

# NIBBLES & BITS

The Comprehensive Monthly Newsletter for ADAM Users

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Oak Hill, WV 25901

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Thought for the month: "Happness is not a destination; it's a way of travelling."

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This issue includes 6 SmartBASIC program LISTs and 2 disassembled Z80 lists.

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DESIGNED and PRINTED with the amazing ADAM™ computer.

## NIBBLES &amp; BITS

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DIGITAL EXPRESS

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**EDITOR'S NOTE****N&B NEWS**

Last week I looked over some of our past issues; I was somewhat humbled by the number of misspellings (yes ... two s's). Worse yet, many of these orthographical oversights were in MY own column. What we ADAMites need is a good 'spelling checker' — Strategic Software to the rescue. They are currently working on **ProofREADER**; it will be written entirely in machine language for good speed. I can hardly wait; in the meantime I'll just keep plodding along hunting for those elusive malefactors.

Well ... on to matters at hand; this issue is replete with goodies. We've got **EZkeysII** in this month's **HACKER'S DELIGHT** department. It has more features than "EZkeys" (from the January issue) including full support for Walter's Software's **RAMDSK** program.

Have you ever been annoyed by the buffer length bug with **SmartBASIC V1.0's** binary OS commands, ie, **BLDAD**, **BRUN**, and **BSAVE?** You can not use these commands properly in a BASIC program because the **CNTL+D** buffer is too short. I finally got frustrated enough to do something about it. The patch is in the **HACKER'S DELIGHT** department this issue. All I did was relocate the buffer to an area of RAM that would allow for more characters. If you use these commands frequently, you'll find this to be a very welcome modification. You can even use the **EZpatch** program from last month to make the changes permanently on your **SmartBASIC V1.0** backup.

Also, I just updated **ShowOFF I** with some of the routines from our still inchoate **PowerPAINT**. You now have dozens of possible print combinations. See the **ADAM NEWS** section for more details. If you purchased **ShowOFF I** in the last three weeks, you should already have the newer version.

As you'll notice in our news articles there is quite a lot going on in the ADAM community. The ADAM consumer certainly has a lot of products to choose from today. And, the prospects are even getting better. Some say "ADAM is not dead!". Others (myself included) frequently say "ADAM is ALIVE and WELL!!". But, I'll take the anthropomorphism a step further. "If ADAM was a human, he would be compelled to egotism from all the attention he's getting today!!!"



Solomon Swift  
EDITOR-IN-CHIEF

□□□ Our third collection of **SmartPAINT** files is completed. Each package contains 13 hi-res pictures stored in **SmartPAINT** (from "ShowOFF I") format. This now gives you 39 public domain pictures to choose from, plus the six that come with **ShowOFF I**. See page 30 of this issue for a detailed description of each of these 'picture file' volumes. The second and third volumes feature some of the **SmartPAINT** contest submissions.

□□□ The judges have chosen the winners in the **SmartPAINT** picture design contest. The four finalists have been notified. We'll tell you who they are and show you the winning designs next month.

□□□ We have added a collection of **ADAMcalc™** paradigm files to our public domain libraries.

□□□ We have added two more of **Reedy Software's** excellent games to our product list. We now stock both **The Entertainment Pack** and their new program **Lab Mouse**.

□□□ Please be sure to send in your address change information as early as possible. We currently have the returned newsletters of two ADAMites; their names and former(?) cities of residence are listed below. If anyone knows how to contact either of these subscribers, please let us know.

Sandra Seroka  
Streator, IL

Stanford S. Johnson  
Fremont, CA

□□□ We have selected the winner of our sixth **HACKER'S CONTEST**. This hacker received a monetary prize and a three month extension to his "NIBBLES & BITS" subscription. He is:

Guy Cousineau  
Ottawa, Canada

□□□ We have a couple of improvements to last month's **EZmenu** program. Thanks to David Carmichael for pointing these out to us. First, omit the semi-colon at the end of line number 11020. Second, change line number 31210 to read "GOTO 31120" (it was "RETURN"). This will allow you to use the shifted **SmartKEYs**. These changes are already incorporated into "N&B set 03".

□□□ There was also a minor error with last month's EZpatch 1.0 program. The problem was that the 'dv\$' variable name was used for two different variables. To correct this change the 'dv\$' to 'di\$' on the following program lines: 170, 530, and 570. These changes are already incorporated into our 'N&B set 03' software.

□□□ If you've ordered disks from us and the 'write protect tabs' weren't included, just mention on your next order form that you'd like some extras.

□□□ We've added computer word processing paper back to our product list -- and, at a better price. It's now just \$3.45 for 250 sheets.

□□□ Due to popular demand, we've decided to offer two modified versions of the ShowOFF II SmartWriter enhancements software. ShowOFF IIa is now completed. This 'a' version will support any dot matrix printer with built-in Epson software codes, eg, Okimate 20, Star printers, the Epson line of printers, etc. Thus, it will work with just about any popular printer on the market. This version, however, doesn't offer the line justification features. See the ADAM ACCESS section in this issue for more details.

□□□ Also, we're working on a 'b' version of ShowOFF II. This version will be specifically for use with the ADAM printer. It doesn't include any print enhancements. It will, however, include the "WriterMATE" utility and it will offer the SmartWriter enhancements that don't involve the printer, ie, screen color changes and the CONTROL key functions. The subscriber discount price on this one will be just \$9.95. We'll let you know when its finished.

## ADAM NEWS

□□□ As many of you are already aware, the ADAM USERS GROUP, Inc. has stopped publishing their AUGment newsletter. This bi-monthly paper was a strong communication source for a lot of ADAMites. They were the first newsletter that many ADAMites subscribed to. They offered a large collection of public domain software and supported ADAM for a little over two years. They will be missed.

Existing subscribers were automatically given prorated subscriptions to SCROLL, a newsletter for word processor users operated by the same people. SCROLL will continue to give limited support to ADAM users.

SCROLL is also a well done newsletter. We feel, however, that most existing AUGment subscribers would prefer to have a newsletter that supports more than the word processing aspects of ADAM. Accordingly, DIGITAL EXPRESS is providing a limited time offer. Until the 15<sup>th</sup> of June, we'll give existing AUGment subscribers who are also "NIBBLES & BITS" subscribers a FREE one month extension to their subscription term with us. Also, we'll give a FREE three month trial subscription to ADAM users who are existing subscribers to AUGment and are NOT currently "NIBBLES & BITS" subscribers. To qualify for either of these special offers, you MUST send the mailing label (for verification) from the Jan-Feb (Vol. 3, No. 2) issue of AUGment. Although we've apprised W/PUG (the publishers of "SCROLL") of our plans for this special offer, it is offered entirely of our own initiative.

□□□ TRISYD VIDEO GAMES, run by Syd Carter, has just completed some very interesting peripherals for ADAM. He has a 300/1200 baud Hayes compatible internal modem, called the "SYD MODEM 1200", that doesn't require an RS-232C interface. The price is \$300 (Canadian); currently it can only be accessed via CP/M 2.2 modem software. But, they are working on modifications to the ADAMlink software. He also has a digital data pack formatter called MEGACOPY. It is capable of 10 format options with the formatting process only taking about six minutes! MEGACOPY comes in two versions. For a double DDP drive system, the price is only \$25 (Canadian). For a single DDP drive system, the cost is \$60 (Canadian). See the BULLETIN BOARD this month for their address.

□□□ Once again "Family Computing Magazine" didn't include "ADAM" on the cover of their latest issue. Usually they include a LIST of a SmartBASIC program. And, Patrick Spera's column on orphaned computers always includes some ADAM info. And, they typically have a couple of dozen classified ads for ADAM products. If you'd like to mail a complaint to them about omitting "ADAM" from the cover, send it to:

Family Computing  
Attn: Editor-In-Chief  
730 Broadway  
New York, NY 10003

Unless we ADAMites do write to them, they might think that we're not interested in the national exposure that they give to ADAM.

□□□ If you purchased E & T SOFTWARE's SOFTPACK I or BUSINESS PACK before 11/14/86, you may want to get it updated to the latest version. Simply return your software to them along with \$2.50 for postage and handling and they'll send you the updated version.

□□□ NIAD's Bob Lennes has recently completed ADAMTALK. This is a useful program for generating speech from BASIC programs with the Eve Electronics SS-CC speech synthesizer. Among its features is the ability to store over a thousand words in an electronic dictionary.

□□□ Mr. T. Software has recently released "BASICAIDE" which includes BASIC enhancements. See our review in this issue. We now have this package in our product list.

□□□ MCP Software, a relatively new ADAM supporter (not to be confused with Marathon Computer Press that has been around for a couple of years), offers a very good price on their own preformatted data packs. They also have a 'blankware' service. Here, you get a DDP with one program (of your choice from their list) at a reasonable price.

□□□ Coleco disk drives are now near impossible to get in the factory sealed package. Digital data drives originally sold for about \$170. Then, they went down in price to about \$10. Now, as the supply of them is starting to dry up, they're going back up in price again. If you don't already have a spare or two, you should get at least one before they're all gone too.

□□□ Good news!!! ADAM USERS GROUP 1986, chaired by Amil Dillinger, has recently purchased a large supply of ADAM accessories ranging from complete systems to unreleased software. Some items are new and some are used; but, everything has been tested. They have even made arrangements with a repairman from Coleco who can fix some ADAM hardware. See this month's BULLITEN BOARD for the address of this large users' group.

□□□ Walter's Software has recently added a binary converter program to the RAMDSK media that is compatible with the program. You may want to contact them to get the update. However, you'd still need to BSAVE all your existing binary converted BASIC programs again using their binary converter.

□□□ REEDY SOFTWARE has just updated two of their software packages. MageQuest 2.0 offers improved graphics, improved sound, and faster loading. Plus, you now get three lives in the main (9 level) adventure; it was nearly impossible to get through all nine levels with just one life. We now stock this latest version in our product list.

SmartTYPE 2.0 is a big improvement over SmartTYPE 1.1. It includes all the original features plus several extras. Some of these are: full on-screen underlining, 40 column screen, bi-directional printing with underlining, a choice between the ADAM SmartWriter printer or a dot matrix printer. With the dot matrix printer option you can even define your own special software escape codes. And, those occasional ghost characters have been completely eliminated.

To update your existing REEDY software, send them your original software, your software ID number, and \$3.00 for return shipping. Both updates include a new software manual.

□□□ DIGITAL EXPRESS has just updated ShowOFF I: The Graphics Design Package. This latest version includes many improvements. First, the routine for printing high and low resolution graphics is now compatible with ANY dot matrix printer that has built-in software escape codes in "IBM 5152" or "EPSON FX" format. This includes the Epson, Panasonic, and Star line of printers, as well as, the Okidata 20. However, it still does not support color graphics printing.

This latest revision includes "SmartPAINT 2.0". It also includes a user - friendly program for converting RLE files to SmartPAINT format. And, a program is included that allows you to change the line spacing value for both SmartPAINT and BlockPAINT.

