

(048) 8409
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Boise 99'ers Computer Club

SEPTEMBER 11, 1984

The Boise 99'ers Computer Club will hold its September meeting on Tuesday the 11th from 7:30 to 10:00 PM in Room 106, Borah High School, 6001 Cassia, in Boise.

This month's presentation will be on identifying, collecting, and preparing the information you need to write programs for your computer. Jerry Hough has been programming for 18 years now, and will present some of the tricks of the trade. For all of you that want to write a program, but don't know how to get started, this is for you. For those of you that are already writing programs, there's always something to learn from the techniques of others, this is for you, too. In other words, be the master of your computer through programming.

We have received some more newsletters from other TI-99/4A Computer Clubs around the country that we will circulate at the meeting for your review. We also have many new programs added to our library. CHECK IT OUT...The price is right.

The meeting is for users of Texas Instruments' 99/4A Home Computers, and the public is welcome to attend. The following group objectives are defined in our operating constitution:

1. Education of members
2. Promote understanding and appreciation of TI micro-computers
3. Exchange of programs and ideas

We feel our most important purpose is to assist members in answering any questions they may have about TI micro-computers.

For further information about the meeting and other Club activities contact Jerry at 344-1409 or Joe at 342-1396 or Esther at 322-8004.

The Boise 99'er Computer Club Newsletter is published for current members of our computer club and is composed of articles written and donated by computer club or other users group members. Opinions expressed by the authors do not necessarily represent those of the club. Any article appearing in this publication may be reproduced providing credit is given to its source.

P R E S I D E N T ' S C O R N E R

11 SEPTEMBER 1984

A lot of Club activities have been going on at this end and these are some of the highlights:

Our visit with Darrell Ingold, a vacationing TEX-BUG member, was a great success. Thanks to our calling committee for getting a good sampling of our membership together in such short notice for dinner, meeting, and general conversation with our guest.

At the meeting, the votes were cast and it was approved that a twelve dollar (\$12.00) annual assessment per family would be adopted, per ARTICLE IV section C. of our Constitution. Although it was not discussed, it is reasonable to assume that sections A. and B. (Initiation Fee) became null and void with that decision. The assessment is due and payable to the Club Secretary/Treasurer by the October meeting date. With the support of its members, the Club will continue to publish this monthly newsletter, hold informative general meetings and Special Interest Group (SIGS) meetings, provide program exchange library services, and generally encourage, inform, and educate you and your interests with the TI Home Computer.

We've received some more newsletters since last meeting, and in exchange, we sent them our current one. "At the I-O Port" from the Lehigh 99'er Computer Group, "The Data Bus" from the Delaware Valley Usergroup, "HOCUS" from the Milwaukee Area 99/4 Users Group, "The 4A Forum" from the Central Iowa 99/4A Users Group, and "Topics" from the LA 99ers Computer Group. Lots of stimulation information, programs, reviews, etc., including two (2) on-line BBS phone numbers for those who are inclined to communicate electronically. They will be available for your review at our next Club meeting. See the Secretary.

Notice the other Clubs seem to have adopted a name for their newsletter. Why don't we do that? Have a contest, or something, to select a good name. Prize could be some programs from our Club library. We need a volunteer to be contest chairperson. How 'bout it? Sounds like a good idea to me. I've been secretly calling it COPIX. An acronym for Computer Club Programmer Information Exchange. That's 'cause I'm a programmer, I guess.

Lots of the new TI books at "The Book Store", 5 Mile & Overland. Bought one the other day... "COMPUTE!'s Guide to Extended BASIC Home Applications on the TI-99/4A". Could be a collection of programs from their magazine, I don't know. But, I know I like it. Rumor is that COMPUTE! is going to drop the TI-99/4A. That would be a shame. They do good work.

"The 4A Forum" has a note in it about a new magazine for the TI-99/4A...first issue in September. Why don't somebody check it out and report back?

The card on CORCOMP's Double-density disk controller card is good. One of our members has it and is happy, and list these benefits:

1. Twice as much storage on disk (double-density)...Uses the same old TI disk drive that came in the PE box. 700+ sectors, up from 350 or so...184K up from 92K.
2. It's fast...faster than the TI card...reading and writing disk.
3. Built in sub-programs, in the controller ROM, that can be CALLED from your program to do all kinds of neat things.

