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MULTI-FUNCTION USER GROUP
MONTHLY NEWSLETTER-PUBLIC DOMAIN LIBRARY
DISCOUNT BUYING SERVICE FOR HDW & SFTW

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Greetings ! Hope you are enjoying fall - it's hard to believe that Thanksgiving is just around the corner. We will conclude our study of Ephesians this month and begin with the book of Romans in the November issue.

¹⁸ Pray at all times in the Spirit, with all prayer and supplication. To that end keep alert with all perseverance, making supplication for all the saints, ¹⁹ and also for me, that utterance may be given me in opening my mouth boldly to proclaim the mystery of the gospel, ²⁰ for which I am an ambassador in chains; that I may declare it boldly, as I ought to speak.

Prayer is a much discussed subject and has various definitions. Paul says to "pray at all times", which at first blush seems an impossible task if we think praying is a "formal" time when we get on our knees, fold our hands, close our eyes and whisper. I would like to propose that praying is communicating with God, which can take many forms. You see, to maintain a close relationship with someone you must be in frequent communication with them. If you don't then the relationship deteriorates accordingly. Our God is NOT an impersonal God who is aloof from us and sits on a throne in heaven and wants nothing to do with us. He is our Father and he wants more than anything to have a close relationship with us. That is why Jesus was sent to us as a man, to re-establish the relationship that was lost as a result of man's sin. God is the perfect Father who wants to protect his children, to love us, to give us blessings, to guide us out of trouble. It is hard to adequately express the enormity of Gods love for us his children. He has given us every blessing imaginable, all we have to do is take them. He sent is precious and only Son Jesus to suffer and die for each of us so that our sins could be forgiven - wow, it is almost too good to be true, but it is true with God. God has "communicated" to us by his holy Bible - this is where his words to us regarding his love, blessings, forgiveness, etc. are written for everyone. God tells us to read his words to us because they contain such precious and important information - eternal life and blessings beyond comprehension. The Bible is God's major

communication vehicle to us. Now, as stated above we need to have two way communication with someone to maintain a relationship. This is where prayer comes in - prayer is simply man's vehicle for communicating with God. God is a spirit so we can't communicate exactly as we would to another person, although it isn't much different. If I want to ask my dad to help me with something, I call him up on the phone. To ask my heavenly father, I "call Him" via my spirit and ask him - see, it isn't any great mystery. You can sit, stand, speak out loud or to yourself. Direct your conversation to God as a child does to his father and say what ever is on your mind. God is always there, waiting to hear from you, in fact he anxiously desires to hear your needs, problems, etc. He is the perfect Father who wants his children to come with their problems so he can help them. There is one prayer that we all need to say in order to obtain God's grace and forgiveness for our sins and to re-establish our relationship with him that was broken by sin. Will you pray this prayer now, from your spirit. I guarantee your life will be changed. God, I confess that I have sinned in my life and I repent of my sins and ask forgiveness for them. I accept forgiveness for my sins through Jesus' sacrifice on the cross and I accept Him as my personal Lord and Saviour. Thank you, God. God Bless you all.

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NIAD - A CHRISTIAN RUN BUSINESS

. Exciting is the name for what is happening around here ! This issue contains alot of new information and announcements of the availability of some hard to find products, just in time for Christmas. After you read this issue, you will be as excited as we are !

. Dot matrix printer owners get ready for some great new products from NIAD. Wayne Motel has been researching the SMARTBasic and operating system printer drivers and has come up with a fantastic, but super simple print driver for SBasic that is much easier to use then any of the ones currently available. Additionally, it allows you to toggle back and forth between the ADAM printer and your parallel printer. Even better it allows the generation of graphics via SBasic !! Yes, more on the graphics next month, but for this month Wayne explains how easily Signshop and Paintmaster can be modified to generate character output to your dot matrix printer. By changing line spacing you can get some nice output - see the examples that accompany the article.

Our goal will be to develop a graphics screen dump program using this program as a base.

. Accessories - Hard to find ADAM expansion modules now in stock ! Atari Expansion Module #1 (2405), Super Action Controllers which includes the best Baseball game I've seen (2491) and Expansion Module #2, Driving module with Turbo arcade game (2413). We only have 24 of the Driving modules, but the rest should be plentiful enough to fill all orders.

Modems are also plentiful - get your orders in early for Christmas presents.

. The Sega Ulitmate Game system is reviewed in this issue and we have decided to offer this fantastic home video game system to our NIAD members. This is NOT a computer, but a dedicated game system that offers alot if you in to arcade type games. Send a SASE to get some more information and brochures on this system and the games available.

. MMSG is a respected developer of quality ADAM software. I think their Backup 3.0 product is the best copy utility program for the Adam on the market - see our review in this issue.

. We have several good Basic programs in this issue for both you beginners and more advanced basic programmers. Bob Lennes has done a Basic program using the hand controller in answer to many of your questions. Don Zimmerman has done an excellent review of CP/M 2.2 control codes and provided some much needed documentation. For you SMARTfiler owners who have not really used this excellent data base program we have an example of setting up a name and address data base. Hope you enjoy the issue. An ADAM Expo is in the planning stages. We discussed this at our last Chicago local NIAD meeting and we will attempt to pull off this meeting in January. The Expo would include software and hardware exhibits and

retail selling.

. Chicago Local Chapter meetings are currently held the Glenside library, 25 East Fullerton in Glendale Hts, IL. The next meeting will be Thursday, November 6th at 7:00 PM. Subsequent meetings (December and beyond) will be held the second Thursday of each month, location to be announced in the next newsletter. Come and benefit from the question and answer session, the demonstrations of programs and just to meet other ADAM owners. To get to the libray take North Avenue west from Highway 53 approx 5 miles and go North on Bloomingdale RD then west on Fullerton.

. Renewals - Get your renewals in early to insure you don't miss any issues. If "1086" are the first 4 digits of your member number this is your last issue.

Newsletters are mailed by the 25th of each month for that months issue e.g. Septembers issue was mailed 9/25. Third class mailings may take up to 2 wks, especially from now through December. Please don't call or write about your newsletter unless it is the 15th of the following month.

SASE's are required for all correspondence requesting information or the answers to questions. PLEASE save us the time and expense of addressing and stamping return envelopes.

ALSO note that you can get the following by sending in a SASE: updated PD list, List of Basic Peeks and Pokes, cross reference of Basic 1.0 to 2.0 addresses, Smartfiler fix instructions, 2010: Text Adv hints.

. Carol Tapia would like to talk to other ADAM owners in her area: 1001 S. Highway 78, Lot 20, Wylie, Tx 75098.

NIAD product information - SPECIALS

- . Super Action Controllers w/ Baseball cartridge - \$49.95
- . Expansion Module #1, Atari Conversion - \$44.95
- . Expansion Module #2, Driving Module w/ Turbo cartridge - \$49.95
- . New ADAM Keyboards - \$9.95
- . ADAMNET 6 Ft. flat cables for keyboard/disk \$2.95
- . Royal Ambassador Education Pack - a series of 8 excellent educational programs with Christian themes - \$9.95 disk/ \$11.95 DDP
- . New ADAM (tan) hand controllers - 2 for \$10.00
- . 3 1/2 by 15/16 inch tractor feed address labels \$6.95/1000
- . 9 1/2 by 11" 20 LB tractor feed with "clean edge" perforations \$9.95/ 500 or \$16.95/1000
- . Right directory tapes for copying Supergames \$2.50
- . Reconditioned data drives \$19.95
- . Super Zaxxon \$10.95

NEW PRODUCTS

- . Panasonic 10801 printer

- . Kid's Trivia
- . Backup 3.0
- . Backup +3.0
- . Family Feud Question Pack
- . Pinball Games Vol I (Public Domain)
- . 1986 ADAM Resource Directory
- . Pro Football
- . SMARTBasic V2.0 Public Domain
- . Trivia Pack I
- . Jeopardy Question Pack
- . Reedy Entertainment Pack
- . Media Aid Utilities Pack
- . Rocky Super Action Boxing
- . Super Sub Roc PD game

NIAD Services

- . Disk conversion of Super games - Buck Rogers, Super Zaxxon, Dragon's Lair, 2010: Text Adventure, Donkey Kong and DK Jr., Recipe Filer, Smart Letters & Forms, Family Feud - send in the card label from your data pack as proof of purchase and \$4.00
- . Replacement SMARTBasic tapes \$7.00
- . ADAMLink II Telecommunications software for upload and download of programs \$7.00
- . Fix SMARTfiler tapes (send yours in) to provide the ability to print mailing labels by correcting the spacing problem and give you the latest bug free version \$4.00
- . Updates or fixes to damaged Public Domain tapes \$3.00.

UPDATES

- . Eve Electronics still has their planned disk drives in a hold status.
- . Orphanware is finalizing their 80 column video board and working on some additional software. I am awaiting a review copy and will review as soon as I get one.
- . 1200 Baud Modem is near completion by S. Carter. This ADAM modem will be Hayes compatible as well - more information to follow.
- . Eve's Speech Synthesizer is a good unit, but lacks software to make it really useful. Bob Lennes has agreed to work on developing some SMARTBasic software for the synthesizer. With Bob's talent, I am sure you won't be disappointed.
- . Walter's software has just released a Question Pack for Family Feud. Their Jeopardy Question Pack has been a big hit.
- . Panasonic produces a fine line of dot matrix printers. They have come out with a new model - the 1080I which replaces the 1080 and 1091 models. It prints in draft mode at 120 CPS and 24 CPS in near letter quality mode and has full IBM graphics capability.. NIAD now carries this printer - it offers good performance for the price.

