The Paper Peripheral

From The President's Keyboard

Hello again! Until a few days ago, I was afraid that there would not be a lot to say here, but now there is. However, first let's take care of the usual by saying that if you missed the last meeting, you didn't get to see the demonstration of "The Haunted Graveyard" game from Tigercub software. It is a very interesting game, and it got some nice comments from the audience. Last month we also demonstrated a special shapes game, again from Tigercub. The Users Group wishes to thank Jim Peterson of Tigercub, for sending these games to the group for us to show you. Y'all really have got to try some of Jim's products. If he sold them for more money, people would be breaking down the doors trying to buy them. (We'll have some literature about Tigercub products at the meeting in case you're interested.)

Moving right along--at the next meeting we'll have John Lesesne demonstrating some speech digitizing equipment that he has purchased. With this equipment he is able to say a phrase into a microphone attached to the equipment and have the /4A store the phrase in memory. He then has a program that will display the digital speech information to the screen or send it to the Speech Synthesizer. (Also known as, "You will believe that a computer can talk!")

Also at the next meeting we will have some more AMLIST books for sale, this time under lock and key!!!

Besides all this, we also must vote for a new vice president and a new secretary. We currently have two volunteers for the VP position: Robert Barger and Susan Donaldson. Please plan to come to the next meeting to vote. Also, we still need volunteers for the secretary position. It is really not a difficult or time-consuming job.

Now for the big news: Susan Donaldson has contacted the officals of the Austin Computer Fair and they have donated a booth for the group at their fair in June. The dates are June 21 thru June 24 and the show will run from 11 am to 7 om each day. You can see we do not have a lot of time to get our act together. Fortunately, all y'all have to do is to volunteer to stand in the booth for a few hours and answer questions about the Users Group. We really are only asking volunteers to answer questions to the best of his/her ability. If somebody asks an overly tough question about the /4A, smile sweetly and do an impression of me--tell them to come to the next meeting, where there will undoubtedly be someone to help them. Our main goal, really, is to attract new members by letting the Austin area know we exist. Publicity, you know.

We will have applications for membership and flyers about the group at the booth. If I can get it ready in time, I would like to prepare a program that gives in-depth information about the group, so most questions should be answered by computer. Those of you who would like to can put up notices of items for sale. Also, we plan to hold a drawing for free software. People who join the Users Group during the fair will be eligible for the drawing, as well as those current members who had booth duty. Right now, we plan to give away one game a day. We have in mind two Star Trek games and some other TI game modules that were donated to the club. We knew they would come in handy someday!

In closing, I'd like to turn to another subject. The other day I went into a computer store and asked if they had INFOCOM games for the TI machine. They responded that they could get them. Unfortunately, it turned out that they thought I meant the TIPC. Well that's it!!! I've had it!!! I do hereby resolve to attempt to never refer to the /4A ever again as the TI 99/4A. TI has abandoned me and doesn't deserve any free advertising that I may be giving them by using their name. So if anybody ever asks me who made my machine, I think I'll say that it was given to me by some aliens in a flying saucer. (Maybe a flying Police Box?) And I'll say that they told me that with it, I could study life on other planets. (According to the *National Enquirer*, this isn't so impossible. In their article "Is Your Neighbor an Alien?", they give tips on ferreting out those aliens that are even now among us. Clues include owning large amounts of high-tech equipment, such as computers, a device that could be used for communication with the home planet, abnormal sleep or work patterns, and unusual amounts of information gathering. And I thought I was from Houston!)

Mike Schultz

A Few Bytes and Nibbles

Not much to report on this month. We've had a busy month at our house, as usual. But June is going to be something! The computer fair is a great thing, and I'm glad we've got a booth, but any other month would have been better!

The group has lost two of our officers, Don Strickland (VP) and John Young (Secretary). Actually, Don is not leaving us, just resigning his office. John, however, is gone to The Frozen North. (That's what we call it at work. I'm not sure, but I think they define TFN as anything north of Albany, Texas.) Both Don and John were instrumental in keeping the club going when it looked like it might fold. Now we need some brave soul to take the secretary's position. With a couple of good new officers, we might not miss the old ones so much.

