

SYNTAX^{1.5}

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FIRST CANADIAN ADAM USERS' GROUP
P.O. Box 547 Victoria Station
Westmount, P. Q.
H3Z 2Y6

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L E T T E R S

Dear Editor,

I read about the efforts some users go through to get less expensive multi-strike ribbons for their Adam. Boy have we got it easy in Vancouver. All we do is take our old cartridges to Pacific Ribbon and Carbon Co. and they refill them as you wait and charge \$3.95 each. That's a far cry from the exorbitant prices one had to pay for Coleco cartridges and a lot less hassle than buying another brand and reloading it into the Adam cartridge. Surely, there must be some company in the eastern cities that can do the same thing as Pacific does here.

I read about the Nibble Notch in a computer magazine. This little gadget allows you to notch your single sided disks turning them into a double sided disk. Have any of your readers used the Nibble Notch and if so does it do the job?

Bill Mayers
North Vancouver, B.C.

Thanks for the printer ribbon information, Bill. I hope some of you Westerners take advantage of this service. On a similar note, I have heard that it's possible to put different colored ribbons in your printer cartridges, so now you can really go crazy! If any of you are aware of similar services in other parts of the country don't hesitate to write, you'll be helping us all.

In regards to your question about the Nibble Notch, yes we are aware of this item. We also know how to "double side" disks. Disks hold 160 K of information, if you format the other side you double this amount. You may have noticed that some computers have drives that can read double sided disks. The difference between their type of double sidedness and the one that we will learn how to make is that like an audio cassette player with auto reverse, you don't have to turn the tape (disk for us, of course) over to "play" the other side. Our version would have to be flipped over in order to access the material on the other side. Hence, their name - floppy disks! The two sides are handled as if they are 2 different disks. Each side has to be formatted and you could put whatever you want on one side and it will have no effect on the other. The reason is that our disk drive has only one read/write head for one side of the disk. The other type of double siders usually have two heads. This method allows for continuous data recording past 160 K and greater ease of use (no flipping).

The disks that we buy are called single sided double density disks. They are called single sided because the side that we do not use did not pass the quality test that would have allowed it to become a double sided disk. So with one perfectly good side available, they are sold as single sided disks. They don't make the manufacturer as much money as a double sided disk but selling them is certainly better than throwing them away. So the first thing to watch out for, when you decide to double side a disk for Adam, is to remember that you may get bad blocks when you try and format the other side. However, through practical experience we

have learned that 9 times out of 10, we can safely format the bad side without any problems. Anyway, now you know.

When you buy a Nibble Notch what then are you getting? And what are you doing to your disk? Well, I remember the first time I had heard of the Nibble Notch and what it can do. I wanted to run out and buy one right away. I soon found out, however, that they went for around \$20.00. After recovering from the initial shock, I asked myself these same questions.

The Nibble Notch bites out a square on the opposite side of the disk. When the disk is turned upside down in order to use the other side, the notch lets a sensor shine through telling Adam that the disk can be written to. This is why you cover up the regular notch if you want to make it write-protected. The size or squareness of the notch is irrelevant. All that's important is that the light gets through. Therefore, the Nibble Notch could be replaced with my old newspaper punch. It is an overpriced and quite unnecessary item. So the hole looks like a half circle, I don't care, as long as it works.

That's half the story, however. You may have noticed the small hole near the center hub of the disk. You guessed it, it is for another sensor. If you rotate the disk inside the sleeve you will eventually see a hole in the actual disk that aligns with the hole in its sleeve. Again a light shines through; this time it is used for timing. The timing is used to position the disk head correctly when reading or writing data. To punch a hole like the one that already exists in the sleeve on the opposite side is a little more tricky. This time you must open the sleeve, carefully slip the disk out, and then with your punch, pierce the appropriate hole in the sleeve. When you go to open up the sleeve it is always best to lift up the seal at the back of the disk because it has the least connections that you have to break. Once you've punched the new timing hole reseal the fold with plastic airplane glue. You now have a "flippy" disk.

A note of caution. It is very easy to damage your disk when you are trying to make a flippy, especially when you have it out of its protective sleeve. Also note that there are some risks involved in using flippies. When only one side is used, dust trapped between the disk surface and the inside of its sleeve is eventually spun off to the end of the disk. When you turn the disk over, it is spun in the opposite direction reapplying the dust back onto the disk. Although we haven't had any problems, we suspect that given enough time, our flippies will wear out faster than our floppies. So don't put your most important stuff on your flippies. If you do use flippies always use the same side until it starts to wear out, then use the other side exclusively.

Dear FCAUG,

I've been doing a lot more experimenting using knowledge acquired through SYNTAX, and I've come up with a lot, including a way of beating HGR color bleeding (sort of).

The articles on sprites and character redefinition revealed one of the many routines in BASIC OS which can save the trouble of assembling them oneself. However, it has many shortcomings. If you want to blank a large part of memory (as TEXT, GR etc. all do) you need a buffer as large as the area in VRAM to be blanked; rather inconvenient. However, the TEXT routine uses another OS routine which doesn't require a buffer. Its jump table address is 64806; the jump instruction there reveals the actual routine at 57433. To use it, you load the HL register pair with the VRAM address, DE with the area size to be filled (counting from HL) and A with the number 0-255 to be outputted.

Since the graphics routines must also make use of that routine (since a buffer of 24K is necessary with the 57344 routine), I searched the memory for 205 38 253 (CALL 64806). Jackpot! The GR and the two HGR's are found! You can set the default background color in HGR to any other color, HPLOTting over it WILL NOT result in bleeding! Changing the real background color will allow for THREE colors where there once were only two. (once sprites are mastered).

(P.S.) Did you know that everything typed into Adam while in BASIC is kept in an input buffer until <RETURN> is pressed? The buffer is located at address 16247.

James May
Thorold, Ont.