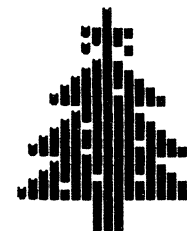
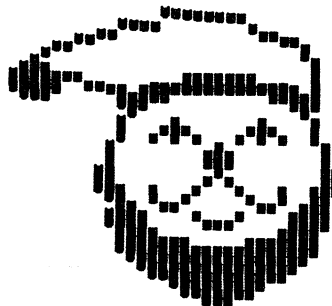
. We still have not received the new Skiing and Bumpman cartridges for review that we ordered in August. Evidently the British firm that is manufacturing them is behind.

. MegaUtilities is a new product from Marathon Computer Press which we will review next month.

. CCCAUG is a new ADAM User's group based in Milwaukee. Contact Dennis K. Sehmer, 1423 N 50th St, Milwaukee WI 53208 (414) 259-9954 for more information.

. ADAMLAND needs all members to write to them immediately so they can reconstruct their records which were recently destroyed by a lightning strike.

. Digital Express is producing a fine newsletter that is supporting the ADAM. They have taken over the marketing of Data Doctor's products (SmartBest/ SmartTrix) and are developing their own products. I need some help in contacting them, however. Their published phone number has been disconnected.



PUBLIC DOMAIN WORKSHOP

MISCELLANEOUS

There have been some questions regarding the PD tapes so I will give some basic information that should help.

1. Make sure you read the 1 page documentation titled "NIAD PUBLIC DOMAIN LIBRARIES 4/86". This document is part of your new member pack and is sent with all PD orders. Information is provided regarding how to obtain and print the instruction files that are contained ON the PD tapes/disks.

2. Unless otherwise noted, you must load the appropriate program first and then insert your tape/disk to run the PD programs.

E.6. To run one of the programs on one of our SMARTBasic PD volumes to first load the SMARTBasic master tape that came with your ADAM by pulling the computer reset button (this program is required to set up the ADAM to read individual SMARTBasic programs). You then remove your SMARTBasic master tape and insert our PD tape. You should type the word catalog, which will display the names of all the programs on the tape/disk or better yet print via SMARTWriter (the word processing program) the readme file that is on each tape/disk which gives the name and a short description of each program. To run one of the programs just enter - run followed by the name of the program; that's all there is to it.

NOTE: This procedure does not apply to the special game PD programs - Jeopardy, Super Sub Roc, Troll's Tale, Pinball/Mack. These programs are self booting so just insert the tape and pull the reset button.

3. Since we store all our master PD volumes on diskettes, even though you purchase a data pack volume, ADAM "thinks" it is a disk and indicates that there are 160 blocks in total instead of the 255 blocks that are available on a data pack. This is not a problem since you should only use the original data pack we send you as a backup and copy the programs to a working tape for your use. Note that if you copy the entire data pack using a block copy program (producing a mirror image of the original) the copy will still indicate a maximum of 160 blocks. You can prevent this in one of two ways, use a file copy program (Quickcopy, Media-Aid) to copy the individual files from one DP to another or load each file individually into SMARTBasic and save them onto another DP.

4. Always make a backup copy of the PD tapes/disks before using them. If you don't have a copy program to do this get one of the ones on our Product List or get PD Basic Utilities volume # UNDV1 which contains our PD copy program.

NOTE: If you only have one tape drive you must alternate removing and inserting the source (original) and destination (blank) tape as instructed by the program. If you have 2 drives the backup copy program will read from the first drive and write to the second drive, avoiding this problem.

This month we are printing the README file from Basic PD

#BNDV14. There are a variety of excellent programs on this volume. We have put a number of good math oriented programs contributed by Dan Pease. There are 2 good simulation games - king and civil war. There are also some excellent 3-D graphics programs - enjoy.

NIAD PUBLIC DOMAIN VOLUME # BNDV14

** PROGRAM DESCRIPTIONS**

NOTE: Programs with file names in CAPITAL letters can not be run directly from SMARTBasic - they are either documentation files or special files. See descriptions below.

*README1ST - this file

*conversion - This program will convert Farenheit to Celsious and vice versa.

*blackjack - no graphics, but a good rendition of this game.

*clock - a simple program, but a good timer routine.

*backspell - a Spanish wordgame that reverses words entered.

*vectors - polar and rectangular vectors

*complex - solves up to 25 simultaneous equations with up to 25 unknowns !

*determeval - determinate evaluation (arbitrary order)

*polygon1.4 - an excellent program that draws in Hires grahics polygons of any number of sides

*loanrepay - calculates amount to repay a loan

*slotmach - run this program which in turn runs the .SLOTS program. A good game for you Las Vegas types.

*.SLOTS - can not be run, see above program.

*gaussformu - calculates the sum of all digits from 1 to the value you enter.

** 3-D PLOTTING PROGRAMS (RECTAN & SPHERI) **

RECTAN (FISHNET)

Lower X limit: -1

Upper X limit: 1

Lower Y limit: -1

Upper Y limit: 1

Slices in X: 20

Slices in Y: 20

Observation angle: 45

RECTAN (HYPERBOLIC PARABOLOID)

Change line 790 to $z=x*x/4-y*y/9$

Lower X limit: -2

Upper X limit: 2

Lower Y limit: -3

Upper Y limit: 3

Slices in X: 25

Slices in Y: 25

Observation angle: 45

SPHERI (TORUS)

Lower THETA limit: 0

Upper THETA limit: 360

Lower PHI limit: 0

Upper PHI limit: 360

Slices in THETA: 25

Slices in PHI: 25

Observation Angle: 45

SPHERI (SPHERE)

Change line 820 to xt=c1*c2

Change line 830 to yt=c1*s2

Lower THETA limit: 0

Upper THETA limit: 360

Lower PHI limit: 0

Upper PHI limit: 180

Slices in THETA: 15

Slices in PHI: 15

Observation Angle: 45

*king - a simulation game where you as king must buy/sell land and feed your people.

*civilwar - a very comprehensive simulation game of 14 Civil War battles. You must choose your offensive/defensive tactics and purchase ammunition, food, etc. for each battle.

*crosswords - interesting display of how to scramble a word.

*hangman2 - very good version of this classic games. The kids will like this one.

*chbase - run this file, which in turn runs the CHORDBase program for some music.

*CHORDBase - can not be run, see chbase above.

*songENTRTN - a good music program. You must enter "brun songENTRTN". If you get an error message, just enter "run" and it will play fine.

*sortnstat - sorts numeric input or reads data from another file, then calculates the mean and standard deviation.

*polysquare - a least squares fit program.

*linearreg - linear regression math program

*equalfract - provides various fractions that are equivalent to the one you input.

*gaussstimul - Gauss-Jordon solutions for simultaneous equations - handles up to 20 equations.

*derivative - computes the derivative of single variable equations.

*lfplotter - you define an equations via the def (fn) function and it is plotted for you

*plotter - another program that plots coordinants that you supply

*intergrati - integration math program

ERRATA

Line 320 of the Basic modif program on Basic PD volume BNDV4 and Basic Utilities # UNDV2 is incorrect and should read (NOTE, this program was also printed in the July/85 issue):

320 B = INT ((2048+a-256)/1024)

BEGINNER'S BASIC WORKSHOP

ADAM Math By D. Pease

I hope that you can all enjoy the powerful math ADAM can do. Try the math programs on PD BASIC VOLUME #14! Most of them were written for IBM by college people for use in various technical courses of study like Mechanical Engineering (my line). ADAM can do any math IBM can do that

I have seen so far, so THERE, you big blue giant you! Besides the use of programs mentioned above, you can do some heavy calculating with ADAM in the immediate mode, too. You can (while in BASIC) use the PRINT (or ?) command to get some answers FAST!

For instance:

Suppose you wanted a quadratic type thing $4x+2x+6$ for a value of x as say 13. You can use ADAM if you put it in the right SYNTAX or wording form he likes to see.

In the above case you could put: $x=13:?" ;4*(x)+2*x+6$ (RETURN) To get a different answer for a new value of x , just use the up arrow key to go to the "13" and stick in the new value, go under the rest of the line with the right arrow and press return key again for answer. If you need more space, like when replacing the "13" with a "1234", just type in the "12" over the "13" and then hold down the control key and press the "N" key twice for two more spaces for the other "34". If you had a shorter number like "2" you just type in the "2" over the "1" and spacebar over the "3". It is not hard to write a very short program for something like that. 10 HOME:INPUT "What value for X? ";x 20 a=4*(x)+2*x+6:REM or your equation 30 ?" The answer is ";a This is really not too hard to do and if one gets tough, when you DO get it right, SAVE it on tape or disk! Then send it to NIAD if it is a program that someone else could possibly use. If we all shared ALL our programs, what a very LARGE library we would soon have!

USING ADAM'S HAND CONTROLLERS IN YOUR SMARTBASIC PROGRAMS

By Bob Lennes

It is very easy to access Adam's hand controllers because SmartBasic has a built in function, PDL(x).

'x' is the argument which tells SmartBasic which part of the controllers you wish to get a value from (I.E. the joystick, buttons, or keypad). 'x' can have any value between zero and 15.

Here is a chart of the arguments (x) and the possible values PDL returns (and what the values mean).

