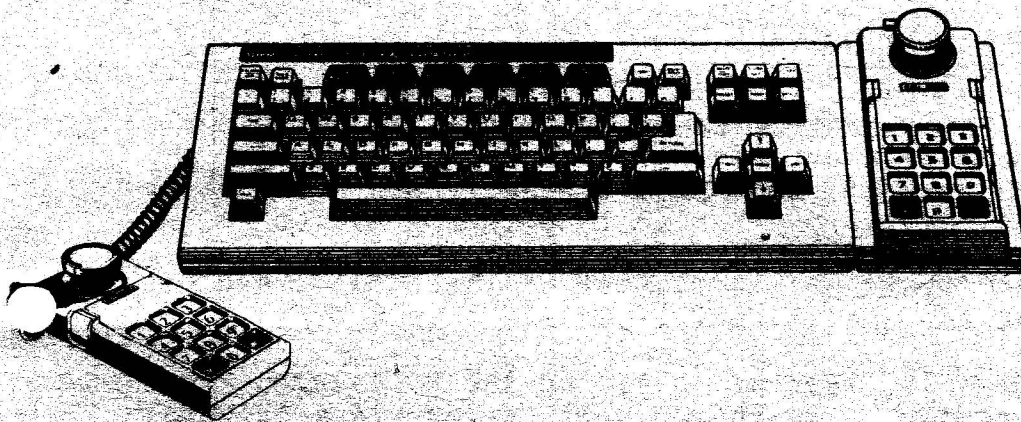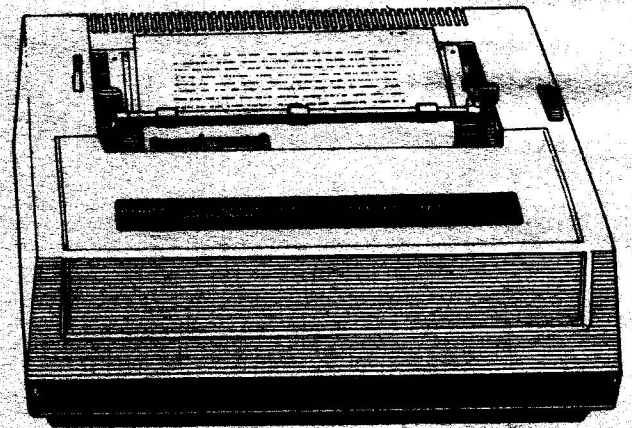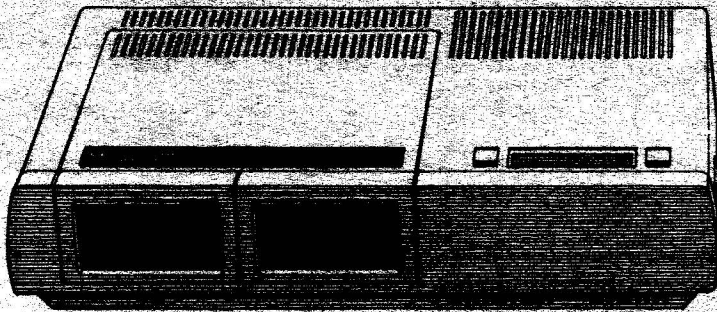# #1 ADAM USERS' GROUP

Presents

The

SPRITE CHASER

This is the official newsletter of the #1 ADAM USERS' GROUP. We are an organization for the sharing and advancement of knowledge and resources of people having interests in, or ownership of Coleco Adam ColecoVision Family Computer System.

Vol. 2   No.3

#2410

SPRITE CHASER STAFF:

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SECRETARY - Michele Lovenstein	Software Librarian - Steve George
TREASURER - George Rhodes	Technical Editor - Ray J. Russell

WHAT'S NEW

"Family Feud" has finally been released by Coleco....It looks like they are going to make good on their promise to release "2010-Text Adventure", "Jeopardy", and "Best of Electronic Arts". From the looks of Family Feud, they were planning to offer "Question Packs" to keep the tape from becoming boring as it was played over and over again. Maybe someone can figure out the format of these tapes and use the questions from the board game to fulfill Coleco's lack of support....