With "SmartPAINT 2.0" you can use the keyboard number keys or the game controller keypad. You can even use some of SmartWriter's function keys, ie, PRINT to go to 'print' mode, STORE/GET to go to 'disk/DDP' mode, etc. And, you now have dozens of possible print combinations including user - defined width, user - defined left margin, user - defined length, screen image or mirror image, and normal or inverse hardcopy.

To get the updated version with "SmartPAINT 2.0", just send \$1.00 for the updating service, your original software medium (not the manual), and \$2.50 for return shipping. This shipping charge will be waived if placed with a product order. The update service fee will be waived if you ordered "ShowOFF I" after March 1<sup>st</sup> and did not already get the update.

## **ADAM USERS FORUM**

The following questions and comments have been culled from recently received mail. The reader's input is a reasonable facsimile of the actual correspondence. For the benefit of all readers my response, where applicable, is generally more detailed than my written reply (if any). Unless the reader requests it, street addresses are omitted.

### BASIC MEMORY QUESTIONS

Page C-22 of the SmartBASIC manual states that approximately 25950 bytes of RAM are available for programs and variables. Per the BASIC Memory Map on page C-16, I assumed the total amount of free RAM would be equal to the difference between the HIMEM and LOMEM settings. However, a quick subtraction of LOMEM from HIMEM implies that there are 26224 bytes of free RAM. If I issue a "NEW: ?FRE(0)" command after booting SmartBASIC V1.0 (version 79), ADAM returns a free RAM value of 25954 bytes. This figure is 270 bytes less than the the HIMEM / LOMEM difference and exactly equal to the difference between the pointers to the start and end of the numeric variables.

Additionally, if I issue only a "?FRE(0)" command immediately after booting SmartBASIC, ADAM returns a free RAM of 25944 bytes. Why isn't LOMEM set to 27677? Why does free RAM increase by 10 bytes after issuing a "NEW" command? If I have no need for graphics in my program, is there any way of freeing up more RAM space? Is there an area outside the allocated free RAM area where I can POKE variables to be passed from one program to another?

Edward Fisher  
Hamburg, NY

□ The reason that LOMEM is not 27677 is that the extra 270 bytes are used to store the Math Function names (SQR, FRE, SPC, PEEK, LOG, etc.). My guess is that the programmers at Lazer Microsystems did not add these function names until after the rest of the interpreter was completed; there is no good reason for them to be located above LOMEM. To compound the problem, these variable names don't even stay at the same addresses. The interpreter is constantly moving them around between data tables. This is one of the reasons for the pause after entering a long program line.

□ The reason that the NEW command increases free memory to 25954 bytes is that an incorrect value is used in the default table of pointers. The 25954 bytes is the correct value.

□ With a POKE trick you can set LOMEM to 25600 (1807 more bytes). POKE a zero into address 10950 and POKE a '100' into address 10951; this is the location of the lower limit for LOMEM. Now reset LOMEM. Here are the commands that you can not use after doing this: HGR, HPLOT, DRAW, XDRAW, ROT, SCALE, PDL, POS, VPOS, HTAB, VTAB, INVERSE, NORMAL, FLASH, GR, PLOT, VLIN, HLIN, and SCRN. If you attempt any of these, ADAM will most likely lockup.

□ There are many free RAM gaps throughout the interpreter and the Operating System. However, most of these get used by various patches. The safest area is from address 56320 through 57343, inclusive. This area is generally used only by binary BASIC converters. You may need to reset the POKE limit in order to POKE into this otherwise unused 1K buffer. To do so, POKE 16149, 255 then POKE 16150, 255.

### FORMATTING DATA PACKS

An ordinary cassette can be made to fit into a data drive by drilling the two holes at the upper back of the shell. I got the idea to copy my DOS from the Disk Manager to data pack and pull the reset on the data pack to format tapes using it. But, it won't let me recognize tape drive one to format to. Do you have any suggestions on what I would have to change to make it format to that drive?

Alfred Armstrong  
Muncie, IN

First, blank disks are sold in a semi-formatted condition. They already have electronic impulses for sectors and tracks. All an ADAM disk formatting program does is to mark the already existing sectors to conform to ADAM's 'block' reading and writing. The disks are formatted into 40 tracks of 8 sectors each. Each sector stores 512 bytes.

Now ordinary cassette tapes, on the other hand, have no electronic impulses stored on the magnetic tape to indicate the beginning of tracks, sectors, or blocks. This makes it impossible for software alone to format cassettes into DDPs. If you did patch the allowable drives for a formatting program in order to use the function on a blank cassette, the tape would just spin *ad infinitum* searching for an impulse marker. If you put a blank data pack into an audio player, you can hear the electronic impulses.

## EXPANDING YOUR SYSTEM

## BIT BY BIT

### LOW RESOLUTION GRAPHICS

#### PRINTER ALTERNATIVES

(part 3)

(part 6)

Last month we began discussing what to look for in a second printer. The primary consideration is compatibility with ADAM. Orphanware, Eve Electronics, and Capital Software all offer standard Centronics parallel interfaces for ADAM that will allow you to connect to virtually any printer on the market. Nearly every line of printers in a particular model offers this parallel connection. And, a lot of software has already been developed for ADAM which accesses a second printer. Printers are generally much more standardized than computers are. Most printers offer built-in print control software which can be accessed by standard "EPSON" codes.

After compatibility with the computer proper and the available software for ADAM to direct the printer, there are least another dozen considerations. For instance, an impact dot matrix printer should have, at the very minimum, a 9-pin print head. With a standard 9-pin print head, the pins are all in one vertical column. These pins can be fired (propelled forward) in any combination. When the pin strikes the paper through the inked ribbon a dot printed. In draft mode, consecutive vertical dots are about  $1/72$ " of an inch apart. In near letter quality or correspondence mode, the distance is halved.

Another consideration is ribbon life. You certainly don't want to tie any significant portion of your computer budget in buying ribbons. Many ribbons are touted to be good for at least a million characters; but that comes a lot sooner than you'd expect. There are two general types of ribbons. "Multi - strike ribbons" are typically used by letter quality printers like SmartWRITER. The cartridges for these ribbons usually have gadgets inside to prevent the ribbon from spooling through for a second or third loop. "Fabric ribbons", on the other hand, are designed specifically to loop around the spindles continuously. Most often, the ribbon wears out before the ink is gone. Fabric ribbons are widely used by impact dot matrix printers. For letter quality printers, fabric ribbons rarely produce desirable correspondence quality.

The program below was just sent in to us by one of our newer subscribers. It illustrates the concepts we've covered the last two months in this column. This two player game is an interesting application of GR animation. It's hard to believe that such a short program can generate as much player enthusiasm as it does. Try it.

Don't worry about the POKEs. They just reset the game controller positions. Line numbers 110 and 120 assign the 'blue' player's position. Line numbers 210 and 220 assign the 'red' player's position. Line number 300 determines if the two players occupy the same screen position. Line numbers 60 and 1010 sound ADAM's built-in bell.

The author, Leonard F. Adolph, sent the following information. It is a game that I wrote for my two young sons and we call it chase; it is one of my earlier efforts. "Chase" is a simple video game for two players using the paddle joysticks. The two players start at opposite corners of the screen. One player then tries to "catch" the other. We usually have red as the chaser. As the players move, they leave a trail of color. This allows the player being chased to hide in the areas that he has painted.

```

10 GR
20 PRINT TAB(13);
30 PRINT "GO!"
40 POKE 27100, 0: POKE 27103, 0
50 POKE 27101, 255: POKE 27102, 255
60 PRINT CHR$(7)
100 COLOR = 2
110 x = INT(39*PDL(3)/255)
120 y = INT(39*PDL(1)/255)
130 PLOT x, y
200 COLOR = 3
210 x1 = INT(39*PDL(2)/255)
220 y1 = INT(39*PDL(0)/255)
230 PLOT x1, y1
300 IF x = x1 AND y = y1 THEN 1000
400 GOTO 100
1000 PRINT TAB(11); "GDTCHA!"
1010 PRINT CHR$(7): PRINT CHR$(7)
1020 COLOR = 15
1030 PLOT x, y
1040 INPUT "play again?"; q$
1050 IF LEFT$(q$, 1) = "y" THEN 10
1060 IF LEFT$(q$, 1) = "Y" THEN 10

```

## **BYTE-SIZED BASIC**

### POKES TO PLAY WITH

(part 10)

#### Turning Off The Printer:

Have you ever been annoyed by accidentally activating the SmartWRITER printer by pressing **CONTROL + P**? ADAM immediately proceeds to dump the entire TEXT screen to the printer. There isn't even any way to stop it till it's finished the screen. This same problem happens if you try to print a "CHR\$(16)".

The easiest way to prevent this from happening is to stop the Operating System routine that sends strings to the printer. To do so, just ...

**POKE 62741, 201 [return]**

In order to POKE up this high in RAM, you may need to reset the POKE limit first. To do so, just ...

**POKE 16149, 255 [return]**  
**POKE 16150, 255 [return]**

When you're ready to use the ADAM printer after doing this, you'll need to POKE a '197' into address 62741.

#### The PDL function addresses:

Four addresses contain the values for PDL(0) through PDL(3), ie, the joystick screen position controls. You can PEEK these addresses to determine the current values without using the PDL commands. This way the values won't change. Also, you can reset these PDL values, by POKEing zeroes into the addresses. The default value for each address is "128". The addresses are:

27100 --- PDL(0)  
27101 --- PDL(2)  
27102 --- PDL(1)  
27103 --- PDL(3)

### THE PERPETUAL CALENDAR PROGRAM

The program on page 9 demonstrates a simple perpetual calendar function. You enter the year, month, and the date. It will then calculate the day of the week for you.

Line numbers 110 though 200 set up the various variables. Line numbers 300 through 330 present the opening menu. Line numbers 400 through 450 control the input of the year, month, and date. Line numbers 1000 through 1050 check for date entry errors. This includes a leap year check in February with line numbers 1030 and 1040. Line numbers 1100 through 1220 calculate the day of the week for you. Line numbers 1300 through 1320 print the end result and return you to the opening menu. Line number 1500 displays the error message used with line numbers 1000 through 1050. The program will jump to line number 1000 if you enter a negative number for the year or the month. If you just enter two digits for the year, it will assume the 20<sup>th</sup> century.

You should note that the Gregorian calendar (the world standard) wasn't adopted until 1752. This means that dates prior to this will yield inaccurate results. You could use this routine to create an entire calendar month by determining the first and last day and then just filling in the rest of the numbers.

### SmartBASIC 2.0 FEATURES

Let's complete the discussion on the sprite program from the February issue (page 9). Line numbers 300 through 330 place the sprites on the screen. Line numbers 400 through 470 cause the flashing between normal and double magnification.

Line numbers 430 and 460 create the short pause at each size. In STD MEM this pause lasts for just about one half second. But, in EXT MEM the delay, with the same simple counter loop, lasts for nearly two seconds. This is one of the disadvantages of using the extended memory. Nearly all functions take about four times longer due to the constant bank switching between standard RAM and the 64K expansion RAM.