Function Controller Part Values and Meanings

PDL(0)	Joystick 2	up/down paddle-starts at 127;
PDL(1)	Joystick 1	pushing joystick up raises value to 255; down lowers value to 0
PDL(2)	Joystick 2	left/right paddle- pushing right
PDL(3)	Joystick 1	raises value to 255; left lowers value down to 0.
PDL(4)	Joystick 2	Direction: Zero=not pushed
PDL(5)	Joystick 1	1=up; 2=right; 3=upright
		/01\ 4=down; 6=down+right
		09**03 8=left; 9=up+left
		09**02 12=down+left.
		12**06
		\04/

PDL(6) Left Button #2 Zero=not pressed, 1=pressed.
 PDL(7) Left Button #1
 PDL(8) Right Button #2 Zero=not pressed, 1=pressed.
 PDL(9) Right Button #1

PDL(10) Keypad on #2 Zero=no key pressed; returns ASCII
 PDL(11) Keypad on #1 value of key (0 to 9 is 48 to 57;
 '*' is 42; '#' is 35.)

PDL(12) Keypad on #2 15=no key pressed; returns value
 of
 PDL(13) Keypad on #1 numbers 0 to 9 (i.e. 0=0,1=1,
 etc.)
 '*' is 10; '#' is 11. If you have
 the Super Action controllers, the
 purple button on SuperAction=12;
 blue Button on SuperAction=13.

PDL(14) and PDL(15) are supposed to read the roller ball,
 but I am not sure since I do not have it.

The Basic Calculator

Here is a SmartBasic program that allows you to use the
 controller as a simple calculator, as in Adam Calc.

The keypad is used to type in numbers. The '*' is
 equivalent to a decimal point, and the '#' is equivalent to
 the '+/-' key (used to change sign). The left button is the
 'equal' sign, and the right button clears the display.

The joystick is used to add, subtract, multiply, and
 divide. (The screen will display the proper directions.)

This program could be improved to a scientific
 calculator, but the problem of representational errors (for
 numbers such as .01, which have no binary equivalent) may
 be a hindrance, since real numbers in SmartBasic have 7
 significant digits.

10% ADAM Basic Calculator

20% by Bob Lennes 10/86

30% Variables: t%=title; s=tab for keypad;

40% j1,j2= joysticks one,two; k1,k2=keypads one,two;

50% lb=Left Button on either controller; rb=right button;

60% n%=current num; n2%=prev. num; p%=current operation;

70% p2%=prev. operation; d%=1 if decimal; t=delay loop;

100POKE 17059, 13:POKE 17115, 23:POKE 17126, 26:TEXT

105POKE 16953, 128+32

110POKE 17059, 1:POKE 17115, 240:POKE 17126, 15

120 t%="CALCULATOR"

125 s=10

130VTAB 2:? SPC(15-(LEN(t%)/2)); t%

140VTAB 6:HTAB s:? "By Bob Lennes"; :FOR t=1 TO 1400:NEXT

150HTAB s:? " "

160HTAB s:? " / + \ "

170HTAB s:? " !MULT DIV; "

180HTAB s:? " \ - / " : ?

190HTAB s:? "[C] [=]"

200HTAB s:? " ----- " : ?

210HTAB s:? " 1 2 3 " : ?

220HTAB s:? " 4 5 6 " : ?

230HTAB s:? " 7 8 9 " : ?

240HTAB s-4:? " DEC * 0 # +/-" : ?

250HTAB s:? " ----- " : ?

300VTAB 4:HTAB 9:INVERSE:? SPC(14):HTAB 9

310 j1=PDL(5); j2=PDL(4)

320 k1=PDL(13); k2=PDL(12)

330 lb=PDL(7) OR PDL(6)

340 rb=PDL(9) OR PDL(8)

345IF lb AND rb THEN 900

350IF j1=0 AND j2=0 THEN IF k1=15 AND k2=15 THEN IF lb+rb=0
 THEN 310

360IF (k1 OR k2) AND n\$="" THEN HTAB 9:? SPC(14):HTAB 10

400& meanings

405IF j2 AND NOT j1 THEN j1=j2

410IF j1<>3 AND j1<>6 AND j1<>9 AND j1<>12 THEN ? CHR\$(7);

415IF j1 THEN 500

420IF lb THEN 600

430IF rb THEN GOSUB 700:IF p%<>14 THEN p2%=p%: p%=14

435IF rb THEN 470

440IF k2<>15 THEN k1=k2

445IF p%=14 THEN n2%=n%: n\$="" : p2%=p%: p%=0: d%=0:HTAB

9:? SPC(14)

450IF k1=11 OR k1=10 THEN 800

460IF LEN(n%)>8 THEN 310

465 n%=n%+STR\$(k1)

470HTAB 23-LEN(n%):? n% ; HTAB 10

480FOR t=1 TO 199:NEXT:GOTO 310

500& Joystick

507IF n\$="" THEN p%=p2%: n%=n2%:GOTO 520

510GOSUB 700:HTAB 23-LEN(n%):? n% ; HTAB 10

520IF j1=1 THEN p2%=p%: p%=15: n2%=n%: n\$="" :GOTO 470

530IF j1=4 THEN p2%=p%: p%=16: n2%=n%: n\$="" :GOTO 470

540IF j1=8 THEN p2%=p%: p%=18: n2%=n%: n\$="" :GOTO 470

550IF j1=2 THEN p2%=p%: p%=17: n2%=n%: n\$="" :GOTO 470

599GOTO 310

600& Left Button

610 n\$="" : d%=0: p2%=14: p%=0

699GOTO 300

700& Right Button

710IF p%=0 OR p%=14 THEN 790

715 d%=0

720IF p%=15 THEN n%=STR\$(VAL(n%)+VAL(n2%))

730IF p%=16 THEN n%=STR\$(VAL(n2%)-VAL(n%))

740IF p%=18 THEN n%=STR\$(VAL(n2%)*VAL(n%))

745IF p%=17 THEN IF VAL(n%)=0 THEN n%=STR\$(0):GOTO 790

750IF p%=17 THEN n%=STR\$(VAL(n2%)/VAL(n%))

790RETURN

800& Asterisk, Lb. sign

810IF k1=10 THEN IF d%=0 THEN d%=1: n%=n%+"." :GOTO 470

815IF k1=10 THEN 470

817IF n\$="" THEN 899

820IF LEFT\$(n\$, 1)="-" THEN n%=RIGHT\$(n\$, LEN(n\$)-1):HTAB
 22-LEN(n%):? " " ; :GOTO 899

830 n\$="-"+n%

899GOTO 470

900& Quit?

910VTAB 7:HTAB s-6:NORMAL:? CHR\$(24); "[*]=RETURN or
 [#]=QUIT"; :POKE 16953, 63

920 k1=PDL(13); k2=PDL(12)

930IF k2<>15 THEN k1=k2

940IF k1<>10 AND k1<>11 THEN 920

950IF k1=10 THEN RUN

960POKE 16953, 95:TEXT:END

Here is a nice little program for turns the ADAM into a clock. May not seem like any big deal but it can be used for some nice additional features. P. Palmer would like a 24 hour alarm clock, which can be done real easily by putting some IF clauses for certain values of the hour an minute variable and then jumping to a routine that will issue some ear piercing sounds from ADAM's sound chip! The program is simple, it uses the SPEED command to control the accuracy of the clock. SPEED is used to set how fast data is displayed on the screen. You set it by typing in SPEED = XXX for what ever value you want. Check the accuracy of the clock and reset the speed value in the program accordingly:

```
5REM **NIAD PUBLIC DOMAIN**
10REM      24 hour clock by W.Wright
12REM      ** Please note .to adjust rate change speed
value and or tab value**
14REM reset speed = 200 when done
20INPUT "What is the hour?"; h
30INPUT "What is the minute?"; m
40INPUT "What is the second?"; s
50? h; TAB(5); m; TAB(8); s
60HOME
70SPEED =68
80 h=h+o: m=m+o: s=s+1
90IF s=60 THEN LET m=m+1:IF m=60 THEN LET h=h+1
95IF s=60 THEN LET s=0
100IF m=60 THEN LET m=0
110IF h=24 GOTO 20
120GOTO 50
```

The following program is an excellent graphics one that generates some interesting polygons. You will have great fun with this one:

```
10REM **NIAD PUBLIC DOMAIN**
50& Alan Aben
75&
100& Polygon
105&
110TEXT:? " Polygon":?
120INPUT " How many sides? "; s
130? " I'm thinking..."
140REM array of points
150DIM c(s, 2)
160 d=90: r=75
170 sv=360/s
180FOR p=1 TO s
190 a=d*(3.1416/180)
200 c(p, 1)=128+INT(COS(a)*r*.87+.5)
210 c(p, 2)=80-INT(SIN(a)*r+.5)
220 d=d+sv
230NEXT p
240 c(0, 1)=c(s, 1): c(0, 2)=c(s, 2)
250REM set up screen
260HGR:HCOLOR =9
270? TAB(8); s;
280? " Sided Figure"
300REM draw polygon
310FOR p=1 TO s
320 sx=c(p, 1): sy=c(p, 2)
```

```
330FOR v=p TO s
340 dx=c(v, 1): dy=c(v, 2)
350HPLOT sx, sy TO dx, dy
360NEXT v
370NEXT p
380FOR t=1 TO 2000:NEXT t
390CLEAR
400GOTO 110
```

SMARTBASIC WORKSHOP

ERRATA - Line 150 of Bob Lennes 64K program published last month is incorrect. The 14th number should be 237, not 137.

SEQUENTIAL FILE PROBLEMS - When opening and closing a sequential file a special command is used that tells ADAM that data is going to be sent to a file. This command (Print CHR\$(4)) should always be preceded by an HTAB 1. If not and your cursor is at a location other then the left margin, a heart will print on the screen and your file command will not be executed correctly.

