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MONTHLY NEWSLETTER - PUBLIC DOMAIN LIBRARY  
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Issue #82 - November, 1991

Editors: Lyle Marschand & James Notini

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# \*\* JOY TO THE WORLD \*\*

## What is joy?

Have you ever thought about what joy is versus happiness? Is there a difference, if so what?

Happiness is temporary and usually depends on the situation or the environment, for example "I am happy because today is payday, or I just had a good meal, or my new car looks great, etc."

These are all examples of things that might make us happy for a period of time, but this happiness won't last because the event isn't there anymore (I am now broke, hungry and my car has a dent) or because something negative happened that erased the happy event.

In any case, happiness is nice but you can't expect it to last.

People seem to be forever searching for happiness through "things" or other people. Money is often viewed as the ultimate happiness - "If only I could win the Lottery...". However, do you know how many rich people find that money does not bring happiness? We need to stop kidding ourselves into thinking that we find happiness through things.

Let's talk about Joy and contrast it to happiness:

- 1) Joy is a state of mind that does not have to depend on circumstances like happiness does.
- 2) Joy is more permanent, more real and more sincere.
- 3) Joy is a deeper, more intimate feeling than happiness.

Where does joy come from and how do I get it may be the right question.

The term JOY is usually linked to Christmas. There are many songs and Christmas sayings that refer to joy. The term joy is in fact usually only heard around Christmas time.

Why are joy and Christmas linked? I say it's because Christmas is the source of Joy for all of us. Do you notice that most people act different at Christmas? People are nicer, more giving and forgiving, sharing, etc. Is this just a coincidence, what we expect each other to do; I don't think so.

Christmas is two things:

- 1) On the surface it is when we give gifts, visit relatives, eat cookies and candy, and get some time off of work.
- 2) The origination of Christmas is the birth of Jesus Christ, God's only Son sent to Earth as a man to teach us and give us the plan of salvation for eternal life.

**The real meaning of Christmas is the reason the feeling of Joy is possible. God sent all of mankind the ultimate gift, eternal life through His Son Jesus.**

God's love and gift of eternal life are always with us, are permanent, real and tangible and will not go away like the circumstances that can make us happy one day and sad the next.

This is why Christmas is such a special season, because it is something internal in our spirits. The knowledge of God's gift of eternal life through His Son Jesus is represented by the image of the baby Jesus lying in a manger but the only place it is real is inside each of us. This is why people are different at Christmas time, it brings out this knowledge we have deep inside and tend to hide throughout the year.

I want to tell you that this internal knowledge and joy are real - each of us knows this inside if we just take a quiet minute to realize it.

The signs of Christmas that have to do with the miracle birth of Jesus really happened almost 2,000 years ago and changed the history of the world in a way that nothing else has or ever will. The world is working hard to make us all believe that these events never happened and are just "religious" symbols. Don't let this delusion fool you, these events are real. Henry Thoreau said that each person has a "God sized hole" in them. God is real and each of us needs God inside. God is the source of real joy, the kind that comes from the inside and is permanent.

God gave us this real joy on the first Christmas, 2,000 years ago when Jesus Christ was born. **Jesus is the source of all real joy because it is through him we can have eternal life.** Jesus died for our sins in order to give us this eternal life, which is the ultimate gift from our God. Christmas represents the miracle of God sending his best, his very own Son to bring the message of God's love for us. Jesus was both the messenger and the message, he brought the message of God's love, salvation and eternal life and he was the message in that his sacrifice on the cross was the means by which we can have these gifts.

Are you happy? You may be able to answer yes now, but will you be happy tomorrow or next week? Remember our definition of happiness as being based on circumstances and hence it will come and go. If you want Joy, which does not depend on circumstances but comes from God and is inside us, you need to accept the gift from God represented by Christmas.

Won't you accept God's gift this Christmas by believing the fact that God sent His Son Jesus to give himself so we could have real Joy.

God bless you all and have a JOYFUL Christmas.

**N. I. A. D. - A CHRISTIAN RUN BUSINESS**

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ADVERTISER: S.M. VIDEO - P.O. BOX 3189 - OAKTON, VA 22124 - (703) 620-4485



## N.I.A.D. PROCEDURES



⇒ N.I.A.D. is published monthly except for the months of May / June and July / August, which are combined issues by the Northern Illiana ADAM User's Group. Individual issues may be purchased for the current month or a backissue for \$3.00 (always check Product List for current pricing). The November issue of N.I.A.D. is the 82nd issue published by N.I.A.D., there are 81 preceding issues. When ordering backissues, please specify the number of the issue, month and year.

⇒ The standard membership rate for 10 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 make sure 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 get this information to us as soon as possible so as not to cause any type of difficulties. Also, include your member ID number.

⇒ N.I.A.D. accepts advertising for ADAM related products and services. Cost is \$50 for a half page ad and \$75 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.

⇒ If 1191 are the first four digits in your member number, 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.

⇒ Our Chicago Local Chapter Meetings are a great way to learn more about our beloved ADAM systems. You have the opportunity to meet fellow ADAM owners, ask us questions, see live demonstrations of hardware and software and also purchase products. We meet in our store, CompuKINGDOM, the third Tuesday of each month at 7:30 PM. If you need directions getting here, just give us a call.

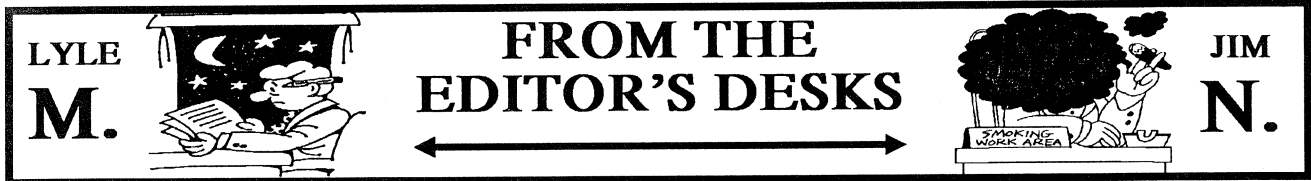
The meetings which will be held throughout the year will fall on the following dates (remember that there are no meetings scheduled for the months of June, July and August):

**DECEMBER MEETING**  
Meeting Cancelled

**JANUARY MEETING**  
Please call to confirm date

**CompuKINDOM / N.I.A.D.**  
6458 College Rd.  
Lisle, IL. 60532  
(708) 961-5011

**We have exercised due care in the preparation of this newsletter (that doesn't mean we're perfect!). 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.**



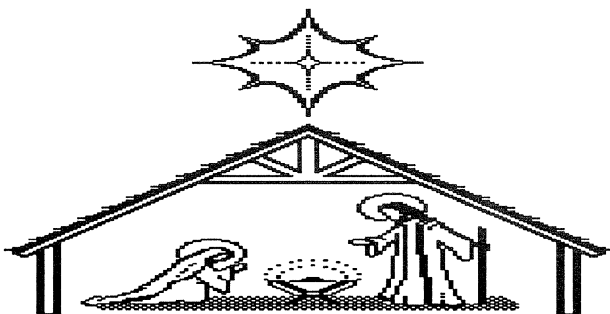
## THE REAL MEANING OF CHRISTMAS

Luke 2:8 And in that region there were shepherds out in the field, keeping watch over their flock by night. <sup>9</sup>And an angel of the Lord appeared to them, and the glory of the Lord shone around them, and they were filled with fear. <sup>10</sup>And the angel said to them, "Be not afraid; for behold, I bring you good news of a great JOY which will come to all the people; <sup>11</sup>for to you is born this day in the city of David a Savior, who is Christ the Lord. <sup>12</sup>And this will be a sign for you: you will find a babe in a manger." <sup>13</sup>And suddenly there was with the angel a multitude of the heavenly host praising God and saying,  
<sup>14</sup>"Glory to God in the highest, and on earth peace among men with whom he is pleased!"

Isaiah 9:6 For unto us a child is born, unto us a Son is given, and His name shall be called Wonderful Counselor, the Mighty of God, the Everlasting Father, the Prince of Peace.

Best Wishes  
for a  
Merry Christmas  
**Joy!**

All of us at N.I.A.D. wish you and your families the best at this Holiday Season. Enjoy your time with your loved ones and think about the real meaning of this time of year.



Hello, once again to all you ADAMites out there. As has become the custom of recent months, the newsletter is once again a little late, but at least this time I have a good excuse. CompuKINGDOM, our computer retail store, has moved! Although the move was a very short one, we moved into a vacant store right next to our old store, it still proved to be an exhaustive experience especially considering that the entire process was handled by Lyle and myself in not even two full days! I am just now overcoming all the aches, pains and soreness that the process gave me but I am sure many of you have also experienced the moving bug and already know about that.

Getting back to our new store... it has turned out to look rather nice, I personally like the lay out and the smaller size of the new store over our old one which we occupied for some 4 1/2 years. So if you are curious to see the new store, pay us a visit soon, and don't forget that the N.I.A.D. group is run out of the store so we have everything available for purchase over the counter as well as for demonstration. The new address is as follows (also note that the phone numbers and P.O. Box addresses all remain the same):

**CompuKINGDOM / N.I.A.D.**  
**6458 College Rd.**  
**Lisle, IL. 60532**

Hopefully by the time you read this we will have available the ADAM Image Maker by Oasive Pensive Abacutors, the 3 1/2" 1.44Mb ADAMnet Floppy Disk Drive by Micro innovations, Hypercard by Jason Brown and some other much anticipated hardware and software products for demonstration at our store. But remember to always call first, because while we try to stock just about everything that we sell, there are many times when we are out of stock on certain items and I wouldn't want to see someone make a long trip to come here and not be able to see a demo or purchase a product.

In this issue, we have compiled yet another tremendous array of specials and sale items for you to take advantage of. We know what a strain the holiday season can be on your finances, so this is our way of compensating and also saying Thank You for supporting us all these years and hopefully for many more to come. Please be curious enough to follow the guidelines which are specified on the specials page. Also, you MUST be a current member of N.I.A.D. in order to receive any of the special products or pricing. NON-MEMBERS will still be charged standard retail prices as well as not be eligible for any of the free offerings.

As we enter into the '91 Holiday Season as well as the new year, I would like to pass along my best regards and wishes for a Happy Thanksgiving, Merry Christmas Happy New Year, Happy Hanukkah and overall Seasons Greetings. I know I am anxiously awaiting the arrival of Santa Claus at my house and the New Year as I am sure many of you are also and my wish list is about as long as the little kid's sitting on Santa's lap (hopefully I'll get about half of what's on it!).



**TIL' NEXT MONTH, "KEEP ON ADAMing!"**

# N.I.A.D. NEWS & UPDATES

⇒ **CompuKINGDOM**, our computer retail store which N.I.A.D. is run out of, has moved as of November 18th. Our new store address is: 6558 College Rd., not much of a move from our old location which was right next door in the same mall! Our U.S. Postman and U.P.S. Driver have both been informed of the change of address so that parcels sent to 6460 will still make it to us at our new location. If you have recently sent us a parcel to 6460, please call to insure that we have received it.



⇒ **N.I.A.D.** has compiled some outstanding specials and free give aways for the Holiday Season and due to the fact that we are running late getting this issue to out to you because of our recent move, we are extending the date which the specials are valid through. Please follow the guidelines which are outlined on the specials page for fastest service on your orders. If at all possible to simplify the process of your gift selection consider placing orders over the phone using a Credit Card or via C.O.D. payment. This way also your orders will be received in a much shorter time frame over mailing in the order.

⇒ **ADAM MAP: U.S. ATLAS** is a new educational / productivity package recently released by Harrison Productivity. This is a graphics oriented atlas program which allows for the viewing or printing of the states of the U.S.A. to a dot matrix printer in two different sizes showing major interstates, tollways, state routes, cities and the capital. Four states are included with the program (IL., IN., WI. and MI.) and additional State Volumes containing five states each are being completed, retail price for ADAM MAP is \$17.95 and it is available now. For further information, see the review contained in this issue.

⇒ **ADAMCON IV** is now officially a GO! This fourth convention is being sponsored / organized by the Akron A.U.G. and Northern Ohio ADAM Hackers and will be centered in Cleveland. At present ADAMCON IV is scheduled for July 23-26 (Thursday to Sunday). Some details which have already been received include: Vendor's Store hours expanded, designated time for product demos, offering of an ADAM Repair Center (Kosowsky's ADAM Repair and Oscar's Computing) during duration of convention and a program copying service. The delegate fee of \$220.00 covers all expenses for the convention and a payment plan is available. For further information contact: Herman Mason - 8912 Blaine Ave. - Cleveland, OH 44106.

⇒ **E.O.S. PROGRAMMING KIT** is a new programming utility released by Walters Software Co. The programming kit will open up a completely new outlook on the EOS operating system for the ADAM Computer. The EOS consists of routines to perform different functions, most of these require some additional information in order to perform it's task. Additional routines added to this system by Walters Software include: SmartKEY, Device, Error, Line and Bar Plotter, Text Entry, Key Sounds, Screen Fill and Clear, File Card and much more. These additional routines help make program development much easier on the ADAM. The kit does not intend to teach Z80 programming, but how to use EOS. A second program recently released by Walters Software is Decimal Disassembler. We will have more news and reviews on these two programs as well as prices available in the December issue.

⇒ **CHROMANTICS** is the newest graphics package released by Eyzod Graphics. Chromantics consists of some of the finest Chrome style clips you will ever see anywhere as well as some very useful full screen picture files and alphabet sprite files and it is the first joint effort between Tony Patterson and Eyzod Graphics. See the reviewed contained in this issue, retail price is \$15.95. Also, if you have purchased Bold Glory, make sure to send in your registration and order the special GLORY B! graphics package which is only available through

Eyzod Graphics for a very small fee. This add on package to Bold Glory is outstanding and we will have a review in the December issue.