The promised sprite grids are on page 10. Use them the same way we did in the February issue to design your own sprites. Just add up the powers of two for the blocks that you shade to determine a byte value. As a special bonus, we'll include ten pages of these sprite grids, FREE, with ANY product order placed before May 31<sup>st</sup>. Be sure to mention on the order form that "you'd like your ten pages of sprite grids".



```

100 REM 'perpetual calendar routine' demonstration
110 TEXT: DIM nu(12), da(12), mo$(12)
120 DATA 0,31,59,90,120,151,181,212,243,273,304,334
130 FOR x = 1 TO 12: READ nu(x): NEXT
140 DATA 31,28,31,30,31,30,31,31,30,31,30,31
150 FOR x = 1 TO 12: READ da(x): NEXT
160 DATA January,February,March,April,May,June
170 DATA July,August,September,October,November,December
180 FOR x = 1 TO 12: READ mo$(x): NEXT
190 DATA Wednesday,Thursday,Friday,Saturday,Sunday,Monday,Tuesday
200 FOR x = 0 TO 6: READ day$(x): NEXT
300 HTAB 2: INVERSE: PRINT " perpetual DAY calculator"
310 NORMAL: VTAB 6
320 PRINT " 1 = find a DAY": PRINT " 2 = exit program"
330 GET k$: k% = VAL(k$): IF k% <> 1 GOTO 10000
400 PRINT: INPUT " what year? "; yr$: yr% = VAL(yr$)
410 ON yr% < 0 GOTO 10000: IF yr% < 99 THEN yr% = yr%+1900
420 PRINT: INPUT " what month (1 - 12)? "; mh$: mh% = VAL(mh$)
430 IF mh% < 1 OR mh% > 12 GOTO 1200
440 PRINT: INPUT " what date? "; dt$: dt% = VAL(dt$)
450 IF dt% < 1 OR dt% > 31 GOTO 1500
1000 IF dt% <= da(mh%) GOTO 1100
1010 ON mh% = 2 GOTO 1020: IF dt% > da(mh%) GOTO 1500
1020 IF dt% > 29 GOTO 1500
1030 IF yr%/4 = INT(yr%/4) AND yr%/25 <> INT(yr%/25) GOTO 1100
1040 IF yr%/400 = INT(yr%/400) GOTO 1100
1050 GOTO 1500
1100 ya% = yr%-1800: z1% = ya%/4
1110 z2% = z1%/25: z3% = (ya%+200)/400: ofs = 0
1120 ON z1%*4 <> ya% GOTO 1200: ON z2%*100 <> ya% GOTO 1140
1130 IF z3%*400-200 <> ya% GOTO 1200
1140 ofs = 1
1200 tt = 365*ya%+z1%-z2%+z3%-ofs+nu(mh%)+dt%-1
1210 IF mh% < 3 THEN tt% = tt%+1
1220 wd = tt-7*INT(tt/7)
1300 PRINT: PRINT " "; mo$(mh%); " "; dt%; ", "; yr%
1310 PRINT " is on a "; day$(wd)
1320 PRINT: PRINT: PRINT: GOTO 320
1500 PRINT: PRINT " invalid date -- try again ...": PRINT: GOTO 440
10000 PRINT: PRINT " program terminated.": END

```

>>> May 1987 <<<

| SUN | MON | TUE | WED | THR | FRI | SAT |
|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     |     | 1   | 2   |
| 3   | 4   | 5   | 6   | 7   | 8   | 9   |
| 10  | 11  | 12  | 13  | 14  | 15  | 16  |
| 17  | 18  | 19  | 20  | 21  | 22  | 23  |
| 24  | 25  | 26  | 27  | 28  | 29  | 30  |
| 31  |     |     |     |     |     |     |



## HACKER'S DELIGHT

### TRANSFERRING DATA

(part 5)

This month we're spotlighting another simple data transfer routine that's used frequently in assembly language. This one corresponds to a BASIC double PEEK / POKE. It uses the the HL register pair for passing the data. It's generally a good idea in Z80 programming to leave the primary accumulator and the HL pair free as temporary work variables for situations such as this. As you'll learn, these registers are supported by more Z80 codes than the other registers. Here's an example:

In BASIC:

```
POKE 65534, PEEK(16089)
POKE 65535, PEEK(16090)
```

In decimal Z80 code:

```
42, 217, 62,
34, 254, 255,
201
```

In mnemonics and hex code:

```
LD HL, ($3ED9)
LD ($FFE), HL
RET
```

Remember, when you're creating short Z80/EOS routines to CALL from BASIC, write the routine on scratch paper using mnemonics and then convert it to decimal Z80 code to put in DATA statements. In the assembly language mnemonics above, the "LD" (stands for Load) and the "RET" (stands for Return) are known as the operation codes (or opcodes). The statement following the "LD" opcode is called the operand. In this example the operand includes two components. The portion to the right of the comma is the "source"; the portion to the left of the comma is the "destination". Data is passed from the source to the destination. Note the use of parentheses. This is known as "indirect addressing". With indirect addressing, the contents of the memory location pointed to (inside the parentheses) is Loaded into the specified register pair. Don't worry if the explanation still seems a little complicated. You don't necessarily have to fully understand everything about machine language in order to create simple, yet useful routines. The greater comprehension will come with practice.

### EOS RESET ALL DEVICES

This month we've disassembled the 16<sup>th</sup> routine in the EOS table of 101 jump vectors. It can be executed by CALLING address 64605 (93, 252). The actual routine begins at address 63734 (246, 248). The routine is 44 bytes in length.

Asmb# 40, at the top of page 22 details the routine. This routine is CALLED only by the EOS RESET SYSTEM routine. Thus, after the system is booted it has no further use. We'll overwrite it with a BASIC patch in a later issue. The routine requires no setup. However, upon completion it will change the AF pair.

As it stands, you can CALL this routine from a BASIC program. Two noticeable changes will take place. First, if the keyboard was in LOCK mode, it will be reset. Second, all the device communication blocks will be cleared and reset. The benefit of this needs further discussion.

Suppose you have a disk drive connected to ADAM, but the power is off. You insert SmartBASIC in the first tape drive and pull the computer reset. Since the disk drive was off when the system booted, you won't be able to access it when you do turn it on. The reason is because the boot - up procedure didn't recognize it as an active drive. Thus, no device communication block was created to allow input / output with the disk drive. Now, turn the disk drive power on and CALL address 63734. The ADAM printer will reset and the disk drive light will flicker. You just created a device communication block for the drive.

The DCB is created with the CALL at address 63769 in this routine. This address CALLS another EOS routine, ie, the one that actually creates the DCB's. This routine that really allocates the DCB's can also be CALLED from a BASIC program at address 63947 or address 64650 (in the jump table). Also, to UNLOCK the keyboard you can CALL address 63819 or address 64608 (in the jump table). Refer to our December 1986 issue for a detailed explanation of the jump table (page 13).

### THE BSAVE CORRECTION

The patch at the top of page 13 corrects the short BSAVE buffer problem with SmartBASIC V1.0. This and the DATA / REM space bump bug were two of SmartBASIC's most annoying flaws. The default buffer used addresses 17016 through 17041, inclusive. This buffer was only 26 bytes in length including the pointer and the byte counter. However, to use BSAVE properly inside a BASIC program you need at least 38 bytes for the buffer, preferably 41 bytes so that spaces can be used after the commas.

This patch relocates the buffer to an unused area of the EOS. It supplants the old "initialize I/O processor" routine. And, as fate would have it, this routine was exactly 41 bytes in length.

Line number 9100 resets the POKE limit. Line number 9110 sets the byte counter address. Line numbers 9120 and 9130 set the pointers to the beginning of the usable buffer. Line numbers 9140 and 9150 change the interpreter's pointers to the buffer position pointer. Line number 9160 sets the pointer to the subtraction value for counting the bytes. And, line number 9170 adds another improvement.

By default, you can not use BRUN or BLOAD with the drive suffix immediately after the filename. For some reason, SmartBASIC insists on a load address before the drive suffix. Line number 9170 corrects this problem. For example you can now enter a command such as this:

```
BRUN testfile, d5
```

Also, to test the BSAVE fix, RUN this simple demo:

```
10?chr$(4);"bsave abcdefghij,A11000,L9000,d1"
```

### CHANGING ADAMlink SCREEN COLOR

Have you noticed that Coleco's ADAMlink program doesn't permit you to change screen colors? The program at the bottom of page 13 will allow you to set the default colors on the software. Be sure to use it ONLY on a backup.

The ADAMlink software has three rather independent modules: title screen, command mode (with SmartKEYs), and terminal mode (when you're online). Command mode uses hi-res graphics mode 2 (like HGR2). Terminal mode uses a modified 40 column TEXT screen. To change colors, you need to alter one byte in each mode's program module. For both ADAMlink I and II, the address to change is same for the command mode. It is the 334<sup>th</sup> byte of the fifth block. For ADAMlink I, the terminal mode color byte is the 129<sup>th</sup> byte of block 15. For ADAMlink II, the terminal mode color byte is the 895<sup>th</sup> byte of block 15.

### EZkeysII

**EZkeys** (LISTed in our January issue) has been one of our most popular BASIC enhancements. This month, we've got what most users would consider as an improvement to the patch. As with the original version, it adds five keyclick sounds in immediate or program mode. Instead of using UNshifted SmartKEYs, this update uses the SHIFTEd SmartKEYs. This is so that you can easily add keyclick to existing BASIC programs that use the SmartKEYs for menu choices. Also, SmartKEY VI will now change the default drive to the Walter's Software's RAMDSK. Also, you can press SHIFTEd CLEAR to execute a TEXT command. SHIFTEd STORE will check to see if our Intel-LOAD VI.0 is in RAM and CALL address 56320. EZkeysII, however, does not provide an on/off feature.

### EZcopy

EZcopy is LISTed on pages 15 through 21. As was EZmenu last month, this program is done entirely in the HGR2 mode. And it prints the SmartKEY labels at the bottom of the screen the same way SmartWriter does. EZcopy is, by no means, a full featured media copy program; but, it does offer some rather unique features.

For instance, it includes an 'auto' copy option which calculates the number of blocks to copy. And, it will work with a one (standard), two, or three block directory. If you're copying super games or CP/M software this 'auto' feature will adjust automatically to copy all the blocks.

It also includes a 'home media' feature that you can turn on or off. And, it has a 'fix blocks' feature that you can also turn on or off. This is a convenience for copying data packs to disk and vice versa. The program is extremely user friendly.

It starts by displaying the title screen and two SmartKEY choices, 'xfer' (copy) and exit. If you choose 'xfer', it will then show you the six copy controls: source medium, destination medium, first block, last block, home media status, and fix blocks status. At the bottom of this screen you're asked to choose between 'auto' (automatic) and 'spec' (specialized) copying. Specialized copying is for advanced users. With this option you can set the first and last blocks to copy at your preference. Automatic copying is the option that you'll most likely want to try.

After choosing between these two, five more SmartKEYs are displayed: "src" (to change the source medium), "dest" (to change the destination medium), "more" (to go to other controls), "xfer" (to begin copying), and "done" (to revert to the previous SmartKEYs).

