

NIBBLES & BITS



THE COMPREHENSIVE MONTHLY NEWSLETTER FOR THE ADAM COMPUTER

DEC 88

HAPPY HOLIDAYS

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PUBLIC NOTICE

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To insure that you don't miss any issues, please renew early and let us know promptly of any address change. Please include your subscription ID number on the address change notification (you can get an address change kit free from your local US post office).

GENERAL INFORMATION

Most issues include a special offer on software purchases; these are explained as time limited offers. If you receive N&B outside the North American continent (Australia, Isreal, England, and South Africa, for example), we will extend these deadlines to you by 30 days.

If you have products or services of interest to ADAM owners, please let us know. We try to keep our readers apprised of all the latest news concerning the ADAM. We also offer half page (7" across by 4.5" down) commercial advertising slots for \$50.00 per issue (effective April 1, 1988). "Camera ready" artwork must be received at least 30 days prior to the first day of the issue month. Circulation: 2400+.

Product orders are processed within 48 hours of receipt. Where possible, orders are shipped via UPS. Backordered items are shipped at our expense. Order processing may be delayed by legal and traditional holidays. C.O.D. orders (via our BBS) add \$2.50 for the service.

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ADAM NEWS AND UPDATES



□□□ As promised, in this issue we have the article on the known publications that support ADAM. Be sure to take a look at "READING ABOUT ADAM", pages 10 thru 14. By all means, write to some of these groups and firms and let them know that you appreciate their efforts. And, if at all possible we recommend that you join with / subscribe to at LEAST two or three ADAM oriented publications. Most will send you a sample issue for a nominal fee.

□□□ Over the past couple of years there were a few publications that apparently had the sole intention of 'taking' as many people as possible. I recall one group that boasted some 4000+ members around the world. The editor claimed to have created all sorts of interesting hardware devices for the ADAM. I've only spoken with a few people who were curious enough to send off for these items, but in every single case these people who did NOT know each other stated that all the firm shipped was a box of loose, common surplus components with NO instructions at all. Finally, due to all the returns from enraged consumers, the editor/owner announced a policy of 'no returns'. Furthermore, the editor claimed to have had four heart attacks, a couple of strokes, and to have been the victim of numerous other health tragedies (not to mention his entire staff). To top this, his wife died two or three times (yes, the same woman it is presumed) during a six month interval. Yes, we continued our subscription for the duration; if for no other reason than the sheer hilarity of perusing its contents. So, we advise caution when subscribing to publications, but the ones we have listed in this issue seem quite reputable.

□□□ We have the new NOAH publication sponsored by John Lingrel listed. But, the late breaking news is that they are issuing refunds at this time due to a change of plans.

□□□ Al Roginsky, creator of "Las Vegas Craps" and a multitude of public domain games, is completing his next set of Casino games. Volume II will have three graphic games: Lotto, Keno, and Red Dog. This one promises to have all the same excellent features of LV Craps including the great graphics and sound effects. Expected to be completed early in JAN 89, the projected price will be \$11.95 retail.

□□□ Steve Pitman, the creator of "Ghost Zapper" and "MIND OVER ADAM", is completing his third commercial game for the ADAM. "ADAM BOMB" will be an action and thought game with 30 graphic screens. The user will also be able to create his own screens for use with the game. It is scheduled for release in late JAN 89.

□□□ Denny Kehoe has updated his excellent SmartTERM program for use with the ADAMlink 300 bps internal modem. "Version 1.02" has several improvements. These include: faster file viewing, connect time available from terminal mode, and it now estimates transfer time for binary files. You may contact Mr. Kehoe at the following address for a free update or to make a purchase of this fine program.

144 Stratton Crescent, SW
Calgary Alberta
Canada T3H 1V7

□□□ A new ADAM firm is on the horizon that has plans to release several colorful graphic games. Watch for more info next month regarding MagicVISION.

□□□ We have added three new PD volumes to our libraries. "PaintMATES 15" is now completed. We also have a graphic version of SARGON for CP/M users; this fine upgrade to the text version was done by Chris Braymen. We also have "Chess Solitaire" (self-booting package), a graphic chess challenge that lets you make the move in 15 world famous games.

□□□ Some systems have a problem with the 256K memory expanders with just 64K of chips installed. Many of the programs geared for larger XRAM sizes won't work. The problem is fixed, though, by upgrading to as little 128K.

□□□ We missed three firms in our SHOPPING FOR ADAM section last month. Please take note of the following three companies.

□□□ Gerlach Family Software has several volumes of ORIGINAL clip art for use with PowerPAINT, Print Works, and GoWRITER. Also, they have volumes of artwork for use with SignSHOP and NewsMAKER.

Ricki J. Gerlach
CMR Box 757
Det II, 44TH Sig
APO, NY 09175

□□□ LOF Communications also has several volume of artwork for use with ADAM. Write to:

LOF Communications
P.O. Box 587
York, PA 17405

□□□ S.M. VIDEO has a large selection of ADAM products from many different firms. Write to:

S.M. VIDEO
P.O. Box 313
Oakton, VA 22124
(703) 620-4485

□□□ White Software Company has just released "SpeedyWRITE SPELL". This excellent spell checker works the only way one can for efficiency ... in memory while you type. You don't have to store the file first!!! And, you can turn the feature on or off that causes it to beep at you when you make a typo. It comes with a 10000 word dictionary and a 5000 word thesaurus. It stays in memory with SpeedyWRITE 2.0 which it requires along with at least a 64K memory expander. This is an EXCELLENT addition to an already POWERFUL word processor. We have added this latest innovation from David White to our product list. Just \$24.95 on disk or data pack -- a MUST HAVE for SpeedyWRITE 2.0 owners.

□□□ We have a special this month on 5.25" DS/DD disks. Get 25 with sleeves and tabs for only \$9.45. Also, we have a special on Panasonic KX series ribbons. Get two (black) for just \$7.45. Stock up for the winter!!

□□□ The annual subscription rate (12 issues) of Nibbles & Bits will increase by one dollar to \$25 effective the first of February. Anyone may renew prior to 1 FEB 89 at the current rate. Also we have a renewal special in effect until the 18TH of January. If your renewal is postmarked prior to that date, you get 13 issues (a baker's dozen) for \$25. To qualify, your current term (as indicated on your DEC N&B label) should have more than two issues remaining and less than 18 issues remaining.

□□□ We also have a special on PD graphics volumes this month. Until the 18TH of January, you can get ANY five volumes from our PD GRAPHICS LIBRARY for just \$17.95 on disk ONLY.

□□□ TLB Enterprises has revised and lowered the price of their Super BASIC Plus. The latest revision is only \$14.95. Order from:

Computer Quorum of America
Route 2, Box 14-B
Spring Mills, PA 16875-9720

□□□ Norman Castro now has reduced size reprints of all issues of Expandable Computer News, one of the premier ADAM newsletters. Reprinted with permission, they are available for just \$3.00 each (including S/H) or six issues for \$14.00. Write to:

Norman R. Castro
809W 33RD Avenue
Bellevue, NE 68005

□□□ ADAM'S HOUSE has just completed a new business program entitled, INVOICER. It will print your invoices and keep track of your inventory based on the items entered. Write to:

ADAM'S HOUSE
Route 2, Box 2756
Pearland, TX 77581
(713) 482-5040

□□□ Here's another ADAM support group pointed out by T.M. Ferdinand. Memberships are \$10 / year. Information is free.

PD User's Group
Attn: William Rogers
P.O. Box 1442
Orange Park, FL 32067

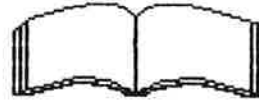
□□□■■■■□□□

HAPPY HOLIDAYS!!!

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ADAM LORE

(PART THREE)



by Richard Lefko

"The ADAM Chronicle"

(quoted from L.I. Newsday, January 3, 1985)

JUN 3 (1983): ADAM introduced. Coleco says it will be in stores in August.

AUG 17: Coleco says ADAM, due for AUG 31 introduction, will be "a couple of days late".

AUG 30: Coleco says introduction of ADAM delayed until mid-September due to FCC paperwork backlog.

SEP 22: FCC clears ADAM.

OCT 4: Shareholders sue Coleco claiming company concealed ADAM problems.

OCT 17: First ADAM shipped but Coleco says it won't meet 1983 goal of 500,000 units.

NOV 17: Coleco says production and shipments of ADAM are increasing daily, but retailers say ADAMS are scarce.

DEC 21: *Consumer Reports* negative report on Adam; J.C. Penney says ADAM failed to meet retailer's quality standards and as a result has cancelled its orders.

DEC 27: Coleco announces Honeywell Information Services will operate ADAM service centers nationwide.

JAN 8 (1984): Coleco says it will report 1983 fourth-quarter loss but that most of ADAM's problems have been fixed. They said it shipped 95,000 units in 1983.

MAR 7: Coleco reports \$35 million 1983 fourth-quarter loss.

MAR 8: Coleco denies analysts reports that it will phase out ADAM due to fourth quarter loss.

MAR 28: Coleco says it will lay off 1300 persons at its Amsterdam, NY plant.

JUN 12: Coleco says it expects to earn a profit in the second quarter.

JUL 19: Coleco reports 44% fall in second-quarter profit. Coleco says it will continue to support ADAM with intensive ad campaign.

AUG 22: Coleco to offer \$500 college scholarships to some ADAM purchasers.

OCT 24: Wholesale price of ADAM cut from \$650 to \$475.

OCT 25: Coleco reports its third-quarter profit jumped 65% despite the fact that ADAM remains a drag on earnings.

JAN 2 (1985): ADAM inventory sold to national retailer.

I think the author of that article, Stephen Williams, would be extremely surprised if he knew how far the ADAM has come. As we all know, the real story merely begins where Mr. Williams' ends.

Just look at what ADAM has to offer in 1988! We can now hook up to any high speed Dot Matrix printer. We have access to 64k, 128k, 256k, 512k, and one megabyte expansion cards. We have 160k, 320k, 360k, 640k, and 720k disk drives, and you can hook up as many as 10 of these! We can utilize 1200 and 2400 bps modems. Hard drives are coming! We can design and print a wide array of graphics. We have literally THOUSANDS of high quality software programs to choose from, and the list goes on and on!

As you can see in the chronology ADAM was probably released before all of its bugs were fixed; subsequently, it got a bad name in the beginning, leading to its early demise. In other words, bad marketing was the problem. Coleco eventually fixed all or most of ADAM's problems and we now have one VERY reliable, easy to use, and quite expandable system.

Well, where do we go from here? It seems as far as our imaginations will take us! On to GoDOS and the future.

STUDYING OS7



by Leonard F. Adolph

In a previous issue of *Nibbles & Bits* I listed the OS7, cartridge game operating system, jump table. You probably noticed that some names end with 'p'. These are the entry points for PASCAL. PASCAL passes parameters which are used by a routine from 152 to 251 in the OS7 ROM. After this routine alters the incoming data, it jumps to the routine needed. For example, after using the parameter passing routine #17, put VRAMP, the system jumps to #32, put VRAM. This is most likely intended to accomodate the language carts mentioned in bank select information.

Some of the routines in the OS7 use information and data from the cartridge ROM. This month I will show how to use some of the cart locations from BASIC; first we have to know what locations are used and for what.

Cartridge ROM Dedicated Addresses

32768: 2 bytes; 170,85 for game carts, 85,170 for test carts
 32770: pointer to spr.nm.tbl. in RAM (for multiplexing)
 32772: pointer to spr.ord.tbl. in RAM
 32774: pointer to buffer in RAM (used by obj. routines)
 32776: pointer to RAM for controllers (used by scan & debounce)
 32778: pointer to start of game interrupt vectors (jump table)
 32780: RST 8
 32783: RST 16
 32786: RST 24
 32789: RST 32
 32792: RST 40
 32795: RST 54
 32798: IRQ (maskable interrupt)
 32801: NMI (nonmaskable interrupt)
 32804: game title in ASCII (no lowercase)

The format for this concluding ASCII data is as follows:

NAME OF GAME/MAKER OF GAME/(year)

The name and maker can be a maximum of 32 characters each, the year is four characters. Note that each piece of information is separated by a slash or solidus (ASCII 47).

BEGINNING WITH GO-DOS

by Solomon Swift



AN OVERVIEW

In previous episodes of this column I've discussed some of the upcoming software. This month, let's take a look at the program itself.

It was about two years ago when I first heard the term, 'writing on bare metal'. The idiom refers to bypassing a computer's built-in operating system because the programmer would rather create his own OS than to use someone else's set of routines or functions which may be replete with bugs or not be well suited to particular applications. Having full cognizance of the many shortcomings of Coleco's EOS, one of my first thoughts concerning this idea was to write a new operating system for the ADAM. At the time, I was barely competent enough at Z80 programming to write a print driver for a dot matrix printer.

But from this rather nebulous beginning an entire computer control system, 74K of functions, was borne. Along the way I studied many algorithms, languages, and, in particular, operating systems. Looking back, I probably learned more about programming during the last six months of completing GoDOS than I knew (or thought I knew) in the 30 months prior.

