

CHATTANOOGA USERS GROUP  
PO BOX 136  
HIXSON, TN 37379

NEWSLETTER 7  
JUNE '84

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CHUG

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Larry Bryant	Vice-President	332-5766
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We need one!	Education Chairperson	
We need one!	Newsletter Chairperson	
John Rathjen	Historian	
Kerry Roach	Equipment Chairperson	
Jim Roach	Special Interest Group I	

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MEETING ANNOUNCEMENT

Our next meeting is:

MONDAY, June 18th at 7:00 pm  
AT THE RED BANK BAPTIST CHURCH FAMILY LIFE CENTER on Dayton Blvd. Our thanks to  
Larry Bryant for arranging this for us.

As we mentioned at the last few meetings, if you have software or peripherals you would like to sell, swap or buy, try and get there a little early and we will see how it goes.

EDITORIAL

We still need a newsletter editor/chairperson. The responsibilities will include publishing the newsletter, corresponding with other users group newsletter editors, and being praised by the club officers for sharing the burden of running the group. Whoever takes the job will need a printer but the group may consider providing a printer if needed. We would have to vote on this. Anyone interested please contact one of the officers, PLEASE!!!

SWAP SHOP

1. The users group is still offering TI FORTH for \$15.00. Contact one of the officers if you are interested.
2. Larry Bryant has Alien Addition, Minus Mission, Munchman, and Blackjack modules for sale for \$7.50 each or all four for \$25.00. See him at the meeting if interested.

- 3. CHUG is still offering C-10 computer tapes.
- 4. Larry Bryant has a speech synthesizer (new) for \$35
- 5. Howard Conway has TI Logo II.
- 6. Ed McCoy has Pirate Adventure Module and cassette for \$15.00

PERIPHERAL VISION  
 Part 1- Floppy Disk Drives

By Kerry Roach

Do you envision yourself with a more sophisticated system than the TI console, TV, and cassette recorder? If you have been considering expanding your system to include a floppy disk drive, memory expansion, or printer, maybe this series of articles can help you decide on which equipment to buy by supplying you with some background information on available equipment. In this segment of the series we will discuss floppy disk drive systems.

There are several options available to you for the addition of a floppy disk drive to your computer. There are stand alone systems available that require no additional hardware other than that purchased with the drive. Other systems require the purchase of an 'electronics package' or 'peripheral box' containing the disk operating hardware in addition to a bare disk drive and power supply.

The only company to manufacture a stand alone disk system for the TI 99/4A Percom, Inc., is no longer producing the TI compatible model (TX-99S1), but there are numerous mail order houses that still market these drives from their inventory. This system features a single sided, single density (SSSD) disk drive, a disk controller which will control additional SSSD drives, and a power supply all neatly packaged in an aluminum housing. The system comes complete with the cable to connect to the I/O port on the right hand side of the TI console. The price you ask? The system ranges in price from \$245 to \$399 depending upon the length of time a particular mail order house has had it in stock (Percom recently increased the price by about \$70).

There are several other package systems on the market containing a disk controller, RS-232 interface, a 32K memory expansion and a power supply. These units use a different operating system than Texas Instrument. The two companies marketing these systems are CorComp and TexMicro. The CorComp disk controller will control single or double sided, single or double density drives in any combination up to four drives. The system adds several commands to the TI such as CALL PEEK, PEEK V, POKE, POKE V, and MERGE and will transfer memory contents from one location to another. Since the system will not come with a drive, a compatible drive and power supply must be purchased. Last week the system was still not available, but orders were being taken by Tenex at a price of \$369 for the expansion system. Prices for drives and power supplies add approximately \$200 per drive to the system cost.

The expansion system from TexMicro also consists of an electronics package containing a disk controller, RS-232 interface, 32K memory expansion, and power supply. The disk controller will control single or double sided, single or double density drives in any combination up to 3 drives. This package connects to the TI console via a cable to the I/O port on the side of the console. A space is provided inside the electronics package for the speech synthesizer circuit card which must be removed from the PHP 1500 unit. The package comes with a "disk access" command module and a diskette containing disk manager and file transfer utilities. The package should be available from the manufacturer during the month of June at a price of \$499.

Myarc, Inc. markets a mini peripheral expansion system that also contains a 32K memory expansion, double density floppy disk controller which will control up to four drives, RS-232 interface, and also includes a single side, double

density disk drive. The package consists of one unit containing all of the above items and plugs into the expansion port on the TI console. For \$595 American dollars you can have one of these to call your own.