We continue to exchange newsletters with other users groups around the country--and we recently added Edmonton, Canada to the list! (Welcome! Hope you had your magnifying glass handy to read this with!) Most other groups seem to be calming down, spreading out roots, and eagerly awaiting...something. Actually, I don't know what we're all waiting for. But there seems to be a definite air of anticipation. Another thing I've noticed is that nearly all groups are having minor problems filling vacant officer positions--and nearly every newsletter editor is pleading for articles from members. It's nice to know we're not alone, anyway.

The Story Continues: the story about disappearing and reappearing regular columns, that is. First off, Charlie Watkins was very busy all May fighting various horrible monsters (sometimes known as management) in the TI dungeon (sometimes called "the plant"). Anyway, we both beg your pardon that his article is missing (again), but he's got a good start on next month already. Maybe if I drop by his office often enough and harass him...? Also, in case anybody was wondering what happened to the CompuServe Diary--was anybody wondering? The assistant treasurer (Mike) insisted on cutting down on the number of pages in the last issue, and I'm afraid that was one of the casualties. My real problem, though, is what articles do y'all like and want to see more of? I've had enough reprint requests to know that people are enjoying the Tunnels of Doom hints, but we need to find some way to get a response out of the members as to what articles are being enjoyed. Any ideas?

Diane Schultz

TI Home Computer Languages

Using a programming language is nothing more than communicating in a way that both you and your computer can understand. Since there are several different languages that you can use with the TI Home Computer, I'll highlight a different language every month and list its advantages and disadvantages. Last month, I discussed TI Extended BASIC. This month, we'll look at UCSD Pascal.

UCSD Pascal

Pascal was originated as a teaching language in the early 1970s by Professor Niklaus Wirth and Kathleen Jensen. They derived it from a relatively unknown language called ALGOL. (It was named for a famous French mathematician. Since the name is not an acronym of other words, it is one of the few languages whose name is not written in all capital letters.) Programming in Pascal forces the programmer to write clear, correct, and maintainable programs. This language is most appropriate for programmers who wish to delve into more sophisticated programming. The /4A uses a version of Pascal developed by Kenneth Bowles at the University of California at San Diego (UCSD). UCSD Pascal includes functions for accessing all the special features on the /4A. On the /4A, Pascal is available only with p-System.

To run UCSD Pascal on the /4A you need an expansion box with 32K memory expansion, disk drive and controller, the p-Code card, and diskettes containing the UCSD p-System Pascal compiler, editor/filer, and utilities. There is also a diskette called Assembler/Linker.

UCSD Pascal is a compiled language. (If you've been keeping up with me, you know that that means that the /4A translates the language into machine code). Once a program is compiled, it needn't be recompiled again unless it has been changed--it can be run as compiled.

This makes UCSD Pascal run quite a bit faster than BASIC and LOGO.

This language is also highly structured, which means it restricts programs to modular organization according to sets of specific construction rules known as syntax. In other words, when you write a Pascal program, you write it the right way or your program won't run. Because it is both compiled and structured, programs written in UCSD Pascal are faster and easier to modify than most other high-level languages--which makes it suitable for large business and scientific programs or for learning how to program properly. (Actually, it was originally intended not so much to teach programming as to teach proper programming techniques.)

The following is a simple Pascal program.

```
        PROGRAM SUM;
        VAR A,B,TOTAL:INTEGER;

        BEGIN
          WRITELN('ENTER TWO NUMBERS TO BE ADDED...');
          READ(A,B);
          TOTAL:=A+B;
          WRITELN('THE SUM OF ',A,' AND ',B,' IS ',TOTAL)
        END.
```

The first line names the program. The second line declares variables A, B, and TOTAL as integers. The BEGIN and END statements enclose the actual program. WRITELN writes the line in parenthesis and moves to the next line. READ reads the two variables entered by the program user. The variables A and B are added and assigned to the variable TOTAL. The final WRITELN writes that the sum of "A" and "B" is "TOTAL".

