# NIAD
### NORTHERN ILLIANA ADAM USERS GROUP

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HAPPY EASTER - CHRIST IS RISEN !!  This is a
wonderful time of year. The long winter is over (for those
of us that have a long winter), the weather is changing and
their is a feeling of "newness" in the air.  Isn't it
amazing that this coincides with Jesus' resurrection !!
Continuing our study of Ephesians Chapter 3...
20 Now to him who by the power at work within us is able to
do far more abundantly that all that we ask or think, 21 to
him be glory in the church and in Christ Jesus to all
generations, for ever and ever. Amen.
CHAPTER 4
I therfore, a prisoner for the Lord, beg you to lead a life
worthy of the calling to which you have been called, 2 with
all lovliness and meekness, with patience, forbearing one
another in love, 3 eager to maintian the unity of the
Spirit in the bond of peace. 4 There is one body and one
Spirit, just as you were called to the one hope that
belongs to your call, 5 one Lord, one faith, one baptism, 6
one God and Father of us all, who is above all and through
all and in all. 7 But grace was   given to each of us
according to the measure of Christ's gift. 8 Therefore it
is said,
"When he ascended on high he led a host of captives,
and he gave gifts to men."
9(In saying "He ascended," what does it mean but that he
had also descended into the lower parts of the earth?  10
He who descended is he who also ascended far above all the
heavens, that he might fill all things.)
Please note that verse 20 states that God through "...the
power at work within us is able to do far more
abundantly than all that we ask or think,...".  In other
words, we (once we are born again) have God within us and
hence he can do all things THROUGH us because our spirit is
a re-born one and is in unity with God. Also note that God
says he provides more abundantly than we could ask or think
- that's quite a statement for me to imagine, but not for
the God that created the universe! I think it is amazing
that within us dwells the Spirit of almighty God himself
and the power that goes with it!
Chapter 4 marks a turning point in Pauls letter to the
Ephesians.  In the first 3 chapters he explained God's plan
and the blessings available to the beleiver.  He explained
that we can only attain salvation through faith in the
person of Jesus and his death on the cross.  He now
discusses the human response to these truths i.e how we
should react and act.  He first asks them to "lead a life
worthy" of their calling.  I interpret this to say "be the
person God has made you to be" as explained in the first 3
Chapters.  He goes on and asks them to be meek, patient,
loving with one another, tolerant and to "...maintain the
unity of the spirit...".  This is a very important
statement because dis-unity among believers has disastrous
results.  Paul furthur states that there is one God (who is
above all, through all and in all - (that about covers it
!), one faith, one baptism, one Lord.  There are NOT
numerous ways to salvation but only ONE.  There is only one
Church in the sense that the body of Christian beleivers
should be in unity, it is unfortunate that man's doctrines
have resulted in splitting the Church into many
denominations and weakening its power.  However, there are
many things underway that will re-unite the body of
Christian beleivers into one - more on that another time.
Verse 7 begins a discussion of GRACE which means "gift from
God".  Jesus gave each of us the "general" gift of eternal
life when we accepted him as our personal Lord and Saviour,
but he also gives individual gifts to each of the members
of his Church.  We will discuss these next month.
God bless you all.

## INDEX

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# NIAD — A CHRISTIAN RUN BUSINESS

## NIAD NEWS

. NIAD membership is continuing to grow at an ever faster pace. We have hit the 1000 member mark as we predicted back in November !! Please be patient with us as we go through these "growing pains". Orders will take a week to 10 days to fill if all items are in stock. If you need a rush order please call it in or indicate "RUSH" on your order form. Please observe the Ordering rules in the NIAD BASICs section.

. New Look - Many of you have expressed that you really like the new print in the newsletter. One thing I blew was making the left margin too small for those of you that three hole punch the issues - this is corrected in this issue. The new print allows me to put about 10% more words on each page as well.

NIAD WINNERS for those of you that sent in your questionnaire by March 15th, we had a drawing and here are the winners of credits to NIAD orders:
FIRST PRIZE - $30.00 Jack Walton of Muncie, IN
SECOND PRIZE - $20.00 Eric Webster of East Waterboro, ME
THIRD PRIZE - $10.00 Mark Goldberg of Edison, NJ

. Darrell Sage of ECN and I talked the other day. We had a very amicable conversation and agreed to communicate frequently and exchange information. I wanted to insure that we work in concert and not at odds. I am sure that we do not agree on all things but the main thing that we do agree on is our desire to support the ADAM and the many owners out there. Both Darrell and I are committed to this goal. I think a good relationship between us will provide better support to you.

. ADAM Users of America is advertising again according to D. Sage. This company "ripped" a number of people off in 1984 when they took money for memberships and only produced one newsletter. Please, be careful when joining new user groups - write me for information on other user groups.

. The first Chicago area local meeting of NIAD members was held in March with the next meeting set for April 3 at the Glenside Library located at 25 East Fullerton, Glendale Hts, Il at 7:00 PM. Contact Chuck Kolander at (312) 790-1857 for more information. There will a demo of ADAMCalc in addition to discussion.

ADAM Future Product Survey is included in this issue. This survey from Eve Electronics will enable them to develop plans for future product developments. Please take time to fill out this survey if you are interested in any of these products.

Software/ Hardware - We still have a waiting list on disk drives and modems. I don't expect any large

quantities until the end of April at this point - hold on

folks, they will be coming. Software is in better shape. We have filled back orders for 2010 and Family Feud. Some of the cartridge games are still hard to find, especially Dambusters and Spyhunter. We have Rocky, Antartic Adventure, Wargames Dukes of Hazzard and all the SuperGames (Zaxxon, Donkey Kong and Jr.) in stock as well. We also obtained a small stock of the Super Action controller sets with the Baseball game. We just purchased a good supply of some of the Coleco software at a reduced price and are passing it on to you - see the specials on the Product List. We also have a small quantity of NEW digital data drives. These are the latest style drive, but they are not in the Coleco boxes.

. Renewals - Get your renewals in early to insure you don't miss any issues. For those of you whose member # (above your name on the mailing label) begins with "0386" this is your last issue.

Reveiws - See our reviews in this issue of Quickopy, SmartTRIX, Signshop, Powerprint, Electronic Games Pack, Eve's 80 column VD-MB

New Products now carried by NIAD include :
- PaintMASTER
- TurboLOAD
- PowerPRINT
- SignSHOP
- MultiWRITE
- SmartTRIX I
- Quickopy

- ADAM Hardware Diagnostic PD software
- Disk conversions
- Coleco ADAM User's Handbook
- The Basic ADAM: Self Teaching Guide
- Tape Drive head cleaning kits
- NEW digital data tape drives
- Reconditioned digital data tape drives
- Super Action controller sets w/ Baseball game

. NIAD BASICS
. New members subcriptions are started with the last issue published.
. Back issues of the NIAD newsletter are available for $3.00 each and I would recommend you purchase them for the reviews and workshop information.
. Telephone call ins - are becoming a problem. As many of you know, we now have an answering machine (frankly I don't like these, but was forced to add one to handle the volume of calls). We want to service all NIAD members and hence please observe the following phone rules:
. ORDERING - Unless you have a rush request, I would prefer you mail orders in rather then call them in. If you have questions you need answers to before ordering then you may call your order in. If you do call in orders please DO NOT

additional functions over SMARTWriter, which is the word processing program included with the ADAM. The nice thing is that a conversion program is provided that will convert existing SMARTWriter files to MulitWRITE format. The main advantages over SMARTWriter are a 64 character display (SMARTWriter provides 36 characters), right justification, line centering, variable tabs and margin settings within a document and a "see what you print" concept of formatting on the screen. Due to the 64 character display, a monochrome monitor is recommended (composite color monitors do not adequately display more then 40 characters). Due to the size of the program, only about 5 pages of text can be held in memory at one time. We will have a full review next month.

I am very impressed with the work being done by Orphanware to support the ADAM. They currently have a 64K expander and Parallel printer interface in prototype mode and should have production versions available soon. They are also finalizing an 80 column video board which should be available in a few monthes. Their software support is also encouraging in that they have many new products under development. They now repair the Coleco ADAM disk drive for a price of $39.95 plus parts. If they can't fix it they will return your money. I recommend them to those of you with defective drives.
Orphanware, 5665 Myers Rd, Akron, OH 44319.


GJMG Enterprises has done a fine job with Quickopy (see review this issue) and has some fantastic new utility software programs under development that we will report on next month. It is very encouraging to see such skilled programmers "attack" the ADAM with zeal and produce such quality products.
Glenn Gabarik has also agreed to work with NIAD on the New ADAM Owner's Handbook mentioned last month.

Eve Electronics has started planning their disk drive controller now that the 80 column video board is about done. One option they are considering is offering an upgrade for the current Coleco ADAM disk drive to install a DOUBLE SIDED disk drive unit in the the ADAM case ! Yes, ADAM was originally designed to support double sided disks.


Zayre's Department stores now have a good supply of ADAM software.

Marathon Computer Press is a nwe company producing software for the ADAM. They have three new software programs - Codevisor for "locking " Basic programs by requiring passwords to run the programs, Spanish Librarian which is a spanish vocabulary program and the Investment Analyst for tracking your stock portfolio. Marathon has a special and will give 30% off to ADAM User Group members. Just give them the following control number with your order - NIAD3886MC. We have requested review copies of these products.
Marathon, PO Box 68503, Virginia Beach, VA 23455.

call on Saturday AMs so the lines can be open for Technical questions. You may call each day from 11:00 AM to . 3:00 PM Chicago time with your rush orders. You may also leave orders on the answering machine, but if you do please make sure to leave your name, address, phone number and charge card number.
. QUESTIONS - Many of the questions asked over the phone could be handled via letter, especially if they only require a yes or no answer. I would appreciate it if you sent in your questions, leaving a space under each question for me to write the answer and please include a self addressed stamped return envelope. Technical info/ questions - Please reserve Saturday morning for these types of questions.
. PROBLEMS - Problems you have with our products, orders, etc can be called in anytime. We usually have the phones manned during the day from 11:00 AM Chicago time until 3:00 PM. If you get the infamous NIAD answering machine, state the problem and leave your phone number and we will return your call.
. Regarding Product ordering -
 Send a money order or chargecard number if you want to expedite your order on all first time orders (Note: Established members may pay by check without the 10 day delay).
If you order items that are shown as not yet available at the same time you order other items, you will be charged two shipping charges unless you specify that I should hold your order until all items are available.
. If you want me to ship to a Post Office box, include the shipping charge for US Mail since UPS does not ship to PO boxes.
. All shipments to Hawaii or APO/ FPO addresses are charged the US mail 1st class rate.
. Please call me before returning any merchandise.
. If I am backordered on an item that is not shown as "not yet available", I will fill the rest of your order and send the backordered item when received (with no additional shipping charge).
. If you are having trouble receiving your newsletter via third class mail, you may upgrade to 1st class delivery by sending in $ .50 for each month remaining in your subscription (expiration month is the first 4 numbers of your membership number on your mailing label).
. A list of all the program names in our Public Domain list may be obtained by sending in a self addressed stamped envelope with your request.

