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MONTHLY NEWSLETTER - PUBLIC DOMAIN LIBRARY
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Editor: James Notini

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FROM THE EDITOR'S DESK

by Jim Notini

Welcome to another issue of the N.I.A.D. Newsletter. Warm weather has finally arrived over the past couple of weeks and let me tell you, it couldn't have come at a better time to wash away all the winter blues! The arrival of summer and warm weather also means that people will be spending less time in front of their computers and more time enjoying outdoor activities. I know that I will be enjoying this summer keeping busy with such activities as baseball, softball, basketball, fishing, camping, and boating just to name a few. I will also be hard at work keeping things running as smoothly as possible with N.I.A.D. so as not to disappoint any of our faithful members. It definitely looks like it will be a great summer and I haven't even mentioned ADAMCON V.

Recently, one of N.I.A.D.'s more prominent members, through a stroke of luck or maybe fate, was introduced to an ex-Coleco hardware designer. Through this meeting and subsequent conversations, he was able to acquire a stock of goods from this ex-Coleco employee which includes prototype hardware, software and technical manuals. I have received a number of the items that were discussed with this member and have had time to look over them and am anxiously awaiting further news of findings and shipments of products from this member. To date I have received:

PROTOTYPE ADAMnet 1200 BAUD EXTERNAL MODEM: By all appearances this is the modem that was originally planned for release before Coleco management decided to go with the internal 300 baud modem. This prototype unit is housed in a plastic case which is the same two-toned color as all other ADAM hardware products and contains a Hayes 1200 Baud Modem, an RS-232 to ADAMnet adapter board, an ADAMnet jack and a phonenumber jack, and is powered by the ColecoVision Power Supply. I have been unable to get this unit to work due to the lack of proper software since ADAMLink will not work with this unit. ADAMLink is designed specifically for the internal 300 baud modem which means the program is setup to access a port address instead of the ADAMnet. Our member has informed us that he has come across a software program called SmartTerminal which he thinks is the software needed to access the ADAMnet modem so hopefully we will have an answer soon on this one. We are not sure at the time if anyone will be interested in manufacturing this modem, but we will keep you posted.

PROTOTYPE AUTODIALER: This hardware product was completed and released by Coleco. It plugs into the external expansion bus on the right side of the Memory Console and is packaged with the Address Book Filer software program.

FinalTEST CARTRIDGE: System diagnostics cart which is available through our Public Domain (ADAM Utilities) on disk or data pack.

PROTOTYPE SmartWRITER R81 and R84 CHIP SETS: See the N.I.A.D. News & Updates section in this issue for further details.

CONVERTED EXPANSION MODULE #3 TAPE FORMATTER: This unit is a specially converted Expansion Module #3 that houses its own switching power supply, a custom chip set and two digital data drives. Its one and only function is to format digital data packs. To use it, you plug in the power cord (no monitor or keyboard is required), then you place a tape in either Data Drive #1 (Right Directory) or Data Drive #2 (Center Directory). A few seconds later the drive with the tape installed in it will begin the formatting process. When completed, an ADAM Digital Data Pack will have been created from an audio cassette. Somewhat like MegaCopy by Trisyd Video, but a lot more reliable. We will be checking around to see if anyone is interested in reproducing this unit for resale.

PROTOTYPE ADAM 3 1/4" INTERNAL FLOPPY DISK DRIVE: This disk drive unit installs inside the Memory Console in place of Data Drive #1 and is powered by a ColecoVision Power Supply. It plugs into the Data Drive #1 pin connectors and comes with the cover lid already attached for the Memory Console. It works off of ADAMnet so it is fully compatible with all ADAM software. In fact, the formatting program formats the 3 1/4" disks for 256K, a perfect match for the Data Drives. It is doubtful this disk drive will be reproduced.

ASSORTED SOFTWARE: I have not received any of the software to date, but should shortly have complete details that I will pass along in the next issue. Stay tuned.

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N.I.A.D. SPECIALS

MEMBERS ONLY - LIMITED SUPPLIES - PHONE FIRST TO RESERVE



USED ADAM PRODUCTS

COLECO / ADAM CARTRIDGES:

● B.C. II: GROG'S REVENGE by Coleco	\$6.00
● BRAIN STRAINERS by Coleco	\$5.00
● CABBAGE PATCH KIDS: PICTURE SHOW by Coleco	\$5.00
● COSMIC AVENGER by Coleco	\$5.00
● DAM BUSTERS by Coleco	\$7.00
● DECATHLON by Activision	\$6.00
● DONKEY KONG JR. by Coleco (with instructions)	\$5.00
● FRACTION FEVER by Fisher Price	\$6.00
● POPEYE by Parker Brothers	\$7.00
● SUPER ACTION BASEBALL by Coleco (with instructions)	\$5.00
● ZAXXON by Coleco	\$5.00

ADAM SOFTWARE:

● ADVENTURE PACK I by Victory Software (DP)	\$5.00
● BEST OF BRODERBUND by Coleco (DP - with instructions)	\$7.00
● CP/M 2.2 & ASSEMBLER by Coleco (DP - with instructions)	\$10.00
● GAME PACK I by Victory Software (DP)	\$5.00
● HOME BUDGET PLANNING by Parallel Systems (DP)	\$4.00
● MULTWRITE by Strategic Software (DP)	\$7.00
● PACKOPY by Sage Enterprises (DP)	\$3.00
● POWERPRINT by Strategic Software (DP - with instructions)	\$4.00
● STATES & CAPITALS GAME by Parallel Systems (DP)	\$4.00
● SUPER DONKEY KONG by Coleco (DP)	\$6.00
● THE SOLAR SYSTEM by A-Ware (DP)	\$4.00
● WORLD CAPITALS GAME by Parallel Systems (DP)	\$4.00

ADAM BOOKS & MANUALS:

● COLECO / ADAM ENTERTAINER by Osborne McGraw-Hill	\$5.00
● COLECO SmartWRITER OWNER'S MANUAL by Coleco	\$2.00
● HACKER'S GUIDE TO ADAM VOL. I by Hinkle Publications	\$4.00
● SmartBASIC FOR THE ADAM by Brady Publishing	\$5.00

OVERSTOCK CLEARANCE SALE

	WAS	SALE
● ADDICTUS by Reedy Software	\$19.95	\$9.95
● APPOINTMENT BOOK by The Maine ADAM Library	\$24.95	\$9.95
● BACKUP 3.0 by M.M.S.G.	\$10.95	\$4.95
● DECIMAL DISASSEMBLER by Walters Software Co.	\$19.95	\$9.95
● E.F.M. FLASH FACTS: HISTORY by Coleco Elect.	\$6.95	\$2.95
● PHRASE PAK I by Reedy Software	\$12.95	\$4.95
● RAMBOOT by Walters Software Co.	\$19.95	\$4.95
● RECIPE FILER by Coleco Electronics	\$9.95	\$4.95
● REEDY ENTERTAINMENT PACK by Reedy Software	\$15.95	\$5.95
● SHOWOFF II by Digital Express Inc.	\$14.95	\$4.95
● SmartBASIC V1.x by Drushel Software	\$29.95	\$14.95
● SmartLETTERS & FORMS by Coleco Electronics	\$9.95	\$4.95
● SmartLOGO by Coleco Electronics	\$15.95	\$5.95
● SmartTERM V1.02 by Keheo Software	\$15.95	\$5.95
● STAGE FRIGHT by Reedy Software	\$15.95	\$5.95
● STATES RACES by Hal Weber Software	\$15.95	\$5.95
● STRATOZAP by Allied Creative Engineers	\$16.95	\$6.95
● SUPER ZAXXON by Coleco Electronics	\$9.95	\$4.95
● U-MATCH-EM by Phoenix 2000	\$14.95	\$4.95
● ADAM GLOSSARY by The ADAM News Network	\$4.95	\$2.95
● BASIC PROGRAMMING TUTORIAL by ADAM's House	\$14.95	\$6.95
● BEST OF ELECTRONIC ARTS MANUAL by Coleco	\$4.00	\$2.00
● FROM BASICS TO BASIC W/ ADAM by Roadrunner	\$19.95	\$9.95
● HACKER'S GUIDE TO ADAM VOL. II by Hinkle Publ.	\$11.95	\$5.95
● UNCOMM. DIS. OF ADAM EOS7/SBV2.0 by Road.	\$24.95	\$4.95
● UNCOMM. DIS. OF SmartBASIC V1.0 by Roadrunner	\$15.95	\$4.95
● ADAM DUST COVER: EXP. MOD. #3 CONSOLE	\$8.95	\$4.95
● PANASONIC KX-P115 or KX-P145 PRINTER RIBBON	\$12.95	\$6.95
● MICRO INNOVATIONS 64K MEMORY EXPANDER	\$29.95	\$19.95



N.I.A.D. PROCEDURES



⇒ N.I.A.D. is published bi-monthly and mailed at the beginning of the second week of each odd numbered month by the Northern Illiana ADAM User's Group. Individual issues may be purchased for the current months or a backissue for \$3.00 (always check Product List for current pricing). The April / May issue of N.I.A.D. is the 95th issue published by N.I.A.D., there are 94 preceding issues. When ordering backissues, please specify the number of the issue, month and year.

⇒ The standard membership rate for 6 issues is **\$22.00 USA First Class** and **\$26.00 Canadian First Class** and it's possessions. Contact us for membership rates outside of these areas.

⇒ N.I.A.D. welcomes contributions of original reviews, programs, articles, questions, suggestions and comments. Please include a SASE (Self-Addressed-Stamped-Envelope) if you want a written reply. Also, any contribution sent in on DDP or DISK will be eligible to receive a Public Domain program or volume in return at no charge!

⇒ Your N.I.A.D. member ID number is on the first line of your mailing label (affixed to the newsletter). The first four digits are the month and year of the final issue in your current membership. Please check this number each month to insure that issues are not missed.

⇒ N.I.A.D. will not be held liable for any issues missed due to an address change which we are not informed of. Please send this information to us as soon as possible so as not to cause any type of difficulties. Also, include your member ID number any time that you send us any kind of letter, package or order.

⇒ N.I.A.D. accepts advertising for ADAM related products and services. Cost is \$35 for a half page ad and \$60 for a full page ad for one month. Contact us for multi-issue discounts. Well over a thousand ADAM owners receive our newsletter each month and many more get to see it second hand. You may send in your ad in either SmartWRITER, SpeedyWRITE, PowerPAINT, PrintWORKS, other ADAM formats, IBM ASCII or IBM PUBLISH IT! DTP format files or even supply us with a high quality print out for reproduction in the newsletter. N.I.A.D. reserves the right to not advertise certain products or services which may be offered.

⇒ If **0493** or **0593** are the first four digits in your member number, this is the last issue you will receive in your current membership, it is time to renew your membership to insure that you do not miss an issue.

⇒ N.I.A.D. welcomes software developers to submit their programs for us to evaluate for possible commercial sale. Send in your products for us to test and to review in the newsletter. N.I.A.D. offers a 50 / 50 split of the sale price on all items that we handle distribution of for all developers. You will find that this is one of the best offers around in the ADAM community. We will also publish a review on the product as soon as possible and handle distribution of demo copies.

⇒ **We have exercised due care in the preparation of this newsletter. No warranty, expressed or implied with regard to the information contained herein is given, either by interpretation, use or misuse. The opinions expressed herein do not reflect those of the editor or staff unless noted.**



N.I.A.D. NEWS & UPDATES

⇒ **N.I.A.D.** has stumbled across an ex-Coleco employee thanks to one of our longtime members. We have not received all the products that were discussed as of this article being written, but the member who has acted as a go between does have most, if not all, of what was offered. To date we have received the prototype ADAMnet 1200 Baud External Modem (haven't gotten it to work yet as it must need special software), the Coleco FinalTest cartridge and a number of very interesting SmartWRITER Chip Sets. The chip sets that were received are Revision 81 and 84, both of which have proven so far to fix a number of very irritating SmartWRITER R80 bugs. Slowly, but surely, we are plugging away at each of these revision chip sets to find out as much as we can about them. What we need to know from our membership, as well as others ADAM owners, is what kind of interest there would be in purchasing the better of the two chip sets or even both. If you are interested please contact us immediately, either by phone or mail, so that we may create a master list. We do have someone who is ready and willing to mass produce them if interest is high enough. PLEASE LET US KNOW A.S.A.P. When we have received further shipments of the Coleco hardware, software and manuals, we will continue to test out what we have and pass along our findings to you in the newsletter.

⇒ **ADAM MAP: STATE VOL. #8** has been released by Carl Harrison of Harrison Productivity for use only with ADAM MAP: U.S. ATLAS. State Vol. #8 contains the following five states: Alaska, Vermont, Maine, New Hampshire, and Massachusetts. Retail price for ADAM MAP: STATE VOL. #8 is only \$6.95. Watch for further states volumes in the near future.

⇒ **ADAM MAP: U.S. ATLAS**, by Harrison Productivity, contains a small bug in it that has now been fixed. The bug in the main program will cause ADAM MAP: U.S. ATLAS to report that it can't find the state of Georgia which is contained on ADAM MAP: STATE VOL. #6. If the serial number on the label of your ADAM MAP: U.S. ATLAS program is from 1 through 11 then you will need to mail in your original disk or data pack to us so that we may supply you with a new, updated copy absolutely free of charge.

⇒ **THE COLLECTOR** has been released by Bruce Walters of Hexace Software. The Collector is a menu program that allows owners of other Hexace Software titles to assemble them onto one media and boot them from a main menu. We have not received a demo copy or pricing yet, but as soon as we do we will pass along the information to you in the newsletter.

⇒ **FONTASY! V1A and V2A** have been released by Pat Herrington of Eyezod Graphics. FONTASY! V1A: DOUBLE DECKER FONTS includes a SmartBASIC FontView program, 6 Snip Files which are full cell PowerPAINT picture files of fonts and 19 Double Decker font sets in three different formats that can be used with PowerPAINT and Swift Label PrintShop as well as other programs. Double Decker fonts were developed to produce large type with only half the space between lines, giving users more flexibility. They can also be used to make quick headlines or even offset by half their height to make them appear to climb, descend, or roll in waves. FONTASY! V2A: MAGNI FONTS includes a SmartBASIC SpriteView program, 3 Snip Files and 39 sets of alphanumeric characters for use with PowerPAINT and Swift Label PrintShop as well as other programs. None of these Magni Fonts are standard as they overcome the standard 8x8 limitation and are 16x16 pixels, or four times the standard font size. See the reviews of each volume contained in this issue for all the details and some printouts of what you get with each volume. FONTASY! V1A and V2A are both currently available at the price of only \$16.95 each.

⇒ **FontPOWER**, by Digital Express Inc., has been upgraded to work

properly with all existing Hard Disk Drives, by Peter Ames. Not only has the hard drive patch been added but Peter Ames has added the following features: a built-in Screen Saver; initialize disk drives from 160K on up to 1.44Mb; directory size can be from 1 to 8 blocks; and in draw mode two new commands have been added that allow the user to move 10 ASCII characters forwards or backwards at one time. Peter Ames is currently busy patching Swift Label PrintShop to work properly from a hard disk drive. The FontPOWER Patch is available through ADAMLink of Utah, who, by the way, also have numerous other E.O.S. software patches available for the hard disk drive including PowerPAINT. Peter is also putting the finishing touches on an E.O.S. Hard Disk Backup program that will backup E.O.S. partitions only. Contact Alan Neeley at: ADAMLINK OF UTAH - 2337 SOUTH 600 WEST - SALT LAKE CITY, UT 84106 - (801) 484-5114.

⇒ **ADAM HOME AUTOMATION PACKAGE V1.5** software has been released by Chris Braymen and Alan Neeley of ADAMLink of Utah. Several updates have had to be made due to small bugs that were found. As was mentioned a number of months ago, Chris has written entirely new software for the A.H.A.P. that is 100% machine language and SmartKEY driven as well as compatible with all Orphanware / Eve Electronics and Micro Innovations Serial Interfaces. A.H.A.P. V1.5 will be sent to all purchasers of the A.H.A.P. free of charge by the distributor that you purchased the A.H.A.P. from. Like earlier versions available through ADAMLink of Utah, A.H.A.P. V1.5 is also available on cartridge as well as disk and data pack.