You can easily combine several smaller Pascal programs into one large program. Since Pascal is so structured, you can write and test these little programs before you combine them all in a larger one.

It is interesting that a language first developed merely to teach has become extremely popular with programmers. There is a newer language now in the public domain called MODULA-2 which has been called "Pascal without the bugs", which is also becoming increasingly popular with programmers. (It is not, however, currently available for the /4A.)

UCSD is a trademark of the Regents of the University of California at San Diego.

Ken Mathews

(Editor's Note: For more about p-System, see Mike's article directly below. Pascal is an extremely popular language in our house--one of my favorite jokes is that Mike speaks Pascal better than English.

Yes, But What Does the "p" Stand For?

This month we'll take a brief detour from our discussion of BASIC to talk about p-System. But, you say, Ken has already talked about Pascal, what else is there to say? Well, there is a lot, because p-System is not a language; it is a standard operating system that allows our computer to run many programs that also run on other computers such as PDP-11s, TI-PCs, IBM-PCs, and Apples, just to mention a few.

This raises two questions: just how is this possible? and what is an operating system, anyway? The answer to the first is an interesting story and will allow me to answer the second.

The nice thing about p-System is that it makes all computers look the same! (mostly) You see, the p-System operating system is not written to run on the /4A at all but on a "pseudo" machine. The American Heritage Dictionary defines "pseudo" as "counterfeit: fake", which is a relatively good description of how p-System works. The machine that the p-System OS was designed to run on has never (that I know of) been built! There is a little program running inside the /4A that pretends to be the pseudo machine. Thus, in order to bring p-System programs to a different machine, it is only necessary to write a relatively small program to make the new machine appear to be the pseudo machine.

This may seem strange, but it is not unheard of in the computer field. When a manufacturer wishes to build a new machine, do the engineers waste a lot of money building a prototype of the machine, only to discover a flaw in the design? Do they have their programmers play video games while waiting for the hardware engineers to get their act together? No--unfortunately for the programmers! The engineers have the programmers write a program on an existing machine that makes it appear to be the new machine. The real thing might be faster that the program version, but it will let the programmers start writing application programs for the new machine. This, in turn, will shake out any design problems in the new machine.

The makers of p-System just took the idea one step further. They were the Computer Science department at the University of California at San Diego. It seems that they didn't have just one kind of computer to teach on, they had several manufacturer's machines. With one class teaching programming on one machine another another class on a different one, it was very hard to design consistent courses. So they designed the ideal machine to run Pascal, then set about implementing this pseudo machine on all of the real machines they owned.

But to have the ideal Pascal machine is not enough. You need some way of storing data on disk so that it could be retrieved later (disk files), calling programs into execution from the disk or tape (like OLD CS1), a text editor, and various other programs. These programs are necessary when writing your own programs on a machine. These things are collectively known as an "operating system", because it supplies an environment (a systematic, organized environment, presumably) in which programs (and programmers) can operate.

Of course, the hardware manufacturers supplied their own operating systems, each suited to the capabilities of their machines. But no one OS (standard abbreviation for operating system) looked like another. So the folks at UCSD wrote their own OS, in Pascal of course, and it now runs happily on all the different machines that have a pseudo machine program.

And that is how a program that runs on p-System can run on our /4A. The card that is installed in the expansion box has the program to make the /4A appear as a pseudo machine in ROM. It also has enough of the p-System operating system programs to allow programs to be loaded from cassette, so disks aren't necessary to just run p-System programs.

So why don't we see more p-System programs running on the /4A? For one thing, there aren't really enough /4A p-System owners to make it worth while to software manufactures to write /4A p-System programs. Also, major manufacturers haven't supported p-System as well as they could, since it doesn't favor any individual piece of hardware. Finally, the hardware manufacturers have had the last laugh in that each machine formats disks in its own way, so we can't take a p-System diskette from the TIPC and plug it into a /4A p-System and have it run. (I've tried.) There are ways around this problem and one day when I find some time I'll pursue it further, but the first two problems are the major ones.