EVE Electronic Systems is close to releasing the 80 column card-mother board-power supply. The speech synthesizer-clock calendar should be available by the time you read this. The 80 column unit

will work with B&W and color monitors. Software to be used in conjunction with the SP-1 will also be soon available. A Smartfiler and AdamCalc version are among the first to be adapted and I have been in touch with them about a screen dump of graphics with SmartLOGO.

A new cartridge backup utility is available through M.W. Ruth, called Multicart Backup. It is a total machine language program that copies 95% of all carts released. It is menu driven and uses the joystick to control most functions. You can put 5 or more carts to a disk, and 8 or more carts to a DDP. I've used this program and it is amazing! Main program is only 2 blocks long and boots up in less than 3 seconds. You use the joystick to both copy and run the carts. A backup program such as PACKCOPY, HACKER'S GUILDE TO ADAM is needed. It comes with a manual and a "master" from which you make the backup copies. Why should one keep turning the ADAM off to play carts when you can execute them from disk??? It can be bought for $20 through M.W. Ruth.

I also got a chance to try out a SmartWriter power cord "extender". It will locate the printer up to 12 feet away and a custom one can go as far as 20 with no loss of performance (fully shielded-identical to the real thing). Also get it through M.W. RUTH....

Other gossip includes someone offering new hardware...a 128K, 256K, and a 512K RAM disk; an RGB interface; possibly and Apple or Commodore emulator; an RS232 interface; a double hi-res card.....I'll let you know more about this when I check it out further...

One of our members, Bob Davis, wrote to tell us he called Coleco about his #21 version SmartFiler...It would not sort records properly when there are more than 200 on the tape or disk. They told him to send it, along with a brief description of the problem to:

        SHAWN FONTAIN
        Coleco Industries, Inc.
        23 Chelton Avenue
        West Hartford, CT 06110

Evidently they are reprogramming the tapes....Even though he got it back and it still said V#21, he said it works much better....According to another member, Joan Goldsmith, Recipefiler has a V#14 when first booted up and CTRL-R is hit....Anyone have a higher number?? CP/M has a version number of 1.50, July 5, 1984. It can be found by using DU-V86, Uncle Ernie's, or MOD and peeking at Block (Track) 0, Sector 3 or about address 259-265. USE ONLY A BACKUP WHEN DOING THIS!!!

Saw an interesting item the other day on CIS...Seems BC's Quest/Grog's Revenge TAPE version can be modified to run from disk when three addresses are changed..Anyone interested send me a SASE....

Was talking to Hank Szretter (designer of the SP-1) the other day and he told me Version 2.0 of the software will be released (free to all SP-1 purchasers). It will work now with most of ADAM's applications. Look for it in the mail in the next few weeks...

Well it's been a busy time since last issue and I'll keep my ear to the ground and let you know what's shakin'...I KNOW some of you out there know even more....Write and enlighten us all...Till next time...

Questions & Answers
By Ray J.

My first letter comes from Edward Prosienski in Waterville Maine.

Dear Ray,

I've just started using fanfold paper in my ADAM printer and while printing a three page resume, I discovered a problem. The second and third sheets began to run off the page. I think the problem may be because the ADAM is set for a 11 1/2" & I'm using a standard 11". My question is: Can the ADAM be reset to run a STANDARD 11" paper? If so how?

                    Sincerely ED

Dear Ed,

          Sorry as I am to say the ADAM is set for an 11" standard paper but, there may be a fix.
The next time you're at the ADAM check out SMART KEY I, this is labeled 'MARGIN/TAB/ETC.' by use of this key you can alter the size of ADAM's so called standard 11" paper. It would be best for you to look through the manual called "TYPING WITH ADAM" specifically chapter # 8 page 53 as it explains how to alter all of ADAM's standard settings.

                    Sincerely,
                    Ray J.

Next up is Mary Crutchfield from Tampa, Florida.

Dear Mr. Russell,

I've stored lengthy SMARTWRITER text on DDP for future printing. Can POWERPRINT be used to change these files to right justification without having to re-type the text?
Also, I assume the POWERPRINT features (rt. just., auto center, etc.) can be viewed on the screen before printing.
Is this correct?
If POWERPRINT cannot do the above, do you know of any ohter ADAM word processing enhancement available (preferably DP software or a BASIC program)? I am not considering "THE SECRETARY" because of its CPM 2.2 requirement.
Any info you can give will be much appreciated.
Thank you.