## UPDATES

Eve's 80 Column Video Board is now available in small quantities. There has been a latent demand for this product, even at the high price so new orders will take about 4-6 weeks to fill. Please read the first of a two part review in this issue to really understand the functions this product does and doesn't provide.

. MultiWRITE is now available. This is a new word processing software program for the ADAM that provides

Steve Jacoby Enterprises is now marketing an ADAM Voice Synthesizer that uses a different sound chip then either the Eve SS-CC or the AAL Chatterbox. Price is $59.95 in kit form or $99.95 complete. We have requested a review copy.

Darrell Sage is seriously considering doing modifications to the print function within the SMARTFiler program. As many of you know, this is the weak point of this otherwise good database program. Encourage Darrell in this effort.
Darrell has also come out with a new Utility program that we will review in next months issue.

Walter's Software has a great Basic Utility program that contains all the useful utilities an ADAMite could want. We will review this fine package next month.

Family Computing magazine's April issue has an article on "Souping Up Your Computer" that provides ADAM information on page 32.

## PUBLIC DOMAIN WORKSHOP

Due to the large increase in NIAD members and our ever increasing Pubic Domain library, we will do this workshop each month.

Utilcopy —There are two changes needed to insure you can copy from tape drive 1 to tape drive 2 (or vice versa) for all types of ADAM software. There is a bug in the ADAM operating system which results in ADAM "forgetting" where it is on the destination drive. This drove us crazy for awhile but thanks to a tip from Jim Walters, Wayne devised a fix that help. ADAM not get lost. This problem ONLY occurs when copying tape to tape using two tape drives. If you would llike the updated version please send in $3.00 and your current Utilicopy tape or disk and we will recopy the new version for you.

Basic PD #BNDV5 needs a fix to the KOALA drawing program. Bob Tarnowski tells us that line 780 should read as follows:
780 X=X-1 : Y=Y+1

. New volumes available: We now have 16 CP/M volumes and 10 Basic volumes. Send in a SASE to get the updated list of programs.
Here is the program description for Basic volume # BNDV8, which contains more fine programs:
     NIAD PUBLIC DOMAIN
      PROGRAM DESCRIPTIONS #BNDV8
          by Bob Lennes, Librarian

*TRAVBOOT- Run this program and it will boot the traveler adventure.
*1TRAVELER, 2TRAVELER, 3TRAVELER- A text adventure series of games, has graphic screens too; very good game for text adventure fanatics to have fun with. You can travel through time with certain machines
*JEWELHUNT- Excellent text adventure in which you go searching for the valuable jewels- You have access to a stock room of many articles. You must carry the right objects and search for the right clues to find your ultimate goal- the secret hiding place of the jewels. This program also has a partially assembled version- "JEWEL.ASM". You can BRUN JEWEL.ASM- it's a faster loading version of JEWELHUNT
*FIREWORK- This program will display a "firework" show in the low-res graphics mode
*ADDdrill- A colorful addition drill for young kids or even the older ones- you can select skill level and how many problems you want
*wordcount- can count the number of words in any 'A' type file. (Doesn't count line #'s in programs)

*2ndDeqEq- solves second degree equations and graphs them
*deviation- calculates the average,mean, and deviation of a set of numbers
*Loveprint- Prints out a reproduction of R. Indiana's great work "LOVE" with a message of your choice
*MINEFIELD- In this high-res graphic game, you must guide the soldier home through a minefield. Each level the number of mines increases
*planets- this program tells you information about any of the nine planets in our solar system
*cointoss- randomly selects 'heads' or 'tails'
*CRAPS- the classic dice game- Here are the rules:
     1) A 7 or 11 on the first roll wins.
     2) A 2,3, or 12 on the first roll loses
     3) Any number rolled becomes your "point." You continue to roll; if you get your "point", you win. If you roll a 7, you lose.
*DRAWstraws- like drawing straws, this program will pick random lengths of straws for four players.

## NEW ADAM OWNERS WORKSHOP

The purpose of this column is to help new ADAM owners
get started and effectively use their system.
Obviously, some of you new ADAM owners may be computer
experts in that you may have had other systems and only
need acclimation to the specifics of the ADAM. The rest of
you may have purchased the ADAM as their first computer
system.
The first thing to stress is READ the instructions and
manuals supplied with your ADAM. Many questions I have
answered could have been solved through reading the Coleco
manuals. Now, I know that this is tough for the impetuous
among us (I am one of these types), but it necessary if you
want to effectively use your system. I do recommend a
training course that will help you get started with your
ADAM called the Learning Express. This audio course was
reviewed in NIAD issue # 10 and is a great way to get
started, especially if you are a new computer owner. The
audio tape and manual does a nice job of stepping the
novice through setting up the computer, and using both
SMARTWriter and SMARTBasic. Depending on what you plan to
use your ADAM for will determine what education you need.
If you just plan to use the wordprocessing program
(SMARTWriter) then a combination of the book supplied with
ADAM and one called
The Second Book of ADAM: Using SMARTWriter. Both
of these items are available through the Buying Service.
For you potential Basic programmers, you need to plan on
spending some time to learn the Basic programming language.
There are alot of Basic programming books around and two
that are good for the beginner are: The Coleco ADAM
User's Handbook and The First Book of ADAM. NIAD
carries both of these books. Now if you want to get into
other languages such as LOGO or use programs such as
ADAMCalc or SMARTFiler you will have to study the manuals
that come with these programs. I would suggest you get the
back issues of NIAD to read the reviews and workshops on
some of these programs.
CPM is a whole other world and I would suggest you get
acquainted with the ADAM for awhile before you tackle CPM.
See the CPM WORKSHOPS in the various issues for information
on this operating system and associated programs.


There are some basics you need to get started.
1. The first is a "backup copy " utility that will allow
you to create a second copy of important programs such as
your SMARTBasic tape and other key programs. This is a
commandment to insure that you have an extra copy of these
key programs in case your original is lost or damaged. If
you do not have one of these programs (there are a bunch on
the market) you should order the NIAD Public Domain Volume
UITILITY # UNDV1 which contains a program called UTILICOPY
which will make back up copies of all your data packs and
disks except for the SUPERgames.
2. Repair for your ADAM (except for the Disk Drive) can be
obtained at a Honeywell Service center located near you -

call information or the Coleco toll free "Hotline" for the

phone number.
3. Read the Product Review Summary you received and
determine which products you are interested in and then
read the detailed review in the back issue indicated for
more information if required - don't buy indiscriminately
just because a title sounds good because you may be
disappointed and frustrated.
4. Order basic supplies of ribbons and extra data packs/
diskettes so you don't run out when you're in the middle of
a hot project.

## BEGINNER'S BASIC WORKSHOP

Let's talk about running SMARTBasic programs since we have
had several questions on this.
Most SMARTBasic tapes or disks contain individual programs
on them that can be "RUN" from SMARTBasic itself. This is
confusing so let's explain - The SMARTBasic tape you
received with your ADAM system contains the actual
SMARTBasic "interpreter" program which is loaded into the
ADAM when you insert the SMARTBasic tape and pull the
computer reset button. This "interpreter" program is used
to enter and run other programs written in the SMARTBasic
language i.e. the SMARTBasic interpreter program runs
programs written in the SMARTBasic language. Hence, to run
a program written in SMARTBasic you first load the
SMARTBasic interpreter program then remove that tape and
insert your tape with the specific SMARTBasic programs you
want to run. Let's use our best selling Public Domain tape
- Utilities #UNDV1 as an example.
1. Insert SMARTBasic tape (the one you received with the
ADAM).
2. Pull the Computer Reset switch
3. SMARTBasic will take a while to load - when it is done
you will see the following on the screen:
SMARTBASIC V 1.0
4. Remove the SMARTBasic tape and insert the Utilities
#UNDV1 tape.
5. Enter the following using the keyboard (NOTE: Do not
enter the quotes, they indicate what you should enter):
"catalog,d1" - If UNDV1 is on tape
"catalog,d5" - If UNDV1 is on disk
Hit the "return" key after each entry - this sends the
command to the SMARTBasic interpreter program. If you do
not enter a command correctly you will get an error message
"Syntax Error" or "Illegal Command".
6. The tape/ disk will run and a list of all the programs
contained will be displayed.
7. To run an individual program enter "run" followed by the
name of the program EXACTLY as it is listed on the
catalog display - use lower case and upper case as
displayed.
Example - "run UTILCOPY" would be entered since the name is
all upper case on the catalog listing.
If you do not enter the name correctly you will get an
error message "File Not Found".
8. The tape/ disk will spin and the program will be loaded
and automatically run.

## SMARTBASIC WORKSHOP

## THE ADAM SmartBASIC PROGRAMMER'S TOOLBOX
   By Bob Lennes


   Once again, I have some handy peeks, calls, and
other tidbits to tell you to use in your programs.
 Printing Lines
   Last month, in explaining the Phonebook program, I told
you about a machine language routine that is
equivalent to a PRINT statement, except much faster. I will
now explai n how you can use this routine in any  program.
   The routine is very short. All it actually does is  call
the print routine in the Basic portion oi a... , : : 't
kn ow why this routine works faster than the actual PRINT
statements, I just know it is faster. You can put this
routine anywhere you want between 27407 and whatever you
set LOME M to by using a FOR-NEXT loop. Here is what the
data statement looks like:
   900 DATA  33,0,0,205,78,47,201


   Each number is a machine language operation code- it
tells ADAM's brain, the CPU (Central Processing Unit) to
perform a certain function. They are many different kinds
of CPU's that they use in the variety  of computers on the
market. They all do basically the  same thing, but they use
different operation codes and different kinds of operations
are available. That is why you can't use Apple machine
language routines in ADAM programs. If you want to learn
more about machine language for ADAM's CPU, the Z-80A by
Zilog, then I recommend the book, Programming the Z80, by
Rodnay Zaks. A note of warning, however: machine language
is very complicated! But if you are an advanced programmer,
then you may want to try your hand at it.
   Anyway, I will explain what each data value does when in
memory:


| Bytes | Values | Assembly Code | Meaning |
|---|---|---|---|
| 00,01,02 | 33,00,00 | LD HL,00 | ;Load address of ;print statement(00) |
| 03,04,05 | 205,78,47 | CALL 12110 | ;call Print Routine |
| 06 | 201 | RET | ;return to Basic |


   To get the address 12110, you multiply 47 times 256, and
add 78. In order to print a line from memory, you have to
poke the address into bytes 01,02. Byte 01 would be
ADDRESS-INT(ADDRESS/256)*256. Byte 02 would be
INT(ADDRESS/256). At ADDRESS the byte must contain the
number of characters in the line i.e. how many bytes to
print.
 This routine is used by SmartBASIC to print all error
messages. Here is a program that shows you all of the
addresses that have messages after them.

```
10LOMEM :28000
20FOR i=27800 TO 27806:READ v:POKE i, v:NEXT
30DATA  33,0,0,205,78,47,201
```

```
100PRINT:PRINT " ENTER 0 FOR A LIST OF HANDY
ADDRESSES, ENTER 99999 TO QUIT"
105INPUT " ADDRESS? "; adr:PRINT:IF adr>65535 THEN END
107IF adr=0 THEN 500
110 b1=adr-INT(adr/256)*256
120 b2=INT(adr/256)
130POKE 27801, b1:POKE 27802, b2
140CALL 27800:PRINT:REM The PRINT routine does not add a
CARRIAGE RETURN- So you must.
150GOTO 100
500HOME:PRINT " ADDRESSES YOU CAN USE"
510PRINT
520PRINT " 11980 12485 13860 13921 14012"
530PRINT "  9220 14190 14395 14760 14881"
540PRINT " 14908 15006 15191 15253 15342"
550PRINT " 15638 24139 24155 24168 24183"
560PRINT " 24193 24206 24218 24231 24252"
570PRINT " 24273  1064  1083  1i5i  :76:"
580PRINT "  1176  1197  1209  1226  1235"
590PRINT "  1249  1264  1284  1298  1318"
600PRINT "  1333  1347  1363  1383  1402"
610PRINT "  1427  1442  1448 21463"
680PRINT
690GOTO 100
```