Oh, I almost forgot. What's the "p" stand for? I say it stands for "pseuso". Others say "Pascal". What do you think?

Mike Schultz

(Editor's note for anyone interested--when writing "p-System", the p is lowercase and the s in System is uppercase. Just another way of confusing programmers and making life hard for typists and editors.)

Magic Sprite
by Robert Barger

Since so many people didn't understand or pick up on it at the presentation, here it is again--but this time on PAPER! That's right: the "neat sprite magic" that was spoken of in last month's newsletter!

These call routines execute and stay executed outside of regular program mode. Don't ask me why--I found out how to do this by accident. Here's an example.

Type this in Extended BASIC:

```
FOR T=0 TO 14 :: CALL COLOR(T,16,5) :: NEXT T :: CALL SCREEN(5)::ACCEPT AT(1,1) :A$
```

Now your screen should be white on blue, but here comes the neat part!! Press FCTN 4. Hey neat-- it stayed white on blue and look, even the cursor is white! Now you can continue to use your computer in regular command mode and it will continue to be white on blue as long as you don't get an error or until you execute another out of programming command (without a number in front of it). From now on if you want to clear the screen type CALL CLEAR:: ACCEPT AT(1,1):A$ and then press FCTN 4 as you did when changing the screen colors.

Hey, I got an idea! Let's try this out with sprites!

Type:

        CALL SPRITE(#1,82,16,100,100,0,1):: CALL CLEAR::ACCEPT AT(1,1):A$

Press **FCTN 4** again

Are you catching on yet? All you do is type ::ACCEPT AT (1,1):A$ after a command in command mode. You can use any variable. I chose A$ for my convenience. Here is the basic format for these commands:

        [command]::ACCEPT AT(1,1):A$

That's all there is to it. If you have any further questions, don't hesitate to ask me at the meeting.

Robert Barger

Editor's Note: I appreciate Robert writing this up for me. At most meetings the officers (and any other knowledgeable person) get so swamped by enthusiastic members, we don't get to see the program! It would be a big favor to us if whoever gives a presentation at a meeting would write it up like this---or get somebody else to write it (not me!).

TI-Writing

This month we are going to plunge merrily into word processing, using TI-WRITER as an example.

What is word processing, you say? The accepted definition is that it is the new high-tech way of generating, managing, and saving text, generally using a computer or a microchip in some fashion. I find that I think of it as a sort of subset of typesetting; it is not nearly as complicated, but it's lightyears away from merely typing.

Before we actually begin, let me pass on a couple of tips. First, it is the better part of careful to never turn on or off your disk drive with a disk actually engaged in it. Although I have seen no documented cases of someone losing the information on a disk through a random surge caused by turning the power on or off, I have no intention of being the first. (This is a rule we follow at work, where the information on a disk could conceivably be extremely valuable and possible irreplacable).

I wish I could take credit for the second tip--it seemed so obvious to everyone that mentioned it to me that I hate to admit I didn't think of it. Back up copies of the important TI-WRITER files onto the disks you intend to store your text on. This is not terribly important during the first phases of TI-WRITER, but when you get to using the formatter, it will save wear and tear on the disks, the disk drive, and your sanity. (When you use the formatter with only one disk drive, you can find yourself popping it in and out a lot as you debug your formatting commands.) The files to include on your data disk are EDITA1, EDITA2, FORMA1, AND FORMA2. These four files are the editor and formatter programs.

Now that you're ready, turn TI-WRITER on. After choosing your way through the /4A menu, you will find yourself facing a menu, blue with white letters, where you need to choose between the editor, the formatter, or utilities. Just for grins, push 3 (Utilities). Nope, you were right. TI didn't include any. However, I understand there is a spelling checker in the works that will run here. Let's hope!

Now try 1. The computer will go off and read the disk and pretty soon you find yourself facing a screen with four lines on it. The first line has a list of words in upppercase and lowercase letters. The second line is blank except for the cursor. The third line says 0001, and the fourth line informs you that it is the end of your file, using Version 1.0 of TI-WRITER.