Mary Crutchfield

Dear Mary,
          Your letter almost reads like Ed's above.
I regret to say that I am not familiar with POWERPRINT (as I do not have one in my use.)
First off if these are SMARTWRITER files you should be able to adjust

left & right margins to suit your needs.
As for other software, contact the ADAM USERS GROUP in regard to our
public domain library, perhaps in there we will have something of use
for you.

Ray. J.

H. E. Graham of Charlotte, NC writes;

Dear Mr. Russell,

     As a member of the #1 A.U.G. I am writing for advice on a
programming problem with HI-RES graphics.
I'm just starting to use HGR, I find that under some circumstances,
plotting of points or vertical lines result in bands of lines
appearing to be about 10 pixels wide. Under these conditions drawing
figures or on a colored background are not feasible.
     Your suggestions will be appreciated.

Dear H. E.,

     The solution to your problem is in how you plot on the HGR
screen. Make sure the screen is completely blank when you start, as it
seems that when you plot thing close enough to each other they 'run'
or 'spread' out.
Carefully review your ploting statementss ONE at a time to see what is
doing and this may help you out. Another solution is to try to use
ADAM's shape table features since there are commands to draw and erase
an exact shape on the HGR screen. Try looking in a bookstore for a
book on APPLE graphics particularly with shape tables as the APPLE &
ADAM use 90% of the same commands in this mode of drawing.

     Ray J.

Bill Stove of Eugene, OR writes;

How come when I delete a program from a full data pack, I still can't
put more programs on the data pack.

Dear Bill,

If it was a disk you could. Data packs fill programs in a line. All
you did was delete the file name. When you have a full data pack that
you have deleted some programs from, transfer the programs to a new
data pack. INIT the old DP after the transfer. This updating is
important if you want to use less data packs

BASIC TIPS

I read this in AUG and was submitted by Gordon Meyer. Try POKEing
17215,200 or 100, followed by TEXT. Commands will be recognized by
ADAM, so to return, type POKE 17215, 224:TEXT. Gordon says "I believe
what is happening is that you are setting the VDP to multi-color

This is a nice program submitted by a Dan Uitti, a member who also
made some other contributions. Lander uses shape tables..It is a good
basis for a more detailed game if you'd like to modify it...It would
be appreciated if you send any mods to the Exchange...

```
90 REM This poke changes screen color
100POKE 17115, 23:TEXT
110?:? " Welcome to the Lunar Lander"
120? "     Simulation Program"
130?:?
140? "  Use the Left fire button to"
150? "   control your descent"
160?:? "   Good Luck!"
170FOR i=1 TO  4000:NEXT
175 REM Set himem up to store shape tables
180HIMEM :50000
190 hs=0:REM      high score
200GOSUB 530
210 d=5:REM        original distance
220 tm=0:REM       time
230 v=0:REM        original velocity
240 g=.2:REM        gravity
250 t=-.5:REM          thrust
260 dold=5:REM      orig old D
270 fuel=50
280SCALE =1:ROT =0
290HGR:HCOLOR =12
300HPLOT 0, 156 TO 255, 156
310HPLOT 0, 155 TO 255, 155
320GOSUB 710
330 a=g
340IF fuel<=0 THEN 370
350IF PDL(7)=1 THEN  a=a+t
360IF PDL(7)=1 THEN  fuel=fuel-1
370 tm=tm+1
380 d=(.5*a)+v+dold
390 v=v+a
400GOSUB 710
410 dold=d
420IF d<150 THEN 330
430TEXT
440IF v>1 THEN ? "Sorry, you crashed"
450IF v<=1 THEN ? "Safe landing"
460 sc=(1-(d-150)*v/.945)*fuel/30*100
470? "score = "; sc
480IF sc>hs THEN  hs=sc
490? "Highest score = "; hs
500INPUT "Play again ?"; a$
510IF LEFT$(a$, 1)<>"n" THEN 210
520END
530FOR i=0 TO 33
540READ a
```

```
550POKE 50001+i, a
560NEXT i
570POKE 16766, INT(50001-INT(50001/256)*256)
580POKE 16767, INT(50001/256)
590RETURN
598 REM shape table data
600DATA      1,0,6,0,28,0
610DATA      56,63,38
620DATA      37,60,37
630DATA      45,45,46
640DATA      55,46,38
650DATA      63,63,39
660DATA      45,45,63
670DATA      36,54,22
680DATA      0
690DATA      58,45,55
700DATA      38,4,0
710REM       print ship position
720HCOLOR =8
730IF dold<5 THEN 770
740XDRAW 1 AT 126, dold
750XDRAW 2 AT 126, dold
760GOTO 790
770XDRAW 1 AT 126, 5
780XDRAW 2 AT 126, 5
790IF d<5 THEN GOSUB 950:GOTO 860
800DRAW 1 AT 126, d
810HCOLOR =2
820IF PDL(7)=1 THEN DRAW 2 AT 126, d
830HCOLOR =12
840HPLOT 0, 156 TO 255, 156
850HPLOT 0, 155 TO 255, 155
860HOME
870? "TIME   SPEED   HEIGHT  FUEL"
880? tm; " ";
890HTAB 8
900? (INT(v*100))/100; "   ";
910HTAB 16
920? 150-INT(d); "   ";
930HTAB 24:? fuel
940RETURN
950FOR i=1 TO 300:NEXT
960RETURN
```