 Memory Dump
   Here is a short routine that prints out the memory  in
characters:
```
900FOR t=256 TO 27407:IF t/16=INT(t/16) THEN
PRINT:PRINT t; " ";
910 p=PEEK(t):IF p>30 AND p<127 THEN PRINT CHR$(p);
:GOTO 930
920PRINT CHR$(1);
930NEXT
```
 Break and Pause
   The key that causes you to break out of a program
(stop it) is the CONTROL+C. There is a PEEK location that
holds the value of this key. It is address 16134. You could
POKE 16134,27 and then you would only have to push
ESCAPE/WP instead of both the CONTROL and C keys. You could
also poke a value that is not a key (e.g. 255) and then
noone could break out of your program. Be careful if you do
this. You should always have a secret way of getting out of
your program just in case something goes wrong.
   You could also change the value for the freeze
screen(pause) at address 16135 from CONTROL-s (19) to
maybe 145 for UNDO. The only problem with UNDO is that if
UNDO is used without the LOCK or SHIFT key it is a value of
145, but with the LOCK or SHIFT key it is 153.


 Raising Numbers to A Power
   The SmartBASIC manual does not mention how to raise a
number to a power. I think this was an oversight by the
authors of the manual, but some of you probably didn't know
that you could use the caret (^). E.G. To raise 5 to the
second power; that is five squared, you would type PRINT
5^2. Adam will respond with 25.

## SmartBEST WORKSHOP

### Module 1.2 The Sound Commands

**COMMENTS:**

Here we'll continue last month's review of the
SmartBEST sound commands. Each workshop in this series
will continue to be segregated into two sections: novice '
advanced. If you have any questions that you'd like
answered in the workshop, send them to:
NIAD
SmartBEST WORKSHOP
P.O. Box 1114
Lisle, IL 60532

**NOVICE USAGE:**

As you gain programming experience, you'll discover
that there are usually many different ways of accomplishing
any specific task. The BEST commands are the simplest way
to date for accessing ADAM's sound chip.

However, programming utilities by nature are usually
geared toward intermediate to advanced use. Don't let this
discourage you though. Practice! Experiment! That's the
way to learn. Nothing that you type in can do any
permanent damage to ADAM. So, let's type in a few
commands:
```
VOICE1 <RETURN>
VOICE2 <RETURN>
VOICE3 <RETURN>
NOISE <RETURN>
```

Now let's quiet things down a bit:
```
OFF <RETURN> (shuts off noise command)
```
Now to turn everything off at once:
```
HUSH <RETURN>
```

Now let's enter a simple demo program:
```
NEW <RETURN>
10 FOR note = 1 to 63 <RETURN>
20 POKE 1, note <RETURN>
30 VOICE1 <RETURN>
40 FOR delay = 1 to 375 : NEXT delay <RETURN>
50 NEXT note:V1off <RETURN>
60 END
RUN <RETURN>
```
Line # 40 controls the tone duration. It's commonly
called a timing loop. This is because all it does is count
(using up time to do so) to the specified number (375 here)
and then go on to the next command. A timing loop that
counts from 1 to 750 lasts one second. The loop here
counts to half that value, so it lasts about a half second.

**INTERMEDIATE/ADVANCED USAGE:**

If you have delved into ADAM machine language at all,
you probably already know that to access a voice requires a
two byte tonal frequency input. BEST enters the first
frequency automatically. The values are stored in

addresses 7, 8, and 9 respectively for each voice. You can
easily POKE in new values.

The first tonal frequency byte for the first voice may
be any value from 128 to 143. The range for the second
voice is 32 higher. And the range for the third voice is
32 higher than the range for the second voice.

BEST sets each of these first byte addresses (7 - 9)
at the lowest possible values. Changing this value will
alter the pitch of the tones for the specific voice.
Consider this example:

```
10 FOR x = 143 to 128 STEP -1: POKE 7, x
20 VOICE1: FOR de = 1 to 375: NEXT: HUSH
30 FOR x = 175 to 160 STEP -1: POKE 8, x
40 VOICE2: FOR de = 1 to 375: NEXT: HUSH
50 FOR x = 207 to 192 STEP -1: POKE 9, x
60 VOICE3: FOR de = 1 to 375: NEXT: HUSH
```

Here is a nice financial program for figuring interest
rates, loan payment amounts, etc. from NIAD PD volume
8NDV6:

```
0& 'finance'-NIAD #BNDV6
1& edited by Bob Lennes
100TEXT
101CLEAR:? "ENTER THE NUMBER OF ONE OF THE FOLLOWING
PROGRAMS:":?
110? "  1 - NOMINAL & EFFECTIVE"
115? "      INTEREST RATES"
120? "  2 - INTERNAL RATE OF RETURN"
130? "  3 - FUTURE VALUE OF REGULAR"
135? "      DEPOSITS"
140? "  4 - REGULAR DEPOSITS FOR"
145? "      FUTURE VALUE"
150? "  5 - REGULAR PAYMENTS"
155? "      FROM AN ACCOUNT"
160? "  6 - STOP THE PROGRAM"
210?:INPUT "ENTER THE # OF YOUR CHOICE "; f
2300N f GOTO 1000, 2000, 3000, 4000, 5000, 6000
2406OTO 100
1000& **nominal and effective interest rates**
1005TEXT:CLEAR
1010? "THIS PROGRAM GIVES"
1015? "YOU THE NOMINAL AND"
1020? "EFFECTIVE INTEREST"
1025? "RATES WHEN GIVEN THE"
1030? "FUTURE VALUE, PRESENT"
1035? "VALUE, NUMBER OF "
1040? "PERIODS BETWEEN THE"
1042? "TWO, AND THE NUMBER OF"
1044? "COMPOUNDING PERIODS"
1045? "PER YEAR."
1050?:INPUT "ENTER FUTURE VALUE  "; fv
1060INPUT "ENTER PRESENT VALUE  "; pv
1070INPUT "ENTER TOTAL # OF PERIODS  "; np
1080INPUT "ENTER # OF PERIODS/YEAR  "; py
1085IF py  THEN  pv=1E-08
1086IF np=0 THEN  np=1E-08
```

```
1090 nr=(py*((fv/pv)1/np))-py)*100
1100 er=((fv/pv)py/np)-1)*100
1110?:?:? "THE NOMINAL RATE IS  "; nr; " %"
1120?:? "THE EFFECTIVE RATE IS  "; er; " %"
1130?:INPUT "PRESS ENTER TO RETURN TO MENU"; a$
1140GOTO 100
2000& **INTERNAL RATE OF RETURN**
2005TEXT:CLEAR
2010? "THIS PROGRAM FIGURES"
2011? "THE INTERNAL RATE OF"
2012? "RETURN ON AN INVESTMENT,"
2013? "THE PERIODIC EARNINGS"
2014? "OF THAT INVESTMENT,"
2015? "DISCOUNTED FOR THE"
2016? "PRESENT VALUE OF THE"
2017? "EXPECTED SALES PRICE.":?
2050INPUT "ENTER THE PURCHASE PRICE  "; pv:IF pv=0 THEN
pv=1E-08
2060INPUT "ENTER THE EXPECTED SALES PRICE  "; fv
2070INPUT "ENTER THE # OF PERIODS/YEAR  "; py:IF py=0 THEN
py=1E-08
2080INPUT "ENTER THE TOTAL # OF PERIODS  "; n:IF n<1 THEN
VTAB VPOS(0)-1:GOTO 2080
2085DIM ep(n)
2090FOR x=1 TO n:? "ENTER THE EARNINGS FOR PERIOD #"; x;
:INPUT ep(x):NEXT x
2095?:?:? "COMPUTER WORKING.  BE WITH YOU IN A FEW SECONDS
...."
2100 ir=.15/py: i1=.25
2110 pf=fv/(1+ir)
2115 te=0
2120FOR x=1 TO n
2130 pe=ep(x)/(1+ir)
2140 te=te+pe
2145NEXT x
2150 i1=ir*(pf+te)/pv
2160IF ABS(ir-i1)<1E-06 THEN  ir=ir*py*100:GOTO 2200
2170 ir=i1:GOTO 2110
2200?:?:?:?:? "THE RATE OF RETURN IS  "; ir; "%"
2210?:INPUT "PRESS ENTER FOR MENU"; a$:GOTO 100
3000TEXT:CLEAR
3005? "THIS PROGRAM WILL GIVE YOU"
3006? "THE FUTURE VALUE OF A"
3007? "SERIES OF REGULAR DEPOSITS"
3009? "WHERE EACH DEPOSIT IS "
3010? "IDENTICAL AND INTEREST"
3011? "IS COMPOUNDED WITH  THE SAME"
3012? "FREQUENCY THAT DEPOSITS"
3013? "ARE MADE."
3080?:?:?:? "ENTER THE AMOUNT OF THE REGULAR"
3085INPUT "DEPOSITS  "; rd
3093? "ENTER THE NUMBER OF DEPOSITS"
3095INPUT "PER YEAR  "; py
3100? "USING THE FORMAT (YY,MM)":? "ENTER THE YEARS AND
MONTHS"
3110INPUT "OF THE TERM  "; y, m
3120 y=y+m/12
3130INPUT "ENTER THE ANNUAL INTEREST RATE IN %  "; ir
3135IF py=0 THEN  py=1E-08
3140 i=ir/py/100
```

```
3145IF i=0 THEN  i=1E-08
3150 t=(1+i)py*y): t=t-1: t=t/i: fv=rd*t
3160?:?:? "THE FUTURE VALUE IS $"; fv
3170?:?:INPUT "PRESS RETURN TO RETURN TO MENU"; a$:GOTO 100
3200END
4000TEXT
4005? "THIS PROGRAM COMPUTES THE "
4006? "AMOUNT OF A REGULAR DEPOSIT"
4007? "NEEDED TO PRODUCE A "
4008? "PARTICULAR FUTURE VALUE."
4020?:?:?
4030INPUT "WHAT IS THE FUTURE VALUE        $"; fv
4040? "ENTER THE NUMBER OF DEPOSITS"
4045INPUT "PER YEAR  "; py
4050? "ENTER THE NUMBER OF YEARS"
4060INPUT "USING THE FORMAT (YY,MM)  "; y, m

4070 y=y+m/12
4080? "ENTER THE NOMINAL INTEREST"
4085INPUT "RATE IN %  "; ir
4087IF py=0 THEN  py=1E-07
4090 i=ir/py/100
4095IF t=0 THEN  t=1E-06
4100 t=(1+i)py*y): t=t-1:IF t=0 THEN  t=1E-07
4105 t=i/t: rd=fv*t
4110?:?:?
4115? "THE AMOUNT OF THE REGULAR"
4116? "DEPOSIT IS $"; rd
4120?:INPUT "PRESS RETURN TO GO BACK TO THE MENU"; a$:GOTO
100
5000TEXT:CLEAR
5010? "THIS PROGRAM WILL GIVE YOU"
5020? "THE MONTHLY PAYMENT WHICH"
5030? "YOU CAN DRAW FROM ANACCOUNT"
5040? "FOR A DESIGNATED PERIOD OF"
5050? "TIME."
5060?:?:?
5070INPUT "WHAT IS THE ACCOUNT BALANCE    $"; p
5080? "ENTER THE NUMBER OF YEARS"
5090? "PAYMENTS WILL BE MADE,"
5100INPUT "USING THE FORMAT (YY,MM)  "; y, m
5110 y=12*y+m
5120? "ENTER THE NOMINAL INTEREST"
5130INPUT "RATE IN %  "; ir
5140 i=ir/1200
5150 t=(i+1): n=i*t: d=t-1:IF d=0 THEN  d=1E-07
5155 a=p*n/d
5160?:?:?
5170? "THE AMOUNT OF THE REGULAR"
5180? "PAYMENT IS $"; a
5190?:INPUT "PRESS RETURN TO GO BACK TO THE MENU"; a$:GOTO
100
6000END
```