You should insert the media before opting to change the source or destination drives. A machine code routine will scan the drives to see which ones contain media. As with SmartWriter, SmartKEY labels will only be shown for drives that do contain a medium. You can select SmartKEY five from these, "scan", to have ADAM search the drives again.

All the controls are dynamically displayed on the screen. With the automatic copy feature, the program will show you how many blocks it's going to copy. If it encounters an error in the copy process, a buzzer will sound and you can Retry the block, Skip the block, or Quit the copy. If you do get this error message, reinsert the medium in the drive and press 'R' for retry. If this happens again at the same block number, you've got a bad medium.

EZcopy is an extremely convenient copy utility with the "auto" function. And, the graphics, sound, and user friendly features make it fun to work with, even for beginners. It's gone through very rigorous testing in the past few weeks. Please let us know your opinion on this one. We will discuss the various programming aspects of it next month.

```
9000 REM BLOAD,BSAVE,BRUN corrections
9010 REM can be used with PatchWORK 1.0 or 3.3, ie,
9020 REM it works with SmartBASIC 1.0 and Intel-BEST 3.3
9100 POKE 16149, 255: POKE 16150, 255
9110 POKE 19459, 34: POKE 19450, 249
9120 DATA 16601,63817,19585
9130 FOR x = 1 TO 3: READ adr: POKE adr, 35: POKE adr+1, 249: NEXT
9140 DATA 16604,19558,19563,19576,19595
9150 FOR x = 1 TO 5: READ adr: POKE adr, 73: POKE adr+1, 249: NEXT
9160 POKE 19566, 72: POKE 19567, 249
9170 POKE 21019, 11
```

```
10 REM screen color patch for
20 REM ADAMlink I and/or ADAMlink II
100 LOMEM :30000
110 DATA 62,0,1,0,0,17,0,0,33,0,100,205,243,252,50,255,107,201
120 FOR x = 27600 TO 27617: READ mc: POKE x, mc: NEXT
130 p1 = 27600: p2 = p1+1: p3 = p1+6: p4 = p1+12
200 TEXT: HTAB 2: FLASH: PRINT " ADAMlink patch": NORMAL
210 VTAB 4: PRINT " Use with extreme caution!!!": PRINT
220 PRINT " Use ONLY with Coleco ADAMlink"
230 PRINT " software!!!": VTAB 10
240 PRINT " Which drive has the ADAMlink"
250 PRINT " software in it?": PRINT
260 PRINT " 1 = tape one"
270 PRINT " 2 = disk one"
280 GET k$: k% = VAL(k$): IF k% < 1 OR k% > 2 GOTO 10000
290 dv% = 2^(4-k%)
300 IF dv% = 8 THEN dv$ = "tape one"
310 IF dv% = 4 THEN dv$ = "disk one"
400 VTAB 18: PRINT " Which software title?": PRINT
410 PRINT " 1 = ADAMlink I": PRINT " 2 = ADAMlink II"
420 GET k$: k% = VAL(k$): IF k% < 1 OR k% > 2 GOTO 10000
430 IF k% = 1 THEN a1 = 27776: sf$ = "ADAMlink I"
440 IF k% = 2 THEN a1 = 28542: sf$ = "ADAMlink II"
700 HOME: PRINT " What text background?"
710 PRINT " (the default is '7')": PRINT
720 INPUT " any number 1 thru 15: "; tb$: tb% = VAL(tb$)
730 IF tb% < 1 OR tb% > 15 GOTO 10000
900 VTAB 18: PRINT " to patch "; sf$
910 PRINT " in "; dv$: ", press [return]..."
920 GET go$: IF go$ <> CHR$(13) THEN GOTO 10000
1000 TEXT: PRINT " one moment please ...": VTAB 4
1010 POKE p2, dv%: POKE p3, 5: POKE p4, 243: CALL p1
1020 IF PEEK(27647) <> 128 GOTO 11000
1030 POKE 27981, tb%: POKE p4, 246: CALL p1
1040 IF PEEK(27647) <> 0 GOTO 11100
1100 POKE p3, 15: POKE p4, 243: CALL p1
1110 IF PEEK(27647) <> 128 GOTO 11000
1120 POKE a1, 16+tb%: POKE p4, 246: CALL p1
1130 IF PEEK(27647) <> 0 GOTO 11100
1200 PRINT: PRINT: PRINT " "; sf$: " colors patched.": END
10000 TEXT: PRINT " program terminated.": END
11000 PRINT " block read error on "; PEEK(27606): END
11100 PRINT " block write error on "; PEEK(27606): END
```

```
0000 REM EZkeys II (EOS input patch)
0010 REM can be merged with PatchWORK 1.0, 3.3,
0020 REM ie, it works with SmartBASIC 1.0, 3.3, or
0030 REM with Walter's Software's 'RAMDSK 1.1' enhancement
0040 REM shifted I      = POKE 16821,8
0042 REM shifted II    = POKE 16821,24
0044 REM shifted III   = POKE 16821,4
0046 REM shifted IV    = POKE 16821,5
0048 REM shifted V     = CATALOG (current device)
0050 REM shifted VI    = POKE 16821,26
0052 REM shifted CLEAR = TEXT
0054 REM shifted STORE = CALL 56320 (execute Intel-LOAD V1.0)
0100 POKE 16149, 255: POKE 16150, 255
0130 DATA 205,134,251,245,58,117,253,254,160,56,4,241,209,193,201
0140 DATA 254,13,202,217,248,254,32,56,243,6,8,254,64,56,2,6,16
0150 DATA 254,96,56,2,6,24,254,128,56,2,6,32
0160 DATA 62,192,211,224,120,211,224,62,210,211,224
0170 DATA 17,0,7,27,122,179,32,251,62,223,211,224
0180 DATA 58,117,253,254,137,32,4,62,8,24,30
0190 DATA 254,138,32,4,62,24,24,22,254,139,32,4,62,4,24,14
0200 DATA 254,140,32,4,62,5,24,6,254,142,32,8
0210 DATA 62,26,50,181,65,241,24,45
0220 DATA 254,141,32,19,241,209,193,175,50,117,253
0230 DATA 205,96,47,205,152,82,205,162,82,195,166,62
0240 DATA 254,158,32,13,241,209,193,175,50,117,253
0250 DATA 205,57,43,195,166,62
0260 DATA 254,155,202,234,238
0270 DATA 241,209,193,175,50,117,253,201
0280 DATA 62,201,50,117,248,6,20,205,94,248,5,16,250
0290 DATA 62,58,50,117,248,24,228
0299 DATA -1
0300 start = 63538: tot = 0
0310 READ mc: IF mc = -1 GOTO 0330
0320 POKE start, mc: tot = tot+mc: start = start+1: GOTO 0310
0330 IF start = 63725 AND tot = 23060 GOTO 0500
0400 PRINT: PRINT " data entry error!!!"
0410 PRINT " please check your data.": END
0500 POKE 63539, PEEK(64678): POKE 63540, PEEK(64679)
0600 DATA 241,209,193,241,175,50,117,253,58,0,220,254,205,192
0610 DATA 58,0,221,254,108,192,58,0,223,254,174,192
0620 DATA 205,0,220,195,166,62
0630 FOR x = 61162 TO 61193: READ mc: POKE x, mc: NEXT
0640 IF PEEK(61193) = 62 GOTO 0700
0650 PRINT " data error 0600 - 0620!": END
0700 DATA 62,195,50,218,244,33,50,248,34,219,244,201
0710 FOR x = 54272 TO 54283: READ mc: POKE x, mc: NEXT
0720 IF PEEK(54283) = 201 GOTO 0740
0730 PRINT " data error on line 0700!": END
0740 CALL 54272
0800 POKE 16134, 27: REM CNTL+C to ESCAPE
0810 POKE 12374, 148: REM CNTL+N to INSERT (unshifted)
0820 POKE 12375, 151: REM CNTL+O to DELETE (unshifted)
0830 POKE 16135, 144: REM CNTL+S to WILDCARD (unshifted)
0840 POKE 17302, 149: POKE 18320, 149: REM CNTL+P to PRINT (unshifted)
```

```
10 REM EZcopy
20 REM by DIGITAL EXPRESS
30 REM All graphics!!!
40 REM AUTO 'block count' copy feature
100 IF PEEK(259) <> 195 GOTO 60000
110 LOMEM :37888: POKE 16149, 255: POKE 16150, 255: qz = PEEK(16134)
120 TEXT: PRINT "standby, processing data ...": POKE 16134, 255
130 DATA 17,0,0,33,0,108,1,0,4,205,29,253,201
140 FOR x = 28672 TO 28684: READ mc: POKE x, mc: NEXT: CALL 28672
150 DATA 33,0,108,17,0,212,1,0,4,126,18,19,18,19
160 DATA 35,11,120,177,32,245,201
170 FOR x = 28685 TO 28705: READ mc: POKE x, mc: NEXT
180 DATA 0,16,16,16,16,16,16,0,0,68,68,68,68,68,0
190 DATA 0,146,146,146,146,146,146,0,0,145,145,138,138,132,132,0
200 DATA 0,34,34,20,20,8,8,0,0,137,137,81,81,33,33,0
210 FOR x = 27656 TO 27703: READ mc: POKE x, mc: NEXT
220 DATA 237,91,242,255,26,254,0,200,254,13,200
230 DATA 245,58,239,255,71,241,33,0,0,95,22,0,25,16,253
235 DATA 237,75,248,255,9,58,246,255
240 DATA 71,58,244,255,79,175,129,16,253
245 DATA 95,58,245,255,61,198,32,87,237,75,246,255
250 DATA 213,205,26,253,209,107,122,214,32,103,58,241,255
260 DATA 237,91,246,255,205,38,253,58,244,255,60,50,244,255
270 DATA 42,242,255,35,34,242,255,24,165
280 FOR x = 28706 TO 28796: READ mc: POKE x, mc: NEXT
290 FOR x = 65517 TO 65535: POKE x, 0: NEXT: POKE 65526, 8
300 POKE 25431, 11: POKE 25471, 187: HGR2: pt = 28706
310 DATA 62,187,17,0,20,33,0,0,213,205,38,253,209
320 DATA 175,33,0,32,205,38,253,201
330 FOR x = 28797 TO 28817: READ mc: POKE x, mc: NEXT: c1 = 28797
340 DATA 62,153,17,248,0,33,8,20,213,205,38,253,209
350 DATA 175,33,8,52,205,38,253,201
360 FOR x = 28818 TO 28838: READ mc: POKE x, mc: NEXT: c2 = 28818
370 DATA 62,119,17,248,0,33,8,21,245,213,229,205,38,253
380 DATA 225,209,241,36,245,213,229,205,38,253,225,209,241
390 DATA 36,213,205,38,253,209,33,8,53,175,213,229,205,38,253
400 DATA 225,209,36,175,213,229,205,38,253,225,209,36,175,195,38,253
410 FOR x = 28839 TO 28896: READ mc: POKE x, mc: NEXT: c3 = 28839
420 DATA 62,4,17,40,0,33,0,21,229,213,245,205,38,253
430 DATA 241,209,225,36,229,213,245,205,38,253
440 DATA 241,209,225,36,195,38,253
450 FOR x = 28897 TO 28927: READ mc: POKE x, mc: NEXT
460 d1 = 28897: d2 = d1+1: d3 = d1+6
470 FOR x = 5 TO 6: READ m1$(x): NEXT: DATA xfer,exit
475 DATA 6,20,62,128,211,224,120,211,224,62,146,211,224
480 DATA 17,0,10,27,122,179,32,251,5,16,234,62,159,211,224,201
485 FOR x = 28928 TO 28956: READ mc: POKE x, mc: NEXT
490 s1 = 28928: s2 = s1+1: s3 = s1+15
495 DATA 62,226,211,224,62,240,211,224,17,0,175,27,122,179
500 DATA 32,251,62,255,211,224,201
```

