copied to the ram disk will not be destroyed when you pull the computer <RESET>. This feature prevents your ram disk from being destroyed if your kids decide to play Buck Rogers after you have copied files to the ram disk. The only thing that can destroy your ram disk is using a program that initializes the expander for its use, or by turning off the computer.

For those of you that already own the following products from Walters Software: SmartDSK I, II, III, Pr-Boot, or AutoBackup, contract Walters for details on rebates before purchasing their new SmartDSK Cartridge.

SmartDSK Cartridge is a MUST HAVE for anyone who owns a memory expander and wants to get the most use from their ADAM. The Walters brothers have done an excellent job with the release of this fine product.

At E. & T., we have found this product most indispensable. If you only buy one program for your expander card, we highly recommend you purchase the new SmartDSK Cartridge. You won't be disappointed, we guarantee it.

Member price: only $27.95

RATING: A++

BRAINSTORM
Reviewed by Ed Jenkins

Steve Pitman has once again shown the ADAM world that he is one of the finest game producers for the ADAM. His latest game is called 'BRAINSTORM' that requires quick thinking and good skill to fully master. Brainstorm is another great game from Steve, but unlike most of his other games, this one does NOT require any kind of memory expander.

The game involves around different sized shapes that drop from the top of the screen. By using the joystick (the game is controlled via joystick port #1), the player has some control over the objects as they fall. The game player can move the objects left, right or rotate them as they fall. The object of the game is to position the objects across the bottom of the screen. Doesn't this sound a little bit like ADDICTUS? You bit it does. But, Steve has added a nice touch by allowing the addition of a trivia game along with the video game excitement.

For those of you that love trivia games, Brainstorm is a lot of fun. The player has the option to choose the trivia version and if chosen, is then given a phrase to solve while he/she is trying to position the blocks. The trivia categories are: Normal, TV/Movie, or ADAM questions.

As the objects fall from the top, some of them contain letters that solve the puzzle displayed at the top of the screen. The letters are shown if and when the player positions them correctly at the bottom of the screen. If the letter is won (and is somewhere in the selected phrase) the player is then given ten seconds in which to solve the puzzle. When the player wishes to solve a phrase, a special screen comes up that allows the player to choose a letter from the alphabet. If a correct letter is chosen, it is then displayed in the phrase.

The graphics, sound and game play in this game are FANTASTIC. So good in fact, that you may think this game was designed by one of the so-called 'Big Software Companies' for that other 'big blue' computer.

Brainstorm can be pre-set to three different skill levels, making this a great game for the whole family. When the skill levels are changed, the speed of the falling objects is increased or decreased accordingly. One nice feature, that Steve included, is a little box at the side of the screen that displays the shape of the next object that will fall. This nice feature lets you prepare for things to come. As the skill levels are increased, it takes some really quick thinking to decide where you are going to place the objects.

Steve bested himself with this one, he even added a feature that shakes the screen when the game is lost. A nice added touch. Should you invest in this latest game from Steve Pitman? You bet you should. This is one game your entire family (if they like good video games) will play again and again and again.

Recommendation: If you buy only one game a year, we suggest you purchase Brainstorm. You won't be disappointed. Member price: $16.95

RATING: A+ - HIGHLY RECOMMENDED

IDEAS?

Have any ideas on how to use the ADAM or problems that you have solved? If so, send them to us so we can share them with other ADAM owners.
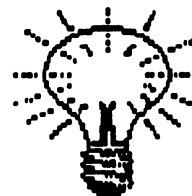
POWERTOOLS

"May the POWER be with you!"
Reviewed by Richard Lefko

POWERTOOLS is a new utility available for our ADAM computer system. But you have never seen a utility program like this one (how could you if it is a new item: new means never seen before).

POWERTOOLS is a utility for use with PowerPAINT by Digital Express. (You know Digital Express, the people who brought you GODOS, but now they are called The Softworks Factory or is it Z-DELTA SOFTWARE. I am not sure but they have almost as many names as BJ's various ventures have had. You need a score card to tell the players).