Here is the classic game BREAKOUT for the ADAM - try it,
it's a tough one.

```
0& 'BREAKOUT-NIAD #BNDV6
1TEXT
2& define shapes for breakout
3LOMEM :29000:POKE 16766, 108:POKE 16767, 107
4FOR x=0 TO 44:READ y
5POKE 27500+x, y
6DATA
3,0,8,0,18,0,28,0,36,62,62,53,53,44,44,39,7,0,63,63,4
4,45,45,45,53,63,63,0
7DATA  48,36,45,54,55,53,36,61,36,45,38,45,54,47,54,63,0
8NEXT
12POKE 28000, 58:POKE 28001, 102:POKE 28002, 109:POKE
28003,  211:POKE 28004, 255:POKE 28005, 201
130NERR  GOTO 996
15DIM a(25, 20): n=10
20HOME:INVERSE:? SPC(12); "BREAKOUT"; SPC(11):NORMAL
30? "A ball will drop from the       middle of the screen."
35? "Keep it in play by moving your paddle."
40?:? "The coloured squares are worth:"
45? " PURPLE", "50", "BLUE", "40", "YELLOW", "30", "GREEN",
"20", "BEIGE", "10"
46?:? "WARNING the ball gets faster   on each successive
screen."
50?:? "You get 10 balls per game......GOOD LUCK!"
996OTO 370
105FOR x=0 TO 24:FOR y=0 TO 9: a(x, y)=0:NEXT y, x
107POKE 28006, 154:CALL 28000
110FOR c=15 TO 12 STEP -1:FOR t=1 TO 10*(16-c)
111POKE 28006, 127+c:CALL 28000
112POKE 28006, c:CALL 28000
118FOR t=1 TO 10*(16-c)
120 r=17-c
130 x=INT(RND(1)*23+1): y=INT(RND(1)*r)+2
140IF a(x, y)<>0 THEN 130
150 a(x, y)=c:NEXT:NEXT
151POKE 28006, 159:CALL 28000
155HGR2:SCALE =1:ROT =0
157POKE 28006, 150:CALL 28000
160FOR x=1 TO 23:FOR y=2 TO 12:IF a(x, y)=0 THEN  a(x,
y)=11
162POKE 28006, 128+x/2:CALL 28000
164POKE 28006, (y+x)/3:CALL 28000
170HCOLOR =a(x, y):DRAW 3 AT 10*x+5, 10*y+5
180NEXT:NEXT
181POKE 28006, 159:CALL 28000
185HCOLOR =1
186FOR zz=0 TO 5
190HPLOT zz, 0 TO zz, 190:HPLOT 250+zz, 0 TO 250+zz,
190:HPLOT 0, zz TO 255, zz:NEXT
195HCOLOR =7
200 x=120: y=121: h=0: v=11: ps=0: n=n+1:GOSUB 600
210 a=INT(x/10): b=INT(y/10)
215IF a<0 THEN  a=0
220IF a(a, b)<>0 THEN GOSUB 400
222IF ps>4580 THEN  pm=pm+1: n=n+1:GOTO 107
```

```
225 q=p
230 p=PDL(3)
240IF x<10 THEN  h=ABS(h):GOSUB 700
245 p=PDL(3)
250IF x>236 THEN  h=-ABS(h):GOSUB 700
255 p=PDL(3)
256IF PDL(7)=0 THEN 260
257IF PDL(9)=0 THEN 257
260XDRAW 1 AT x+4, y
265IF y<16 THEN  v=ABS(v):GOSUB 700
266 p=PDL(3)
270IF y>180 AND v>5 THEN GOSUB 500
271IF y>185 AND v>0 THEN GOSUB 500
275 p=PDL(3)
280 x=x+h: y=y+v:IF y<0 THEN  y=0
285DRAW 1 AT x+4, y
290XDRAW 2 AT q+4, 188
300 p=PDL(3)
305IF p>251 THEN  p=251
310DRAW 2 AT p+4, 188
320IF n>0 THEN 210
330FOR w=1 TO 2222:NEXT:TEXT
335 ps=ps+pm*5000: pm=0
340? "your score "; ps
345 n=10
350IF ps>hs THEN  hs=ps
360? "high score "; hs
370?:?:? "left  FB  stop"
380? "right FB  play again"
390IF PDL(7)=0 AND PDL(9)=0 THEN 390
395IF PDL(9)=1 THEN ?:? "ONE MOMENT PLEASE":FOR w=1 TO
ps/100: r=RND(1):NEXT:GOTO 105
399END
400& points
405POKE 28006, 144:CALL 28000
410FOR t=10 TO a(a, b)
420POKE 28006, 142:CALL 28000:POKE 28006, t:CALL 28000
430NEXT
440POKE 28006, 159:CALL 28000
450XDRAW 3 AT 10*a+5, 10*b+5
460 ps=ps+10*(a(a, b)-10): v=-v: a(a, b)=0
470RETURN
500 t=x-q
505POKE 28006, 230:CALL 28000
506POKE 28006, 240:CALL 28000
510IF ABS(t)>5 THEN 600
520 h=h+t:IF h>6+pm THEN  h=6+pm
530IF h<-(pm+6) THEN  h=-(pm+6)
540 ps=ps+1
545 vv=10+INT(ps/2000)+pm
550 v=-(vv-ABS(h)):IF v<-10 THEN  v=-10
554POKE 28006, 245:CALL 28000
555POKE 28006, 250:CALL 28000
560POKE 28006, 255:CALL 28000
570RETURN
600 n=n-1:XDRAW 1 AT x+4, y: x=120: y=121: h=0: v=10:DRAW 1
AT x+4, y
```

```
602POKE 28006, 255:CALL 28000

606POKE 28006, 154:CALL 28000
610FOR t=1 TO 150
615IF p>251 THEN  p=251
620XDRAW 2 AT p+4, 188
624POKE 28006, 128:CALL 28000
625POKE 28006, 10+INT(t/10):CALL 28000
640 p=PDL(3):IF p>251 THEN  p=251
645DRAW 2 AT p+4, 188
650NEXT: q=p
660POKE 28006, 159:CALL 28000
670XDRAW 1 AT x+4, y
680RETURN
700% beeps
710POKE 28006, 229:CALL 28000
720FOR w=241 TO 255 STEP 2
730POKE 28006, w:CALL 28000
740NEXT
790RETURN
996POKE 28006, 255:CALL 28000
997POKE 28006, 223:CALL 28000
998POKE 28006, 191:CALL 28000
999POKE 28006, 159:CALL 28000:TEXT:END
```

### CP/M 2.2 WORKSHOP

NIAD CP/M PUBLIC DOMAIN By C Kolander


This month we will cover PD Disk #9. This disk contains
primarily miscellaneous utilities.
RENEXT.COM,ASM,DOC - This program is a utility that can be
used to change the file extension of any given type to that
of another. All names remain the same, the extension
changes to that given in the command tail. Correct syntax
is:
RENEXT [DRIVE]Oldext. Newext.

MBUTIL.LBR - The files in this library are all MBasic tools
that are useful for preparing basic programs for compiling.
The library contains the following programs:
MBREM20.COM-Is a program that can be used to remove all REM
statements from a program, making it smaller, faster and
easier to compile.
MBEAUT20.COM-Is a program that cleans up basic source
files,  making them easier to read and debug.
SCRN-CHR.COM-This program when ran will display each of the
ASCII characters one at a time to the screen or printer,
including graphic characters. Very useful for seeing what
each character will look like when displayed.
There is also a documention file in the library.


TYPEL34A,TYPEL23.LBR - These libraries contain programs
that can used to "TYPE" ASCII files out to the printer or
screen. You can type out files standalone or from
libraries, squeezed or unsqueezed. It will also print out
the directory of library files, or just about any ASCII
file contained  with in. The assembly listing as well
all needed support files are enclosed, you need Macro-80 to
reassemble. There is also a very good documention file
enclosed.

NSWP207.LBR - This is a multiple disk maintenance utility
that can be used for a variety of tasks such as squeezing,
unsqueezing,copying files from disk to disk, user to user
and alot of others. The library contains a very good 16
page documention file.


RESOURCE.LBR - This library contains a program that is a
Command file disassembler. More than just a mere
disassembler, the program will take a com file and turn it
into a pretty good 8080 source listing that can be used to
see how programs are written and how they work. The program
is not user friendly and should be used by only experienced
assembly programmers. There is an excellent 12 page
documention file in the library. NOTE: Before you can use
the program you must rename it from RESOURCE.OBJ to
RESOURCE.COM.


Next month we will be covering PD Disk #10, which is a
RCP/M-BBS system that works with the ADAMLink Modem. NOTE:
Some of you have asked if there is a way to tell the size
of the programs in a library file before you extract them
so you can make sure that you have room on the disk. Yes,
if you use either Ldir(will be on PD #17) or Typel23(PD #9)
they will give you a directory and size in kbytes.