The TI disk system requires the peripheral expansion box, a disk controller card which will control up to three drives, and a bare disk drive. The disk controller card and disk drive included with most packages are single density type capable of storing 92K bytes per disk. Unisource Electronics, Inc. has a limited supply of TI packages which include the P.E. box, disk controller card (SSSD), disk drive, and a 32K memory expansion for a price of \$499.95.

The next installment of this series will include a discussion of hardware that will allow you to add a printer to your TI.

[editors note: I really appreciate Kerry volunteering to do a series for us on peripherals. It makes our job easier, the newsletter more useful, and hopefully will encourage some of you to follow suit! Come on people, we're asking for some help]

PRESIDENT'S CORNER

It is close to 8 P.M.. It's still nice and sunny. I have been working on the news letter for about an hour. I have not been very creative. The entire contents so far have been the work of Larry Bryant and Kerry Roach. Jim Roche has contributed also. Brenda Mitchell has done an excellent job as Recruitment Chairperson. Several others have been involved and it is appreciated. We have asked over and over what the membership wants for their money. I would like to outline some goals that CHUG needs to achieve and if we can achieve these to some degree what our group can then offer.

1. We need a newsletter editor.
2. We need a correspondance secretary.  
(I didn't ask Sandy if She could or would handle this, Yet!).
3. We need to get our finances organized.  
(Candy Hicks and Andy Anderson and Jerry McClanahan have helped in the past but Candy needs help in keeping track of membership dues. We have the capability to do this but have not put forth the effort yet).
4. We need to get additional SIGs (Special Interest Groups) going. I see a wide range of interests in our membership. I suggest the following.
  - a. Basic SIG.
  - b. Extended Basic SIG.
  - c. Assembly Language SIG.
  - d. Forth SIG.
  - e. Games SIG.

As some of You know We have an IBM and Clones SIG. If only two people get together for a common purpose, it can be the start of a SIG.

Debugging a computer-The first time.

Captain Grace Hopper, USN, in her book THE ANNALS OF THE HISTORY OF COMPUTING tells how the first American large scale digital computer, the Mark II, was repaired in the summer of 1943. The computer had stopped. The windows had been opened as the room was not air conditioned. Examining the large relays used in those days they found a moth in the contacts as the cause of the failure. From that time on when the crew was asked about progress on the computer they replied that they were debugging to indicate that lack of progress. That bug still remains taped to the page of a logbook at a Naval Museum in Virginia.

It's Incredible.

Scott Oldham ran a test on the pseudo random number generator capabilities of the 99/4A. He found after 19 million plus generations the first number was NEVER repeated. That's mindboggling when you think about it.

Scott demonstrated two programs that he wrote that achieve that rare combination of being useful, informative and interesting. He will demonstrate them at the next two meetings. One allows visual examination of the various color combinations achievable on the 99/4A. The other does the same for sound. I think that you'll be surprised by what he can show on the sound demo.

!!!!!!!!!!!!!!IMPORTANT INFORMATION!!!!!!!!!!!!!!

DON VIETH, President of Tex-BUG (TI-Bakersfield Users Group) is forming a 99'ers Users Group Association. Marshall Gordon, a very dedicated man and President of the Atlanta 99/4A Computer Group, is our Regional Coordinator. The aim is to provide factual, accurate, and valuable information through a newsletter. I highly recommend that we participate actively in this venture. It is an excellent way to maintain a high profile among the industry manufacturers.

Kerry Roach has been cataloging the Newsletters that we have been receiving from other user groups. There is a TREMENDOUS amount of information in them. Here is just an appetizer.

The Sprite. 9900 User's Group, Inc. Mooretown, N.J.

Editor Assembler tutorial, by M. Baker.

A scoop on the TI-MINI-WRITER.

Hints from other clubs.

A heapsort program.

Latest flashes from vendors.

A data linker program by Vaughn Software

Tips from the Tigercub #11 (We should support this type of service. Look over the enclosed article.)

All of this is in just one Newsletter. This points out several things.

1. The value of our intergroup correspondence.
2. The availability of items in other areas that are locally scarce.
3. The problem in not having an original material for OUR newsletter. We can't grow if we stay just copy-cats.

TIPS

See the Tigercub Software Enclosure.

HUMOUR

An employment agency official to applicant. "What are your strong points?"