Anyway, one point of debate that I grappled with for many weeks was a format for the GoDOS directory. I wanted it to be fully compatible with the EOS directory, but EOS uses a sequential format that causes all sorts of problems. One of the most salient of which is the fact that DELETED files still use directory space. There was just no way to go with a random access file management system and maintain compatibility in this area. Thus, work began on a new system.

The GoDOS DIRECTORY

There has been a lot of information published regarding the EOS directory, so we won't go into detail on how it is organized here. But, you might want to compare some of this printed material to the following info on the GoDOS directory for a better understanding of the substantial differences.

For all media in current use (160K, 320K, 640K, and 720K disk drives along with the tapes drives and any size of RAMdrive) seven blocks are utilized for the medium's file management system. Block '0' on the disk is still the 'boot block'. On disks with the GoDOS system, pulling the reset will perform a cold boot of GoDOS; blocks '1' thru '5' contain the fundamental file information. There is room for 160 directory entries; 32 bytes for each entry (32 * 160 = 5120, or 5K). The first entry is reserved for critical volume data. This entry contains seven fields of information.

17 bytes: volume name
2 bytes: volume size
2 bytes: volume used
1 byte: directory ID
6 bytes: date
2 bytes: number of files used
2 bytes: reserved for later use

The remaining 159 directory entries are for user files. Also, certain application programs may use a single directory entry as a pseudo-directory or subdirectory for related data. A user directory entry contains eight fields.

13 bytes: primary filename
4 bytes: filename extension
1 byte: file attribute
6 bytes: date
2 bytes: header block pointer
2 bytes: bytes in last block
2 bytes: number of blocks used
2 bytes: (optional) load address

The file attribute is bit coded with five significant bits: 0 = deleted, 1 = user, 2 = lock status, 3 = unlock protect, and 4 = invisible status.

The date could have been encoded to use fewer bytes; but as it is, it allows for direct translation to or from physical clock date data (the NMI, or software, clock also uses this same format).

Each file begins with a header block; this '1K' table is used to identify the blocks used by the file and their particular sequence. This is a central component of the random access feature of the directory.

Also, following the 5K of directory entries is another "1K" table which I refer to as the "Media Designator Block", or MDB. MS-DOS labels its similar buffer the "File Allocation Table"; being somewhat overweight myself, I couldn't bare to have it called FAT. Anyway, this table is used to conveniently keep track of the used sectors on the disk.

ASSEMBLY LANGUAGE AND CP/M 2.2

by Guy Cousineau



FLOWCHARTING PROGRAMS

Have you ever seen flowcharts about waking up in the morning, making decisions, or other similar cartoons? They are simple, logical, and essential to writing good programs. If you write a program off the top of your head, you will find yourself putting band aides on top of band aides before getting what you really want. Take a look at a BASIC program that you wrote without a flowchart and see what I mean.

Flowcharts don't need to be fancy; they just need to show the major functions and decisions to be made. Let's take a bubble sort as an example:

```
0 set counter to start of table
1 compare element to next
2 if smaller or equal goto '4'
3 exchange elements
4 set flag to show swap
5 move to next element
6 if not at end goto '1'
7 no swap=end of sort
8 reset swap flag
9 goto '0'
```

Now I know what I want to do and I can plan my programming approach. What do I need to get started?

```
1: table of elements to compare
2: a routine to compare elements
3: a flag for swaps
4: the start and end of table
```

At this point I might make a more detailed flowchart indicating all the other minor details and operations. For the experienced programmer, however, this simple chart will be enough. Note that the flowchart above is essentially linear. One step leads to another except when a certain condition is met. This approach usually keeps programs running smoothly and effectively whether written in Assembly, BASIC, or any other programming language. Once you have made a flowchart, it is usually a good idea to work on the subroutines. You might spend a lot of time working on your program to find later that it does not work because your compare routine does not function properly. Write a test program to develop your compare routine. Once you are sure that it works correctly, work on other routines such as exchanging elements, then proceed to put it all together to create your sorting program.

Writing programs in segments will allow you to work on one problem at a time and will usually get you where you are going with less frustration. Next month, decision making.

CONTROLLING THE MODEM

by Alan Neeley



COMMANDING THE MODEM TO DIAL A NUMBER

The ADAMlink modem makes use of what is called PULSE dialing; this is the same as the old rotary dial phones and the 'cheapies' that are sold at almost any store nowadays. Note that the internal modem is not capable of TONE dialing. Now to dial a number, you must first set the modem to originate (make a call) mode. This is done by sending the value '10' to the control port; this value also takes the phone off the hook.

Now with pulse dialing a quick series of 'clicks' are sent to the dial each digit in the phone number (the best way that I can explain this is that it's like hanging up the phone and picking it up again REAL QUICK). If the number (or digit) that you wish the modem to dial is a '1', you send one click. If it is a '2', you send two clicks, and so on up to '9'. For a '0', you send '10' clicks. Now to command the modem to do a 'click', you send out to the control port the value '0' quickly followed by the value '10'. For the dialing procedure to work correctly, you should put some pauses in between the actual picking up of the phone (which is done when the first value of '10' is sent to the control port). You should also put a pause in between each '0' and '10' that is sent to accomplish the 'click'.

After the dialing has been completed, you wait for the modem you are calling to answer the phone. When a modem answers at the other end and sends out an ANSWER MODE signal, the ADAMlink phone modem will automatically send out the originate mode signal and connect the carrier.

There is also a special value that can be sent to the control port that will cause the modem to pick up the phone and go directly into originate mode. The value is '39' (without the value '7' being sent before it -- which would set the modem to answer mode).

HANGING UP or DISCONNECTING CARRIER

There are two values that can be useful in disconnecting your modm from another modem. The most commonly use value is '37'. This value command the modem to disconnect the carrier signal (whether you are in answer or originate mode) and then to disconnect the modem from the phone line (I call this "putting the phone on the hook"). The other value is '0'. This value disconnects the carrier signal, but leaves the phone line 'off the hook'; this value can be useful in conjunction with a BBS program. It allows the programmer to disconnect the current caller, leaving the phone line busy until the value of 37 is sent. This way the BBS program can perform any mainenance that may need to be done before accepting the next caller.

READING ABOUT ADAM

by Solomon Swift



ADAM ORIENTED PUBLICATIONS

We ADAM owners are an information hungry lot; many of us try to read anything we can get our hands on regarding our powerful, but orphaned computer. One of the highlights of getting our daily mail for me is the arrival of another group's or company's newsletter -- I am an ADAM fanatic.

Currently I subscribe to some 20 ADAM oriented publications. The purpose of this article is not to evaluate these newsletters, but rather to present objective information regarding them. I would say that they range in quality from good to excellent.

Be sure to write to the editor of any publications that appeal to you ... and let them know where you heard about them. If at all possible, I'd suggest that you subscribe to at least two or three ADAM newsletters. At least half of the existing publications have had to skip an issue at least once; yes, N&B did this last winter too. You'll note here the difference between joining a users' group that sends a newsletter to its members and a company that accepts subscriptions. When you 'subscribe' to a publication, the law requires that you receive the full term or a pro-rated refund thereof (even if the firm files for bankruptcy you are usually entitled to some portion of the remaining assets). With a users' group, however, if the editor decides to cut down to say 10 issues per year instead of 12, the group is under no legal obligation to re-imburse you in any manner. You are still a member of the group, which is what you paid for, and that fact did not change with any missed issues of the publication the group happens to sponsor.

Before we move along to the existing periodicals, here are some that have failed. Each of these failures fall into one of three categories: (1) deliberate attempt to 'rip off' as many people as possible, (2) too much demand on the editor's time schedule, or (3) poor marketing of the publication. Fortunately only a handful are clearly within the first group.

ADAM'S APPLE

ADAM Technical Journal
ADAM Users of Gainesville
ADAM-X-CHANGE
ADAMland International News
AUGment
Australia ADAM Users
Bit Parade
CME Computer Digest
Expandable Computer News
Garden of ADAM
Highlights
Kansas ADAM Users Group
Paper Peripheral
Syntax

The following list is in alphabetical sequence. Along with each one I've included subscription / membership information and some of each periodical's more salient features.

ADAM'S ALIVE

This newsletter is published by E&T SOFTWARE, one of the leading mail order houses supporting the ADAM. The concentration of the paper is in product reviews. Also included are a news section and a BASIC programming workshop with at least one LIST per issue. And, subscribers get discounts on many of the products carried by E&T SOFTWARE.

You'll note below that ADAM'S ALIVE is described as a monthly periodical. Actually it comes out about every six weeks; but, you still get the same number of issues per subscription term.

FREQUENCY: monthly
ANNUAL RATE: \$18 in the USA
\$21.50 in Canada
EDITOR: Ed Jenkins
PUBLISHER: E&T SOFTWARE
of PAGES: 24
STARTED: DEC 87
of ISSUES: 8

E&T SOFTWARE
1010 Westminster
Garland, TX 75040
(214) 414-8156

ADAM'S BYTES

This montly newsletter is published by the Gulf Coast ADAM Users Group. Although it is geared primarily to local members, they do accept national memberships. Most issues have a program LISTed and the group also distributes public domain software. I'm not certain when the first issue of this newsletter, but the group has been publishing for at least a couple of years.

FREQUENCY: monthly
 ANNUAL RATE: \$12 in the USA
 EDITOR: Joe Quinn
 PUBLISHER: Gulf Coast AUG
 # of PAGES: 6-10

Gulf Coast ADAM Users
 6665 Timbers Drive
 Mobile, AL 36695
 (205) 639-1368 (after 9pm CST)

ADAMlink of UTAH

This is an information packed, bi-monthly newsletter. It features in-depth news, detailed programming workshops, and truly objective product reviews. Also, ALU has a retail mail order business and an electronic BBS.

FREQUENCY: monthly
 ANNUAL RATE: \$15 in USA
 EDITOR: Alan Neeley
 PUBLISHER: ADAMlink of Utah
 # of PAGES: 28-42
 STARTED: NOV/DEC 86
 # of ISSUES: 12

ADAMlink of UTAH
 2337 South 600 East
 Salt Lake City, UT 84106
 (801) 484-5114 [business: 8am - 7pm MST]

AUGER

This is the bi-monthly newsletter of the Emerald Coast ADAM Users' Group. A variety of topics are covered with reprints from many of the national newsletters. This one concentrates on its local members, but they will accept members nationally too.

FREQUENCY: bi-monthly
 ANNUAL RATE: \$15 in the USA
 EDITOR: Faye B. Deere
 PUBLISHER: ECAUG
 # of PAGES: 20
 STARTED: OCT/NOV 85
 # of ISSUES: 25

Emerald Coast ADAM Users' Group
 P.O. Box 4934
 Fort Walton Beach, FL 32549-4934

ADAM INTERNATIONAL MEDIA

This publication was formerly known as gHAAUG (greater Houston Area AUG). A.I.M., for short, is one of the oldest ADAM publications. It started as a local paper and it now has one of the largest national circulations of an ADAM newsletter. A wide range of topics are discussed from a technical corner to product reviews; ADAM'S HOUSE also has a large selection of products for the ADAM including system repair.

FREQUENCY: 10 issues per year
 ANNUAL RATE: \$20 in the USA
 \$22 in CANADA
 EDITOR: Terry R. Fowler
 PUBLISHER: ADAM'S HOUSE
 # of PAGES: 16-20
 STARTED: JAN 85
 # of ISSUES: 40

ADAM'S HOUSE
 Route 2, Box 2756
 Pearland, TX 77501
 (713) 482-5040

AWAUG

This is another newsletter which started by concentrating on its local members. It is now available nationally as well. Each issue contains a variety of original articles and programs on EOS and CP/M. The group also runs an electronic BBS.

FREQUENCY: monthly
 ANNUAL RATE: \$15 in the USA
 EDITORS: Bob Blair and Peter Hartzler
 PUBLISHER: AWAUG
 # of PAGES: 16-20
 STARTED: JUN 84
 # of ISSUES: 53

Bob Blair
 7814 Worthing Court
 Alexandria, VA 22310

Calgary ADAM'S Family NEWS

Geared toward novice hackers, AFN is the Calgary AUG's bi-monthly publication. I've only received four issues of my annual subscription (MAY/JUN 88 was the last one I got), I have been very impressed with the original programs in this newsletter. The group also runs a BBS called NorthernLINK.

FREQUENCY: scheduled 6 per year
 ANNUAL RATE: \$20 in USA or Canada
 EDITORS: Gerry St.Peter & Ken Dornbusch
 PUBLISHER: Calgary ADAM'S Family
 # of PAGES: 14-18
 STARTED: DEC 87
 # of ISSUES: 4

Calgary ADAM'S Family
 6508 34st. SW
 Calgary, Alberta
 Canada T3E 5M2

Computer Shopper

Computer Shopper is a national magazine which has a two to four page section devoted to the ADAM. The primary author is Paul Pappas, the former editor of the *The Paper Peripheral*, an ADAM only newsletter. In addition to the 'ADAM FORUM' in CS, just about every computer is covered. Plus, there are a LOT of advertisements for low cost disks, printer ribbons, and dot matrix printers in this 600+ page magazine. Also, you can find this one at most news stands and magazine racks.