The words on the top line are editing commands. A little explanation is needed here. In TI-WRITER there are really three different types of commands, entered in three different ways. Two types are executed immediately and directly affect what you see on your screen. The third kind are formatting commands which are executed when using the document formatter program. When your screen displays the commands at the top of the screen, followed by a blank line, you are in command mode. Commands are entered in command mode using one or two letters to stand for the command. An example is the first one listed, Edit. That command is entered by typing E, then the ENTER key. Note that when you are in command mode, all letters are capital letters, even if you think you are typing lowercase.

So, let's try Edit. Notice that now you see the two last lines move up two lines and the two command mode lines go away. You can start entering text now--try one of the practice documents in the TI-WRITER manual.

If you're typical, you will almost immediately need to fix errors in what you typed. For this you use the cursor positioning keys. Four of these keys you most likely know, the four arrow keys. You can use either the FCTN key or the CTRL key in conjunction with E, S, D, or X to position your cursor. While you're "debugging" your typing you might need to delete a character. Go ahead--the Delete Character key is the same as it's always been, FCTN 1.

You may also want to insert a character. The Insert Character key is also the same as it's always been, FCTN 2--but it works differently in TI-WRITER. When you use it, the text from the cursor on is dropped down the screen a line. What do you do when you do an insert in the middle of a paragraph and want the paragraph glued back together? Meet a new key, and a new concept, Reformat. The Reformat key is CTRL 2. When you use this key, all the text in the current paragraph from the cursor on is reformatted within your margins. (To really understand, you will have to see this, so try it yourself in a practice document.) Reformat works only on the paragraph that your cursor is in, from the position of the cursor to the end of the paragraph. (The end of a paragraph is signalled by a carriage return character.) Reformat will not touch any text above the cursor or after a carriage return. While this is generally good in the long run--you can only screw up one paragraph at a time--it also means that if you want to reformat an entire document, you have to change each paragraph in turn.

By the way, all of the commands you've used that weren't entered in the command mode were the second type of command, editing commands. Most of these commands are entered using either the CTRL or FCTN key in conjunction with another key. There are a great many of them and they help make TI-WRITER convenient to use. You will eventually remember the ones you want.

Well, we've gotten your feet wet now, but this article is long enough as it is! Next time we'll take up the next command mode command, Tabs, along with a whole bunch more editing commands.

Diane Schultz,
Professional Typesetter, part-time computer operator, and amateur editor

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Using Files
by Robert Barger

I have had a lot of people ask me about files so I decided to write an article on TI file processing.

The file system on the /4A isn't really difficult, it just isn't explained in great detail. After you read this article I will guarantee that you will be able to save data and retrieve data from tape or disk.

Okay, here we go. To even start trying to save data to disk you MUST open a file. I'll use disk files but in most cases you can substitute CS1 for DSK1. The only difference is that when you run the CS1 it will take a considerably longer amount of time.

To open a file, type this statement.

    OPEN #1:"DSK1.FILENAME"

There--you have now opened a file called FILENAME, the drive used is drive 1, and the file number is file number one.

From now on whenever addressing this file you will address it as #1, as in PRINT #1, INPUT #1, or CLOSE #1. It will always be #1 because you opened it that way. Valid numbers to open files are 1-255.

Now, say that you want to print some information with which you would use a PRINT statement. No, you don't just use PRINT"HELLO", though it is almost that simple. Tou use PRINT #1:"HELLO (and your name)". This in turn will print HELLO to the disk. PRINT tells the /4A to write it to the disk, #1 tells it which files, and it prints everything after the colon.

Now, what do we do with the file, you ask??? We can now either PRINT to it again or CLOSE it. We can't INPUT from the file right now because you can only input in a program. So go ahead and CLOSE the file. To do this type, CLOSE #1 and press enter. Now the file is closed. Make sure you always close your opened files-- if you don't you could lose everything in that file!