"I've been fired 17 times."

"That doesn't sound so good to me."

"It shows I'm no quitter!"

We'll quit on that one.

Adios,

Ty Phoray

TIPS FROM THE TIGERCUB  
NO. 11

**TIGERCUB SOFTWARE**  
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THESE TIPS ARE DISTRIBUTED BY  
TIGERCUB SOFTWARE FOR PROMOTIONAL PURPOSES, AND MAY BE REPRODUCED BY NON-PROFIT ORGANIZATIONS PROVIDING THAT CREDIT IS GIVEN TO TIGERCUB SOFTWARE.  
TIGERCUB SOFTWARE IS A KITCHEN-TABLE ENTERPRISE SPECIALIZING IN ORIGINAL LOW-COST QUALITY SOFTWARE FOR THE TI-99/4A COMPUTER. I HAVE OVER 130 PROGRAMS AVAILABLE ON CASSETTE OR DISK AT ONLY \$3.00 EACH. MY DESCRIPTIVE CATALOG WILL BE SENT TO YOU FOR \$1.00 WHICH IS DEDUCTABLE FROM YOUR FIRST ORDER.

LAST MONTH'S CHALLENGE WAS TO UNFURL THE U.S. FLAG (WITH 49 STARS), FROM THE MAST OUT, IN 2 LINES OF EXTENDED BASIC.  
100 CALL CLEAR :: CALL COLOR (2,16,5,3,16,16,4,7,7):: AS(1)="\*\*\*\*\*080808" :: AS(2)=RPT\$( "80",7):: CALL CHAR(33, RPT\$( "01",5)):: CALL VCHAR(4,4,33,20)  
110 FOR C=5 TO 22 :: X=1+ABS(C>11):: FOR T=1 TO 13 :: CALL VCHAR(5+T,C,ASC(SEGS\$(AS(X),T,1))):: NEXT T :: NEXT C  
:: GOTO 110

ONE OF THE PREVIOUS CHALLENGES WAS TO WRITE THE EXTENDED BASIC STATEMENT IF X=1 THEN Y=7 ELSE IF X=2 THEN Y=33 ELSE IF X=3 THEN Y=19 ELSE IF X=4 THEN Y=21. MY SOLUTION WAS Y=VAL(SEGS("07331921",X\*2-1,2)). JIM JOHNSTON IN THE K\*3 USER'S GROUP NEWSLETTER CAME UP WITH A METHOD WHICH IS BETTER BECAUSE IT DOES NOT REQUIRE THAT THE VALUES OF X BE IN A SEQUENCE:  
Y=ABS((7\*(X=1))+33\*(X=2))+19\*(X=3)+21\*(X=4))

PROVING ONCE AGAIN THAT THERE IS MORE THAN ONE WAY TO SKIN THE CAT, AND OFTEN A BETTER WAY - ALTHOUGH THE CAT MIGHT NOT AGREE.

ADVICE TO DISK-DRIVERS - KEEP AN EYE ON THOSE LITTLE TABS OF SILVER TAPE THAT YOU USE TO COVER THE WRITE-PROTECT NOTCH ON YOUR DISKS. THEY TEND TO BECOME DOG-EARED FROM BUMPING AGAINST THE

SLOT OF THE DRIVE. I RECENTLY HEARD A HORROR STORY ABOUT ONE OF THOSE TABS THAT CAME LOOSE AND GOT INTO THE DRIVE!