James, you have provided us with an overwhelming amount of useful information in your letters. First off, we'd like to apologize to you (and any others) who have written in and not had letters as good as the ones you send in published. We are still checking some of your material and will put together an article based around a lot of your findings next issue. Everything you've said so far seems to check out. If you have more information, feel free to send it in so that we can incorporate it in the article as well. We hope that you were not discouraged by not hearing from us till now. We have been doing everything but ignoring your contributions, so keep up the good work.

CORRECTIONS - HANGMAN program #5 (SYNTAX 1.1) Substitute these new lines and renumber line 10 as line 95.

```
2 INPUT "Un numero SVP, A number please"; n
20 HGR: HOME: m$ = "": k$ = ""
80 t = 0: FOR i = 1 TO m: k$ = k$+"_": NEXT
95 IF k$ = m$ THEN 270
110 PRINT "Quelle lettre? What letter?"; : GET 1$ = CHR$(3) THEN
END: PRINT m$
170 FOR i = 2 TO m: IF MID$(m$, i, 1) = 1$ THEN k$ = LEFT$(k$,
i-1)+1$+MID$(k$, i+1, m-i): f = 1
205 IF f = 1 THEN 220
300 FOR i = 1 TO 9000: NEXT: GOTO 20
1215 FOR i = 0 TO 2*pi STEP .02
```

BOOK REVIEW: COLECO ADAM USER'S HANDBOOK
by Weber Systems Inc. (1984)
Ballantine Books
201 East 50th St., N.Y., NY 10022

There was a time when Adam books were readily available in most local bookstores. But with the Adam's demise, Adam books have become scarce to say the least. Hence, we have included the above address in case you decide you might like to obtain this particular handbook.

In regards to Weber Systems, I have seen a multitude of handbooks by them for Apple, IBM and many other computers. It seems that with the arrival of any new microprocessor on the market, Weber is there with a new handbook. It makes us wonder whether there is a room full of writers churning out pages as soon as a new unit hits the market. Nevertheless, this book is just fine for beginners and a great reference manual for more advanced individuals.

The structure of the book follows a definite pattern for easy reading and reference. The following is a chapter by chapter breakdown of the book.

- 1) - provides an overview of the Adam with introductory concepts such as bits, bytes, ROM, RAM, etc.
- 2) - contains complete Adam installation procedures and a fair troubleshooting guide. This is especially useful for beginners as it helps to overcome anxieties most often associated with using something as complex as a computer for the first time. It is not a definitive guide to troubleshooting by any means. The chapter also mentions the Adam toll-free hotline which I'm sure most of you have tried and received the all too familiar busy signal.
- 3) - introduces us to the Adam wordprocessor; SmartWriter. Their interpretation of this ROM chip is neat, clear and concise. Every SmartKey is explained in enough detail that anybody reading these 30 odd pages will get the hang of it in a short period of time. Weber even shows you how to print out a calendar using the MOVE/COPY function, a key I rarely use. A tree structure of the standard menu is supplied showing you every possible command sequence in SmartWriter.
- 4-11) - a detailed look at SmartBASIC from the development of Basic at Dartmouth College in the early sixties to Adam graphics. Each chapter covers the various concepts of Basic with a follow up example. The material presented here should help to refine programming skills even for the more experienced users.
- 12) - this chapter consists of a Basic reference guide. All that was said in the preceding chapters is condensed and summarized in this one. If your memory should ever need to be refreshed on a certain subject or procedure, a quick look in the index will lead you to the page in this reference section. Note that not all is

covered in this book (e.g. sprites). PEEKS and POKES cover only two pages. Therefore, we must seriously question their advertising hype; "The Only Manual You'll Ever Need".

13) - this is a good chapter for beginner programmers and for those looking for programs to add to their library. There are four programs in this section. These being: METRIC CONVERSIONS, LOAN ANALYZER, BREAKEVEN ANALYSIS, TELEPHONE BOOK and FILECOPIER found in chapter 10. As of this writing, we're only entered two.

i) FILECOPIER - basically a single drive text copier. That is, it won't transfer files from one drive to another. To date I have had problems copying files. Certain lines would always be deleted in the backup file. I'm quite sure it is an error on my part. However, I do feel it is of limited value, since it is just as easy to use SmartWriter or the load and save commands in Basic. But it's still a good program to learn from.

ii) TELEPHONE BOOK - this one takes a while to type being nine pages long but it does have some attractive features. It allows you to make a file of names, addresses, and phone numbers. The program then utilizes this file to add, delete, list or print labels of your friends, relatives, etc. The list command allows you to see your directory on the screen or prints it out in its entirety for easy reference use next to your phone.

In conclusion, this book holds its own. I use it quite often and defend it against Adam Companion believers. They are very similar but I find the Adam User's Handbook to be clearer and easier to read. You can quickly understand what is being explained in every page and there is even room to write your own notes. Adam's Companion may be more thorough but I find it difficult to read.

Adam Graphics: BASIC Subroutines

This article will outline a framework which you can use to write your own BASIC programs in the TEXT mode. We will look at how to write useful and easy to use BASIC subroutines which make use of machine code routines. These subroutines will be used in a game (refer to p.19 for the listing, the complete game will be printed next issue) and will be of a general nature so that you can apply them in any game you may decide to write.

The game scenario is as follows; you are piloting a space craft on the moon. You are given different moon bases to go to. You try to reach as many bases as possible before your fuel runs out or before you crash. The program uses 3 sprites, redefines the shape and color of some of the text characters, and uses the sound chip to produce white noise of varying loudness. All this is accomplished using BASIC subroutines defined and explained below.

The subroutine at lines 3000 to 3050 poke the machine code routines that are used in the program. The video RAM read and write routines you have seen in previous articles. The sound routine

has also appeared in a previous SYNTAX. The LOMEM statement in line 100 must be there for these routines to operate properly.