The bottom line is that Al Westerfield likes it and recommends it, and will help members with answers to their questions.

Check out the LOADER program in the Club library. It will build a menu of programs on your disk, and all you have to do to run one is select it off the menu. I put it on all my program diskettes, along with the CATALOG program. Of course, it only works with Extended BASIC. Here's how it works:

```
>RUN "DSK1.LOADER"  !will build the menu file called "CAT".
>NEW              !clears memory
>MERGE "DSK1.CAT"  !will load the menu file
>SAVE "DSK1.LOAD"  !will store it as a program that will
                  !automatically run when you select
                  !Extended BASIC from the master menu.
```

SEE YOU AT THE MEETING.

PRE-CAMPAIGN

August 30, 1984

NEWSLETTER #3

HELLO CLUB MEMBERS:

There is still time for the groups that have not officially signed up to participate in CCA this year. Remember \$7,000 will be awarded to non-profit groups in the area. I realize that some PTA's & PTO's have not had their first meetings yet, but the time has come when the decision must be made to participate now. The buyer's guide is being printed now, as well as the other supplies needed for the clubs.

The Training Session has been set for Thursday, September 13, 1984. The location will be at KIZN/KTOX studios at 1002 W. Franklin St. (the corner of 10th and Franklin- downtown). I will be there from 8AM-6PM to hand out the supplies and go over all the necessary information you will need as a club to participate, so be sure to have the CCA Chairperson in attendance. You can drop by anytime during these hours. If this time is not acceptable to any club for any reason, please contact me and another time will be set aside to get the information to you.

You will not be receiving the newsletters in the mail from me any longer. The newsletter will be printed in the Advertiser/TV WEEK from now on---so watch for it there. The copies are free, so have your club members pick up their own copies when they start appearing there.

Every sponsor's receipt will be worth 100 points per dollar spent, plus every sponsor will have ways to earn bonus points for doing all kinds of other things-----the buyer's guide will have some more details.

- ADVERTISER/TV WEEK
- AMTRON VIDEO
- ATKINSON'S MIRROR & GLASS
- B.J.'S KIDS
- BIG 44 WESTERN STORE
- BOB NICHOLS OIL CO.----locations are: Self/Serve & Convenience Store at corner of Boise Ave. & Protest Ave.....Interstate 66 at Exit 29 at I84 & Franklin Rd.....Tot's 66 at 10th & Cleveland....Fuel Oil & Furnace Oil at 2309 Franklin Rd in Caldwell.
- CALL JEWELERS
- COMMERCIAL TV & APPLIANCE
- CRAMER CHIROPRACTIC
- D & J MUSTARD
- GROCERY STORE RECEIPTS---any store
- KOFFEE KLATCH
- LINEN OUTLET
- LITTLE CHIPMUNK NUT & CANDY HOUSE
- MEADOWGOLD DAIRY
- MERIDIAN FORD
- PACIFIC UPHOLSTERY
- PAYLESS
- UNCLE BOB'S FAMILY RESTAURANT
- WADELL-REED
- WILLIS & SONS LUMBER



SEE YOU SEPTEMBER 13!!!!

BECKY DOBBS 345-6386

OUR CCA CONTEST CHAIRPERSON IS ESTHER SMITH-----322-8004

SOFTWARE REVIEW

by Jerry S. Hough

SST Expanded BASIC Compiler System

According to the advertising for this product "The ... translates your BASIC Program directly into machine language while allowing you to edit and debug using T.I. BASIC". Upon reading this, a person could get real excited while thinking about all those slow running BASIC programs they have hidden away on disk or tape that that desperately need to run faster. Why not fork over \$95.00 to buy this compiler and convert them to machine language and then really watch them smoke? That would be nice, but it really doesn't work that way. Oh, it will translate a BASIC program into machine language and it will run faster, but NOT the TI BASIC that we know and love. SST BASIC (my name). Out of the "Index of Commands", inserted loosely in the manual as an afterthought, 75 commands are listed and only 20 of them are legal TI BASIC. Now if you want to use their commands, they have some real powerful ones, providing you the ability to create programs in their psuedo-BASIC that may have previously only have been able to be programmed in TI Assembler language. If you follow their rules.