OVERLAYS By C Kolander


EDITOR'S NOTE: Thanks for Chuck's nice explanation of CP/M
overlays below.
Lyle has received alot of questions about overlays, what
they do and what they are for, and has asked me to try and
explain. On some of the PD Disks you have noticed that
there are overlays for such things as Modem programs, text
editors, etc. The reason behind having such things are that
when a program is written for a multi computer environment
such as CP/M, the programmer rather than having to try and
write his program for alot of different computers will
write a base program that can be adapted to each computer.
The overlay is what adapts the base program for a
particular computer. Now, I know this is still pretty
confusing, but that is what   happens. Remember that the
ADAM is just one of many computers that run CP/M, and that
it's input/output ports, screen information, ect. are
totally differnt than say, a  KAYPRO or C128. So an overlay
is made with that information put into it and is installed
into the base program, which allows it to be ran on the
ADAM and work. I hope this clears up the why's, because now
I would like to go over how one goes about installing the
overlay into the base program. There a couple of ways to
install overlays, one is with DDT, the other with a program
called MLOAD(PD #3 NOTE: On some of the PD Disks it will be
called SLOAD). The following is an example of installing
with DDT, the program is MDM740(PD #2) and the overlay is
M7ADAM-1(PD #2). First asssemble the overlay with asm. Then
with the resulting hex file, MDM740 and DDT all on the same
disk do the following:

At the prompt type:    '
A> DDT MDM740.COM
You will see the following:
DDT 2.2
NEXT   PC
4A00  0100  <==Remember these as
                you will need them LATER.
Now at the DDT prompt type:
-IM7ADAM-1.HEX <==Notice no space
                  between them.
-R
Now you should see:
NEXT   PC
4A00  0000
At the prompt type:
-G0  <== NOTE: G ZERO
You should now return to the CP/M prompt, you will need to
do a memory save to get your final version. Remember those
numbers you got from DDT, we'll take the number from the
NEXT column and subtract the PC column from it(100h),
convert it to decimal, should be 18688, then divide it by
256, should be 73. So now type at the CP/M prompt:

A> SAVE 73 MDM740.COM
Now your done, pretty easy, well there is an easier method,
using MLOAD. With Mload you assemble the overlay with asm,
make sure that Mload, DDT and your two files are on the
same disk. Then at the CP/M prompt type the following:

A> MLOAD MADAM7.COM=MDM740.COM,M7ADAM-1.HEX

The resulting Madam7 will be your installed version of
Modem7. Either way you get the same result, this was just
an example and should work with any program that requires
an     overlay. I tried to cover everything that most of you
would need to know to use overlays, but you still might
have some questions about them. If you do just jot them
down and send  them to me and I will see that they get
answered, I might not be the fastest, but I will make sure
that they get answered.

### SMARTWRITER TIPS

Here are some more great tips from Don Zimmerman.


       CARRIAGE RETURNS -  If you have been bothered by
ADAM buzzing whenever the RETURN key is pressed the
"problem" is caused by the presence of a "space" being
where you are trying to enter the line feed (carriage
return). This space cannot be seen but a space (ASCII 32)
takes up one place on the screen the same as any other
character does. The cursor must be moved to the right to
get past the spaces before ADAM will accept the carriage
return. You can prove this by typing in one short line
consisting of a few words followed by a few spaces.
Starting at the beginning of the line try entering a
carriage return in each column. ADAM will not accept the
carriage return until the cursor is past the last space. If

you insist on having a carriage return where ADAM says "NO"
simply insert one using the INSERT mode.

       TAB will actually put spaces on the screen where
the arrow keys do not. All the arrow keys (and "speed" key
combinations) does is to move the cursor. The cursor is
there for the simple reason of letting you know where the
"A" will appear on the screen when you press the "A" key.
This is important to remember if you try to enter a
carriage return if you TAB out on the page and then use the
arrows to backspace. By using the TAB you have "written"
actual spaces on the screen.


       SmartWriter does not recognize a second disk drive
if you have one. This must be because Coleco was in such a
hurry to get the original ADAMs out that they did not have
the time to add the few features that would have made
SmartWriter an even better Word Processor than it is now.

       ADAM adds one extra carriage return when it saves
the file to tape/disk. It also removes this one extra
carriage return when the file is loaded.  This is used by
ADAM as an END of FILE locator in case no data was entered
as in the case of a dummy file (Basic also does this). This
also may be another reson ADAM may scramble text at the end
of a long file if it does not end with a carriage return

       SEARCH - The SEARCH starts at the PRESENT cursor
position and SEARCHes to the end of the file. If the entire
file is to be SEARCHed be sure to move the cursor to the
start of the file.

       SEARCH seems to have a problem searching past any
END PAGE markers. It is best to go through the text and
remove all END PAGE markers before searching if there is a
problem.

## REVIEWS

Eve VD-MB 80 Column Video Board By

L. Marschand

Well, the infamous ADAM 80 column video board has arrived !!! I find it both amazing and wonderful that I can have such a unit that attaches to the Coleco ADAM that so many have "written off" as a dead system. I say to such naysayers - "look at this one, fella" !!
Yes, this unit is in full production as of March 1st, although the documentation on the software that is included is still having the finishing touches put on it. Eve Electronics has been working on this ADAM peripheral for a good 9 monthes and has poured literally thousands of dollars into it's design and production.

We need to back up and give some history as to the purpose of this product before I actually begin the first of a two part review.
The ADAM, just like most small home computers provides from 30 to 36 horizontal characters on it's video display, depending on which software program you are running. As an example, the SMARTWriter wordprocessing software that is built into the ADAM displays 36 characters across the screen and "wraps" what will be a full printed line into two lines on the screen to make up for this short horizontal display. Now, once you get used to this and learn some of the tricks to using SMARTWriter, such as Moving Window, etc. it is not bad. However, under the ADAM CP/M 2.2 software it is a real problem since almost all of the commercial and Public Domain software available is disigned to display 80 characters and although there are ways to "chop" these programs to only display the 30 characters that ADAM can display under CP/M, many programs really lose their utility. We tried to use Wordstar on the ADAM and just could not make it functional enough due to the 30 column display limitation.
One might ask why Coleco and other home computer manufacturers only provided such a limited horizontal display ? The answer is COLOR ! Yes, many advances in color graphics hardware and software for small computers have resulted in this being a big reason for purchasing one. The ADAM has excellent color graphics and uses them to advantage in all their software, SMARTWriter is a good example. However, the drawback of color is the cost of the hardware to display it. In order for the ADAM to display more then 36 characters and retain the advantage of color would have meant more costly hardware inside the ADAM, but more importantly would require every ADAM owner to have an expensive ($275 - $375) RGB color monitor which would have significantly reduced the sales of the ADAM. Color video signals are of two types:
1. Composite color - this is the color signal used in regular color televisions and inexpensive color monitors.
2. RGB (red-green-blue) color - a more sophisticated method of transmitting color signals, but one that allows much finer detail or resolution as it is defined.

Resolution on video displays is measured in the number of scan lines that can be displayed. The horizontal resolution provided by color composite video display is about 300 lines. RGB video display can display around 600 lines. Hence, most composite color displays can adequately display 40 characters and most RGB displays 80 characters horizontally. If you forget about color and only display monochrome (one color such as white or green) much greater resolution can be obtained. As and example, most monochrome monitors have a horizontal resolution of 900 lines !
So, to get the advantages of color displays at a reasonable cost most home computers only provide color composite output which can be displayed on any color television or if a better quality picture is required a monitor can be purchased for under $200.00.

Well, what is the advantage of an 80 column video display for the ADAM ? It comes down to the ability to run current CP/M commercial and Public Domain software that is designed for 80 column displays. The current ADAM software (SMARTWriter, Filer, ADAMCalc, etc.) would still only display the limited horizontal number of characters, even if it was switched to 80 columns because the software is designed for this limited display and would have to be rewritten to take advantage of an 80 column display. This wouldn't make much sense, even if someone could do the rewrites when there is so much CP/M 80 column software available. The negative part of this is that it you are not into CP/M you can't take advantage of 80 column displays. However, I would offer that the only ADAM owners that really NEED 80 column video are those that are fully using the ADAM for business purposes and can only get the sophisticated software they need in the CP/M arena or for software developers and ADAM "techies". The 80 column video board truly makes the ADAM a full fledged computer system for those that need it and can use it as such.

I would venture to say that the ADAM is most heavily used for Word processing by most ADAM owners. SMARTwriter fills the bill for most of these applications as it is a good, basic word processing program. However, for the heavy user of ADAM word processing or one that needs special printing formats, SMARTWriter may not meet the need (I have to add that most people don't fully use or understand SMARTWriter and may not be getting the full benefit of its capabilities). A number of products have been introduced in an attempt to fill this gap - PowerPRINT and SMARType are the best examples. The MultiWRITE word processing software package that has just been released is a whole new word processing program that is designed to provide the advantages that SMARTWriter doesn't have, including a 64 character horizontal display (Editor's Note: MultiWRITE's developer, Strategic Software recommends that a color composite monitor or TV NOT be used with MultiWRITE, but that a monochrome monitor be used to provide good display of the 64 columns). Although a color composite monitor will

work with displays larger then 40 columns the letters

become very difficult to read. Some of the better color composite monitors, that also have a RGB mode, will be able to display 80 columns of text, but if you plan to do alot of word processing work the "fuzziness" of the characters may cause you eye problems.

Eve Electronics is certainly committed to the ADAM as evidenced by their fine list of peripherals and the time and money they have invested in the 80 column video board. I am, however, disappointed with the price of the unit at over $300.00 dollars. I have discussed this with Eve and they certainly understand that this will limit the sales of the unit to only those seriously committed ADAM owners who need this capability to get full usage out of available CP/M software. One of the design decisions made by Eve was to build a separate unit and not just a card that would fit inside the ADAM console, which would have been a much cheaper approach. However, this would have resulted in making addtional demands on the ADAM's central microprocessor and memory that would have degraded the ADAM's performance and available memory. Eve chose the wiser (although more expensive) approach.

Let's talk about what the Eve 80 column video board is and is not. Firstly, there are two models to choose from - VD-MB 80 - this unit is the one I have and contains the following features:

. 80 column video output under a new ADAM version of CP/M that is compatible with ADAM CP/M 2.2

. Independent power supply that replaces the one in the ADAM printer

. Four expansion slots inside the housing to accomodate the Eve SP-1 parallel/ serial interface card, Eve SS-CC Speech Synthesizer, Disk controller and other expansion units that would attach to the side expansion port

. Ports on the back of the unit for future expansion capabilities (RGB video, etc.).

The VD-MB 80 is a metal box 7" deep, 14" wide and 4 1/2" high. It is designed to be placed on top of the ADAM console. All cables are included; the main cable plugs into the side expansion port, another cable plugs into the connection on the left side of the ADAM that the ADAM printer now plugs into and the third cable plugs into the 7 pin video port on the back of the ADAM. You then plug in a 5 pin video cable into the back of the VD-MB 80 which attaches to your monitor - hence, all video is routed through the VD-MB 80. There is also a port connection on the back of the VD-MB 80 that you connect the ADAM printer to so you can still utilize it.

I have to say that Eve has done a great job on this unit, they have developed a high quality ADAM expansion box that will be the base for future development of additional peripherals. A very quiet cooler fan is included in the VD-MB 80 to insure things don't get too hot after additional expansion boards are added inside. This is not a "cheapo" plastic constructed unit, but a heavy duty, quality electronic component. Each unit takes a full day

to assemble and is then tested for 3 full days prior to shipment.
Prices (until 4/15) are as follows:
VD-MB 80:                        $299.95
VD-MB 80 w/o power supply:       $279.95
VD-MB 80 w/ trade in of PS-1 :$269.95
Shipping is a flat $15.00, all units will be shipped directly from Eve.