FREQUENCY: monthly
ANNUAL RATE: \$21.97 in the USA
PUBLISHER: Patch Communications
of PAGES: 600+
STARTED: JAN 80
of ISSUES: 96

Computer Shopper
P.O. Box 51020
Boulder, CO 80321-1020

463 ADAM

This is a monthly newsletter primarily for members of the local 463 AUG. The editor has generously been shipping me their paper for quite a while now. I'm not certain what the cost would be or if they even accept national memberships, but if you're interested (or particularly if you live in the area), you might want to contact Mr. Roades for details.

FREQUENCY: monthly
EDITOR: Dean Roades
of PAGES: 2-6

Dean Roades
8522 Hohman Avenue
Munster, IN 46321

IEAUG

This is the monthly newsletter of the Inland Empire AUG. The large local group holds monthly meetings and demonstrates commercial software for the benefit of the consumer. The paper concentrates primarily on BASIC math, JKL utilities, and CP/M 2.2 and its many PD applications programs.

FREQUENCY: monthly
ANNUAL RATE: \$10 in the USA
EDITOR: Bennie Montoya
PUBLISHER: IEAUG
of PAGES: 16-20
STARTED: MAY 86
of ISSUES: 31

Inland Empire ADAM Users Group
P.O. Box 2210
Rialto, CA 02376

MAGnet

Affiliated with the Manitoba ADAM Group, MAGnet is scheduled to be published 11 times per year. I received their June and July '88 issues and have heard nothing else since. I must assume that publication has ceased. But the paper got off to a good start. There were hardware projects and graphics workshops.

FREQUENCY: 11 times per year
ANNUAL RATE: \$20 in USA & Canada
EDITOR: Eric Brennan
PUBLISHER: Eric Brennan
of PAGES: 22
STARTED: JUN 88
of ISSUES: 2

Eric Brennan
888 Templeton Avenue
Winnipeg, Manitoba
Canada R2V 3S6

MOAUG

The Metro Orlando AUG sponsors this monthly publication. The editor, Patricia Herrington, is a longtime ADAM enthusiast who has cheerfully helped many ADAM support firms. A talented artist ... upbeat writer ... and Mensa member, Pat adds a unique appeal to the group's newsletter.

FREQUENCY: monthly
ANNUAL RATE: \$12 in the USA
EDITOR: Pat Herrington
PUBLISHER: MOAUG
of PAGES: 12
STARTED: JAN 85
of ISSUES: 36

Metro Orlando ADAM Users Group
1003 Oak Lane
Apopka, FL 32703

Nibbles & Bits

You should be familiar with this monthly publication. N&B has one of the largest circulations of an ADAM-only publication and covers a variety of topics. The first 18 issues concentrated primarily on BASIC programming tricks and understanding the fundamentals of programming the ADAM. N&B is published by DIGITAL EXPRESS which also operates an electronic BBS, bi-monthly DISK PAK club, retail mail order business, and wholesale mail order business.

FREQUENCY: monthly
ANNUAL RATE: \$24 in USA & Canada
EDITOR: Sol Swift
PUBLISHER: Digital Express
of PAGES: 36
STARTED: JUL 86
of ISSUES: 27

Digital Express
P.O. Box 37
Oak Hill, WV 25901

NIAD

NIAD is the published by the group of the same name, Northern Illiana ADam user's group. Of the national organizations, NIAD is the oldest dating back to January 1985. This group was clearly one of the early sources for galvanizing ADAM support across the USA and Canada. Having one of the two largest newsletter circulations, NIAD also holds huge local group meetings and has a buying service for the group's members. The primary concentration of the newsletter is product reviews with articles on BASIC programming and using public domain software. It should also be noted that NIAD was the original distributor of about a third of the public domain software available for the ADAM today.

FREQUENCY: 10 times per year
 ANNUAL RATE: \$26 in the USA & Canada
 EDITOR: Lyle Marschand
 # of PAGES: 24
 STARTED: JAN 88
 # of ISSUES: 47

NIAD

P.O. Box 1317
 Lisle, IL 60532
 (312) 961-3529

N.O.A.H.

This is the newest ADAM-only newsletter. The publisher is the Northern Ohio ADAM Hackers a long time affiliate of OrphanWare. In fact, John Lingrel will be a co-editor of the paper geared primarily toward CP/M 2.2, hardware projects, and software reviews. The premier issue, JAN 89, is due to be mailed before the end of December. NOAH also operates a BBS 24 hrs daily.

FREQUENCY: 8 times per year
 ANNUAL RATE: \$20 in the USA
 EDITORS: John Lingrel & Ron Collins
 PUBLISHER: N.O.A.H
 # of PAGES: 16-20
 STARTED: JAN 89
 # of ISSUES: 1ST one due any day

Ron Collins
 5665 Myers Road
 Akron, OH 44319

Omaha AUC Newsletter

This is the bi-monthly newsletter of the Omaha ADAM User's Club. It is in digest format with excerpts from most of the national newsletters along with comments and tips from the editor. It is geared chiefly to local members (\$20/year), but they will also accept national members.

FREQUENCY: bi-monthly
 ANNUAL RATE: \$5 in the USA
 EDITOR: Norman R. Castro
 PUBLISHER: Omaha ADAM User's Club
 # of PAGES: 4-8
 STARTED: JUN/JUL 84
 # of ISSUES: 27

Omaha ADAM User's Club
 809 West 33RD Avenue
 Bellevue, NE 68005

PSAN

The Puget Sound ADAM NewsNET is another chiefly local paper that accepts national memberships. Each issue contains a variety of original information along with excerpts from other periodicals. The local group also sponsors mountain retreats (with ADAM along) a couple of times a year.

FREQUENCY: monthly
 ANNUAL RATE: \$5 in the USA
 EDITORS: Bob & Valorie Zimmerman
 PUBLISHER: PSAN
 # of PAGES: 3-6
 STARTED: JAN 85
 # of ISSUES: 48

Puget Sound ADAM NewsNET
 22607 SE 322ND
 Kent, WA 98042



Saint Louis AUG

This is one of the newer publications. The group's founder is Barry Wilson who started distributing PD software a couple of years ago. Their premier issue was May of this year. They have grown rapidly over the past few months with a new professional newsletter format, monthly group meetings, a group BBS, and a new wholesale mail order business is on the horizon. The newsletter is segregated into two sections: original articles and reprints from other periodicals. This is a group with a lot of promise featuring five well known (and very active) ADAM owners: Don Bueltmann, Father Al Fitzgerald, Jim Guenzel, Rev. Michael Keith, and Barry Wilson.

FREQUENCY: monthly
 ANNUAL RATE: \$23
 EDITORS: Barry Wilson & Michael Keith
 PUBLISHER: SLAUG
 # of PAGES: 20-26
 STARTED: MAY 88
 # of ISSUES: 8

Saint Louis ADAM Users Group
 12967 Weatherfield Drive
 St. Louis, MO 63146

SPRITE CHASER

This is the newsletter of the #1 ADAM Users' Group and is published by Jay Forman of the MW Ruth, Company. Group membership which includes the newsletter is \$18/year; subscriptions are \$22.50/year. Since there is no scheduled publication date for the issues it is a little difficult to judge when one is expected; the latest issue is #10.

FREQUENCY: 2 to 4 issues per year
 ANNUAL RATE: \$18 in the USA
 EDITORS: Steve George & Greg Daro
 PUBLISHER: Jay Forman
 # of PAGES: 12-16
 STARTED: JAN 85
 # of ISSUES: 10

#1 ADAM Users' Group
 P.O. Box 3761
 Cherry Hill, NJ 08002

U.K.A.S. Journal

The United Kingdom ADAM Subscriber's Journal is a bi-monthly publication. Each issue has a variety of information from programming tips to software reviews. This is one of only two newsletters with which I trade subscriptions, and, consequently I'm not certain what the membership price is in the USA. The rate in England is 15 pounds. The group also operates a BBS with Roger Fillary as the SYSOP.

FREQUENCY: bi-monthly
 EDITOR: Keith Marner
 PUBLISHER: U.K.A.S.
 # of PAGES: 30-34

United Kingdom ADAM Subscribers
 33 Homer Road
 Croydon, Surrey
 ENGLAND CR0 7SB

V.C.N.

VideoGaming & Computer News (formerly "High Lights") is a mammoth bi-monthly newsletter with concentration on ADAM and some of the newer videogame systems. Though I was impressed with the first two (and only two) issues, it now appears that the newsletter has ceased publication.

FREQUENCY: bi-monthly
 ANNUAL RATE: \$23.70 in the USA
 EDITORS: Tom Sawyer & Amil Dillinger
 PUBLISHER: M.A.D. Enterprises
 # of PAGES: 52-56
 STARTED: MAR/APR 88
 # of ISSUES: 2

M.A.D. Enterprises
 2226 Patterson Avenue South
 Joplin, MO 64804





THE SAGE SPEAKS

The Wizard of Dalark



MORE ON THE DALARK STORY

As the morning sun begins to rise above the Samenia mountains the dark clouds of storm from last evening seem to disseminate and flee from the growing light. It is almost as though they knew that this would be a special day -- a day of rejoicing and merriment. For upon this day the marriage of crowned prince David of Drumeria to princess Lydia of Kroden will officially put an end to the bitter war that has raged between the nations for three generations. The hostilities ended months ago but until this bond is sealed the specter of war hangs heavy in the air.

The preparations are complete, down to the last detail. Everyone who is anyone is here to celebrate this auspicious occasion. Everyone that is except your beloved. A dark and terrible fever overtook them last evening and has yet to break. The honored guests are seated to each side of the dias, high upon the balcony of the east wall of the palace. The cheering throngs have gathered in the courtyard below. Everywhere are splendid decorations and flowers and the banquet tables are heaped high with every delicacy imaginable.

The trumpets blare forth their song announcing the beginning of the ceremony. As the musicians start to play, prince David and princess Lydia start the slow march to the dais. As the couple come into view, the crowd below shouts their approval. The shadows from the remaining clouds flee before them. All of the shadows save one, which seems to grow larger as they draw near to the dais.

A heart-stopping roar brings everyone's eyes toward the sky. Hovering high above on its leathery wings is the Dragon of Dalark. A dark figure sits astride the massive shoulders. Even before the royal archers can bring their arrows into play the demon dives, strafing the balcony with its freezing ice daggers. Many are killed outright while others are frozen solid. A flurry of arrows meet the beast on the second pass but to no avail. The steel tipped arrows bounce harmlessly off the thick scales falling into the crowd below.

At the end of the second pass the mighty Dragon of Dalark whirls around and blasts the balcony with its fiery breath. The blast shatters the stone balcony, collapsing in upon itself to fall into the crowd far below. There are no survivors.

As the Dragon of Dalark wings its way northward a hideous laughter is heard fading in the distance...

THE SAGE SPEAKS

EDITOR'S NOTE: The following questions are excerpts from mail recieved by Digital Adventures regarding "Temple of the Snow Dragon".

Q: I have tried everything and can not get into more than 12 rooms ... HELP!

A: You must have a key to move deeper into the TEMPLE. A key may be found in the lair of the wizard MONDREL.

Q: but every time ... MONDEL turns me to stone; how do I get past this nefarious fiend?

A: The answer you seek may be found inside the chest that is hidden within the dungeon.

Q: I can not seem to get the hang of the power meter ... I will be doing fine and then some bad guy will come along and trash me. Is there a secret to the power meter?

A: To attain a high power score you must hit the INSERT and PRINT keys in sequence (first one then the other), AND you must do so FAST. As long as you hit them in sequence, the faster (not harder) you hit them, the higher the meter will go, and the better you will fight.

GAME HINTS

Always read every message, some will be presented only once.

Save your game often. If you die, you can take up where you last saved your game.

Be sure to "Turn Around" in each room to look for clues hidden in the different graphics there.

Each "New Game" is different. If you begin a game with a strength of less than 20, start over.

The "Mystic Scroll" contains more than one message.

Additional strength can be had by dropping some objects.

NOTICE OF DELAY

Due to the overwhelming demand for "Temple of the Snow Dragon", the second adventure in the DALARK series will be delayed by at least 30 days. We've all had to devote our time to production of Temple just to keep up with demand. The "Pit of Reshus" will be available in late January. We are sorry for the delay, but quality can not be rushed. Thank you for your patience.

ADVANCED PROGRAMMING

by Solomon Swift



PART 6

Did you enjoy the break from Advanced Programming? I trust that we're all ready to get back to work.

Last lesson we examined decision making functions using the "F"lags register. As we progress, we'll study each area of Z80 programming; by studying existing routines one gets a better grip of how to setup for them and can thereby glean aspects of encoding that are common to the creation of all routines.

This month we'll take a look at jump tables and their purpose. Next month we'll start leaning more toward GoDOS in our programming applications. By spring we should be creating simple GoDOS programs!!

AN OPERATING SYSTEM

What exactly is an Operating System? First, every computer has at least some form of OS. It is a set of routines (written in the particular computer's machine code) that handles the low level functions of using the computer. For example the very BASIC low level functions with ADAM include operating the system printer, accepting input from the keyboard, reading from and writing to the tape drives, reading from and writing to the disk drives, and communicating with the video chip.