Let's write a simple program to save and retrieve media from the disk.

```
10 CALL CLEAR
20 OPEN #1:"DSK1.FILENAME"
30 INPUT"DID YOU DO THE EXERCISE IN THE NEWS LETTER? ":A$
40 IF A$<>"YES" THEN 70
50 INPUT #1:A$
60 PRINT"HELLO ":A$
65 PRINT
70 INPUT"WOULD YOU LIKE TO SAVE DATA(SD) OR RETRIEVE DATA(RD)? ":A$
80 IF A$<>"SD" OR A$<>"RD" THEN 70
90 IF A$<>"SD" THEN 1000
100 CALL CLEAR
105 PRINT"SAVE DATA TO DISK"
110 PRINT
120 PRINT"ENTER THE DATA TO SAVE TO END TYPE END":"ON A LINE BY ITSELF."
130 INPUT":":A$
140 IF A$="END" THEN 170
150 PRINT #1:A$
160 GOTO 130
170 RESTORE #1
180 GOTO 70
1000 INPUT #1:A$
1010 IF EOF(1)<>0 THEN 1040
1020 PRINT A$
1030 GOTO 1000
1040 PRINT
1050 PRINT"END OF FILE"
1060 CLOSE #1
1070 END
```

That's it for now! If anyone needs more assistance I will be happy to help them out--or if a lot of people want to learn more about file handling, I will write another article on advanced file processing.

Robert Barger

VDP

This article is reprinted from the February-March issue of the TI Home Computer Newsletter *of the Arizona 99 Users Group.*

One of the key components in the 99/4A is the Texas Instruments TMS9918A Video Display Processor (VDP). This chip offers features that are not found in any other graphics system.

The TMS9918A VDP interfaces to the host microprocessor (TMS9900) through an 8-bit bidirectional data bus and three control lines. The VDP's output is a composite color video signal, which can be fed directly into any video monitor (you don't have to have TI's) or, with the RF modulator (came with your computer), to the antenna terminals of a television set.

The 99/4A has 16K bytes of dynamic RAM attached directly to the VDP. This video RAM, which contains the data that defines the graphics image to be displayed, is automatically refreshed by the TMS9918A.

The TMS9900 host processor interacts with the 9918A by reading from or writing to its registers or the VRAM.

The 9918A VDP displays an image on the screen that is a set of overlapping display planes sandwiched together. This distinctive graphics architecture makes possible the simulation of depth relationships between animated objects in the display.

When objects that are on two different planes attempt to occupy the same spot on the screen, the object in the higher-priority plane

will be seen.

How About Sprites?

The 99/4A has **sprites** that can be used from Extended BASIC. A sprite is a graphics object of a specified pattern appearing on its plane in a position determined by a single coordinate pair that specify the sprite's location on the screen in the horizontal and vertical axes. By changing the coordinates, the sprite can be moved easily and quickly across the screen. The resolution of movement is one pixel on the 192 by 256 pixel area on the screen. The sprite plane with the highest priority is sprite 0, and the one with the lowest priority is sprite 28.

The ease of programming complex graphics displays through the use of sprites in Extended BASIC is a very remarkable feature. The TMS9918A Video Display Processor makes it possible.

Sprites Are Not All

The 9918A VDP is capable of considerable graphic feats. This chip has a Graphics I Mode. The screen is divided up into a grid of pattern positions arranged in 24 rows of 32 columns for a total of 768 positions. Each pattern position contains 64 pixels arranged in 8 rows of 8 columns. The Graphics I Mode is used by BASIC and Extended BASIC.

The pattern definition in the pattern-generator table consists of an 8-byte segment of memory; each bit in the segment corresponds to one pixel in the 8 by 8 matrix; the first byte is the top row of the matrix, and the second byte is the second row, etc. The colors to be used in a given pattern are determined by the two 4-bit values stored in the pattern's color byte in the pattern-color table.

The Graphics II Mode allows 768 separate pattern definitions. In addition, instead of only two colors within each 8 by 8 pixel pattern block, this mode allows two colors to be defined separately for each byte in the pattern block. This mode uses up about 12K bytes of VRAM.

Multicolor Mode

The Multicolor Mode is essentially a low-resolution graphics mode. The screen is divided into 3072 blocks, each measuring 4 by 4 pixels, in a 48-line by 64-column format. The color of each block can be any of the fifteen colors or transparent.