MON-80 is the second 80 column configuration from Eve and is designed in an attempt to keep the cost down for those ADAM owners who just want an 80 column display. This unit comes with a built in monochrome monitor ! The MON-80 does NOT include the independent power supply or the four expansion ports. The MON-80 comes with a cable attached to a circuit board that plugs into the second slot INSIDE the ADAM console. Hence, the expansion port on the right side of the ADAM can still be used to attach other units such as the SP-1, SS-CC, etc.. This unit is completely compatible with the VD-MB 80 from a software and functional standpoint in all other ways and sells for the same price of $299.95.

The 80 column video display actually emulates a Heath/Zenith H-19 terminal, which is a widely used model. The circuit board contains its own Z80A microprocessor chip which is the primary processor along with other support microprocessor and memory chips in order to not rely on the ADAM's processor and memory. . The character set is upper and lower case with full descenders using a 7 x 9 character matrix. Normal and inverse video is possible and there are a number of options for display parameters and even alternate character sets available.

Both the VD-MB and MON-80 units come with a special version of CP/M (compatible with ADAM CP/M 2.2) that includes the software to drive the 80 column video display and output print to either the ADAM printer or another printer attached to the SP-1 interface card.

Two addtional software products are INCLUDED in the price of the unit:
1. A full function CP/M word processing program that is designed especially for the ADAM, using all the SMARTKEYs and other special function keys. This program provides many print format options such as right justification, variable margins, centering and the ability to send control codes to Epson compatible printers for special functions such as bold, italics, underline, compressed, etc..
2. Z80 Basic - this is a Basic interpreter that runs under CP/M and has been designed specifically for the ADAM.

Eve has made a good move by supplying these two programs free with the VD-MB and MON-80 since they are two essential programs that would have otherwise have to be purchased separately. Most commercial word processing programs available cost between $100 and $200. A Z80 Basic interpreter would cost between $50 and $300. Obviously, Eve is moving to providing a complete ADAM sub system, both hardware and software. This offering is comparable to

maarketing and supporting a new computer !! It appears to

me that Eve is in the ADAM support business to stay. Look
at their survey in this issue and you will get an idea of
what some of their future plans are.

We will continue this review next month and cover the word
processing software provided with the VD-MB and more
details on the 80 column display features.

## SmartTRIX I By Dale Metcalf

I just received SmartTRIX I a few days ago. After reading
the extremely well prepared manual that is 65 pages long, I
fired up SMARTBasic and then TRIX. All the TRIX programs
are binary (for fast loading) except the HELLO program.
Everything is very user friendly using SMARTKyes and a
display screen that rivals Coleco's own software packages.
Those at Data Doctor have put in a lot of hard work in
programming. I have broken into their programs so I have
seen their extensive wrok putinto it. That alone was a
challenge as a tape/disk editor does not show the program
in a readable form. All you hackers will have with this
one. My main inerest in SmartTRIX is its FAST command and
sprites (16 x 16 double magnitude) since the Hacker's Guide
to ADAM will not work for large sprites. All of the TRIX
programs work flawlessly !
THe FAST command gives you an address to BSAVE your
programs which Data Doctor claims will load as much as ten
times faster. I have a 23K Basic program that takes 125
seconds to load from disk and just under 5 minutes to load
from a data pack as ADAM has to interpret the program.
After I BSAVEd to a digital data pack, it only took 21
blocks and 25 seconds to load - faster then the disk with
the normal save ! On disk it only took 10 seconds to load,
which is 12 times faster. It is incredible. I have been
using the disk for the speed and my cat uses for for its
heat, but now I will be using the data drives to avoid wear
and tear on the disk drive.
TRIX appears to be an extension for SmartBEST (also a Data
Doctor program) which would be a drawback if you don't have
it. Although SmartBEST is very good, TRIX is far superior
and for all practical purposes needs it. There is too much
to TRIX to cover in this review. TRIX for $34.95 is the
best package that I have bought for the ADAM, and I've
bought a lot, so my wife says...

Rating - A+

## SmartTRIX By W. Motel

To quote the forward from the DATA Doctor manual
"SmartTRIX I is a collection of advanced utility programs
and a treasure chest of programming tips, tricks, and
secrets. Althogh the package is designed specifically for
programmers, some of the programs will provide hours of
entertainment to casual users as well, namely SHAPE MAKER,
SPRITE ANIMATOR, SPRITE MAKER, SOUND EFFECTS, and TUNE
MAKER".
I totally agree. It contains information, not only for the
advanced person, but it is written and contains other
information that will be of use to any ADAM owner.
    The programs included on the pack all utilize the
normal highly professional, user-friendly
techniques/graphics we've seen before from DATA DOCTOR. The
programs are all fast-load and run error free. Include with
the program pack is a 69 page manual. This contains
backwound information that not only explains the various
programs, but also how to use them and the output they
create. It also contains a wealth of tips and techniques to
use in your own programming and understanding of Smart
BASIC. Some of the topics include:
  - General fundamentals (Binary, Hex, and ASCII coding)
  - Addressing concepts
  - How the BASIC interpretor is layed out with addresses of

various values you might want to change (I.E. flash speed,
tone value for the print CHR$(7) sound, margins, screen
colors, etc.
  - Tape/Disk storage information and speeds
  - Video display concepts and excellent SPRITE explanation
  - How to protect your program from LISTing and error
trapping
  - Techniques for sorting, hi-res circle drawing, using
moving windows (as in spreadsheets), and input control
routines.
    The program pack contains the various programs, which
are all accessed from a main menu program. The use of
graphics, colors, music, and menu setup of this package
clearly shows how a user series of programs should be set
up. It is just excellent. Although the programs utilize the
DATA DOCTORS SmartBEST enhanced BASIC, it is not necessary
to have it for SmartTRIX. When this pack is loaded, it also
loads in the enhancements that are added by SmartBEST. When
you exit, you go back to normal SmartBASIC. The following
is a breif descriptions of the programs:
    BASIC EDITOR
Change values on your SmartBASIC backup. You have the
option of changing one or more of the 15 standard values
(color defaults, permanent left margin, and defualt
device). You can also change a specific address within
Smart BASIC with a different value. This allows you to
create your own custom Smart BASIC that will alsways boot
with your own values (I.E. your own screen color other then
black/white, default drive device, etc.)
    TAPE MODIFIER
Allows you to modify tape/disk blocks. You read a block of

data in and then have options to view speific sections or

bytes, change them, and write it back out. You can also
fill blocks with the same value. Directory blocks can be
viewed and you can easily change any of the volume or
directory entry fields, including the attribute bits. Block
data changes are easily done. You can either change the
specific byte value or the actual character in the byte.
(I.E. you don't need to look up the code for the letter A,
just put in the A).

### BINARY CONVERTOR
This is DATA DOCTOR's version of a fast-load basic program
convertor. You will need your own SmartBEST compiler to use
this. This is,I beleive, the original quick-load convertor,
as we've seen this from DATA DOCTOR over 6 months ago when
he first used in in his program packs.

### NUMBER CONVERTOR
Allows you the option of doing number conversions from 1
base to another. Besides the normal binary, decimal, and
hexidecimal, you can specify any number base.

### SCREEN COLOR
Shows the result and poke location/value to use for changes
to TEXT, GR, or HGR screens. Nicely controlled by use of
SmartKeys and the arrow keys to increase/decrease color
values.

### SOUND EFFECTS
Lets you create and hear sound effects by changing various
sound values and duration values. This one is a lot of fun.

### TUNE MAKER
Lets you create/save/hear 1 voice music created by changing
pitch, duration, and volume.

Both SOUND EFFECTS and TUNE MAKER use SmartBEST audio
commands. You can print out the neccessary code to create
the sound or music in your own program, using SmartBEST
audio commands. Both programs utilize nice screen display
and various keyboard key entry.

### SHAPE MAKER
Excellent screen editor for creating hi-res shapes. You can
create/save/change your shapes and even see the effect of
ROT and SCALE values on it. You can also print out the
various coding needed to use the designed shape in your own
basic program (not SmartBEST dependant).

### SPRITE MAKER and ANIMATOR
This is a very user-friendly sprite editor. It allows both
normal and double magnification. Include is a file of 32
sprites already created for you. The animator allows you to
experiment and view up to 8 sprites at a time. The sprite
AND neccessay machine language code can be saved for use in
your own programs (NOT SmartBEST dependant). The manual
contains an excellent explanation of, not only sprites, but
how to use the created file in your own program.

This is an excellent package that no one should be
without. There is a wealth of information that anyone can
use. Although this is a companion to SmartBEST (see review
in NOV 85 NIAD issue), you can still use Smart TRIX,
Actually, there is really no reason why you shouldn't own
SmartBEST, as it has more then enough enhancements to BASIC
that make it worth owning. They have smartly elected to
enhance it, by not really changing SmartBASIC that

drastically, but to really add useful instructions and
replace very rarely or non-used instruction. I.E. the
RESTORE command in SmartBEST lets you specify WHICH data
statement the READ should read from. This is very useful in
that you no longer have to put your data statements in the
program in the order that they are to be read from. They
also have added terrific color capabilities and sound
routines.

Overall, you should get this. Also SmartBEST would
also be a good investment, if you don't already have it.
Smart TRIX:     A+
  Smart BEST:    A+   (Nov. 85 NIAD)


## QUICKOPY By L. Marschand

This is general purpose copy program for making backup
copies of ADAM tapes and disks written by Glenn Gabarik of
GJMG Enterprises (see Updates Section in this issue).  You
might say "So what, just another copy program"; well, this
one has alot over most of the copy programs I have seen !
Firstly, it is written in machine language which means it
is very fast. Most copy programs are written in Basic.
Secondly, it uses a buffer of 40K if you don't have the 64K
memory expander and 104K if you do !  The size of the
buffer is how much data is read from the source tape or
disk at one time. The larger the buffer, the faster the
copy takes and the less reading and writing to the tape or
disk.  If you are copying to and from the same drive this
will greatly reduce the number of times you have to "swap"
the tape or disk in and out of the drive. Most copy
programs written in Basic only use a 16K buffer due to
memory space problems.
Thirdly, this program allows two different methods of
copying:
1. BLOCK COPYING - You can copy any block(s) from the
source device to any block(s) on the destination device.
You use this method to duplicate an entire tape or disk
quickly (160 blocks for disk, 256 for tape).  You specify
the source and destination device, the starting block and
the number of blocks to copy.
2. FILE COPYING - This second option allows you to copy
individual files from source to destination drives. This
program is nice in that it reads in the directory for each
file, displays the attributes for the file (start block,
end block, status, locked, etc.) and gives you the option
to select the file for copying or skip past it.  You can
even copy deleted files !  You can back up and change the
copy status on any file as well.  You can even use this
program to copy all the files on a tape or disk to a blank
one in order to clean up the tape/ disk and remove any
empty or deleted blocks.

Not only is the program fast, but is done well.  The
screens are nicely layed out for entry and you can go back
to the previous screen at any point by hitting the ESCape
key.

The programs contain full error checking and if a read or write error is encountered you are given the option to abort, continue or retry the copy process. I have found that if I just take out the tape, shake it and reinsert it and hit the "retry" option, the copy will proceed without problem.

Glenn has done one of the best jobs of writing instructions I have seen in a while. A 30 page ( 8 1/2 by 11) manual comes with Quickcopy that not only provides step by step instructions for copying your files but also includes a full explanation of how the various type of tapes are configured i.e. number of blocks, where block 0 is, etc..