You must own PowerPAINT in order to use POWERTOOLS, this is because POWERTOOLS is a variety of graphic "tools" for use from within PowerPAINT.

There are an incredible not 10, not 20, not even 30, you would pay more for only 40 files elsewhere, but here you get 91 countem, yes I said 91, not 89 nor 92 nor 90 but 91 files on the POWERTOOLS medium, including fonts, sprites, pixes, wood nymphs, brushes, clips, hair clips, bows, as well as full-screen graphics and the Christmas Tree Construction set. NOW I ASK IS THIS FAIR? NO, IT IS DISCRIMINATORY. WHAT ABOUT OUR JEWISH ADAMITES? THERE SHOULD BE AN ALTERNATE SELECTION OF THE CHANNUKKA BUSH CONSTRUCTION SET. ALSO, WHERE IS THE TURBIN CONSTRUCTION SET, OR THE BUDDA IDOL CONSTRUCTION SET. THIS SHOULD BE REPORTED TO THE JUSTICE DEPARTMENT. UNFAIR DISCRIMINATION HAS NO PLACE IN ADAMDOM!!!!!

Stand back and hold onto your hat as we see some of the most useful PowerPAINT tools you'll EVER own! (Short of having Pat Ierrington or Tony Patterson who demo'd Power Paint at ADAMCON01 living with you as your personal paint advisor).

FONTS: There are three different font sets on the POWERTOOLS medium. Two of these are unique character sets, while the third, Detail.FNT, is ANYTHING but regular. Loading "Detail.fnt" is like filling your keyboard up with half-sized sprites, merely pressing different keys to use the various shapes, lines and shades.

SPRITES: The 17 sprite sets available give you over 500 different shapes and things with which to work! And as the A.N.N. combined weight contest will show, Adamites come in various different shapes. There are three alphabet-type sprite sets and 14 other sets consisting of things like Scroll, Ribbon, Hollowbox, Shadowbox, Rope, Footprints, Nudes, Semi-Nudes, Fully clothed, foolishly clothed, and my favorite, Arrows (bows & arrows, Indian arrows, arrows that point to the mens room, the ladies room, to exits, straight arrows, etc.). Almost all of these sprite sets allow the user to "link" consenting and adult sprites together in all types of sick and perverted ways to form a multitude of various designs. The possibilities are endless, only limited by your own sick mind.

CLIPS: There are 55 clip art files, 39 of which are dedicated to "Gotham" clips which consists of large capital letters, numbers, and punctuation. These are great for making flyers and such. The remainder of the clip art files include demonstration examples of sprites and brushes and various pictures such as a pelican, left and right hands, other body parts which we cannot mention in polite society, and an excellent full color drawing of a gumball machine, not to mention many others. The problem with this is that YOU have to supply your own gumballs, talk about cheap, they could at least give you a couple of green gum balls and maybe a red along with the software.

BRUSHES: There are eleven brush sets, and these are easily the most powerful of your POWERTOOLS. There are "small" brushes (8x8 pixels) and "large" brushes (16x16 pixels.) There are three "airbrush" sets, as well as Pine, Seagulls, Laurel, TREETrimA, TREETrimB, and TinyTrim (for use with the Christmas tree.

There are also two sets called "Speedball" which can give you all kinds of effects like calligraphy, "neon", or three-dimensional shadowboxes.

Finally, there is the Christmas Tree Construction set, which consists of various ornament sprites, and brushes. There is a full screen Christmas tree that you can decorate as well. NOTE This Christmas tree always stays fresh and looks like new, there is NO fire hazard with it, you do not have to replace each year and it stores on a disk, taking up little storage space or room. A GREAT IDEA!