EZcopy LIST continued ...

```
510 FOR x = 28957 TO 28977: READ mc: POKE x, mc: NEXT
520 e1 = 28957: e2 = e1+1: e3 = e1+10
530 FOR x = 4 TO 6: READ x1$(x): NEXT: DATA auto,spec,done
540 FOR x = 0 TO 15: POKE x+18765, x: NEXT: POKE 65518, 255
550 dr% = PEEK(16821): POKE 65530, dr%: POKE 65531, dr%
555 IF dr% = 4 OR dr% = 5 THEN POKE 65518, 159
560 hm$ = "yes": fix$ = "yes"
570 FOR x = 2 TO 6: READ x2$(x): NEXT
580 DATA src,dest,more,xfer,done
590 FOR x = 2 TO 6: READ x3$(x): NEXT
600 DATA frst,last,home,fix,done
610 FOR x = 5 TO 6: READ yn$(x): NEXT: DATA no,yes
620 DATA 62,4,205,126,252,40,5,50,252,255,24,21
630 DATA 62,4,205,84,252,253,126,20,230,15,254,3,62,4,56,2
640 DATA 62,255,50,252,255
650 DATA 62,5,205,126,252,40,5,50,253,255,24,21
660 DATA 62,5,205,84,252,253,126,20,230,15,254,3,62,5,56,2
670 DATA 62,255,50,253,255
680 DATA 62,8,205,126,252
690 DATA 62,8,205,84,252,253,126,20,230,15,254,3,62,8,56,2
700 DATA 62,255,50,254,255
710 DATA 253,126,20,254,48,48,4,62,24,24,2,62,255
720 DATA 50,255,255,201
730 FOR x = 28978 TO 29086: READ mc: POKE x, mc: NEXT: dv = 28978
740 FOR x = 5 TO 6: READ dv$(x): NEXT: DATA scan,done
750 DATA 62,0,1,0,0,17,0,0,33,0,0,205,243,252,50,255,107,201
760 FOR x = 29087 TO 29104: READ mc: POKE x, mc: NEXT
770 r1 = 29087: r2 = r1+1: r3 = r1+6: r4 = r1+10
780 DATA 62,0,1,0,0,17,0,0,33,0,0,205,246,252,50,255,107,201
790 FOR x = 29105 TO 29122: READ mc: POKE x, mc: NEXT
800 w1 = 29105: w2 = w1+1: w3 = w1+6: w4 = w1+10
810 DATA 62,0,1,0,0,17,1,0,33,0,116,195,243,252
820 FOR x = 29123 TO 29136: READ mc: POKE x, mc: NEXT
830 ha% = 29123: hb% = ha%+1
1000 GOSUB 30100: CALL 28685
1010 ww$ = " DIGITAL EXPRESS": vt% = 2: ht% = 8: co% = 18
1020 b1% = 0: b2% = 212: di% = 16: GOSUB 30000
1030 b1% = 0: vt% = 3: GOSUB 30000
1040 b1% = 0: ww$ = "presents ...": co% = 19
1050 ht% = 10: vt% = 5: b2% = 108: di% = 8: GOSUB 30000
1060 ww$ = "- EZcopy -": vt% = 7: ht% = 11: co% = 246
1070 b2% = 212: di% = 16: GOSUB 30000: b1% = 8: vt% = 8: GOSUB 30000
1080 b1% = 0: b2% = 108: di% = 8: ww$ = "(a simple media copy utility)"
1090 ht% = 2: vt% = 11: co% = 248: GOSUB 30000
1100 ww$ = "primary menu ...": GOSUB 40000: be% = 5
1110 FOR z = be% TO 6: wd$ = m1$(z): GOSUB 40100: NEXT
1120 GOSUB 31000: IF sk% < 6 THEN GOSUB 30100
1130 ON sd% GOTO 2000, 60000
2000 ww$ = " source:      ": vt% = 2: ht% = 2: co% = 25: GOSUB 30000
2010 ww$ = " destination:    ": vt% = 4: co% = 19: GOSUB 30000
2020 ww$ = " FIRST block:   ": vt% = 6: co% = 24: GOSUB 30000
2030 ww$ = " LAST block:    ": vt% = 8: co% = 18: GOSUB 30000
2040 ww$ = " home media:    ": vt% = 10: co% = 246: GOSUB 30000
2050 ww$ = " fix blocks:    ": vt% = 12: co% = 252: GOSUB 30000
2060 GOSUB 32200: GOSUB 32210
2070 GOSUB 32220: GOSUB 32230: GOSUB 32240: GOSUB 32250
```



EZcopy LIST continued ...

```
2100 ww$ = "XFER options ...": GOSUB 40000: be% = 4
2110 FOR z = be% TO 6: wd$ = x1$(z): GOSUB 40100: NEXT
2120 GOSUB 31000: ON sd% GOTO 2200, 2210, 1000
2200 au$ = "auto": GOTO 2300
2210 au$ = "specialized"
2300 ww$ = au$+" XFER options ...": GOSUB 40000: be% = 2
2310 FOR z = be% TO 6: wd$ = x2$(z): GOSUB 40100: NEXT
2320 GOSUB 31000: ON sd% GOTO 3000, 3500, 4000, 5000, 2100
3000 w1$ = "choose the SOURCE ...": GOSUB 34000
3010 IF dd% = 0 GOTO 2300
3020 POKE 65531, dd%: GOSUB 32000: GOSUB 32200: GOTO 2300
3500 w1$ = "choose the DESTINATION ...": GOSUB 34000
3510 IF dd% = 0 GOTO 2300
3520 POKE 65530, dd%: GOSUB 32000: GOSUB 32210: GOTO 2300
4000 ww$ = "more XFER options ...": GOSUB 40000
4010 be% = 2: IF au$ = "auto" THEN be% = 4
4020 FOR z = be% TO 6: wd$ = x3$(z): GOSUB 40100: NEXT
4030 GOSUB 31000: IF be% = 4 GOTO 4050
4040 ON sd% GOTO 4100, 4200, 4300, 4400, 2300
4050 ON sd% GOTO 4300, 4400, 2300
4100 ww$ = "enter new FIRST block:": GOSUB 40000: GOSUB 32300
4110 ht = 26: vt = 21: ml = 1: ll = 3: lf$ = "0": hf$ = "9": GOSUB 55000
4120 bk% = VAL(b$): ww$ = b$
4130 IF bk% > PEEK(65518) THEN GOSUB 30600: GOTO 4110
4140 POKE 65517, bk%: GOSUB 32220: GOTO 4000
4200 ww$ = "enter new LAST block:": GOSUB 40000: GOSUB 32300
4210 ht = 26: vt = 21: ml = 1: ll = 3: lf$ = "0": hf$ = "9": GOSUB 55000
4220 bk% = VAL(b$): ww$ = b$
4230 IF bk% < PEEK(65517) OR bk% > 255 THEN GOSUB 30600: GOTO 4210
4240 POKE 65518, bk%: GOSUB 32230: GOTO 4000
4300 ww$ = "Change auto home media?": GOSUB 40000: be% = 5
4310 FOR z = be% TO 6: wd$ = yn$(z): GOSUB 40100: NEXT
4320 GOSUB 31000: IF sd% = 1 GOTO 4000
4330 IF hm$ = "yes" THEN hm$ = "no ": GOTO 4350
4340 hm$ = "yes"
4350 GOSUB 32240: GOTO 4000
4400 ww$ = "Change the blocks left fix?": GOSUB 40000: be% = 5
4410 FOR z = be% TO 6: wd$ = yn$(z): GOSUB 40100: NEXT
4420 GOSUB 31000: IF sd% = 1 GOTO 4000
4430 IF fix$ = "yes" THEN fix$ = "no ": GOTO 4450
4440 fix$ = "yes"
4450 GOSUB 32250: GOTO 4000
5000 fb% = PEEK(65517): eb% = PEEK(65518): sc% = PEEK(65531)
5010 ds% = PEEK(65530): IF ds% = sc% GOTO 5050
5020 ww$ = "to begin xfer,": GOSUB 40000
5030 ww$ = "press [return] ...": ht% = 2: vt% = 23: co% = 23: GOSUB 30000
5040 GET go$: IF go$ <> CHR$(13) GOTO 2100
5050 IF au$ <> "auto" GOTO 5065
5060 ww$ = "computing blocks to copy ...": GOSUB 40000: GOSUB 37000
5065 IF eb% <= 159 GOTO 5090
5070 IF sc% <> 4 AND sc% <> 5 AND ds% <> 4 AND ds% <> 5 GOTO 5090
5075 IF fb% > 159 THEN fb% = 0: POKE 65517, fb%: GOSUB 32220
5080 eb% = 159: POKE 65518, eb%: GOSUB 32230: GOSUB 30300
5090 GOSUB 35000
```