Basic Printing Routines/ADAM EOS

By W. Motel

The purpose of this article is to (1) explain how BASIC print routines work and interreact with the EOS (operating system)

(2) discuss how the various parallel printer interface routines are set up, and
(3) show why all things don't work with them in BASIC. How we can fix this is the subject of another article in this issue.

The EOS print drivers are the machine language routines that actually send the data to the printer. They contain all the machine language to not only print the data, but also do all the required status checking, channel commands, etc to get data printed correctly. The routines are part of the operating system and available to you or programs that interface with the operating system (BASIC, SMARTWRITER, SMARTFILER). This eliminates you (or the programmer) from having to write their own printer routines its own). To use these EOS routines, you or the software simply has to make sure the various registers required by the routines are set prior to calling the EOS routines I.E. set the required register with the address of where the data to be printed is stored.

Besides the EOS routines, the individual software (I.E. BASIC, SMARTWRITER, SMARTFILER) or your own code goes thru a preparation (building) procedure.

Relative to the BASIC PRINT command, some of the things done when you do a Print:

- decides if the data is a variable or constant
- if a variable, gets it from its location
- deciphers special subcommands like TAB or SPC

-are fields separated by ; or , (if , generate spaces until next print zone)

-if PRINT doesn't end with ; generate a CR and line feed. Besides preparing the data, it also needs to know where to PRINT; screen, printer, or tape/disk (CHR\$ (4)) then it calls the appropriate EOS routine.

Within EOS, not only do we have the actual routines, but another concept exists. This is called a JUMP TABLE. The JUMP TABLE always exists in the same spot and consists of a 3 byte entry for each routine. The first byte is a JUMP instruction followed by the 2 byte address of where the routine actually exists. The software of your code always calls the JUMP TABLE entry. This, in turn, jumps to the actual location. If Coleco decided to modify the operating system, all they need to do is change the actual routines and change the JUMP TABLE entry. However, where it jumps to from there isn't really your concern, as long as the register protocol is still followed.

Now to real values.

From EOS, 2 main print routines are used. The JUMP TABLE entries are:

1) FC63 (64611) jumps to F515 (62741) actual executed code

2) FC66 (64614) jumps to F4FC (62716) actual executed code
FC63 jumps to the routine PRINT-BUFFER at F515 (62741)

This routine prints the contents of a buffer area to the ADAM printer. Simply initialize the HL register with the address of the start of the data to be printed (the buffer) and makes sure the data string ends with a hex 03. This routine does all the necessary calls to other EOS routines. FC66 jumps to the routine PRINT-CHARACTER at F4FC (62716). This routine is used when the user program or software passes one character at a time to be printed. This can be due to the caller only knowing one character at a time or they do not want to build their own print buffer. Simply initialize the A register with the ASCII value to be printed. This routine uses its own buffer area. It loads A into the first byte, loads HL with the address of the buffer and calls F515 (the preceding routine B we just described).

Note, the above are really 2 separate routines; although F4FC utilizes F515. 98% of BASIC internal code; as does, I believe, all of SMARTWRITER and SMARTFILER always calls FC66 (the jump to PRINT-CHARACTER at F4FC). This means most of the printing is on a one character passing at a time basis.

Within the BASIC V1.0 interpreter code, a number of routines and areas are important to our discussion.

1. The actual code that deciphers the PRINT command going left to right, i.e. PRINT A;"=", B\$;TAB(30)

A) A is a variable, find its location, get current value, put into printable form and print it

B) ; no space between fields

C) "=" print variable as is

D) , comma-space to start of next print zone

E) B\$ is a string variable, get current value, print

F) ; no space

G) TAB (30) are we at position 30, if not generate enough spaces to get there

H) end of PRINT, since no ; is there generate CR and Line Feed

As you can see, there is a lot of logic going on. Within all of this, the data is being passed one byte at a time to an EOS routine, i.e. at C) the printing of the variable "=" . Load A with space, CALL EOS; load A with =, CALL EOS; Load A with space, CALL EOS.

The reason I said CALL EOS: remember the print can go to the SCREEN or the PRINTER. Register A has the ASCII value of where it should go.

2. The PR# command controls where output goes. PR#0 is the screen, PR#1 is the printer. Within the PRINT statement, the screen or the printer routine in BASIC is made via a jump to the address in location 3F49 and 3F50. What loads this location? The PR# command does. A PR VECTOR table exists consisting of 8 entries, each 2 bytes long. Each 2 bytes contain the address of the execute code for that corresponding PR#. The first entry is for PR#0, second for PR#1 up to PR#7. Basically, the PR command loads location 3F49/50 with the 2 byte corresponding entry from the PR vector table. Once it is done 3F49/50 now contains the address of the screen or the printer routine.

For your information, the PR VECTOR table is at location 3F55 thru 3F64. It is 16 bytes long (\$\$\$\$\$\$\$\$\$\$j

The value in the first 2 bytes (for PR#0-screen) is 2F03, the next 2 bytes (for PR#1-Adam printer) is 2EEA. The remaining 12 bytes (each of the remaining 6 entries, also contain 2F03). This defaults to the screen routine.

So what we have is the code directing output to the printer located at 2EEA thru 2F02. The screen directed routine is next at 2F03 thru 2F19. Output to the printer automatically also goes to the screen, since the printer routine drops thru to it.

If you wanted to write your own code to access a "dot matrix" printer via PR#2, such as INTEL-BEST 3 does, you write your code, put it into memory, lets say at address XYZ, and fix the PR VECTOR TABLE entry for PR#2, that PR VECTOR TABLE entry is loaded into 3F49/50. The PRINT statement jumps to whatever address is currently in 3F49/50.

The Printer directed routine at 2EEA thru 2F02 does some further preparation and then calls FC66 (the EOS routine). It then does special printer only check, such as if print head at end of line, generate a CR and Line Feed.

The SCREEN DIRECTED routine at 2F03 thru 2F19 does some further preparation (screen oriented) and then calls the appropriate EOS routine to go to Video Ram.

In review and specifically relating to SMARTBASIC V1.0 utilizing the Adam printer.

WITHIN BASIC

PR Vector table at 3F55 thru 3F64 contains 8 entries of 2 bytes each. first entry is for PR#0 and contains screen directed BASIC routine. All other entries (PR#2 thru 7) precoded to screen routine.

PR Pointer at 3F49/50 contains address loaded from last PR# command. Pre initialized with PR#0 entry value. Used to direct output from BASIC PRINT command internal code.

MAIN PRINT command logic 1E3C thru 1EDB

This does the majority of the command decoding, preparation, load ASCII into A register. It then does a call to 2EDA.

2EDA - 2EE9

Basically loads HL with the contents of the PR pointer at 3F49/50. It then jumps to that address in (HL). Right now its either the screen (PR#0) or the printer (PR#1).

2EEA - 2FOA - PRINTER DIRECTED.

Calls FC66 (EOS JUMP TABLE, not actual EOS code) Does some other printer line checks. Drops thru to the following:

2FOB - 2F19 - SCREEN DIRECTED -

Called appropriate EOS JUMPTABLE entry for Video Ram output (screen)

EOS INTERFACE (always thru the JUMPTABLE)

FC66 - Jump to FYFC (actual code to print to Adam printer)

To utilize a dot matrix printer, basically a small amount of code needs to be utilized. Basically it involves passing a byte of data to PORT 64 for the parallel interface.

Very simply, we could write this code, insert it somewhere and access it thru BASIC as PR#2. Besides inserting the actual code into memory, we need to point to it via the PR VECTOR TABLE entry for PR#2. This is fine but existing programs in BASIC need to be changed from PR#1 to PR#2. Another approach, as used by the EVE/FASTPATCH interfaces is to change the actual EOS code for the print driver. This then applies to any software utilizing the EOS routines. What code is changed? Not the JUMP TABLES at FC63/66 but the actual code at F4FC thru F5DB, which is the 2 main EOS routines we discussed, plus the supporting Adam printer routines. EVE has even custom built conversion logic in that it allows you to utilize some printer function from SMARTWRITER by keying in keyable data that is converted to nonkeyable (hex code) commands to the printer. For SMARTWRITER and SMARTFILER this is great, and for BASIC its ok most of the time. Disadvantages, once you load in the EOS patch, you cannot use the Adam printer from Basic, because its code has been replaced in EOS (F4FC thru F5DB). Also you cannot generate dot matrix printer command sequence codes because the new EOS routines are stripping out certain values less than ASCII 32 (hex20). Thirdly, CTRL-P (print screen) does not work. Lastly, SIGNSHOP and PAINTMASTER don't work. The reason for the last two. Remember much earlier, we talked of 2 EOS routines. The PRINT-CHARACTER routine from JUMP ENTRY FC66 (actual code at F4FC). This I said was called 98% of the time from BASIC. The other was the PRINT-BUFFER routine from Jump entry FC63 (actual code at F515). Guess what CTRL-P and SIGNSHOP/PAINTMASTER call (FC63). This is all well and

good, however, the EVE patch does not treat the F4FC thru F5DB area as 2 separate routines, but utilizes it as one large replaceable area. Any call FC63 Jump to F515, which is no longer a PRINT-BUFFER routine to the dot matrix printer, but the middle of dot matrix printer code that starts at F4FC. This is NOT A SLAM at EVE, but simply an explanation of why these problems occur. Actually, what they are using the entire area for is the code that allows you to do some of the printer functions from SMARTWRITER. Hopefully, this gives you some insight into how software interfaces with the operating system and specifically

WAMO ADAM SMARTBasic Parallel
Printer Interface By W. Motel

The following program is an alternative to one of the other parallel printer patches, such as Eve's or FastPatch from Orphanware for operating under SMARTBasic ONLY. It is not a replacement for these programs when using SMARTWriter or SMARTFiler.