The subroutine at line 3100 will break up a video address passed in the variable, za, into the least and most significant bytes and poke them where the VREAD and VWRITE routines can use them. The subroutine is used by several of the other subroutines.

The subroutine at lines 3200 to 3210 will read the character code at a location on the screen. You supply the screen's row coordinate in the variable, zr, and the column coordinate in the variable, zc. The routine will return the character code in the variable zb. The screen coordinates are the same as the HTAB and VTAB statements. The equation in line 3200 computes the video address and limits the screen coordinates to their proper limits. As mentioned in last issue's article, there are 2 screen tables in VRAM, the subroutine only checks one of these so flashing characters might not be checked correctly.

The subroutine at line 3300 will place a sprite's 4 attribute bytes into the Sprite Attribute table in VRAM. You tell the routine which of the 32 sprites you are using by passing a sprite number in zn. This number is from 0 to 31. If, for example, you are using 1 sprite then you would make zn equal to 0. You can't use a sprite with a higher number if you haven't used any previous ones before. If you use several sprites and wish to get rid of a lower numbered sprite, then write that sprite off the screen by giving it a row value between 191 and 255 (excluding 208, since as mentioned before, it will get rid of all higher numbered sprites as well). The sprites' row, column, shape definition value, and color are passed in the variables zr, zc, zs, and zh respectively.

The subroutine at line 3400 is similar to the one at 3300 but will only write a sprite's row and column values to VRAM.

Line 3500 is a subroutine which produces white noise from the sound chip. You may change the volume of the sound by passing a volume byte in the variable, vol. A volume byte of 240 will make the noise the loudest, a value of 255 will turn the noise off. Any value in between will give different levels of loudness.

The subroutine in lines 3600 to 3650 makes some text characters into colored blocks. The characters "@" (ASCII 64 or at location $64*8 = 512$ in VRAM), "H", "P", and "X" (at location 704 in VRAM, and the other value in the FOR loop of line 3610) are redefined. This routine can be modified to read in your own shapes and colors from a DATA statement.

The subroutine at lines 3700 to 3740 loads the 3 sprite shapes that will be used in the game. The shapes were created using the sprite editor program presented in the last article. If you want to define your own shapes then change the data in the DATA statements of lines 3710 to 3730.

The CP/M CORNER

With this issue we start the first installment of what will become a regular feature of SYNTAX. We call it "CP/M Corner". Each issue will have at least one article pertaining to CP/M 2.2 usage for Adam users. Some issues will have more than one CP/M article. We know that not everyone has CP/M. However, we feel that it is such an important addition to the Adam system that we must continue to explore it. And if you haven't started exploring CP/M, it's high time that you did! Through our descriptions on how to use these programs, we hope to take a lot of the mystery out of them. You'll also learn where to find the programs (many are free public domain programs) so that you can try them yourselves. If you don't have CP/M yet, these articles should help to get you interested in using it. If you do have CP/M, we will help you to get further involved in the world of CP/M. You won't be sorry that you did.

The first subject I'd like to talk about is CP/M fixes. Digital Research, the makers of CP/M, have announced two to the Adam package that Coleco sells. Although we have not seen any problems with ASM.COM, we have seen some with PIP.COM. The following explains how to fix these two CP/M files.

Digital Research has released two patches of interest to those with the ADAM CP/M package to correct certain bugs in the ASM.COM and PIP.COM programs that are common to all versions of CP/M 2.2. These bugs won't cause problems with most uses, but can crop up particularly in object file transfers under PIP.

The copyright is owned by Digital Research but distribution is approved to all people operating CP/M 2.2 (and wouldn't do anyone else any good anyway!) The patches and the installation instructions follow for ADAM implementation. Lower case is what you type, upper case is typed by ADAM.

```
A>ddt asm.com          A>ddt pip.com          1174 mov a,m
DDT V2.2                DDT V2.2                1175 mvi m,0
NEXT PC                 NEXT PC                 1177 inr a
2300 0100                2000 0100                1178 dcx h
-a1dad                  -a0713                  1179 mov m,a
1DAD call 1b8d           0713 lda 1e04            117A .
1DB0 .                  0716 lxi h,1f5e         -a1640
-a1b8d                  0719 .                  1640 lda 1f5e
1B8D call 1352           -a1099                  1643 .
1B90 ora a              1099 lda 1f5e           -g0
1B91 jz 1db5            109C                    A>era pip.com
1B94 ret                -a1168                  A>save 31 pip.com
1B95 .                  1168 lxi h,1f62         A>
-g0                      116B mov a,m
                          116C sta 1df7
                          116F mvi m,0
                          1171 lxi h,1df9
```


Type this in very carefully. Note the differences between lower case "L" and the numeral "1". If ADAM types any addresses other than those given above, be aware that there may be a problem. It is suggested that you patch a backup disk first. Once you have created the patch and exited DDT with a "g0", you can put your backup disk in the drive and log it in with a Control-C before using the SAVE command.

John Moore
Downloaded From ADAM SmartLINK.

SYNTAX CP/M Public Domain Software

Currently we are compiling public domain CP/M programs for our members. Where necessary we are debugging them and/or modifying them for Adam. Certainly all the programs will be tested and run by us before we make them available to you. Hopefully, this will take out a lot of the pain, time and cost that would normally be involved if many of you tried to do this yourselves. This should be especially helpful to those who do not live in major urban areas. In addition, we know that even if you do find a source of public domain software, there is so much of it out there that it is often hard to know where to start. So if we can help you to get a start on using this vast information resource, we feel that we will have done our job.

If you have access to a public domain program and you think that other members could benefit from its use, send it in. We'll look at it and try to iron out any problems that there may be with it before we pass it on to other members. Most public domain programs come with a large ".doc" file which can often be larger than the ".com" file itself. It contains all the information that you need to run the file (like a user's and technical manual in one) and sections on applications, known limitations and ideas for future improvements. So don't ever forget to send or receive the doc file for a public domain CP/M program.