⇒ **MICRO INNOVATIONS'** has released the ADAMnet 3 1/2" 1.44Mb Floppy Disk Drive and it is now available for \$324.95 (PRICE SUBJECT TO CHANGE). This much awaited 3 1/2" disk drive has double the storage capacity of the standard 3 1/2" 720K disk drives and almost ten times the storage capacity of the original Coleco made 5 1/4" 160K disk drives. Tentative plans call for the new 3 1/2" 1.44Mb disk drive to eventually replace the 3 1/2" 720K disk drive entirely, but that may change. The next product which we should see completion of in the near future in the Powermate LC/40 Hard Disk Drive, but an exact time frame has not been mentioned for it's release. We will keep you posted and hope to have some good news for you by the December issue.

⇒ **OASIVE PENSIVE ABACUTORS** has informed us that their ADAM IMAGE MAKER VIDEO BOARD (A.I.M.) hardware has been fully completed and tested but that sufficient software is still the major holdup at this time. Word from the developer has a planned release date of November 30th. So if you have been anxiously awaited the release of the A.I.M. video board, contact us about a week after this date for the latest update.

⇒ **N.I.A.D.** has not received a number of new programs and books which have recently been released which we thought we would have in time for a review in this issue so hopefully by the December issue we will have reviews available on the following new products: Tax Helper 1991 by Hoosier Software; Directory Sorter V1.0 by AJM Software; Disassembly of ADAM OS7, Disassembly of EOS7, Learning to Make Games with ADAM and Learning to Make Music with ADAM all by Roadrunner Publications; Linked Stack Development Kit by Jason Brown; The ADAM Home Automation Package by ADAMLink of Utah; Artwork Review Manual and Software Review Manual by ADAM's House, etc.

⇒ **N.I.A.D.** has, due to our move and rush to catch up with the newsletter, been unable to review many other products this month and I would like to apologize to the developers of the following products due to the fact that reviews are what they depend on in order to create sales of their products: Birthdays & Anniversaries, IBM Clip-Art and Appointment Book by Maine ADAM Library; Norman's Railroad by Norman Castro; Edix, 6801 Decimal Disassembler, Z80 Decimal Disassembler and others by Hexace Software; The Billy Saga Vol. I & II and MusicPro by Hal Weber Software; and finally Basic Programming Tutorial Manual by ADAM'S House. Although it is bad news on our part that we have fallen so far behind, it is a very good sign that so many new products are being developed and released over the course of the last couple months and that trend seems to be continuing all the way through to the end of the year!



⇒ **N.I.A.D. USERS GROUP MEETINGS** for the next couple of months have been cancelled for the months of December and possibly January due to pre-engagements and lack of turn-outs. We will be considering whether to continue these meetings in the future and will inform everyone of our final decision on whether to continue the meetings in the coming months.



# Season's Greetings

## EFFECTIVE: 12/10/91 TO 12/31/91

It's the Holiday Season once again and N.I.A.D. is once again offering a wide range of Holiday Specials which is our way of saying "Thank You" for all the support which you have given us over the last year! We hope that these specials provide some relief for your pocket books during this time of year when it always seems that money is one commodity, unlike love, that we do not have a lot of.

If placing an order via phone-in, you will be notified if you are eligible for a free gift choice or not. A selection will have to be made at this time, so please read over the options which have been outlined below. If placing an order via mail-in, you will have to make your selection on the order form or else you will forfeit your free selection. Also, when mailing in an order, make THREE selections in the case that one or more of the products which are available on special is no longer available. Number the products in the order (1 being the most wanted and 3 the least) that you most desire. Also, please inform us whether you wish to receive software on DISK or DATA PACK. If the choice is not made, the software will be sent according to other software ordered or by what's available.

Regarding ordering in time to guarantee delivery of the products before Christmas - THE SOONER YOU ORDER, THE MORE LIKELY YOU WILL RECEIVE YOUR ORDER BEFORE CHRISTMAS SO CONSIDER PHONING IN YOUR ORDER USING A CREDIT CARD OR C.O.D. N.I.A.D. will be working as hard as possible to process and ship your orders, but we can't perform miracles.

## MEMBERSHIP SPECIAL

- U.S. MEMBERSHIP 1<sup>st</sup> CLASS .....\$22.00
- CANADIAN MEMBERSHIP 1<sup>st</sup> CLASS .....\$26.00

## ORDER SIZE SPECIAL

Any product orders, MINUS MEMBERSHIP COSTS, received before 01/10/92 will be eligible to receive a free product dependent on the size of the order. Please, only base the order size on the products ordered, do not include the cost for membership, shipping & handling, balance due payments, etc.

### ORDER SIZE: \$75.00 - \$149.99

Your choice of one of the following free:

- 1. One Public Domain Volume (DISK or DDP)
- 2. One Coleco Tan Hand Controller (Joystick)
- 3. One Coleco 7 ft. ADAMnet Cable
- 4. Two Coleco 256K ADAM Digital Data Packs
- 5. Four Coleco Right Directory ADAM Digital Data Packs
- 6. Two Coleco ADAM Printer Ribbons
- 7. Super Zaxxon by Coleco Electronics (DDP ONLY)
- 8. Flash Facts: Flashbacks by Coleco Electronics (DDP ONLY)
- 9. World Capitals by Parallel Systems (DDP ONLY)
- 10. Chess Tutor #2 by Parallel Systems (DDP ONLY)

### ORDER SIZE: \$150.00 - \$249.99

Your choice of one of the following free:

- 1. Two Public Domain Volumes (DISK or DDP)
- 2. Two Coleco Tan Hand Controllers (Joysticks)
- 3. Four Coleco 256K ADAM Digital Data Packs
- 4. Six Coleco Right Directory ADAM Digital Data Packs

- 5. Four Coleco ADAM Printer Ribbons
- 6. Backup 3.0 by MMSG (DISK ONLY)
- 7. MisSpeller for SpellingAIDE by Walters Software (DISK or DDP)
- 8. SmartLOGO by Coleco Electronics (DDP ONLY)
- 9. U-Match-Em by Phoenix 2000 (DISK ONLY)
- 10. Recipe Filer by Coleco Electronics (DISK or DDP)

### ORDER SIZE: \$250.00 - \$399.99

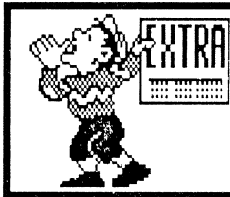
- 1. Four Public Domain Volumes (DISK or DDP)
- 2. Eight Coleco 256K ADAM Digital Data Packs
- 3. Ten Coleco Right Directory ADAM Digital Data Packs
- 4. Six Coleco ADAM Printer Ribbons
- 5. Dragon: Chinese Challenge by Reedy Software (DISK or DDP)
- 6. Tournament Tennis by Imagic (DISK ONLY)
- 7. SmartTERM V1.02 by Keheo Software (DISK or DDP)
- 8. RamBOOT by Walters Software (DISK or DDP)
- 9. Reedy Entertainment Pack by Reedy Software (DDP ONLY)
- 10. Stratozap by Allied Creative Engineers (DISK or DDP)

### ORDER SIZE: \$400.00 - AND UP

Take 7% OFF all orders over \$400.00. Membership Tax, Shipping & Handling and Balance Due Payments DO NOT APPLY to total value of order.

## PRODUCT SPECIALS

- AUTOBACKUP by Walters Software (64K) (DISK or DDP) ..... \$9.95
- BACKUP 3.0 by M.M.S.G. (DISK ONLY).....\$7.95
- CHESS TUTOR II by Parallel Systems (DDP ONLY) .....\$6.95
- COPYCART+ D2.0 by M.M.S.G. (DISK ONLY).....\$14.95
- DRAGON by Reedy Software (DISK or DDP).....\$14.95
- EASY COME, EASY GO by M.M.S.G. (DDP ONLY).....\$9.95
- FLASH FACTS: FLASHBACKS by Coleco Elec. (DDP ONLY)..\$4.95
- FLASH FACTS: VOCABULARY by Coleco Elec. (DDP ONLY) \$4.95
- INVOICER 3 by Adam's House (DISK or DDP).....\$14.95
- MISSPELLER by Walters Software (DISK or DDP) .....\$9.95
- PHRASE PAK I by Reedy Software (DISK or DDP).....\$6.95
- PHRASE PAK II by Reedy Software (DISK or DDP).....\$6.95
- PHRASE PAK CON. SET by Reedy Software (DISK or DDP)...\$6.95
- RAMBOOT by Walters Software (64K) (DISK or DDP) .....\$9.95
- RECIPE FILER by Coleco Electronics (DISK or DDP).....\$6.95
- REEDY ENTER. PACK by Reedy Software (DDP ONLY) .....\$8.95
- SNAPSHOTS VOL. I & II by Wizard's Lair (DISK or DDP).....\$6.95
- SMARTDSK II by Walters Software (DISK or DDP).....\$9.95
- SMARTLOGO by Coleco Electronics (DDP ONLY) .....\$9.95
- SMARTTERM V1.02 by Keheo Software (DISK or DDP) .....\$9.95
- SQUISH'EM SAM by Interphase (DISK ONLY).....\$9.95
- STAGE FRIGHT by Reedy Software (DISK or DDP) .....\$9.95
- STRATOZAP by Allied Creative Engineers (DISK or DDP) .....\$9.95
- SUPER ZAXXON by Coleco Electronics (DDP ONLY) .....\$6.95
- TOURNAMENT TENNIS by Imagic (DISK ONLY).....\$9.95
- U-MATCH-EM by Phoenix 2000 (DISK or DDP) .....\$9.95
- WORLD CAPITALS GAME by Parallel Systems (DDP ONLY) ..\$4.95
- YULE TOOLS I by Eyzod Graphics (DISK ONLY).....\$10.95
- ZORAN III by ADAMzap Software (DDP ONLY).....\$9.95
- ADAM TAN HAND CONTROLLER (JOYSTICK).....\$2.95
- EXP. MOD. #1 ATARI 2600 ADAPTOR.....\$34.95
- EXP. MOD. #3 MEMORY CONSOLE DUST COVER.....\$4.95
- ROLLER CONTROLLER WITH SLITHER CART.....\$29.95



## SO FAR

### Part IV of VI

# An Essay on ADD-ONS for the Coleco ADAM Computer

## by Ron Collins of the Akron AUG

**EDITOR'S NOTE:** This is the fourth chapter of the "SO FAR" series written by Ron Collins of N.O.A.H. which originally appeared in the "ADAMLink of UTAH" Newsletter.

### Part Four

## The Innovators and Money Savers

In House Service Representatives, or IHS as they would come to be known, presented a new style of ADAM compatible disk drive. This unit, with its custom made drive housing and controller board, made it possible for ADAM owners to purchase a full double-sided disk drive without the need of sacrificing an existing 160K disk drive. Designed by Don Pearlman, owner of IHS, this disk drive would connect between the printer/power supply and the CPU. All data and power were carried through one single cable, all without the need for an additional disk drive power supply. Any existing Coleco style disk drives could still be used the same as before.

The drive mechanics Don chose were less power hungry and a bit more smoother in operation, but the \$275 price was a bit more than many ADAM owners were willing to spend. Cost has always been a limiting factor to any hardware devices in the ADAM world.

When Coleco liquidated ADAM systems, most people bought them for less than \$300! Not bad at all for an \$800 computer! When presented with a cost of \$275 just for a disk drive, most people failed (and continue to fail) to consider all the benefits of the device, and fall back instead on the comparisons between what it will cost verses what they actually paid for the whole computer! It never dawns on them that they paid a "liquidation price" for their ADAM.

All in all, if you considered the advantages, compared to the cost of a new ADAM drive and the extra cost of double siding it, the price of the IHS drive unit was really a bargain. It is unfortunate that the cost issue eventually killed IHS and its new drive. What I've always liked about the IHS disk drives was their use of a non-Coleco controller board. Every other vendor worked at various methods to either repair or upgrade Coleco disk drive controller boards. This has always been a nice way to go, but let's face it. You HAVE to give up the drive you are using now until it comes back to you. Don's idea of building his OWN controller board and drive cabinet worked around this problem quite nicely!



Besides the novelty of an independent drive design, the IHS drives had one extra new feature... a new drive EPROM. This new eprom, modified by Tony Morehen of AJM Software in Canada, would provide owners with 320K of storage capacity... 48K more than the EVE drives' 256K storage capacity!

These drives also came with the most innovative CP/M software ever released on the ADAM market. Programs such as ABP to improve system performance and a convert-type program to allow you to transfer programs between a few other CP/M computers to an from ADAM disk drive format are two that come to mind.

During this time, some of the strongest user's groups ever started came into being. N.I.A.D., one of the first and fated to be one of the biggest of these user's groups began to sell hardware and software along with

publishing a fine newsletter of ADAM related facts and reviews. Companies such as E&T Software, Alpha-1 Limited and M.W. Ruth Co. began to market more and more third party software and hardware. These companies and user's groups also sold original Coleco hardware and software, giving buyers a wider choice in their buying. Selling to a large number of ADAM owners than the average toy store, these user's groups did more to get prices reduced and promote new products than anyone else.

New software companies that also published super newsletters came into being. Digital Express began to sell all sorts of graphics oriented software such as SpritePower, Clipper, and later PowerPoint to take advantage of the new hardware products. Their newsletter, "Nibbles & Bits" would prove to be one of the most favored among ADAM owners because of its many "type them in" programs and workshops.

With all this software available, and more coming almost daily, the only real limit to system expansion came down to dollars and cents. Memory expanders were expensive and generally hard to find. Printer interfaces were too costly for the average buyer to even consider. Problems with other products, such as disk drive over-heating, failures of some products of various vendors and ever escalating cost of hardware was high.

All of this practically DEMANDED a new vendor. What was needed, if the ADAM were to continue to grow was a cost conscious hardware manufacturer with a dedication to extremely well built, high quality products. Enter ORPHANWARE!