A nice explanation of the tape/ disk directory is also

provided. This manual contains alot of good ADAM documentation for those "diggers" among you as well as step by step instructions for the inexperienced.
I have adopted this program for all my copying due to its use of the 64K memory expander and speed. I highly recommend this for those of you wanting a fast multi-purpose copying program. Glenn has created a full function, quality program at a fair price for us ADAMites.

**Rating - A**


## PowerPRINT By W. Motel

PowerPRINT by Strategic Software is a BASIC program that is used as "a printing enhancement" to SMARTWriter, not a word processor. It allows you to add special codes into your text files that give you additional print features. They say it does not work with existing files, only with SMARTWriter files initially created by PowerPRINT. (Read the article at the end of this one). Basically the steps involved are as follows:
1 a. Load BASIC and run PowerPRINT
                                   b. Do option to CREATE
SMARTWriter file on tape/disk.
2    Enter SMARTWriter mode.
  a. get the file created in step 1b.
  b. type in your data (and/or special commands)
  c. Re-save file  NOTE: this may be repeated as needed
     TO PRINT
3 a. Load BASIC and run PowerPRINT
  b. do option to PRINT
  c. change any defult options you want
  d. printing starts
     What does this really all mean? First off, PowerPRINT is NOT creating a true SMARTWriter file, which is a type H. It is simply creating a regular A type file, just like your BASIC program file. This means that any SMARTWriter settings you make (under SMARTWriter) are not remembered. It is not necessary to set line spacing, margins, etc. with this file. What controls this are the special PowerPRINT commands that you enter within your text file. If you do

not use these, you also set defult values prior to printing.
     First, what are the defult parameters. I will list only those outside the scope of SMARTWriter. RIGHT justify all paragr paragraph lines. PAGE NUMBERING at bottom of each page. What page number to START and END printing at. Also the NUMBER OF COPIES to print.
     Embedded commands (within the actual text) do not actually print on the document printed from PowerPRINT (if you print the file from SMARTWriter, they will, as SMARTWriter simply thinks they are normal text). They are used by PowerPRINT to reformat the document. They all start with @ which identifies this as a command to the PowerPRINT program. The commands include CENTER, RIGHT, and LEFT JUSTIFY. Interspersed text changing of LINE WIDTH, LEFT MARGIN, and LINE SPACING. These are useful in, for example, first paragraph printed normal width, single spacing. The next paragraph is double spaced, idented (left margin/line width change). These are all easily done. They cannot be done with regular SMARTWriter which has constant line width/line spacing per text file.
     You can also set the page numbering ON/OFF or reset the actual PAGE NUMBER within the text. You can have the print stop to change DAISY WHEELS. Finally, you can have automatic HEADER/FOOTER lines printed on each page.
     The instructions are well written and a sample text file is included. If you do a lot of word processing and find a need for these functions, this program will work for you. The only drawback is that it is slow. You must weigh this against the added advantages of text formating.
     The reason for the slowness is that it is a BASIC program and the text is being formatted prior to printing by the BASIC program. As your text lines are read from your file, the PowerPRINT programs must string the text (based on your line width and margin settings) together and insert spacing in the line for the right, left, or center justification. The actual printing is also done via normal BASIC printing - 1 direction only. There is no bi-directional printing as with a real SMARTWriter file. In a comparison run with their sample of roughly 1 page of printing, the file printed out (as is, with embedded commands) in 4 minutes from SMARTWriter. Printed thru PowerPRINT, in formatted form, it took 9 minutes. This produced a nice typed page showing examples of different line justify and interspersed single/double line spacing.
     One other thing that I found bothersome, but perhaps you won't, is the change paper routine. A message is displayed and you have 2 minutes to change the paper. You must also wait the full 2 minutes before printing resumes, as I could not see any way to continue printing after I put the new paper in. The other thing I noticed is that a page is determined by the line margin and line width settings and the actual text. If you want to start printing from page 2, the program goes thru the entire formatting of page 1 lines as it normally would, it just doesn't print them. This means it will take a while until the program actually determines it is time to start printing page 2.
     In conclusion, the advantages of PowerPRINT are the nicely formatted documents that you can produce, using the

various options described.  The disadvantage is the time it takes to get your document printed out.
**Rating:  B+**

Addendum:
Using PowerPRINT on existing SMARTWriter files.

The key to this is to remember that PowerPRINT is using a text file in regular A format. To utilize an existing "true" type H SMARTWriter file, create your PowerPRINT file as indicated in step 1. (you can also do the same thing by saving a BASIC program as you normally would - just have 1 line I.E. 10 rem)

Go into SMARTWriter, as stated in step 2, but load your existing SMARTWriter - type H file. Scroll to the bottom of the file. When there, do a GET on the A type file you created in step 1. This loads (and merges) the file at the end of the H SMARTWriter file. It also changes the current filename and type to the A file just loaded. Delete the data FROM the A file (I.E. 10 REM if you created as a BASIC program file). Now do a SAVE workspace. DO NOT change the name, it should be the same as the A file. After the file is saved, check it under BASIC catalog. It should show up as a type A file. It should now be usable thru PowerPRINT. You may have to do some modifications of it. I found returns (without text in front of it - show up as a right pointed triangle in SMARTWriter) sometimes cause PowerPRINT to think its at the end of form. You probably will also want to edit the file to insert PowerPRINT embedded commands.


Electronic Game Pack 1 By W. Motel

This is an excellent set of 5 games on a self-booting disk/tape written by a new Canadian ADAM Software company (APE). The games are all hi-res, utilizing sprites and game intro music. Control-C will always reload the menu from which you can select any of the 5 games or instructions. The instructions can be viewed or printed. When viewed on the screen, they've set it up to pause so that it does not just scroll off the screen. The games all load very quickly and are very well done. They all pit you against the ADAM.

### BACKGAMMON
This is the classic game where you play against the ADAM. The object is to get your pieces around the board into your home zone and off the board before the ADAM. Dice roll is automatic, but you control your moves. ADAM gives you a fairly good game.

### BATTLESHIP
Played on a 10 x 10 grid. You place your fleet of 1 (5 square) battleship, 1 (4 sq) cruiser, 2 (3 sq) destroyers, and 2 (2 sq) submarines and the board. ADAM randomly places it's fleet. Play alternates between you and ADAM picking a square to bomb. The results will either show a white cloud (bomb hit a piece of the ship) or a blue missed bomb design. As play alternates, your previous bombed spots always show up when it's your turn, as does ADAM's when it's the computers turn. Since the ships can be placed

horizontally or vertically, you must decide what square to go for after a successful bomb. You must also keep in mind that the ships are different lengths. The first side to destroy the opponents fleet (19 squares), wins. At the end of game, the ADAM fleet will show so you can see how close you came (if you lose). Graphics are EXCELLENT in detail. The placement of the fleet by ADAM seems fairly random in continuous play.

### MASTERMIND
The ADAM  picks out a secret figure using one of 4 possible shapes and colors. You must guess the correct code in 10 tries (the game also shows how much time you took). After a guess, ADAM tells you how many shapes are in the correct spot and how many shapes are the correct ones -  but not in the correct spot. It does not tell you what spots are correct. This is the same logic game called mastermind, but using shapes instead of 4 digit numbers.

### 3D TIC TAC TOE
you pick one of 3 difficulty levels (ADAM skill). Play is on a 4 level - 4 x 4 square. First to get 4 in a row (up, down, accross, or diaganol) wins. Excellent graphics. Each levels 4 x 4 square grid is in perspective, with the front squares larger then the back. As you/ADAM place your markers, they are also shown in the same perspective. ADAM plays a very good game in any of the 3 levels.

### MINER
Played on a 8 x 8 grid, you and the ADAM travel from square to square collecting ore. Each square contains 1 to 5 ore pieces. The object is to collect the most pieces. Each move, however, is done like the knight in chess, that is, 2 then 1 over (like an L). Once a square is mined, it can not be landed on as the last square of a move. What happens is that you can find yourself trapped, unable to move, as ADAM continues moving until it has enough to beat you. This game requires planning ahead and not just moving to the highest value square. This one is one of the tougher ones to beat ADAM at consistenly, especially without a planned pattern.

Overall, this is an excellent game pack. Not only are all the games fun and challenging (logic - thinking oriented), but the hi-res and sprite graphics give them a very polished look. If you like any of these type of games, you won't be disappointed. This is one of the better game packs I've seen.

**Rating; A**

## SOFTWARE (DDP UNLESS NOTED)

| | |
|---|---|
| SMART LOGO 7600 | $ 29.95 |
| EXPERTYPE 7602 | $ 19.95 |
| 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@ |
| ADAMCALC 7831 | $ 19.95 |
| R. SCARRY'S WORDBOOK 7658 | $ 20.95 |
| DRAGONS LAIR 2683 | $ 19.95 |
| WACKY WORD GAME 7834 | $ 15.95 |
| CPM 2.2 & ASSEMBLER 7832 | $ 29.95 |
| SUPER ZAXXON 2623 | $ 19.95 |
| BEST OF BRODERBUND: AE & CHOPLIFTER 7850 | $ 24.95 |
| HOME SFTWARE LIBRARY 7826 | $ 39.95 |
| 2010: TEXT ADVENTURE GAME BY MGM/UA 7849 | $ 20.95 |
| FAMILY FEUD 7710 | $ 20.95 |

## OTHER SOFTWARE- SPECIFY DDP OR DISK

| | |
|---|---|
| BOUNTY HUNTER VS4048 | $19.95 |
| ADVENTURE PK I VS4011 | $19.95 |
| ADVENTURE PK II VS4015 | $19.95 |
| VIDEOTUNES (DDP ONLY) | $26.95 |
| EXT BASIC UTILITIES | $19.95 |
| FANTASY GAMER (DDP) | $29.95 |
| BASIC BONANZA | $29.95 |
| DIABLO | $19.95 |
| SOFTPACK I | $18.95 |
| LVAC ARCHIVES I | $ 9.95 SPECIAL |
| REEDY SOFTWARE LIB | $22.95 |
| QUICKFAX QUEST | $22.95 |
| PERSONAL ACCOUNTANT | $19.95 |
| SMARTBEST | $16.95 NEW |
| STRATEGY STRAINER I | $19.95 NEW |
| BUSINESS PACK | $18.95 NEW |
| PAINTMASTER | $22.95 NEW |
| TURBOLOAD | $26.95 NEW |
| SIGNSHOP | $22.95 NEW |
| SMARTTRIX | $28.95 NEW |
| QUICKOPY    DISK | $11.95 NEW |
|             DDP | $14.95 |
| MULTIWRITE | $36.95 NEW |

## CARTRIDGE SOFTWARE

| | |
|---|---|
| ILLUSIONS  2621 | $18.95 |
| BC II: GROG'S REVENGE 2620 | $18.95 |
| TAPPER   2616 | $18.95 |
| SMURF PAINT AND PLAY 2697 | $18.95 |
| FIX UP MIX UP PUZZLE 2699 | $18.95 |
| MONKEY ACADEMY 2694 | $18.95 |
| TELLY TURTLE LOGO GRAPHICS 2698 | $18.95 |
| DUKES OF HAZZARD | $18.95 |
| ROCKY BOXING | $18.95 |
| ANTARTIC ADV | $18.95 |
| WARGAMES | $18.95 |