The rules for using this product are spread throughout the 59 page manual. And they are many. Appreciate that the authors had to try to figure out what you wanted each command to do and convert it to machine language. And they are different. Not only will you have to change the commands that you use, but the way you use them will probably change, too. If you write bugless, structured, simplistic code (one function per command), then the effect upon you will be less. If not, and the EDITOR don't get you, and the COMPILER don't get you, the LOADER probably will. Or, maybe your program won't do what you thought you told it to do, and you can go through the whole process again. But, that's the way of a compiled language. Create the source, Compile, Link, Execute, fix the source, and do it all over again, until it's right. More work than intepreted BASIC, but it has its' advantages.

I've included an example of the process I had to go through to get a simple TI Extended BASIC program compiled, so I could watch it smoke. Well, I got the joke instead of the smoke. Apparently, I don't understand all the rules, and the manual left many questions unanswered. For instance, the combination of the advertising and the manual let me believe I could compile an Extended BASIC program. Mistake number one. It says "Expanded", not "Extended". Remember that. (I could only find one command that was the same between their BASIC and TI's Extended BASIC, and even then, TI allowed multiple variables and SST only one).

So, my first attempt (TEST 1) at using the SST product failed miserably. And this is how I did it...The manual says to load the EDITOR and key your program in using line numbers 11 thru 32000. It also said that if you preferred, you may use Extended BASIC, in which case you load the EDITOR/EX program (maybe that's why I thought it could handle Extended BASIC code). Of course I wanted to use Extended BASIC. That's what I want to program in. Right? Wrong! But, I'm getting ahead of myself.

(3)

So, I plugged my Extended BASIC in, keyed my program in, renumbered it (REN 11), and saved it to disk with the MERGE option. Then I loaded the EDITOR/EX and merged my program with it, renumbered the whole thing (REN 1,1 -- that's that it said had to be done), and keyed RUN.

```
TEST 1
11 CALL CLEAR
21 DISPLAY AT(9,5)BEEP:"TEST OF SST COMPILER" :: DISPLAY AT(11,7)BEEP:
"by Jerry S. Hough" :: DISPLAY AT(13,9)BEEP:"5 August 1984"
31 STOP
```

The EDITOR passed statement 11, but stopped on 21. The message was something like "invalid command". Well, I remembered something in the manual about--only one command on a line, so, I changed my program and repeated the process.

```
TEST 2
11 CALL CLEAR
21 DISPLAY AT(9,5)BEEP:"TEST OF SST COMPILER"
31 DISPLAY AT(11,7)BEEP:"by Jerry S. Hough"
41 DISPLAY AT(13,9)BEEP:"5 AUGUST 1984"
51 STOP
```

Same message. It just didn't like statement 21. Back to the manual and the "Index of Commands"...DISPLAY AT isn't there, but PRINT is, and I didn't care if it was in the center of the screen or on the bottom (I just wanted it to work).

```
TEST 3
11 CALL CLEAR
21 PRINT "TEST OF SST COMPILER"
31 PRINT " by Jerry S. Hough"
41 PRINT " 5 AUGUST 1984"
51 STOP
```

My third test passed the EDITOR, so I loaded the COMPILER and keyed RUN. Whoops. Another boo-boo. The section on running the COMPILER should have told me to insert the Editor/Assembler module. I was still in Extended BASIC (that only works for EDITOR/EX, all the others require E/A or Mini-memory). So, I wonder, if they require these modules, are they written in Assembler and you LOAD them like you do any other Assembler program? Not so. Fire up the E/A module, select TI BASIC from the master menu and load the COMPILER and then RUN. I did that and it promptly replied..."VARIABLE NOT FOUND". Back to the book and refer to the section "In case of Problems". It said that I violated the rules. I didn't define my variable in a LET statement at the beginning of the program. So, I fixed my program again. (By the way, each time I'd "fix" my program, I'd RUN it to see if it still did what I wanted it to, and it did...in TI BASIC...even with the LET statements).

```
TEST 4
11 CALL CLEAR
21 LET A$="TEST OF SST COMPILER"
31 LET B$=" by Jerry S. Hough"
41 LET C$=" 5 AUGUST 1984"
51 PRINT A$
61 PRINT B$
71 PRINT C$
81 STOP
```

Now everything should be fine. From what I can tell, it follows all the rules, so I rerun the EDITOR and rerun the COMPILER and lo and behold, I got a machine language object file created. Now all I have to do is run the LOADER and watch it smoke. And I did just that. And it did just that. Smoke/crash/burn. It locked up the computer tighter than the money supply. It just sat there and looked at me. It didn't display at or print at anywhere. It didn't even clear the screen (the first command..one of the acceptable few), and still had the LOADER stuff on it. It did change the color, but who cares. Now, I'm desperate and tear through the manual trying to find the secret rule I violated. In desperation, I decide it must have to be told to scroll up after it prints a line (yes, there are commands to control the horizontal and vertical scrolling...some of the many powerful features of the SST language). So, I go through the process again (TEST 5) and get the same results as TEST 4, and I'm tired now, and I've wasted most of the day, and I give up.