This new company came into being out of anger and disgust with the available vendors. The Honeywell Service Center in Ohio was used by most north-eastern Ohio ADAM owners for repair service and new Coleco products. Looking for an interface to connect his ADAM to a dot matrix printer for graphics printing, John Lingrel of Akron, Ohio stormed out of Honeywell when informed that no such interface was available. While going out the door, John commented "someone should go into business and build this stuff!" Turning to EVE for their SP1-P Parallel Port, John was finally supplied, at a cost of \$135, with the means of finally printing graphics, etc. on an ADAM!

One thing about John is that his profession is one of building computer hardware used in the manufacture of Air Force Flight Simulators. Using his wealth of knowledge for expansion of the ADAM was a natural! Looking inside the new EVE unit, John soon thought of new ways to do the same thing at a fraction of the cost. If it's new, and the government likes it, it has to be state of the art. It is also, an odds on bet, that Big John, as we all know him, is familiar with it's use!

John set about building the new interface and putting it out on the market. The first units were primitive wire wrap boards which, despite their appearance, worked flawless! Next in line was a memory expander that would use a new style of RAM storage chip. Besides dropping the cost to the consumer, the new boards also reduced the component count per unit. Less parts on the board meant less parts to go bad!

Concerned about the quality of hardware, John determined to build the BEST boards in the business. Contracting with a nearby circuit board manufacturer, PC board versions were soon released. The company building the bare PC boards was chosen, not on the basis of cost, but on the basis of quality. All boards HAD to be mil-spec (military specification) quality before John would use them. The end result was state of the art ADAM hardware of the most sophisticated design and highest quality. Rather than high prices on his products, John held his

profits down as low as he could to allow the most ADAM owners the ability to afford them.

The 64K memory expander, known as the MX64, was sold as the low price of \$45... less than half the Coleco or EVE price. The PIA2 Parallel Printer Interface went for just under \$40! Still not satisfied, Big John began contacting various software authors in hopes of generating better software to better utilize all the now affordable hardware. When he met Glen Gabarick, founder of GJMG Enterprises, John's hardware became even more useful thanks to two programs from Glen... FASTPATCH to tell ADAM how to print on a dot matrix printer and QUICKCOPY 1.0, the finest block and file copy program ever sold for the ADAM at that time.

QUICKCOPY had the ability to use the memory expander as a copy buffer. Less media swaps would be needed to backup important disks and data packs thanks to this little buffer. Tired of slow 300 baud speeds on the ADAMLink Modem, John went to work on a way to use available external modems. It was obvious that a newly designed and inexpensive RS-232 Serial Port was needed. After a few weeks in design, the Orphanware RS-232 port became available at just under \$64.95. Orphanware even provided a package deal that contained the serial port, an Avatex 1200 baud modem and two disks packed with public domain modem software. All of this for only \$149.95 was hard to beat! The modem could even be used on other computers one might own.



An 80 column video unit was John's next product. Provided with an easy to install sideport adapter cable and software, this one product, at a cost of \$239 would sell by the hundreds. Not at all satisfied with the available software, John contacted Tony Morehen, author of that super software distributed with the IHS hardware for something "different". Tony provided, at first a new version of ABP and later an independent operating system called T-DOS for best use of ALL the Orphanware products.

These two programs, ABP and T-DOS, patched CP/M 2.2 in a way that let your ADAM use any size memory expander, an 80 column unit, a dot matrix printer and even your RS-232 unit! For EOS users, John contacted Soloman Swift for a new version of SmartBASIC that would run on the 80 column unit. Programming in BASIC soon became easy on a screen that didn't split the lines into three parts as it did on a TV screen.

Different versions of the memory expansion unit went into production, first in it's wire wrapped version and soon after in it's professional looking PC board plug-in version. T-DOS went in for another modification as did Quickcopy to support the new boards. Prices ranged from \$115 for a 128K device up to \$255 for a 512K memory expander. Digital Express and Walters Software soon began to sell new software to use these larger expanders with SmartWRITER, SmartBASIC and many other programs. PowerPoint from Digital Express even used it as a means to display and use larger graphics files.

Not at all satisfied with the overheating of the EVE double-sided disk drives and the limited availability of the IHS drives, John set about doing his own disk drive repairs and upgrades. Again talking to Tony Morehen, double-sided disk drive owners were soon able to get a full 320K out of EOS software such as SmartBASIC and 304K out of CP/M software. Still not finished, John and Tony worked together to create a workable 720K disk drive that would use the IBM format 3.5" disks on an ADAM!

**Merry Christmas**



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- ⇨ THE BEST OF BRODERBUND by Coleco Electronics.....\$5.00
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## USED MANUALS & BOOKS

- ⇨ HACKER'S GUIDE TO ADAM VOL. I by Hinkle Publications.....\$5.00
- ⇨ HACKER'S GUIDE TO ADAM VOL. II by Hinkle Publications.....\$5.00
- ⇨ SmartBASIC FOR THE ADAM by Brady Books.....\$5.00
- ⇨ THE COLECO ADAM ENTERTAINER by Osborne McGraw-Hill \$5.00



# CP/M 2.2 & TDOS FOR THE NOVICE

## Part II

by Doug Rosenvinge

This is the second major part of a series of articles on CP/M and how to use it. The first dealt with filenames, built-in (resident) commands, utilities supplied with CP/M and the console commands for CP/M and TDOS. This section will talk about the internal parts of CP/M, disk / tape directories and files, and installing programs for the ADAM system. I assume that you know how to start CP/M (Insert disk / tape into the drive and pull the reset switch on the ADAM, then wait for the prompt.) and that you have made backup copies of your software in case they are damaged. *(Because of the length of the articles, they may have been published in several smaller sections.)*

### CP/M & TDOS's INTERNAL STRUCTURE

CP/M and TDOS have four major sections. Each section has specific tasks to accomplish that enable a user and / or programmer to control the computer at various levels. You can think of them as layers. The inner core enables the most basic computer functions. The next level handles more complex functions including disk access. The next enables the computer to understand the commands typed at the console. The last is an area for the user's program to use.

The actual modules are:

**CCP (Console Command Processor):** This module receives and interprets the commands typed at the keyboard. It is like any other CP/M program in that it uses function calls for all its I/O (input/output) operations.

**TPA (Transient Program Area):** This is the area of memory in which your programs are loaded and run. The area always starts with memory address 100H. After a program is loaded a jump to 100H is done by CP/M. Whatever code is at 100H is expected to take control of the computer.

**BIOS (Basic Input Output System):** This part of CP/M is written for each specific type of computer. It enables CP/M to request a set of standard services from the computer through a jump table.

**BDOS (Basic Disk Operating System):** This part of CP/M provides a standardized jump table of routines for reading, writing to the screen, memory, disks and peripherals. This enables programmers to write "generic" programs in CP/M that can be used on different computers.

A graphic representation of CP/M would look something like this:

CP/M or TDOS MODULE	Memory location
=====	65535 FFFFH
BIOS and BDOS	
-----	
CCP	
-----	
TPA	256 100H
-----	
SYSTEM PARAMETERS and VECTOR TABLE	
(Page 0)	
=====	0 0H

The Zero Page or the bottom of memory can be further divided into data areas and work areas used by CP/M and programs running under CP/M to keep track of information that needs to be used by both the programs or the operating system. This area can be over written if a program needs the memory and will not make use of the information in the Zero Page. The program must first be loaded normally starting at 100H and then moved by a small program segment to location 0. When

the program is finished running the computer will have to be reset as the instructions on reloading the system will be overwritten. Next is a description of the contents of the Zero Page for ADAM CP/M 2.2

BYTE IN MEMORY		NAME DESCRIPTION
DEC	HEX	
0-2	0-2	Warm Boot Routine for rebooting CP/M
3	3	IOBYTE Contains current configuration
4	4	Default Drive A:=0 B:=1 C:=2 D:=3
5-7	5-7	FBASE Jump Routine for jumping to FBASE, the lowest memory location of the BDOS and BIOS) If a program doesn't need the CCP then the address at byte 6 could be used to calculate the size of available memory.
8-39	8-27	UNUSED interrupt locations 1-5 (CP/M)
48-55	30-37	Interrupt 6 Reserved
56-58	38-3A	Restart. Used only by DDT or SID when debugging.
59-63	3B-3F	Reserved
64-65	40-41	Base Address of the current Smart Key Menu
66-67	42-43	SmartKey Values Base Address of the current SmartKey Values
68-69	44-45	Smart Key Descrip Base Address of the current SmartKey display strings
70-71	46-47	CurrKey Menu Base address of the currently displayed or active menu.
78	4E	IsRAMDiskThereEither 0 or FFH (255 decimal). If 0 ram disk card is available, if FF ram disk not available.
79	4F	Boot device designator
80-91	50-5B	Reserved
92-124	5C-7C	Default File Control Block created by the CCP for a transient program.
125-127	7D-7F	Optional default random record position.
128-255	80-FF	Default 128 byte disk buffer. It is also used for the command line and tail when a transient program is loaded by the CCP. File Control Block A data area that contains a copy of the directory record for a file. It is used to control reading, writing and creating of a file.

### DISK / TAPE ORGANIZATION

**Block 0 (BOOT BLOCK):** This block tells the computer how to load the system if there is one present on the tape or disk. If no system is present the block contains an instruction to jump to the electronic typewriter mode.

**Block 1 - 12 (CP/M or TDOS SYSTEM):** These blocks are reserved for the system. Even if you have never put the system with SYSGEN.COM on these blocks CP/M and TDOS will not use them. For that reason, it is a good idea to sysgen all of your tapes and disks after they have been formatted. It will save you reaching for the system disk in case you need to reboot your computer. This is not always true with other CP/M computers. Some computers do not reserve system tracks unless done before any files are copied to the disk.

**Block 1-6 (BIOS Basic In/Out System):** This is the information and routines that are specific to each computer type. Each manufacturer would customize this area so CP/M would know how to do things like read/write to the screen, memory and disks and control other peripherals.



**Block 7-12 (CCP and BDOS):** The CCP (Command Character Processor) is a translator that translates what you type at the key board into a form usable by the computer. There have been many enhancements to the CP/M CCP, some of which were discussed in the previous article. Some of the changes that have been made in some enhanced versions include removal and replacement of the user command, and addition of the "Go" command. Some systems, such as NZ.COM allow for search paths, aliases, environment controls, error handling and terminal descriptors, allowing for a highly customized and efficient CP/M system.

**Block 13-14 (Directory)**

**Block 15 - END** is the actual file storage area. This is where your files are stored.

## FILE DIRECTORY ORGANIZATION

The key to both CP/M and TDOS's file handling abilities is their file directory. It is more complicated than the simple EOS sequential file access method where the whole file must be recorded together in sequence on the disk or tape. In TDOS and CP/M, files can be stored as pieces as small as 1K (one block) in what ever space is available. If your disk or tape had blocks 29-35, 40, and 45-47 free and you had a 10K file to save, CP/M and TDOS would have no problem doing for you. Faced with the same situation, Coleco's EOS system would tell you that you didn't have enough room. A second advantage to TDOS and CP/M is that they support true random access to individual records in a file, unlike EOS's sequential access. In simple language this means that CP/M and TDOS can locate a small part of the file (called a record) without having to read all of the file that precedes that record. The Coleco EOS system has to read the file from the start in order to locate any given record.

The Directory has its own structure, made up of records that enable the operating system to keep track of where files are located and what space is available for new files. Each directory record refers to one "extent" of a file.

A directory entry's structure and a file control block's structure are the same with the exception that the file control block contains additional fields for keeping track of the current record number. When a file is saved, appended to, or shortened the contents of the file control block is changed in memory. It is written to the directory when the file is closed or the CP/M system makes use of a new extent. The following is a description of their internal structure.

- ⇒ Byte 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20  
dr <filename--><type-> ex s s rc <for system --
- ⇒ Byte 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35  
for system-----> cr <random>
- ⇒ **dr:** drive code 0 = default drive, 1 = A, 2 = B ... 16 = P
- ⇒ **filename:** The filename in uppercase ASCII
- ⇒ **type:** The file type in upper case ASCII. The high bits of bytes 9 and 10 can be set (equal to 1) to act as file attribute flags. If the high bit of byte 9 is set then the file is Read Only. If the high bit of byte 10 is set then the file is a System file and is not listed in the directory.
- ⇒ **ex:** This is the current extent number in the range of 0 - 31.
- ⇒ **s1:** This byte is for CP/M's use.
- ⇒ **s2:** This byte is for CP/M's use. It is set to 0 when a call is made to OPEN, SEARCH or MAKE.
- ⇒ **rc:** This byte is the record count for the current extent. Its values range between 0 and 127.
- ⇒ **system:** Bytes 16 through 31 are reserved for CP/M's use.
- ⇒ **cr:** This byte is the current record to read or write in a sequential file operation.
- ⇒ **random:** Bytes 33-35 are optional and are used for random file operations.

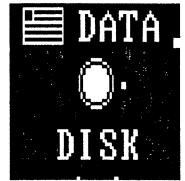
The default File Control Block is stored at location 5c hex in memory.

A second File Control Block is stored at 6c hex. If this FCB is to be used the programmer must move it immediately to some other area of memory as it overlays the first FCB. For more information about how the directory and FCBs work you can consult the ADAM CP/M manual or Digital Research's "CP/M 2.2 Interface Guide."

**Extents** are simply a number of blocks of a file on a disk or tape that are treated as a group. They can be made up of 1, 2, 4, 8, or 16 blocks. (On the ADAM system each block equals 1k. This is not always true with other computers.) Extents are numbered consecutively 0-31.

There are two ways that you can run out of space on a disk or tape. The first is using up the data area, the second is by using up all of the directory area. Standard ADAM disks and tapes have 64 directory entries each. The 64k memory expander has 32 directory entries. Sometimes the repacking of a disk will enable the disk to hold more information.

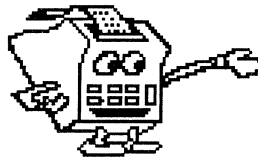
There are a couple of public domain programs for doing this. If you do use such a program, copy the disk first. If the program encounters a problem, or the power fails, you may lose everything on the disk! One further note, I would not use any such program with TDOS unless it has been written to function under TDOS. I have had several disks destroyed while trying to pack them. I have not had that problem under CP/M.