As with the rest of the package there are several ways in which to decorate your tree using the POWERTOOLS available. The ornament sprites and the TinyTrim brushes are literally delightful to look at and a pleasure to use. These, as well as any other sprites or clips, can be used to make great-looking labels, halloween masks,etc. One of the best things about POWERTOOLS is the very thoughtfully done 14-page manual included. It not only explains in fine detail all of the included files, but it also gives INSTRUCTION on how to use the brushes, sprites, and other tools.

I've always felt that the Adultware Adult programs were the best disks of software I'd ever bought for my ADAM, but now PowerTools makes me reconsider. Naaaahaa, the Adult stuff still ranks high but for non-perverts I would think POWERTOOLS would be an absolute MUST.

The folks at Eyezod Graphics should be VERY proud of their fine package of graphic tools! I can't wait for POWERTOOLS II, The Sequel or Son of POWERTOOLS, or the Return of POWERTOOLS, or the FURTHER ADVENTURES OF POWERTOOLS, or POWERTOOLS, THE BEGINNING, OR ....

If you own PowerPAINT by DEI then you simply MUST own POWERTOOLS by Eyezod Graphics! I can't think of a better way to put it! POWERTOOLS is simply awesome!

POWERTOOLS is available to Adam's Alive members for $13.95.

IT IS ALSO AVAILABLE FROM PETER PIRATE FOR $ 6.99 BUT THEN YOU RISK THE CHANCE OF A FINE AND/OR JAIL SENTENCE AS WELL AS DRIVING MORE PROGRAMMERS OUT OF BUSINESS AND THE RESULTING LOSS TO ADAM.

FROM THE EDITOR'S DESK
(Continued from Page 1)

We have reduced this newsletter to bi-monthly, but will offer super specials each issue that will make a membership more than worth the money. As an example, this issue we are offering a 25% discount on every software item listed (limit two per member please). Purchase our MegaRAM expander for only $115.00 (our new regular member price is $124.95) and purchase a copy of SmartDSK cartridge for only $19.95 (that's an $8.00 savings off the regular member price of $27.95). This special on MegaRAM & SmartDSK cartridge is in addition to the software special mentioned above. These offers expire June 1, 1990 - so place your order today!!

We need your help in producing this newsletter. For those of you who will send us an article (one page or more) you will have your choice of any public domain software in our catalog FREE, or you can have your subscription extended by an additional two issues. The articles can be about anything you have learned about the ADAM. They can be reviews of software/hardware, tips you have learned on how to use a particular software package, programming hints, or tips and tricks you have discovered since you became an ADAMITE. Please send your articles in SmartWRITER or SpeedyWRITE format on a Data Pack or Disk (we will return your media to you).

For those of you that have sent letters requesting information, please understand that we have not had the time in the last several

months to answer your letters. We have not forgotten you however, we will include your letters in up-coming issues of this newsletter.

Due to us getting so behind, several of you have requested subscription refunds. For those of you, please understand that we would rather you stay with us. But, if you choose not to remain a member, we would rather you accept an exchange for software or hardware rather than a cash refund.

For those of you that have stood by us, we wish to thank you for all your support. It is people like you that keep us going when the going gets tough.

MEMBERS LETTERS

Dear Adam's Alive:

Just a few lines to answer the questions that Paul Guion asked about AdamCalc. The answer to the first question concerning formula copy is fairly simple. When summing columns, only the row numbers need to be used. That is, the formula sum([1.c:4.c]) can be used in as many columns as you choose. The "c" indicates the column you are presently in. So if you copy this formula across row 5 which Paul used in his example, each column would sum rows 1 thru 4.

The second question concerning the filling of a cell is not quite clear to me. It is simple enough to fill a large cell with a dash by selecting EDIT CELL and then holding the dash key down until the cell is filled. If there were several smaller cells in the same row, copying a cell using COPY TO LINE will allow you to copy a filled cell to all cells in that row by selecting the first column then moving to the last column.

I hope this will solve Pauls problem. I have been using AdamCalc to schedule training for the mechanics that I work with at Continental

Airlines. It works quite well and the sort feature allows me tolist by seniority, last name, payroll number, or crew. It also permits tracking total attendance and percentage of mechanics in any particular school. The only drawbacks are not being able to print sideways which would allow more columns and the limited number of cells available.