TEST 5

```
11 CALL CLEAR
21 LET A$="TEST OF SST COMPILER"
31 LET B$=" by Jerry S. Hough"
41 LET C$=" 5 AUGUST 1984"
51 LET F@=0
61 LET O@=1
71 CALL SCRON(O@)
81 PRINT A$
91 PRINT B$
101 PRINT C$
111 STOP
```

The following series of source code listings may be of interest to game programmers. They were adapted from "BEGINNING ASSEMBLY LANGUAGE FOR THE TI HOME COMPUTER" which is published by D & D Publishing. The first program illustrates how a red ball-shaped sprite can be moved around the screen using joystick #1. Automatic sprite motion is used. The sprite only moves when the joystick is moved. When the joystick is released the sprite stops.

The Extended BASIC version of this program is provided for comparison purposes.

To enter this program using the MMM and LBL assembler, you must follow the following steps.

1. Alter all labels to two characters in length.
2. Use proper addresses for utility programs.
3. Enter program name and starting point in REF/DEF table.

This is included as an example of assembler language. It was copied from an advertising brochure for the book. If you like it, buy it.

PRES

```

*****
* 10 CALL SCREEN(11) *
* 20 CALL CHAR(80,"3C7EFFFFFFF7E3C") *
* 30 CALL SPRITE(#1,80,9,100,100) *
* 40 CALL JOYST(1,X,Y) *
* 50 CALL MOTION(#1,-Y*4,X*4) *
* 60 GOTO 40 *
*****
DEF START
REF VSBW, VMBW, KSCAN, VWTR
BALL DATA >3C7E,>FFFF,>FFFF,>7E3C
SDATA DATA >70D0,>8008
DATA >D000,>0000
SPEED DATA >0000,>0000
START LI R0,>0384
LI R1,>AA00 * Set the space character
BLWP @VSBW * to yellow on yellow and fill
CLR R0 * every screen position with
LI R1,>2000 * this space character.
LOOP BLWP @VSBW *
INC R0 * CALL SCREEN(11)
CI R0,768 *
JNE LOOP *
LI R0,>070A * Set border color to dark yellow
BLWP @VWTR * by writing value to VDP register 7.
*
LI R0,>0400 * Load the sprite
LI R1,BALL * descriptor table with
LI R2,8 * the ball pattern.
BLWP @VMBW * CALL CHAR(80,"3C7EFFFFFFF7E3C")
*
LI R0,>0300 * Load the sprite attribute
LI R1,SDATA * table with the sprite data.
LI R2,8 *
BLWP @VMBW * CALL SPRITE(#1,80,9,100,100)
*
LI R1,1 *
SLA R1,8 *
MOVB R1,@>8374 * Select keyboard device >01.
MOVB R1,@>837A * One sprite will be in motion.
*
LI R0,>0780 * Load sprite motion table
LOOP1 LI R1,SPEED * with a zero 'X' and zero 'Y'
LI R2,4 * velocity.
BLWP @VMBW *
LOOP2 LIM1 2 * Allow interrupts so
LIMI 0 * that sprites can move.
BLWP @KSCAN *
MOV @>8376,@>8376 * See if joystick moved, if
JEQ LOOP1 * not set velocities to zero.
CB @>8376,2 * CALL JOYST(1,X,Y)
JEQ CHANGE * Set correct 'X' and 'Y'
MOVB @>8377,R5 * values depending on joystick
NEG @>8376 * position.
MOVB R5,@>8377 *
CHANGE LI R1,>8376 * Load new values into the
LI R2,2 * sprite motion table.
BLWP @VMBW * CALL MOTION(#1,-Y*4,X*4)
B @LOOP2 * Go check again for new input. GOTO
END START