⇒ **BONAFIDE SYSTEMS**, owned and operated by Chris and Elizabeth Braymen, are putting the final touches on a new MIDI program that let's one edit MIDI sound files on the FB01 MIDI Unit. As soon as we hear further news we will pass along the information to you in the newsletter. Also from Bonafide Systems is an enhancement to the public domain title A-Chess Sargon. This new enhancement contains RLE graphics and has been converted to an E.O.S. media. As soon as we receive a copy of this updated version we will run a review in the Public Domain Workshop.

⇒ **PBBS V5.0** is in the final stages of modification for use on the ADAM by Guy Cousineau. PBBS is a CP/M / T-DOS based Bulletin Board System software program that is now available for those who wish to operate a BBS using their ADAM Computer. Because of the size of the board and the vast features which it offers, one should really own a hard disk drive to make operation most effective. However, Guy has managed to produce a version that will run on 3 1/2" 720K or 1.44Mb floppy disk drives although it is still being debugged. Also in the works is a T-DOS Hard Disk Backup program that operates in T-DOS and will backup all T-DOS and E.O.S. partitions. Currently, Guy and Ron Mitchell each have PBBS systems up and running. You can call either of their systems using 300 on up to 2400 baud with the parameters of 8-N-1 during the following unconfirmed times: 12am - 5pm weekdays and 12am - Sunup weekends. Guy C. - (613) 829-6354 or Ron M. - (613) 230-9511.

⇒ **GIF VIEWER**, by Dale Wick, is in the beta-testing stages. GIF Viewer is a T-DOS program that will finally allow ADAM owners to view GIF format picture files. The GIF format is a widely used graphic format in the DOS world and will open up a whole new world of picture files to the ADAM community that can be used in PowerPAINT. Also, if you frequent Information Networks such as CompuServe and Genie, you will have access to thousands of picture files that you can download for absolutely free. Watch for further news on this exciting new picture viewer / converter in an upcoming newsletter.

(CONTINUED ON PAGE 8, COLUMN 2)



MICRO INNOVATIONS' HARD DISK DRIVE AND E.O.S. PROGRAMING

by Allen Smith

As of the beginning of 1993 I've learned that our ADAM community is still shrinking. The N.I.A.D. Newsletter is reducing the number of issues by half for the year (ED. NOTE: actually we have reduced from 10 to 6 issues a year and will not devote one issue specifically to a catalog listing as we have done in past years.) and another terrific supporter / programmer has given up do to problems within her user group.

I've heard others make the statement that 'when someone within the ADAM community ends their support, someone else steps in.' Perhaps that has been true in the past, but the older our ADAM gets the less likely that statement remains true.

I sometimes think of switching to another system, but then take stock of the time and expense invested in this system. I also looked at how much more difficult and expensive other systems would be; this always brings me back to the ADAM system.

Our ADAM may not be the fastest or the most modern, but it really can accomplish just as much as other systems costing three times as much. ENOUGH EDITORIALIZING: the purpose of this article is to acquaint the ADAM user with the Micro Innovations' Hard Disk Drive (HDD) and ADAM'S Elementary Operating System (E.O.S.). Almost every article I've read regarding a HDD has related it to the T-DOS system. Rightfully so; T-DOS is a fabulous system.

Recently I purchased a M.I. HDD with the T-DOS system installed. I'm starting to discover just how much more one can do with ADAM using T-DOS, instead of the standard E.O.S. programs, and T-DOS compatible programs such as SUPERCALC, dBASE II and WORDSTAR which were once reserved only for the IBM and APPLE computers. Well, for those of us late bloomers guess what we have within our grasp?

However, before discovering T-DOS I mainly used ADAM'S E.O.S. programs (SmartBASIC, ADAMCalc, SmartLOGO, SmartFILER, etc.). If boot-up time between program swappings is becoming a pain, if you're concerned with tape or floppy drives overheating, or if one megabyte (1Mb) of expansion ram isn't enough then a HDD is the way to go. The storage / retrieval speed is remarkable! Not to mention how much storage space you will have.

Micro Innovations (M.I.) provides excellent instructions regarding the use of their product. I purchased a 20 megabyte unit which was configured as follows:

- A) Four drives (partitions) equalling 10Mb for T-DOS [programs included].
 - B) Ten drives (partitions) equalling 10Mb for E.O.S. (the 0 partition contains BOOT programs to call up ADAMCalc, SmartLOGO, etc.).
- NOTE: FILE MANAGER has been pre-installed.

By using FILE MANAGER you can install your E.O.S. programs and their files on any one of 10 partitions. I would not use the 0 partition; this is the BOOT area; if you corrupt this area the HDD WILL CRASH and become inoperable. I've already discovered that!

The instructions will walk you through slight E.O.S. program modifications to make their use more compatible with the HDD. Once completed each E.O.S. program will boot in less than one to two seconds. Changing between SmartBASIC, ADAMCalc and SmartLOGO takes roughly the same amount of time without tape or floppy disk swapping.

The HDD documentation provides you with a list of what E.O.S. programs will and will not operate on the HDD. I've yet to verify the entire list, but what has been verified is enclosed in the article. The HDD

unit replaces tape drive two as the storage device. That's not to say tape drive two becomes worthless just that it's use becomes very limited. Also, the HDD unit utilizes certain areas of ADAM's memory pertaining to it's voice / sound ability (as do the expansion cards). This means that you will loose the use of the memory cards as RAM disks and that some E.O.S. programs will loose the ability to generate sound.

Each E.O.S. partition can be 'INITIALIZED' to allow for a 20+ block directory. I've discovered that ADAMCalc, SmartLETTERS and FORMS and SmartLOGO will not operate properly (if at all) with anything larger than a five block directory. SmartBASIC gave me some operational problems with a seven + block directory. DO NOT place more than one E.O.S. program per partition. This means DO NOT place ADAMCalc and SmartLOGO on the same partition. ADAM will get confused as to which program you want booted. (ED. NOTE: This should not be a problem as the BOOT FILE tells the system what file to load, i.e. CALC.FL will tell the system to load the BASICPGM file and LOGO.FL will tell it to load the LOGO file). Each E.O.S. program should occupy it's own partition. I placed ADAMCalc (and it's files) on partition one; SmartLETTERS and FORMS on partition two, SmartLOGO on partition three and SmartBASIC occupies partitions four through nine.

Only under SmartBASIC is one allowed to CATALOG throughout each partition by typing: "catalog d2 (remember your HDD is now tape drive two), volumes 0-9"; [example: CATALOG D2,V0 or CATALOG D2,V2; etc].

Programs that I've used:

(1) ADAMCalc:

As long as the partition you have placed this on is limited to a four block directory you should not have any problems.

(2) SmartLETTERS and FORMS:

Being a novice programmer I had a little trouble understanding the modifications stated in the instructions. The second change required involves the 'BOOTWRIT' program. It requires you to change byte 76 (4ch) to another number using the FILE MANAGER program. Byte 76 should read 09 00 before the change. This pair of numbers was located at byte 77 (4dh) on mine. Once all of the files on this media were copied to partition two and the modifications made, everything operated as it should. However the cursor seems to hesitate (stick) when using the arrow keys for it's movement. You cannot move to other partitions. All of your work must remain within the partitions you installed this media on. Do not worry about running out of storage space, there will be plenty of it.

(3) SmartLOGO:

I try to spend most of my computing time with SmartLOGO. Unlike other art producing programs this one requires you to use your programing imagination. The graphics can be quite stunning while creating animation. Too bad the work space is limited to about 5K of material. I used partition three for this one. As mentioned earlier, you can only stay within the partition you have SmartLOGO installed on. The only true draw back to using SmartLOGO with the HDD is that you loose all sound capacity, COMPLETELY! That means the SmartLOGO library you have will require you to edit out all of the sound routines; what a pain!

The only other solution would require a memory expansion card and Hexace's 'MEMDSK for LOGO' package. To use this package properly you will need to power down your HDD. Doing so would give you the use of your memory card as a RAM DISK and return tape drive two to it's full use. The RAM DISK may not be a permanent storage device, but

you can use SmartLOGO to it's fullest potential.

(4) SmartBASIC V1.0:

Every program that has been written using SmartBASIC V1.0, whether saved as an 'A' or 'H' file, seems to function as it should. Even programs containing music and / or sound operates properly. Example: On one of my public domain tapes a program exists called "xmas". I copied this to a HDD partition. Each xmas song within this program operated as it should. I have noticed that on occasion, when trying to BRUN a 'H' file, that I receive a 'SYNTAX ERROR' message. By typing 'NEW' and pressing 'RETURN' then BRUNing the program again everything executes as it should.

So many SmartBASIC programs have been given new life by using the HDD. For example, three programs created by STRATEGIC SOFTWARE function so much better on a HDD. These are MicroWORKS, SignSHOP and PaintMASTER. With a slight program modification each operates more efficiently and with much greater speed.

MicroWORKS MODIFICATIONS:

This package really does not require any changes. Each program within the MicroWORKS package already supports tape drive two. Repeating, ALL of the programs and their files must be on the same partition. Even though tape drive two is fully supported you CAN NOT switch between partitions while in the MicroWORKS programs.

SignSHOP MODIFICATIONS:

SignSHOP Picture Editor Program: After you have saved all of these files, change the following lines;

```
1045 PRINT "LOAD PICTURE FROM HARD DISK"
1070 PRINT "SAVE PICTURE TO HARD DISK"
1320 IF co$="3" THEN dr$=",d2"
1750 IF co$="6" THEN dr$=",d2"
```

Once this is done resave.

SS.OBJ (SignSHOP master program):

Make the following changes;

```
1310 VTAB 14: HTAB 2: PRINT "3 - LOAD PICTURE FROM H.D.D."
1380 IF pn=3 THEN dn$=",d2"
10070 PRINT chr$(4);"run "+fi$+",d2"
```

PaintMASTER MODIFICATIONS:

It has been quite a while since I've used this program. After examining the master program (PM.OBJ) the only change I've made, that I can find, involves the following line:

```
10060 IF p6>73 then d=2: GOTO 10090
```

When running this program you are asked which drive to read or write to. ALWAYS save or load your picture to the TAPE. You WILL get strange results if you try to use the floppy disk. Also, I changed this program to a 'H' file using Walter's cruncher program. Watch how fast it loads now! The program's running speed remains the same but the loading and saving time of your art work is unbelievable.

The two programs that I own by ADAMzap (MicroTalk and Zoran III) not only function perfectly on the HDD, but the loading speed is amazing.

The FILE MANAGER program copies both of these programs to the HDD without any problems. Remember to copy SmartBASIC to the same partition. When you boot SmartBASIC these programs will load themselves and operate just as they do on the tapes and floppy drives. Put each of these on their own partition with SmartBASIC. Putting them on the same partition will confuse ADAM as to which one to load and run. You can also create a menu program that will be loaded and then give the user the option as to which program they want to run.

EVE's Speech Synthesizer / Clock Calendar works without any problems. The HDD makes the task of using programmable speech more enjoyable; the speech is instantaneous. No longer do we wait while the shell program loads the machine language program to generate the speech. The HDD operates with RAM DISK speed.

The Hurricane Tracking program (public domain) operates so much better and quicker once copied to a HDD partition. The sound is the only thing missing.

The following programs were tested at Micro Innovations and were stated in their documentation as to being operational: JKL Utilities, Disk Doctor, E.O.S. File Indexer, SmartFILER, VideoTunes, ADAMLink and SmartWRITER.

At this time I do not own JKL Utilities, VideoTunes or any of the ADAMLink programs but I have tested Disk Doctor, E.O.S. File Indexer and SmartFILER with negative results.

Inquires have indicated that SmartFILER CAN NOT be booted from the HDD, but that the database you create could be stored on a HDD partition. I have not had any success as of yet with storing or retrieving any databases that I've created.

SmartWRITER - (without sound):

The boot screen for E.O.S. will allow you to select the partition you will work from. Once you boot SmartWRITER you can store / retrieve files without any problems. Remember which partition you're working from so you do not lose your files. I would pick a partition only for SmartWRITER then INITIALIZE that partition (see the enclosed documentation) with the title 'WRITER'. That way when you select the partition that contains the SmartWRITER files, the name of that partition will verify what your looking for.

Micro Innovations listed three software programs that WILL NOT operate at all. They are:

PowerPAINT:

The expansion RAM driver software was overwritten by the HDD drivers. In other words a conflict of operational routines prevent this software from working. (ED. NOTE: A special patch is available through ADAMLink of Utah as well as other Digital Express Inc. software that was patched for use on Hard Disk Drives.)

SmartBASIC V2.0:

Overwrites the E.O.S. The HDD units are configured for SmartBASIC V1.0. There is a boot program installed in the unit for calling up SmartBASIC V2.0, but I've yet been able to get it to work.

NewsMAKER and ADAMTalk:

WILL NOT function. Both are written in SmartBASIC V2.0. This also applies for other programs that use SmartBASIC V2.0.

DISK MANAGER:

Overwrites E.O.S. I do not own this software, so I haven't tested it.

A HDD unit operates much like a record player. There is a small permanently installed disk; just hovering above this disk is an arm that reads and writes magnetic images while traveling across the disk. If you shake, hit or pickup the HDD unit while in operation you WILL CRASH the unit making it inoperative. This is a delicate piece of equipment; treat it that way.

Do not worry about overheating. The unit has a cooling fan installed. It's possible that overheating could occur, but I haven't had any problems yet and I leave my unit on almost all day.

Your questions and inquiries should be made through ADAM outlets that carry this product. You can contact Micro Innovations directly; Mr. Gordon is extremely patient and helpful.



IN DEFENSE OF ADAMLink V

Reviewed by Peter Ames

Review Rebuttal by Richard F. Drushel

ADAMLink V REVIEW

Since the first ADAMLink software, I have used it as it is driven with ADAM's SmartKEY's. I have used ADAMLink I, II, and III+, and from what I had heard about ADAMLink V, it would be better than ever. As it turned out, I was not pleased with the software at all. It took only a short time to determine that ADAMLink V was not all that great.

I wanted to install ADAMLink V on my Hard Drive but there were no instructions as to proper installation procedure. This includes what files to copy and where to place files on the Hard Drive. After copying all the files to the H.D., I proceeded to boot-up the software and found that the BOOT FILE was saved to disk incorrectly. The following is a list of problems and shortcomings that I found within the first six hours of owning the ADAMLink V software.

- 1) A separate purchase of a Ram Drive program is required to access your Ram Disk.
- 2) The program locks up if it is unable to read a directory.
- 3) Losing access to Tape Drive #1 is possible.
- 4) External modem does not hang-up if you call out thru SmartKEY I.
- 5) Documentation instructs the use of <SHIFT>+<TAB> to advance the hard drive volume if you are running Hard Disk 2.3 or 3.9, but I could not change from one volume to another. I am running H.D. V2.3.
- 6) If you want to see the directory of a disk or tape, you must be running the software in video mode or both video and 80 column as the directory is not sent out to the 80 column monitor.
- 7) A big deficiency in the program is that of selecting a file or group of files for a mass transfer (upload) operation. You are prompted to select a drive to display a directory. There is no provision in ADAMLink V to tag files for a mass operation. Instead, it is necessary for the operator to note the name and location of the file and manually input that information during the file transfer process. In addition, the program takes the user through several tedious steps and screens during the file transfer process including clearing the screen. This is very confusing and unnerving to the user and does not make for a smooth and logical operation.
- 8) While using the software, I found that ADAMLink V was displaying a line feed character at the start of each menu from the local BBS. This did not appear in previous versions of ADAMLink.
- 9) As a programmer, the following comments have great significance. This version of ADAMLink V changed the port addresses from the HEX values to DECIMAL values. The standard values are 44 (hex) for port A, 54 (hex) for port B, 4C (hex) for port C, and 5C (hex) for port D. These are the values that I am used to using and not the decimal values of ADAMLink V. Because of this change, I was unable to do a demo of the software. I had pressed the wrong SmartKEY to access the RS-232 for the 80 column screen.