Erasing files does not actually remove them from the disk/tape, it only marks their directory entry as space available by writing E5 at byte 1. Several "unerase" programs exist that will change the byte back to the proper user number, thus restoring the file, provided they have not been overwritten. Deleted files continue to exist unless they are over written by a new file or the disk is reformatted. Security conscious types take note. If you have information that you want destroyed, just don't erase the disk, either reformat it or fill it up with other files. (This is also true in MS-DOS as well.)

CP/M deals with files in 128 byte long records. A file can be composed of 0 to 65,536 records (8 megabytes), provided the disk/tape can handle that large of a file. CP/M is a very powerful system that can make the most of your ADAM computer.

Next time we will take a look at the IOBYTE and the use of some utility programs in CP/M. If you have any questions, corrections or suggestions drop me a postcard. If you want a personal reply don't forget to send a Self Addressed Stamped Envelope.



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**My turn:** I was just given an Epson QX-10, a 256k, Z-80 computer. It came with Valdocs, CP/M, TP/M and the manuals for CP/M and Valdocs. What it is missing is the setup and operations manual for the computer itself. I am interested in finding out the answers to the following: 1) What do the dip switch settings on the back of the computer do? 2) Was there a manual on TP/M and how to use the memory bank switching? 3) Can the keyboard keys be remapped or the translation changed so that the arrow keys can match WordStar? If anyone has an answer to the above I would appreciate a brief answer to those questions. Thank you!





# USING MACHINE LANGUAGE ROUTINES FROM WITHIN SmartBASIC

## Part III of III

By Mel Ostler / Roadrunner Publications

I have mentioned how one can CALL a routine not specifically designed for his purpose, as long as it will do for him what he wants done. As we go through the following disassemblies, you will see that this is exactly what the authors of the setup routine have done. They are using the CALL to "Make Variable", part way through the routine, to effect a transfer of these "variable commands" from the place where they were on the media, to where they will be used in RAM, in a fashion similar to that which will later take place when a user of Basic defines his own variable(s). (Please note that the CALL is not made to the beginning of the routines. See your Basic disassembly - either media or RAM disassembly).

```
14221:378D E5      PUSH    HL
14222:378E F5      PUSH    AF
14223:378F CD 02 37 CALL    $3702
```

The HL and AF registers are saved onto the stack, and a CALL is made to 14082 (\$3702), "Look For Variable".

We might fully expect that no variable will be found in this first loop if this routine does in fact look for a variable, inasmuch as the Basic Program is still being set up, and no operator inputs have been received. However let us proceed.

```
14082:3702 C5      PUSH    BC
14083:3703 2A EB 3E LD      HL,($3EEB)
14086:3706 E5      PUSH    HL
14087:3707 E6 78  AND    $78
14089:3709 47      LD      B,A
```

BC is saved on the stack and HL is loaded with the value of "Number of Variables" from the data table. This value from the dump of the Basic Program media, is HL=\$0000, as one might expect inasmuch as Basic has not been used up to this point. HL is put on the stack, and the variable type (\$88), (and later in some other cycles \$A8), is ANDed with \$78 to become \$08, (and later to become \$28 when the var type is \$A8). In any case the value in A, the B, is saved in the B register.

```
14090:370A 2A DF 3E LD      HL,($3EDF)
14093:370D 18 35  JR      $3744

14148:3744 E3      EX      (SP),HL
14149:3745 7C      LD      A,H
14150:3746 B5      OR      L
14151:3747 2B      DEC    HL
14152:3748 E3      EX      (SP),HL
14153:3749 C2 0F 37 JP      NZ,$370F
14156:374C 33      INC    SP
14157:374D 33      INC    SP
14158:374E C1      POP    BC
14159:374F C9      RET
```

HL is then loaded with the contents of the "Pointer To The Start Of Variable Table", or LOMEM. This from the media dump is \$6B0F, or 27407.

Making the unconditional relative jump, the last two bytes placed on the stack are exchanged for the number in the HL double register, that is: 27407 is placed on the stack, (see instructions 14083 and 14148 to 14153), to decrement to zero. But enough speculation, we'll get to that case soon enough.

```
14226:3792 DA 2F 38 JP      C,$382F
14229:3795 2A EB 3E LD      HL,(3EEB)
```

```
14232:3798 23      INC    HL
14233:3799 3E FC  LD      A,FC
14235:379B A4      AND    H
14236:379C 20 C7  JR      NZ,$3765
14238:379E D5      PUSH  DE
14239:379F C5      PUSH  BC
14240:37A0 3E 05  LD      A,$05
14242:37A2 CD 18 35 CALL    $3518
```

The JP instruction at 14226 is bypassed. HL is again loaded with the "number of variables" which is zero, (still from the media dump), and incremented to \$0001. The value in H is ANDed with 252d to give a zero in A, (only if H were larger than \$04, would the result in A be non-zero to reset the Z flag). This makes the JR test fail, and DE=\$3F76 and BC=\$1F03 are PUSHed to the stack. A register is loaded with a 5, and a CALL is then made to the routine called "Make First String" at 13592.

Thus we see that the limit of the number of variables to be allowed in the variable table is 1K or 1024 variables, (0 to 1023). We also see the A register is being prepared to create room beyond LOMEM for the first entry in the variable table, which table immediately precedes the variable command name table.

```
13592:3518 E5      PUSH    HL
13593:3519 C5      PUSH    BC
13594:351A F5      PUSH    AF
13595:351B 6F      LD      L,A
13596:351C 26 00  LD      H,$00
13598:351E CD 8F 1C CALL    $1C8F
```

HL=\$0001, BC=\$1F03 and AF=\$05,Z,NC are saved on the stack, and the HL register is loaded with \$0005. Another CALL is issued, to 7311, "Check String Space".

```
7311:1C8F C5      PUSH    BC
7312:1C90 E5      PUSH    HL
7314:1C91 ED 4B EF 3E LD      BC,($3EEF)
7317:1C95 09      ADD    HL,BC
7318:1C96 DA A4 1C JP      C,$1CA4
7321:1C99 ED 4B ED 3E LD      BC,($3EED)
7325:1C9D ED 42  SBC    HL,BC
7327:1C9F E1      POP    HL
7328:1CA0 C1      POP    BC
7329:1CA1 D8      RET     C
```

After BC and HL are saved to the stack, BC is loaded with the pointer to the "End Of String Space", (27408, from the media dump). HL=\$0005 is added to BC to make HL=27413, pointing to the newly proposed "End of \$ Space", EO\$S. This is in the low end of Basic RAM. Since no CARRY was incurred, (and in fact would never occur), the C flag is reset to "NC" for the forthcoming subtraction.

The program loads BC with the "Pointer To The Start Of Variable Value Table", (which is initially 53631 from the media dump). This is the high end of Basic RAM, and it is then subtracted from HL to see if the newly proposed "EO\$S", is larger than the "Pointer To The Start Of Variable Value Table", SOVVT, which would mean that Basic RAM had all been used, and that there was no room for the newly proposed variable. Since BC is at this point, (and unless we run out of Basic RAM with our program, always will be), larger than HL, the C flag is set, and the HL and BC registers are restored from the stack.

The Z80 then RETURNS to the "Make New String" routine because of the C flag. The RETURN at this point indicates that there is space available

for the newly proposed variable. Were there not space at this point the FRE(0) routine would be called to provide appropriate action.

13601:3521	2A F3 3E	LD	HL,(\$3EF3)
13604:3524	3A EF 3E	LD	A,(\$3EEF)
13607:3527	BD	CP	L
13608:3528	20 06	JR	NZ,\$3503
13610:352A	3A F0 3E	LD	A,(\$3EF0)
13613:352D	BC	CP	H
13614:352E	28 1D	JR	Z,\$354D

HL is loaded with \$6B10, or 27408, the start of \$ space, (SO\$S); and A is loaded with the low byte value of EO\$S. This compared to the low byte of SO\$S in L, sets a Z flag. Thus passing 13608, A is loaded with the value of the high byte of the EO\$S. This is then compared to H which is also the same, and the resultant Z flag causes the jump.

13645:354D	F1	POP	AF
13646:354E	4F	LD	C,A
13647:354F	06 00	LD	B,\$00
13649:3551	09	ADD	HL,BC
13650:3552	22 F3 3E	LD	(\$3EF3),HL
13653:3555	22 EF 3E	LD	(\$3EEF),HL
13656:3558	C1	POP	BC \$1F03
13657:3559	E1	POP	HL \$0001
13658:355A	C9	RET	

The POP AF loads A with the \$05 from the stack which was stored there in instruction 13594. The 5, (the length of an entry in the Variable Table, [VT]), is saved in C, and the B is loaded with a \$00, making BC=\$0005.

This value is added to the value of 27408 in the HL register, making HL=27413. This then becomes the new value stored as the pointer to SO\$S, and also the pointer to EO\$S. BC is restored (=s \$1F03), as is likewise HL (=s \$0001), and RETURN is made to 14245.

14245:37A5	2A A3 3E	LD	HL,(\$3EE3)
14248:37A8	54	LD	D,H
14249:37A9	5D	LD	E,L
14250:37AA	ED 4B E1 3E	LD	BC,(\$3EE1)
14254:37AE	B7	OR	A
14255:37AF	ED 42	SBC	HL,BC
14257:37B1	44	LD	B,H
14258:37B2	4D	LD	C,L
14259:37B3	21 05 00	LD	HL,\$0005
14262:37B6	19	ADD	HL,DE
14263:37B7	22 E3 3E	LD	(\$3EE3),HL
14266:37BA	EB	EX	DE,HL
14267:37BB	28 06	JR	Z,\$37C3

HL receives a 27407, the end of VCNT; as does BC, the start of VCNT, (since no strings have been introduced into Basic yet). HL shares the 27407 with DE. 14255 nets a zero in HL and a Z flag, and the zero is passed on to BC. HL is given a \$0005 which is added with the value of 27407 from DE, making HL=27412. This value is placed into the location of the Pointer To The End Of Variable Command Name Table. We have herein increased the value of this pointer by 5. Then HL and DE switch values, DE=27412 and HL=27407.

The instruction at 14255 left a Z flag and the instruction at 14262 does not affect the Z flag at all, so it is still set at 14267. (One must read Z80 language instruction books with caution, they do occasionally contain errors. In one of my three Z80 reference books it says that instructions of the type of that at 14262 do affect the Z and C flags. Two others that I have claim the opposite. It is true in this case that the majority rules). Thus the jump is made. The result of this section of disassembly is that the two pointers to the VCNT are increased by 5, to allow room for the newly proposed entry to the VT, and DE contains a pointer 27412 to the end of VCNT. HL points to the SOVT.

14275:37C3	C1	POP	BC
------------	----	-----	----

14276:37C4	ED 53 E1 3E	LD	(\$3EE1), DE
14280:37C8	D1	POP	DE
14281:37C9	41	LD	B,C
14282:37CA	79	LD	A,C
14283:37CB	FE 03	CP	\$03
14285:37CD	38 02	JR	C,\$37D1
14287:37CF	06 02	LD	B,\$02
14289:37D1	F1	POP	AF
14290:37D2	32 09 3F	LD	(\$3F09),A
14293:37D5	C6 40	ADD	\$40
14295:37D7	3A 09 3F	LD	A,(\$3F09)
14298:37DA	FA DF 37	JP	M,\$37DF

14303:37DE	77	LD	(HL),A
14304:37E0	C6 40	ADD	A,\$40
14306:37E2	79	LD	A,C
14307:37E3	C1	POP	BC
14308:37E4	23	INC	HL
14309:37E5	Z1	LD	(HL),C
14310:37E6	23	INC	HL
14311:37E7	Z0	LD	(HL),B
14312:37E8	23	INC	HL
14313:37E9	06 00	LD	B,\$00
14315:37EB	4F	LD	C,A
14316:37EC	F2 13 38	JP	P,3813
14319:37EF	D5	PUSH	DE
14320:37F0	E5	PUSH	HL
14321:37F1	3C	INC	A
14322:37F2	CD 18 35	CALL	\$3518

BC is loaded from the stack with \$1F03 in instruction 14275, (from the PUSH at 14239), and the pointer to start VCNT is made to be the same as the end of VCNT since the VCNT is initially of zero length. DE is loaded from the stack with \$3F76 which points it to the ASCII of the first character of the first entry in this Table.

A test is made to see if the number of characters to be copied is 3 or more, and finding that there are three, B is loaded with a 2 and AF is loaded from the stack with a \$88=136, the variable type. This is placed into the "Temporary Storage Area" (provided for this type of purpose by the authors of Basic), while the A register is used for something else.

The value in A is added to \$40=64, netting a result of 200=\$C8. The reason for this operation is to determine if bit seven is set, setting the sign flag, (M), and causing the jump at 14298.

A, the variable type, is placed at the address pointed to by HL=27407. This begins the placement of the first Variable in it's new VT location. A is again added with \$40=64, again setting the M flag, (or resetting the P flag, whichever convention you want to use to describe the condition of the Sign flag at this point). C=3, the number of characters, is loaded into A, and BC is again loaded from the stack, this time with a \$1F0C, the Execution Address, from 14221, (PUSHed on from HL, but retrieved in the BC register pair).

HL is incremented to 27408, which address is loaded with the \$0C=12, which is the low byte of the execution address of the command. HL is incremented again and B=\$1F=31, the high byte of the execution address, is loaded into 27409. So now we have the suffix type number, the low byte, and the high byte of the execution address, in that order, stored beginning at 27407, the first three of the five bytes required to make up an entry to the VT. HL is incremented to point to the next address, 27410, and BC is loaded with \$0003, the # of characters, from the original setup routine via 14239.

The JP P instruction fails since 14304 set bit 7 of the A register, and nothing has interfered with the S flag since that point.