When we first met at your house about a year ago, I asked about column justification using SmartFILER. Your answer was, "You have to tell it what you want it to do." Well, I told it and told it what I wanted but it wouldn't do it. Until a week ago, while experimenting with different ideas, I discovered that inserting a control "q" at the same location in each field of each record would column justify. The control "q" prints on the screen but will not print on the printer.

In conclusion, I would like to commend you on your fine products including the Adam's Alive publication. I find the information very useful.

Sincerley,

A. D. McInnis

Hi Folks...

(Question #1) I'd like to be able to alter the 'BOOT' and 'DIR' blocks of a tape...create Graphics 'opener' screens for my programs, using the HEX numbers to my advantage, like our more advanced programmers out there. What type of literature must I purchase that will describe (in simple lay terms) the functions of all the HEX numbers?

(Question #2) In SmartBASIC 1.0, poke 16955, x creates a 'freeze' window at the top of the screen (the screen's entire width and 'x' number of lines down from the top). Are there some simple pokes (in SmartBASIC 1.0) that will allow me to create a 'variety' of sized windows, like in the AdamCalc program, anywhere on the screen?

(Question #3) Instead of using the PD's version of SmartBASIC 2.0 to 'trigger' into the extra

64K of memory by typing EXTMEM, is there a simple POKE, or several POKEs, or a simple routine I can use in SmartBASIC 1.0 or SUPERBASIC PLUS that will do the same thing?

(Question #4) Could you please tell me if there is a program written with a set of POKE instructions just for the SmartBASIC 2.0 tape?

(Question #5) What is the difference in Machine Code Format between the two SmartBASIC 2.0 tapes that you have? Are the POKES different between the two? Or, is it that you've just added the extra routine of the 40 column version?

(Question #6) Could you please explain about CP/M 2.2. What is it exactly?

(Question #7) What is the 'best' book available for Machine Language for the ADAM?

Respectfully,

Richard C. Whiting

EDITOR'S RESPONSE: (Question #1) There is a public domain program (DEI PROGRAMS #1 IN OUR PD SECTION) that allows the user to create opening screens. Since I am not a machine language programmer, I do not know about HEX numbers nor their use with ADAM. Can any of you members answer this question for Richard?

(Question #2) I do not know of any routines in SmartBASIC 1.0, but the new GoBASIC (when the final version is released) does allow you to create and place windows anywhere on the screen. This can be done with a simple command. The current version will only allow a 6K program however. The final version will have this problem corrected.

(Question #3) SmartBASIC 1.0 does not allow the access of a memory expander for a larger work space. The user can only use the expander as a ram disk by using a software utility (like the new SmartDSK Cartridge).

(Question #4) The only instructions concerning SmartBASIC 2.0's pokes is contained on the

media itself. If there is a program package that has this kind of information, I am not aware of it.

(Question #5) The color pokes of the 40 column version of SmartBASIC 2.0 have been changed. I have not had time of late to check this out. Any of you members out there have the color pokes for 2.0? If so, please send them in so we can share them with all our members.

(Question #6) CP/M is a programming language that was created some years ago by Digital Research. It was intended for business use and thus was used as a model to create MS-DOS. There are literally hundreds of great programs available for this operating system that can be used on ADAM. The new TDOS makes a great replacement for CP/M (see our review on this new PD package next issue).

(Question #7) Since I do not program in Machine Language, I do not have the answer to this one. Any of you members know which is the best Machine Language book for the ADAM?

Just before going to press, we received demo copies of several new programs from Sol Swift. These include: GoDOS 1.2, Super Parrot, Pity and U-Match-Em. We will have reviews of these new programs next issue. All of Sol Swift's new programs will be released thru his NEW Company called PHOENIX 2000. Sol has announced five new programs for the ADAM. He states that the following will be coming soon: Swift Bookkeeping System, PasteUP, R&S SLIDESHOW and Programmer's Setup Utility.