It is my opinion that ADAMLink V was not adequately tested before it was made available for sale; or that whoever tested the software did not test all of the features.

ADAMLink V REVIEW REBUTTAL

This is a response to Pete Ames' review of ADAMLink V that appeared

in the M.O.A.U.G. Newsletter, February 1993.

As the chief programmer responsible for ADAMLink V, I would like to respond in detail to Mr. Ames' criticisms. Most of these seem to be simple misunderstandings of the capabilities of ADAMLink V, as I hope I can show below. But first, a brief programming history of ADAMLink V. ADAMLink V was created by a series of binary patches to the existing binary files of ADAMLink IV alpha, an unreleased version by original author Tom Clary. Using my own complete disassembly of ADAMLink IV alpha as a guide, I added support for CATALOG, enhanced ASCII file transfers, fixed a bug in the RLE viewer, and a few other things; a complete list of who did what can be found in the ADAMLink V documentation. However, because no assemblance source code was made available to me, there were serious limitations on extent to which fundamental changes could be made in ADAMLink V.

- 1) "A separate purchase of a ram drive program is required to access your RAMDISK." ADAMLink V cannot access expansion memory unless you have purchased commercial RAMDISK software to install proper E.O.S. drivers to access it as device 25. ADAMLink V will not configure expansion memory as a RAMDISK. If your RAMDISK contains files when ADAMLink V is started, you can display them on the CATALOG and access them for file transfers. As stated in the documentation, ADAMLink V will work with the Walters Software RAMDISK, a commercial product. ADAMLink V also detects a RAMDISK installed by an experimental, unreleased version of the HARD DISK software for Mini-Winni Hard Drives. HLM-GMK Inc. had hoped to make this enhanced HARD DISK program available commercially, but was unable to obtain the necessary permission from the authors of HARD DISK. This type of RAMDISK driver, written by me, will appear in the new E.O.S. Operating System I am preparing, and will be recognized by ADAMLink V when run under the new E.O.S.
- 2) "The program locks up if it is unable to read a directory." The CATALOG routine assumes a valid E.O.S.-5 directory. ADAMLink V requires a valid BLOCKS LEFT entry to terminate the listing. Disks which have been written under E.O.S.-7 (such as Disk Manager or SmartBASIC V2.0) do not have a BLOCKS LEFT entry, and do indeed cause the CATALOG function to lock-up. All other file transfer operations, however, correctly recover from hardware read errors and does not lock-up the system.
- 3) "Losing access to Tape Drive #1 is possible." I have never observed this error, and can find nothing in the source code which would suggest its appearance.
- 4) "External modem does not hang-up if you call out through SmartKEY I." Yes it does; I just verified it on my own system.
- 5) Advancing the hard drive volume. It is specifically stated in the ADAMLink V documentation that this feature is available *only if* you have a special, enhanced version of the HARD DISK software. This feature is *not* a part of the ADAMLink V program, but of the enhanced HARD DISK.
- 6) CATALOG not displaying on an 80-column monitor. This is true. All versions of ADAMLink capable of serial terminal display use it *only* for modem communications. A television/video monitor is required to display menu selections, including CATALOG.
- 7) Lack of batch file transfer. This is true: ADAMLink V supports only ASCII and XMODEM file transfers. While in principle a batch protocol like YMODEM BATCH or ZMODEM could be implemented, in practice there is no convenient way to do this without (a) assemblance source code and (b) major program reorganization.

● 8) Extra line feed character. I have never observed this phenomenon. An extra line feed with each line of received text would indicate that the AUTO LF is turned ON unnecessarily (e.g. in full duplex mode). Or perhaps the host computer is using an incompatible terminal emulation.

● 9) Hex versus decimal base ports. Since Mr. Ames points with obvious pride to his programming skills, I am at a loss to explain his inability to recognize that 44 hex is 68 decimal... ADAMLink V supports all 4 Orphanware base ports, both M.I.B. 2 and 3 and M.I. Dual Serial Interface base ports. Whether they are expressed as hex or decimal is immaterial to their function.

Mr. Ames states: "It is my opinion that ADAMLink V was not adequately tested before it was made available for sale; or that whoever tested the software did not test all the features." Nothing could be further from the truth. ADAMLink V was tested exhaustively by me at each step in its modification from ADAMLink IV alpha, on systems ranging from "vanilla" ADAMs with one tape drive to my custom Mini Winni hard drive system with internal M.I.B. 2 and internal Orphanware serial ports as well as my home-built 80 column video unit. Herman Mason and George Koczwar were extensively involved in beta testing. We were satisfied that the released program functioned according to specifications, and that the documentation was detailed and accurate.

In my opinion, ADAMLink V is the best available E.O.S.-based, SmartKEY interfaced telecommunications program for the Coleco ADAM. This does not mean that such a program could not be improved. However, I feel that most of Mr. Ames' criticisms are a result of technical ignorance and failure to read the ample documentation. He also laments missing program features as if their absence were a calculated deception - i.e. promised but not delivered. This is untrue and highly insulting.



A NOTE FROM THE DISTRIBUTOR

FROM HLM / GMK HARDWARE & SOFTWARE CO.

The above letter is the programmer's statement regarding Pete Ames' review of ADAMLink V.

We do not delude ourselves about the advantages and abilities of ADAMLink V. We did make a concentrated effort to test and prepare concise documentation for ADAMLink V. As in most any program there is the possibility of an inadvertent omission in documentation or some minor "bug" in a programs functions. As with most program releases, we did request that end users report any deficiencies found. We assume this review, of imagined problems, is Mr. Ames' report of problems he thinks are in ADAMLink V.

Due to the registration format we use, each copy is set up for the purchaser's own system configuration. If the end user states a need of assistance in operation or installation, we are and have been readily accessible for this aid. We are unable to aid an individual with his reading comprehension and subsequent use of written instructions.

It is correct that there is no definite instructions for installing ADAMLink V on a hard drive. This is purposely done, as each hard drive system is as different as the individual owner. A general installation procedure would not be possible without having a number of the different systems available, along with a myriad of possible configurations. It was felt that persons who had hard drive systems, were capable of the installation to their particular system's. For all the ADAMLink V software that has been sold, we have not had problems that were unsolved.

We do stand behind ADAMLink V, with all our ability and knowledge. We believe that ADAMLink V is a great E.O.S. based modem program.

Herman L. Mason and George M. Koczwar



CLEANING YOUR COLECO / ADAM GAME CARTRIDGES by Fred Horvat

Have you ever had problems with a game cartridge when you press reset and all you get is the famous "Turn Game Off Before Inserting Cartridge Or Expansion Module". But you just played the game last week and it worked fine.

Normally all you have to do is shut the unit off and take out the cartridge and put back in and reseating it may have given better contact. If it still does not work don't panic just yet the problem may be some dirt or oxidation on the game cartridge or system unit.

I have noticed a big market in cleaning products for Nintendo cartridges and system units. It is common for these unit to get dirty in a very short period of time and basically quit working completely until the unit is cleaned. The ColecoVision / ADAM holds up great compared to newer equipment, I guess they just don't make them like they used to.

To clean the ColecoVision / ADAM cartridges you could go out and buy a Nintendo Cleaning kit for \$9.99 at the local toy store. The kit comes with three cartridge cleaning pads with nice handles, a large system unit cleaning pad, and a bottle of cleaning solution. The cartridge cleaning pads have a slight bend on the handle that makes getting into the cartridge area a breeze. All you need to do is add a couple of drops of solution and run the pad up and down on the cartridge contacts a few times and you're all done.

The system cleaning pad will not fit into the ADAM game cartridge port without some cutting to it's plastic case. I have not cut mine up yet to see how it fits yet because my unit works fine. For most people they will not likely need to get a cleaning kit plus that's a bit pricey just to clean a game or two that are giving you trouble.

Another method is to use a cotton swab with a little isopropyl alcohol and rub it across the cartridge contacts a few times. The cleaning solutions is specially made for cleaning cartridges. It is made by 3M and smells a lot like tape/diskette head cleaning fluid which consist of isopropyl alcohol.

So you should be ok in using isopropyl alcohol without fear of ruining a cartridge plus you are only going to clean it once anyway and may never have to again. As far as cleaning the contacts on the unit well I've not had to do it on mine yet probably because of the dust flap protecting the entrance well or most likely by constantly using the cartridge port it keeps the contacts cleaning from use.

I hope this helps a few of you gamers out there.



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DEMONS OF THE COLECO ADAM DIGITAL DATA DRIVE

by Richard Clee / M.T.A.G. Newsletter

When Coleco was frantically rushing the ADAM to completion, the Digital Data Drive (DDD) seemed like an absolutely brilliant idea.

The many ADAM owners, among them members of M.T.A.G., who have since sat cursing the infernal machine may beg to differ. But there was a rationale behind it.

You have to remember that when the ADAM was conceived, towards the end of 1980, owners of competitive machines would have given their eyes and teeth for such a machine. TI99/4A, APPLE II, Commodore VIC-20 and C=64, and others, were using plain tape recorders to feed data in and out. Speed? Reliability? You had to date back to when you entered a program by cross connecting circuit board plugs to think that was an improvement.

Disk Drives? These machines were supposed to be affordable. Coleco would offer one - a single-sided, 160K unit of highly respectable speed, at about \$300, which was quite a bit cheaper than the prices charged by the competition and compared well with them in performance. But for the ordinary, tight-budget user, that was a fancy frill for the real hackers. Coleco made the DDD part of the basic ADAM package. It ran ten times faster, if not more, than a tape recorder. It stored more than half (256K) as much as a disk, and disks at that point were neither cheap nor noted for reliability. Some ADAMites claimed the DDD was faster than the C=64's original disk drive. It was a good deal - then.

Of course, now it is easy to bring ADAM into the '90s. A number of vendors will be delighted to sell you all the disk drives you want, hard or floppy, of great speed, marvellous reliability and ridiculously low price. Even so, many who underuse their ADAMs choose to soldier on with the original Digital Data Drive.

At this point my phone starts ringing. "Where can I get an ADAM fixed?". "My digital data drive won't work!". "Where can I get new data packs?". "I keep getting error messages!". What to do!

In the latest issue of A.I.M., Terry Fowler (who fixes ADAMs) has put in a special plea to all club executives and newsletter editors. "Please", Terry asks us, "tell your members to phone first before sending an ADAM in for repairs". Many times Terry can give advice that will let the owner fix the ADAM himself.

Terry's point is well taken, especially regarding digital data drives.

Not everything that goes wrong with a digital data drive can be cured by a home-fix. But if it's 2 a.m., you need to store the essay that's due tomorrow afternoon, and suddenly all of your data packs produce a message saying "cannot write to this file", there are a couple of techniques worth trying. The first thing to do is to take your little swab, foam or cotton, dip it in a bottle of tape head cleaner (99% isopropyl alcohol), and very gently but thoroughly clean the tape reading head. Never, never, never under pain of causing the irretrievable demise of your DDD, use a demagnetizer or abrasive tape cleaner. Just swab the cleaner on, blot up the excess of all the tape granules that have stuck to the head, and let it dry. In fact, you should be doing it as a matter of course every few months anyway.

Before doing anything further, you should try a couple of data packs. If you have them, it might be worth trying a Megacopied data pack and or a 320K data pack. This gets into the reason why the data packs someone copied for you, and that you saw working on his machine, doesn't work on yours. The DDD is very sensitive to speed variations and can drift far from the factory settings over time. If your DDD has drifted, even data packs used or recorded on it at the old, original

speed may refuse to work. The reason a Megacopied or 320K data pack may work is that they have different formats and hence run at effectively different speeds.

According to one of the ADAM repair specialists, Phil Kosowsky, 90% of the dead DDDs he sees have the same faulty part - either Q4 (or Q6 on later revision boards), a Panasonic chip part #2N3906. This is the chip governing the speed circuit. It emphasizes how critical speed control is to the working of the Digital Data Drive.

So, if cleaning doesn't work, and assuming you're using mostly Loran clear-label data packs, get out your copy of the Coleco Speed Checker program (version I or II will do). If you do not have one, get one as soon as possible through the public domain libraries of either a vendor or users group. Run the program and see if the drive is running within the tolerance limits, (+3% to -3% for R79 and R80 CPU's). If your drive is out of tolerance, take your precision screwdriver to the adjustment screw and adjust it until the drive operates within the limits.

N.I.A.D. NEWS & UPDATES, CONTINUED FROM PAGE 3

⇒ **22-DISK V1.39** has been released by Sydex of Eugene, OR. 22-Disk V1.39 is the popular CP/M to MS-DOS and vice versa conversion utility that runs on MS-DOS machines. It can be obtained by sending \$25.00 + \$5.00 shipping / handling to: SYDEX - P.O. BOX 5700 - EUGENE, OR 97405 - (503) 683-6033.

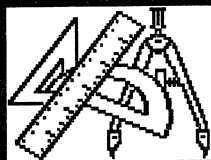
⇒ **VIDEO 80 BOARD KIT** has been released by Terry Fowler of ADAM's House. This 80 column interface kit comes with all that is needed to set your ADAM up for 80 column display in CP/M or T-DOS (hardware, cables, power supply and software) except an 80 column compatible monitor. An RGB monitor that has composite audio and video jacks is recommended unless you do not require color, in which case you can go with a green or amber 80 column monitor at a considerable savings. The Video 80 Board Kit sells for \$139.95 unassembled or \$189.95 assembled. For ordering information contact: ADAM'S HOUSE - RT. 2 BOX 2756 or 1829-1 COUNTY RD. 130 - PEARLAND, TX 77581 - (713) 482-5040.

⇒ **ADAMCON 05**, chaired by Alan Neeley and sponsored by ADAMLink of Utah and The ADAM News Network, is drawing nearer and nearer. See the registration form in this issue and last month's newsletter (February / March '93) for all the latest details on the fifth annual ADAM convention that is being held in Salt Lake City, Utah from July 22-25, 1993.

⇒ **ADAM GALLERY OF HONOR** balloting is underway once again. This is the third "annual" induction of ADAMites into this prestigious group. This year's voting is to conclude on May 9th, but unfortunately you will receive this issue after the cut off date for balloting. This year's inductions will include 1 New ADAMite, 5 Active ADAMites and 2 Inactive ADAMites. Previous year's inductees include: Tony Morehen, Alan Neeley, Norman Castro, Syd Carter, Sol Swift, John Lingrel, Pat Herrington, Rob Friedman, Lyle Marschand, Guy Cousineau, Mark Gordon, Terry Fowler, Dean Roades, Barry Wilson, Ron Collins and Sharon McFarlane. Results of this year's balloting will be announced at ADAMCON 05. If you want to get a late ballot in, in the hope that it will still count, send to: GALLERY OF HONOR COMMITTEE - 1146 MANATEE DR. - ROCKLEDGE, FL 32955.

⇒ **C.A.N.A.D.A.**, created by Mike Hurst, is a new informational service for Canadian ADAMites. They are currently in the process of organizing their services as well as their new BBS. In the future they will offer a . . .

(CONTINUED ON PAGE 11, COLUMN 2)



FUNDEMENTALS OF COMPUTER PROGRAMMING

Chapter VIII & IX: Debugging, Numbering Systems and More

by John Y. Terry, Sr. / M.O.A.U.G. Newsletter

DEBUGGING

One of the hardest things that a programmer has to do is debug or correct his or her work. Following are some suggestions that may help.

Look for the obvious: the letter O where the number 0 is desired; the letter I when the number 1 is desired. Both of these are very common errors even among experienced programmers.

Check syntax. Be sure that all program instructions are spelled properly, and are set up properly. Some computers will flag syntax errors, others will not. Some syntax errors are not recognized by the computer because in the form that they currently appear, they are proper instructions, being used wrongly. This is one of the hardest errors to detect.

Check arithmetics. Be sure that your arithmetic expressions are correct for the computer language that you are using. Remember the computer does its arithmetic algebraically. Refer to your programming manual for assistance.

Work out the problem on paper. Be sure that your program steps follow the same sequence.