These are the LOW LEVEL operations; thus they are at the very heart of using the ADAM. Even though there is only one way to read the keyboard, for example, there is an almost infinite number of ways to write a routine that reads the keyboard. You could put the keypress value in a different register; currently the accumulator is utilized for this. You could reset the keyboard after every input or you could make use of the built-in 22-byte input buffer. Or, you could use an address other than 64885 for the current keypress buffer. The list could go on and on, but the point is that the programmer of the OS decides precisely how the routines are accessed and what the returned values (if any) will be even though there is only one connection and only one possible location to retrieve the information.

I am asked regularly by readers why EOS requires the specific register setups before CALLing a routine. The only answer is that it was the OS programmer's volition; it was an arbitrary decision. However, many of these routines are very minor modifications of the OS7 (cartridge operating system) routines. Also, for development continuity by existing programmers, many of my low level GoDOS routines use the same setups.

These routines are referred to as LOW LEVEL because in an heirarchy of routines, they are lower or closer to the actual hardware of the computer proper. Thus, HIGH LEVEL routines are further from the hardware. The high level routines generally have their own heirarchy which CALLs the LOW LEVEL routines. This concept is the basis of all machine code programming ... an heirarchy of routines getting further and further from the actual hardware.

Thus, in order to program efficiently one needs to first consider each algorithm, or thought process, in the smallest possible terms. From the small, low level concepts progress is made to develop larger, more sophisticated functions; one might say then that when programming, "one must think SMALL in order to achieve BIG accomplishments".

EOS

In addition to the very low level operations, EOS also provides a file management system, or Disk Operating System (DOS). For some reason which has totally elluded me, Coleco saw fit to use a sequential or linear directory. Thus files are stored on a medium sector by sector. It is this error in judgement that has caused most the assorted problems with EOS.

Despite its shortcomings though, EOS is a fairly well-written operating system. One feature that I particularly like is that it is open-ended enough to allow for so many different drives (up to 10) and in any size arrangement. This degree of foresight was not very common five years ago when the system was written.

HOW HIGH

How far from the hardware should an Operating System go? How high is high? Learning from Icarus and Daedalus we don't want to go too high? But, where do we draw the line on an OS?

The further we get from the base computer, the more memory we must use. So the price for a good high level OS is memory ... yes, precious computer memory. With the exception of the basic file functions, EOS is essentially a low level OS. Some systems are so sophisticated and so removed from the actual internal workings of the particular computer that the OS in many ways resembles a computer language. I like to think of GoDOS as one such example.

A JUMP TABLE

Okay, so what is a jump table and how does it tie in with all these hierarchies of routines and functions? When an OS is finished, it is common practice to setup a table of vectors which Jump to the more commonly used OS routines. For example, each entry in the EOS jump table is three bytes in length. The first byte is a Z80 command to jump to the address pointed to by the next two bytes in memory (195 decimal). The following two bytes, of course, are the actual or absolute address of the system routine.

Why go through this much trouble and, worse yet, use even more computer memory? Well ... in the computer industry, it is generally assumed that by the time a product hits the marketplace, it is already obsolete. The whole industry is geared toward improvement ... make it smaller, make it cheaper, make it faster ... make it better. The jump table is our bridge over the obsolescence gap. As long as application programs ONLY call the jump table addresses, the actual OS routines may be revised or even shifted around in memory without any adverse effect on the application program. Thus, the jump table permits and even encourages updates to an Operating System.

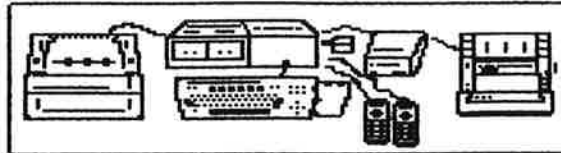
More next month. Be sure to note that this month's progress report covers both this issue and the issue #25 lessons.

PROGRESS REPORT #5

Be sure to send your answers along with a COPY and an SASE. Don't just answer verbally. Even if the answers seem to simple (or too complicated) write them down and send them in. This reinforces the information for you and it gives me the opportunity to help with any problems.

1. With the DJNZ instruction, which register is used as the counter?
2. Does the DJNZ counter count down to "1" or to "0"?
3. Figuratively speaking, is a Low Level OS routine closer to the hardware or to the programmer's application program?
4. Is ADAM capable of true multi-tasking?
5. How many jump vectors are there in the EOS jump table?
6. Does EOS use a sequential or random access file management system?
7. What is the name of ADAM's cartridge operating system?
8. Does a jump table help or hinder OS revisions?
9. Which register is used with regard to using conditional operation codes with the Z80?
10. The CompAre op code is very similar to what other Z80 op code?
11. Of the following which is NOT directly a status flag on the Z80: Carry, Overflow, or Zero?
12. What is the Z80 op code for multiply the value in the HL pair by the value in the accumulator?
13. Can an Operating System contain more than basic low level system communication functions?
14. What is an Operating system?

PRODUCT REVIEWS



Review of:

MEGACOPY

by Mel Ostler

Some time ago, I wrote an unsolicited review of the "MEGACOPY" device tape formatter by Syd Carter of TRISYD VIDEO GAMES. Well, I again have the inclination to do so.

I'm not going to write a review of the same device as I evaluated then. No, I have since obtained the latest version of that device, and it is really impressive, and that is what I wish to discuss. The ease of use and trouble-free operation are my motivation for taking time out from my other writing endeavors to tell all interested about it.

Now don't feel that I have stock in the company or anything of the sort. I don't. It is just that on occasion I am greatly impressed with something, and that is when I feel it only fair to the creator(s) thereof that I share my feelings with others inasmuch as it may be within my ability to do so.

I wrote in the previous review about my impressions concerning the creator of this device; thus I'll not go through that again. But I must say that further communications with Mr. Carter have done nothing but strengthen my previously described feelings concerning his character and his dedication to ADAM users.

But perhaps something which I did neglect doing, which seems to be a bit of a habit of those of us who on occasion review ADAM software and hardware, was that I failed to adequately describe the system to those who might want to know a little more about it physically. The device consists of a small box measuring 1" x 2" x 4". (Sounds like the builder of the box is definitely into binary numbers, doesn't it?) This box contains the circuits which are the heart of the device and externally there are four leads coming from the left end of the box (two are 8-conductor ribbon cables and two are 9-conductor cables). On the front of the box are two small LED's and to the right of them is a two position toggle switch (push for 'on' and push again for 'off')

The four ribbon cables are supplied with male and female connectors so that the device can be placed electrically between the second tape drive and the ADAM, ie, two of the cables attach to the cable running from the drive (which would otherwise be attached directly to the ADAM), and two of the ribbon cables attach to the ADAM in place of those ordinarily used there from the second drive.

The two LED's light up when the unit is operating. The light nearest the switch lights when the unit is activated manually by the user. The light on the left of the box is lighted by the circuitry within whenever the actual format operation is taking place. In that sense, both lights are for the convenience of the user, although the one nearest the switch would be difficult to live without.

What the little box does is that it just sits there while the ADAM is being used for whatever ordinary application the user makes of his computer. As Elmer Fudd used to say in the ole days, "Th-th-that's all folks." But don't be deceived by such simplicity! The box has a few tricks of its own.

You see, when the switch is pressed and that little "power on" LED lights up, that little box allows the "Sydsoftware" (which was loaded into ADAM), to control the second drive in relationship to the first drive. Ah! I perceive that I have lost a few of you. Perhaps a short "run through" would eliminate any confusion at this point.

A tape and excellent instructions accompany the delivery of the little box. The documentation (instructions) include easy to follow instruction on how to connect the box, as well as Syd's personal phone number if you would rather have him personally "walk" you through it. Once connected, the wires just fit in the little opening in the space between the ADAM console cover (which most of you know by experience just lifts off), and the top of the console. This is done so that the box can just sit on top of the ADAM forever.

After connecting the box and turning the power on, one inserts the tape in the first data drive and pulls the reset switch to load the tape. This is a right directory tape with only a short section formatted (just enough to accomodate Syd's formatting program).

MEGACOPY review continued ...

Once loaded, the screens give all of the necessary instructions, although the documentation also speaks of the various screens and further explanation can be found therein. I found need for such help only on the screen asking what kind of tape I was formatting in one particular case.

The first screen asks for the user to decide if he has need to synchronize his two drive speeds. Of course this is a 'yes' the first time. That choice takes the user to the instructions which tell the user in easy to understand terms how to set the drive speeds, using the program just loaded.

Once the speeds are adjusted to a reasonable proximity of one another, the user may close the cover and go to the format choices. Here he can decide to format center directory, right directory, Donkey Kong, Donkey Kong Jr., and others. There is a variety which fits the needs of all.

Now at one point here the user is instructed to insert a master tape, preferably an original Coleco tape, and a tape to be formatted and then to turn on the little white box. A quick push of the switch illuminates the 'power on' LED. From there the device just goes on doing the formatting. No more buttons need to be pushed at all. The screen has what Syd has humorously called the "microspy activity" which mesmerizes the user as he watches which block number is being formatted; this version is a definite improvement over the first and second models.

When completed, the program rings a bell. What a snap! When all finished, the user turns the power off and goes about doing that which he is good at going about doing. The next time he runs the program, he need not be bothered with the tape drive speeds, although it would be good to set them once a year anyway to insure that they are reading and writing correctly.

Now let me say a bit about quality. The box allows the second tape to become slave to the first or to operate independently of the first. The second drive tape receives the format from the first drive tape. For this reason the tape in the first drive should be one of good quality, without too much mileage. I use the original BASIC tape that came with my ADAM inasmuch as soon after purchasing it, I added a disk drive. I use a new 'Buck Rogers' tape for right directory tapes.

Several users here in Las Cruces have used me to supply them with data tapes, but it is not one of my occupations to furnish ADAM owners with supplies. I have never had a complaint about the tapes, though.

My recommendation? Get one! If you don't have the cash, at least get a 'version 2' from someone and talk him into getting the new 'version 3'.

There is nothing to compare with the security that one feels when he can backup his system. I wish I had that security for my disk repair needs. Manufactured by:

TRISYD VIDEO GAMES
26 Florence Crescent
Toronto, Ontario
Canada M6N 4E4

Review of:

Temple of the Snow Dragon

by David E. Carmichael

Have you ever enjoyed a fantasy story book such as the many about "King Authur and the Knights of the Roundtable" where a brave Knight had to face a Evil Wizard? Or, have you ever enjoyed playing one of the many text adventure games like "ZORK" on your ADAM computer system? Or, do you enjoy viewing excellent color graphics on your ADAM? If your answer to any of these is yes, then "Temple" is the program that you must add to your ADAM software collection!

You, the game player, become this un-named Knight/Adventurer who is out to save the kingdom from the OVERLORD OF DALARK who not only took your beloved for his own, but also killed off the royal family of DRUMERIA, the leaders of your country! With the help of the OLD SAGE OF THE ELVEN FOREST you set out to create the magical weaponry and shields to protect yourself when it comes time to do battle with THE OVERLORD OF DALARK. Your first mission is to retrieve an egg from the SNOW DRAGON which will help fashion a shield against THE OVERLORD's fortress guard, THE DRAGON OF DALARK which not only breathes fire, but also ICE!

The SNOW DRAGON is the least feared of all the dragons. It does not breathe fire (or ice) and it can not fly. The only known living SNOW DRAGON was brought to DRUMERIA by a worshiper of the SNOW DRAGON, who built a temple to honor it. But as the creature matured it became vicious and killed off all the priests. By now the dragon had grown too large to leave the TEMPLE. Except for GANDOR, the DRAGONKEEPER, all that have entered the temple have been killed. So ... onward with your quest to the TEMPLE OF THE SNOW DRAGON.

The copy of the game that I received came on two 160K disks, wrapped with a nice colorful ribbon. One disk held all the needed game (or SYSTEM) operations. The second disk held the GREAT game graphics. The DDP version comes all on one tape. The program is over 240k is total size! You insert the SYSTEM disk into your drive and pull reset to load just as you would with most any self-booting Coleco program. While the game is loading you are treated to a number of very nice graphics displays, starting off with the story of your quest and ending with a very colorful picture of the outside of the TEMPLE OF THE SNOW DRAGON.

The main GRAPHIC GAME WINDOW is then displayed asking you to enter your name, and then to place the graphics disk in the same drive that the system was booted from. The program then checks to be sure that you had placed the graphics disk into the drive; then if you have a 256K XRAM card (or larger) the program will ask you if you wish to copy the graphics disk to RAM for use in the game (this takes a couple of minutes but is well worth it!). Your Adventure is about to begin ...

Most of the game's movements throughout the TEMPLE's maze of over 21+ FULL COLOR ROOMS is with your ADAM's arrow keys, and a player can even turn around in a room to get a full 360' view by pressing the HOME key. At times you will come upon foes that you must fight off while in the TEMPLE! DIGITAL ADVENTURES came up with a very skillful way of doing this. The player presses the INSERT and PRINT SmartKEYs in sequence. The faster you hit them, the higher your POWER INDICATOR will go, giving you a better chance to defeat your adversary. This is similar to how a player fights in "ROCKY"! If you get tired of playing (or just have to go to bed), you can save your game at any time by pressing the ESCAPE key. You will then be prompted to place a blank formatted media into your computer's drive. This way you can start the game next time where you had left off.

(GAME HINT: SAVE YOUR MOVES OFTEN!)