EZcopy LIST continued ...

```
5100 kk = 0: ib% = fb%: FOR jj = fb% TO eb%
5110 IF kk > 7 GOTO 6000
5120 ww$ = STR$(jj)+" "+" ": ht% = 20: vt% = 21: co% = 25: GOSUB 30000
5130 POKE r2, sc%: POKE r3, jj: POKE r4, 116+kk*4: CALL r1
5140 IF PEEK(64885) = 27 THEN GOSUB 30300: GOTO 2300
5150 IF PEEK(27647) = 128 GOTO 5500
5200 ww$ = "READ error on block "+STR$(jj): CALL c2: CALL c3
5210 GOSUB 30600: ht% = 2: vt% = 21: co% = 25: GOSUB 30000
5220 ww$ = "(R=retry, S=skip, & Q=quit)"
5230 vt% = 23: co% = 23: GOSUB 30000
5240 GET go$: IF go$ = "q" OR go$ = "Q" THEN GOSUB 30300: GOTO 2300
5250 IF go$ <> "r" AND go$ <> "R" GOTO 5300
5260 GOSUB 30300: GOSUB 36000: GOTO 5110
5300 IF go$ <> "s" AND go$ <> "S" THEN GOSUB 30600: GOTO 5240
5310 GOSUB 30300: GOSUB 36000: jj = jj+1: kk = kk+1
5320 IF jj > eb% THEN jj = eb%
5330 GOTO 5110
5500 kk = kk+1: NEXT jj
6000 GOSUB 35100: kk = 0: FOR ii = ib% TO jj-1
6010 IF kk > 7 GOTO 7000
6020 ww$ = STR$(ii)+" "+" ": ht% = 20: vt% = 21: co% = 25: GOSUB 30000
6030 POKE w2, ds%: POKE w3, ii: POKE w4, 116+kk*4: CALL w1
6040 IF PEEK(64885) = 27 THEN GOSUB 30300: GOTO 2300
6050 IF PEEK(27647) = 0 GOTO 6500
6200 ww$ = "WRITE error on block "+STR$(ii): CALL c2: CALL c3
6210 GOSUB 30600: ht% = 2: vt% = 21: co% = 25: GOSUB 30000
6220 ww$ = "(R=retry, S=skip, & Q=quit)"
6230 vt% = 23: co% = 23: GOSUB 30000
6240 GET go$: IF go$ = "q" OR go$ = "Q" THEN GOSUB 30300: GOTO 2300
6250 IF go$ <> "r" AND go$ <> "R" GOTO 6300
6260 GOSUB 30300: GOSUB 36100: GOTO 6010
6300 IF go$ <> "s" AND go$ <> "S" THEN GOSUB 30600: GOTO 6240
6310 GOSUB 30300: GOSUB 36000: ii = ii+1: kk = kk+1
6320 IF ii > eb% THEN ii = eb%
6330 GOTO 6010
6500 kk = kk+1: NEXT ii: kk = 0: ib% = ii
6510 IF ii >= eb% GOTO 7000
6520 GOSUB 35000: GOTO 5110
7000 yj$ = "": IF fix$ = "yes" THEN jq$ = "sub": GOSUB 39000
7050 jq$ = "": IF hm$ = "no" GOTO 7500
7100 ww$ = "homing media ...": GOSUB 40000
7110 POKE hb%, ds%: CALL ha%: POKE hb%, sc%: CALL ha%
7500 GOSUB 30300: GOTO 2300
30000 FOR x = 1 TO LEN(ww$): POKE x+27599, ASC(MID$(ww$, x, 1))
30010 NEXT: POKE 27599+x, 0: POKE 65525, vt%
30020 POKE 65524, ht%: POKE 65519, di%: POKE 65521, co%
30030 POKE 65528, b1%: POKE 65529, b2%
30040 POKE 65522, 208: POKE 65523, 107: CALL pt: RETURN
30100 CALL c1: CALL c2: CALL c3: HCOLOR = 4: HPLLOT 7, 0 TO 255, 0
30110 HPLLOT 7, 158 TO 255, 158: HPLLOT 7, 0 TO 7, 158
30120 HPLLOT 255, 0 TO 255, 158: RETURN
30300 POKE s2, 20: POKE s3, 10: CALL s1: RETURN
30400 POKE s2, 8: POKE s3, 25: CALL s1: RETURN
30500 POKE s2, 2: POKE s3, 30: CALL s1: RETURN
30600 POKE e2, 226: POKE e3, 150: CALL e1: RETURN
```

EZcopy LIST continued ...

```
30700 POKE e2, 228: POKE e3, 20: CALL e1: RETURN
30800 POP: GOSUB 30300: CALL c2: CALL c3: GOTO 1000
31000 GET sk$: sk% = ASC(sk$)
31010 IF sk% > 134 THEN sk% = sk%-8
31020 IF sk% > 134 THEN GOSUB 30600: GOTO 31000
31030 IF sk% = 27 GOTO 30800
31040 IF sk% < be%+128 THEN GOSUB 30600: GOTO 31000
31050 sk% = sk%-128: sd% = sk%-be%+1: GOTO 30300
32000 IF dd% = 4 THEN ww$ = "disk one"
32010 IF dd% = 5 THEN ww$ = "disk two"
32020 IF dd% = 8 THEN ww$ = "tape one"
32030 IF dd% = 24 THEN ww$ = "tape two"
32040 RETURN
32100 ww$ = STR$(bk%): IF bk% > 99 THEN RETURN
32110 IF bk% > 9 THEN ww$ = " "+ww$: RETURN
32120 ww$ = " "+" "+ww$: RETURN
32200 dd% = PEEK(65531): GOSUB 32000: ht% = 18: vt% = 2
32205 co% = 25: GOTO 30000
32210 dd% = PEEK(65530): GOSUB 32000: vt% = 4: ht% = 18
32215 co% = 19: GOTO 30000
32220 bk% = PEEK(65517): GOSUB 32100: vt% = 6: ht% = 18
32225 co% = 24: GOTO 30000
32230 bk% = PEEK(65518): GOSUB 32100: vt% = 8: ht% = 18
32235 co% = 18: GOTO 30000
32240 ww$ = hm$: vt% = 10: co% = 246: ht% = 18: GOTO 30000
32250 ww$ = fix$: vt% = 12: co% = 252: ht% = 18: GOTO 30000
32300 ww$ = "press [RETURN] after typing..."
32310 ht% = 2: vt% = 23: co% = 23: GOTO 30000
33000 CALL c2: CALL c3: CALL dv: ee = 0
33010 IF PEEK(65534) <> 8 THEN ee = ee+1: GOTO 33030
33020 z = 1: wd$ = "ddp1": GOSUB 40100
33030 IF PEEK(65535) <> 24 THEN ee = ee+1: GOTO 33050
33040 z = 2: wd$ = "ddp2": GOSUB 40100
33050 IF PEEK(65532) <> 4 THEN ee = ee+1: GOTO 33070
33060 z = 3: wd$ = "dsk1": GOSUB 40100
33070 IF PEEK(65533) <> 5 THEN ee = ee+1: GOTO 33090
33080 z = 4: wd$ = "dsk2": GOSUB 40100
33090 RETURN
34000 GOSUB 33000: dd% = 0: IF ee <> 4 GOTO 34100
34010 ww$ = "all drives empty ..."
34100 DN ee = 4 GOTO 34110: ww$ = w1$
34110 vt% = 21: ht% = 2: co% = 25: GOSUB 30000
34120 FOR z = 5 TO 6: wd$ = dv$(z): GOSUB 40100: NEXT
34130 be% = 1: IF ee = 4 THEN be% = 5
34140 GOSUB 31000: IF sk% = 5 GOTO 34000
34150 IF sk% = 6 THEN RETURN
34160 IF sk% = 1 AND PEEK(65534) <> 8 THEN GOSUB 30600: GOTO 34130
34170 IF sk% = 2 AND PEEK(65535) <> 24 THEN GOSUB 30600: GOTO 34130
34180 IF sk% = 3 AND PEEK(65532) <> 4 THEN GOSUB 30600: GOTO 34130
34190 IF sk% = 4 AND PEEK(65533) <> 5 THEN GOSUB 30600: GOTO 34130
```

EZcopy LIST continued ...

```
34200 IF sk% = 1 THEN dd% = 8: RETURN
34210 IF sk% = 2 THEN dd% = 24: RETURN
34220 IF sk% = 3 THEN dd% = 4: RETURN
34230 dd% = 5: RETURN
35000 IF sc% <> ds% GOTO 36000
35010 ww$ = "insert SOURCE, then": CALL c2: CALL c3
35020 ht% = 2: vt% = 23: co% = 23: GOSUB 30000
35030 ww$ = "type an 'S' ...": vt% = 24: GOSUB 30000
35040 GET go$: IF go$ = CHR$(27) THEN POP: GOSUB 30300: GOTO 2300
35050 IF go$ <> "s" AND go$ <> "S" THEN GOSUB 30600: GOTO 35040
35060 GOSUB 30300: GOTO 36000
35100 IF sc% <> ds% GOTO 36100
35110 ww$ = "insert DESTINATION, then": CALL c2: CALL c3
35120 ht% = 2: vt% = 23: co% = 23: GOSUB 30000
35130 ww$ = "type a 'D' ...": vt% = 24: GOSUB 30000
35140 GET go$: IF go$ = CHR$(27) THEN POP: GOSUB 30300: GOTO 2300
35150 IF go$ <> "d" AND go$ <> "D" THEN GOSUB 30600: GOTO 35140
35160 GOSUB 30300: GOTO 36100
36000 ww$ = "READING block #:": CALL c2: CALL c3
36010 ht% = 2: vt% = 21: co% = 25: GOSUB 30000
36020 ww$ = "press [ESCAPE] to abort ..."
36030 ht% = 2: vt% = 23: co% = 23: GOTO 30000
36100 ww$ = "WRITING block #:": CALL c2: CALL c3: GOTO 36010
37000 POKE r2, sc%: POKE r3, 1: POKE r4, 116: CALL r1
37005 IF PEEK(27647) <> 128 GOTO 39600
37010 IF PEEK(29709) <> 85 GOTO 38100
37020 IF PEEK(29710) <> 170 GOTO 38100
37030 IF PEEK(29711) <> 0 GOTO 38100
37040 IF PEEK(29712) <> 255 GOTO 38100
37050 ty% = PEEK(29708): IF ty% > 128 THEN ty% = ty%-128
37060 bv% = PEEK(29713): IF ty% > 3 GOTO 38100
37100 eb% = 0: cz% = 1: GOSUB 38500: IF eb% <> 0 GOTO 38000
37110 IF eb% = 0 AND ty% = 2 THEN GOSUB 38500: IF eb% <> 0 GOTO 38000
37120 IF eb% = 0 AND ty% = 3 THEN GOSUB 38500: IF eb% <> 0 GOTO 38000
37130 GOTO 38100
38000 IF jq$ = "sub" THEN RETURN
38010 GOSUB 30300: POKE 65518, eb%: GOSUB 32230
38020 fb% = 0: POKE 65517, fb%: GOTO 32220
38100 IF jq$ = "sub" THEN yj$ = "no": GOTO 38000
38110 eb% = 255: IF sc% = 4 OR sc% = 5 THEN eb% = 159
38120 IF ds% = 4 OR ds% = 5 THEN eb% = 159
38130 GOTO 38000
38500 POKE r3, cz%: CALL r1: cz% = cz%+1
38510 FOR xz = 29708 TO 30719 STEP 26
38520 IF PEEK(xz) = 1 GOTO 38540
38530 NEXT xz: RETURN
38540 eb% = PEEK(xz+1): eb% = eb%-1
38550 POKE 65518, eb%: uq% = PEEK(xz+5): RETURN
```