CP/M CORNER

This month's program will help you get familiar with programming
in CP/M. Boot-up CP/M (backup)..Type "ED DSKRST.ASM". At the *, type
"i" (means insert). At the 1: type in the program below. You can
leave out all lines that start with ";"...(It's the same as a REM
statement in BASIC)..As you type, instead of hitting space, use the
TAB key. In fact, hit TAB key first, then type "BDOS", then TAB, next
"EQU", and so on..Finish program that way and you will have a nicely
lined-up program. When done typing, hit crtl+the "Z" key, and at the

*, type "e". The disk will spin and when you type "dir" at the A>, you will see DSKRST.ASM in the directory. Next type "ASM DSKRST" the disk will spin, and at the A>, type "dir" again and you will see (if there were no typos) DSKRST.ASM, DSKRST.HEX, and DSKRST.PRN. At this point you can type at the A>, "TYPE DSKRST.PRN" and you will see a "PRiNt" file. The addresses of the code are at the far left, the source code (machine language in hex) is in the middle, and to the right is your typing..

Now you are ready to create the ".COM" file. At the A>, type "load DSKRST". After the disk finishes spinning, type "DIR" again and you will see DSKRST.COM and DSKRST.BAK.
Use the command file as directed below:

This is a short-short assembly language program that resets the disk drive system of CP/M by calling on BDOS function 13. (See CP/M manual for info) It works best by using the 64K Memory Expander. If you don't have this, you'll have to move it onto any disk that you want to reset often (like the system disk.)

```
;=====================================
;=              DSKRST.ASM           =
;=====================================
;
;A program to reset the disk drive system so's that you don't have
;to type ^C all the time to reset disks under CP/M.
;Works best with the 64K Ram Expander
;
;Format: DSKRST or A:dskrst
;
;Optimum use: use PIP or EDIT (NOT ED!) to move this prog. to Ramdisk
; then:type m:dskrst everytime you change disks
;
;=====================================
;=          BDOS EQUATES             =
;=====================================
        bdos    equ     5
        functn  equ     13
;
;end of bdos equates, program follows:
;
        org     100h
        mvi     a,functn
        call    bdos
        ret
;END PROGRAM (short, wasn't it?)
```
Type all above that does NOT start with a ";". Let me know if I confused you more than I helped!!

For those who want to "graduate", your assignment is below....See if you can get a .COM file working. You'll KNOW you got it right because no longer will information in CP/M go off your screen...Send questions to me...