The OWNER'S MANUAL is very well thought out and written. And it includes a page with many game hints on how to get through the TEMPLE. It also has a two page OPEN-BOOK HELP PAGE listing all the SmartKEY MACRO commands along with a listing of almost all of the treasures that can be found in the TEMPLE!

The game's graphics and owner's manual were both done using the PowerPAINT graphics program from DIGITAL EXPRESS. Not only does this program showoff ADAM's GRAPHICS, but it also shows you just what can be done using this graphics program from DEI.

I feel that DIGITAL ADVENTURES did not miss a single point when they created this game. And I would have to give it a rating of ELEVEN (on a scale of one to ten).

PROGRAM EXPLANATIONS

by Solomon Swift



SIMPLE LIST SORTER

From time to time, readers write to me asking about including a program that will sort and store a list. Here it is. I, too, have found a need occasionally for such a utility. Though rather simple in nature, it does provide some useful functions and it illustrates several programming techniques.

You should note a few characteristics of the program and computers in general first. Strings (groups of alphanumeric data) are sorted according to the ASCII value of each character of the string. Since we've covered ASCII in several issues previously, we won't go into a lot of detail here, but suffice it to say that there is a priority difference between upper case, lower case, and numbers. Numbers have the lower ASCII values, then upper case, and finally lower case. Thus, in our program "Dog" would come before "dog", and "123" would come before "ABC".

Menu options are selected by just tapping the corresponding number key; you don't need to press <RETURN>. At these menu prompts you may also tap the <ESCAPE> key to abort the current menu and revert to the previous one. When string input is requested, ie, you are prompted to type a word, you may enter "QUIT" or "quit" to abort the input and revert to the previous set of menu options.

Line numbers 100 through 250 setup the assorted variables for the program. Line numbers 200 through 250 constitute a machine code patch to SmartBASIC 1.0 which permits you to use a dot matrix printer. Thus for printing a list, you may use the ADAM printer or a DMP.

Line numbers 500 thru 570 present the opening (or main) menu of program options. These are:

- 1: clear the workspace
- 2: add to existing list
- 3: delete last item
- 4: replace item
- 5: load list
- 6: store list
- 7: print list
- 8: display list
- 9: exit program

When you first RUN the program, the workspace is already 'clear'. Thus, the first option is for erasing the list in memory that you either typed or loaded from a disk or data pack. The second option is the one that permits you to type entries. You continue entering items to the list (without returning to the opening menu) until you enter 'QUIT'.

The third opening menu option simply removes the last item in the list. Since the list is sorted after each entry, the item deleted is always the highest ASCII value string in the list. If you used the delete option many times, it would be just like clearing the workspace. The fourth option, replace item, lets you change a string. You might use this for correcting a typo. Also, you could combine the third and fourth option to erase an item anywhere in the list. For example, just replace (or rename) an item to 'zzzzz'; this will force it to the bottom of the list. Then just use delete to remove it from the list entirely.

The fifth and sixth options provide media access by allowing you to store or retrieve a list. This is accomplished via BASIC's text file handling commands, eg, OPEN, READ, WRITE, and CLOSE. This can be a little tricky since the BASIC manual has some inaccuracies regarding these functions; study line numbers 5000 to 6150. Also, note that line number 5230 concludes with a 'PRINT' statement; this prevents that annoying 'End of DATA' error message by the interpreter.

The seventh and eighth options, print and display the list, are very similar in nature -- with the display option, you may also select the starting item number.

The final option just returns you to BASIC. If you select it inadvertently, just enter: GOTO 500. This will resume the program without affecting your list.

The program does have several nice features that you'll discover as you use it. If you have improvements on it, I'd appreciate hearing from you.

SmartTUNES SONGS

Pages 25 and 26 LIST two more songs for use with the SmartTUNES music routine LISTED in our NOV 87 issue. "Jingle Bells" and "Silent Night" are a couple of favorites this time of year; enjoy the yuletide spirit with friends!

BTW there is another benefit in writing SmartTUNES songs. GoDOS has the advanced version of the public domain music driver. The two major differences are that volume can be set independently for each voice (for the entire song) and the "A", "B", and "A sharp / B flat" are in correct chromatic scale sequence. Thus the only change one would need to make would be to correct the octave of these three notes in a song file.

```

10 REM simple list sorter
12 REM a freeware donation by DIGITAL EXPRESS (c) DEC'88
14 REM presented in Nibbles & Bits
16 REM Do NOT remove these REMark statements.
50 REM NOTE: capital letters precede lower case
60 REM NOTE: ESCape at menus restarts first menu
70 REM NOTE: QUIT exits string inputs
80 REM NOTE: blank PRINT after inputs on line # 5230
90 REM this prevents the "End of DATA" error message.
100 mx% = 600: DIM wd$(mx%): es$ = CHR$(27): ct% = 0: d$ = CHR$(4)
110 DATA clear the workspace,add to existing list
115 DATA delete last item,replace item
120 DATA load list,store list,print list,display list,exit program
130 FOR x = 1 TO 9: READ m1$(x): NEXT
140 POKE 12185, 224: POKE 16149, 255: POKE 16150, 255
200 DATA 245,219,64,203,71,40,250,241,211,64,201
210 DATA 205,11,47,205,78,4,254,13,192,62,10,24,2
220 DATA 62,0,195,78,4
230 FOR x = 0 TO 28: READ mc: POKE 1102+x, mc: NEXT
240 POKE 16217, 89: POKE 16218, 4
250 POKE 16219, 92: POKE 16220, 4
500 POKE 17059, 244: POKE 17115, 244: POKE 17126, 25: TEXT
510 INVERSE: PRINT " SIMPLE LIST SORTER": NORMAL: PRINT: PRINT
530 FOR x = 1 TO 9: PRINT " "; x; " = "; m1$(x): NEXT
540 GET k$: IF k$ = es$ GOTO 570
550 k% = VAL(k$): IF k% < 1 OR k% > 9 GOTO 540
560 ON k% GOTO 1000, 2000, 3000, 4000, 5000, 5000, 7000, 8000, 570
570 TEXT: PRINT " end of program.": END
1000 HOME: GOSUB 13000: PRINT " really clear list? (Y or N)"
1010 GET k$: IF k$ <> "Y" AND k$ <> "y" GOTO 500
1020 HOME: PRINT " list is cleared!!!": PRINT: GOSUB 10000: RUN
2000 HOME: GOSUB 11000: PRINT " (type quit to exit)": PRINT
2010 PRINT " Enter item # "; ct%+1; ":"
2020 INPUT " "; wd$
2030 IF wd$ = "QUIT" OR wd$ = "quit" OR wd$ = "" GOTO 500
2040 ct% = ct%+1: wd$(ct%) = wd$: GOSUB 2100
2050 GOSUB 11000: PRINT: GOTO 2010
2100 PRINT: PRINT " sorting...";
2110 FOR x = 1 TO ct%: dd = 1
2120 dd = 2*dd: ON dd < ct% GOTO 2120
2130 dd = INT((dd-1)/2): ON dd = 0 GOTO 2190
2140 FOR xx = 1 TO ct%-dd: yy = xx
2150 k = yy+dd: IF wd$(k) > wd$(yy) GOTO 2180
2160 tw$ = wd$(yy): wd$(yy) = wd$(k): wd$(k) = tw$: yy = yy-dd
2170 IF yy > 0 GOTO 2150
2180 NEXT xx: GOTO 2130
2190 FOR x = 1 TO 11: PRINT CHR$(8); : NEXT: fe = FRE(0): RETURN
3000 HOME: GOSUB 13000: PRINT " LAST ITEM:": PRINT
3010 PRINT " "; ct%; "--> "; wd$(ct%): PRINT: PRINT
3020 PRINT " Really delete this item?"
3030 PRINT " (Y or N):"
3040 GET k$: IF k$ <> "Y" AND k$ <> "y" GOTO 500
3050 ct% = ct%-1: IF ct% < 0 THEN ct% = 0
3060 HOME: PRINT " Item deleted...": PRINT: GOSUB 10000: GOTO 500

```



SIMPLE LIST SORTER LIST continued...

```

4000 HOME: GOSUB 13000: PRINT " Replace which item (1-"; ct%; ")?": PRINT
4010 INPUT " "; nu$: nu% = VAL(nu$): IF nu% < 1 OR nu% > ct% GOTO 500
4020 HOME: PRINT " "; nu%; "--> "; wd$(nu%): PRINT: PRINT
4030 PRINT " Enter replacement:"
4040 INPUT " "; wd$: IF wd$ = "quit" OR wd$ = "QUIT" GOTO 500
4050 wd$(nu%) = wd$: SOSUB 2100: GOTO 500
5000 HOME: IF ct% = 0 GOTO 5100
5010 PRINT " Clear this workspace first!": PRINT: GOSUB 10000: GOTO 500
5100 HOME: PRINT " Which drive?": PRINT
5110 PRINT " 1 = tape one": PRINT " 2 = disk one"
5120 GET k$: IF k$ = es$ GOTO 500
5130 k% = VAL(k$): IF k% < 1 OR k% > 2 GOTO 5120
5140 POKE 16821, 2^(4-k%): HOME
5150 PRINT " insert medium now...": PRINT: GOSUB 10000
5160 HOME: PRINT d$; " catalog": PRINT: PRINT: GOSUB 10000: HOME
5170 PRINT " Enter filename to LOAD:"
5180 PRINT: INPUT " "; fi$
5190 IF fi$ = "QUIT" OR fi$ = "quit" GOTO 500
5200 HOME: PRINT " loading...": PRINT d$; " open "; fi$
5210 PRINT d$; "read "; fi$
5220 INPUT " "; ct%
5230 FOR x = 1 TO ct%: INPUT " "; wd$(x): NEXT: PRINT
5240 PRINT d$; "close "; fi$
5250 HOME: PRINT " file LOADED.": PRINT: GOSUB 10000: GOTO 500
6000 HOME: GOSUB 13000: PRINT " Which drive?": PRINT
6010 PRINT " 1 = tape one": PRINT " 2 = disk one"
6020 GET k$: IF k$ = es$ GOTO 500
6030 k% = VAL(k$): IF k% < 1 OR k% > 2 GOTO 6020
6040 POKE 16821, 2^(4-k%): HOME
6050 PRINT " insert medium now...": PRINT: GOSUB 10000
6060 HOME: PRINT d$; " catalog": PRINT: PRINT: GOSUB 10000: HOME
6070 PRINT " Enter filename to STORE:"
6080 PRINT: INPUT " "; fi$
6090 IF fi$ = "QUIT" OR fi$ = "quit" GOTO 500
6100 HOME: PRINT " storing...": PRINT d$; " open "; fi$
6110 PRINT d$; " write "; fi$
6120 PRINT ct%
6130 FOR x = 1 TO ct%: PRINT wd$(x): NEXT
6140 PRINT d$; " close "; fi$
6150 HOME: PRINT " file STORED.": PRINT: GOSUB 10000: GOTO 500
7000 HOME: GOSUB 13000: PRINT " Which printer?": PRINT
7010 PRINT " 1 = ADAM printer": PRINT " 2 = dot matrix printer"
7020 GET k$: ON k$ = es$ GOTO 500: pt% = VAL(k$)
7030 HOME: PRINT " insert paper...": PRINT: GOSUB 10000: HOME
7040 POKE 64885, 0: PR #pt%: FOR x = 1 TO ct% STEP 2: x$ = STR$(x)
7050 IF x < 10 THEN x$ = " "+x$
7060 IF x < 100 THEN x$ = " "+x$
7065 le% = LEN(wd$(x)): IF le% > 33 THEN wd$(x) = LEFT$(wd$(x), 33)
7070 PRINT x$; " "; wd$(x); SPC(34-LEN(wd$(x)));
7080 ON x+1 > ct% GOTO 7200
7090 y = x+1: y$ = STR$(y): IF y < 10 THEN y$ = " "+y$

```



SIMPLE LIST SORTER LIST continued...

```

7100 IF y < 100 THEN y$ = " "+y$
7110 le% = LEN(wd$(y)): IF le% > 33 THEN wd$(y) = LEFT$(wd$(y), 33)
7115 PRINT y$; " "; wd$(y)
7120 IF PEEK(64885) = 129 OR PEEK(64885) = 137 GOTO 7210
7200 NEXT
7210 PR #0: GOTO 500
8000 HOME: GOSUB 13000
8100 ON ct% = 1 GOTO 8900
8110 VTAB 8: PRINT " Enter # to start at:"
8120 PRINT " (1-"; ct%; ") or '0' for ALL"
8130 INPUT " "; nu$: nu% = VAL(nu$): IF nu% < 0 OR nu% > ct% GOTO 500
8140 IF nu% = 0 THEN nu% = 1
8150 HOME: PRINT " Tap 'I' to abort display."
8160 PRINT " Tap 'II' to pause display.": PRINT: GOSUB 10000
8165 HOME: POKE 64885, 0: FOR x = nu% TO ct%
8170 x$ = STR$(x): IF x < 10 THEN x$ = " "+x$
8180 IF x < 100 THEN x$ = " "+x$
8190 PRINT " "; x$; "..."; wd$(x)
8200 pk = PEEK(64885): ON pk = 129 OR pk = 137 GOTO 500
8210 ON pk = 130 OR pk = 138 GOSUB 12000
8220 NEXT: PRINT: PRINT: GOSUB 10000: GOTO 500
9999 END
10000 PRINT " tap any key to continue...": GET k$: RETURN
11000 IF ct% < mx%+1 THEN RETURN
11010 HOME: PRINT " Workspace is full!!!": PRINT: GOSUB 10000
11020 POP: GOTO 500
12000 POKE 64885, 0
12010 ON PEEK(64885) <> 0 GOTO 12020: GOTO 12010
12020 IF PEEK(64885) = 129 OR PEEK(64885) = 137 THEN POP: GOTO 500
12030 POKE 64885, 0: RETURN
13000 IF ct% > 0 THEN RETURN
13010 HOME: PRINT " No items in list!!!": PRINT
13020 GOSUB 10000: POP: GOTO 500