Under Basic it provides the following:

1. Access to either the ADAM printer of parallel port 64 attached printer. This switch to either printer is done by simply doing a CALL command, either from a program or directly. It does not require any change to current programs. Either printer is accessed by using the PR#1 command.
2. The machine language code is loaded into unused memory locations within Basic. It does not alter or destroy the original ADAM EOS printer code. It does not use LOWMEM, so it is compatible with any programs that do. Based on a few tests I have run, it appears to run under Basic 2.0 as well (the parallel interface only, not the ADAM printer).
3. With a minor change to Signshop and Paintmaster (which actually corrects an error in their method of EOS calling anyway), you can print via these programs to your parallel printer.
4. Control-P will work with the parallel printer port !
5. Functions of the dot matrix printer are now available via the special escape code sequences required - these will not work with the current parallel software programs.

Listed below is the program. You can make it part of your HELLO program or simply run it right after you load Basic. DO NOT boot Basic using the Eve or FastPatch program prior to running this program as these alter the EOS printer routines. All you need to do is boot Basic and run this program. This loads the necessary machine language routines into memory addresses 10 thru 98 and sets the EOS jump tables to point to the parallel printer routines. IT does NOT DESTROY the original EOS printer routines. Here is a brief map of the routines:

ADDRESS	ROUTINE
10-24	Sets Jump table to ADAM printer routine
25-39	Sets Jump table to parallel printer routine
40-55	Parallel routine print buffer (16 bytes)
56	Constant 3

- 57-69 (A) To buffer, call print parallel routine similar to ADAM print routine at F4FC
- 70-88 (HL) buffer parallel print routine similar to EOS routine at F515
- 90-98 Set (HL) with buffer, call print. For using when you POKE into the buffer at 40-55

SIGNSHOP/ PAINTMASTER FIX
FOR PARALLEL PRINTERS
By W. Motel

When the program is first run, it does a CALL 25, which sets the Jump table's to the parallel printer. To reset to the ADAM printer just do a CALL 10. To go back to parallel do a CALL 25. All normal printing or use of PR#1 goes to the printer specified by the last CALL. Address 40-55 is used as print buffer area for the parallel printer, just poke into this area and make your last character an ASCII 03 and then CALL 90. More on this next month. Try a control-P with inverse data on the screen. Try doing some of the special escape codes as defined in your printer manual. All should work except CHR\$(3) and CHR\$(0). I'll show how to do this next month by poking directly into our buffer area. We will also describe how to do some graphics from Basic.

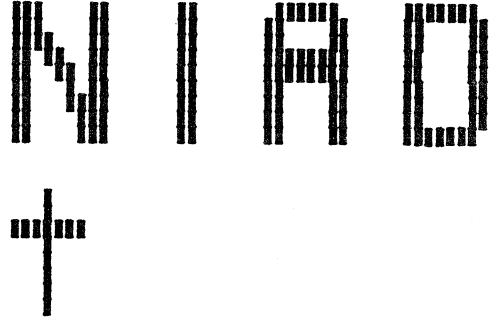
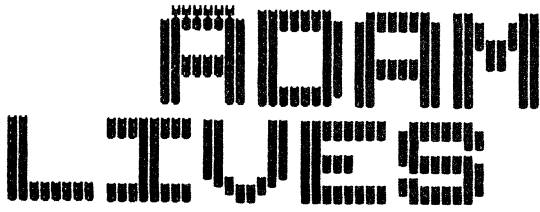
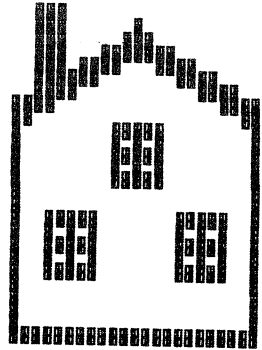
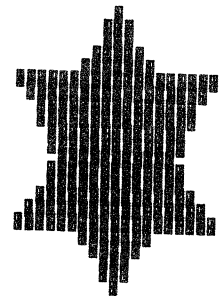
As mentioned above there is an error in the print routine access by these two programs that make them unable to use the WAMO parallel printer driver. This change will allow that and will still allow the programs to work on the ADAM printer. Line 12 in the SS.OBJ (Signshop) and Picprint (Paintmaster) programs are the same and need to be changed.
CURRENT: 12 DATA 33,17,0,205,21,245,201
NEW : 12 DATA 33,17,0,205,99,252,201

Just load the specified programs re-enter or edit line 12 as shown and then save the program back onto your tape/disk. That's all there is to it. To output to a parallel dot matrix printer - load Basic, load and run the WAMO program above, load and run either Signshop or Paintmaster (Picprint) and all output will go to your parallel printer. We have placed several examples of Signshop output in this issue which we printed using the WAMO program. After loading Basic and running WAMO, we set the vertical spacing at 15/216 and used the compressed print mode. Experiment with your printer and have fun ! More next month.

```

1 REM WAMO-print driver
2 REM NIAD W. Motel
3 REM Access to adam or Parallel printer port under BASIC
10 REM SET ADAM printer in Jumtable
11 DATA 229,33,21,245,34,100,252,33,252,244,34,103,252,225,201
20 REM SET Parallel Port 64 routine to Jumtable
21 DATA 229,33,70,000,34,100,252,33,057,000,34,103,252,225,201
30 REM Print Buffer fill
31 DATA 03,03,03,03,03,03,03,03,03,03,03,03,03,03,03,03,03,03,03,03
40 REM FC66 routine (A) to buffer
41 DATA 229,33,41,0,54,3,43,119,205,99,252,225,201
50 REM FC63 routine (HL) buffer to port 64
51 DATA 126,254,3,40,13,245,219,64,230,1,40,250,241,211,64,35,24,238,201
60 REM NO-OP
61 DATA 00
70 REM SET (HL) with buffer address
71 DATA 229,33,40,0,205,99,252,225,201
100 FOR x = 10 TO 98: READ v: POKE x, v: NEXT x
110 CALL 25: REM Set for Parallel printer
120 TEXT: PRINT " WAMO driver installed"
122 PRINT " Parallel Port active"

```



COMMUNICATIONS WORKSHOP

I was on CompuServe the other day and the Data Library of ADAM software has really grown. There have been some questions as to how to get programs off of that library via the ADAMLink modem. Please note that you must have the ADAMLink II Telecommunications software in order to download programs from CompuServe to your ADAM. The data pack you received with your ADAM contains ADANLINK I, which does not support file transfer. Coleco does not sell the AL II software any longer, so we have added it to our PD library - see product list for ordering.

To obtain programs from CompuServe you need to get to the Family Computing forum by entering "6D FAM-200". Once you are in FAM - 200 you must enter the DATA Library. ON FAM it is "DL6". There are two instructions files there that define the download procedure - to view them on the ADAM screen (Note: via ADAMLink you may print the information on your printer as it is displayed on the screen - see your ADAMLink instruction manual) do the following:

1. Hit "Control - O" (hold down the Control key and hit O at the same time).
2. Enter "R UPLOAD.HLP" and press the return key.

The instructions will now be displayed. Do the same for the other instruction file - MOREDD.HLP.

You may list (print on your ADAM printer at the same time) the listing of all the programs on DL6 by just entering "DIR".

These instructions are all you will need to obtain programs (other than CP/M 2.2 object programs) from CompuServe or other BBS. Have fun, but remember your connect time can add up fast when you're searching for programs and downloading them to your ADAM.

Miscellaneous

. The telephone number for the Steel City BBS published in the September issue is incorrect - if anyone has the correct number please let us know.

. CompuServe has just changed their charging method so that any time you spend on CUS UPLOADING programs is not charged as connect time (normal charges are \$6.25 per hour I believe). This is obviously to stimulate us to give them data libraries more programs so all can have access to them.

SMARTFILER WORKSHOP

Last month we got down the basics of a general purpose data base program of which SmartFiler is an excellent example. Please note that most data base programs are quite expensive, SF contains most of the features of these more expensive programs at a fraction of the cost. SF's only limitations are in the limited printing capability and the number of records that can be stored on the data base. The maximum number of records is 1000 and this maximum is reduced based on the number of fields per record and the length of each field (see below).

Let's look at an example of setting up a data base for a mailing list.

The first thing we do is to "Design Form" which sets up our Fieldnames for our specific data base needs. We first specify what we want to call each field, then what type of field (C for characters and numbers or N if the field will only contain numbers), followed by the length of the field - that is the number of letters/numbers in the field. Make sure you allow enough in the length for the longest field name. Don't be too skippy on the lengths of the fields because you can't change them once your data base is completed.

Here is an example of how the Design Form screen will look after we are done:

<u>Field Name</u>	<u>Type</u>	<u>Length</u>
Last Name	C	25
First Name	C	15
Street	C	30
City	C	23
State	C	3
Zip	N	9
Phone	N	16
Note	T	30

Remember that the total lengths of all the fields combined can not be more than 255. Notice that the last field (Note) is a Type "T", meaning it is a text field which can be used to store up to 2 pages of text for any record you choose. This is a nice feature, but it will significantly reduce the total number of records that you can store in your data base so only use it if you really need it. Once you have completed the data base design SF tells you how many total records can be accommodated for the particular data base.

OK, the last entry required is whether the field will be a "Search" field. SF allows only 4 searchable fields for a data base. These should be the fields that you will most commonly be using to find records. SF requires that the first field name be defined as Searchable, so I made Last Name this field since we would always use this one to search on. I would suggest State, Zip and maybe City as the other 3, but choose based on what you want to use the data base for. One idea to consider is to define a field name called Miscellaneous and make it the last Searchable field. This gives you some flexibility for some need you may not think of when you first design the data base.