Several files can usually fit on one tape, less on a disk. We will make them available on both formats (disk size capacity) so keep this in mind when you ask for a program. Cost is \$10.00 per package to cover labor, postage, and some of the costs involved in tracking down, fixing up, and compiling the programs. If you want the doc files already printed out, we can also provide copies for \$5.00 extra. Please try and be clear as to what you want when ordering. Presently we have available the following communication programs for Adam.

- 1- a) MDM7.COM w/ 2 .doc files
 w/ 2 library files, M7LIB.COM and M7FNK.COM
- b) MODEM7.COM - alternate MODEM7 program
- 2) MEX.COM w/ 1 .doc file - advanced modem program
- 3) ADAMBOOT.COM - CP/M program used with AdamLink 2 in order to up/down load CP/M binary files.

PROGRAM REVIEWS

MODEM 7: A CP/M Modem Program

Believe it or not AdamLink 2, the must-have modem program for Adam modem users, is not the last word in modem programs. There are many limitations to this program. One is quite serious. You cannot upload more than 3 pages of text to another computer. This has to do with the file transfer protocol that Adam uses, or lack thereof. AdamLink 2 does not send the proper signal to the receiving computer and after 3 pages the other computer stops listening.

What else can AdamLink 2 not do? Well, you are not able to transmit binary files. This is not too bad for most SmartBasic and all text files but in terms of having a complete modem program this simply won't do. CP/M users are especially affected by this situation since all CP/M executable files are binary.

The solution would normally be to go out and buy a complete modem program for the Adam. Unfortunately, no one makes one. However, there are 2 ways around this problem. One is to keep using the AdamLink 2 program and whenever you want to get CP/M executable files, use a partial modem program written for the Adam called "AdamBoot". After getting to the point where you want to transmit a ".com" file you remove AdamLink 2 and then boot AdamBoot. Note here that booting up AdamBoot does not disconnect your line, so don't worry about that. Now you can make your binary file transfer. When finished it is good user protocol to log off properly. This involves re-booting AdamLink 2 and then logging off. This method is a little awkward but at least it works.

Your second option is to get your hands on a full modem program, that can do everything you need. Although commercially sold communications programs for CP/M are available, we recommend MODEM7.COM. It does everything you will most probably need and best of all, like many CP/M programs, it is free. Before we look at the MODEM7.COM program, let's look briefly at its history. CP/M itself has been around for so long that many useful programs have been developed in the field, often by several people. That many useful and free programs are now available should come as no surprise. The development, or more accurately, the evolution of MODEM 7 illustrates this unique phenomenon perfectly.

MODEM 7 traces its origins back to the dawn of CP/M, 1977 to be exact - real prehistoric stuff! At the time, and I'm now paraphrasing from the .doc file, the program was used to simply transfer a file from one computer to another. Over the years many additions and changes were made to it. Some routines were changed for the better, for efficiency or expansion purposes, until MODEM 7 in its full form was arrived at.

There is a good reason why this unlikely evolution has come about. First and foremost was the fact that the program was in the public domain. Second was the availability of the source code

to programmers so that they could examine and modify the program. Third was the modular design of the program. This design allowed for easy transfer of the program from one computer to another. Fourth was the unselfish cooperation between programmers in developing a truly fine package. It may be argued, of course, that this altruism on behalf of the programmers was the direct result of point one. A new development could be passed on and incorporated into another revision this way, and was most probably done with a fair degree of regularity.

Before we look at the program, let's define a few terms. This will also help us to understand the true power of the program when we come to talk of it in specific terms. With this and any modem program, there are 2 operating modes. The first mode that I'll discuss is called the command mode. With AdamLink 2, this is the mode with all the SmartKeys on the bottom of the screen. It is in this mode that you dial the numbers and the mode that you get to after pressing <WILDCARD> whenever you want to transmit or receive files or change parameters. Since file transfer is the whole raison d'etre for modems you can see why we were particularly displeased with AdamLink 1 when it first came out (see issue 1.1). And as we just mentioned, so important is this mode that this was the only operational mode for MODEM 7 when it first came out.

The second mode is called the terminal mode. This is mostly used for BBS communication. In modem-to-modem communication it is used to converse but the telephone is really the most effective communications device at your disposal. Use the terminal mode to set up and ready a file transfer, that's really the only use for it.

Some programs allow terminal screen capture. It's a sort of blend of the two modes. This is the only type of downloading that AdamLink 2 can do. With this method you copy anything uploaded to you as well as anything you or the other person types to the screen. The file stays active because the downloading function is not deactivated until you manually do this. For AdamLink 2 this is done by hitting <UNDO> in the terminal mode.

The next thing to look at is duplex. There are 2 types of duplex: full and half. Full duplex is used when communicating with BBS's. When you type a character it is sent to the other computer's screen first and then displayed on your screen. If you want to test this try calling a BBS on the other side of the country on full duplex. What you'll see is an almost imperceptible delay as the image races to that computer and then back to your screen. It's an expensive proposition so most of you will just have to take my word on this one.

Half duplex is used for Adam to Adam transmissions via AdamLink. Each computer writes its input to its screen first and then sends it out to the other computer's screen. Another type of half duplex is available (we'll call it echo). This is the kind that BBS's use. One computer uses full duplex and the other uses echo half duplex setting. If the long distance experiment described

above is tried with these settings, the results will be the same for the person who set his modem to full duplex.

In its present form, MODEM 7, incorporates all of the above parameter options. As well, moving between these parameters is very easy. To get to full duplex, you type "T". "L" gets you into half duplex and "E" into echo half duplex. Once in one of these terminal modes you switch to the command mode by pressing ^E.