THE FOLLOWING MENU-LOADER OR AUTO-BOOTER WAS ORIGINALLY PUBLISHED BY A. KLUDGE IN THE 99'ER VOL. 1 #4. MARSHAL GORDON AND THOMAS BOISSEAU GREATLY IMPROVED IT AND PUBLISHED IT IN THE ATLANTA 99/4 UG NEWSLETTER VOL. 2 #1. I HAVE NO IDEA HOW IT WORKS, BUT HAVE MANAGED TO MODIFY IT SO THAT IT WILL CATALOG UP TO 99 PROGRAMS ON A DISK, STOPPING FOR INPUT AFTER EACH 19 ARE LISTED, OR STOPPING WHENEVER ANY KEY IS PRESSED; I ALSO ADDED A DELETE OPTION, REQUIRING A REPEATED INPUT TO PREVENT ERROR. IT TAKES UP ONLY 8 SECTORS. IF YOU HAVE EXTENDED BASIC AND DISK DRIVE, LOAD THIS PROGRAM UNDER THE FILE NAME LOAD. IT WILL THEN AUTOMATICALLY RUN WHENEVER YOU SELECT EXTENDED BASIC, WILL LIST ALL THE PROGRAMS ON THE DISK, AND WILL RUN WHICHEVER PROGRAM YOU SELECT.

```
100 OPTION BASE 1 :: DIM PGS(99),TS(5):: CALL CLEAR-
110 TS(1)="DIS/FIX" :: TS(2)
    ="DIS/VAR" :: TS(3)="INT/FIX
    " :: TS(4)="INT/VAR" :: TS(5)
    ="PROGRAM"
120 IMAGE #
130 DISPLAY AT(1,9)ERASE ALL
    :"DISKETTE MENU"
140 ! IF YOU HAVE MORE THAN
    ONE DISK DRIVE, DELETE THE !
    IN LINE 150
150 ! DISPLAY AT(12,6):"DISK
    ? (1-3):" :: ACCEPT AT(12,19)
    )SIZE(-1)VALIDATE("123"):DS
    :: DS="DSK"&DS&"
160 DS="DSK1." :: OPEN #1:DS
    ,INPUT ,RELATIVE,INTERNAL ::
    INPUT #1:N$,A,J,K :: DISPLA
    Y AT(1,1)ERASE ALL:SEGS(DS,1
    ,4)&" - DISKNAME="&N$:
170 DISPLAY AT(2,1):"AVAILAB
    LE=";K;"UGED=";J-K;"PROG FI
    LENAME SIZE TYPE:"
    " ::
    I=0
180 FOR X=1 TO 80 :: IF X/20
    <>INT(X/20)THEN 210
190 DISPLAY AT(24,1):"TYPE C
    HOICE OR 99 FOR MORE" :: ACC
    EPT AT(24,27)VALIDATE(DIGIT)
    :K :: IF K=99 THEN 200 :: IF
    K>0 AND K<X+1 THEN 360.ELSE
    190
200 X=X+1 :: CALL VCHAR(1,2,
    32,48)
```

(CONT.)

```

210 I=I+1 :: IF I>127 THEN K
=<K :: GOTO 300
220 INPUT #1:PS,A,J,B
230 IF LEN(P$)=0 THEN 270
240 DISPLAY AT(X+4,2):USING
120: X :: DISPLAY AT(X+4,6):P
$ :: PG$(X)=P$ :: DISPLAY AT
(X+4,18):USING 120: J :: DISP
LAY AT(X+4,22):T$(ABS(A))
250 CALL KEY(O, KK, ST):: IF S
T=0 THEN 260 :: FLAG=1 :: GO
TO 280
260 NEXT X
270 DISPLAY AT(X+4,1):" " ::
DISPLAY AT(X+4,2):USING 120
: X :: DISPLAY AT(X+4,6):"TER
MINATE" :: DISPLAY AT(X+5,2)
:STR$(X+4)&" DELETED"
280 DISPLAY AT(X+6,1):" C
HOICE"
290 ACCEPT AT(X+6,16)SIZE(2)
VALIDATE(DIGIT):K :: IF K<>X
AND K<>X+1 OR FLAG=1 THEN 3
50
300 IF K=K THEN CALL CLEAR :
: CLOSE #1 :: END
310 DISPLAY AT(X+5,11)SIZE(1
8):" #?" :: ACCEPT AT(X+5,15
)SIZE(2)VALIDATE(DIGIT):KD :
: IF KD<1 OR KD>X-1 THEN 310
320 DISPLAY AT(X+6,1)SIZE(28
)BEEP:"VERIFY - REPEAT DELET
E #?" :: ACCEPT AT(X+6,27)SIZ
E(2)VALIDATE(DIGIT):KDZ :: I
F KDZ<>KD THEN 340
330 DELETE "DSK1."&PG$(KD)
340 CLOSE #1 :: GOTO 130
350 IF K<1 OR K>99 OR LEN(PG
$(K))=0 THEN 270
360 CLOSE #1
370 CALL INIT :: CALL PEEK(-
31952,A,B):: CALL PEEK(A*256
+8-65534,A,B):: C=A*256+B-65
534 :: A$=O$&PG$(K):: CALL L
OAD(C,LEN(A$))
380 FOR I=1 TO LEN(A$):: CAL
L LOAD(C+I,ASC(SEG$(A$,I,1))
):: NEXT I :: CALL LOAD(C+I,
0)
390 RUN "DSKX.1234567890"

```

COME TO THINK OF IT, IF YOU HAVE MORE THAN ONE DISK DRIVE YOU WILL ALSO HAVE TO DELETE THE FIRST STATEMENT IN LINE 160, AND MODIFY LINE 330.