DE=\$3F76 and HL=27410 are PUSHed to the stack, and A is incremented to \$04, and a CALL is made to 13592 again, Make First String.

This CALL, as followed before, checks to see if there is sufficient string space and then increases the values stored in the pointer to EO\$S, and pointer to SO\$S by the value in the A register. This was originally began as a 3, indicating the number of characters in the name, but is increased to 4 to accommodate the prefix of the number of characters.

The format of the second table in Basic RAM, the VCNT, is: 1. # of Characters in the name; 2. ASCII of each character. And this is the next table to be formed from the transfer of information from the table we found earlier in the Basic media dump at \$3F75 or 16245. So now these two pointers, EO\$S and SO\$S, have the value of 27417, up from 27413.

14325:37F5	2A E3 3E	LD	HL,(\$3EE3)
14328:37F8	ED 5B E1 3E	LD	DE,(\$3EE1)
14332:37FC	B7	OR	A
14333:37FD	ED 52	SBC	HL,DE
14335:37FF	EB	EX	DE,HL
14336:3800	E1	POP	HL
14337:3801	Z3	LD	(HL),E
14338:3802	23	INC	HL
14339:3803	72	LD	(HL),D
14340:3804	2A E3 3E	LD	HL,(\$3EE3)
14343:3807	D1	POP	DE
14344:3808	71	LD	(HL),C
14345:3809	23	INC	HL
14346:380A	EB	EX	DE,HL
14347:380B	ED	B0	LDIR
14349:380D	ED 53 E3 3E	LD	(3EE3),DE
14353:3811	18 0F	JR	\$3822

HL and DE are loaded with 27412 and subtracted from one another leaving a zero in HL. Exchanging values, HL=27412, and DE=\$0000. Now HL is loaded from the stack with the 27410 placed there in 14320, and DE=\$0000 is placed at the two addresses, 27410 and 27411. HL is then loaded with the "Pointer To The End Of The Variable Command Table" again, (27412), and C=\$03 is placed there. This is the first byte in the VCNT of the new entry, (and in this case, the only entry).

HL is incremented to 27413, and switched with DE which is now \$3F76 from a POP instruction at 14343. Thus DE=27413, the address to which the ASCII at \$3F76,7,8 is to be placed. (The HL=\$3F76). The subsequent LDIR instruction transfers the ASCII from \$3F76,7 and 8; to 27413,4 and 5.

This finishes the 1st entry to the Variable Command Table. In the process DE is incremented up three to DE=27416, and HL up to \$3F79. The pointer to the end of the VCNT Table is updated to 27416, the value of DE. (As has become apparent to all of us by now, the pointers to the end of a table, are actually pointing to one byte beyond the end of that table). A relative jump is made to \$3822.

14370:3822	2A EB 3E	LD	HL,(\$3EEB)
14373:3825	23	INC	HL
14374:3826	22 EB 3E	LD	(3EEB),HL
14377:3829	2B	DEC	HL
14378:382A	3E 8C	LD	A,\$8C
14380:382C	B4	OR	H
14381:382D	67	LD	H,A
14382:382D	C9	RET	

The Number of Variables is increased to 1, indicating that the variables in the VCNT are in fact considered by Basic as variables. HL is restored to the value of the previous Number Of Variables, (or zero), and then \$8C is added to the top byte of the variable number. (Note that while the number of variables is 1, the variable number is \$8C00, signifying that the variable number works from a base value of zero, just as bit numbers, and memory locations do). The reason for the addition to the upper byte of the variable number of \$8C is not obvious at this juncture, the addition of this value is mentioned in Vol. II of Hinkle's work, page 5.

The RETURN is made to the CALLing Setup Routine at 16520.

16520:4088	C1	POP	BC
16521:4089	D1	POP	DE
16522:408A	13	INC	DE
16523:408B	13	INC	DE
16524:408C	10 32	DJNZ	B,\$4070

At this point the BC and DE registers are loaded from the stack, (see 16516 and 16509 respectively), with \$1F03 and \$3F7A. DE is then incremented twice. Try to become familiar enough with this disassembly above, that we won't have to spend much time on it the second time, so that we can concentrate on the new subroutines to be employed when the number of variables is greater than 1.

We will also show the difference made in the loop when the variable type \$A8 is encountered, as will be done with "CHR", "LEFT", etc., where a \$ symbol is required as a part of the authorized syntax of the command. And we will discuss the transfer of "JK" and "JL", the last two "variables" in the media dump of the VCNT. We will find that they are not transferred to the RAM VCNT at all, but are located in the VT, and perhaps more. I can't tell all now. There would be no curiosity about the upcoming items.

We will also discover a very handy routine which we can use for some simple programming purposes, one that we can CALL after a very short ML program of our own sets up two registers. With this routine we can have part of the existing Basic Program do some searching for us. Ah, but here I go again giving away secrets. An analysis of the routines may show how they might also be used to perform tasks for us.

The first, the Setup routine is obvious enough but perhaps not available inasmuch as it is written over as soon as the user presses a key on the keyboard.

The second, the part of "Make Variable", would be very limited in its use, inasmuch as it is for the specific purpose of making variables and updating the appropriate tables. It is used automatically by the user when he defines a variable within a Basic program. It would require some modification from the user's own setup routine, changing the locations of tables like \$3EE1 etc., to those of his own choosing. But if the programmer had a good use for these routines, it might well be worth the effort. Of course he would have to restore the routines at the conclusion of his ML program, so that when he returned to Basic, Basic would find it unaltered.

The third routine, the "Look For Variable" may be of some use, again by changing the addresses in instructions like 14083 via the user's setup program. But later disassembly of the path taken where the jump condition at 14153 is satisfied, would be necessary to determine its usefulness. As it was done herein, there were no variables, and so the path was unique to the conditions of the Setup routine. (This will not be true with the second entry, however, as we shall soon see).

The fourth routine, the "Make First String" routine, is similarly loaded with the use of normally unwanted constants, and would not be very useable as it is.

The fifth routine, the Check String Space, has the same problem, and yet if one copied this routine to test the limits of some parameters in his program, he would be sure of a proven routine.

One can study the routines, and see if in his own ML program he might first replace the reference locations of the parenthesized addresses with those of his own need, and use the routines quite satisfactorily, returning the addresses to the original values prior to returning to Basic. Remember that after CALLing an ML routine from Basic, Basic will not need any of its own routines until the ML instruction in your ML routine is a RETURN to Basic. Thus one might change instructions, and or addresses in an established Basic routine, and use the routine, and then prior to RETURNing to Basic, restore what he had originally changed. Good Luck in your future programming endeavors and make it a point to check out Roadrunner Publication's manuals.



# EXPLORING SmartBASIC

## Part III: Input Commands

by Guy Cousineau

**EDITOR'S NOTE:** *The following article is the third in a series of SmartBASIC programming tutorials which originally appeared in the ADAM User Friendly Group Newsletter. The articles were provided by Ron Mitchell, the president of AUFUG, through the ADAM News Network.*

There are various ways of getting values into your programs: keyboard, joystick, peeking around, or using the program itself. This article will cover using the keyboard and program... the others will follow later.

**INPUT** can be used to let the user give a string (word) or a numerical value to the program. It also has the option of printing a message which will be referred to as a prompt:

```
INPUT x
INPUT y$, z$
INPUT "name: ";n$
```

Above are all valid versions of INPUT commands. The first requests a numerical value, the second asks for 2 strings, and the third prints a prompt then asks for a string. Note that BASIC will not allow you to respond with a string at the first prompt and will give you a nasty re-enter message if you do. Note also that there is a space after the colon in the prompt in the third example. Remember that SmartBASIC will not automatically add a space after a string and you should provide adequate spacing yourself. Note also that when entering a string it is not necessary to place the string in quotes unless the string includes a comma (.). A quote character (") can never be part of a string entered at the keyboard.

**GET** is handy for MENU-TYPE applications when you want to get only one character without having to also hit the RETURN key:

```
10 PRINT "Continue or Quit (c or q)"
20 GET k$
30 IF k$="q" THEN END
40 IF k$<>"c" GOTO 10
50 more program...
```

In the example above we expect the user to respond with either "q" or "c". Line 40 goes back and asks the question again if the answer was unacceptable. Note that contrary to INPUT, GET cannot be preceded with a prompt; it is supplied via a regular PRINT statement. GET can handle any key press including the SmartKEYs, SPECIAL FUNCTION KEYS and even CONTROL-C without affecting program execution. A program that uses GET's instead of INPUT's allows more flexibility and cannot be CRASHED by incorrect input.

If you consult a table of keyboard codes, you can make use of the values returned by the MOVE, STORE, PRINT, CLEAR, etc., keys to handle menu options. The following example is not the most effective use of this approach but illustrates the concept:

```
100 GET q$
110 q=ASC(q$)
120 a=0
130 IF q=146 THEN a=1: REM MOVE/COPY
140 IF q=147 THEN a=2: REM STORE/GET
150 IF q=148 THEN a=3: REM INSERT
160 IF q=149 THEN a=4: REM PRINT
170 IF q=150 THEN a=5: REM CLEAR
180 IF q=151 THEN a=6: REM DELETE
190 ON q GOSUB 1100,1200,1300,1400,1500,1600
200 GOTO 100
```

The routine above sets values of a based on the 6 function keys on the

right of the keyboard. An ON GOSUB instruction is used to execute the appropriate routines. Note that subtracting 145 from the value of "q" would have worked but you might have also wished to evaluate the values for the UNDO, HOME, etc., keys which do not have consecutive values.

When using GET to input numbers only, it is interesting to note that the GET function accepts NUMBER-PUNCTUATION such as ". + - e E". This can lead to interesting gymnastics on the programmers part... try writing a routine that will use GETs to correctly receive a number such as +3.67E-12 or 365.42.

**DATA** is a handy way of providing reference information to your program. DATA statements can be composed of numbers or strings:

```
1000 DATA 1,2,3,4,5
1010 DATA Guy Cousineau,"Hi, My name is Guy",Ottawa,Ontario
```

The first example contains 5 numbers; quickly now, how many string elements in the second line? The correct answer is four. The space between Guy and Cousineau will be included in one string containing my full name. The second string is enclosed in quotes since it contains a comma. Ottawa and Ontario form the third and fourth strings respectively.

**READ** is used to enter DATA statements in programs. Using the example above, my program might start with:

```
10 READ a,b,c,d,e
20 READ me$
30 READ hello$
40 READ city$
50 READ province$
```

Note that READ will start at the first DATA statement in sequence and continue forward until there are no more. You may have encountered the OUT OF DATA message; it simply means that you have tried to READ more DATA than there is in the program. Note also that it is very important to read the data in the correct order and not to try to READ a string data into a numerical variable or you will get another nasty message. Note that DATA statements can be located anywhere in the program and need not be sequential. SmartBASIC will handle finding them, even if they are not on a line by themselves.

**CLEAR** does the same thing as RUN; it resets all variables to zero and resets DATA pointers. This is a trick used by some programmers to prevent you from analyzing a program after it ENDS. It can be handy during a program restart operation. For example, in a game situation, rather than use tedious assignments like:

```
1000 a=0;b=0;c=0;d=0
1010 q=1:r=2
1020 GOTO 100
```

You can replace line 1000 with CLEAR which resets all variables to zero and then reset only the ones that should not be 0.

**RESTORE** affects only DATA statements. The command resets the pointer to the current data element back to the beginning of the program. There are enhancements that lets one pick the RESTORE line number (as other BASICs allow) but this routine forces the RESTORE command to always be followed by a valid line number... better patch will be coming one of these days.

**IN** lets one branch program control to another routine which handles all

keyboard requested input. These are very complicated and require a thorough knowledge of the BASIC operating system. This is not a command to mess around with. BASIC is set up to have all these routines pointing to the regular routine so using an IN command has no effect at all. If you are curious, the syntax is:

IN#1...IN#8

FP and INT were added to be APPLE compatible. Some BASICs allow you to specify if your program is using FLOATING POINT or INTEGERS for input. Since BASIC has implemented this function differently, all these commands do is change the system prompt from ']' to '>' and vice-versa. Integers will be the subject of another discussion.

## ROUTINE ADDRESSES

⇒ INPUT executes at 8957 (22FDH). It starts by looking for a prompt message. If there is none, the character at location 9003 is printed; you can change this to anything you want (happy face, asterisk, etc.). When a string is entered, it is checked for CONTROL-C and the program aborts accordingly. You can defeat this feature by POKEing 3 zeroes in 9026, 9027 and 9028. The INPUT STRING subroutine ignores leading spaces unless they are in quotes. To defeat this feature, POKE a 255 into location 9236.

⇒ GET executes at 9378 (24A2H). It requests one character from the keyboard (waits for it) and returns the appropriate string or number.

⇒ DATA executes at 8419 (20E3H). It is a very simple routine that just ignores the rest of the statement (not line). The interesting routine is the one that PARSES a DATA line when it is entered. That one starts a 15184 (3DC6H) and is the culprit of the DATA / REM bump bug. Every time you load in a program that has a DATA or REM statement in it, an extra space is added. This can eventually push your DATA off the end of the line... oops. Fix this routine with the following:

POKE 15830,8: POKE 15831,55: POKE 15832,19

⇒ READ executes at 9499 (251BH). It starts by verifying that there is DATA left. It then executes then appropriate subroutine based on string or numerical input. To accept leading spaces in strings that are not in quotes, poke a 255 in location 9618.

⇒ CLEAR executes at 8141 (1FCDH). It starts by CALLing RESTORE and clears all pointers to variables. The values are still in RAM somewhere but BASIC can't find them any more. If you want to implement a CLEAR without RESTORE, simply POKE 3 zeroes in 8141, 8142, and 8143.

⇒ RESTORE executes at 9482 (250AH). It resets the DATA pointers to the start of the program.

⇒ IN executes at 12084 (2F34H). It skips over the '#' in the command and extracts the next digit aborting if greater than 8. It then reads in the corresponding vector from a table at 16229 and stores the current IN vector at 16197.