Use a "dummy" instruction. Place a dummy instruction in the program that will stop the program and write a message to the computer screen. If the dummy instruction is inserted at instruction 400, and after starting the program the message appears on the screen, you know that the program has made it that far.

Move the dummy instruction to instruction 800 and start the program again. Continue doing this until the program does not find your dummy instruction. You have isolated a problem between the instruction last used and the current instruction. Correct the problem and continue using the dummy instruction until the program goes from start to finish.

The dummy instruction technique can also be used to debug program modules.

Modules are easier to debug than entire programs.

Remember, always keep things as simple as possible. This is for the benefit of the programmer, not the computer.

Any problems that are encountered that may cause problems in a later use of that particular instruction or sequence of instructions should be documented and kept for later use in other programs.

Don't depend on your memory. Check.

It is sometimes helpful to verbally express questions or problems. Even if you are alone, talk out loud. Hearing a problem expressed causes a different part of the brain to become active and assists in thinking through a problem.

Never expect a program bug to just go away. It won't. Find the bug and fix it.

There are always the times that a problem cannot be found and fixed. In these cases, go back to the beginning, remove the problem routine and reprogram it. Our thinking process and the computer's operation on instructions are two entirely different things and we could be wrong.

Keep things small. Small sections or routines are easier to work with.

Remember, the mind never stops working or thinking. Even when we're asleep, the subconscious continues to work. It is sometimes best to just put the problem down and walk away for awhile. When you come back you will be fresh and can start again with fresh, if not new, ideas.

It is sometimes helpful to work with another person when debugging a program. No two people think alike and a second opinion is usually helpful. Take advantage of any help that you can get. When working with another person, one person reads from a computer listing of the program and the other verifies what is intended from a duplicate listing. Some of the obvious errors are overlooked by one person but will be found when a second person is involved.

Don't let it get you down. You can get so wrapped up in debugging a program that even the most obvious and blatant error will look right. Take your time and think things through. When you get tired, rest. A fresh outlook is always best.

Remember, you are not alone with your problem. At one time or another someone else has made the exact same mistake that you've made.

NUMBERING SYSTEMS

Computers use several numbering systems in performing their various functions. The computer itself uses a numbering system known as "binary". In binary, there are two possible digits in any one column - either a zero or a one. Inside the computer, the Central Processing Unit (CPU) uses only bits of data at any one time and a single bit can have a value of either one or zero. Using binary to program a computer is very difficult and time-consuming. The first computers were programmed only in binary.

As time went on, another numbering system was developed which was easier for individuals to understand, but could easily be converted to binary. That numbering system is known as "binary coded octal". Binary coded octal is a numbering system based on eight, using the digits 0 through 7.

Later, a binary coded decimal system, using the digits 0 through 9, was developed and used by programmers. This binary coded decimal system wasted valuable memory, since all positions of a byte were not utilized.

Finally, the binary coded hexadecimal (base 16) system, using the digits 0 through 15 (represented by 0 - 9 and A, B, C, D, E, and F) was developed for the use of programmers. More information can be represented in less space using this code than any of the foregoing numbering systems.

Currently there are three numbering systems used on a typical computer. Binary is used by the System, Binary Coded Decimal by the Operator of the System, and Binary Coded Hexadecimal by the Programmer of the System.

BRANCHING

There are two types of branch or GOTO instructions used in programming: CONDITIONAL branch and UNCONDITIONAL branch.

A conditional branch is based on the occurrence of another action, and requires that a given condition exists or is satisfied.

(CONTINUED ON PAGE 13, COLUMN 1)



WORKING WITH SpeedyWRITE

Part II: Printing Address Info. On Envelopes

by David Sands / A.D.V.I.S.A. Newsletter

This series is written, for original publication, in the Vancouver Island Senior ADAMphiles (V.I.S.A.) newsletter, the A.D.V.I.S.A., and is then provided to the ADAM News Network.

In the previous part, we wrote a letter and used various formatting commands.

One of SpeedyWrite's many interesting features is its multiple workspaces. Simply put, the program allows you to work on two different files, two parts of the same file, or to create a second file from the first. We'll use this ability to create a second file to address the envelope for our letter.

We'll also use SpeedyWrite's "delete buffer".

Here's the address on our letter:

Mr. Persons Name
His Company's Name,
Company's Street Address
Company's City and State / Province
Zip / Postal Code

Straightforward. To delete or move this from the letter, we first press CONTROL-N, then we press CONTROL-D, delete, press CONTROL-T, change workspace, press the Move/Copy key on the keyboard, and get our address in a new uncluttered screen.

This is not straightforward, this is a jumble of strange commands! Let's take them one at a time.

We first press CONTROL-N. And as always with Control keys, it's first press down Control and then press N. And it does not have to be an N, it can be an 'n'. No SHIFT key press to make a capital letter is needed. Control letters are simply shown in capitals to make them distinctive in the text. CONTROL-N in SpeedyWrite clears out the 'delete buffer'. If you've been typing, backspacing, deleting with the Delete key, which works fine in SpeedyWrite, everything has been conveniently vanishing and you haven't had to press SmartKEY VI to confirm that you are "Sure", not even once. SpeedyWrite tends to treat you more like an adult than SmartWRITER.

However, if you have been deleting with SpeedyWrite's CONTROL-D feature, you've been filling a small memory area in the ADAM, created by the SpeedyWrite program, in which deleted material is kept. To prove it to yourself, type a line in SpeedyWrite, move the cursor to the start of the text and press CONTROL-D. The command line, (the top line of the screen) will say 'Hi-lite Text, Use CTRL-D'. Simply move the cursor to the end of the line you are deleting and press CONTROL-D again. It's gone. Now press the Move/Copy key. It's back.

If you wish to delete something and then re-insert your deletion elsewhere in your file, it's necessary to clear out the buffer and CONTROL-N is the command that does that. Otherwise, you find everything previously CONTROL-D deleted re-inserted. This might not be what you want, to put it mildly. So, CONTROL-N before every deletion that you wish to move.

With our address in screen, the delete buffer cleared out with CONTROL-N, and our cursor on the 'M' in 'Mr.', press CONTROL-D. Using the arrow keys, move that cursor to the line below the Postal Code and press CONTROL-D again. Now, press CONTROL-T. We are now facing a blank screen. For reassurance, press CONTROL-T again.

You are now looking at your letter, minus its address. CONTROL-T is thus moving us between two workspaces, one of them empty. Pressing Move/Copy key brings up the address we just deleted from the letter. (You can also reinsert the address back into the letter by moving back to the letter and pressing Move/Copy again.)

As with anything new, this may look like a lot of effort for a small return. But notice that you now have an address for your envelope on your screen.

Formatting the envelope is the same as formatting the letter. If you're using a #10 envelope, the standard business size of 4 1/8" by 9 1/2" or 10.5 by 24.1 cm, try CONTROL-V Trumber settings of 12 or 14 with the standard ADAM pica daisy wheel. Then set the page width at 30, with the commands CONTROL-V W30, and then the left margin with the command CONTROL-V L40. Place the envelope in the ADAM printer so that the top of the envelope is even with the top of the plastic shield over the ribbon. Note that the W (Width) setting is set first because it decreases the usual SpeedyWrite setting. Set the width first, then the left margin, when changing the SpeedyWrite default settings.

If you wished to type your own return address on this envelope, as well as the destination, simply set CONTROL V T for Top margin to 0 (number not letter) and CONTROL L to 0, 1, 2 etc., and then type your return address. Depending on its depth, then insert a number of returns.

Two carriage returns equals three line spaces on the ADAM printer, remember. Then, insert the CONTROL-V Width and Left margin commands for the address, insert the envelope and print it. Remember that the envelope top should be lined up with the ribbon if you want to print with no top margin. Using this system may require a bit of experimentation the first time. I find the envelopes sent to me in the junk mail just ideal to experiment on when I'm playing with formatting in SpeedyWrite. When you have a set of formatting figures you like, save the resulting envelope as a file, or store the numbers in SpeedyWrite's Pocket Database, or write them on a successful envelope and keep it near the ADAM.

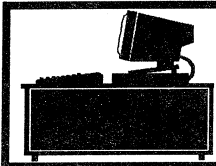
After you've done one or two letters this way, producing the letter and its envelope in one easy go on the ADAM, in SpeedyWrite, will come naturally and will be an early reward for your practice. Remember too, that letters get an inordinate amount of attention in our day of telephone and fax, 'voice mail' and answering machines. People still like to get letters. Politicians may not take your kindly and thoughtful suggestions to heart, or act on them -- Mulroney's still there, isn't he? -- but they can't ignore them as easily if they're on paper.

Next time, some more SpeedyWrite tricks, and handy features for long documents, like headers, footers, etc.



For further information on the V.I.S.A. ADAM Users Group write to or call them at the address listed below. The A.D.V.I.S.A. Newsletter is published on a bi-monthly basis and each issue is jammed packed with a wide range of ADAM related articles, news updates and reviews.

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WORD PROCESSING WITH SmartWRITER

Part I: Some Do's and Some Do Not's

by Norman J. Deere / E.C.A.U.G. Newsletter

ADAM's built-in word processing program is SmartWRITER. Whenever something is said to be in SmartWRITER, it has been done on the ADAM, in WP, or Word Processing. I find that I can do almost anything that I care to do, in SmartWRITER. There are a lot of programs on the market that are said to be great and easy to use; but I find that they are too complicated, or I have to read too much documentation to use them. When I see 25 pages of instructions I begin to wonder if it is really worth it.

When you are using your ADAM word processor, one thing to remember is to break some of the habits you get into when using a typewriter. Don't backspace, unless you want to move your whole line of text over. Don't use your spacebar, unless you want to erase all the text ahead of your cursor.

Break those habits. USE YOUR ARROW KEYS. Use the LEFT arrow key in place of the BACKSPACE; and the RIGHT arrow key in place of the spacebar. Keeping this in mind will save your nerves.

Speaking of typewriter habits, don't use lower case "l" for the numeral "1". This works on the typewriter, but it doesn't give you the same character on a computer. ADAM has the numerals "1" to "0" on the top row of the keys. So use them to type the numbers; and also remember NOT to type upper case "O", when you want the numeral "0".

The "l" and "1", and "O" and "0" may look a lot alike; but to ADAM they have a completely different meaning. If you happen to do this when using SmartBASIC, it can really mess you up. In fact, one of the first things to do, if you are "debugging" a SmartBASIC program, is to see if you happened to mix up "l" and "1", and an "O" for "0". This drives ADAM crazy!

INSERTing is a slow process; so, if you are at the end of the line, and find you cannot get a <CR> (Carriage Return) by pressing RETURN; just BACKSPACE until you erase the last character. Then type the last (erased) character in, and press RETURN. And, there you are; the <CR> is at the end of the line, where you want it to be.

Remember, INSERTing is always faster than DELETEing, so you can often write over, or INSERT some thing quicker than you can DELETE it.

And, if you happen to have a large amount to DELETE, it is often quicker, and easier, to use the CLEAR SCREEN feature.

With a screen full or more, to get rid of just press the CLEAR key, then SmartKEY V (CLEAR SCREEN), and the screen full of data is gone. You can repeat this as many times as necessary, and get rid of as many screen fulls as you find necessary. If you have less than a screen full to clear, you can usually maneuver your text upward, or downward, on the screen; and then CLEAR it.

You may have to INSERT several RETURNS to position the text the way you want it. Then, when you CLEAR the screen, the RETURNS and all, are gone. If the text that you wish to get rid of is in the middle of an article, with not quite enough lines to fill the screen; get the top (first) line that you wish to get rid of, at the top of the screen, by adding RETURNS after the last line of unwanted text. Then CLEAR your SCREEN, and it's gone. A little practice will make perfect and press the CLEAR sequence slowly or the system will lock-up on you.

Another thing to keep in mind when using your ADAM is don't get in too big of a hurry to DELETE, or to CLEAR something, on your screen. Sometimes, hitting the various keys too close together or too fast, can cause a lock-up of your computer. Then, you are stuck; nothing, and none of the keys you press, will work!. When this happens, you have no

choice but to pull the COMPUTER RESET, and there goes all your work (on the screen, and in ADAM's memory) down the drain. You can't print it out, and you can't SAVE it; it is all GONE!

Sometimes, (instead of hitting the keys too fast), you inadvertently hit another (function) key besides the one you wish to hit, and the same thing happens.

I find that when DELETEing, it seems to work better to press SmartKEY IV (HILITE) first. Then you HILITE (underline) what you want DELETED. Then press the DELETE key, then SmartKEY VI (DELETE) and VI again (DONE). Usually you are told to press the DELETE key, then SmartKEY IV, then VI, and VI again. Try it and see which you find to be best.

When using SmartKEY IV to underline the text, if you run over (or go to another line), you can press SmartKEY V to erase those underlines that you don't want. Then press SmartKEY IV again, to continue underlining. You can mark or unmark anything, as you wish, and you're not committed to DELETEing anything, since you didn't press the DELETE key first.

N.I.A.D. NEWS & UPDATES, CONTINUED FROM PAGE 8

newsletter to go along with their BBS and they are planning a few surprises for the ADAM community. For more information contact Mike Hurst at either of the following phone numbers: Voice - (416) 962-6695 or PBBS - (416) 962-7415. When calling the BBS, which is the new CP/M / T-DOS BBS software converted to ADAM by Guy Cousineau, use the parameters of 8-N-1.

⇒ **FMH I.S. GAMES**, created by Fred Horvat, is a new one stop classic games source which deals in the buying and selling of new / used video game cartridges for the ATARI 2600, 5200, and 7800; ColecoVision / ADAM; and Intellivision Game Systems and Computers. FMH I.S. GAMES also specializes in the conversion of most major graphic files from other computers (AMIGA, ATARI, IBM, MacINTOSH and TANDY) to RLE format for use on the ADAM. For a current catalog with ordering information for game cartridges and graphics conversion contact Fred Horvat at: FMH I.S. GAMES - P.O. BOX 493 - CHESTERLAND, OH 44026 - (216) 729-0761.

⇒ **LAMBDA SOFTWARE PUBLISHING**, owned and operated by David A.J. McGlore, is a CP/M users group who we have recently come into contact with. David produces a 20 page bi-monthly CP/M newsletter called the Z-Letter and it covers numerous CP/M and CP/M compatible machines (the first issue I received even had an article by an ADAMite even though David doesn't own an ADAM yet). Current subscription rates are based on 12 issues or two years: \$18 U.S, \$22 Canadian, and \$36 Foreign. The most current issue is #24 and backissues are available for \$3.00 each. Contact David at: LAMBDA SOFTWARE PUBLISHING - c/o DAVID A.J. MCGLORE - 149 W. HILLIARD LN. - EUGENE, OR 97404-3057 - (503) 688-3563.

⇒ **ADAM'S HOUSE**, owned and operated by Terry Fowler, has disconnected their 800 phone number due to a conflict with customers of the company which previously owned the number. If Terry replaces the 800 number we will pass along details. All is not bad news out of ADAM's House, for instance, check with them for the largest list of new ColecoVision / ADAM compatible games cartridges at very reasonable prices. They are also offering an ADAM Printer Service where they will completely rebuild your ADAM Printer (installing all the latest revision mechanics) for only \$50.00. Last, but not least, ADAM's House has just informed us of a large sale that has just gone into effect and will last until August 31, 1993 on a large percentage of their ADAM stock. Call or write Terry for all the latest details on any of the above items.



EXPLORING SmartBASIC

Part XV: Mathematical Functions

by Guy Cousineau / A.U.F.G. Newsletter

In the several previous articles on SmartBASIC, I have mentioned variable commands. Although most of them are mathematical functions, a few are not; notably FRE and USR. Variable commands are those commands which pass a parameter within brackets: eg. INT(123.45). The parameter is evaluated by the function in order to determine the result. Presumably to save on interpretation and parsing code, the designers of SmartBASIC adopted a complicated technique which dynamically relocates these variable commands based on the LOMEM setting. Each of the variables is defined as an array and the array simply points back to the execution routine for each function.

When you are playing around with memory and accidentally write where you should not, the variable commands are invariably the first ones to suffer. When they start misbehaving, the best thing to do is reboot.