Make sure you read your SF manual - it is well written and contains information you need to design a data base and then use the Search capabilities.

CP/M 2.2 WORKSHOP

ADAM CP/M CONTROL KEY DEFINITIONS By D.ZIMMERMAN

ADAM uses control codes ASCII zero through thirty one to perform certain actions. It would be nice if all computers would use these codes for the same thing but because each computer is of different designs the application of these codes are not standard. Page D30 and D31 of the ADAM CPM manual lists what ADAM uses these codes for under the CPM operating system. After discovering a few uses of a couple of these control codes by accident I decided to try out all 32 of them. It appears that only some of the codes described in the manual act as they should and others either do nothing or do something different than described. This was discovered when using the CONFIG.COM program to alter the system tracks on a SYSGENed disk to have the six SMARTKEYS contain MACROS. These MACROS are then executed by pressing one of the SMARTKEYS. This saves having to type in chained commands to control application programs that require more than one byte commands. It is a shame ADAM only allows the six lower case SMARTKEYS to contain these strings but it is better than nothing. The appearance of the SMARTKEYS in most CPM application programs will cause confusion with the programs' screen but there is a way of taking the SMARTKEYS off the screen while in a program and still have the SMARTKEYS issue the configured commands when pressed. Sometimes the SMARTKEYS must be turned off with a Control V before executing the application program because some programs will "trap" the keyboard codes and use some of them as commands in their own program. This can be worked around by configuring one disks' system tracks to contain SMARTKEY macros for one application program and another disks' tracks to contain SMARTKEY macros for a different application program. If you do this be sure to cold boot a "normal" CPM disk before running a second program because the SMARTKEY definitions are "resident" i.e. They remain in memory and active even after a Control C "warm boot".

NOTE: Each of the following is invoked by a combination of the control key and the letter indicated unless otherwise specified.

- E - Moves cursor to the start of the next screen line without adding a carriage return.
- G - Ring bell once. Same action as PRINT CHR\$(7) in Basic.
- H - Back space destructive. Destructive back space means the cursor will erase the character to the left as it moves one space to the left.
- I - Move cursor six places to the right.
- J - Same as carriage return.
- L - Home the cursor. Screen clears.
- Z - Puts SMARTKEYS back on screen and also loads string data into SMARTKEYS. SHIFT UNDO seems to toggle between Y and Z.

M - Carriage return.

N - Home the cursor without clearing the screen.

R - Places a "*" (pound sign) after the entry and issues a line feed without a carriage return. Retypes entry on the next line. Does not return the cursor to the left of the screen. Subsequent keyboard entries are added to the data left on the screen.

U - Places a "*" (pound sign) after the entry and issues a line feed without a carriage return. Returns the cursor to the left of the screen. Data remaining on the screen is LOST although it still shows on the screen. Subsequent keyboard entries are NOT added to the data showing on the screen, but are accepted as if the prompt was still showing.

P - Toggles printer on and off.

X - Erases entry and returns cursor to the prompt without issuing a carriage return.

UP ARROW - Toggles Alpha lock on and off. Affects ONLY the letter keys and not the number keys.

\ (back slash) - Turns INVERSE video on.

] (right bracket) - Turns INVERSE video off.

SMARTKEY CONTROLS

SHIFT UNDO (no control key) - Toggle SMARTKEYS on and off. If the SMARTKEYS appear on screen the SMARTKEYS will issue the string data that the user programmed in with CONFIG.COM. If the SMARTKEYS are toggled off with SHIFT UNDO the output of the SMARTKEYS is changed from string to single byte "keyboard" data. This single byte output can also be changed by using the KEYBOARD TRANSLATIONS menu of CONFIG.COM but string or "text" data can not be used as the SMARTKEY menu of CONFIG.COM allows.

V - Takes the SMARTKEYS off the screen but will not change their output from string to single byte. NOTE: Before the SMARTKEYS will output the CONFIGed string data they must appear on the screen first before turning them off. This can be done on boot, pressing SHIFT UNDO, or by pressing Control Z to load the string data into memory. They then can be turned off with Control V.

W - Removes SMARTKEYS from screen without changing type of data contained in the SMARTKEYS. The SMARTKEYS can be toggled on and off by using W and V anytime without changing the SMARTKEYS data format.

Y - Takes SMARTKEYS off the screen but will change the output from string data to single byte.

SMARTLOGO WORKSHOP

```
TO HARM
HA
MAKE "HH :HH + 0.5
IF :HH = 360 [MAKE "HH 0]
HA
END
```

```
TO CLICK
NOISE 4 15 5 3 1
END
```

```
TO MARM
HARM
MA
MAKE "HM :HM + 6
IF :HM = 360 [MAKE "HM 0]
MA
END
```

```
TO RAY :H :C :S
IF :H > 359 [STOP]
SETH :H
SETPOS :C
PU
FD 5 * :S
FD :S
PU
RAY :H + 10 :C :S
END
```

```
TO ARCR :RADIUS :DEGREES
MAKE "STEP 2 * :RADIUS * 3.1416 / 36
MAKE "REM REMAINDER :DEGREES 10
REPEAT :DEGREES / 10 [RT 5 FD :STEP RT 5]
IF :REM > 0 [FD :STEP * :REM / 10 RT :REM]
END
```

```
TO ARCL :RADIUS :DEGREES
MAKE "STEP 2 * :RADIUS * 3.1416 / 36
MAKE "REM REMAINDER :DEGREES 10
REPEAT :DEGREES / 10 [LT 5 FD :STEP LT 5]
IF :REM > 0 [FD :STEP * :REM / 10 LT :REM]
END
```

```
TO CIRCLEL :RADIUS
MAKE "STEP 2 * :RADIUS * 3.1416 / 36
REPEAT 36 [LT 5 FD :STEP LT 5]
END
```

```
TO CIRCRL :RADIUS
MAKE "STEP 2 * :RADIUS * 3.1416 / 36
REPEAT 36 [RT 5 FD :STEP RT 5]
END
```

```
TO SARM
IF :HS > 348 [MAKE "HS 0 MARM]
SETH :HS
```

FD 75

```
RT 180
CLICK
WAIT 50
CLICK
FD 75
MAKE "HS :HS + 6
SARM
END
```

```
TO CHECKKEY
IF KEYP [STOP]
CHECKKEY
END
```

```
TO MA
SETH :HM
LT 90
FD 3
RT 90
FD 75
RT 90
FD 6
RT 90
FD 75
RT 90
FD 3
RT 90
END
```

```
TO HA
SETH :HH
LT 90
FD 6
RT 90
FD 55
RT 90
FD 12
RT 90
FD 55
RT 90
FD 6
RT 90
END
```

```
TO STAR :S
HT
SETH 0
MAKE "SCR SCRUNCH
SETSCRUNCH :SCR * 2
PD
SETPC 6
ARCR 5 * :S 50
LT 100
ARCR 5 * :S 50
LT 180
ARCR 5 * :S 50
LT 100
```

ARCR 5 * :S 50

```
FD :S
PU
BK 4.835 * :S
MAKE "CEN POS
PD
SETPC 4
RAY 0 :CEN :S
SETSCRUNCH :SCR
END
```

```
TO BUCKSHOT :HM
IF :HM = 100 [STOP]
DOT LIST ( ( RANDOM 145 ) - 72.5 )
( ( RANDOM 145 ) - 72.5 )
SETPC RANDOM 3 + 3
BUCKSHOT :HM + 1
END
```

```
TO LOGO :S
BK 1 * :S
RT 90
FD 0.5 * :S
PU
FD 0.8 * :S
PD
CIRCLEL :S / 2
PU
FD 1.4 * :S
PD
ARCL ( :S / 2 ) 90
LT 90
FD 0.4 * :S
BK 0.4 * :S
LT 90
ARCR ( :S / 2 ) 310
RT 180
ARCL ( :S / 2 ) 220
PU
FD 1.4 * :S
PD
CIRCLEL :S / 2
END
```

```
TO DR.ADAM
TELL 4
PU
SETPOS [-23 45]
SETSH 1
PD STAMP PU
HOME
SETPOS [-8 45]
SETSH 2 PD
STAMP PU
HOME
SETPOS [8 45]
SETSH 1 PD
STAMP PU
HOME
```

```
SETPOS [24 45]
SETSH 3 PD
STAMP PU
HOME
TELL 0
END
```

```
TO FACE
HT
PU
SETPOS [0 0]
FD 83
RT 90
PD
CIRCLER 83
LT 90
PU
FD 7
RT 90
PD
SETPC 2
CIRCLER 90
LT 90
PU
FD 7
RT 90
PD
SETPC 3
CIRCLER 97
PU
END
```

```
TO TICK :HEAD
PU
SETPOS [0 0]
SETH :HEAD
FD 80
RT 180
PD
FD 5
IF :HEAD > 330 [STOP]
TICK :HEAD + 360 / 12
END
```

```
TO CLOCK
CS
WRAP
PRINT [ENTER SEPERATED BY 1 SPACE]
PRINT [HOUR - MINUTES - SECONDS]
MAKE "TIME READLIST
CT
MAKE "HH ( ( 30 * FIRST :TIME ) + ( 0.5 * FIRST BUTFIRST
:TIME ) )
MAKE "HM ( 6 * FIRST BUTFIRST :TIME )
MAKE "HS ( 6 * LAST :TIME )
SETBG 14
SETPC 5
PD
```

```
TICK 0
FACE
SETPOS [-9.11567 40]
SETH 0
PD
SETPC 4
DR.ADAM
PU
SETPOS [-20 -40]
SETH 0
PD
SETPC 4
LOGO 10
SETPC 1
BUCKSHOT 1
PU
SETPC 1
SETPOS [-110 60]
STAR 2.5
PU
SETPOS [0 0]
PX
HA
MA
PRINT [PRESS < RETURN > TO START]
CHECKKEY
CT
WINDOW
SARM
END
```

```
TO ADAM
PUTSH 1 :A
PUTSH 2 :D
PUTSH 3 :M
CLOCK
END
```

```
MAKE "STARTUP [ADAM]
MAKE "DAVID 5
MAKE "M [0 0 0 0 240 248 120 124 124 126 126 119 119 115
113 113 0 0 0 0 7 15 15 31 31 63 63 119 247 231 199 199]
MAKE "D [0 0 0 0 255 255 63 56 56 56 56 56 63 63 63 0 0
0 0 252 254 255 7 7 7 7 7 255 254 252]
MAKE "A [0 0 0 0 63 63 14 14 28 28 63 63 120 120 240 240 0
0 0 0 224 224 112 112 56 56 252 252 30 30 15 15]
```