Some of MODEM 7's features include automatic dialing of any one number from a library that comes with MODEM 7. This library file is called M7LIB.COM. You use it to enter numbers that you dial frequently. Then when you want to dial them you access them by typing a one letter code. Once you've dialled the number, you can then go right into the terminal mode when contact is made (like AdamLink 2) or go to the command mode first. Inside the MODEM 7 program is another file that stores frequently used phrases. You get a file called M7FNK.COM that is used to modify your phrases. It's a good idea to enter things like your name, "Hi, are you there?" and "Bye, talk to you later" - anything that you 'll have to type often and want to print at the simultaneous touch of 2 keys. When you get MODEM 7 the procedure is press "^" and a number at the same time. Note that the "^" does not refer to "CONTROL" in this case but the character "^". This character can be changed if you wish.

MODEM 7 can take several commands on one line. Thus you could put the modem into the terminal mode, download some files and then have the program close your files, hang up the phone, and then leave the program. Multiple file transfers can be made using the "batch" mode. This is extremely easy to use. All the receiver has to do is type the 2 commands "RB" and you will download a full disk of material in one operation. The sender would type "SB [filename] [filename] etc". Ambiguous file names can be used (ie *.*). Single file transfers are sent the same way but with only one filename and no "B" present. Special error checking (two types: CRC and CHECKSUM) insure good file transfer. The number of records and the transmission time is also available. This format is good for ASCII and binary files. If you ever get to a BBS that asks what type of protocol you are using say "XMODEM with CRC error checking". This allows certain match ups between Adam and the BBS that are necessary for proper file transfer. We won't go into the details here.

The text downloading procedure as found in AdamLink 2 can also be used by entering "T [filename]" in the command mode (of course E or L can be used in place of T if necessary). After returning to the terminal mode, ^Y starts capturing text, ^and ^R stops it. You can stop and start text capture as often as you like. If you want to you can download files right from the terminal mode (like AdamLink 2), just type ^T. You are then asked the name of the file to be sent and that's it. This type of file transfer uses yet another type of error checking called XON/XOFF.

So far, what I've tried to do in this article is to give you a

short look at MODEM 7. There is a tremendous amount of flexibility to this program and MODEM 7 can be adapted to just about anyone's needs. However, the only way to really appreciate this program is to try it yourself. MODEM 7 comes with the two library files previously mentioned, two .doc files (one is a general MODEM 7 file, the other one covers the basic points and is very easy to read; it concerns itself with MODEM 7 for Adam, so read it first), and an alternate version of MODEM 7 that has a larger telephone library file and doesn't beep when you load it in the first time. This will be valuable to people who like to dial their numbers with the telephone so that they can tell if the line is busy or not. Sometimes the beep can prevent contact from being made.

When you look at the documentation for MODEM 7, you'll see references made to PMMI modems and other things that you probably do not understand. Don't worry. Just remember that this .doc was written as a general .doc file. There are some things that MODEM 7 cannot do that are stated in this file. You cannot change the BAUD rate. This is the speed that the modem transmits at. You can not auto answer. But these are limitations of the modem, not the modem program. These limitations, incidentally are being looked at, so we hope that one day we will be able to announce a fix for these problems. Another point that I'd like to make is one that concerns the modularized design of the program that I referred to earlier. Even though all the MODEM 7 programs run on CP/M, there are differences involved between each machine and the particular modem that is being used. Now this doesn't affect us, you say, but it does. MODEM 7 was not written for Adam, it was adapted from a generic that has been used on other computers for quite some time now. Everything in the program is the same from one system to the next except for the part that concerns itself with the interaction between the program and the computer it is running on. Each computer has an overlay written for it that is tagged on to the front of the program so that it works correctly for the system you are running. There is a procedure that is outlined at the end of the .doc file that explains this. If you get the program from us (see the ordering procedure elsewhere in this issue), we will have taken care of this so you can ignore this initial installation problem and get right to using the program. Getting back to my original point, it is this modularization, this use of overlays that also contributes to the power of MODEM 7.

The only minor criticism that I have is the lack of an on-line time clock as found with the AdamLink software. I'll keep using MODEM 7 and maybe we can discuss applications and other fun stuff in future issues of SYNTAX.

Next issue we will look at yet another CP/M modem program called MEX. This program is harder to use than MODEM 7 and is often too complex for its own good but it can do some things that even MODEM 7 can't do.

C O R R E C T I O N - (SYNTAX 1.4, LETTERS Section p.3)

The Basic interpreter is stored starting at block 2 and ends at block 29, therefore taking up a total of 28 blocks.

Product Review: SmartTYPE

Developer: Reedy Software, 10085 - 60th St. S.E., Alto, MI 49302

Price: For SmartTYPE or Reedy Library - each US \$25 DP, \$23 Disk

SmartTYPE is a word processing program written in SmartBasic. The instruction manual you receive with the software introduces the features and guidelines required to operate SmartTYPE. A few features are definitely unique and even a step ahead of SmartWriter's but it does have its drawbacks.

SmartTYPE is set up to be menu driven using ADAM's SmartKeys. The work space is divided into 60 rows and anywhere from 10 to 80 columns depending on what you require. The limits are here due to the fact that it is written in SmartBasic and uses quite a bit of memory. You must save your text page by page. After having done this you must clear your work space. You can then begin your next page which you will have to save under a different filename.

Most of the inherent limitations of SmartTYPE are related to it being a Basic program. One of the most frustrating aspects in using SmartTYPE was having to press <RETURN> after reaching the end of each row. I would be typing along and then realize I wasn't going anywhere and that I sometimes had only half a word at the end of my row. Unlike SmartWriter, SmartTYPE does not wrap around. This is one feature I missed - to be able to blindly type away without worrying about words being cut off in strange ways at the end of a line. Another problem I came across was that of strange characters appearing in the text after recalling a file. The manual states that this is a problem in SmartBasic and that it happens only sometimes. Well, it happened on my first try, so it makes you wonder what sometimes means. The error can be corrected by editing the wrong characters. I also did not like the delay encountered after pressing a SmartKey. SmartWriter is much faster. Printing with SmartTYPE is rather slow since it is done in one direction only.