Try this one after the first one..it will cut the 80 column display in
CP/M down so that information does not go off the screen. To get out
of it, just reboot system..Remember to skip any lines beginning with
";" (unless you want a documented CP/M ASM file)

```
;File: SCRNCHOP.ASM
;
;SCREENCHOP - Chops the 80 column screen
;to a 31 column screen
;
  ORG 100H
  LXI H,0EA68H
  MVI A,1FH ;specify size of screen in hex-1FH=32
  MOV M,A
  JMP 00H
  END
```

The EVE SP-1 ADAM RS232 Interface

     Yes, it's here!! Someone has finally put together a reliable
interface to drive serial and parallel modems, printers, and other
devices. It costs $149 and includes a 10 pin and 26 pin output,
software, and a manual. The system requires an ADAM, a disk drive,
and SmartBASIC.
     The unit itself is 2" high by 3" wide by 6" long and plugs into
the expansion slot on the right side of ADAM. It does increase the
size of the CPU's "footprint" by a few inches, so plan to move things
about. The interface is in a "workbox" that is easily opened.
Evidently, a four slot "motherboard" is in the works and this card can
be removed and inserted into the new board!
     There are two connections, one for a serial or parallel printer
and one for a modem. The purchaser has to buy a cable for the
parallel printer available through EVE or RUTH CO.for $20.
     I have been using my interface with a Panasonic 1091 Dot Matrix,
and have a Bell Dataphone 300/1200 modem that I will soon have
working. The Panasonic seems to be one of the major brands used by
ADAMites. Both M.W. Ruth Co. and a midwestern group called NIAD are
carrying the entire line of Panasonic. The 1091 runs at 120 cps and
has near letter quality and a host of other features. Since the
software put out by EVE has to be custom-made for each kind of
printer, it is to the user's advantage to buy the most popular printer
as the software will be written for that particular unit before any
other.

Software

     The interface has been designed to work with BASIC, Smartwriter
(to a small extent), and CP/M. In BASIC, one must first run a printer
driver program to "initialize" the I/O port. Serial printers are
designated "PR#3" and parallel printers are "PR#2". In most
applications, the printer performed flawlessly. Only when used with a
program that resets the LOMEM or HIMEM to something different to that
of the driver program, does the system lock up and need to be reset.
     In order to print out a SmartWriter file, a "draft" print program
is provided. BASIC is booted up, and the draft program looks for the

"H" designated SmartWriter file. For $25 a "custom print" program is offered that incorporates many of a specific printers special codes to change fonts, highlight and a host of other features. I have used this program and other than printing 5 blank spaces throughout the document, it does all it says it would. The programmer promises to fix this problem.

In CP/M, The printer works the best. It replaces the SmartWriter as the "LST" device. It remains the listing device until one changes it with the "STAT" program or rebooting CP/M. An added feature is that using the CONFIG program one can change the LST device so that when CP/M is booted up, the new printer can be initialized by just running one program. (It eliminates the need to type "STAT LST:=UL1:" all the time.)

All in all, the interface is a good deal. (Especially when it is the only one on the market!) Some of the improvements I could think of are to shrink its size, and to make it compatible with other software like SmartLOGO (for screen dumps of graphics), Smartfiler and ADAMCalc. I have heard the manufacturer will soon be offering software for all this. Some strongpoints are the compatibility with the future releases by EVE and the friendly support offered by the company. On more than one occasion I have been in touch with the designer of this hardware and he will try his best to keep you happy...

Even better are the other hardware offerings from this company. An 80-column card with a 3 slot motherboard-power supply, light pen interface, voice synthesizer-clock calendar, and a disk controller (how would you like a 10MB hard disk and really see some speed?!?) Stay tuned for more info....

AS AN AFTERNOTE....I spoke with the designer of the SP-1 and he said that shortly a version 2.0 of the utilities will be sent to every purchaser of the SP-1 free. It contains a program that patches the new printer onto the system disk (DOS) so that when you boot up, the new printer will be the default. Any program that can be run from DOS will work with the SP-1 without a new program. The aforementioned bug in the original and custom print programs has been eliminated by the new software. Evidently other software that cannot run from the disk manager (LOGO) can be easily modified to use the printer....More to come..... SOFTWARE EXCHANGE

We have received some new disks from members and from CP/M sources.....Are there Public Domain programs you'd like to see?? We have anything and everything on the disks in the Exchange..Some of the highlights:A program by a member Dan Uitti called LANDER that is a really good demonstration of more advanced SmartBASIC programming. It uses shape tables (as outlined in the SmartBASIC manual). It's featured in the BASIC column in this issue. BALLOON uses a different technique--sprites and movement. There's DUELING CANNONS (HI RES GRAPHICS), and ELIMINATOR, which features some of the sharpest graphics I've seen in a BASIC game. LIFE also by Dan is a good ADAMdaptation of the classic PD program. (You should see the MAC version!) Thanks to all the members who contributed something!