⇒ FP executes, in a roundabout way at 20419 (4FC3H). The system prompt for FP resides at address 20420 and can be any ASCII character.

⇒ INT also executes in a roundabout way at address 20416 (4FC0H) and it's prompt character is at 20417. Both routines store the prompt into location 1146. So you can change the prompt by POKEing a value to 1146 and restore it with a FP command.

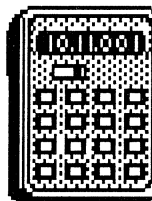
So much for INPUT for the moment. Next time, OUTPUT commands.

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# P.D. WORKSHOP

## REVIEWS & UPDATES

by Jim Notini



### N.I.A.D. ANDV VOL. #14

⇒ GRAPH - An attempt to simulate an x, y graph. Three examples: 6 months sales, 6 years sales, 6 years profit and loss with average.

⇒ MATH QUIZ - Addition, subtraction and multiplication. You can leave it as is and see 10 questions at a time. You can set up a 2 row

window and see titles and 1 question at a time. Scores automatically.

⇒ SHIP FUEL - Find the optimum speed upriver against the current given the cost of fuel and speed of current.

⇒ TRAIN TRAVEL - Train carries 50 passengers at \$50.00 each. For each new passenger, cost decreases \$ .50 for everybody. Find the maximum number of profitable passengers.

⇒ CAPITALS QUIZ - Text Quiz using 1 for yes and -1 for no. Automatic scoring. Ten questions are visible with option to reduce to 1.

⇒ MINIMAREA - Find the minimum area of four sides and bottom of box knowing the volume.

⇒ STEEL MILL - A steel mill produces high grade steel and low grade steel daily. High grade sells for twice the price of low grade. Find optimum daily production given cost relationship formulas.

⇒ RADIOMFRa - Revised sale price per unit and cost of production formulas.

⇒ RADIOMFRb - Same as above but with new formulas.

⇒ TUNNEL - Dig a tunnel horizontally from point A to C through earth at \$5 per foot and then diagonally to point B through rock at \$13 per foot. Find minimum cost.

### N.I.A.D. ANDV VOL. #15

⇒ IFSIGN tutor - Formulas and explanations of the IFSIGN cash flow and loan determination statement.

⇒ ENVELOPEXAMPmp - Weekly schedule for a year to find out the amount of cash needed per week.

⇒ CONSOLIDATE - Consolidated profits of 3 businesses that have holdings in each other. Some of the fun that accountants have with intercompany holdings and eliminations. This is a complex situation that computers have made a lot easier.

⇒ IFSIGN - A pro forma statement showing the projected purchases, sales, expenses, borrowings, collections, balances and profits. Figures are shown for 12 months.

⇒ ENVELOPEXAM 2W - A detailed schedule for 1991 for determining the weekly amount needed for the cash budget if the pay period is a two week period.

⇒ ENVELOPEXAM SM - Schedule for 1991 to determine the amount each week for cash house keeping when pay is semi-monthly.

⇒ ENVELOPES - General history and description of envelope method of weekly cash household budgeting.

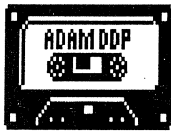
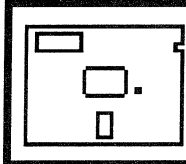
⇒ DUBLGRAPH - Shows symbols for actual and budgeted sales monthly. Actual sales use BARGRAPH and print automatically on screen. Budgeted sales are entered manually using (=). Prints out on regular sized paper. Bargraph prints out as a star (\*).

⇒ TOYS - Company makes toy boats and toy cars using two automatic machines. Machine 1 can be used 15 hours maximum and machine 2 can be used 20 hours maximum. Each toy uses different number of hours on each machine. Find maximum profit and production.

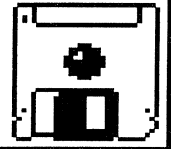
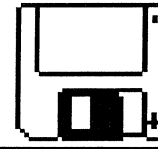
⇒ CHAIRS - Same method as above used to solve the production of chairs and tables where a manufacturer uses a machine and skilled labor.

HAPPY NEW YEAR!





# PRODUCT REVIEWS



**TYPE**  
PRODUCTIVITY

**RELEASED**  
NOVEMBER 1991

## ADAM MAP: U.S. ATLAS

By Harrison Productivity

Reviewed by Jim Notini

**PRICE**  
\$17.95

**MEDIA**  
DISK OR DDP

ADAM MAP: U.S. ATLAS by Harrison Productivity is the newest release by Carl Harrison and is written entirely in fast Z-80 Assembly Language using SmartKEY displays. This is a U.S. ATLAS program with printout functions of all the states showing major highways and cities and is intended to be educational software for students but will also serve for those frequent travelers amongst us. All states printout in two different sizes: the first is a small scale image of the state with only major cities marked and the second is a half page representation of the state again containing the major cities and also all major highways with route numbers.

The unique capability included in this program is the three different printout options which are available for the user. Method one is Epson compatible "ESC K" which is a single density mode. Method 2 is Epson compatible "ESC L" which is a double density mode which makes the graphics print out much darker than "ESC K". These first two methods can be used on 9-pin and or 24-pin Epson compatible printers (the 24-pin Epson printers use only 8 of their 24 pins in these modes). Method 3 is Epson compatible "ESC \*" which is the first 24-pin triple density commercial printout routine for the ADAM Computer which make the printout look as if it came for a Laser Printer.

To begin, you will want to printout the brief instruction file which is contained in a SmartWRITER format. This will explain all that is necessary to run ADAM MAP: U.S. ATLAS (it is a very simple program to use and should not require any major studying of the instructions). To boot the ADAM MAP, pull the <COMPUTER RESET> switch after inserting the disk or data pack into it's proper drive. Then two nicely rendered titles screens will be displayed one after the other while the main program loads into the memory expander. Once completely loaded, a very impressive Main Menu will be displayed on screen which lists all 50 states in alphabetical order in three columns and a highlighter will come up which is moved around the screen using the cursor keys. To make a selection, press the <RETURN> key and the appropriate state which is highlighted will load up. Provided on the ADAM MAP: U.S. ATLAS media are the states of Illinois, Indiana, Michigan and Wisconsin. If you choose any of the other states listed you are asked to insert a data disk / ddp which contains the state (more on this matter later).

Once the state file is loaded a reduced rendition of the state will be displayed on the screen with all major cities and their names marked and a SmartKEY Menu will be displayed:

SmartKEY III Line Spacing switches to another SmartKEY Menu that allows the user to change the line spacing of the printout anywhere from 0 - 30 by using the appropriate SmartKEY to increment or decrement the line spacing (SK IV - Up, SK V - Down and SK VI - Done). This option comes in handy for those of you who may

experience some compatibility problems, such as blank lines or no paper feed when printing out the states on your dot matrix printer.

SmartKEY VI Print Options switches to a new SmartKEY Menu with options to either change the Image Position when printed on paper (SK IV - Left, SK V - Center or SK VI - Right) or change the Print Mode (SK IV - ESC \*, SK V - ESC K or SK VI - ESC L which have already been explained). Once the print mode is selected than the <PRINT> key needs to be pressed to start the printing of the reduced rendition of the state. This printout takes less than a minute.

SmartKEY V View State first gives the user the option of which corner (SK III - Top Left, SK IV - Top Right, SK V - Bottom Left or SK VI - Bottom Right) of the state to start in and then it blows up the view of the state so that the full picture now takes up 2 1/2 screens wide by 2 screens high. The new state display contains even more cities (including a star for the capital city) as well as displays of all major highways (state routes, tollways and interstates) along with the shield symbol with number that corresponds to the highway. From here, you may scroll around the state using the cursor keys or choose SmartKEY V Print Options to printout the full blown rendition of the state as you see it now with the highways, towns and capital displayed using one of the three print modes which are available (ESC \*, ESC K or ESC L). This printout takes a couple of minutes to complete depending on the density option chosen.

The reason for only four states being included with ADAM MAP: U.S. ATLAS is that each individual state file is a full 30K in size and due to this the ADAM MAP: U.S. ATLAS program will be sold as the main program and separate ADAM MAP: State Volumes will be made available over the course of the next few months which will each contain 5 more states. Overall, when all the ADAM MAP: State Volumes are completed and compiled with the ADAM MAP: U.S. ATLAS program a grand total of 1 1/2 MEG (or 1,536K) of data will have been assembled by the programmer - easily the largest program ever developed for the ADAM along with PowerPAINT!

Overall, I found ADAM MAP: U.S. ATLAS to be the most outstanding productivity program yet to pass before my eyes this year. The screen displays: the two title screens, the main menu, the SmartKEY menus and the display of the small and large states; are all beautifully rendered and would make you think that Carl was possibly a Coleco programmer in the past. The capability of this program is tremendous for younger children who need to learn about locations of cities or capitals within a state as well as for those frequent travelers who never seem to have a map on hand when they most need it. The only drawback is that all the states do not fit on one media, but at least that way you can be selective about which State Volumes you need. See actual printouts from a 24-pin dot matrix printer on the next page!

### SYSTEM REQUIREMENTS

- MEMORY: BASE ADAM SYSTEM WITH MEMORY EXPANDER
- PRINTER: EPSON COMPATIBLE DOT MATRIX PRINTER
- DRIVES: 1 DISK DRIVE OR 1 DIGITAL DATA DRIVE
- OTHERS: NO OTHER REQUIREMENTS
- OPTIONS: 24-PIN EPSON COMPATIBLE DOT MATRIX PRINTER

### SOFTWARE RATINGS

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

### OVERALL

# A+





**TYPE**  
**GRAPHICS**

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**RELEASED**  
 NOVEMBER 1991

# CHROMANTICS

By Eyezod Graphics

**PRICE**  
 \$15.95

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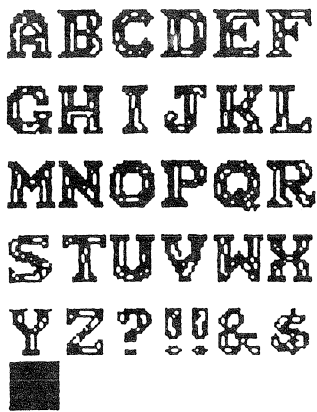
**MEDIA**  
 DISK OR DDP

Reviewed by Jim Notini

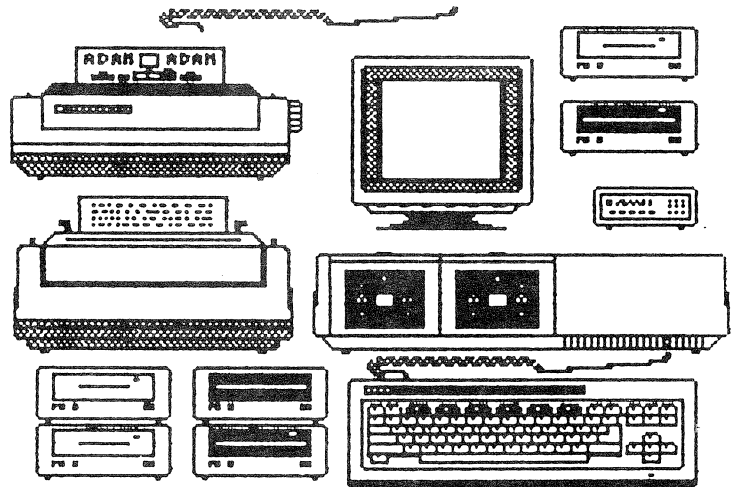
Chromantics is the fourth commercial graphics compilation released by Eyezod Graphics for the ADAM for use with PowerPAINT or any other compatible programs which are capable of loading clip-art, sprite-art or full screen picture files. This is the first Eyezod volume ever to contain graphics drawn by a third party, the majority of the graphics were created by Tony Patterson of Digital Adventures. There are 43 clip files contained on this volume, 42 of which are the "Chrome" letters, numbers and punctuation. The 43rd Clip file is a compatible "Chrome" heart. A total of two sprite files are also included which consist of "Shiny" letters and punctuation (these letters are useful for applications where the Chrome clips would be too large. One of these alphabets has rounded edges (much like the clips), the other has sharper edges with serifs. Also included are 3 full screen pictures, one of which is a beautiful rendition of an ADAM system with numerous hardware items that can easily be manipulated in PowerPAINT. Finally, a full page graphic file is included (80K) which I will keep a secret at this time. You will get a laugh out of this one! Enough with the chitter-chatter and on with the display of some of the terrific graphics provided by Chromantics!



DETROIT - \$



INDY - \$



**SYSTEM REQUIREMENTS**

- MEMORY: BASE ADAM SYSTEM WITH 64K MEMORY EXPANDER
- PRINTER: DOT MATRIX PRINTER FOR PRINTING GRAPHICS
- DRIVES: 1 DISK DRIVE OR 1 DIGITAL DATA DRIVE
- OTHERS: POWERPAINT BY D.E.I. OR COMPATIBLE PROGRAM
- OPTIONS: 256K OR LARGER MEMORY EXPANDER

**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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**ADAM TECHNICAL MANUAL - \$75.00**

This HIGH QUALITY 600+ PAGE MANUAL has been reproduced so good that most people can't tell the difference between Coleco's and our Public Domain manual. Call for more information.

**OS7 COLECOVISION MANUAL - \$50.00**

For anyone interested in writing supergames for the ADAM. This 500+ page Coleco manual will be one of the first steps needed to be taken.