In this article, we will briefly cover the use of arithmetic and algebraic functions. I will not attempt to describe the calculation method, for even if I understood it completely, it would take several pages to explain. The purpose of this article is to remind you that these functions are there and clarify their use as required.

INT does just what you might expect; it extracts the integer value of a real variable. Since it truncates rather than round off, statistical calculations will be more precise if you use INT(x+.5). You will also find that certain numbers truncate in a strange fashion. I have never noted the exact numbers, but the floating point has difficulty handling numbers like .001. For this reason, I often use INT(x+.50001). This helps to avoid those nasty INTEGER values which wind up being 37.9999997.

ABS takes the absolute value of a number by removing its sign thus ABS(-12) will yield 12. You can use ABS to make a number negative with something like -1*ABS(x).

SGN will report on the sign of a variable. SGN will return 0 if the variable is 0, -1 for negative values, and +1 for positive values. SGN can be used in conjunction with ON GOTO in the following fashion:

```
999 REM make decision on sign of x
1000 sx=SGN(x)+2: REM make result 1, 2, 3
1010 ON sx GOTO 2000, 3000, 4000
2000 REM handle negative
3000 REM handle zero
4000 REM handle positive
```

LOG takes the natural LOG (base e) of a number. If you are curious, the value of e is 2.718281828... You can come close to this value by asking SmartBASIC for the LOG(10). If you want to take base 10 LOGS, just divide the LOG value by LOG(10):

```
999 REM subroutine to take base 10 log of x
1000 y=LOG(x)/LOG(10)
1010 RETURN
```

EXP is the complementary function which raises e to the power of the argument. Thus EXP(2) is the same as e^2. This function is redundant for powers of 10 since you can use 10^2 or 1.0E+2. It would be tedious, however to write 2.718281828^2.

SQR extracts the square root. Thus the Pythagorean theorem would be calculated by hyp = SQR(s1^2 + s2^2). The square root can also be expressed with hyp = (s1^2 + s2^2)^(1/2), but SQR is more convenient.

Before discussing the TRIG functions, a bit about RADIANS. Computers

insist on working with radians rather than degrees. If you remember your high school trigonometry, there are 'pi' radians in 180 degrees or about 57.3 degrees per radian. 'pi' (despite what textbooks might say) has the value 3.141592657 and you can define RAD=180/3.141592657 to use as a conversion from degrees to radians. This will become clearer in a moment.

SIN takes the sine of the specified radian. If you would rather work in degrees, use something like SIN(45/RAD) to evaluate the sine of 45 degrees.

COS takes the cosine of the specified radian. Again, if you remember your high school math, COS(x)=SIN(90-x). Thus COS(45) should be the same as (SIN(45)). Define RAD as outlined above and print SIN(45/RAD) and COS(45/RAD). If you change the value of 'pi' in the equation to a different value like 3.141592655, you will see that the values are not the same. Thus the value given above is the CORRECT one for working with ADAM's floating point accumulator.

TAN takes the tangent and ATN takes the arc-tangent; the latter function is difficult to calculate manually.

All other TRIG functions can be evaluated using the 4 functions above; you just have to remember how it's done. I must admit I have forgotten.

ROUTINE ADDRESSES

- **INT** executes at 10672(29B0). It verifies that the number is in floating point format. It then checks if the number is less than 1 in which case 0 is returned. It then juggles the number around to drop the decimal portion.

- **ABS** executes at 2276(08E4). It simply resets the sign bit in the floating point accumulator. This is why ABS cannot be used with INTEGER variables.

- **SGN** executes at 2285(08ED). It starts by checking the value of the exponent in the FPA. If zero it simply returns which yields a zero value. It then sets the value in the FPA to +1 or -1 depending on the original sign of the number.

- **LOG** executes at 3604(0E14). It checks for zero and negative values and then calls a power series calculator to do a recursive calculation.

- **EXP** executes at 3816(0EE8). It uses a power series calculator to approximate the required value.

- **SQR** executes at 3678(0E5E). It does the calculation the way we learned it when we learned about logs. It takes the LOG of the value, divides it by 2 and recalculates the exponent. This is like doing e^(log(x)/2).

- **SIN** executes at 3954(0F72). This is the workhorse which uses a power series calculator to approximate the required value.

- **COS** executes at 3946(0F6A). It calculates the value from the formula COS(x)+SIN(x+pi/2) in radians, of course.

- **TAN** executes at 3912(0F48). It calculates the value from the formula TAN=SIN/COS.

- **ATN** executes at 4180(1054). It also uses a power series calculator.

Following is a list of routines used by the MATH functions. They are

very complex and should likely not be fiddled with. The addresses are included for information purposes only.

4156-4179 - POWER SERIES CALCULATOR

It takes a value from a table pointed to by HL. Copies FPA1 to FPA2, multiplies the first value at (HL) by FPA1 and multiplies the original result by the next table value. It is called by the controlling routine as long as there are values in the table.

4255-4269 - ADD PI FRACTIONS

Depending on the entry point, these routines add or subtract $\pi/2$ or $\pi/4$ to the current value in the floating point accumulator.

4270-4355 - POWER SERIES CALCULATOR

This one basically multiplies the 2 numbers in the FPA's, then multiplies each component by values from the power table and finally adds the 2 halves together.

4497-4695 - CONSTANTS

This is a set of values used by the various math routines when calling the power series calculators. Some are in floating point and others in integer format. You will find values corresponding to $\text{LOG}(2)$ $1/\text{LOG}(2)$ $\pi/2$ $2/\pi$ $\pi/4$ $1/11$ $1/9$ $1/7$ $1/5$ $1/3$ but NOT π or e .

This is the extent of my coverage of Math Functions. Next time, Random Numbers.



ADAM NEWS NETWORK
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FUND. OF COMP. PROG., CONTINUED FROM PAGE 9

EXAMPLE: IF A = B GOTO 1200

In the above example, if the condition of A and B is equal, the condition established in the branch instruction has been met, and the branch will occur.

If, on the other hand, A is NOT equal to B, the condition established in the branch instruction does not exist, and control of the program is passed to the next sequential instruction.

In an unconditional branch instruction, when the branch instruction is encountered by the computer, control passes to the address specified in the branch command.

EXAMPLE: GOTO 1200

ADDRESSING WITHIN THE COMPUTER

As we know, a computer's memory is divided into bytes. Each individual byte has its own unique address in the computer's memory, and can be accessed by the computer programmer. Bits are not usually directly accessible, and must be addressed through index registers. Bit manipulation is a very important part of programming and should be learned by programmers when possible.

There are two forms of addressing used in computing: DIRECT addressing, and RELATIVE or indirect addressing.

When using direct addressing, it is necessary to know where the program resides in memory, or have some other means of directing a

program to a given address.

Because computer systems work differently, we never know exactly where in the computer's memory the program is residing, and subsequent loads of the program can put the program in different locations within the memory; we cannot address the individual program steps by byte address, but must address the program steps by their step numbers.

If all program steps are numbered as discussed earlier in this manual, direct access to a program step is available through the use of the program step numbers.

In indirect (or relative) addressing, it is assumed that the program will be in different locations in the computer memory each time it is loaded.

In this case, address locations that the program is going to branch to are given names. These names are stored by the computer and the byte address of each instruction is also stored. When a branch or GOTO instruction is encountered by the system, the branch address table is searched for the name specified in the branch or GOTO instruction. If the name specified is found, control of the program is passed to the instruction at the branch or GOTO location. If no matching name is found in the branch address table, an error has occurred and the computer will stop and display an error message. The same is true of subroutines. These are named and stored in the branch address table. When the subroutine is exited, the program control is passed to the instruction following the "goto subroutine" instruction.

Care must be taken that all names used in indirect addressing are unique and that the names are not "RESERVED" words. Reserved words are words that are used by the computer. These words cannot be used as labels and must only be used as the system requires. Check your programming manual for further information.

The Central Processing Unit (CPU) of any computer system is divided into three sections. The first section is the ARITHMETIC section where all arithmetic(al) functions occur. The second section is the LOGIC section where all logic(al) functions, such as "compares" occur. The third and final part of the CPU is the I/O section which controls all of the input / output functions of the computer.

All arithmetic and logic instructions should be kept as simple as possible... not for the computer's sake, but for the programmer's sake. Because the computer operates using a binary numbering system, there are only two possibilities available to the computer. These possibilities are normally represented by a 1, meaning that a bit is turned ON, or a zero, meaning that a bit is turned OFF.

EXAMPLE: IF A = B GOTO 1200 (if A and B are equal, the bit is set and control goes to instruction 1200. If A and B are NOT equal, the bit is not set and control goes to the next sequential instruction.)

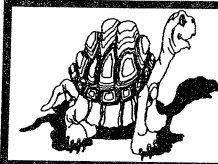
Because there are only two possibilities available, instructions should be simple.

EXAMPLE: IF A = B and > C GOTO 1200 (complex form)

In the above example two conditions must be met in order for the branch to occur. Both an A and B must be equal, and C must be greater than either A or B.

EXAMPLE: IF A = B GOTO NEXT (simple form)
GOTO 150
NEXT IF A > C GOTO 1200

In the above example, each of the two parts of the instruction has been handled separately. Both conditions must be met for the branch to occur. If either condition is not met, the control continues to the next sequential instruction. The effect is the same, but the programming is clearer. Next issue the final installment: Chapter X, "Points To Ponder".



THE LOGO NOTEBOOK

Part XIII: Memory Management

by Ron H. Mitchell / A.U.F.G. Newsletter

There's an aspect of SmartLOGO that we'll have to note before we go much further. I can see a problem on the horizon. It has to do with memory management, and the way that SmartLOGO uses the workspace.

Our reference for this installment for the notebook is chapter 18 of the SmartLOGO manual, Workspace Management, and Appendix D, Memory Space. You'd be well advised to give both a good read.

Enter the NODE. The NODE is a unit of 5 bytes of memory. SmartLOGO works with ADAM's memory using NODES. In fact there is an operation in SmartLOGO which will give you the number of nodes available any time you want it.

ENTER: PR NODES

LOGO RESPONDS: 3429

That is the value that SmartLOGO will give you if you do a PR NODES right after bootup. That's 17145 bytes of memory free. For the sake of comparison, if you do a PRINT FRE(0) immediately after booting SmartBASIC you get 25944.

In your SmartLOGO workspace at any given time, there will be procedures, variables and properties. We haven't dealt with the latter yet, but for the moment it's sufficient to know the name. Let's see what happens when we load our tutorial.

ENTER: LOAD "TUTOR.LGO

Normally, you would start the tutorial by typing SETUP, but don't do that just yet. Instead, once again type:

ENTER: PR NODES

LOGO RESPONDS: 453

Wow!

You mean to say that just loading the opening screen of our tutorial took up 2976 NODES, and we only have 453 left?

Yup.

There's more bad news. Now run the program by typing:

ENTER: SETUP

Now...type:

ENTER: PR NODES

LOGO RESPONDS: 183

Hey C'mon! You mean we just used another 270 nodes simply running the program?

Yup.

So what's going to happen when we add the rest of our tutorial?

Not sure yet. There's one promising section in Appendix D that says, "When there are no more free nodes, a special part of SmartLOGO

called the garbage collector looks through all the nodes and reclaims any nodes that are not being used."

Well, bless his heart! How do I get a hold of this dude?

ENTER: RECYCLE

(That operation took about 1 second. Wonder if it would affect the playability of some SmartLOGO game I might write later. We'll have to see about that.) At any rate, did RECYCLE do anything?

ENTER: PR NODES

LOGO RESPONDS: 2300

That's better. Although we've still used up 1129 NODES with the introductory screen. Let's try running it again. Type:

ENTER: SETUP

The screen clears, and the tutorial program runs again.

ENTER: PR NODES

LOGO RESPONDS: 2030

Again we used 270 nodes by running the program.

Obviously we have more to learn about how SmartLOGO uses memory, and as our tutorial development continues, we'll have to pay close attention to how much space we're using. Appendix D gives some hints about how to save space, and they're worth checking out. Meantime, we should note what is said in Appendix D under the heading "How Space is Used".

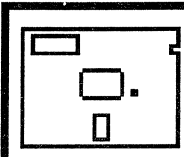
"Every SmartLOGO word used is stored only once: all occurrences of that word are actually pointers to the word. The first time a word is used it takes up four nodes, plus one node for every two letters in its name. Each time a word is used, other than the first time, it uses only one node." (Aha!)

Back to Chapter 18 for a moment. There are six other commands which enable you to do certain things in the workspace. These are ERALL, ERASE (or ER), ERN, ERNS, ERPROPS and ERPS. With these commands and the ones which we covered in the last installment of the Logo Notebook, you have a fair degree of control over what you have in your workspace.

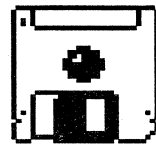
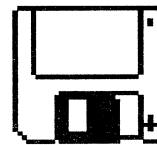


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PRODUCT REVIEWS



TYPE
GRAPHICS

RELEASED
MAY 1993

FONTASY! V1.A

By Eyezod Graphics

Reviewed by Jim Notini

PRICE
\$16.95

MEDIA
DISK OR DDP

FONTASY! V1.A - DOUBLE DECKER FONTS is the newest addition to the fantastic line of graphics volumes produced by Eyezod Graphics for use with numerous ADAM software titles. FONTASY! V1.A includes 19 font styles in three different formats, to accommodate a wide range of tastes and working styles. The fonts on this medium are designed specifically for use with PowerPAINT and Swift's Label PrintShop. You can also use them with many other commercial volumes, or incorporate them into your own SmartBASIC programs.

This collection contains a new font style called Double Decker and is the culmination of three years work. Double Deckers are the same width as regular fonts, but they are twice as tall. They were developed to fill a particular need. With regular fonts, there were only two choices for spacing between lines of text. You could leave a space between lines that was fully as tall as the text, or you could eliminate spacing altogether. The first option left an oversized gap, and the latter option appeared overcrowded. With Double Decker fonts, you can leave a space that is only half as tall as the letter, which is often more pleasing to the eye. You can also "offset" your letters by half their height, making them appear to climb, descend, or roll in waves. And finally, these fonts provide an easy way to make quick "headlines" for emphasis.

The idea behind Double Deckers is simple but elegant: The top half of each letter is designed so that it appears when the SHIFT key is used...

in other words, when you use a CAPITAL. The bottom half of the letter is what you'll see when you press the UNSHIFTED, or lower case, key. Of course, since it takes both the shifted and unshifted keys to display each letter, the font file can contain only caps OR lower case, not both.

This volume also introduces special 10K PowerPAINT pictures which Eyezod calls "Snips". The 10K picture files serve a dual purpose. First of all, these files allow you to more easily see the differences among similar font styles. But even better, they permit you to keep a number of "fonts" in memory at the same time. You can load the font file you will be using most, and also load any of the "Snip" pix into one or more unused cells. That way, you can use the MOVE/COPY options to "snip" portions of the picture file and move them anywhere you want them. Working back and forth between INSERT TEXT and MOVE/COPY gives you a flexible working environment without constant file loading.

Finally, FONTASY! V1.A contains a self-booting SmartBASIC program named FONTVIEW, for previewing standard font files without first loading PowerPAINT. A handy little utility that will save the user a lot of time.

Eyezod Graphics has available a bonus volume, FONTASY! V1.B: MORE DOUBLE DECKER FONTS, for those who register V1.A. Price is only \$4.50 plus \$3.00 S/H through Eyezod Graphics only.

ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*+&[]:;'"!@?`	Big Sur 3
ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*&[]:;'"!@?`	Boston 3
ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*&[]:;'"!@?`	Camden 3
abcdefghijklmnpqrstuvwxyz	!1234567890	*&[]:;'"!@?`	Dayton 3
ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*&[]:;'"!@?`	Denver 3
ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*&[]:;'"!@?`	Elgin 3
ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*&[]:;'"!@?`	Encino 3
ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*+&[]:;'"!@?`	Groton 3
ABCDEFGHIJ KLMNOPQRSTUVWXYZ	!1234567890	*&[]:;'"!@?`	Helene 3

SYSTEM REQUIREMENTS

- MEMORY: BASE ADAM SYSTEM WITH R80 REVISION
- PRINTER: DOT MATRIX PRINTER FOR PRINTING GRAPHICS
- DRIVES: 1 OR MORE DISK DRIVES AND OR DIGITAL DATA DRIVES
- OTHERS: PowerPAINT, S.L.P., MEMORY EXPANDER - ANY SIZE
- OPTIONS: ADAM GRAPHICS COMPATIBLE SOFT., SmartBASIC

SOFTWARE RATINGS

- GRAPHICS / SCREENS.....A+
- MUSIC / SOUND.....N/A
- INSTRUCTIONS.....A+
- EASE OF USE.....A+
- VALUE FOR THE DOLLAR.....A+

OVERALL

A+

TYPE
GRAPHICS

RELEASED
MAY 1993

FONTASY! V2.A

by Eyezod Graphics

Reviewed by Jim Notini

PRICE
\$16.95

MEDIA
DISK OR DDP

FONTASY! V2.A - MAGNI FONTS is the newest addition to the fantastic line of graphics volumes produced by Eyezod Graphics for use with numerous ADAM software titles. FONTASY! V2.A includes 39 sets of alphanumeric characters for use with PowerPAINT and Swift's Label PrintShop. You can also use them with many other commercial volumes, or incorporate them into your own SmartBASIC programs.

The term MAGNI FONTS was coined to describe the larger sized, nonstandard fonts contained on this volume. None of these fonts is "standard". Standard fonts sets for the ADAM are limited to shapes which are only 8 pixels square. MAGNI FONTS overcome this size limitation. They are the size of a standard Sprite... 16x16 pixels, or FOUR TIMES the size of a "standard" font. There are two font sets here that are even larger... the .sz5 fonts are 16x32 pixels. (That's twice as wide as a regular font, and four times as tall!).

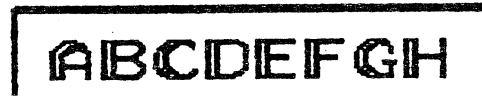
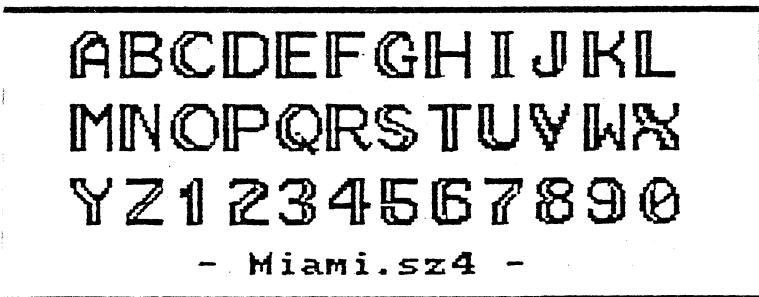
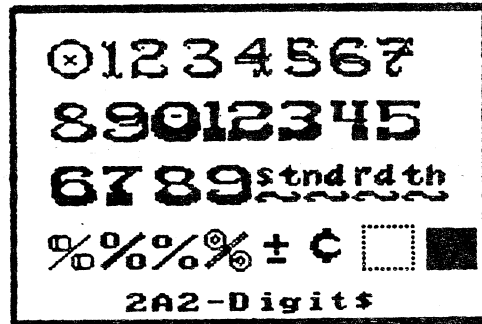
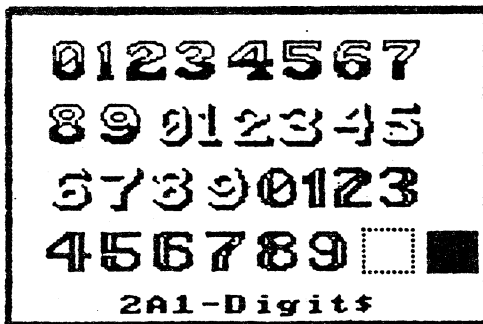
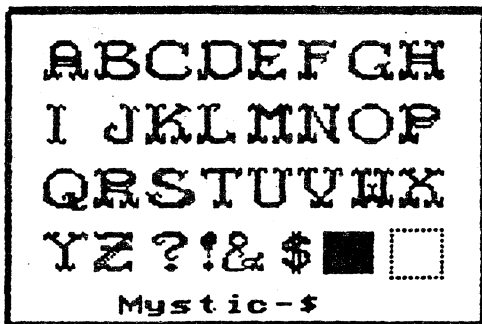
Although the name MAGNI FONTS is new, the concept of "font Sprites" is not. Eyezod has included a number of such sets in previous releases. However, until now, the only way to use them was by calling up Sprite Art. With the advent of Swift's Label PrintShop, it became possible to reconfigure the files so they could be entered directly from the keyboard. (This format allows for both numerals and letter characters to be contained in the same file; however, it does not allow for punctuation.) So, besides the new sets on this volume, you will find that

FONTASY! V2.A contains ALL PREVIOUS Eyezod "Sprite fonts" in the NEW S.L.P. FORMAT! The brand-new sets are present in BOTH formats, and also in 10K "Snip" pictures, so that whatever your project, you will have the most convenient format at your fingertips. Also, as in all previous Eyezod releases, the various types of files are easily identified by the final characters in the filenames.

The 10K "Snips" files were introduced with FONTASY! V1.A. They serve a dual purpose. First of all, these files allow you to more easily see the differences among similar font styles. But even better, they permit you to keep a number of "fonts" in memory at the same time. You can load the font file you will be using most, and also load any of the "Snip" pix into one or more unused cells. That way, you can use the MOVE/COPY options to "snip" portions of the picture file and move them anywhere you want them.

Finally, FONTASY! V2.A contains a self-booting SmartBASIC program named SpriteVIEW for previewing regular 2K Sprite files without first loading PowerPAINT. A handy little utility that will save the user a lot of time.

Eyezod Graphics has available a bonus volume, FONTASY! V2.B: MORE MAGNI FONTS, for those who register V2.A. Price is only \$4.50 plus \$3.00 S/H.



SYSTEM REQUIREMENTS

- MEMORY: BASE ADAM SYSTEM WITH R80 REVISION
- PRINTER: DOT MATRIX PRINTER FOR PRINTING GRAPHICS
- DRIVES: 1 OR MORE DISK DRIVES AND OR DIGITAL DATA DRIVES
- OTHERS: PowerPAINT, S.L.P., MEMORY EXPANDER - ANY SIZE
- OPTIONS: ADAM GRAPHICS COMPATIBLE SOFT., SmartBASIC

SOFTWARE RATINGS

- GRAPHICS / SCREENS.....A+
- MUSIC / SOUND.....N/A
- INSTRUCTIONS.....A+
- EASE OF USE.....A+
- VALUE FOR THE DOLLAR.....A+

OVERALL

A+

TYPE
 GRAPHICS
RELEASED
 FEBRUARY 1993

WAYNE'S TRAINS

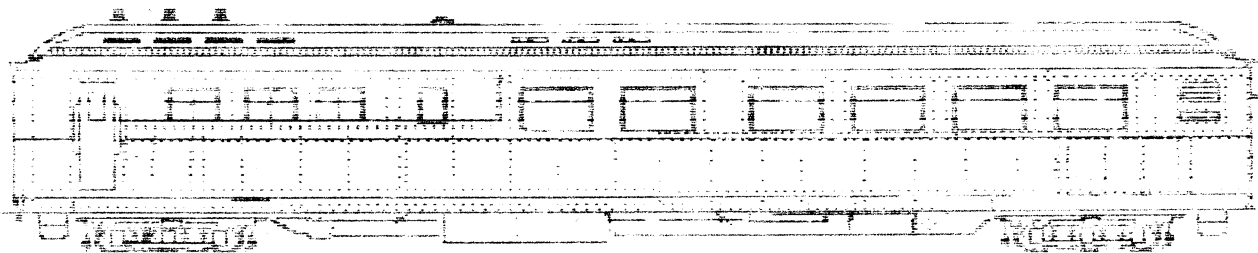
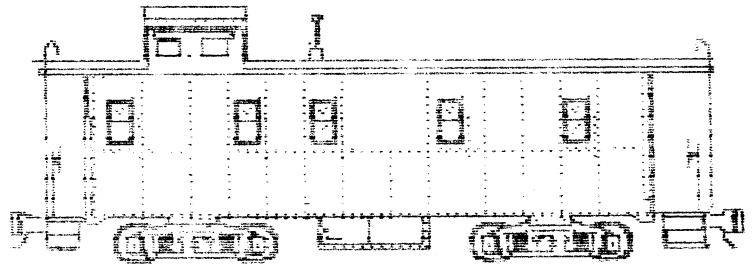
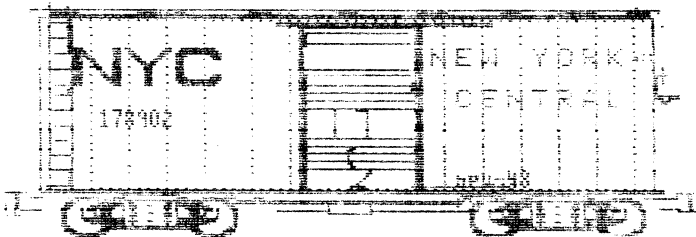
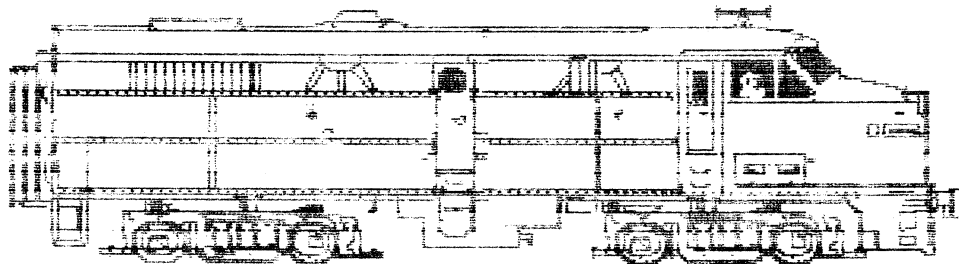
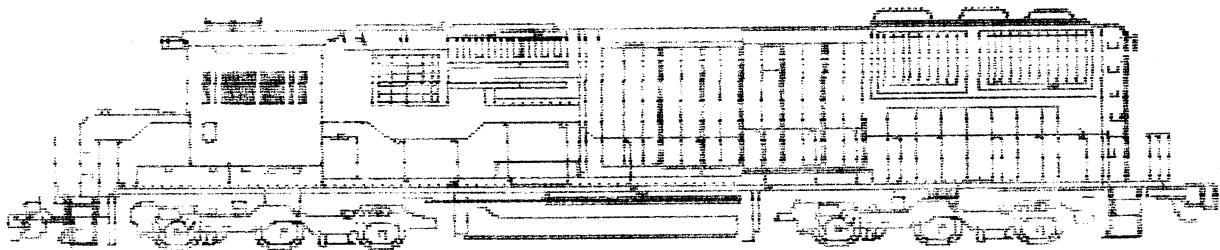
By Loco Software

Reviewed by Jim Notini

PRICE
 \$19.95
MEDIA
 DISK OR DDP

Wayne's Trains is the first commercial release by Wayne Blackmer of Loco Software. It is a mammoth collection, three disks or two data packs, of graphic picture files dealing solely with the subject of trains and railroads. All of the picture files are stored in PowerPAINT 10K Binary format and include: 13 steam and diesel engines, 3 cabooses, and 9 assorted railroad cars. Also included are: 5 engine clip-art files and 6 sprite files containing miscellaneous railroad related depictions.

Wayne's Trains is a very impressive collection of graphics for use with PowerPAINT and compatible programs. For all you train hobbyists out there or just plain old graphics nuts, this is a must have collection. The detail of the drawings is second to none, but don't take my word for it, take a gander at the pictures supplied below.



SYSTEM REQUIREMENTS

- MEMORY: BASE ADAM SYSTEM WITH R80 REVISION
- PRINTER: DOT MATRIX PRINTER FOR PRINTING GRAPHICS
- DRIVES: 1 OR MORE DISK DRIVES AND OR DATA DRIVES
- OTHERS: PowerPAINT, MEMORY EXPANDER - ANY SIZE
- OPTIONS: CLIPPER, SpritePOWER, COMPATIBLE PROGRAMS

SOFTWARE RATINGS

- GRAPHICS / SCREENS.....A+
- MUSIC / SOUND.....N/A
- INSTRUCTIONS.....A+
- EASE OF USE.....A+
- VALUE FOR THE DOLLAR.....A+

OVERALL

A+

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LOCATED AT THE
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THE FIFTH INTERNATIONAL
ADAM COMPUTER CONVENTION
JULY 22nd - 25th, 1993



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 - \$ 30.00
 - NO LUNCH \$ 11.00
- FINAL DAY DELEGATE PASS (Includes 1 dinner and admission to convention events scheduled on the 25th of July) \$ 40.00
- NO DINNER (still eligible for door prizes) \$ 16.00

Reception party on the 22nd of July is free to ALL ADAMites courtesy of the ADAM-LINK User's Group. All registrants paid in full by July 1st can purchase a souvenir T-shirt for \$10. Souvenir T-shirts will be available at the convention for \$13. All deposits are fully refundable if requested by July 1st, 1993.

LIST PACKAGES BEING PURCHASED: _____
TOTAL COST _____
DEPOSIT _____
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 - OADAMnet SLEEVES (pack of ten).....\$5.00
 - O300 BAUD COLECO ADAMLINK INTERNAL MODEM with ADAMLINK II\$19.95
 - OFRANKLIN WM1000 POCKET SPELLING CORRECTOR\$14.95
-
- OADAMLINK V (D/DP)\$9.95
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 - ORECIPE FILER REV.17 (D/DP) Previously unreleased.....\$4.95
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 - O SmartLOGO (DP).....\$9.95
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- O* DAMBUSTERS THE SUPERGAME - Bug free World War II flight simulator
- OFRONTLINE THE SUPERGAME DEMO
- O* TROLL'S TALE - Bug free version
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- O* PERSONAL CP/M - Has a few bugs
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Hook up to four disk drives to your ADAM at one time. Specify what drive capacities you have (160K, 320K, 720K or 1.44Mb). Call for details if needed.

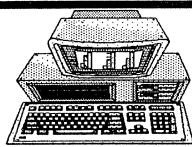
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This 150ns 8K eeprom plugs into the first port socket in the ADAM. Send your ADAM in with \$24.95 and we will install it for you. To see what E.O.S. you are using, type: ? PEEK(64864) after loading Smartbasic V1.D or V1.0. This new E.O.S. speeds up the ADAM and fixes many bugs. Can be setup to use device #'s 3 and 4 with 160K, 320K and 720K Disk Drives. Call for details.

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- O** U.S. DATA DRIVE TROUBLE SHOOTING GUIDE
- O** ADAM DISK DRIVE TEST PROCEDURE MANUAL
- OTHE COMPLETE ADAM DISK DRIVE MANUAL - \$7.50
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- O** DELTA GAME BOARD REPAIR GUIDE
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- O** COMPUTER LOGIC BOARD REPAIR GUIDE/GAMMA DEBUG USERS GUIDE
- O** COLECOVISION REPAIR GUIDE



N.I.A.D. PRODUCT LIST

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 PRODUCT LIST EFFECTIVE JUNE 1, 1993

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- ADAM DAISY WHEEL PRINTER.....\$109.95
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- M.I. 2,048K (2 Mb) MEMORY EXPANDER.....\$249.95
- MEGARAM 256K SIPP MODULE\$34.95

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- M.I. RS-232 SERIAL CABLE.....\$14.95

FLOPPY DISK DRIVES

- 5 1/4" 320K FLOPPY DISK DRIVE UPGRADE KIT (Disk)\$89.95
- 3 1/2" 720K FLOPPY DISK DRIVE UPGRADE KIT (Disk)\$109.95
- M.I. 5 1/4" 320K ADAMnet FLOPPY DISK DRIVE\$199.95
- M.I. 3 1/2" 720K ADAMnet FLOPPY DISK DRIVE\$249.95
- M.I. 3 1/2" 1.44Mb ADAMnet FLOPPY DISK DRIVE\$299.95

HARD DISK DRIVES

- M.I. PowerMATE 20Mb HARD DISK DRIVE.....\$299.95
 - M.I. PowerMATE 40Mb HARD DISK DRIVE.....\$399.95
 - M.I. PowerMATE SLOT #2 HARD DISK INTERFACE\$25.00
- Also provides Parallel Interface, Memory Addressor and BOOT PROM.