ADAM'S ALIVE PRODUCT LISTING

RECREATION / GAMES

ALCAZAR	$ 17.95
ROCK 'N BOLT	$ 17.95
BOLDER DASH	$ 17.95
TENNIS	$ 17.95
WING WAR	$ 17.95
FATHOM	$ 17.95
PITFALL	$ 16.95
PITFALL II	$ 16.95
RIVER RAID	$ 16.95
BEAMRIDER	$ 16.95
KEYSTONE KAPERS	$ 16.95
SEWER SAM	$ 16.95
AQUA ATTACK	$ 16.95
H.E.R.O.	$ 16.95
DECATHLON	$ 18.95
ZENJI	$ 16.95
BLOCKAID RUNNER	$ 14.95
SQUISH'EM SAM	$ 14.95
MOONSWEEPER	$ 14.95
NOVA BLAST	$ 14.95
2010: TEXT ADVENTURE	$ 13.50
ZAXXON	$ 9.00
DRAGON'S LAIR	$ 9.00
BEYOND TREK (64K CARD REQ.)	$ 14.95
CHESS CHAMP (64K CARD REQ.)	$ 14.95
MAGEQUEST	$ 17.50
MAGEQUEST CONSTRUCTION SET	$ 13.95
ADDICTUS	$ 17.50
DRAGON:The Chinse Challenge	$ 17.50
LAB MOUSE	$ 12.50
STAGE FRIGHT	$ 15.50
ENTERTAINMENT PACK	$ 15.50
PHRASE CRASE	$ 19.50
PHRASE PAK 1	$ 9.50
PHRASE PAK II	$ 9.50
PHRASE CRASE CONST. SET	$ 9.95
PRO-GOLF CHAMP	$ 14.95
LINK BUILDER	$ 24.95
AFL FOOTBALL	$ 14.95
TRIVIA PACK	$ 18.50
KID'S TRIVIA PACK	$ 18.50
WIZARDS PINBALL ARCADE	$ 14.50
JEOPARDY QUESTION PACK	$ 19.95
FAMILY FEUD QUESTION PACK	$ 19.95
MR. T-SEARCH (word puzzle game)	$ 12.95
SEARCH GAMES Vol. 1 (above game req.)	$ 9.00
SUB RAIDERS	$ 20.95
TEMPLE OF THE SNOW DRAGON	$ 20.95
PITY	$ 18.95
U-MATCH-EM	$ 11.95
MIND OVER ADAM	$ 11.50
GHOST ZAPPER (64K REQ.)	$ 11.50
ADAM BOMB (64K REQ.)	$ 19.95
DINOSAUR DIG (64K REQ.)	$ 16.50
BRAINSTORM	$ 16.50
THE BASEBALL STATISTICIAN	$ 11.95
EASY AS A, B, C & 1, 2, 3	$ 11.95
SCHOOL DAZE	$ 16.95
THE VASE OF TURR(	$ 29.95

UTILITIES

BACKUP 3.0 (DISK ONLY)	$ 10..95
BACKUP+ 3.0	$ 19.95
COPYCART+	$ 12.95
COPYCART+ D2.0 (DISK ONLY)	$ 19.95

The following six (6) programs require a memory expander card:

SMARTTDSK I (for SmartWRITER)	$ 19.95
SMARTDISK II (for DEVICE #2)	$ 19.95
SMARTDSK III (for SmartBASIC 1 & 2)	$ 24.95
SMARTDSK CARTRIDGE	$ 27.95
RAMBOOT	$ 19.95
AUTOBACKUP	$ 19.95
PR-BOOT	$ 19.95
SPELLINGAID	$ 29.95
MISSPELLER	$ 18.95
THE PRINTWORKS	$ 27.95
BOARDERS-PLUS	$ 12.50
THE LABEL WORKS	$ 24.95
FORMATTER II	$ 12.95
PROOFREADER * * SALE * *	$ 24.95
UNCLE ERNIE'S TOOLKIT	$ 10.95
BASICAID	$ 9.95
AUTOWRITER	$ 14.95
FONTPOWER	$ 12.95
SPRITEPOWER	$ 15.95
CLIPPER	$ 14.95
SMARTBEST V1.0	$ 14.95
INTEL-BEST 3.0	$ 14.95
SHOWOFF II	$ 14.95
POWERPAINT (64K REQ.)	$ 33.95
PAINTAIDE (requires PowerPAINT)	$ 16.95
POWERTOOLS (requires PowerPAINT)	$ 13.95
CLIP ART VOL. I	$ 12.95
CLIP ART VOL. I (for The Print Works)	$ 12.95
CLIP ART VOL. II	$ 12.95
CLIP ART VOL. II (for The Print Works)	$ 12.95
POWERPRINTS VOL. I	$ 12.95
CONVERT	$ 26.50
LIBRARIAN	$ 19.95
MR. T LIBRARY	$ 10.95
SUPERBASIC PLUS	$ 9.95
JEOPARDY WRITER	$ 19.95
FAMILY FEUD WRITER	$ 19.95
ADAM TIPS & TRICKS	$ 13.00
ADAMCALC PRINTER PATCH	$ 9.95
ADAMLINK II PRINTER PATCH	$ 9.95
FILE PRINTER	$ 14.95
INVOICER	$ 14.95
THE ADAM CONNECTION (IBM DISK)	$ 24.95

BLANK DATA PACKS

E. & T. BRAND	1 /	$ 1.75
	10/	$ 15.00
LORAN (COLECO TYPE)	4 /	$ 10.00
	10 /	$ 22.00

HOME / BUSINESS

SOFTPACK 1 (2.0)	$ 18.00
BUSINESS PACK (2.0	$ 18.00

ADAM'S ALIVE PRODUCT LISTING

EASY-COME-EASY-GO	$ 13.95
BONANZA PACKAGE	$ 14.95
SMARTFILER (REV. 27D)	$ 9.00
ADAMCALC	$ 15.95
SMARTLETTERS & FORMS	$ 8.00
MICROWORKS	$ 26.95
NEWSMAKER	$ 26.95
SNAPSHOTS VOL. 1	$ 10.95
SNAPSHOTS VOL. 2	$ 10.95
SPEEDYWRITE 2	$ 39.95
SpeedyWRITE SPELL	$ 24.95

EDUCATIONAL

EXPERTYPE	$ 8.00
SMARTLOGO	$ 8.00
EDUCATION PACKAGE	$ 19.95
FLASHCARD MAKER	$ 9.00

HARDWARE/SUPPLIES

MegaRAM EXPANDER CARD	$124.95
ADDRESSER (for MegaRAM card)	$ 18.95
256K MEMORY (for MegaRAM card)	$ 50.00
ADAM SINGLE SIDED DISK DRIVE	$175.00
E & T DOUBLE SIDED DISK DRIVE	$235.00
E & T 3 1/2" DISK DRIVE	$270.00
5 1/4" DISK DRIVE CONVERSION	$115.00
3 1/2" DISK DRIVE CONVERSION	$135.00
E & T SUPER-160 EPROM	$ 14.95
64K MEMORY EXPANDER	$ 29.95
PRINTER INTERFACE (with cable,)	$ 44.95
PANASONIC 1180 dot matrix printer	$196.00
PANASONIC RIBBONS (BLACK)	$ 5.50
PANASONIC RIBBONS (for 1180 - BLACK)	$ 6.50
MONITOR CABLES (3 FT.)	$ 9.50
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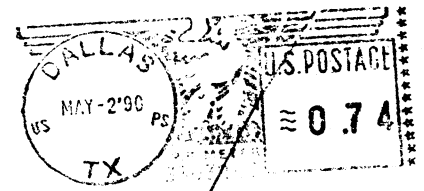
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