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Complete reconditioned or new ADAM Computer System with Printer, includes all components, accessories and software which was originally sold by Coleco (1 piece Memory Console). 90 day warranty. Price includes Shipping & Handling!!
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New, more reliable power supply transformer for ADAM Disk Drive (5 1/4" or 3 1/2").
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Allows attachment of a Composite Monitor, Monitor ready T.V., or RGB (with composite jacks) to the ADAM Memory Console providing both audio and video. Monitor must have separate RCA Audio and RCA Video input jacks. **NOTE:** Note available for the ADAM Expansion Module #3 Unit that attaches to the ColecoVision.
- **ADAM PRINTER POWER SUPPLY**.....\$49.95  
Standalone power supply which can be used in place of the ADAM Printer (saves wear and tear) to power the ADAM. Great to own if you have a dot matrix printer so that the ADAM Printer can be unhooked and stored for future use.
- **ADAM PRINTER POWER SUPPLY COVER with ON / OFF LIGHT** .....\$14.95  
Protect your ADAM Printer Power Supply from dust, dirt and accidents with this cover and power on / off light. Instructions for hookup included.
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New Coleco Hand Controller with 12-button numeric keypad and two fire-buttons.
- **ADAMLINK 300 BAUD MODEM (DDP)**.....\$49.95  
The original Coleco made modem which plugs into Slot #1 in the Memory Console and allows the user to connect to any BBS or Information Service. Comes with ADAMLINK I and as a special SmartTERM V1.02 (Disk or DDP) while supplies last.
- **ADAMNET CABLE** .....\$2.95  
Flat, 7 foot cable for use with either the ADAM Keyboard or ADAM Disk Drive.
- **COLECOVISION GAME SYSTEM** .....\$49.95  
Complete Coleco Game System with two hand controllers, tv-hookup, power transformer, instructions and Donkey Kong cartridge. Great for a spare unit.
- **EXPANSION MODULE #1 ATARI 2600 ADAPTER** .....\$44.95  
Plugs into the front expansion slot on the ColecoVision or the right side expansion slot on the ADAM Memory Console. Allows for the use of ATARI 2600 compatible cartridges on the Coleco / ADAM systems. No additional hardware is required, just plug-in and then play Atari games on the ColecoVision or ADAM.
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Allows your ADAM to communicate with MIDI compatible synthesizers. It has one MIDI-IN, one MIDI THRU and two MIDI OUT jacks. Included are two MIDI cables for connection to your synthesizers and a ribbon cable for connection to the ADAM side port. Advanced software is included.
- **ROLLER CONTROLLER** .....\$44.95  
Trakball controller with two joystick slots which creates a control center for use on the ColecoVision or ADAM. Can be used as a mouse-type controller in numerous ADAM programs. Is required by a number of ColecoVision game cartridges. Comes with a free SLITHER game cartridge and manuals.
- **SUPER ACTION CONTROLLERS** .....\$49.95  
The ultimate in joysticks for the ColecoVision or ADAM. Package includes two arcade style joysticks each with a 12 button keypad, 4 fire-buttons and speed wheel. Comes with a free SUPER ACTION BASEBALL game cartridge and manuals. A number of other Coleco cartridges require these controllers. Works with all Coleco programs.

## MEMORY EXPANDERS

Plug in memory boards for the Coleco ADAM Computer. All boards plug in to Expansion Slot #3 (the right expansion slot). They are currently available in 64K and 256K sizes. The 256K Memory Expander requires the connection of a Parallel Interface to it in order for ADAM to recognize all of it's memory.

- MICRO INNOVATIONS' 64K MEMORY EXPANDER .....\$29.95
- MICRO INNOVATION'S 256K MEMORY EXPANDER .....\$69.95
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Plug-in board for the Coleco ADAM Computer that provides a Centronics compatible parallel interface for a 9-pin or 24-pin dot matrix or laser printer. Also includes addressor function for 256K or larger Memory Expander boards.
- **MULTI-PURPOSE INTERFACE BOARD 2 (Disk or DDP)** .....\$74.95  
Provides two RS-232 Serial Ports and 1 Parallel Port along with Addressor Connection for 256K or larger Memory Expanders. Includes patch software for dot matrix printer and specially configured telecommunications software for non-standard serial ports along with the most current version of TDOS. Serial & Parallel cables sold separately.
- **PARALLEL PRINTER CABLE** .....\$14.95  
Cable which attaches between Parallel Interface and Dot Matrix Printer for either the M.I.B. 2 or Micro Innovations Parallel Printer Interface.
- **SHIELDED PARALLEL PRINTER CABLE** .....\$24.95  
6 foot shielded cable which provides for extra shielding from interference.
- **RS-232 SERIAL CABLE**.....\$14.95  
6 foot cable which attaches between M.I.B.2 and Serial hardware device.

## DOT MATRIX PRINTERS

- **PANASONIC KX-P1180 DOT MATRIX PRINTER** .....\$189.95  
(with ADAM Printer Interface & Cable (Disk or DDP)) .....\$229.95  
9 pin dot matrix printer with 6K buffer and parallel connector. Draft speed 192 CPS, Near Letter Quality speed 38 CPS. Many built-in print styles and size adjustable. Bottom/Rear paper feed. One ribbon enclosed. Two year limited warranty.
- **PANASONIC KX-P1123 DOT MATRIX PRINTER** .....\$239.95  
(with ADAM Printer Interface & Cable (Disk or DDP)) .....\$279.95  
Identical to KX-P1180i but 24-pin with draft speed 240 CPS and Near Letter Quality 53 CPS., 10K buffer and a Front paper feed. One ribbon. Two year limited warranty.
- **PANASONIC KX-P1124i DOT MATRIX PRINTER**.....\$299.95  
(with ADAM Printer Interface & Cable (Disk or DDP)) .....\$339.95  
Identical to KX-P1123 but 24-pin with 6K buffer. Draft speed 192 CPS and Near Letter Quality 63 CPS and more. One ribbon. Two year limited warranty.

## MONITORS & MODEMS

- **MAGNAVOX 1CM135 13" COLOR RGB MONITOR** .....\$299.95  
13" Color RGB / Composite compatible monitor, green text display option, sharpness control, vertical & horizontal centering controls, comb filter, built-in stand, IBM compatible as a CGA Monitor, capable of 80 column display with 25 lines and 640 horizontal pixel resolution. Requires ADAM Monitor Cable.
- **GOLSTAR 2105G 12" GREEN COMPOSITE MONITOR**.....\$109.95  
12" Green composite / monochrome monitor that offers resolutions up to 640 x 200, with up to 80 columns, 25 lines. Video only, no audio. Requires ADAM Monitor Cable.
- **GOLDSTAR 2105A 12" AMBER COMPOSITE MONITOR**.....\$109.95  
12" Amber composite / monochrome monitor that offers resolutions up to 640 x 200 with up to 80 columns, 25 lines. Video only, no audio. Requires ADAM Monitor Cable.
- **GOLDSTAR GSM-1200 BAUD MODEM**.....\$89.95  
100% Hayes compatible, asynchronous, auto answer, auto dial, call progress monitoring with speaker. Requires Serial Interface and cable.
- **GOLDSTAR GSM-2400 BAUD MODEM**.....\$129.95  
100% Hayes compatible, asynchronous, synchronous, full or half duplex, auto answer auto dial. Requires Serial Interface and cable.

## M.I. ADAMnet DISK DRIVES

Stand-alone floppy disk drives for the ADAM Computer. Plugs into the ADAMnet connector on the Memory Console. Comes with external power transformer and ADAMnet Cable. 100% compatibility with Coleco's ADAMnet Disk Drive and E& Software's Disk Drive upgrades. Contact Micro Innovations for custom configurations.

- 5 1/4" 320K M.I. ADAMnet FLOPPY DISK DRIVE .....\$219.95
- 3 1/2" 720K M.I. ADAMnet FLOPPY DISK DRIVE .....\$269.95
- 3 1/2" 1.44K M.I. ADAMnet FLOPPY DISK DRIVE .....\$324.95

## M.I. HARD DISK DRIVES

Standalone Hard Disk drives for the Coleco ADAM Computer. The 40Mb Powermate version includes a new interface board which mounts in Expansion Slot #2 providing a BOOT PROM, a parallel printer port and a memory expansion addressor port. The ADAMnet version plugs directly into ADAMnet and requires no interface card. A external power supply provides all power to the unit. The LC/40 includes the external hard disk enclosure, the power cube, cable, and all necessary software to run the unit.

- M.I. PowerMATE LC / 40 Hard Disk Drive .....\$CALL
- M.I. ADAMnet LC / 40 Hard Disk Drive .....\$CALL

## N.I.A.D. SERVICES

### ● UPGRADE 5 1/4" 160K SINGLE-SIDED DISK DRIVE TO:

- 5 1/4" 320K DOUBLE-SIDED DISK DRIVE UPGRADE ..... \$89.95
  - 3 1/2" 720K QUAD-SIDED DISK DRIVE UPGRADE ..... \$109.95
- Send in your Coleco 5 1/4" 160K Single-Sided Disk Drive to be upgraded. Don't send the power supply transformer. Repair charge for defective drives. will be assessed (minimum of \$50.00). Send payment to N.I.A.D. and drive to ADAM's House - 1829-1 County Rd. 130 - Pearland, TX 77581 - (800) 999-5040.

### ● DATA PACK CONVERSION to DISK FORMAT ..... \$4.00

Send in your title card from your Coleco data pack to be converted to disk. Titles which can be converted are: Buck Rodgers, Donkey Kong, Donkey Kong Jr., Dragon's Lair, Zaxxon, Recipe Filer, 2010: The Text Adventure, Richard Scarry's Best (specify 320K or 720K disk size), The Best of B.C., SmartLetters & Forms, CP/M 2.2. If you don't see a program listed above that you can't produce a working copy of on disk, call during regular business hours to see if we can do so for you.

### ● SmartFILER UPGRADE to VERSION 27D ..... \$4.00

Send in your SmartFILER Disk or DDP to be upgraded to Version 27D which provides numerous fixes to bugs contained in Coleco's original release.

### ● INFOCOM CONVERSION to ADAM CP/M FORMAT ..... \$4.00

Send in your INFOCOM titles to be converted to an ADAM CP/M format. 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. Most, if not all, Infocom titles are still available in just about any computer store. Does not matter what computer it is for, we can convert it to ADAM format.

## MANUALS & BOOKS

### ● ACCESSING VRAM ..... \$12.95

A detailed explanation and overview of the Video Display Processor and VRAM covering 15 pages which demonstrates how to set up the two most used graphics modes on ADAM in Z-80 code. Numerous SmartBASIC and Z-80 code listings.

### ● BASIC PROGRAMMING TUTORIAL (Disk or DDP) ..... \$14.95

A terrific series of tutorials and program listings which walk the beginner through the many different phases of programming in SmartBASIC by L.C. Austill. A must have for those seriously interested in learning how to program or even brush up on their skills. Plus a great replacement to Coleco's SmartBASIC Manual.

### ● DISASSEMBLY: EOS ..... \$14.95

The complete Operating System is disassembled. All routines are separated by title of function. The EOS routines were principally designed to be used separately as called upon by other programs. This is just a listing of the ADAM's EOS, not a study of it, explanation of it's uses or demos.

### ● DISASSEMBLY: SmartBASIC V1.0 ..... \$24.95

The complete SmartBASIC program is disassembled. All separate routines are listed by title of function. Invaluable for the hacker who wants to follow the disassemblies with a view toward CALLING these subroutines directly or revising them for ones own designs. Listing only, no comments or explanations.

### ● EzREF GUIDE 101 & 102 ..... \$5.95

101 contains approximately 700 Z-80 instructions listed in Numerical sequence. Decimal, hex, op code and operands. Good for disassembling machine code in SmartBASIC. A total of 9 pages in all. 102 contains approximately 700 Z-80 instructions listed in Alphabetical sequence. Decimal, hex, op code and operands. Good for assembling machine code in SmartBASIC. A total of 9 pages in all. Both manuals were compiled by Nibbles & Bits.

### ● EzREF GUIDE 103 ..... \$5.95

A study of ADAM's EOS jump table vectors, routines, setup for CALLs, exit register meanings, plus several assorted tables. A total of 21 information packed pages which were originally printed in the Nibbles & Bits Newsletter.

### ● FROM BASICS TO BASIC ..... \$19.95

A beginners look at computers. The first step in moving from SmartBASIC programming to machine language. Contains detailed overviews of the systems used in the computer and why they are required. When the reader has completed, machine language programming will be possible. Numerous machine code listings.

### ● HACKER'S GUIDE TO ADAM VOL. I ..... \$11.95

Detailed look at the operation of the ADAM hardware and software. Operating system routines are identified and instructions given to control all aspects of the ADAM. Numerous SmartBASIC program listings included.

### ● HACKER'S GUIDE TO ADAM VOL. II ..... \$11.95

Continues from Vol. I plus: Basic overview, zero page, keywords, math routines, basic commands, screen and data / disk drive routines, schematics, etc. A must for the serious SmartBASIC programmer. Numerous SmartBASIC program listings included.

### ○ HACKER'S GUIDE VOL. 1 & 2 PROGRAMS (Disk or DDP) ..... \$5.00

### ● LEARNING TO DRAW WITH ADAM (Z-80) (Disk or DDP) ..... \$24.95

Deals with graphics in general and teaches one how to address the video screen via the Z-80 microprocessor in all four standard modes of the ADAM Video Display Processor (TI-9928). The reader will finish this 161 page book with a vast understanding of the VDP through considerable drilling exercises and through the included SmartBASIC demo programs and listings.

### ● LEARNING TO READ WITH ADAM (Z-80) ..... \$24.95

A discussion of machine language instructions, some specifically, and a great many generally, as the author develops the disassemblies of all that transpires after the reset button is activated. Promotes direct use of routines in ADAM's EOS.

### ● LEARNING TO WRITE WITH ADAM (Z-80) (Disk or DDP) ..... \$24.95

Assumes the reader has a knowledge of Z-80. Discusses write to media operations, memory mapped ports vs. standard IN/OUT ports, device control blocks, creation of new routines to replace EOS write-block is created, mass storage, Master 6081 processor and much more. Comes with outstanding SmartBASIC demo programs.

### ● MacADAM MANUAL ..... \$19.95

An enlightening 72 page manual that aids the user of the public domain title "MacADAM" with simple step-by-step methods of programming macros. Numerous assembly language routines listed.