ADAM CARTRIDGES

- ADAM HOME AUTOMATION.....\$39.95
- ADAM'S DESK TOP\$39.95
- COLECO GRAPHICS PROCESSOR (aka. Project Name By Line).....\$39.95
- SMARTBASIC V1.1.....\$29.95
- SMARTMATE (for PowerMATE 2 and 4 Hard Disk Drives by M.I.)\$39.95
- SMARTWRITER ELITE\$34.95

NOTE: The cartridges listed above are for use with the ADAM Computer and cannot be used on the Colecovision Game System alone.

PROGRAM EPROMS

- ADAM'S DESK TOP\$29.95
- M.I. PowerMATE HARD DISK DRIVE BOOT EPROM\$10.00
- SmartWRITER ELITE.....\$29.95

ADAM & MISC. ACCESSORIES

- 256K COLECO ADAM DIGITAL DATA PACK\$2.00
- 256K RIGHT DIRECTORY ADAM DIGITAL DATA PACK\$1.00
- 50 5 1/4" DS / DD GENERIC DISKS WITH SLEEVES AND TABS\$16.95
- 25 3 1/2" DS / DD 720K GENERIC DISKS\$16.95
- 25 3 1/2" DS / HD 1.44Mb GENERIC DISKS\$29.95
- ADAM PRINTER RIBBON - BLACK ONLY\$5.95
- ADAM PRINT WHEEL (3 STYLES: PICA, COURIER, or EMPHASIS)\$5.95
- ADAM DUST COVER: PRINTER.....\$8.95
- ADAM DUST COVER: KEYBOARD.....\$8.95
- ADAM DUST COVER: STAND-ALONE MEMORY CONSOLE\$8.95
- ADAM DUST COVER: EXP. MOD. #3 MEMORY CONSOLE\$8.95
- ADAM DUST COVER: 5 1/4" OR 3 1/2" COLECO DISK DRIVE\$8.95
- ADAM DUST COVER: 3 PIECE SET (KEYBOARD, PRINTER, CONSOLE)\$21.95
- PANASONIC KX-P110i RIBBON FOR KX-P1080, 1090, ETC\$12.95
- PANASONIC KX-P115i RIBBON FOR KX-P1180, 1190, ETC\$12.95
- PANASONIC KX-P145i RIBBON FOR KX-P1123, 1124, 1124i, ETC\$12.95

ADAM MANUALS & BOOKS

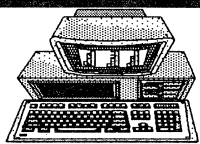
- ACCESSING VRAM MANUAL\$12.95
- ADAM PROGRAMMING GUIDE (Disk or DDP)\$15.95
- BASIC PROGRAMMING TUTORIAL WITH SOFTWARE (Disk or DDP)\$14.95
- E.O.S. PROGRAMMER'S MANUAL\$11.95
- EzREF GUIDE 101, 102 & 103\$9.95
- FROM BASICS TO BASIC WITH ADAM\$19.95
- HACKER'S GUIDE TO ADAM VOL. I\$11.95
- HACKER'S GUIDE TO ADAM VOL. II\$11.95
- HACKER'S GUIDE VOL. I & II PROGRAMS (Disk or DDP)\$5.00
- LEARNING TO DRAW WITH ADAM (Z-80) (Disk or DDP)\$24.95
- LEARNING TO READ WITH ADAM (Z-80)\$24.95
- LEARNING TO WRITE WITH ADAM (Z-80) (Disk or DDP)\$24.95
- MacADAM MANUAL.....\$19.95
- MacADAM DEMO FILES (Disk or DDP)\$5.00
- THE OFFICIAL A.N.N. ADAM GLOSSARY\$4.95
- THE OFFICIAL A.N.N. ADAM SURVIVAL GUIDE\$24.95
- TDOS V4.5x OWNERS MANUAL\$4.00
- THE BEST OF ELECTRONIC ARTS OWNER'S MANUAL\$4.00

N.I.A.D. BACKISSUES

- N.I.A.D. NEWSLETTER BACKISSUES\$1.00
- All backissues of the N.I.A.D. Newsletter are available at this price of \$1.00 except for the issues listed below. The following backissues of the N.I.A.D. Newsletter are out of original print and no longer available: Issues # 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 19, 20, 23, 42, 55, 66/67, 73, 74, 75, 78/79 and 88.

UPGRADES & CONVERSIONS

- COLECO 'FILER PROGRAM UPGRADES\$4.00
- Send in your original Filer program Disk or DDP to be upgraded. Latest versions of the Coleco 'FILER programs are fully compatible with earlier versions. These versions will work correctly with any size 5 1/4" or 3 1/2" ADAM floppy disk drives. Specify whether you wish to receive a 5 1/4" 160K disk version of the 'Filer program if you send in a data pack master: SmartFILER R28D, RECIPE FILER R17, ADDRESS BOOK FILER R10D.
- DISK CONVERSION OF DATA PACK SOFTWARE\$4.00
- Send in your title card from your Coleco data pack to be converted to disk. Titles which can be converted include: Buck Rodgers, Donkey Kong, Donkey Kong Jr., Dragon's Lair, Zaxxon, Recipe Filer, 2010: The Text Adventure, Richard Scarry's Best Electronic Wordbook Ever (for 320K or 720K disk only), The Best of B.C., SmartLetters & Forms, CP/M 2.2 & Assembler or any other data pack software which you can not make a working copy to disk of. If you do not have proof of purchase, the original DDP must be mailed in as proof of purchase.
- INFOCOM CONVERSION TO ADAM CP/M 2.2 FORMAT\$4.00
- Send in your INFOCOM titles to be converted to an ADAM CP/M or TDOS format disk. We can convert: Zork I, II & III, Planetfall, Deadline, Starcross, Hitchhiker's Guide to the Galaxy, Leather Goddess' of Phobos, Stationfall, Plundered Hearts, Seastalker and Ballyhoo. Please inform us whether you would like the ADAM version written onto the original Infocom disk.



N.I.A.D. PRODUCT LIST

PRODUCTS & PRICING SUBJECT TO CHANGE

PRODUCT LIST EFFECTIVE JUNE 1, 1993

ENTERTAINMENT

ADAM BOMB (64K)	\$19.95
ADDICTUS	\$19.95
BEST OF BRODERBUND (DP)	\$14.95
BEYOND TREK (64K)	\$15.95
BIBLE JEOPARDY	\$14.95
BILLY SAGA VOL. I	\$15.95
BILLY SAGA VOL. II	\$15.95
BLACK GOLD	\$15.95
BRAINSTORM	\$16.95
CHESS CHAMP (64K)	\$15.95
DEMONS & DRAGONS I	\$19.95
DEMONS & DRAGONS II	\$19.95
DIABLO	\$15.95
DINOSAUR DIG (64K)	\$16.95
DRAGON: THE CHINESE CHALLENGE	\$19.95
DRAGON'S LAIR (DISK)	\$16.95
ELECTRONIC GAME PACK I	\$14.95
ELECTRONIC GAME PACK II	\$14.95
FAMILY FEUD QUESTION PACK	\$10.95
G.A.M.E. SET VOL. I	\$12.95
G.A.M.E. SET VOL. II	\$12.95
GHOST ZAPPER (64K)	\$11.95
JEOPARDY QUESTION PACK	\$10.95
KID'S TRIVIAPAK I	\$12.95
L.V.A.C. ARCHIVES I	\$9.95
LAB MOUSE	\$15.95
LAS VEGAS CRAPS	\$16.95
M&M JEOPARDY QUESTION PACK	\$14.95
MAGE QUEST	\$15.95
MIND OVER ADAM	\$11.95
MR. T SEARCH	\$12.95
MR. T SEARCH: GAMEPAK I	\$9.95
MR. T SEARCH: TRIVIA WORD SEARCH	\$9.95
PHRASE CRAZE	\$19.95
PHRASE PAK I for Phrase Craze	\$12.95
PHRASE PAK II for Phrase Craze	\$12.95
PITY	\$18.95
PRO FOOTBALL	\$18.95
REEDY ENTERTAINMENT PACK	\$15.95
REEDY SOFTWARE LIBRARY	\$19.95
ROBOTHIEF	\$19.95
SMARTGAMES PACK	\$9.95
STAGE FRIGHT	\$15.95
STOCK MARKET GAME	\$15.95
STRATOZAP	\$16.95
SUB RAIDERS	\$24.95
SUPER PARROT	\$14.95
SUPER ZAXXON (DP)	\$9.95
TEMPLE OF THE SNOW DRAGON	\$19.95
TRIVIAPAK I	\$12.95
U-MATCH-EM	\$14.95
VASE OF TURR	\$19.95
WIZARD'S PINBALL ARCADE	\$14.95
ZORAN III	\$13.95

CONSTRUCT. KITS

FAMILY FEUD WRITER	\$10.95
JEOPARDY WRITER	\$10.95
MAGE QUEST CONSTRUCTION SET	\$15.95
PHRASE PAK CONSTRUCTION SET	\$12.95

EDUCAT. / TUTOR

EASY AS A, B, C & 1, 2, 3	\$9.95
EL ESPANOL	\$15.95
ELECTRONIC FLASHCARD MAKER (DP)	\$9.95
E.F.M. FLASH FACTS: HISTORY (DP)	\$6.95
EXPERTYPE (DP)	\$9.95
FRANCAIS POUR LES CHIC	\$15.95
MASTERING MUSIC	\$9.95
MATH MENTOR	\$15.95
MUSICPRO	\$15.95
ROYAL AMBASSADOR EDUC. PACK	\$9.95
SCHOOL DAZE	\$16.95
STATES RACE	\$15.95

MEDIA UTILITIES

6801 DECIMAL DISASSEMBLER	\$10.00
ADAM CONNECTION (IBM DISK)	\$24.95
ADAM'S DESK TOP	\$24.95
ADAM'S TOOLKIT	\$24.95
ADAMCALC & LINK II D.M. PATCHES	\$9.95
BASIC SYSTEM MGR. 3.0 / FASTRUN	\$18.95
COPYCART+ V2.0 (DISK)	\$19.95
COPX	\$10.00
DECIMAL DISASSEMBLER	\$19.95
DISK DOCTOR	\$10.00
E.O.S. DIRECTORY SORTER	\$10.00
E.O.S. FILE INDEXER	\$10.00
E.O.S. PROGRAMMING KIT	\$29.95
EDIX	\$10.00
FILE MANAGER V3.0	\$19.95
FORMATTER III (DISK)	\$9.95
FORMAX	\$10.00
GUY'S E.O.S. UTILITIES	\$20.00
HEXACE SYSTEM DOCUMENTATION	\$12.00
LIBRARIAN	\$10.95
MEDIA HELPER	\$17.95
MEMDSK FOR SmartLOGO (64K)	\$10.00
MR. T LIBRARY	\$10.95
OPENFILER V3.0 with OPENRECIPE	\$14.95
Z80 DECIMAL DISASSEMBLER	\$10.00

HOME / BUSINESS

ADAMCALC (DP)	\$29.95
ADAMLINK V	\$24.95
ADAM MAP: U.S. ATLAS (64K)	\$17.95
ADAM MAP: STATES VOL. #1 STATES: IA, MN, NE, ND, SD	\$6.95
ADAM MAP: STATES VOL. #2 STATES: MT, ID, OR, WA, WY	\$6.95
ADAM MAP: STATES VOL. #3 STATES: CA, NV, UT, AZ CO	\$6.95
ADAM MAP: STATES VOL. #4 STATES: TX, MO, NM, KS, OK	\$6.95
ADAM MAP: STATES VOL. #5 STATES: AR, LA, TN, AL, MS	\$6.95
ADAM MAP: STATES VOL. #6 STATES: GA, FL, SC, NC, VA	\$6.95
ADAM MAP: STATES VOL. #7 STATES: WV, OH, MD, DE, KY	\$6.95
ADAM MAP: STATES VOL. #8 STATES: AK, VT, ME, NH, MA	\$6.95

ADAMTALK V1.1 (EVE SS-CC)	\$19.95
ADDRESS BOOK / CALENDAR	\$9.95
APPOINTMENT BOOK	\$24.95
AUTOAID	\$24.95
AUTOWRITER	\$14.95
B&R HANDYMAN VOL. I & II	\$14.95
BASICAIDE V2.0	\$9.95
BUSINESS PACK I V2.0	\$18.95
CLIP-ART VIEWER & CONVERTER	\$24.95
CLIPS & LABELS	\$12.00
CP/M 2.2 & ASSEMBLER (DP)	\$19.95
EASY COME, EASY GO	\$15.95
FILE PRINTER	\$17.95
INVOICER V3.1 (64K)	\$19.95
LABEL MAKER DELUXE (DISK)	\$9.95
LABELWORKS, THE	\$24.95
MISSPELLER for SpellingAIDE	\$9.95
P.A.L. (Personal Appointment Lister)	\$10.00
PRINTWORKS, THE	\$24.95
RECIPER FILER (DP)	\$9.95
SEQuel	\$24.95
SMARTBASIC V1.x	\$29.95
SMARTFILER (DP)	\$9.95
SMARTLETTERS & FORMS (DP)	\$9.95
SMARTLOGO (DP)	\$15.95
SMARTTERM V1.02	\$15.95
SMARTWRITER ELITE	\$19.95
SMARTWRITER'S HELPER	\$10.00
SOFTPACK I V2.0	\$18.95
SPEEDYWRITE V2.0	\$39.95
SPEEDYWRITE SPELL (64K)	\$24.95
SPELLINGAIDE	\$19.95
SUPERBASIC PLUS	\$9.95
TAX HELPER 1992 (64K)	\$19.95
VIDEOTUNES	\$24.95

GRAPHICS DESIGN

ADAM GRAPHICS FOR IBM (DISK)	\$19.95
BOLD GLORY	\$16.95
BORDERSPLUS for PrintWORKS	\$10.95
CHROMANTICS	\$16.95
CLIPPER	\$15.95
FONTASY! V1.A	\$16.95
FONTASY! V2.A	\$16.95
FONTPOWER	\$14.95
GRAPHIXPAINTER WITH GRAPHIXPIX I	\$19.95
GROOVY GRAPHICS	\$14.95
HAPPY CLIPS	\$19.95
IBM CLIP-ART FOR ADAM VOL. I & II	\$14.95
M&M GRAPHICS	\$9.95
NORMAN'S RAILROAD	\$14.95
PAINTAIDE with the SWIFT FONT KIT	\$16.95
PERSONAL CALENDAR UTILITY (64K)	\$19.95
POWERPAINT (64K)	\$29.95
POWERTOOLS	\$16.95
SHOWOFF I	\$18.95
SMARTPRINT PLUS	\$15.95
SMILEY FACE: WHAT AN ATTITUDE!	\$9.95
SPRITEPOWER	\$15.95
SWIFT LABEL PRINTSHOP (64K)	\$19.95
SWIFTPRINT (64K)	\$15.95
VISI-SPRITE V6.5	\$19.95
WAYNE'S TRAINS	\$19.95
YULE TOOLS I	\$16.95

\$3.00
DISK

N.I.A.D. PUBLIC DOMAIN SOFTWARE

PLEASE NOTE: Specify VOLUME #, TITLE and DISK OR DDP

\$4.00
DDP

MISCELLANEOUS VOLUMES

DADAMCALC ANDV #1-34: 34 different volumes containing ADAMCALC spreadsheet formulas, theories and demonstrations. All volumes require the use of boot ADAMCALC first and contain SmartWRTTR or ADAMCALC documentation file(s).

DADAMGIC ONDV VOL #1-18: 18 different volumes of commercially copyrighted programs that were released to the Public Domain. Contains entertainment, adventure, productivity, education, business, telecommunications, arcade brain etc. programs complete with documentation.