HERE'S A MEMORY-SAVER FOR YOU - PUT YOUR DATA IN STRINGS INSTEAD OF DATA STATEMENTS. MY "HANGMAN PLUS" PROGRAM WAS ONLY 7764 BYTES LONG BUT IT CONTAINED A VOCABULARY OF 315 WORDS IN DATA STATEMENTS. AFTER

READING THESE INTO AN ARRAY, IT HAD TOO LITTLE WORKING MEMORY LEFT, AND PAUSED TOO OFTEN FOR GARBAGE COLLECTION. AFTER CHANGING ALL THE DATA STATEMENTS TO STRINGS, IT RUNS WITHOUT STALLING EVEN THOUGH THE NUMBER OF WORDS WAS INCREASED AND AN ARRAY OF 50 IS STILL DIMENSIONED FOR USER INPUT OF WORDS. WHEN I LOADED THE ORIGINAL VERSION IN EXTENDED BASIC WITH THE MEMORY EXPANSION AND ASKED FOR SIZE AFTER THE DATA HAD BEEN READ IN, I FOUND THAT I HAD 14756 BYTES OF PROGRAM AND 7669 BYTES OF STACK FREE. IN THE VERSION WITH DATA IN STRINGS, AT THE SAME STAGE IN THE PROGRAM I HAD 14874 BYTES OF PROGRAM AND 11310 BYTES OF STACK FREE - A SAVING OF 3730 BYTES! AND ANOTHER ADVANTAGE IS THAT THERE IS NO DELAY WAITING FOR ALL THOSE WORDS TO BE READ INTO THE ARRAY. HOWEVER, PULLING DATA OUT OF A STRING IS UNDOUBTEDLY A BIT SLOWER, SO THIS METHOD SHOULD NOT BE USED WHEN SPEED IS OF PRIMARY IMPORTANCE.

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IN THE "HANGMAN PLUS" PROGRAM, I USED LOWER CASE LETTERS AS DIVIDERS BETWEEN THE UPPER CASE WORDS. TO PULL WORDS AT RANDOM, I RANDOMLY SELECTED A STRING AND A POSITION WITHIN THE STRING, USING THE POS OF THE LOWER CASE LETTER TO FIND THE WORD. THE FOLLOWING IS A MUCH ABBREVIATED EXAMPLE:
100 M$(1)="AJOHNBJOECCHARLIE
DMIKE=LARRYF"
110 M$(2)="AGEORGEBPETECHRIS
SDONERALPHF"
120 X=INT(2*RND+1)
130 Y=INT(5*RND+97)
140 X$=SEG$(M$(X),POS(M$(X),
CHR$(Y),1)+1,POS(M$(X),CHR$(
Y+1),1)-POS(M$(X),CHR$(Y),1)
-1)

```

IT IS OF COURSE ESSENTIAL THAT ALL THE STRINGS CONTAIN THE SAME NUMBER OF ELEMENTS OF DATA. IF LOWER CASE LETTERS ARE NEEDED, THE SEPARATORS CAN BE ASCII CODES 129 THRU 154, OBTAINED BY HOLDING DOWN THE CTRL KEY WHILE TYPING THE ALPHABET - IT'S A BIT HARD TO KEEP TRACK OF THOSE, BECAUSE THEY'RE INVISIBLE! NUMERIC DATA CAN ALSO BE STORED, USING THE VAL FUNCTION TO CONVERT IT TO NUMERIC AFTER IT IS PULLED FROM THE STRING.

YOU PROBABLY ALREADY KNOW THIS, BUT YOU DON'T HAVE TO TYPE IN THE BLANK SPACES BEFORE AND AFTER THE :: IN MULTIPLE STATEMENTS IN EXTENDED BASIC. JUST RUN EVERYTHING TOGETHER 100 CALL CLEAR::RANDOMIZE::FOR D=1 TO 100::NEXT D AND THE COMPUTER WILL SEPARATE IT FOR YOU, SHOVING STATEMENTS INTO ADDITIONAL LINES IF NECESSARY.

OUT OF MEMORY

HAPPY HACKIN'

JIM PETERSON