SmartTYPE does, however, have some redeeming qualities. It can center with a press of a SmartKey and you have the option of printing in two columns like in newspapers and magazines. By far the best feature found in SmartTYPE is its ability to justify text in both directions (left and right). This feature which is lacking in SmartWriter, is what makes your text "flush" on both sides instead of ragged looking. I wish that these features could somehow be incorporated into SmartWriter. At the very least, I would have liked to see compatibility between the two. As it is, SmartTYPE seems to have been designed to fill specific needs not met with the built-in word processor. As such, it should be considered an alternative to rather than a complete new word processing program.

Storing and retrieving files is very similar to SmartWriter, i.e. by pressing the STORE/GET Key and then using the SmartKeys. In this respect, I was hoping that I could utilize the two column

printing feature found in SmartTYPE, but alas it only operates one way. After typing under SmartTYPE and storing the file, one can retrieve the file using SmartWriter. The file is the same with return symbols at the end of each row along with added information such as the number of rows and columns. To use this file with SmartWriter you simply edit out the extra characters. However, the opposite is not possible. You cannot store a file under SmartWriter and then retrieve it using SmartTYPE. If you want to use any files you created under SmartWriter, you will have to retype them if you want to take advantage of SmartTYPE's features.

Even with its limitations, the fact that one can print in two columns and justify make it an interesting program to consider if your word processing needs require this. For those situations where you absolutely need access to these type of features, it will not fail you. I also like the fact that it is written in Basic. It shows what a little ingenuity and patience can do. Who knows, given some time, SmartTYPE version 5 may meet all my needs and yours.

Product Review: The Reedy Library

The Reedy Library consists of a collection of 12 SmartBasic programs and subroutines available on data pack or disk.

1) MICHIGANA: A rather long text game consisting of four levels and fifty rooms. The object of the game is to obtain the golden idol and leave the house. But to do so you must look for clues and battle monsters as you weave your way through the large house of deceased owner Daryl Misteree, who was thought to be a Warlock. I, as yet, have not gotten too far into the game but I have noticed some discrepancies. One being that I discover a Magic Sword which I presume would be useful in killing a future encountered monster. The program tells me I see the sword yet every command I make (get, take, etc.) does not have effect. The message says there is no sword. Flaw or puzzle? Another one is where I encounter stairs. The computer lets me know which directions I can take; either N, S, W, or DOWN. However, I cannot get down the stairs. I tried CLIMB, DOWN, D, DO, DOW, GO DOWN, etc. So there must be flaws in the program. I have not looked at the listing yet, since I wish to try some other possibilities in solving the game and the quirks encountered.

2-3) VideoPAINT and LOGO: A low resolution picture editor and example. VideoPAINT reminds me of the "etch-a-sketch" board most of us played with as kids taken a step further since you can save the pictures you draw. The program allows you to change colors, lift the brush, draw vertical, diagonal, and horizontal lines. The diagonal is a step line of vertical and horizontal lines. Reedy has supplied an example of their LOGO to give you an idea of what you can do. It is definitely easy to use as they claim.

4) TextEDITOR: A subroutine for printing in HGR and HGR2 graphic

modes. It lets you print bold and colorful characters.

5) SUBmaker: A screen subroutine maker. It adds a picture subroutine with DATA statements to an existing program. SUBmaker loads the picture you drew using VideoPAINT into memory and then asks you to specify the filename and where in the program you want the subroutine to start. Great for adding a colorful title or logo to games and other programs you create.

6-7) SAVESUB and LOADSUB: These two subroutines are similar to SUBmaker as they allow you to make use of picture files in your programs. SAVESUB is used to save a picture presently on the screen into memory. LOADSUB retrieves a picture file from a data pack or disk and loads it into memory and then onto the screen. The main difference between having these two subroutines within your program or using SUBmaker is one of speed of execution. The latter is more efficient. The first method involves loading the picture into memory each time the program is RUN which can be very time-consuming using the tape drive(s).

8-9) SAVEPICT and LOADPICT: These two small programs quickly store and retrieve pictures for you. To save one of your on-screen creations, you would just RUN SAVEPICT and then give it a filename. This will be done without affecting your picture on the screen. To load a picture file you can, of course, use either LOADPICT or VideoPAINT. If you just want to view stored picture files LOADPICT will give you faster access.

10) ADAMadding: A multi-skill adding practice. An educational program designed to sharpen the user's math skills. It's a good program for parents with young children. Unfortunately, I feel the program is somewhat limited since it only covers addition. A better program would have included a mixture of all 4 arithmetic functions.

11) ADAMCode: It enables you to encode and decode messages. Another good program for children to play and learn with. ADAMCode takes the ASCII(American Standard Code For Information) code of a character and subtracts 13. A list of the code can be printed out in the encode mode. Therefore, you can use it to leave messages among the informed few.

12) DEC-TO-HEX: Prints out a chart of decimal and their equivalent hexadecimal numbers which you can keep for reference when working in assembly language.

Overall, this package will fill several user needs as it provides among other things some easy to use subroutines which can greatly enhance your programs. It includes a good range of programs and will provide many hours of sitting in front of your Adam. Also included in the instruction booklet are several programming tips which you may find useful. My only complaint is with MICHIGANA. However, I am not sure if it is the program or me.

Product Review: VIEWLOAD V1.0

Developer: Practical Programs P.O. Box 244, Kalamazoo, MI 49005

Price: U.S. \$10.95 Disk or DP

This small program is designed to help you better organize your Basic programs on DP or disk. VIEWLOAD allows you to display up to 32 program names on one screen. Using the SmartKeys, you can then elect to LOAD or RUN the program you select with the arrow keys. The other SmartKeys functions are as follows: to CATALOG the source media, to exit the program and return to SmartBasic, to go directly to SmartWriter and more importantly to create your menu screen containing the names of programs which you want to be able to access with simple key strokes only.