```

SPEECH HELPER PROGRAM

THIS PROGRAM IS FROM TEX-BUG'S LIBRARY AND IS PRINTED HERE TO AID MEMBERS WITH THE TERMINAL EMULATOR COMMAND MODULE USE.



```

100 REM *SPEECH HELPER*
110 REM
120 REM *TI BASIC*
130 REM TE II & SPEECH      SYNTHESIZER NEEDED; PRINTER OPTIONAL
140 CALL CLEAR
150 PRINT " TE II SPEECH-CHOOSE ONE:"
160 PRINT : " 1-ENTER PHRASE, COMPUTER"; "  SPEAKS"
170 PRINT : " 2-ENTER PHRASE, COMPUTER"; "  PRINTS ALLOPHONE NUMBERS"
180 PRINT : " 3-ENTER ALLOPHONE NUMBERS, "; "  COMPUTER SPEAKS WORD"
190 PRINT : " 4-END PROGRAM":
200 INPUT SEL
210 IF (SEL<1)+(SEL>4)THEN 200
220 CALL CLEAR
230 ON SEL GOTO 240,350,620,820
240 OPEN #1:"SPEECH",OUTPUT
250 PRINT "ENTER PHRASE TO BE SPOKEN."
260 PRINT "TO ALTER PITCH, ENTER //":" FOLLOWED BY PITCH # (0-63)";"AND SLOPE # ( 0-255).";"EXAMPLE: //43 128":
270 PRINT "ENTER 999 TO EXIT)"
280 PRINT
290 INPUT "PHRASE=":A$
300 IF A$="999" THEN 330
310 PRINT #1:A$
320 GOTO 280
330 CLOSE #1
340 GOTO 140
350 OPEN #1:"SPEECH",OUTPUT
360 OPEN #2:"ALPHON",INTERNAL
370 PRINT "ENTER A WORD OR PHRASE. THE COMPUTER WILL PRINT THE ALLOPHONE NUMBERS
380 INPUT "USING A PRINTER? (Y-N)":Y$
390 IF Y$<>"Y" THEN 420
400 INPUT "DEVICE NAME:";DN$
410 OPEN #1:DN$,OUTPUT
420 PRINT : "ENTER 999 TO QUIT)":
430 INPUT "PHRASE=":A$
440 IF A$="" THEN 430
450 IF A$="999" THEN 570
460 PRINT #1:A$
470 INPUT #1:R$
480 P$=""
490 Z=LEN B$
500 FOR R=4 TO Z
510 PRINT ASC(SEE$(R$,R,1))
520 P$=P$&ST$(ASC(SEE$(B$,R,1)))$
530 NEXT R
540 IF Y$<>"Y" THEN 560
550 PRINT #3:A$:P$
560 GOTO 420
570 CLOSE #1
580 CLOSE #2
590 IF Y$<>"Y" THEN 140
600 CLOSE #3
610 GOTO 140
620 OPEN #1:"ALPHON",INTERNAL
630 PRINT "ENTER NUMBER OF SYLLABLES IN THE WORD THEN ENTER EACH ALLOPHONE NUMBER 1 AT A TIME"
640 PRINT : "(ENTER 999 TO QUIT)":
650 INPUT "SYLLABLES=":A
660 IF A=999 THEN 600
670 B$=CHR$(250)&CHR$(255)&CHR$(A)
680 PRINT : "(ENTER 0 TO END WORD)":
690 INPUT "ALLOPHONE NUMBER=":C
700 IF C=0 THEN 730
710 B$=B$&CHR$(C)
720 GOTO 690
730 PRINT #1:B$
740 PRINT : "(PRESS ENTER FOR NEW WORD
OR ANOTHER KEY TO REPEAT)"
750 CALL KEY(0,"",ST)
760 IF ST=0 THEN 750
770 IF K=13 THEN 640
780 PRINT #1:B$
790 GOTO 750
800 CLOSE #1
810 GOTO 140
820 STOP

```

XBASIC: CALL LOADS and a diatribe

Info from CALL NEWSLETTER, (Atlanta 99/4A CUG, PO Box 19841, Atlanta, Georgia 30325), who got from others and so on -- the network is alive!. What these values do is to muddle with the CPU PAD, so XBASIC does things no right-minded TI software engineer intended. Aha! Just what you need!