```




```

100 LOMEM :32000: be = 29000
110 PRINT " one moment please ...": PRINT
1000 REM "Silent Night"
1010 REM must load SmartTUNES player routine first
1020 DATA G4G3G516,A5A4A64,G4G3G516
1030 DATA E4E3E532,G4G3G516,A5A4A64
1040 DATA G4G3G516,E4E3E532,D5D4D632,D4YZ1
1050 DATA D5D4D616,B5B4B632,C5C4C632,C4YZ1
1060 DATA C5C4C616,G4G3G532,A5A4A632,A4YZ1
1070 DATA A5A4A616,C5C4C624,B5B4B68
1080 DATA A5A4A616,G4G3G532,A5A4A68
1090 DATA G4G3G516,E4E3E532,A5A4A632,A4YZ1
1100 DATA A5A4A616,C5C4C624,B5B4B68
1110 DATA A5A4A616,G4G3G532,A5A4A68
1120 DATA G4G3G516,E4E3E532,D5D4D632,D4YZ1
1130 DATA D5D4D616,F5F4F616,D5D4D624
1140 DATA B5B4B616,C5C4C632,E5E4E632
1150 DATA C5C4C616,G4G3G516,E4E3E516
1160 DATA G4G3G516,F4F3F516,D4D3D516
1170 DATA C4C3C532
2599 DATA W
2900 READ nt$: IF nt$ = "W" THEN GOSUB 3000: GOTO 4000
2910 GOSUB 3000: GOTO 2900
3000 FOR x = 1 TO LEN(nt$): ak = ASC(MID$(nt$, x, 1))
3010 IF ak > 64 THEN POKE be, ak: GOTO 3100
3015 pk = PEEK(be-1): IF pk = 88 OR pk = 89 OR pk = 90 GOTO 3030
3020 IF PEEK(be-1) > 64 GOTO 3200
3030 IF x = LEN(nt$) GOTO 3200
3040 a1 = VAL(MID$(nt$, x, 1)): a2 = VAL(RIGHT$(nt$, 1))
3050 POKE be, a1*10+a2: x = x+1: GOTO 3100
3100 be = be+1: NEXT x: RETURN
3200 POKE be, VAL(MID$(nt$, x, 1)): GOTO 3100
4000 tempo = 235: volume = 15: pointer = 29000: offset = 2
4010 POKE 27946, offset: REM (39,109)
4020 POKE 27792, tempo: REM (144,108)
4030 POKE 27793, volume: REM (145,108)
4040 POKE 27795, pointer/256: REM (147,108)
4050 POKE 27794, pointer-PEEK(27795)*256: REM (146,108)
4100 IF PEEK(27800) <> 229 GOTO 4200
4110 IF PEEK(28000) <> 195 GOTO 4200
4120 IF PEEK(28110) <> 108 GOTO 4200
4130 GOTO 5000
4200 PRINT: PRINT " ERROR!!! SmartTUNES"
4210 PRINT " routine not detected.": END
5000 CALL 27B00: END

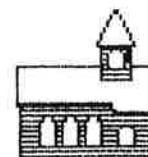
```



```

100 LOMEM :32000: be = 29000
110 PRINT " one moment please ...": PRINT
1000 REM "Jingle Bells"
1010 REM must load SmartTUNES player routine first
1020 DATA E5E6E48,XYZ1,E5E6E48,XYZ1,E5E6E416,XYZ1
1030 DATA E5E6E48,XYZ1,E5E6E48,XYZ1,E5E6E416,XYZ1
1040 DATA E5E6E48,G5G6G48,C5C6C412,D5D6D44,E5E6E424
1050 DATA F5F6F48,XYZ1,F5F6F48,XYZ1,F5F6F412,XYZ1
1060 DATA F5F6F44,XYZ1,F5F6F48,E5E6E48,XYZ1
1070 DATA E5E6E412,XYZ1,E5E6E44,XYZ1,E5E6E48
1080 DATA D5D6D48,XYZ1,D5D6D48,E5E6E48,D5D6D416
1090 DATA G5G6G416,E5E6E48,XYZ1,E5E6E48,XYZ1
1100 DATA E5E6E416,XYZ1,E5E6E48,XYZ1,E5E6E48,XYZ1
1110 DATA E5E6E416,XYZ1,E5E6E48,G5G6G48,C5C6C412
1120 DATA D5D6D44,E5E6E424,F5F6F48,XYZ1,F5F6F48,XYZ1
1130 DATA F5F6F412,XYZ1,F5F6F44,XYZ1,F5F6F48
1140 DATA E5E6E48,XYZ1,E5E6E412,XYZ1,E5E6E44,G5G6G48,XYZ1
1150 DATA G5G6G48,F5F6F48,D5D6D48,C5C6C424
1160 DATA G4G5G38,E5E6E48,D5D6D48,C5C6C48,G4G5G324,XYZ1
1170 DATA G4G5G34,XYZ1,G4G5G38,E5E6E48,D5D6D48,C5C6C48
1180 DATA A5A6A424,XYZ1,A5A6A48,F5F6F48,E5E6E48
1190 DATA D5D6D48,B5B6B424,G5G6G48,XYZ1,G5G6G48
1200 DATA F5F6F48,D5D6D48,E5E6E424,G4G5G38,E5E6E48
1210 DATA D5D6D48,C5C6C48,G4G5G324,XYZ1,G4G5G34,XYZ1
1220 DATA G4G5G38,E5E6E48,D5D6D48,C5C6C48,A5A6A424,XYZ1
1230 DATA A5A6A48,F5F6F48,E5E6E48,D5D6D48,G5G6G48,XYZ1
1240 DATA G5G6G48,XYZ1,G5G6G412,XYZ1,G5G6G44
1250 DATA A6A7A5B,G5G6G48,F5F6F48,D5D6D48
1260 DATA C5C6C416
2599 DATA W
2900 READ nt$: IF nt$ = "W" THEN GOSUB 3000: GOTO 4000
2910 GOSUB 3000: GOTO 2900
3000 FOR x = 1 TO LEN(nt$): ak = ASC(MID$(nt$, x, 1))
3010 IF ak > 64 THEN POKE be, ak: GOTO 3100
3015 pk = PEEK(be-1): IF pk = 88 OR pk = 89 OR pk = 90 GOTO 3030
3020 IF PEEK(be-1) > 64 GOTO 3200
3030 IF x = LEN(nt$) GOTO 3200
3040 a1 = VAL(MID$(nt$, x, 1)): a2 = VAL(RIGHT$(nt$, 1))
3050 POKE be, a1*10+a2: x = x+1: GOTO 3100
3100 be = be+1: NEXT x: RETURN
3200 POKE be, VAL(MID$(nt$, x, 1)): GOTO 3100
4000 tempo = 240: volume = 15: pointer = 29000: offset = 2
4010 POKE 27946, offset: REM (39,109)
4020 POKE 27792, tempo: REM (144,108)
4030 POKE 27793, volume: REM (145,108)
4040 POKE 27795, pointer/256: REM (147,108)
4050 POKE 27794, pointer-PEEK(27795)*256: REM (146,108)
4100 IF PEEK(27800) <> 229 GOTO 4200
4110 IF PEEK(28000) <> 195 GOTO 4200
4120 IF PEEK(28110) <> 108 GOTO 4200
4130 GOTO 5000
4200 PRINT: PRINT " ERROR!!! SmartTUNES"
4210 PRINT " routine not detected.": END
5000 CALL 27800: END

```



NEW PRODUCTS



SpeedyWRITE 1.0: Simply the most advanced word processor ever developed specifically for ADAM -- written in fast Z80 code. More than 100 features including 40 column screen, all screen colors, underline, bold, super & subscript, split screen, line justification, keyboard macros, configuration options and a full supply of file handling utilities, plus lots more. \$29.95 on disk or data pack. (WHITE COMPANY)

SpeedyWRITE 2.0: All of the above plus: INIT support for any disk drive size, ability to edit two files simultaneously, pocket database, already setup for dot matrix or ADAM printer, built-in ramdisk (10K for standard ADAM and 64K with memory expander). Just \$39.95 on disk or data pack.

PICTURE 1.2: great graphics program; move/copy; lines, circles, ellipses, magnify, no printing (but can easily be converted for ShowOFF I or PowerPAINT). Full screen or standard HGR screen drawing. Only \$9.95 on disk or data pack. (TLB SOFTWARE)

PowerPRINTS: 15 full screen pictures for use with PowerPAINT; most designed by professional artists just for ADAM. \$11.95 on disk or data pack. (WIZARD'S LAIR)

CLIP ART (1 & 2): Each volume has more than 40 clip art pictures for use with CLIPPER, PowerPAINT, or GoWRITER. Most are designed by the two commercial artists at WIZARD'S LAIR. \$11.95 each on disk or data pack.

SwiftDISK: Pools the operating system into believing that the super fast ramdisk is a second tape drive. Great for SmartWRITER, ADAMcalc, SmartBASIC, SmartLOGO, and many others. Requires MegaDISK 1.0 and at least a 64K card (works best with 128K or larger card). \$9.95 on disk or data pack. (DIGITAL EXPRESS)

PaintAIDE: Allows you to customize some aspects of PowerPAINT and fixes the minor bugs with the early versions. Let's you preset the SPECIAL typefaces. Plus it comes with over THREE DOZEN font files which really brings out the page design features of PowerPAINT. Includes some BASIC programs too. \$16.95 on disk or data pack. (DIGITAL EXPRESS)

Mr. T-SEARCH: Great word search puzzle maker. Five size options. Nice hardcopy (ADAM or dot matrix). Packed with nice features. \$12.95 on disk or data pack. (Mr. T. SOFTWARE)

PHRASE CRAZE: Colorful graphics; good sound; two or three players; "Wheel of Fortune" type game; very realistic. \$18.95 on disk or data pack. (REEDY SOFTWARE). -- EDITOR'S CHOICE

GAME (I, II, & III): Each set is two volumes (14 songs with pictures); good entertainment; great for recording as video tape headers. \$11.95 per set on disk or data pack. (DIGITAL EXPRESS)

SwiftPRINT: Powerful graphics file interchange program (RLE, SmartPAINT, GraphixPAINTER, and PaintMASTER). STORE and LOAD in virtually any ADAM picture format. A variety of picture print functions including COLOR for Okimate 20 owners. Requires at least a 64K expander. \$14.95 on disk or DDP (DIGITAL EXPRESS)

SEARCHset (1 & 2): preset word lists for use with Mr. T-SEARCH. \$8.95 each on disk or DDP (DIGITAL EXPRESS)

File Indexer: Great utility for organizing directories. Just \$9.95 on disk or DDP. (AJM SOFTWARE)

DISK DOCTOR: Useful program for reconstructing a damaged directory. Just \$9.95 on disk or DDP; (AJM SOFTWARE)

SwiftBASIC 80 (rv 2.3): Now the BASIC that you're used to can be used with the OrphanWare 80 column board. Now it also works with the EVE or OBS clock board. Plus there are many enhancements including DMP support and automatic RAMdrive capability with a memory expander. Just \$11.95 on disk or DDP. (DIGITAL EXPRESS)

CARD SET (1, 2, & 3): Now you can print nice greetings cards with PowerPAINT. Comes with three graphic cards each, plus sprites and clip art. Just \$11.95 on disk or DDP (each). (BRYAN'S SOFTWARE)

SwiftLINK 1.3: A multi-featured terminal program written entirely in fast Z80 code. Works with AL300 or any Hayes compatible external modem connected thru the OBS/EVE serial port (300, 1200, 2400, or 4800 baud). SmartKEY macros, 20 record library (name, #, pw, id, memos, and parms), RAMdrive, plus lots more -- extremely user friendly. Works with 30, 40, or 80 columns (EVE or OBS card required for 80). Imminent updates; comes with coupon for THREE free updates -- send blank disk and 65 cents in postage for updates; only \$19.95 on disk or DDP. (DIGITAL EXPRESS)

CopyCart+ D2.0: The most advanced cartcopy utility for the ADAM. Works with 16K or 32K carts. Can use 160K, 320K, or 720K drives, plus the two tape drives. Has DELETE and CATALOG functions too. Only \$18.95 on 5.25" disk ONLY. (WMSG). -- EDITOR'S CHOICE utility.

File Manager 2.1: The multi-featured hacker's utility for the ADAM, written entirely in fast Z80 machine code. Works with 160K, 320K, and 720K disk drives. Backup media, copy files, edit blocks, print files, and much much more. Just \$14.95. -- EDITOR'S CHOICE utility.