## NIAD USER'S GROUP PRODUCTS:

### I.  NIAD PUBLIC DOMAIN SOFTWARE
** COST IS $6.00 FOR EACH VOLUME ** INCLUDING DISK OR DDP **
*** SPECIFY VOLUME # AND DISK OR DDP***

| | |
|---|---|
| SMARTBasic | Volumes I-10 #BNDV1-10 (10 different volumes) |
| SMARTLogo | Volume I #LNDVI |
| ADAMCalc | Volume I #ANDVI |
| BASIC Utilities UTILITY PROGRAM | Volume I #UNDVI (INCLUDES BACKUP |
| CPM 2.2 available) | Volumes I-16 #CNDV1-16 (16 volumes |

JEOPARDY
PINBALL/ MACK
TROLLS TALE
ADAM DIAGNOSTIC

### II. SOFTWARE

| | |
|---|---|
| SMARTGAMES PACK | $ 9.95 DISK NEW |
| | $ 11.95 DDP  NEW |
| ROYAL AMBASSADOR EDUCATION PACK I | $ 14.95 DISK NEW |
| | $ 16.95 DDP  NEW |
| CPM NEVADA BASIC | $ 39.95 DISK/DDP NEW |
| SP-1 CUSTOM SFTWARE FOR SMARTWRITER /FILER (AVAILABLE FOR MOST PRNTERS) | $ 20.00 |

## **** NIAD SPECIALS ****

| | |
|---|---|
| EVE SS-CC & ME64K | $ 144.95 |
| EVE SP-1 & PANASONIC 1080 PRNTER | $ 369.95 |
| EVE SP-1P (PARALLEL ONLY) AND PANASONIC 1080 PRINTER | $ 309.95 |
| NEW DATA DRIVES (not in boxes) | $ 29.95 |
| RECONDITIONED DIGITAL DATA DRIVES | $ 19.95(instructions/30 day guar) |
| SUPER ACTION SET WITH BASEBALL | $ 39.95 |
| COLECO HAND CONTROLLERS    2 for | $ 10.00 |

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NIAD SOFTWARE PACKAGE- includes following 3 items:    $ 34.95 DISK / $ 38.95 DDP
. SMARTGAMES PACK
. ROYAL AMBASSADOR EDUC PACK or LVAC I
. 5 DDP's or 10 DISKETTES

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CONVERSION OF SUPER GAMES TO DISKETTE:  $ 4.00 EACH
NOTE: YOU MUST SEND IN THE LABEL CARD FROM THE GAME AS PROOF OF PURCHASE EDUCATION PACK II
$ FAMILY FEUD; BEST OF BRODERBUND CAN BE COPIED DIRECTLY BY MOST COPY PROGRAMS

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BACK ISSUES OF NIAD NEWSLETTER FROM 1/85 $ 3.00 EACH
$ 2.50 EACH 10 OR MORE

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SQUISH EM SAM CARTRIDGE       $ 9.95
INCLUDES TALKING VOICE -NO ATTACHMENTS REQ'D

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CP/M 2.2 COMM'L SOFTWARE - RECOMMEND DISK ONLY NOTE:
REQUIRES ADAM CP/M SOFTWARE # 7832

INFOCOM PRODUCTS:

| | |
|---|---|
| Planetfall | $34.95 |
| Zork III | $39.95 |
| Deadline | $39.95 |
| Seastalker | $39.95 |

## HARDWARE & ACCESSORIES

ADAM DISK DRIVE    7817                    $185.00
5-1/4" high-capacity disk drive for the Coleco Adam.
Provides expanded capability for faster storage and
retrieval and increased reliability.  Requires standard
diskettes.

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 Compuserve.  Includes coupon
for receiving advanced communications software for uploading
and downloading of programs.

COMPUSERVE STARTER KIT              $ 25.95
Includes account number, password and five free hours of
connect time to the popular compuserve 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
PARALLEL OR SERIAL CABLE SP-1C        $ 14.95
Second cable required to attach SP-1 interface to parallel
or serial 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
  POWER SUPPLY              VD-MB    $299.95
                W/O Power supply $279.95
            With trade in of PS-1    $269.95
Provides 80-column video output from the ADAM to a
monochrome 80-column monitor.  Also includes separate power
supply and expansion slots for attaching other EVE products.
Light pen port attachment also included.  Expands ADAMS
capability for software requiring 80-column display.
** Includes Word Processing and Basic software programs **
EVE MON-80                         $299.95
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    $ 79.95
EVE 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.

ADAM 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
  ADAM REPLACEMENT RIBBONS    7806  $   4.95

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$1.20 @

### *** PRINTERS ***

**PANASONIC KX-1080**                    $ 249.95
. TYPE:      9x9 DOT MATRIX
. SPEED:     DRAFT MODE -100 CPS (PICA & ELITE);
             NEAR LTR QUAL - 20 CPS; PROPRTIONL -75
. PRINT CHAR:BI-DIRECTIONAL; 96 CHAR W/ASCII DEC'S
             NORMAL, ELONGATED,CONDENSED,IBM GRAPHICS
             ITALICS,  IBM SPECIAL CHAR'S
. MEDIA HNDL:ADJ TRACTOR FEED, FRICTION FEED
             4" TO 10" PAPER
. INTERFACE: CENTRONICS 8 BIT PARALLEL
. BUFFER:    1K STANDARD - 4K ADD'L OPTIONAL ($ 69.95)
. SIZE:      4.5"x15.9"x11.3"; WEIGHT 14.6 LBS
. FEATURES:  2 YEAR LIMITED WARRANTY


**PANASONIC KX-1091**                    $ 299.95
. TYPE:      9x9 DOT MATRIX
. SPEED:     DRAFT MODE -120 CPS (PICA & ELITE);
             NEAR LTR QUAL - 29 CPS; PROPRTIONL -75
. PRINT CHAR:BI-DIRECTIONAL; 96 CHAR W/ASCII DEC'S
             NORMAL, ELONGATED,CONDENSED,IBM GRAPHICS
             ITALICS,  IBM SPECIAL CHAR'S
. MEDIA HNDL:ADJ TRACTOR FEED, FRICTION FEED
             4" TO 10" PAPER
. INTERFACE: CENTRONICS 8 BIT PARALLEL
. BUFFER:    1K STANDARD - 4K ADD'L OPTIONAL ($ 69.95)
. SIZE:      4.5"x15.9"x11.3"; WEIGHT 14.6 LBS
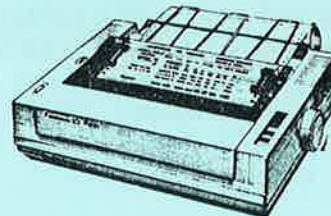. FEATURES:  2 YEAR LIMITED WARRANTY


**PANASONIC KX-1092**                    $ 399.95
. TYPE:      9x9 DOT MATRIX
. SPEED:     DRAFT MODE -180 CPS (PICA & ELITE);
             NEAR LTR QUAL - 33 CPS; PROPRTIONL -112
. PRINT CHAR:BI-DIRECTIONAL; 96 CHAR W/ASCII DEC'S
             NORMAL, ELONGATED,CONDENSED,IBM GRAPHICS
             ITALICS, IBM SPECIAL CHAR'S
. MEDIA HNDL:ADJ TRACTOR FEED, FRICTION FEED
             4" TO 10" PAPER
. INTERFACE: CENTRONICS 8 BIT PARALLEL
. BUFFER:    7K STANDARD - 4K ADD'L OPTIONAL
. SIZE:      5.4"x16.3"x13.8"; WEIGHT 19.6 LBS
. FEATURES:  2 YEAR LIMITED WARRANTY


**PANASONIC RIBBONS # P110 (ALL MODELS)**  $ 9.95

**STAR SG10**                            $ 279.95
. TYPE:      9x9 DOT MATRIX
. SPEED:     DRAFT MODE - 120 CPS; NLQ -30 CPS
. PRINT CHAR:BI-DIRECTIONAL, NORMAL,ELONGATED, CONDSD
             ITALICS, IBM GRAPHICS/ SPECIAL CHAR"S
. MEDIA HNDL:ADJ TRACTOR FEED,FRICTION FEED
             4" TO 8 1/2 "
. INTERFACE :CENTRONICS 8 BIT PARALLEL
. BUFFER:    2K STANDARD
. FEATURES:  140 DOWNLOADABLE CUSTOM CHARACTERS
. ACCESSORIES:   RIBBONS        $  2.95 a
                 4K BUFFER      $ 109.95

### ** MONITORS **

**PANASONIC COLOR DT-S101 COMPOSITE**    $ 199.95
. CRT TYPE:    10" 90 DEG INLINE DARK; P22
. DOT PITCH:   .63 MM
. RESOLUTION: 250 HOR x 300 VERTICAL
. SIZE:        10.3 x 11.2 x 13.4 "
. AUDIO:       YES
. FEATURES:    BLK & WHITE DISPLAY
. OPTIONS:     TILT SWIVEL STAND      $  19.95



### TRAINING MANUALS/ BOOKS

THE 1985 ADAM RESOURCE DIR    $ 12.95
LEARNING EXPRESS AUDIO TRAINER $ 32.95
CP/M USER'S GUIDE BY T. HOGAN  $ 15.95
FIRST BOOK OF ADAM - BASIC
BY P. ROTH                     $ 10.95
2ND BOOK OF ADAM - SMARTWRITER $  7.95
THE COLECO ADAM USER'S HANDBOOK$  8.95
THE BASIC ADAM : A SELF TEACHING
GUIDE BY ABIKOFF & CORNELL     $ 14.95

***BUYING SERVICE ORDER FORM***

NAME_____

HARDWARE/ ACCESSORIES          ADDRESS _____

ITEM NAME/ NUMBER          PRICE          _____

|_____| $ [_____.___]

|_____| $ [_____.___]

SUB TOTAL HDW/ACC $ [_____.___]

ILLINOIS RESIDENTS ADD 6.25 % SALES TAX $ [_____.___]

SOFTWARE PRODUCTS

ITEM NAME/ NUMBER          PRICE

|_____| $ [_____.___]

|_____| $ [_____.___]

SUB TOTAL SOFTWARE$ [_____.___]

PAYMENT -CHECK (ALLOW A WEEK TO          TOTAL THIS ORDER $ [_____.___]
CLEAR); MONEY ORDER; MASTERCARD
OR VISA ($25 MINIMUM).          SHIPPING/INSURANCE $ [_____.___]
          CARD #                    UPS        US MAIL
[ | | | | | | | | | | | | | | | | | | ]   (FIRST $50 -  $2.50    $ 4.00)
                              (FIRST $100- $4.50    $ 7.00)
EXPIRATION DATE [ | | | ]     (FIRST $200- $6.00    $10.00)
                              (MAXIMUM     $8.00    $15.00)
BANK # (LFT. SIDE) [ | | | ]

SIGNATURE-

MEMBERSHIP # OR INITIAL ANNUAL FEE REQ'D  $ [_____]

TOTAL INCLUDED $ [_____.___]

NIAD - A CHRISTIAN RUN BUSINESS