DCLASSIC UNRELEASED CARTRIS VOL #1-2 : 2 different collections of cartridges: VOL #1 - Fall Guy, Video Hustler, M.A.S.H., Super Cobra, Memory Manor, World Feud, Artillery Duel and Tomcat the Barbarian; VOL #2 - Cabbage Patch Kids: Adventures in the Park Enhanced, Yokes on You and Winzham. Some were never released and others wouldn't work on the ADAM in their cartridge form. Each volume contains SmartWRTTR documentation for each game.

CP/M 2.2 GNDV #1-63: 63 different volumes containing CP/M 2.2 utilities, games, interpreters, patches, compilers, word processors and other misc. programs. Volumes require the use of boot CP/M 2.2 first, most programs contain documentation.

MDI SONGS MINDV #1-18: 18 different volumes containing many assorted song files each for use with Mini-Recorder by Bonafide Systems for the MDI-MITE.

MDI I.A.D. GOLD VOL #1-5: 5 different volumes of enhanced SmartBASIC programs: Vol. I - Games, Vol. II - Text Adventures, Vol. III - Science & Education, Vol. IV - Home & Business and Vol. V - Utilities. Each volume contains documentation.

PIPBALL GAMES PNDV #1-8: 8 different volumes containing Pinball Construction Set pinball games which were designed with this public domain program by Coleco. Each volume is auto-booting and contains SmartWRTTR documentation.

SMARTBASIC BNDV #1-36: 36 different volumes containing assorted SmartBASIC entertainment, application, graphics, patch, utilities and other misc. programs. Most volumes are auto-booting and contain SmartWRTTR documentation.

SMARTBASIC UTILITIES UNDV #1-2: 2 different volumes containing SmartBASIC utility programs such as file copiers, backup utilities, patches and other misc. programs. Volumes are auto-booting and contain SmartWRTTR documentation.

SMARTLOGO LNDV #1-5: 5 different volumes containing SmartLOGO entertainment, application, graphics, utilities, patches and other misc. programs. Volumes require the use of boot SmartLOGO first, contain SmartWRTTR documentation.

SOLO-ADVENTURE PACK VOL #2-3: 2 different volumes of Solo Adventures for use with Mage Quest by Ready Software. Each volume requires the user to boot Mage Quest first and contain SmartWRTTR documentation.

SUPERIOR SOTW/WARE ENDV VOL #1-4: 4 different volumes of commercially copyrighted programs that were released to the Public Domain. Vol. 1 - Pro Golf Champ, Vol. II - LinkBuilder, Vol. III - AFL Football and Vol. IV - SuperHoBASIC V3.0. Each volume contains documentation in SmartWRTTR form or in the program.

DUKKS MINI-REVIEWS VOL #1-2: 2 different SmartWRTTR databases with mini-reviews of hundreds of software and hardware products. Requires that the user boot SmartWRTTR first and then follow the included instruction sheet on how to access.

VIDEOTUNES SONGS UNDV #1-4: 4 different volumes containing many assorted songs files each that are for use with VideoTunes by FutureVision.

GRAPHICS VOLUMES

DG.G.P. PIX VOL #1-4: 4 different volumes of 13 picture files for use with the Coleco Graphics Processor. All pictures are taken from Coleco / ADAM programs and cars through the use of the cartridge version of The Coleco Graphics Processor.

DN & B PIX VOL #1-32: 32 different volumes of 13 SmartPAINT format picture files to be viewed / edited in PowerPAINT, ShowOff, etc.

DPAIN'T PALETTE: For use with PowerPAINT. Will provide you with over 200 different shades of color, where normally the total number of colors accessible is 16. Contains SmartWRTTR documentation.

DPAIN'TFORMS VOL #1-4: 4 different volumes of assorted letterheads, labels font files and miscellaneous graphic files for use with PowerPAINT by Digital Express.

DPAIN'TMATES VOL #1-15: 15 different volumes of clip-art, smile and font files for use with PowerPAINT, SpritePOWER and CLIPPER by Digital Express. The Print Works or The Label Works by Walkers Software Co., and other assorted programs.

DPIC SIGNS UNDV #1-4: 4 different volumes containing SignShop/NewsMAKER graphic files for use with these programs. y Strategic Software. Volumes require the user boot SignShop/NewsMAKER #1, #1 and contain SmartWRTTR documentation.

CREEDY ART GALLERY VOL #1-2: 2 different volumes of 13 SmartPAINT format picture files to be viewed in SmartBASIC V1.0 with the included loader program or in PowerPAINT and other programs which support the SmartPAINT format.

DRLE PICS VOL #1-4: 4 different volumes of file picture files which can be viewed in SmartBASIC V1.0 with the included GbPicAST program or in PowerPAINT, also contains SmartWRTTR documentation.

ENTERTAINMENT VOLUMES

DA-CHESS (SARGON): Great graphic chess game which was developed in CP/M

and modified by Chris Braymen. Comes on an auto-booting media and includes documentation on how to use.

DADAMWARS II: A simulation of the real life pitfalls and successes which are experienced by you friendly ADAM retailers. Great graphics and sound effects. Contains SmartWRTTR documentation.

DCHESSE SOLITAIRE: Great graphics version of chess where you try to guess the moves of the masters (15 different classic games are included). Also contains a second game, Knight's Tour, and documentation in program.

DJEOPARDY: Coleco supergame pack of the popular television game show. Fabulous game with great graphics, multi-player ability, load / save games and a Hall of Fame options as well as an instruction sheet.

DMOALIG PHRASES PAK: An additional 300 phrases for use with Phrase Craze by Ready Software. Compiled by George Drank. Contains SmartWRTTR documentation.

DSUPER BUCK RODGERS: This is the supergame which comes with the ADAM Computer and is offered here for replacement in the case of damage to your original.

DSUPER DAM BUSTER: Supergame version of the cartridge with added screens and Hall of Fame. The only flight simulator available for ADAM and one of the best games ever made. Are you good enough to defeat the NAZI forces?

DSUPER DONKEY KONG JR - 5 SCREENS: Coleco's In-house version of Super Donkey Kong Jr. with an additional 5th play level, MARIO'S BAKERY (arcade version doesn't even have this level!). This version automatically runs through all screens.

DSUPER SUB-ROO: Coleco supergame pack version of the Sub-Roo cartridge. This is a tremendous 3-D arcade action game with great graphics and a Hall of Fame option as well as an instruction sheet.

ITEMPLE OF APSHAI Revision 2: Epyx supergame pack which was never released. This is a role playing adventure with graphics and some arcade sequences. Disk and DDP not compatible. Comes with instruction sheet.

DTHE ABOMINABLE SNOWMAN: Search the Great White North for the illusive Abominable Snowman. Be careful in your quest, there are many pitfalls that you will face. Contains SmartWRTTR documentation.

DTHE BEST OF B.C.: A two supergame pack with B.C.'S QUEST FOR TREES and B.C. II. GROSS REVENGE developed by Coleco of Canada. Help Thor past obstacles to find Cude Chick and to find the Meaning of Life.

DTHE BEST OF ELECTRONIC ARTS (Pinball Con. Set / Hard Hat Mack): Coleco supergame pack contains two great games in one package. New bug free version w/ 2 demo pinball games and an instruction sheet. Add \$4.00 for 40 page manual.

DTROLLS 'S TALE: Coleco supergame pack originally developed by Silus Software. This is a children's adventure game with good graphics and offers a strong challenge as well as an instruction sheet.

UTILITY VOLUMES

DADAM UTILITIES: Coleco In-house utilities, test and demo programs contained on an auto-booting media. Memory expander required for some of the system testers. Also, includes Adam Diagnostic and an instruction sheet.

DCCOLECO GAME COPY: Coleco In-house cartridge copy utility as well as a media backup utility rolled into one program. Will copy most of the available cartridges.

DCCOLECO IN-HOUSE PROGRAMS: Six separate programs: three diagnostic programs along with the Turnip'n Trolls, ADAM and Music demos.

DE O.S. DISK MANAGER: Coleco utility program which was supplied with the 5 1/4" 160K Disk Drive. Also contains the most current Coleco EDS Revision, Rev. 7.

DHELPER'S FRIEND: Patching program for Hexace Software's popular SmartWRTTR'S HELPER. Allows owners of SmartWRTTR'S HELPER to customize their backup copies with added embedded printer codes and change the default devices. Comes with documentation file on media.

DMACADAM.Z80 / EDS Assembler: written in machine code for the intermediate to advanced machine code programmer. Contains manual in SmartWRTTR format.

DMEIDA MATE: Three tremendous utility programs for editing data packs and disks in SmartBASIC V1.0. Contains informative SmartWRTTR documentation.

DMDI DRIVERS & DEMOS: A collection of MDI SmartBASIC V1.0 utilities programs along with technical information of the MDI file setup. Contains SmartWRTTR documentation.

DMDI UTILITIES: A collection of 6 mapper utilities, midi format 1 song files, SmartWRTTR documentation files and 1 CP/M or TDOS compatible midi utility. All mapper utilities are SmartKey driven and machine language programs.

DQUICKCOPY V5.0: Excellent machine code copy program (block and file) with additional ramdrive and ramcopy software. Compatible with all memory expanders and disk drive sizes. Contains a 37 page manual in SmartWRTTR format.

DR1.D. TEST: Coleco's own In-house utility designed specifically for testing the operation of the 5 1/4" 160K Coleco made disk drive. No technical knowledge required. Just boot-up and wait for the results. Contains SmartWRTTR documentation.

DSHAPEMAKER: Great SmartBASIC V1.0 utilities for creating shapes and placing text on the High or High2 screen. Shapes created can be used in PowerPAINT. Contains SmartWRTTR documentation.

DSOFTWARE BACKUP V1.0: Allows for the backing-up of bootable programs onto

the same media. Up to six self-booting programs can be placed on one Software Backup media. Most programs work fine. Contains SmartWRTTR documentation.

DSPPEED CHECK V2.0: Enhanced Coleco digital data drive test program to assure proper speed operation of drives for best read / write performance. Best results will occur by purchasing disk from its best of ddp and then copying over to ddp.

DSTATTEGIC SOFTWARE PATCHES: SmartBASIC V1.0 programs for patching Strategic Software's SignShop, NewsMAKER, MultiWrite, MicroWORKS, etc. programs for use with dot matrix printers as well as major enhancements made to the MultiWrite Word Processor. Contains SmartWRTTR documentation.

PRODUCTIVITY VOLUMES

DADAM <-> DOS 1.0: A shareware IBM compatible program by Bonafide Systems that allows for the transferring of ADAM files to an IBM and vice versa. Other options include: directories, file deleting, hex dumps, initializing, block copies, formatting, etc. ADAM files and 5 1/4" 190K or 320K disks on an IBM compatible. Requires an IBM compatible with a 5 1/4" drive running PC-DOS or MS-DOS. Comes with documentation file. DISK ONLY.

DADAMLINK II: Coleco's advanced telecommunications software with all the features of ADAMLINK I and the added ability to up and download ASCII files. Comes with addendum instruction sheets to the ADAMLINK I manual.

DAUSTRALIAN SmartBASIC: Enhanced SmartBASIC V1.0 with SmartKEY display of some of the most often used SmartBASIC commands (ie. RUN, LIST, SAVE, etc.).

DBASEBALL STATISTICIAN: Comprehensive stat compiler for pitching, batting and team statistics with full line of edit features, save option, print features for ADAM Printer or dot matrix by Wizard's Lair. Comprehensive instructions in SmartWRTTR.

DCCOLECO GRAPHICS PROCESSOR: Coleco's graphic design utility used to create graphics for cartridges and supergames. Now, on an EDS media. Instructions are provided as well as a picture file conversion program. Requires memory expander.

DCCOLECO PRESENTS: SOFTWARE: Coleco self-booting database program containing lists of planned Coleco software and cartridges for the ADAM and ColecoVision. DDP ONLY.

DAEAVINCI: Great graphic design utility from France using a point-and-click method of operation along with a SmartBASIC V1.0 utility to convert EAVINCI files into GraphicPAINTER files. Contains SmartWRTTR documentation. DISK ONLY.

DADAWGONE DAMG: This program will, on a consistent basis, select the dog most likely to win at the local dog track through data that is inputted by the user. However, this is not a get-rich-quick scheme. Contains SmartWRTTR documentation.

DFLASH FACTS: MUSIC STUDIES: Eight flashcard files for use with the Electronic Flashcard Maker by Coleco dealing exclusively with music theory. Requires the user boot E.F.M. by Coleco first and contains SmartWRTTR documentation.

DFRENCH BASIC: Great modification of SmartBASIC V1.0 with demos. Must have version for the service programmer that includes 10 new commands for using sprites, windows, easy color changes, etc.

DMARKET MONITOR: Coleco of Canada management system program for the personal investor. Not totally bug free. Contains SmartWRTTR documentation.

DSimplePAINTER With Simple FX: A tremendous collection of graphics utilities which extend the capability of PowerPAINT along with a number of conversion programs. Contains SmartWRTTR documentation.

DSmartBASIC V1.0: Coleco's original SmartBASIC which came with the ADAM. This is available for replacement on DDP / Disk and has been enhanced for disk owners.

DSmartBASIC V2.0: Coleco's extended / enhanced version of SmartBASIC V1.0 (49K versus 28K) with memory expander access but is not fully compatible with V1.0. Contains SmartWRTTR documentation.

DSmartBASIC V2.0 40 COLUMN: 40 column text version of SmartBASIC V2.0 which works in STDMEW or EXTREM modes. No longer do you have to bother with a non-standard 31 column screen. Contains SmartWRTTR documentation.

DSmartBASIC V2.1: Nice modification of SmartBASIC V2.0 that adds macros for string inputs, formatter and backup programs. Contains SmartWRTTR documentation.

DSmartBASIC CONSTRUCTION KIT: Designed to aid the novice programmer better understand the many commands resident in SmartBASIC V1.0. Fully menu driven and auto-booting. Contains SmartWRTTR documentation.

DSP-1 CUSTOM PRINTER SOFTWARE: Specialized software patches for use in SmartWRTTR. Used to imbed software commands. Available for the following printers: Panasonic 1080 / 91 / 92 / 89, Star G10 / G30, Epson FX / RX, Blue Chip, Olympia R60, Brother 2024, Smith Corona Fastack 80 / DZ000, Ok! 182 / 182.

DT-DOS V4.58: Super enhanced version of CP/M 2.2 which operates much like MS-DOS. Many new features. Available on 2 - 5 1/4" 160K floppy disks, 2 - 5 1/4" 320K disks or 1 - 3 1/2" Z80K disk - please specify when ordering. Manual in Doc file.

DTAX PLANNER: Coleco of Canada business software which will create a clearer and more complete picture of your tax situation. Contains SmartWRTTR docs.

DTTRACKER: Allows for the tracking of Hurricanes in the Gulf Coast area. Enter 14 x and y coordinates and then save them as a file or view the hurricane in action on the high-resolution map of the area. Includes SmartWRTTR documentation file.

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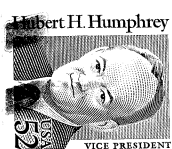
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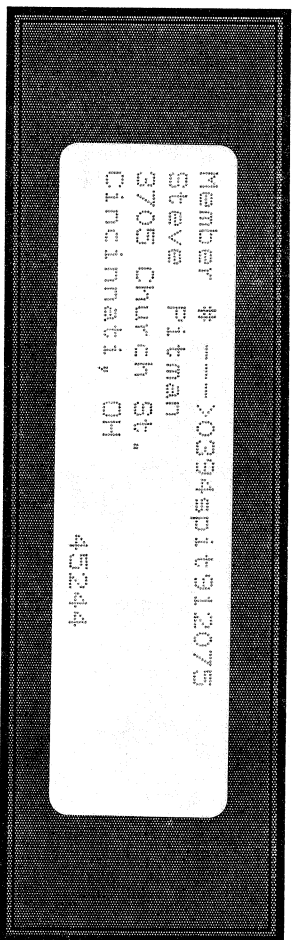
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