CP/M programs remain the strongpoint of this library..We have a

disk of outrageous telecommunications software...MADAM7 features
dial-through-the-modem calling..It will download ANYTHING!! MODEM7MM
is easy and is dial-yourself..MEX can be modified to dial through
ADAMLINK and is menu-driven. We have an excellent Disk Utility called
DU-V86...It will peek into any ADAM disk and print on screen or
printer, a single sector (128K--8 sectors to a track) in hex and
ASCII..It can change addresses (Remember what I said about BC's
Quest?) and much more!! UNERA will actually unerase a delete file
(provided you have not "written" to disk after the erasure). We also
have a Z80 Macro Assembler and Disassembler, and updates on the
squeezer (SQ110) and unsqueezer (USQ120). There's much more..check
'em out!! If you send in CP/M programs please include .ASM and .DOC
files if possible.

SOME NEW PROCEDURES:

MAKE CHECKS PAYABLE TO STEVE GEORGE for the program disks below..I
CANNOT cash ones made out to the #1 Adam Users' Group!! And it will
save time.
From now on, due to the hassle involved with DDPs; if you want
programs on a DDP, you must send one along with a $10 donation,
otherwise the disk will be the standard medium used. All disks are
sent without BASIC or the CP/M system
on them . You must load up the language first then you will be able
to execute files from the disks.
ALSO PLEASE DO NOT SEND FASTFORWARD OR VICTORY BRAND DDPs I WILL NOT
ATTEMPT TO READ OR COPY FROM THEM!!!! I will use the postage to send
them right back as is...They threaten to burn out my drive and then
post I/O errors..Use only Coleco, Loran-Coleco, or Generic (Plain
label M.W. Ruth tapes...)

Hope to hear from all of you...

Disk #1
CP/M-
MBOOT3-simple binary file UPL/DL
FILTER-from ADAM CP/M manual
FICOPY-file,disk copier
written in CP/M, can edit
anything on a disk!

DISK #5
MISC.-BASIC Utilities
A couple ADAMCalc prgms
LOGO programs
* BACKUP.TAPE
* CARTCOPY(Not as good as
  Multicart, but it does
  work!)
* TAPEDIT-Create custom
  versions of copyrighted
  software!!
  Yahtzee
  CPMADAM filter-to "clean"
  files from CP/M to EOS

Disk #2
CP/M-
ROMHEX-Dump cart contents in
       CP/M
SNURF-save contents of a cart

DISK #6
CP/M-
LU.COM
USQ.COM
DUU.COM

feel free to modify to
"run" carts
RSTDSK-Tired of typing CTRL-C??
    Use rstdsk
Contains .ASM,.COM files for
    each.

DISK #3
BASIC-
BALLOON-great sprite game
MOD-use w/ Packcopy to edit DP/D
3D TICTACTOE
DUELING CANNONS-hires game
HELLO-access any drive easily
BRICKOUT-Diff. than Bonanza vers.
LUNAR LANDER-classic text game
LANDER-shape table graphics
STAR TREK-joystick controlled
LIFE-graphics population study
BLACKJACK-text
HANOI-graphics
PAINT w/ save feature
ELIMINATOR...and many other
files!!!

DISK #4
CP/M-
Master Catalog System

DISK #11
CP/M-
NU11LU.COM
PRINTS.COM,.DOC
SLOAD.COM, USQ120.COM, SQ110
CPMUTIL.COM
MULTCOPY.COM
PRINTSQ.COM,.DOC
LASM.LBR-linking assembler
(updated version of sq, usq)

DISK#12
CP/M-
CP/M Adventure-fully featured
includes scnchop....

SQ17.COM
LOGALL.COM
LOGALL.DOC
BUGS.COM
MEMMAP.COM
SORT.COM

DISK #7
CP/M-
Z80 PROGRAMMER
specialized, use w/#8

DISK #8
CP/M-
SCRNCHOP.COM
Z80 PROGRAMMERS II
specialized, use w/#7

DISK #9
CP/M-
EBASIC.COM
EBASIC.DOC
ERUN.COM
NSWP.COM,.DOC
EDIT.COM,.DOC-better
    than ED.COM!