EZcopy LIST continued ...

```
39000 IF sc% = ds% THEN RETURN
39010 IF (sc% = 8 OR sc% = 24) AND (ds% = 4 OR ds% = 5) GOTO 39100
39020 IF (sc% = 4 OR sc% = 5) AND (ds% = 8 OR ds% = 24) GOTO 39100
39030 RETURN
39100 ww$ = "CHECKing blocks left ...": GOSUB 40000
39110 yi% = eb%: GOSUB 37000: eb% = yi%: POKE 65518, eb%
39115 IF yj$ = "no" THEN RETURN
39120 IF (sc% = 4 OR sc% = 5) AND bv% = 255 THEN RETURN
39130 IF (sc% = 8 OR sc% = 24) AND (bv% = 160 OR bv% = 159) THEN RETURN
39200 GOSUB 30300: ww$ = "CHANGING blocks left ...": GOSUB 40000
39300 POKE r2, sc%: POKE r3, 1: POKE r4, 116: CALL r1
39310 IF sc% = 4 OR sc% = 5 THEN POKE 29713, 255: ui% = uq%+96
39315 IF bv% = 160 THEN ui% = uq%+95
39320 IF sc% = 8 OR sc% = 24 THEN POKE 29713, 159: ui% = uq%-96
39330 POKE w2, ds%: POKE w3, 1: POKE w4, 116: CALL w1
39400 POKE r2, ds%: POKE r3, cz%-1: CALL r1
39410 POKE xz+5, ui%: POKE w3, cz%-1: CALL w1: GOTO 30300
39600 ww$ = "missing media!!!": GOSUB 40000: GOSUB 30600
39610 vt% = 23: co% = 23: ww$ = "[return] = continue copy"
39620 GOSUB 30000: vt% = 24: ww$ = "[escape] = abort procedure": GOSUB 30000
39630 GET go$: IF go$ = CHR$(13) THEN GOSUB 30300: GOTO 39700
39640 IF go$ = CHR$(27) THEN GOSUB 30300: POP: GOTO 2300
39650 GOSUB 30600: GOTO 39630
39700 ww$ = "one moment please ...": GOSUB 40000: GOTO 37000
40000 CALL c2: CALL c3: ht% = 2: vt% = 21: co% = 25
40010 b1% = 0: b2% = 108: di% = 8: GOTO 30000
40100 z$ = CHR$(z): POKE d2, 5: IF INT(z/2) = z/2 THEN POKE d2, 4
40110 POKE d3, ((z-1)*5+2)*8: CALL d1: ww$ = "+z$+"
40120 ht% = (z-1)*5+3: vt% = 22: co% = 31: GOSUB 30000
40130 co% = 21: IF PEEK(d2) = 4 THEN co% = 244
40140 ww$ = wd$: vt% = 24: GOSUB 30000
40150 ON z = 6 GOTO 30400: RETURN
55000 ww$ = "": FOR x = 1 TO 11: ww$ = ww$+CHR$(95): NEXT: b$ = ""
55010 ht% = ht: vt% = vt: co% = 25: GOSUB 30000
55020 GET a$: fe% = FRE(0): a% = ASC(a$)
55030 IF a% = 27 GOTO 30800
55060 IF a$ = CHR$(13) AND LEN(b$) >= m1 GOTO 55180
55070 IF a$ >= lf$ AND a$ <= hf$ GOTO 55120
55080 IF a$ <> CHR$(8) AND a$ <> CHR$(163) THEN GOSUB 30600: GOTO 55020
55090 IF b$ = "" THEN GOSUB 30600: GOTO 55020
55100 IF LEN(b$) = 1 THEN b$ = "": GOSUB 55190: GOSUB 30700: GOTO 55020
55110 b$ = LEFT$(b$, LEN(b$)-1): GOSUB 55190: GOSUB 30700: GOTO 55020
55120 IF LEN(b$) < 11 GOTO 55160
55150 GOSUB 30600: GOTO 55020
55160 ww$ = a$: ht% = ht: vt% = vt: GOSUB 30000
55170 b$ = b$+a$: GOSUB 30500: ht = ht+1: GOTO 55020
55180 GOTO 30300
55190 ww$ = CHR$(32): ht% = ht-1: vt% = vt
55200 ht = ht-1: GOSUB 30000: ww$ = CHR$(95): ht% = ht
55210 vt% = vt: GOTO 30000
60000 TEXT: PRINT " program terminated."
60010 PRINT: PRINT " type NEW to clear RAM"
60020 POKE 16134, qz: POKE 25471, 17: END
```

**TITLE (asmb#40):**  
**EOS Reset All Devices**

| <u>addr:</u> | <u>Label:</u> | <u>Value(s):</u> | <u>Op Code:</u> | <u>Comment:</u>           |
|--------------|---------------|------------------|-----------------|---------------------------|
| 63734        | save          | 197,             | PUSH BC         | ;save BC pair             |
| 63735        |               | 213,             | PUSH DE         | ;save DE pair             |
| 63736        |               | 229,             | PUSH HL         | ;save HL pair             |
| 63737        |               | 253, 229,        | PUSH IY         | ;save IY (index) pair     |
| 63739        | reset         | 33, 192, 254,    | LD HL, 65216    | ;load pointer             |
| 63742        |               | 34, 112, 253,    | LD (64880), HL  | ;store pointer            |
| 63745        |               | 205, 75, 249,    | CALL 63819      | ;EOS reset ADAMnet        |
| 63748        |               | 205, 95, 249,    | CALL 63839      | ;EOS programmed delay     |
| 63751        | clear         | 33, 192, 254,    | LD HL, 65216    | ;set clear start          |
| 63754        |               | 17, 193, 254,    | LD DE, 65217    | ;set next clear start     |
| 63757        |               | 1, 63, 1,        | LD BC, 319      | ;set # of bytes to clear  |
| 63760        |               | 54, 0,           | LD (HL), 0      | ;clear the byte           |
| 63762        |               | 237, 176,        | LDIR            | ;repeat clear till done   |
| 63764        | SYloop        | 205, 112, 249,   | CALL 63856      | ;EOS sync clocks          |
| 63767        |               | 32, 251,         | JR NZ, 251      | ;if not sync, then SYloop |
| 63769        | setDCB        | 205, 203, 249,   | CALL 63947      | ;EOS scan devices         |
| 63772        | done          | 253, 225,        | POP IY          | ;retrieve IY (index) pair |
| 63774        |               | 225,             | POP HL          | ;retrieve HL pair         |
| 63775        |               | 209,             | POP DE          | ;retrieve DE pair         |
| 63776        |               | 193,             | POP BC          | ;retrieve BC pair         |
| 63777        |               | 201              | RET             | ;exit routine             |

**TITLE (asmb#41):**  
**Clear HGR Screen**

| <u>addr:</u> | <u>Label:</u> | <u>Value(s):</u> | <u>Op Code:</u> | <u>Comment:</u>         |
|--------------|---------------|------------------|-----------------|-------------------------|
| 28797        | setup1        | 62, 187,         | LD A, 187       | ;set color fill value   |
| 28799        |               | 17, 0, 20,       | LD DE, 5120     | ;set # of bytes to fill |
| 28802        |               | 33, 0, 0,        | LD HL, 00       | ;set VRAM start address |
| 28805        |               | 213,             | PUSH DE         | ;save byte count        |
| 28806        | exec#1        | 205, 38, 253,    | CALL 64806      | ;EOS fill VRAM          |
| 28809        | setup2        | 209,             | POP DE          | ;retrieve byte count    |
| 28810        |               | 175,             | XOR A           | ;clear accumulator      |
| 28811        |               | 33, 0, 32,       | LD HL, 8192     | ;set VRAM start address |
| 28814        | exec#2        | 205, 38, 253,    | CALL 64806      | ;EOS fill VRAM          |
| 28817        | done          | 201              | RET             | ;exit routine           |

## Introducing ShowOFF IIa

"ShowOFF IIa" is very similar to "ShowOFF II", advertised on page 25 of the February issue of "NIBBLES & BITS". The "ShowOFF II" series programs are the only software in existence that actually modify SmartWriter. A CONTROL + T function is added to SmartWriter which moves you five screens toward the top of your documents. A CONTROL+B function is added which moves you five screens toward the bottom of your documents. You can now use symbols when STOREing filenames. You can LOCK or UNLOCK only the alphabetic keys. You even have new screen color choices. And much more.

You get the "WriterMATE" mini - utility which allows you to DELETE and RENAME files. It also allows you to rename volumes and INITIALize directories. This is a machine language program to do the file handling functions that SmartWriter left out.

Plus, you can now use just about all the functions in your printer manual, provided it uses built-in "EPSON" codes. These printers include the Okidata 20, the Star line, and the Epson line, and many others. However, "ShowOFF IIa" does not support line justification between the margins, as "ShowOFF II" does.

What do you need? Revision 80 ADAM, Centronics parallel interface, "EPSON" code dot matrix printer, and a 64K expansion card. The price: just \$19.95 to non - subscribers and the subscriber discount price is ONLY \$14.95!!!

.....  
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## ADAM PRODUCT REVIEWS

|                        |                            |  |
|------------------------|----------------------------|--|
| PRODUCT:               | Lander                     |  |
| MANUFACTURER:          | Steve Jacoby Enterprises   |  |
|                        | David Kraemer (programmer) |  |
| MEDIA TYPE:            | data pack (LORAN type)     |  |
| GRAPHICS/SOUND/DESIGN: | 50/70/80                   |  |
| INSTRUCTIONS:          | 75                         |  |
| USEFULNESS vs. PRICE:  | 75                         |  |
| RECOMMENDATION:        | LIMITED                    |  |
| PRICE:                 | 12.95 (ALPHA-1)            |  |
| RATED BY:              | David E. Carmichael        |  |

First off, I would like to say that, to my knowledge, this is the only GRAPHIC LUNAR LANDER type of program to date for the ADAM computer. And, that I had very high hopes this program would be a lot like the ATARI COIN-OP game. So, this review may be more harsh than it should have been.

The DDP with the LANDER that I received had a number of both the DISK and the DDP versions of the program; however, the on - screen instructions file states that if you received the program on DDP, it would not have the disk versions on it? After loading SmartBASIC, I loaded the DDP version of the program LANDER into my ADAM. The first time, the program bombed out! So, I then made a backup of the DDP onto a disk and ran the disk version of the program. It worked.

You have a choice of a number of different planets or moons. And, you can set the gravity of the world you are trying to land on. You use the number one joystick to control your lander. The program does keep a high score record for each of the planets or moons that you land on. One of the things that really bothers me is the way the LANDER works whenever you try to move your on-screen craft left or right -- it changes sizes on you!

The author / programmer lists his address at the end of the program and asks that you send him copies of your program updates. I spent less than two hours cleaning up the program's displays and adding star light and a moon to the background. This helped bring the program up to my expectations. I have seen a number of "PUBLIC DOMAIN" programs that have better looking graphics than this commercial program has! I am now starting to work on making the LANDER craft more detailed. There were so many things missing from this program that I can only recommend it if you are a space nut, like myself, and wish to try your hand at landing a craft on most of the planets and moons.

|                        |                    |  |
|------------------------|--------------------|--|
| PRODUCT:               | BASICaide          |  |
| MANUFACTURER:          | Mr. T. Software    |  |
| MEDIA TYPE:            | data pack          |  |
| GRAPHICS/SOUND/DESIGN: | 93                 |  |
| INSTRUCTIONS:          | 90                 |  |
| USEFULNESS vs. PRICE:  | 96                 |  |
| RECOMMENDATION:        | highly recommended |  |
| PRICE:                 | 10.95              |  |
| RATED BY:              | staff              |  |

This package is a set of SmartBASIC V1.0 enhancements. It has many features at a very reasonable price. One of the nicest features is the new "BIN" command. This function converts your BASIC programs to binary format for superfast BSAVEing and BRUNning. It also includes a "CHAIN" command for merging BASIC programs. And, BASICaide creates a new "EXTEXT" command to permit using ADAM's 40 - column text mode. You can switch back to 32 - column text with the standard TEXT command. This one is an improvement on our "T" command (LISTed in the December 1986 issue of "NIBBLES & BITS"). The enhancements also include a "BRITE" and a "NOBRITE" command which change screen colors. The program fixes the DATA / REM space bump bug and the RECOVER 'h' filetype bug. Also, included is a program that allows you to experiment with ADAM's sound chip by changing the values for the "CHR\$(7)". This program also lets you play around with ADAM's noise generator. And, with permission, the package includes our EZkeys program (from the January 1987 issue of N&B). BASICaide is well worth the money. Most BASIC binary converters alone sell for more than this entire collection of enhancements!