The Print Works: The print shoppe program for ADAM and a dot matrix printer. Easily construct banners, signs, and cards. Works with FontPOWER fonts and CLIPPER clip art too. Three sizes for graphics; just \$16.95. -- EDITOR'S CHOICE.

RECREATION/GAMES SOFTWARE

- 000 MageQuest (rev 2)** (by REEDY SOFTWARE) \$16.95 (retail) \$14.95 (SDP)
 * superb graphic adventure; includes 9 levels of play in the main adventure plus 3 solo adventures; additional solo adventures available from REEDY SOFTWARE
- 000 TriviaPac I** (by Mr. T. SOFTWARE) \$17.95 (retail) \$14.95 (SDP)
 * 1200 questions; 6 categories; one to four players; graphics and sound; hall of fame; many hours of fun
- 000 Kid's TriviaPac** (by Mr. T. SOFTWARE) \$17.95 (retail) \$14.95 (SDP)
 * 1080 questions; 6 categories; one to four players; graphics and sound; hall of fame; many hours of fun
- 000 Strategy Strain** (by DATA DOCTOR) \$18.95 (retail) \$14.95 (SDP)
 * nine intellectually challenging computer classics; graphics and sound; good Star Trek game
- 000 Lab Mouse** (by REEDY SOFTWARE) \$13.95 (retail) \$11.95 (SDP)
 * exciting game that puts you in the role of a laboratory mouse stuck in a maze; all hi-res graphics; 5 skill levels
- 000 Entertainment Pack** (by REEDY SOFTWARE) \$16.95 (retail) \$14.95 (SDP)
 * three challenging computer classics (connect 4, blockade, and slide puzzle); great graphics; fast animated sprites; one or two players
- 000 Stage Fright** (by REEDY SOFTWARE) \$16.95 (retail) \$14.95 (SDP)
 * extensive text adventure in which you play the role of an actor or actress trapped in an abandoned theater; some graphics and sound; easy to play -- challenging to win; game save option; three progressive levels of play
- 000 Diablo** (by IMAGE MICROCORP) \$19.95 (retail) \$16.95 (SDP)
 * a maze-like game in which the play field consists of user movable tracks on which you try to keep a ball in motion; good graphics; requires substantial strategy to play
- 000 Black Gold** (by IMAGE MICROCORP) \$19.95 (retail) \$16.95 (SDP)
 * a board style game for one to four players; compete by digging for oil; good graphics
- 000 Stock Market Game** (by IMAGE MICROCORP) \$19.95 (retail) \$16.95 (SDP)
 * a board style game for 1 to 4 players; see who makes the biggest profit buying and selling stock; a relatively good tool for learning about the stock market; more enjoyable with some stock market understanding
- 000 Centipede** (by AtariSOFT) \$12.95 (retail) \$10.95 (SDP)
 * the still popular arcade game in which you shoot away segments of oncoming centipedes; available in cartridge ONLY; one or two players
- 000 Defender** (by AtariSOFT) \$12.95 (retail) \$10.95 (SDP)
 * the action packed arcade game in which you shoot attacking alien ships and attempt to save inhabitants of the planet below; available on cartridge PLUS disk or data pack (specify which one you want with the cartridge); one or two players
- 000 Beyond Trek** (by Digital Express) \$19.95 (retail) \$14.95 (SDP)
 * pits you against hostile klingons; very good graphics; good sound/music; protect 4 starbases and annihilate the klingons; you command the Enterprise; hall of fame for 10 high scores (for session or all-time); requires at least a 64K expander
- 000 Chess Champ** (by Digital Express) \$19.95 (retail) \$14.95 (SDP)
 * the FIRST graphic chess game for the ADAM; great graphics; easy user interface; 10 skill levels; a little slow on higher skill levels; good chess playing companion; take back last move; edit board; on-line instructional; store/load up to 52 games per disk or data pack; requires at least a 64K expander
- 000 Las Vegas Craps** (by Al Roginsky) \$16.95 (retail) \$16.45 (SDP)
 * Realistic computer version of the famous casino game; colorful graphics; good sound; good use of sprites; online instructions; stores your money; allows use of markers; and comes with an Official Craps Gaming Guide; this is an EDITOR'S CHOICE GAME.
- 000 MIND OVER ADAM** (by Steve Pitman) \$11.95 (retail) \$11.45 (SDP)
 * This game plays like the popular board game MasterMIND™; great animation; excellent sound; colorful graphics; five levels of play; stores high scores (name entered using a colorful Duija board; EDITOR'S CHOICE GAME.
- 000 GHOST ZAPPER** (by Steve Pitman) \$11.95 (retail) \$11.45 (SDP)
 * This is a fast-action, arcade-style shootem-up with excellent graphics and sound. Quickly blast ghosts in the house for top score. Single player; requires at least a 64K expander -- EDITOR'S CHOICE GAME.
- 000 Temple/Dragon** (by Digital Adventures) \$24.95 (retail) \$21.95 (SDP)
 * The runaway topseller for the '88 Christmas season. See what all the excitement is about. The first adventure in the DALARK Trilogy. Simply incredible graphics; great sound effects; easy to play; extremely challenging to win; single player; disk and DDP version NOT compatible. -- EDITOR'S CHOICE GAME.

GUIDES/BOOKS/INSTRUCTIONS

- 000 Hacker's Guide (vol 1) (by Peter & Ben Hinkle) \$12.95 (retail) \$11.95 (SDP)
* The Hinkle's in - depth guide to the technical aspects of exploring ADAM; 60 pages; 18 programs
- 000 Hacker's Guide (vol 2) (by Peter & Ben Hinkle) \$12.95 (retail) \$11.95 (SDP)
* The Hinkle's detailed guide to SmartBASIC V1.0; 110 pages; HELLO program includes several BASIC fixes and enhancements
- 000 Hacker Software (by Peter & Ben Hinkle) \$5.95 (retail) \$3.95 (SDP)
* the programs from volumes one and two (above)
- 000 ez ref 101 (by DIGITAL EXPRESS) \$2.45 (retail) \$1.95 (SDP)
* approximately 700 Z80 instructions listed in NUMERICAL sequence; 9 pages; decimal, hex, op code, operands; good for disassembling machine code; holes drilled for easy binder insertion
- 000 ez ref 102 (by DIGITAL EXPRESS) \$2.45 (retail) \$1.95 (SDP)
* approximately 700 Z80 instructions listed in ALPHABETICAL sequence; 9 pages; decimal, hex, op code, operands; good for assembling machine code routines; holes drilled for easy binder insertion
- 000 ez ref 103 (by DIGITAL EXPRESS) \$3.95 (retail) \$2.95 (SDP)
* study of ADAM's EOS; jump table vectors, routines, setup for CALLs, exit register meanings; plus several assorted tables that have appeared in N&B; 21 pages; holes drilled for easy binder insertion
- 000 Pinball/HardHat Guide \$3.95 (retail) \$2.95 (SDP)
* 40 pages of instructions for the popular public domain package; holes drilled for easy binder insertion; includes Pinball reference chart

"NIBBLES & BITS" SOFTWARE

- 000 N&B binder01 (by DIGITAL EXPRESS) \$29.95 (retail) \$24.95 (SDP)
* all six issues from 07/86 thru 12/86; sturdy 3-ring binder; includes two DDPs or two disks containing all the programs
- 000 N&B binder02 (by DIGITAL EXPRESS) \$29.95 (retail) \$24.95 (SDP)
* all six issues from 01/87 thru 06/87; sturdy 3-ring binder; includes two DDPs or two disks containing all the programs
- 000 N&B issue programs (by DIGITAL EXPRESS) \$6.95 (retail) \$3.95 (SDP)
*set01: all the programs from 07/86 thru 09/86 *set02: all the programs from 10/86 thru 12/86
*set03: all the programs from 01/87 thru 03/87 *set04: all the programs from 04/87 thru 06/87
*set05: all the programs from 07/87 thru 09/87 *set06: all the programs from 10/87, 11/87, & 03/88
*set07: all the programs from 4/88 thru 6/88 *set08: all the programs from 07/88 thru 09/88

GRAPHICS DESIGN SOFTWARE

- 000 ShowOFF I (by DIGITAL EXPRESS) \$29.95 (retail) \$24.95 (SDP)
* graphics design package (enter text, draw polygons, paint, save pictures, etc.); fast color changes; a variety of print options (preset for Epson FX / IBM 5152 printer codes); printing graphics requires Centronics parallel interface for printer
- 000 CLIPPER (by DIGITAL EXPRESS) \$19.95 (retail) \$14.95 (SDP)
* introduces the concept of "clip art" to ADAM; totally machine code program; build clip art collections; put clip art in hi-res pictures; draw and edit clip art; also capture from hi-res pictures; enter text; change colors; includes an 11K ramdisk (does NOT require 64K expander)
- 000 FontPOWER (by DIGITAL EXPRESS) \$16.95 (retail) \$12.95 (SDP)
* utility using Coleco-like graphics for designing your own font sets; comes with 8 font sets including "script", "Roman", "cory", and "bold"; shows you how to use the font sets in high or low resolution graphics; plus three font shape tables for HGR and HGR2 modes; includes demos; fonts can be used in your own BASIC 1.0, BASIC 2.0, and z80 programs
- 000 SpritePOWER (by DIGITAL EXPRESS) \$19.95 (retail) \$14.95 (SDP)
* totally machine code utility using Coleco-like graphics for designing your own sprites; includes 3 sets of sprites; extensive instruction manual; shows you how use sprites in BASIC 1.0, BASIC 2.0, and Z80 programs; includes PUFF; includes 11K ramdisk (does not require 64K expander); very easy to use program
- 000 PowerPAINT (by DIGITAL EXPRESS) \$44.95 (retail) \$34.95 (SDP)
* 80K machine code graphics processor for ADAM; the most extensive graphics design program available; uses Coleco-like graphics; a large variety of file storage and retrieval options (directly loads PaintMASTER, SmartPAINT, GraphixPAINTER, SmartLOGO, and RLE pictures); quick global color changes; move, copy, and erase options; many hardcopy print options (screen, labels, letterheads, and whole picture); screen scroll options; four screen pictures with 64K card (8 screen picture with 256K or 512K expander); uses FontPOWER font sets, CLIPPER clip art, and SpritePOWER sprites; requires at least a 64K memory expander; requires a Centronics parallel interfaced Epson FX or IBM 5152 compatible dot matrix printer for hardcopies; fully compatible with SmartPAINT; you can easily UNDO changes; internationally acclaimed as THE graphics program for ADAM

PROGRAMMING UTILITY SOFTWARE

- 000 Intel-BEST 3.3** (by DIGITAL EXPRESS) \$24.95 (retail) \$18.95 (SDP)
 * makes over 3 dozen changes to BASIC 1.0; comes with 9 very user friendly MUSIC commands
- 000 Intel-LOAD V1.0** (by DIGITAL EXPRESS) \$15.95 (retail) \$11.95 (SDP)
 * converts BASIC 1.0 programs to load up to 12 times faster; stays in RAM; 2 BSAVE options
- 000 Intel-LOAD V2.0** (by DIGITAL EXPRESS) \$15.95 (retail) \$11.95 (SDP)
 * converts BASIC 2.0 programs to load up to 12 times faster; stays in RAM; 2 BSAVE options; works only in STD MEM
- 000 SmartBEST V1.0** (by DATA DOCTOR) \$16.95 (retail) \$14.95 (SDP)
 * makes several changes to BASIC 1.0; not compatible with Intel-BEST 3.3
- 000 SmartTRIX** (by DATA DOCTOR) \$19.95 (retail) \$14.95 (SDP)
 * a set of 10 excellent programming aides; two very nice sprite programs; 60 page manual; disk & DDP versions not compatible
- 000 BASICaide (rev 2)** (by Mr. T. SOFTWARE) \$11.95 (retail) \$9.95 (SDP)
 * several BASIC 1.0 enhancements; new CHAIN command; new BIN command to store fast loading programs; macros; fixes; more
- 000 TurboDISK 1.0** (by DIGITAL EXPRESS) \$24.95 (retail) \$19.95 (SDP)
 * creates ramdisk ability with BASIC 1.0; corrects several BASIC bugs; includes TurboCOPY -- very nice media control and copy utility; requires 64K expander
- 000 MegaUtil** (by MARATHON COMPUTER) \$32.95 (retail) \$27.95 (SDP)
 * an excellent collection of varied programming aids; includes ByteWriter (block editor), CopyWriter (media backup utility), PD modules, programming tips, plus more
- 000 TurboDISK 2.0** (by DIGITAL EXPRESS) \$15.95 (retail) \$11.95 (SDP)
 creates a powerful ramdisk ability for BASIC 2.0 and a 64K expander; disables EXT MEM command
- 000 MegaDISK 1.0** (by DIGITAL EXPRESS) \$24.95 (retail) \$19.95 (SDP)
 * creates the ramdisk ability for BASIC 1.0 or your own Z80 programs; works with 64K, 128K, 256K, 512K, and 1M ORPHANWARE memory expanders; automatically checks size of your XRAM card; does NOT disable NMI interrupt (FLASH, etc.); comes with 5 PD programs including EZfileXFER; much, much faster than a Coleco disk drive; self-booting or can be BRUN after BASIC
- 000 XRAMpak I** (by DIGITAL EXPRESS) \$19.95 (retail) \$14.95 (SDP)
 * the perfect companion for MegaDISK 1.0 and your ORPHANWARE memory expansion board (any size); includes XRboot (boot BASIC 1.0, ADAMcalc, and ADAMlink in about 2 seconds), XRcopy (a VERY powerful copy utility uses ramdisk space ABOVE your files stored there -- great for multiple copies of PD software), PACK and UNPACK (compacts and decompacts your favorite utilities into/from one large file for quick system setup), EZfileXFR2 (faster than EZfileXFER, by not restarting the directory after each transfer)
- 000 AUTOWRITER** (by Mr. T. SOFTWARE) \$15.00 (retail) \$14.25 (SDP)
 * a menu driven utility that writes machine code routines and BASIC subroutines (included) of your choice to a user designated data pack or disk; file may then be merged with existing programs to add special features; detailed instruction manual