Text Mode

The Text Mode allows the screen to be divided into a grid measuring 24 lines by 40 columns of pattern positions, each of which measures 6 by 8 pixels. The Text Mode is used by TI-WRITER, Multiplan, and the Terminal Emulator II, for example. In this mode the screen has 960 pattern positions that can be filled. The sprite planes are not available in Text Mode.

Shopping for Software?
by Mike Schultz

Around mid-May, I out and around Austin and while I was in a couple of stores, I took some notes about some /4A software that I found there. I hope that it is some help to someone who is looking for a particuliar software title but can't look at every store in town.

At Best Products I found: TI-WRITER $84.97; MicroSoft MULTIPLAN, $84.97; Super Programmer (includes Extended BASIC plus some Extended BASIC utility programs), $99.97; Adventureland, $24.86; Return to Pirate's Isle, $24.86; Tunnels of Doom (cassette), $19.97; Spelling Levels 4-6, $34.97; and Mission Impossible (cassette), $24.83. They also had assorted educational modules and standard TI games.

I also went by Software City that day and found some more titles. (I didn't write the prices down on these.) They had Parallel System's educational and home management programs on casette. From TI I found Percents, Meteor Multiplication, Face Maker, Household Budget Management, Number Magic, Early Learning Fun, Beginning Grammer, Fractional Numbers, Integers, Decimals, TI Invaders, Munchman, Hunt the Wumpus, and Touch Typing Tutor. From Moonbeam Software I found Cavern Quest, Moonbeam Express, Astro Mania, Strike Force 99, Robot Runner, Moon Vasion, and Death Drones. Don Strickland's Budget Master is also available there. I also found some Parker Brother games and AtariSoft games there.

Toys R Us had a large selection of software, including several TI modules, some AtariSoft games (like Ms. Pacman), some Parker Brothers

games (Q-BERT), and Miner 2049.

It looks like a lot of the stores that carried /4A stuff before still have some, so it's probably worth while to look or call around if there's something in particular you're looking for.

For those of you who are looking for INFOCOM games (Zork and the like), Diane found a way to order them via a toll free number, 1-800-262-6868. The Zork games are $39.95 while the other INFOCOM games sell for $49.95. There is a $2.00 postage and handling charge. A hint book is available for $7.50 (per game probably). INFOCOM games are available only on disk.

If you run across a store that has /4A software and are so inclined to write down some of the more unusual or hard to find software that they have, send the information along to us and we'll try to get it into the next newsletter.

Other related information: we got a "newsletter" from TI with no news in it that our members hadn't already heard. We also received a Spring '84 catalog from Triton, who got whatever was left of TI's /4A stuff. At least one users group was very upset about it--the catalog lists a goodly number of modules that were supposed to be available by last Christmas but could barely be found. In Triton's catalog they sell for full price, of course, when many dealers would have sold them at a discount. They are talking boycott! (Someone suggested that Triton is just a front company for TI so that they could keep their fingers in the money without staying in the business! I can't picture TI with the horns, tail, and pitchfork some folks see, but it is interesting that all of these hard-to-find modules have suddenly become available.) At any rate, if you didn't get one of these catalogs and want one, their toll free number is 1-800-227-6900. Times are Monday through Friday, 6 am to 6 pm, and Saturday, 9 am to 6 pm. All times are Pacific time zone. The address is: Triton Products Company; P.O. Box 8123; San Francisco, California 94128.

We have also gotten a most interesting offer from Intellestar. They make Extended BASIC educational games, most of which run on tape or disk. They are trying to market their software directly through users groups and are offering members a discount. Our users group is number 256--and you will need to remember that when ordering. Using that number and our users group name will get you a 10% discount on their software. A group order of 5 or more of the same program gets a total of 35% discount--which is substantial! We will also be notified of periodic special offers available only to users group members. The current offer is a free copy of "Inside Frankie Stien" with every order of the three-part "CELLS" program. (Note: there is no individual discount on this order, but the 25% discount on orders of 5 or more still holds.) These programs are for age 10 to adult and are concerned with Life Science (meaning biology, I suspect). This offer is good through August 1. When ordering from Intellestar, you must give them the correct users group name and our Intellestar registration number. If you would like a copy of their catalog, the number is (301) 251-0046, and their address is Intellestar; 25 West Middle Lane; Rockville, Maryland 20850. This is a very generous program, and a good idea for both users groups and the software manufacturers. Maybe more of them will try it if this catches on.