REVIEWS

Backup 3.0 and Backup + 3.0
By L. Marschand

We are very pleased to review these fine products from MMSG, a quality ADAM software developer. We are also adding them to our product list. These two products are utility and copy programs. In my opinion the copy programs in these two products are the best available for the ADAM. Backup 3.0 is a subset of Backup+ 3.0 so we will review it first.

GENERAL

Both programs utilize a menu driven approach with SMARTKey input. You can get back to the main menu from any screen and online prompts are self explanatory. Screen colors are used to provide status information.

The entire program is done in machine language and hence it is very fast. The first step done is to test the ADAM's internal memory and the 64K expander if installed. This self test is a nice addition to the program. The 64K expander is used to reduce the copy time and further increase copying speed. Full error checking routines are included that prevent the creating of bad copies. If an error is encountered in the process options to retry, abort or ignore are provided. Also, full support for right directory Supergame tapes is provided as well as copying from/to various different tape formats (center and right). Copying from/to disk is also supported.

Both programs are copy protected but have built in safeguards should the original tape/disk develop a problem.

BACKUP 3.0

This product is primarily a backup copy utility designed for making exact duplicates of tapes/disks. There are two types of copy programs - one for making "standard" image backups and one for making "special" image backups. STANDARD image backup is used for all the normal data pack/disk programs - SMARTBasic, ADAMCalc, SMARTfiler, CP/M 2.2, etc. A nice feature is that the directory is read and if the directory is a standard one only the blocks used are copied, reducing copy time. For non-standard directories such as CP/M 2.2, all the blocks are copied.

SPECIAL image backup is used to copy non standard tapes, specifically the Supergames which use special formatted tapes. This copy program will copy all the Supergames except 2010:Text Adventure, which must be copied with a block copy program (see below).

Both these copy programs are top notch and don't require any special procedures as some other programs do. INITIALIZE utilities are also included. You can enter a volume name and initialize a tape or disk, which erases the directory and hence all the programs on the media. Backup 3.0 is smart enough to correctly determine and write the appropriate number of blocks left for tape versus disk. You can also initialize a tape/disk containing SMARTBasic.

BACKUP + 3.0

This program contains all the features of 3.0 above plus the following:

- . COPY Utilities - allow copying of individual files from one media to another. You can select which files to copy via a simple Y/N as each is displayed.
- . SELECTIVE Files - also for copying individual files but by the name of the file. Additionally, some excellent wildcard copying can be done by entering a string of characters to match on. As an example, if you want to copy all files that contain a string such as "doc" and not copy any other files. Individual file types can be selected so you only copy the "A" files and not any "H" files, etc. This is a real nice feature if you do alot of copying between disks/tapes.

- . COPY Basic - allows you to copy the SMARTBasic program itself. Backup + makes some nice "fixes" to Basic while it copies it. Specifically, to allow the hello program to be run from the same drive that Basic was booted from. The correct number of blocks left are determined if you copy to disk. Essentially, Basic is made device independent.

- . FILE Utilities - files can be deleted and previously deleted files can be restored.

- . CATALOG - the catalog of any device can be displayed and printed without leaving Backup +.

- . FORMAT Disk - disks can be formatted and verified.

- . BLOCK Utilities - this is a very flexible program for copying individual blocks or ranges of blocks. By selecting a full range of blocks (0 to 255) you duplicate an entire data pack, but the real purpose is for selective blocks.

- . BLOCK Status - reads all the blocks or a specified range of blocks and displays whether the block is used, empty or bad. Good for finding whether there are bad blocks on the media.

I can't say enough positives about both these programs - they are excellent. They are the premiere copy oriented utility programs for the ADAM.

RATING - A+

Family Feud Question Pack
By L. Marschand

Walter's Software has done it again. The developers of Jeopardy Question Pack, which contains 30 rounds of additional Jeopardy boards for this excellent Public Domain game that was never released by Coleco have now completed a question pack for Family Feud. If you like this classic TV game show, don't pass up this game tape.

The Family Feud program is NOT Public Domain and is still being sold commercially by many companies. The FF program contains several sets of questions. This Question Pack can be used with the base FF game to add a whole bunch of additional questions and give the game more variety. Both FF and Jeopardy are great family games, where everybody can get involved and have alot of fun. The graphics of the contestants are superb and the expressions they give when they get right/wrong answers are really cute.

Walter's software has put 100's of hours of work into these question packs for those of you (like me) that enjoy these great games. Let's support this development effort and purchase these fine products.

RATING - A

Kid's Trivia Pack
By L. Marschand

Mr. T (Bob Tarnowski) has developed is second Trivia game program for the ADAM (see our review in the July/86 issue). Kid's Trivia contains the same use of color and plentiful use of sound that adds to the basic trivia game concept. Kid's Trivia contains 1080 questions divided into 6

categories: Science & Nature, Sports & Games, Music & Stage, People & Places, Movies and Television which are picked randomly prior to each question. Once a player/team (up to 4 can play) has gotten one correct answer in each category, they advance to the Winner's round where a "winning" category is randomly chosen and the next correct answer in this category makes you a winner. There is even a Hall of Fame for winning scores! . New question files are continually brought in during the game to insure randomization. This trivia game is designed for the 11 to 16 year olds, whereas Trivia Pack I contains adult level questions. Most of the 1080 questions are multiple choice or true/false, which is much better for this age group. This is a good game for you trivia lovers and it even keeps score for you!

RATING - A

SEGA ULTIMATE GAME SYSTEM By L. Marschand

Please refer to the July/86 issue for Wayne's review of the Nintendo home arcade system. Both the Nintendo and Sega systems are the newest generation of home game systems, the Atari 2600 being the first generation. Both these systems are NOT computers, but dedicated game systems with specialized hardware designed for high quality arcade type games. As many of you may recall, the Colecovision was state of the art 4 years ago and used the advertisement of "the home arcade system". I remember crowding around a display in Penney's to watch the Smurf game in amazement of the high quality graphics. The original CV games used 24k (24,000 bytes) to store the game program. The Sega system uses 1048k (1,048,000) bytes for some of it's games !! This will give you some idea of the graphics and game complexity that is now available.

The specifications of the Sega system are impressive: 128K bytes of ROM memory, 128K bytes of video memory (the ADAM has 16K of Video RAM), 64 colors (ADAM 16), 256 colored Sprites. Unfortunately the Nintendo system does not give it's specifications, but I assume they are similar. Again, don't try to compare this game systems with an all purpose home computer, because these are specialized machines. I personally agree with this concept, home computers have been relegated to game systems in most homes which is a mistake because people don't like paying several hundred or a \$1000 for a game system. Sega and Nintendo have recognized this and have developed game systems that will not the socks off most computers in this category and for under \$150.00 ! The marketing studies done by both these companies have confirmed that the consumer will recognize this and buy these advanced systems. In fact, these new systems are contributing to the resurgence of the home video game industry that has been in the pits for the last 2 years.

Sega and Nintendo have been in the video game industry for several years. If you go to an arcade with the large video game machines, you will see several with their names on them. They are both large Japanese companies that have divisions here in the US. They have hundreds of programmers doing software design and development that will provide a large variety of programs for the purchaser of these systems. Both systems are similar, using the small,

but effective hand controllers described in the July issue and offering a "laser gun" that is used with some neat games. Both also come in two configurations - the base system without the light gun (Sega gives 2 games, Nintendo 1) and the expanded system with the light gun (Sega gives 2 games). The Nintendo expanded system also includes the Robot, which doesn't do much and you will end up putting it under a table somewhere. The differences are in some of the attachments. The Sega has two slots for cartridges - one large one on top and a small one in the front which accepts 256K game "cards" the size of a credit card !! It is amazing they can get such a large program on this small a card, in fact they are planning to put all new software,

even the large 1048K games on this card - you can store all your games in your shirt pocket ! Sega is also shortly shipping two additional controllers - a graphics pad and a sports pad, the later to be used with what sounds like a fantastic line of sports games. A disk drive is planned for the future which will add "scenery programs" to accompany a new line of games.

Now, to the real test of these two machines - the software programs themselves. From what I have seen thus far, Sega has the edge because most of their programs utilize a 3-D effect that Nintendo's don't. The kids I had play both systems, felt this was an attraction of the Sega over the Nintendo. Both have basically the same capabilities, but I feel Sega has more to offer for the future in the way of expandability and options.