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**PRODUCT LIST****PROGRAMMING UTILITY SOFTWARE**

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\* makes over three dozen changes to SmartBASIC V1.0; includes nine very user friendly MUSIC commands

>>> \$24.95 (each) for non-subscribers  
>>> \$18.95 (each) for N&B subscribers

□□□ Intel-LOAD V1.0 (by DIGITAL EXPRESS)  
\* converts BASIC 1.0 programs to LOAD up to 12 times faster; stays in RAM; onscreen help; two BSAVE options

>>> \$15.95 (each) for non-subscribers  
>>> \$11.95 (each) for N&B subscribers

□□□ Intel-LOAD V2.0 (by DIGITAL EXPRESS)  
\* converts BASIC 2.0 programs to LOAD up to 12 times faster; stays in RAM; onscreen help; two BSAVE options; works only in STD MEM

>>> \$15.95 (each) for non-subscribers  
>>> \$11.95 (each) for N&B subscribers

□□□ SmartBEST V1.0 (by DATA DOCTOR)  
\* makes several changes to SmartBASIC V1.0; not compatible with Intel-BEST 3.3

>>> \$16.95 (each) for non-subscribers  
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□□□ SmartTRIX I (by DATA DOCTOR)  
\* a set of 10 user friendly programming utilities; includes two very nice sprite programs; 60 page manual; disk and DDP version not compatible

>>> \$29.95 (each) for non-subscribers  
>>> \$24.95 (each) for N&B subscribers

□□□ BASICaide (by Mr. T. Software)  
\* several SmartBASIC 1.0 enhancements including a new "CHAIN" command for merging programs and a new "BIN" command that executes the built-in function for converting SmartBASIC 1.0 programs to LOAD up to 12 times faster

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**RECREATION/GAMES SOFTWARE**

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\* superb graphic adventure; includes 9 levels of play in the main adventure plus 3 solo adventures; additional solo adventures are available from REEDY SOFTWARE

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□□□ TRIVIAPAC I (by Mr. T. Software)  
\* 1200 questions; 6 categories; one to four players; graphics and sound; many hours of fun; DDP version only

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\* 1080 questions; 6 categories; one to four players; graphics and sound; many hours of fun; DDP version only

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□□□ The Hacker's Guide to ADAM (vol one)  
\* Ben Hinkle's in-depth guide to the technical aspects of exploring ADAM; 60 pages; 18 programs

>>> \$12.95 (each) for non-subscribers  
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□□□ The Hacker's Guide to ADAM (vol two)  
\* Ben Hinkle's detailed guide to SmartBASIC V1.0; 110 pages; HELLO program includes several BASIC enhancements

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>>> \$10.95 (each) for N&B subscribers

□□□ Hacker's Guide software (by Ben Hinkle)  
\* all the programs from volumes one and two

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>>> \$4.95 (each) for N&B subscribers

□□□ EZ Ref 101 (by DIGITAL EXPRESS)  
\* approximately 700 Z80 instructions listed in NUMERICAL sequence; 9 pages; decimal, hex, op codes, operands

>>> \$2.45 (each) for non-subscribers  
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□□□ EZ Ref 102 (by DIGITAL EXPRESS)  
\* approximately 700 Z80 instructions listed in ALPHABETICAL sequence; 9 pages; decimal, hex, op codes, operands

>>> \$2.45 (each) for non-subscribers  
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□□□ Pinball Construction/HardHat Mac Guides  
\* 40 pages of instructions for the popular public domain package

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MISCELLANEOUS UTILITIES

□□□ ShowOFF I (by DIGITAL EXPRESS)  
\* self-booting graphics design package (enter text, draw polygons, save pictures, etc.) with a variety of print options (preset for Epson FX / IBM 5152 printer codes); printing graphics requires a Centronics parallel interface for printer

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□□□ ShowOFF II (by DIGITAL EXPRESS)  
\* machine code print enhancements for SmartWriter (adds CONTROL features to SmartWriter) and SmartBASIC; requires Centronics parallel interface, a Panasonic KX 1080, 1080i, 1091, or 1091i printer, and a 64K expander

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\* Coleco's version of the popular operating system; configured for ADAM; 250 ++ page manual

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## PUBLIC DOMAIN SOFTWARE

### DEI Public Domain Facts

You may get any of the volumes itemized below on data pack or disk for ONLY \$5.95 as an N&B subscriber, or for just \$9.95 as a non-subscriber. Subscribers also have an option to get a volume FREE (limit three per calendar month); this option does NOT apply to the volumes in the Coleco Unreleased Titles Library.

Here's how to get one FREE. (1) Contribute an original program for any library. (2) Send a signed statement that the program is NOT copyrighted. (3) Send the program on DDP (digital data pack) or disk; one DDP or disk for each volume that you want to exchange. And, (5) include a return mailer with sufficient postage or send \$2.50 for shipping costs.

Public domain software is offered as a quick, inexpensive means for you to expand your ADAM software library. Note, however, that public domain software is not necessarily of commercial quality. Although we do attempt to winnow out flawed programs, there is no guarantee of quality regarding these packages.

### SmartBASIC V1.0 Library

You must boot your own SmartBASIC first in order to use the volumes in this library. All programs will speed load. Each volume (except the utility volumes) is controlled by a user friendly ramdisk (does NOT require the 64K expander) central menu.

"N&Bgames01": An assortment of text adventures, board games, and animation games -- 130K of files.

"N&Bgames02": An assortment of text adventures, board games, and animation games -- 155K of files.

"N&Bgraph01": A variety of graphics displays and music programs -- 88K of files.

"N&Bmath01": Several scientific and financial math programs -- 114K of files.

"N&Butil01": Intended for more advanced programmers this volume includes programming utilities -- 108K of files.

### SmartPAINT Files Library

In order to view/use the volumes in this library you should have SmartPAINT (from ShowOFF I) or the HGR Picture Manager program in the February 1987 issue of "NIBBLES & BITS" (page 16).

"N&Bpix001": 13 different HGR picture files stored in SmartPAINT format.

"N&Bpix002": 13 different HGR picture files stored in SmartPAINT format.

"N&Bpix003": 13 different HGR picture files stored in SmartPAINT format.

### Coleco Unreleased Titles Library

"SmartBASIC 2.0": Improved interpreter; 49K program; works with or without the 64K expander.

"Pinball Construction/Hardhat Mac": Best of Electronic Arts; latest version with two demo pinball games; 1 to 4 players with Pinball Construction; one or two players with Hardhat Mac.

"ADAMLink II": Supports uploading and down loading of SmartWriter compatible files; includes U/D instructions; requires the ADAMLink modem.

"Jeopardy": The extremely popular ADAM game; just like the game show; great graphics; hall of fame; one to three players.

"Super SubRoc": 90K arcade-type game; super graphics; hall of fame; one or two players.

"Troll's Tale": Easy to play graphic/text adventure; supports one player; disk and DDP versions NOT compatible.

### CP/M 2.2 Library

The volumes in this library require that you boot your own CP/M 2.2 package first.

"CP/Mgames01": 30 games.

"CP/Mgames02": 25 games.

"Test/Music": System tester (requires the 64K expander) and a hodgepodge of music samples -- from an unreleased Coleco cartridge program.

### Pinball Games Library

Each volume in this library is self-booting or may be used with the Pinball Construction Set.

"N&B-PBgames01": 10 pinball games.

"N&B-PBgames02": 10 pinball games.

"N&B-PBgames03": 10 pinball games.

### Miscellaneous Collections Library

"MWplus01": A collection of improvements to MultiWrite by Strategic Software. Written by Jim Guenzel, an N&B subscriber.

"N&Bacalc01": several paradigm and other files stored in ADAMcalc format.

**Volume Title: N&Bpix001**  
 (13 hi-res pictures in SmartPAINT format)

Ann.HRP (actress Ann Margaret)  
 Uhura.HRP (Lt. Uhura, actress Nichelle Nichols, from Star Trek)  
 lady.HRP (anonymous model)  
 space.HRP (scene from "Lost In Space")  
 USA.HRP (drawing of the 48 contiguous states)  
 statue.HRP (bust of the Statue of Liberty)  
 Spock.HRP (Mr. Spock, actor Leonard Nimoy, from Star Trek)  
 McCoy.HRP (Dr. McCoy, actor DeForest Kelley, from Star Trek)  
 misc.HRP (miscellaneous graphic designs)  
 Aworld.HRP (drawing of the major world continents)  
 stooge.HRP (the three stooges; Curly Howard, Moe Howard, and Larry Fine)  
 N&B001.HRP ("NIBBLES & BITS" letterhead design)  
 Lunar.HRP (moonscape with an astronaut)

**Volume Title: N&Bpix002**  
 (13 hi-res pictures in SmartPAINT format)

twZONE.HRP (graphic Twilight Zone drawing)  
 couple.HRP (George Burns and Gracie Allen)  
 trekII.HRP (graphic Star Trek II drawing)  
 bela.HRP (actor Bela Lagossi)  
 man.HRP (actor Michael Rennie)  
 ship01.HRP (starship "fighter" drawing)  
 ship02.HRP (starship "trainer fighter" drawing)  
 ship03.HRP (starship "masterstar" drawing)  
 bomber.HRP ("mad bomber" characterisation)  
 ENFORC.HRP ("enforcer" characterisation)  
 ADAM#1.HRP ("ADAM" in giant letters)  
 Easter.HRP (Easter facts with cross)  
 Earth.HRP (geologic depiction of Earth's lithosphere layers)

**Volume Title: N&Bpix003**  
 (13 hi-res pictures in SmartPAINT format)

pooh.HRP (drawing of Winnie the Pooh)  
 mickey.HRP (Disney's cartoon characters, Mickey & Minnie Mouse)  
 contra.HRP (satirical application for a Contra donation)  
 Kent.HRP (Superman as Clark Kent)  
 punk.HRP (satirical drawing of "PacMan")  
 dream.HRP (creative drawing of dreamland)  
 moon.HRP (drawing of a moonrise)  
 DEI.HRP (artist's depiction of DIGITAL EXPRESS offices)  
 DDP.HRP (drawing of a digital data pack)  
 helmet.HRP (football helmet for the "ADAM" team)  
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