### ○ MacADAM DEMO FILES (Disk or DDP) ..... \$5.00

● N.I.A.D. PRODUCT REVIEW BOOK ..... \$19.95  
Contains detailed reviews of over 100 ADAM products previously reviewed in the N.I.A.D. Newsletter through 1987. Save money by knowing about the products you are thinking about purchasing.

### ● N.I.A.D. PUBLIC DOMAIN REVIEW BOOK ..... \$5.00

Booklet contains descriptions of all programs in the SmartBASIC (Vol. 1-33), SmartBASIC Utilities (Vol. 1-2) and SmartLOGO (Vol. 1-5) N.I.A.D. Public Domain libraries.

### ● SOFTWARE REVIEW MANUAL ..... \$19.95

A huge collection of product reviews covering ADAM hardware, software, manuals, books and services which have been compiled by ADAM's House from reviews printed in the ADAM International Media Newsletter over the last 6 years. This is the perfect companion book for those who need a reference of literature describing different ADAM products.

### ● TDOS OWNER'S MANUAL ..... \$2.00

A 47 page manual for owners of the CP/M replacement system TDOS which is available in the Public Domain. Covers all necessary topics on how to use TDOS and make use of it's many enhancements.

### ● TEMPLE OF APSHAI MANUAL ..... \$2.00

A 32 page owner's manual for the Public Domain title Temple of Apschai by Epyx. This manual also includes maps for Levels 1, 2 and 3 along with all ADAM specific control listings. Without it, the game is almost impossible to play.

### ● THE ADAM SURVIVAL GUIDE ..... \$19.95

This 233 page manual is what belongs in the hands of every ADAM owner. Not only does it contain listings of software, hardware and supplies which are available for the ADAM, but it also contains lengthy listing of ADAM mail order firms from which to get these products. Others areas of ADAM usage which are covered in detail are listings of ADAM Users Groups and Newsletter publications, introductions to such uses as: SmartBASIC, CP/M 2.2, TDOS, Graphics Design with PowerPAINT, etc. And for those who are new to the ADAM there are sections devoted to what has transpired in the past dating all the way back to the initial production of the ADAM which was written by a former Coleco employee!

### ● THE BEST OF ELECTRONIC ARTS MANUAL ..... \$2.00

The original 41 page owner's manual from Coleco for The Pinball Construction Set and Hard Hat Mack Supergame pack which was released into the Public Domain. Without this manual, using P.C.S. will be very difficult and tedious.

## MISC. PRODUCTS

### ● 20# PERFORATED COMPUTER PAPER - 1000 COUNT BOX ..... \$14.95

### ● 3 1/2" DISK DRIVE HEAD CLEANING KIT ..... \$5.95

### ● 3 1/2" DISK STORAGE CASE (HOLDS 80 DISKS) ..... \$14.95

### ● 5 1/4" DISK DRIVE HEAD CLEANING KIT ..... \$5.95

### ● 5 1/4" DISK STORAGE CASE (HOLDS 70 DISKS) ..... \$12.95

### ● ADAM PRINTER RIBBON - BLACK ONLY ..... \$5.95

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### ● ADAM DUST COVER: 5 1/4" OR 3 1/2" COLECO DISK DRIVE ..... \$8.95

### ● CURTIS UNIVERSAL PRINTER STAND WITH PAPER TRAY ..... \$24.95

### ● PANASONIC KX-P110i RIBBON for KX-P1080 / 1091 ..... \$9.95

### ● PANASONIC KX-P115i RIBBON for KX-P1180 / 1190 ..... \$12.95

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### ● 256K COLECO ADAM DIGITAL DATA PACK ..... \$2.00

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### ● 10 256K RIGHT DIRECTORY ADAM DIGITAL DATA PACKS ..... \$9.00

### ● 50 5 1/4" DS/DD GENERIC DISKS with SLEEVES, TABS ..... \$16.95

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- SMARTBASIC BNDV # 1 - 38:** 36 different volumes containing assorted SmartBASIC entertainment, application, graphics, patch, utilities and other misc. programs. Most volumes are auto-booting and contain SmartWRITER documentation.
- SMARTBASIC UTILITIES UNDY # 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 SmartWRITER documentation.
- SMARTLOGO UNDY # 1 - 5:** 5 different volumes containing SmartLOGO entertainment, application, graphics, utilities, patches and other misc. programs. Volumes require the user boot SmartLOGO first, contain SmartWRITER documentation.
- ADAMCALC ANDV # 1 - 34:** 34 different volumes containing ADAMCALC spreadsheet formulas, tutorials and demonstrations. All volumes require the user to boot ADAMCALC first and contain SmartWRITER or ADAMCALC documentation file(s).
- CP/M 2.2 CNDV # 1 - 59:** 59 different volumes containing CP/M 2.2 utilities, games, interpreters, patches, compilers, word processors and other misc. programs. Volumes require the user boot CP/M 2.2 first, most programs contain documentation.
- DPD SIGNS UNDY # 1 - 2:** 2 different volumes containing SignsOP/NewsMAKER graphic files for use with these programs by Strategic Software. Volumes require the user boot SignsOP/NewsMAKER first and contain SmartWRITER documentation.
- PINBALL GAMES PNDV # 1 - 7:** 7 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 SmartWRITER documentation.
- VIDEOTUNES SONGS UNDY # 1 - 3:** 3 different volumes containing many assorted song files each that are for use with Videotunes by FutureVision. Each volume requires the user to boot Videotunes, then load the song file.
- MIDI SONGS MNDV # 1 - 9:** 9 different volumes containing many assorted song files each that are for use with Mini-Recorder by Bonafide Systems for the MIDI-MITE.
- SOLO-ADVENTURE PACK VOL. # 2 - 3:** 2 different volumes of Solo Adventures for use with Mage Quest by Reedy Software. Each volume requires the user to boot Mage Quest first and contain SmartWRITER documentation.
- SUPER FRONT LINE DEMO:** A Coleco In-House demo of the never completed supergame version of the ColecoVision cartridge Front Line. Program is auto-running.
- MIAD BACKISSUE INDEX:** SmartFLER database detailing the contents of past MIAD Newsletters through 1987. Requires that the user boot SmartFLER first.
- CUKAS MINI-REVIEWS VOL. #1-2:** 2 different SmartFLER databases with mini-reviews of hundreds of software and hardware products. Requires that the user boot SmartFLER first and then follow the included instruction sheet on how to access.
- ADAM SUPPORT DIRECTORY:** SmartFLER database containing names, addresses, etc. of ADAM support firms and user groups by Hector Sanchez. Requires the user boot SmartFLER and then follow the SmartFLER instruction manual.
- FLASH 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 SmartWRITER documentation.
- COLECO PRESENTS: SOFTWARE:** Coleco self-booting database program containing lists of planned Coleco software and cartridges for the ADAM and ColecoVision, DDP ONLY.
- MIAD, 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.

GRAPHICS VOLUMES

- RLE PICS VOL. # 1 - 4:** 4 different volumes of RLE picture files which can be viewed in SmartBASIC V1.0 with the included CBpicFAST program or in PowerPAINT. Also contains SmartWRITER documentation.
- CREATED 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.
- DN & B PIX VOL. # 1 - 28:** 28 different volumes of 13 SmartPAINT format picture files to be viewed / edited in PowerPAINT, ShowOFF!, etc.
- PAINTMATES VOL. # 1 - 13:** 13 different volumes of clip-art, sprite and font files for use with PowerPAINT, SpritePOWER and CLIPPER by Digital Express, The Print Works or The Label Works by Walters Software Co. and other assorted programs.
- PAINTFORMS VOL. # 1 - 4:** 4 different volumes of assorted templates, labels front files and miscellaneous graphic files for use with PowerPAINT by Digital Express.
- G.G.P. PIX VOL. # 1 - 3:** 3 different volumes of picture files for use with the Coleco Graphics Processor. All pictures are taken from Coleco / ADAM programs, and carts through the use of the cartridge version of The Coleco Graphics Processor.

ENTERTAINMENT VOLUMES

- SUPER 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. **PINBALL CON. SET / HARD HAT MACK** (Best of Electronic Arts): Coleco supergame pack contains two great games in one package. New bug free version w/ 2 demo pinball games and an instruction sheet. **Add \$2.00 for 40 page manual.**

**SUPER SUB-HOC:** Arcade supergame pack with great graphics and a Hall of Fame option as well as an instruction sheet.

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

**JEOPARDY:** 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.

**CARBAGE PATCH KIDS: ADV. IN THE PARK:** Enhanced version of the popular ColecoVision cartridge of the same name, but with better graphics and added obstacles to be avoided by the game(s).

**TEMPLE OF ARSHAI Revision 2:** Ezyx 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.

**ZYKES ON YOU / MATH WIZ:** Carts which were developed by Fox Games & Sierra. Play the role of a rooster in helping the chicken collect her eggs and a tremendous math skills arcade builder for ages 4-up. Comes with instruction sheet.

**CA-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.

**D5 SREEN DONKEY KING JR.:** 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.

**CHESS 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, **Knights Tour**, and documentation in program.

**SUPER 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?

**THE BEST OF B.C.:** A two supergame pack with B.C.'S QUEST FOR TIRES and B.C. II: GUNGUIS REVENGE developed by Coleco of Canada. Help Thor past obstacles to find Cuck and to find the Meaning of Life.

**MOUJAG PHRASE PAK:** An additional 300 phrases for use with Phrase Craze by Reedy Software. Compiled by George Drank. Contains SmartWRITER documentation.

**THE 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 SmartWRITER documentation.

**CLASSIC UNRELEASED CARTS:** A collection of 8 cartridges: Fall Guy, Video Hustler, M.A.S.H., Super Cobra, Memory Manor, Word Feud, Antillye Duel and Tomcat the Barbarian which were never released or wouldn't work on the ADAM in their cartridge form. Contains SmartWRITER documentation.

UTILITY VOLUMES

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

**SPEED 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 us instead of ddp and then copying over to ddp.

**ADAM 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 Adem Diagnostic and an instruction sheet.

**MACADAMS:** 280 / EOS Assembler written in machine code for the intermediate to advanced machine code programmer. Contains manual in SmartWRITER format.

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

**COLECO 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.

**SHAPEMAKER:** Great SmartBASIC V1.0 utilities for creating shapes and placing text on the HGR or HGR2 screen. Shapes created can be used in PowerPAINT. Contains SmartWRITER documentation.

**MEDIA MATE:** Three tremendous utility programs for editing data packs and disks in SmartBASIC V1.0. Contains Informative SmartWRITER documentation.

**QUICKCOPY 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 SmartWRITER format.

**COLECO IN-HOUSE PROGRAMS:** Six separate programs: three diagnostic

programs along with the Tunnel'n'Trolls, ADAM and Music demos.

**MIDI DRIVERS & DEMOS:** A collection of MIDI SmartBASIC V1.0 utilities programs along with technical information of the MIDI file setup. Contains SmartWRITER documentation.

**SOFTWARE 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 program work fine. Contains SmartWRITER documentation.

**R.I.L.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 SmartWRITER documentation.

PRODUCTIVITY VOLUMES

**ADAMLINK 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 II manual.

**MARKET MONITOR:** Coleco of Canada management system program for the personal investor. Not totally bug free. Contains SmartWRITER documentation.

**TAX PLANNER:** Coleco of Canada, business software which will create a clearer and more complete picture of your tax situation. Contains SmartWRITER docs.

**VISH-SPRITE V6.0:** Advanced sprite development package with many powerful built-in features. This is the crappleware version of the copyrighted version 6.5 and is made available for demo purposes and a chance to test out before buying V6.5.

**DAVINCI:** Great graphic design utility from France using a point-and-click method of operation along with a SmartBASIC V1.0 utility to convert DAVINCI files into GRAPHPAINTER files. Contains SmartWRITER documentation. DISK ONLY.

**DX-10 CONTROL SOFTWARE:** Home appliance control / security system software. Requires a Serial Interface, Serial Cable and the X-10 Hardware. Contains SmartWRITER documentation.

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

**DTDS V4.5B:** Super enhanced version of CP/M 2.2 which operates much like MS-DOS. Adds many new features. On 1 - Data Pack \$6.00 and \$2.00 for 30 page manual. On 2 - 5 1/4" Disks \$8.00 with manual in Doc file.

**SMARTBASIC 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.

**SMARTBASIC V2.0:** Coleco's extended / enhanced version of SmartBASIC V1.0 (48K versus 28K) with memory expander access, but is not fully compatible with V1.0. Contains SmartWRITER documentation.

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

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

**SMARTBASIC V2.0 40 COLUMN:** 40 column, text version of SmartBASIC V2.0 which works in STDMEM or EXTMEM modes. No longer do you have to bother with a non-standard 31 column screen. Contains SmartWRITER documentation.

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

**ADAM FORTH V1.1:** ADAM compatible version of this popular programming language. Comes with a number of programs on media and instruction sheet.

**COLECO PERSONAL CP/M:** Coleco's In-House version which evolved into CP/M 2.2. Made available for collectors and as an easy way to test the ADAM components. Comes with instruction sheet.

**TRACKER:** 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 SmartWRITER documentation.

**DSF-1 CUSTOM PRINTER SOFTWARE:** Specialized software patches for use in SmartWRITER. Used to imbed software commands. Available for the following printers: Parasosic 1080 / 91 / 92 / 93, Star G10 / G20, Epson FX / RX, Blue Chip, Olympia R80, Brother 2024, Smith Corona Fastax 80 / D2000, OK 182 / 192.

**BAEBAEL STATISTICS:** Comprehensive statistical compiler for plotting, betting and team statistics with full file of edit features, save option, print features for ADAM Printer or dot matrix by Wizard's List. Comprehensive instructions in SmartWRITER.

**PAINT PALETTE:** For use with PowerPAINT. Will provide you with over 200 different shades of color, where normally the total number of colors accessible is 18. Contains SmartWRITER documentation.

**SMARTBASIC 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 SmartWRITER documentation.

**DAWNGONE DAWGS:** 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 SmartWRITER documentation.





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