SmartKey III is assigned the "CONFIG" function. Selecting this option redefines the keys for changing the screen colors or accessing the main program. The latter is where you input your program names by assigning a name to each variable in lines 501 to 532. You can also enter a title name to your filename display by editing line 590. Once you've entered your data you need to save your modified VIEWLOAD program. If you want to have this customised version load automatically save it using the HELLO filename on your Basic tape or disk:

After using this program on several occasions, I find it most useful for putting some finishing touches to collections of valuable programs you intend to keep permanent for some time. I used it on my Basic Bonanza program package by Martin Consulting. It gives me all the program names on one nice-looking screen plus the added convenience of being able to select any program using the arrow keys and to RUN or LOAD it via the SmartKeys.

Although I like the program, I feel it is overpriced given its limited features. Their FASTRUN type files can also be used with VIEWLOAD. More on this next issue when we will review the BASIC MANAGER program also by Practical Programs (see ad elsewhere in this issue).

*** R E N E W A L N O T I C E ***

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```

100 & Submitted by Jocelyn Labrie (1985)
110 & Sender did not indicate his source
120 &
130 & Press "1" twice on keypad to make squares
140 & First press = lower corner of square, 2nd press = upper corner
150 & Press "2" three times to make a triangle
160 & Press "3" twice to join 2 dots you made to create a line
170 & Press "*" to lift crayon
180 & Press "#" to put crayon down
190 &
200 HIMEM :51399; HGR2: HCOLOR = 15
210 DATA 62,0,211,191,201,62,00,211,190,201
220 FOR x = 51400 TO 51409: READ p: POKE x, p: NEXT
230 a = 0: GOSUB 640: a = 120: GOSUB 640
240 DATA 64,224,112,56,28,14,7,1
250 FOR x = 1 TO 8: READ d: GOSUB 650: NEXT
260 a = 128: GOSUB 640: a = 127: GOSUB 640
270 d = 70: GOSUB 650: GOSUB 650: d = 0: GOSUB 650
280 d = 7: GOSUB 650: d = 208: GOSUB 650
290 a = 127: GOSUB 640: a = 133: GOSUB 640
300 a = 127: GOSUB 640: a = 134: GOSUB 640
310 y = 70: x = 70: e = 2
320 t = PDL(5)
330 IF t = 1 AND x > 1 THEN x = x-1: GOTO 440
340 IF t = 3 AND x > 1 AND y < 240 THEN x = x-1: y = y+1: GOTO 440
350 IF t = 2 AND y < 240 THEN y = y+1: GOTO 440
360 IF t = 6 AND y < 240 AND x < 175 THEN x = x+1: y = y+1: GOTO 440
370 IF t = 4 AND x < 175 THEN x = x+1: GOTO 440
380 IF t = 9 AND x > 1 AND y > 1 THEN x = x-1: y = y-1: GOTO 440
390 IF t = 8 AND y > 1 THEN y = y-1: GOTO 440
400 IF t = 12 AND y > 1 AND x < 240 THEN y = y-1: x = x+1: GOTO 440
410 IF PDL(13) = 10 THEN e = 1
420 IF PDL(13) = 11 THEN e = 2
430 IF PDL(7) = 1 THEN RUN
440 IF PDL(13) = 1 THEN GOSUB 500
450 IF PDL(13) = 2 THEN GOSUB 540
460 IF PDL(13) = 3 THEN GOSUB 610
470 IF e = 2 THEN HPLOT y+7, x+8
480 a = 128: GOSUB 640: a = 127: GOSUB 640
490 d = x: GOSUB 650: d = y: GOSUB 650: GOTO 320
500 IF g = 0 THEN g = y: f = x: FOR i = 1 TO 1000: NEXT: RETURN
510 HPLLOT g+7, f+8 TO y+7, f+8: HPLLOT y+7, f+8 TO y+7, x+8
520 HPLLOT y+7, x+8 TO g+7, x+8: HPLLOT g+7, x+8 TO g+7, f+8
530 g = 0: f = 0: FOR i = 1 TO 1000: NEXT: RETURN
540 IF g = 0 THEN g = y: f = x: FOR i = 1 TO 1000: NEXT
550 HPLLOT g+7, f+8: RETURN
560 IF h = 0 THEN h = y: j = x: FOR i = 1 TO 1000: NEXT
570 HPLLOT h+7, j+8: RETURN
580 HPLLOT g+7, f+8 TO h+7, j+8: HPLLOT h+7, j+8 TO y+7, x+8
590 HPLLOT y+7, x+8 TO g+7, f+8
600 g = 0: f = 0: h = 0: j = 0: FOR i = 1 TO 1000: NEXT: RETURN
610 IF g = 0 THEN g = y: f = x: FOR i = 1 TO 1000: NEXT
620 HPLLOT g+7, f+8: RETURN
630 HPLLOT g+7, f+8 TO y+7, x+8: FOR i = 1 TO 1000: NEXT: g = 0: f = 0: RETURN
640 POKE 51401, a: CALL 51400: RETURN
650 POKE 51406, d: CALL 51405: RETURN

```