DOT MATRIX PRINTER SOFTWARE

- 000 FILE PRINTER** (by Terry Fowler) \$9.95 (retail) \$9.45 (SDP)
 * a fine set of BASIC utilities for use with your dot matrix printer; prints SmartWriter compatible files; allows you to set default printer functions; (price goes UP at the end of November)
- 000 ShowOFF II** (by DIGITAL EXPRESS) \$19.95 (retail) \$14.95 (SDP)
 * machine code print enhancements for SmartWriter (adds 32 print controls and 5 CONTROL functions to SmartBASIC; requires Centronics parallel interface, a Panasonic KXP-10B0 or 10B0i printer, and at least a 64K expander)
- 000 ShowOFF IIa** (by DIGITAL EXPRESS) \$19.95 (retail) \$14.95 (SDP)
 * very similar to ShowOFF II except that it is compatible with any dot matrix printer that supports Epson FX escape codes; works with Epson, Star, and printers and the Okimate 20; does NOT include line justification commands or internal document margin control; requires at least a 64K expander
- 000 Fast & Calc Patch** (by ORPHANWARE) \$9.95 (retail) \$8.95 (SDP)
 * FastPatch 2.0 directs all printer output to your parallel interfaced printer -- can be used with SmartBASIC 1.0, SmartWriter, and SmartFiler; CalcPatch directs ADAMcalc output to your dot matrix printer; neither patch includes special printer commands -- works just like the standard ADAM versions
- 000 LinkPatch** (by ORPHANWARE) \$9.95 (retail) \$8.95 (SDP)
 * ADAMlink II telecommunications software with up and down loading of ASCII files; plus directs printer output to your dot matrix

COLECO COPYRIGHTED SOFTWARE

000 SmartLOGO	(data pack only)	\$47.00 (retail)	\$15.95 (SDP)
* Coleco's version of the popular structured language; good for graphics and sound control; 350+ page manual			
000 SmartFILER	(data pack only)	\$19.95 (retail)	\$10.95 (SDP)
* Coleco's general purpose database program; easy electronic filing system; search features; 38 page manual			
000 ADAMcalc	(data pack only)	\$39.00 (retail)	\$15.95 (SDP)
* advanced electronic spreadsheet; comes with sample templates; 154 page manual			
000 SmartLETTERS & FORMS	(disk/data pack)	\$19.95 (retail)	\$9.95 (SDP)
* Includes samples for business, personal, and social letters; \$7.95 on disk			
000 Richard Scarry's Word Bk	(data pack only)	\$19.95 (retail)	\$10.95 (SDP)
* Fun to play game; very colorful animated graphics; educational fun for ages 5-8; reading skills builder			
000 Recipe Filer	(data pack only)	\$14.95 (retail)	\$6.95 (SDP)
* file recipies by name, type of meal, and main ingredient; ADAM will even print out a grocery list for you			
000 Best of Broderbund	(data pack only)	\$14.95 (retail)	\$10.95 (SDP)
* Two fast action games on one tape; futuristic space warrior; the other lets you rescue 64 hostages by chopper			
000 Super ZAXXON	(data pack only)	\$14.95 (retail)	\$5.95 (SDP)
* Coleco's version of the still popular fast-action arcade game			

COLECO ADAM ADD-ONS

000 Exp Mod 2 with Turbo	(cartridge)	\$69.95 (retail)	\$39.95 (SDP)
* tabletop console with arcade-style steering wheel and foot pedal; comes with exciting Turbo cart			
000 Super Action Controllers	(cartridge)	\$59.95 (retail)	\$39.95 (SDP)
* two deluxe hand-held game controllers; has built-in spinner and two extra triggers; includes baseball cart			
000 Roller Controller	(cartridge)	\$49.95 (retail)	\$29.95 (SDP)
* Arcade-style roller ball; comes with slither cartridge			
000 ADAMlink 300 bps MODEM	(ddp)	\$39.95 (retail)	\$30.95 (SDP)
* internal modem for ADAM; includes all attachments			

COLECO Public Domain Titles

(\$5.95 on tape; \$3.95 on disk)

SmartBASIC 2.0: improved interpreter; 49K file; works with or without 64K card
 Pinball/HardHat Mac: latest version with two demo PB games; 1 to 4 players
 ADAMlink II: supports up and down loading of SW compatible ASCII files; comes with docs
 Jeopardy: just like the game show; great graphics; 1 to 3 players
 Super SubRoc: 90K arcade-type game; super graphics; hall of fame; does not require memory expander
 Troll's Tale: easy graphic adventure; supports one player; disk & DDP not compatible
 VideoHustler: graphic billiards game; 1 or 2 players
 Disk Manager: file handling utility; the program that comes with a Coleco disk drive
 SmartBASIC 1.0: a replacement for the BASIC the came with your ADAM
 Cabbage Patch Kids Adventure: exciting game for kids; maneuver doll around moving and stationary obstacles

MISCELLANEOUS SUPPLIES

000 Coleco/LORAN digital data packs	\$29.95 (retail--for 10) \$24.95 (SDP--for 10)	\$3.95 (retail--each) \$2.95 (SDP--each)
* designed and formatted by Loranger Manufacturing; no face label		
000 plain label digital data packs	\$19.95 (retail--for 10) \$16.95 (SDP--for 10)	\$3.45 (retail--each) \$2.25 (SDP--each)
* Sony brand; high quality formatting; no face label		
000 plain label 5.25" disks for ADAM	\$6.95 (retail--for 10) \$4.25 (SDP--for 10)	\$.79 (retail--each) \$.49 (SDP--each)
* double-sided; double density; includes envelope and write protect tabs		
000 printer ribbons for SmartWRITER printer	\$15.95 (retail--for 3) \$14.95 (SDP--for 3)	\$5.95 (retail--each) \$5.25 (SDP--each)
* black ink; standard replacement ribbon cartridge		
000 Panasonic printer ribbon	\$5.45 (retail--each) \$4.95 (SDP--each)	
* black ink; nylon; standard replacement ribbon for 1080, 1080i, 1090, 1091, 1091i, and 1092		
000 standard multipurpose adhesive labels	\$5.45 (retail--for 1000) \$3.95 (SDP--for 1000)	\$2.95 (retail--for 500) \$2.25 (SDP--for 500)
* white, pin-feed, 3 1/2" by 15/16"; fan fold; single column		
000 multipurpose adhesive labels	\$9.95 (retail--for 1000) \$7.95 (SDP--for 1000)	\$6.95 (retail--for 500) \$4.95 (SDP--for 500)
* white, pin-feed, 4" by 1 7/16"; fan fold; single column		
000 word processing computer paper	\$4.25 (retail--for 250 sheets) \$3.45 (SDP--for 250 sheets)	
* white; pin-feed; 9 1/2" by 11"; fan-fold; 20 lb. wt.; clean edge; one part		

EDUCATIONAL SOFTWARE

000 Spanish Vocabularian (by MARATHON COMPUTER)	\$18.95 (retail)	\$16.95 (SDP)
* a unique program for ADAM; includes electronic dictionary; comes with 1600 words; expandable to 7400 words; quizzes; printed study sheets; report cards		
000 QuikFax Quest (by DATA DOCTOR)	\$18.95 (retail)	\$7.95 (SDP)
* three academic quizzes; includes study mode (on - screen and hardcopy); US capitals, world capitals, and Chemistry elements		

HOME/BUSINESS SOFTWARE

000 SoftPACK I (by E&T SOFTWARE)	\$18.95 (retail)	\$18.45 (SDP)
* four menu driven home management programs; SoftCHECK, Checkbook Totalizer, CheckBook Reconciler, and SoftMailer (address filer for labels and envelopes)		
000 Business Pack I (by E&T SOFTWARE)	\$18.95 (retail)	\$18.45 (SDP)
* two useful programs for creating and printing address files; plus two very good programs for inventory control and printing		

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■■■■■ "SDP" stands for Subscriber Discount Price. N&B subscribers generally get a 5% to 25% discount off the manufacturer's retail price of items listed.

■■■■■ Unless otherwise noted, all software is available on disk or datapack.

■■■■■ All DIGITAL EXPRESS storage media (disks and data packs) are warranted to be free from defects in materials and workmanship. If the storage medium proves defective, return it to us for replacement or repair (at our discretion). After 90 days from purchase, a \$3.00 return shipping fee is required.

■■■■■ The product prices listed herein may be subject to change after January 20, 1989.

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CLIP ART

from: PaintMATES09



Public Domain Software Info

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 the quality regarding these packages. If, however, the storage medium itself proves defective within 90 days of purchase, we will replace it free of charge.

You may get any of the volumes described below on digital data pack for \$5.95 or on disk for \$3.95. Subscribers also have an option to get a volume FREE (limit three per calendar month).

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 \$3.00 for shipping costs.

SmartBASIC V1.0 LIBRARY

Each of these volumes is self-booting with SmartBASIC stored on the volume. When you pull the reset, a graphic screen will be displayed as BASIC loads. 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 for easy file selection. Each volume contains over 120K of files.

N&Bgames (volumes 1, 2, & 3): an assortment of text adventures, board games, and animation games.
 N&Bgraph (volumes 1 & 2): a variety of graphics displays and music programs.
 N&Bmath (volumes 1 & 2): several scientific and financial math programs.
 N&Butil (volumes 1 & 2): an assortment of programming utilities.

GRAPHICS FILES LIBRARY

In order to view/use the hi-res picture files in this library you need SmartPAINT (from ShowOFF I), "pix.mgr" (02/87 N&B), "SimplePAINTER" (11/88 N&B), or PowerPAINT.

N&Bpix (volumes 001 thru 020): 13 screen pictures each.
 Art Gallery (volumes 1 & 2, compiled by REEDY SOFTWARE): 13 screen pix each; #2 is smurf-like characters.
 PaintMATES (vol 1-15): small art for use with PowerPAINT (fonts, sprites, clip art, & brushes).
 PaintFORMS (vol 1 - 4): one full page graphic, 3 letterheads, & 1 label for use with PowerPAINT.
 PixManII: switch pictures between RLE, SmartPAINT and PaintMASTER formats; includes SW docs.
 PowerVERSES (vol 1 - 3): BIBLE verses stored as hi-res screens by D.L. DECKER ENTERPRISES.
 SimplePAINTER 1.1: Nice package (graphics printing and enlargement onscreen); many good pgms.

CP/M 2.2 LIBRARY

CP/Mgames (volumes 1 & 2): assorted EBASIC (included) games.
 demo carts: requires 64K XRAM card; music samples, system tester, much more.
 CP/Mutil01: a variety of utility .COM files for CP/M.
 Z80programmer (vols 1 & 2): assorted utilities for advanced programmers; donated by D.L. Decker.
 Graphic Sargon: Converted to graphic chess game by Chris Braymen; comes with doc file.

MISCELLANEOUS COLLECTIONS LIBRARY

MWplus01: a collection of improvements to MultiWrite (required); by Jim Guenzel.
 N&Bacalc01: several paradigm and other files; 148K; by Terry Fowler.
 EZpak: self-booting medium; contains EZmenu & EZcopy.
 ezFILER: self-booting medium; contains nice BASIC address filer.
 SHAPEMAKER: several font shape tables; nice shape design utility; by Guy Cousineau.
 N&Blogo01: a variety of SmartLOGO (required) files.
 One Minute Formatter 2.0: 1 or 2 drives same time; 160K, 320K, or 720K; plus much more.
 MusicBOX (vol 1 & 2): 10 SmartTUNES songs each, plus instructions, and more.
 Guy's Games: self-booting collection of graphic, thinking games.
 Guy's Misc. Utils: assorted BASIC utilities by Guy Cousineau.
 Bowling Diary: self-booting database for tracking bowling performance; by Hector Sanchez.
 ADAM FB Analyzer: helps pick winners with NFL score tracking; by Hector Sanchez.
 MediaMATE: Includes media editors by D.L. Ewing, Brett Lynn, and Guy Cousineau.
 French BASIC: includes numerous enhancements and new commands; includes 2 demos.
 VideoTUNE songs (vol 1&2): 34 songs each for use with VideoTUNES by FutureVISION.
 SOLO PACK (vol 2&3): six new adventures each for use with MageQUEST--PD by Reedy Software.
 Chess Solitaire: excellent volume that lets you see and study famous games; by Al Roginsky.