DISK #10
CP/M Telecommunications
MADAM7 (Dial w/Adamlink)
MEX include overlays to
to autodial.
SCNCRNCH.COM,.ASM
Docs for all

DISK #12
CP/M
Z80MAC.LBR (need LU.COM
to extract files)
SOURCE.LBR (use w/MAC
to create Z80 code or
change 8080 code to Z80
Includes .DOC files and
a fantasic disassembler
In a few ways, better
than Disk#7,8!
Includes a LU and USQ

Most disks have other files included, but are not listed due
to lack of space.....

ADAM

DATA PACK (Adam)	1/$3.95	- 10/$37.50
RIBBON CART.(Adam)	1/$5.50	- 3/$15.00
DISKS (Adam)	30/$35.95	- 10/$14.95
DAISY WHEEL(Adam) - Italic,Script,Elite, etc.1/$5.50		

ADAM COVERS - Set with Logo for system	$18.95
ADAM DISK COVER - To match above	$7.99

Paper T/F-F/F White 9 1/2x11, 20lb.	1000/$22.95
Paper T/F-F/F 1/2" Greenbar, 18lb.	1000/$18.99
Labels T/F-F/F (Address)	1000/$ 5.00
Labels T/F-F/F (Data pack)	100/$ 5.00
Index Cards - T/F-F/F - 3 x 5"	500/$7.95
Rolodex Cards - T/F-F/F-2 1/6 x 4"	500/$8.95

64K MEMORY EXPANDER	$69.95
DIGITAL DATA DRIVE SPECIAL PRICE	$29.95
TRACTOR FEED for Adam printer	$79.95
PRINTER STAND -Front ON/OFF switch	$19.95
POWER PACK - To separate printer/use CPU alone	$69.95

ADAM AIR CONDITIONER - Stop heat buildup with this super quiet computer fan. Will help eliminate the problem with the computer crashing (freeze) $19.95

SERIAL/PARALLEL INTERFACE UNIT - This opens a whole new world for the Adam owner. Now you can connect a dot matrix hi/speed printer/use standard modem (300-1200 baud). Come w/software used with SmartBASIC or CP/M etc.   Serial or Parallel $139.95
State - Disk or DP   Serial and Parallel $149.95

SPEECH SYNTHESIZER UNIT/CLOCK CALENDAR - Now add VOICE capabilities to Adam.Software included $109.95

Disk Holder - Holds up to 50 disks-anti/static	$15.95
Monitor/TV Stand-360 rotation,up to 12.5 angle	$22.95
Adam Monitor Cable	$10.95
Panasonic 1091 Printer	$279.95
Panasonic Ribbon	$9.95

PACKCOPY - Backup SmartBASIC etc.	$29.95
DIABLO -Mind challenge - Graphic	$19.95
BLACK GOLD - Look for oil. Survey-profits-fun	$19.95
The STOCK MARKET GAME - Fun & educational	$19.95
BOUNTY HUNTER - Text adventure	$20.95

ADAM ENTERTAINER - Book (sound,graphic etc.)	$12.95
ADAM'S COMPANION - Book (updated)	$ 9.95
LEARNING TOGETHER with ADAM - Book w/LOGO	$ 9.95

DataCALC - Spreadsheet	$24.95
SmartSPELLER - Electronic dictionary (D or DP)	$39.95

EBU - SmartBasic - Data Pack or Disk	$21.95
HACKER'S GUIDE TO ADAM - Disk or DP	$17.95

TurboLOAD - Revolutionary new product. Speeds up loading programs, a must for Adam owners. also included the FILE ORGANIZER. $28.95

PaintMASTER - HI-Res graphic design system primarily written in Z80 machine language. Load or save your creation to either D or DP. $23.95

MultiWRITE - The only 84 column word processor. no need for moving windows. What you type on the screen will be printed. On screen R & L justification, on screen centering and so much more. $38.95

VIDEO TUNES -Compose,play,save music. $34.95

AUTOAID - Enhances SmartBASIC. Generates new line numbers as you type. Defines function keys to be any command or character string & so much more. $29.95

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