```

100 & DIAMOND
110 &
120 & Jason Rheindel (1985)
130 &
140 HOME: PRINT TAB(13); "DIAMOND"
150 VTAB 3
160 PRINT "For a pretty diamond pattern,"
170 INPUT "input an odd # between 7 and 21": r
180 IF r < 7 OR r > 21 THEN 140
190 HOME: q = INT(32/r): a$ = "CC"
200 FOR p = 1 TO q
210 x = 1: y = r: z = 2
220 FOR n = x TO y STEP z
230 PRINT TAB((r-n)/2);
240 FOR m = 1 TO q
250 c = 1: FOR a = 1 TO n
260 FOR a = 1 TO n
270 IF c > LEN(a$) THEN PRINT "1": : GOTO 300
280 PRINT MID$(a$, c, 1);
290 c = c+1
300 NEXT a
310 IF m = q THEN 340
320 PRINT TAB(r*m+(r-n)/2);
330 NEXT m
340 PRINT: NEXT n
350 IF x <> 1 THEN 380
360 x = r-2: y = 1: z = -2
370 GOTO 220
380 NEXT p
390 END

```

```

100 & WORDWAVE
110 &
120 & Jason Rheindel (1985)
130 &
140 HOME
150 PRINT TAB(12); "Word Wave"
160 VTAB 4: PRINT "Maximum-7 letters"
170 VTAB 6: INPUT "WORD #1? ": w1$
180 INPUT "WORD #2? ": w2$
190 HOME
200 POKE 16953, 32
210 b = 0
220 FOR t = 0 TO 23 STEP .25
230 a = INT(13+12*SIN(t))
240 PRINT TAB(a);
250 IF b = 1 THEN 290
260 PRINT w1$
270 b = 1
280 GOTO 310
290 PRINT w2$
300 b = 0
310 NEXT t
320 POKE 16953, 95
330 END

```

```

80 & BASIC SUBROUTINES - (Note: This is not a complete program)
90 &
100 LOMEM :29000
200 GOSUB 3000: & load machine code routines
210 & Lines between 200 and 3000 will contain the game code or any program
215 & code you wish to write
2998 & ***** General Purpose Subroutines *****
2999 & ** load machine code into memory **
3000 FOR i = 0 TO 27: READ dat%: POKE 28000+i, dat%: NEXT
3010 & VREAD (CALL 28000) & VWRITE (CALL 28004) routines
3020 DATA 62, 29,56,2,62,26,50,115,109,33,142,109,17,0,0,1,1,0,205,0,253,201
3030 & ** Sound routine (CALL 28022): poke sound byte at 28028 **
3040 DATA 58,124,109,211,255,201
3050 RETURN
3098 & ** break video address up and poke it into memory **
3099 & parameters: za=VRAM address
3100 a2% = za/256: a1% = za-256*a2%: POKE 28013, a1%: POKE 28014, a2%: RETURN
3197 & ** read a byte from the screen **
3198 & parameters: zr=screen row (1-24), zc=screen column (1-31),
3199 & zb=character code at screen location
3200 za = (zr+(zr < 1)*(1-zr)-(zr > 24)*(zr-24)-1)*32+zc+(zc < 1)*(1-zc)-(zc >
31)*(zc-31)+2048
3210 POKE 28016, 1: GOSUB 3100: CALL 28000: zb = PEEK(28046): RETURN
3297 & ** write sprite attributes to VRAM **
3298 & parameters: zn=sprite number (0-31), zr=sprite row, zc=sprite column,
3299 & zs=shape value, zh=sprite's hue
3300 za = 7936+zn*4: POKE 28016, 4: POKE 28046, zr: POKE 28047, zc: POKE 28048,
zs: POKE 28049, zh: GOSUB 3100: CALL 28004: RETURN
3398 & ** position a sprite on the screen **
3399 & parameters: zn=sprite number, zr=sprite row, zc=sprite column
3400 za = 7936+4*zn: POKE 28016, 2: POKE 28046, zr: POKE 28047, zc: GOSUB 3100:
CALL 28004: RETURN
3498 & ** white noise routine **
3499 & parameter: vol=volume of white noise (240(loud)-255(off))
3500 POKE 28028, 228: CALL 28022: POKE 28028, vol: CALL 28022: RETURN
3599 & ** change patterns & colors of some characters **
3600 POKE 28016, 8: FOR i = 0 TO 7: POKE 28046+i, 255: NEXT: & block patterns
3610 FOR za = 512 TO 704 STEP 64: GOSUB 3100: CALL 28004: NEXT
3620 & now change colors
3630 POKE 28016, 1: FOR za = 8200 TO 8203: GOSUB 3100: READ d%: POKE 28046, d%:
CALL 28004: NEXT
3640 DATA 48,176,144,96: & color data
3650 RETURN
3699 & ** load sprite patterns **
3700 POKE 28016, 8: FOR za = 14336 TO 14352 STEP 8: FOR i = 0 TO 7: READ d%
3705 POKE 28046+i, d%: NEXT: GOSUB 3100: CALL 28004: NEXT
3710 DATA 189,126,255,255,255,255,126,189: & ship 1
3720 DATA 24,60,60,126,126,189,189,129: & ship 2
3730 DATA 60,60,24,8,0,0,0,0: & ship 2's flames
3740 RETURN

```

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```

100 & WILDBOX
110 &
120 & Dale Bickerdike (1985)
130 &
140 HGR2
150 HCOLOR = INT(RND(1)*16)
160 e = 191: f = 0
170 HPLOT 0, e TO f, 191
180 e = e-2
190 f = f+2
200 IF e < 2 THEN 230
210 IF PDL(7) = 1 THEN 440
220 GOTO 170
230 g = 0: h = 255
240 HPLOT 255, g TO h, 0
250 g = g+2
260 h = h-2
270 IF g > 190 THEN 300
280 IF PDL(7) = 1 THEN 440
290 GOTO 240
300 i = 0: j = 0
310 HPLOT 0, i TO j, 0
320 i = i+2
330 j = j+2
340 IF i > 190 THEN 370
350 IF PDL(7) = 1 THEN 440
360 GOTO 310
370 k = 191: j = 255
380 HPLOT 255, k TO j, 191
390 k = k-2
400 j = j-2
410 IF k < 1 THEN 140
420 IF PDL(7) = 1 THEN 440
430 GOTO 380
440 TEXT: END

```

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