Some of these are even useful. Try them out, modify them, write them down, collect 'em. And send to the newsletter. One of these days, September for instance, we'll publish a complete list.... Most have at least two actions, depending on whether you just ENTER them, (immediate mode), or RUN into them.

a diatribe as promised

Notice the table has only two locations that do not require correcting. One, the >9000 address of Speech Synthesizer, can't have a phantom location so it really ought not count. Notice too that the first example really matches the second. I can hear the hackers utter 'works though----'. So it does. But the headache comes around when you try to keep track of all these addresses.

So. There is only one PAD. It has 256 locations, from >8300 to >83FF, and phantoms at >8000, >8100, and >8200. They're all the same, check if you like. Keeping consistency with TI manuals (and why not?) let's all use the >8300 series. Who knows, maybe Corcoran will put the IK chip in there, like it should have been in the first place. And if they do, and keep upward capability, these lists will be cattle fodder.

One last item: Please check these before publishing. In the table that follows the second or capitalized info is what I've found out. And a question: does anyone know a poke to reboot the LOAD program from the RUN mode? Short of RUN "DSK1.LOAD", that is.

>Frederick Hawkins

july 84 page 4
LEHIGH 99'ER
COMPUTER GROUP

XBASIC	HEX ADDRESS	POKE ADDR	IMMEDIATE VALUE	MODE ACTION	RUN MODE ACTION	Name or pad area
-32730	>8026	32		returns to title screen		used by BASIC
correct:					SAME	
-31962	>8326					830F-8349
-31962	>8326	255		restart XBASIC, and boot LOAD from DSK1.	MUDDLED TITLE SCREEN	
-32116	>828C	4		puts into BASIC from X-BASIC without losing pgm	two honks, junk line # SYNTAX ERROR dummy line # 0	subrout. stack area
correct:						
-31860	>838C			well, that's the rumor. didn't work here.	trace, protection on	838A-83BF
-32187	>8245	9		will give you pgm line of 0, which can't be used. Likely part of NUM, needs increment, and start line	not dependably in either mode	used by BASIC
correct:				Escape with FCTN 8 (redo)		830F-8349
-31931	>8345			> this location is bit mapped; lots goes on here	trace, clear, protection.	
-32198	>8244	127		Change screen color; give break point. DIDN'T WORK	WITH EITHER MODE	used by BASIC
correct:				try 1 thru 127....		830F-8349
-32116	>828C	1		Puts random characters on screen.	same	subrout stack area
again!						
correct:						
-31860	>838C	8		boots LOAD pgm from DSK1.	muddled title screen	838A-83BF
-32114	>828E	2		random garbage on screen LOCKED UP	locks up; quit some times works.	subrout stack area
correct:						
-31858	>838E	13		screen goes wild :loses MEM-MAPPED pointers		838A-83BF
		119		screen gets wild lines and boxes.	AS ABOVE. quit sometimes works!	
-28672	>9000	peek		CALL PEEK(-29762, SP) here		
				When SP=96 (that's CHR\$ A) system knows that speech is connected. You can then CALL SAY stuff.		

Note this address is NOT in PAD, but rather directly to Speech chip, which is memory-mapped at locations >9000 for read and >9400 (-27648) for write.

Pgming trick: BASIC pgms that use Term. Emulator and SPEECH file may use this syntax to print to screen and say the material:

```
OPEN #1:"SPEECH",OUTPUT
FOR A=0 TO 1
PRINT #A:"YOUR PHRASE GOES HERE"
NEXT A
```

thanks to David Douglas
ALOHA 99/4A CUG, Honolulu

in BASIC file #0 is ALWAYS the screen and ALWAYS OPEN.

About AL --If you don't know anything!

So you've bought the Editor-Assembler cartridge, disks and direction book. Now you're all set to master Assembly language, right. No wrong, by the time you get to page 17, they, whoever they are, inform you that this manual assumes that you already know a programming language, preferably an assembly language. Ho,ho,ho, and then it goes on to say, there are many fine books available which teach the basics of assembly language use.

If you've mastered ancient Sumerian language and Sanskrit language, assembly language will probably come easy to you. However, if you are like me, you will require small doses of knowledge on this subject at any one time. This to be administered by a competent teacher in addition to a good text book on the subject.

The text that I am using at the present time is, "Learning TI 99/4A Home Computer Assembly Language Programming" by Ira McComic.

This book is written in easy to understand every day English Language, in an easily understood manner, which is in contrast to some written by computer engineers who have long ago forgotten that there is a beginner's level.