We played the Sega Choplifter game which is a great adaptation of this classic game. The graphics are great and the 3D effect adds a real dimension to the game. The detail is fantastic - when your helicopter gets shot down, it first blows up and as it is falling to the ground you can see the main rotor blade still turning before it hits and explodes into pieces. The game is very challenging with 3 different scenes - desert, ocean with some neat ships and a cave scene which is super difficult. The kids will love this one.

Transbot is one of the 256K cards. This is a souped up Defender type of game with alot more action. The graphics are superb and the 3D effect is impressive. Your ship can "transform" into different ships with new types of defensive weapons. The number and various types of ships/objects that are attacking you seem endless. This game will be a real challenger.

Hang On is one of the two games that comes with the Sega. It is a motorcycle racing game, as in the current wave of such games at the arcades. This is a good basic game if you are into this type. Graphics, again are superb. Overall, if you are a video game player I don't know how you can pass up this type of home system for the price. The game cards and cartridges cost from \$25 to \$30 dollars each, so you must choose the ones you want with care, but you won't be disappointed with the quality.

Since NIAD has gone on record as supporting these home game systems, we will try something new and add the Sega system to our Product List for the next few months. If we get a good response, we will continue and add more games and accessories. We hope you find this expanded service beneficial.

PRODUCT LIST HARDWARE & ACCESSORIES

NOTE: SEE SPECIALS ON NEXT PAGE AS WELL

DOUBLE SIDED DISK DRIVE UPGRADE \$ 139.95

Send in your Coleco disk drive to be upgraded to 320K (270K in CP/M 2.2) capacity. Send in your complete drive with cables/ Disk Manager and CP/M System disk if you have CP/M. If your drive requires repair you will be charged \$19.95 plus parts.

NOTE: Due to a limitation of CP/M you can not mix single and double sided drives while using CP/M.

ADAM LINK MODEM 7818 \$ 69.95

ADAM phone modem which provides capability, with included software, to interface with other ADAM computers or large bulletin board systems such as Comuserve. Includes coupon for receiving advanced communications software for uploading and downloading of programs.

COMUSERVE STARTER KIT \$ 25.95

Includes account number, password and five free hours of connect time to the popular comuserve information system.

EVE 64K MEMORY EXPANDER ME-64 \$ 49.95

Provides additional 64K of memory for SMARTWriter, CPM programs. Provides print buffer spooling for ADAMCalc.

EVE RS232/PARALLEL INTERFACE SP-1 \$139.95

Allows the connection of the ADAM to any popular printer and other devices requiring either serial or parallel interface connections. Includes software for directing print to additional printers directly from SMARTWriter, SMARFiler, BASIC, CPM programs.

Includes EITHER parallel or serial cable - specify which one desired.

EVE SP-1 PARALLEL INTERFACE ONLY \$ 79.95

(Includes parallel cable)

ORPHANWARE PIA2 PARALLEL INTERFACE \$ 39.95

(Parallel cable required - see next item)

PARALLEL OR SERIAL CABLE SP-1C \$ 15.95

Second cable required to attach SP-1 or PIA2 interface to other printers.

SPEECH SYNTHESIZER/CLK CAL SS-CC \$109.95

Output voice speech and words via Basic and CPM programs.

Includes software to construct words. Real time clock calendar provides continuous date and time accessible from Basic and CPM.

EVE 80-COLUMN VIDEO/MOTHER BOARD VD-MB

With Power Supply \$329.95

W/O Power supply \$309.95

With trade in of PS-1 \$299.95

Provides 80-column video output from the ADAM to a monochrome 80-column monitor. Also includes separate power supply & expansion slots for attaching other EVE products. Expands ADAM's capability for CP/M SOFTWARE ONLY requiring 80-column display.

** Includes Word Processing and Basic software programs **

EVE MON-80 \$329.95

80 Column video board and monochrome monitor assembly.

Includes cable to attach to inside of ADAM console.

Does NOT include independent power supply or motherboard

** Includes Word Processing and Basic software programs **

EVE POWER SUPPLY FOR ADAM PS-1A \$ 79.95EVE MULTI-UNIT ADAPTER MA-3 \$ 44.95

Special adapter cable required to attach both the SP-1 and SS-CC to the ADAM. NOTE: Not required for 80-column video board.

CARD EDGE ADAPTER CEA-1 \$ 24.95

For attaching ADAM Autodialer to MA-3 cable.

ADAM PRINTER TRACTOR FEED \$ 72.95

Hooks unto the ADAM printer as originally designed to provide for feeding of pin-fed continuous form paper.

Provides consistent alignment and advancing of paper. All metal design - guaranteed.

PRINTER STAND/ON/OFF SWITCH \$ 15.95

Provides raised legs for the ADAM printer and relocates the on/off switch to the front of the printer for easier access when loading paper.

MONITOR CABLE 7830 \$ 9.95

Required to hook complete ADAM console to a video monitor.

Supports both picture and sound signals.

EXPANSION MOD MONITOR KIT \$ 29.95

Kit to modify colecovision unit to allow it to be connected to a monitor via 7830 cable above. Requires soldering skill - see review in 2/85 issue.

ADAM REPLACEMENT RIBBONS 7806 \$ 4.95ADAM DUST COVERS

3 pieces for complete ADAM system \$ 18.95

Disk Drive Only Cover \$ 8.95

3 pieces for ADAM Colecovision

Expansion Unit \$ 23.95

PRINTER WHEELS \$ 5.55

Replacement printer wheels for the ADAM printer - Gothic 12 /Script 12 /Elite 12 /Emphasis /Courier 72/Pica. Specify font desired.

TAPE DRIVE HEAD CLEANING KITS \$.50

COLECO/LORAN DATA PKS \$ 4.75 @

10 for \$ 39.95

NIAD/LORAN DATA PKS \$ 4.25

10 for \$ 34.95

NIAD UNFORMATTED DISKS - DS/DD 1-9 \$1.50 (

10 or more \$.99 @

50 or more \$.85 @

PRICES EFFECTIVE 11/1/86

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PRODUCT LIST MEMBERS ONLY

SOFTWARE (DDP UNLESS NOTED)

SMART LOGO 7600	\$ 29.95 SPECIAL
EXPERTYPE 7602	\$ 19.95 SPECIAL
SMART FILER 7813	\$ 15.95
RECIPE FILE 7814	\$ 15.95
SMART LTRS/FORMS 7805	\$ 15.95
FLASHCARD MAKER 7662	\$ 15.95
FLASHFACTS (TRIVIA 2902, HISTORY 2901,VOCAB 2900)	\$ 11.95@
CP/M 2.2 7832	\$ 39.95
ADAMCALC 7831	\$ 29.95
R. SCARRY'S WORDBOOK 7658	\$ 20.95
WACKY WORD GAME 7834	\$ 15.95
DONKEY KONG	\$ 19.95
DONKEY KONG, JR.	\$ 19.95
SUPER ZAXXON 2623	\$ 12.95
2010: TEXT ADVENTURE GAME BY MGM/UA 7849	\$ 20.95
FAMILY FEUD 7710	\$ 20.95
BEST OF BRODERBUND	\$ 20.95 SPECIAL

OTHER SOFTWARE- SPECIFY DDP

		<u>OR DISK</u>	
VIDEOTUNES (DDP ONLY)	\$26.95		JEOPARDY QUESTION PACK \$19.95 NEW
FANTASY GAMER (DDP)	\$22.95 SPECIAL		FAMILY FEUD QUES PACK \$19.95 NEW
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LVAC ARCHIVES I	\$ 9.95 SPECIAL		DDP \$16.95
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MEDIA AID	\$19.95		

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SUESS FIX UP PUZZLE 2699	\$18.95
MONKEY ACADEMY 2694	\$18.95
TELLY TURTLE LOGO GRAPHICS 2698	\$18.95
DUKES OF HAZZARD	\$18.95
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CABBAGE PATCH PIC SHOW	\$18.95
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I. NIAD PUBLIC DOMAIN SOFTWARE

** COST IS \$7.00 FOR EACH VOLUME ON DDP **

** COST IS \$5.00 FOR EACH VOLUME ON DISK **

*** SPECIFY VOLUME # AND DISK OR DDP***

- SMARTBasic Volumes I-16 #BNDV1-16 (16 different volumes)
- SMARTLogo Volumes I-2 #LNDV1-2 (2 volumes)
- ADAMCalc Volumes I-2 #ANDV1-2 (2 volumes)
- BASIC Utilities Volumes I-2 #UNDV1-2 (2 volumes)
Note: UNDV1 contains copy utility
- CPM 2.2 Volumes I-21 #CNDV1-21 (21 volumes available)
- JEOPARDY
- PINBALL/ MACK
- PINBALL GAMES VOLUME I (REQ'S PINBALL/ MACK)
- TROLLS TALE
- ADAM DIAGNOSTIC (NOTE: Requires 64K Memory Expander)
- SUPER SUB ROC
- ADAMLINK II TELECOMMUNICATIONS
- SMARTBASIC REP'L DDP
- SMARTBASIC 2.0 with documentation

- ELEC GAME PACK DISK \$17.95
- DDP \$19.95
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- DDP \$17.95

**** NIAD SPECIALS ****

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AND PANASONIC 1080I PRINTER W/CABLE 309.95
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- ADAMNET CABLES for KEYBOARD/DISK \$ 2.95

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NOTE: YOU MUST SEND IN THE LABEL CARD FROM
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BRODERBUND CAN BE COPIED DIRECTLY
BY MOST COPY PROGRAMS

SMARTFILER COPY SERVICE FOR LATEST VERSION WITH \$ 4.00
MAILING LABEL PRINT FIX (SEND IN YOUR FILER DISK/DDP)

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