We have also received a discount offer from SST Software. SST is offering a $10.00 discount (for three or more) on their new Expanded BASIC compiler, making the price $85.00 each. They sent us some information about this new compiler, which will be available at the next meeting. If anyone wants more information, their address is: SST Software, Inc.; Box 26; Cedarburg, Wisconsin 53012. The phone number is (414) 771-8415.

Finally, we have some information about business accounting and planning software from Peter Bradbury in Cedar Rapids, Iowa. There are two programs, BUDGETPLAN and BUDGETPRNT. There is a discount for orders of 5 or more. The address is: Peter Bradbury; 2024 Sandalwood Drive Northeast; Cedar Rapdis, Iowa 52042. His phone number is (319) 365-6303. We will have some information on these programs at the meeting.

By the way, we aren't recommending or advocating or pushing any of these stores or programs. Just letting you know what's available.

Mike Schultz

Newsletter Exchange

Our users group exchanges newsletters with several other recognized TI Users Groups. The exchange is made with the understanding that, with proper credit to both the newsletter and author (if listed), your users group can reprint articles from our newsletter and, with proper credit, we can reprint articles from exchanged newsletters. (Please feel free to correct any typos, misspelling, bad grammar, etc.; we will do the same.)

Commercial Ads

Commercial advertisements are welcomed by our newsletter. This newsletter can provide a select, specialized audience for advertisers. Advertisements also help our group by offsetting the printing and mailing costs of the monthly newsletter.

The cost of placing a full-page ad is $20. The cost of a half-page ad is $10. The ad should not be more than 7 1/2 inches wide. A half-page ad should be 5 1/4" long and a full-page ad should be 9 1/2" long.

Classified ads are free for both members and non-members. Send your ads to Central Texas 99/4A Users Group, Box 3026, Austin, Texas 78764.

Current Officers

President	Mike Schultz	835-2377
	4200 Harcourt Drive; Austin, Texas 78727	
Vice President	to be elected	
Treasurer	Katie Henry	452-8214
Secretary	Accepting Volunteers!!	
Librarian	Arden Huffstutler	255-2794
Newsletter Editor	Diane Schultz	835-2377

Meetings Calendar

The meetings of the Central Texas 99/4A Users Group are held on the second Thursday of each month at 7:00 pm, at the downtown Austin Public Library, on the fourth floor in the auditorium.

Dates of the meetings for the rest of 1984 are:

        June 14
        July 12
        August 9
        September 13
        October 11
        November 8
        December 13

Software Library Order Form

The following form is an order form for copies of programs which are now available in our software library. You will find a list of them in the February newsletter. Also, copies of the catalog will be available at the meeting. Each program in the list is numbered and, where possible, a short description is given. Programs written in console BASIC are listed separately from those in Extended BASIC. Any hardware or software required is also listed.

Please use this form to order copies of this software. First, circle the number of the program for which you are requesting a copy. Next, remove this sheet from the newsletter and mail it to:

Arden Huffstutler
1811 Sam Bass Road
Round Rock, Texas 78664

255-2794

Arden will bring your copies to the next users' group meeting. Money will be collected at the time you pick up your copies. (If you are unable to come to the next meeting, or if you need a special arrangement, please make those arrangements with Arden.)

Remember, we are now selling copies (instead of renting them). Copies on cassette tape are $2.00 per copy. Copies on disk are $2.00 per copy, plus $1.50 for the disk. *If you do not indicate disk at the bottom of the page, your copies will be made on cassette!*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	
59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	
78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	
97	98	99	100	101	102	103	104	105	106										

Please make my copies on (circle on)   **disk   cassette.**