The book begins with an overview of the book and it's objectives. Then it explains "What is assembly language?" Then into the basics of structure of data and the mathematical translations of number conversions, decimal, hexadecimal, binaries etc. This does require a previous exposure to 7th or 8th grade math.

Each chapter leads into the next. By studying the text methodically I believe one can achieve a knowledge of assembly language. Again I caution a good instructor can save you time and many headaches.

TEAC DISK DRIVES, a review

There have been many published articles about using two half-height drives in your Expansion Box, most likely generated by T.I. sour grapes. The TEAC half height disk drive is also half powered, and 2 halves do make one whole. These disks have really been put to the test by several of us working with the Library, there has been nothing but good to report about them. They work quickly, and quietly, and are both double sided and double density. When the Cor-Comp double density card is released it will address 4 of these drives. I have been able to arrange a group purchase of these disks for User Group members far below what we originally bought them for. Each drive is now \$170.00 and the cable kit is \$20.00, so for \$360.00 you are up and running double sided and hopefully in the future double density. This offer is also available to the members of the User Groups we exchange newsletters with. Interested persons may communicate directly with me at 148 S Maple Drive Beverly Hills Ca 90212 or by telephone 213 2716930. Check, Visa or Master card or UPS collect are all ok.

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COMPUTER CLUB SOFTWARE PROGRAM ACCEPTANCE POLICY

Programs donated to the library remain the property of the donor. The donor agrees by submitting the program that the program is not copyrighted and may be disbursed to members of the users group without compensation to the donor. The program may be withdrawn from the library at any time at the request of the donor or at the discretion of the software library chairman.

31 AUGUST 1984

Due to increased size of library catalog, no more catalogs will be mailed out. There will be a updated copy of our program list at the next meeting. To order programs from the library, write your name, address, phone number and the names, numbers and copying charges of the programs you want to receive on a piece of standard 8 by 10 notebook paper or the equivalent. Bring this along with a blank tape or disk to the next meeting. If our library is going to work we will need your support, any comments or suggestions are welcome. For any questions regarding the library contact Jeff Burkhardt (375-1968).

COPIED FROM THE "TOPICS" - LA 99ERS COMPUTER GROUP NEWSLETTER

```
100 CALL CLEAR :: DISPLAY AT(8,12):"THE": :TAB(6);"<* WEE BOMBER *>"
110 FOR I=1 TO 600 :: NEXT I
120 DISPLAY AT(20,2):"press SPACE BAR to fire": : " 'Q' to quit"
130 DISPLAY AT(24,1):"PRESS <enter> WHEN READY"
140 CALL KEY(0,K,S):: IF S=0 THEN 140
150 REM *****
160 REM ** **
170 REM ** < WEE BOMBER > **
180 REM by J.PIERRE PELLETIER
190 REM ** **
200 REM *****
210 CALL CLEAR :: CALL HCHAR(22,2,30,30)
220 CALL COLOR(9,4,4):: CALL HCHAR(23,1,96,32)
230 CALL SPRITE(#1,43,2,35,256,0,-10)
240 CALL KEY(0,K,S):: CALL SOUND(-2000,-3,3,200,10)
250 IF S=0 THEN 240
260 IF K=81 THEN 380
270 CALL POSITION(#1,XX,YY):: AA=XX
280 CALL SPRITE(#2,46,2,XX,YY,20,0)
290 N=N+1 :: DISPLAY AT(24,2):"BOMBS:";N
300 AA=AA+4 :: CALL LOCATE(#2,AA,YY)
310 REM IF AA>=21*8 THEN CALL SOUND(100,-7,0)
320 CALL POSITION(#2,R,S)
330 FOR I=1 TO 375 :: NEXT I
340 CALL HCHAR(22,S/8+1,32):: AA=0 :: CALL SOUND(-600,110,3,-7,0)
350 CALL DELSPRITE(#2):: GOTO 240
360 CALL SOUND(-100,-3,0,2000-(AA*4),10)
370 CALL DELSPRITE(#2):: GOTO 300
380 CALL DELSPRITE(ALL):: DISPLAY AT(24,1):" "
390 DISPLAY AT(11,7):"YOU USED";N;"BOMBS": :TAB(9);"YOU DID FINE"
400 FOR I=1 TO 600 :: NEXT I
410 END
```

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