THE GUILFORD 99'ER NEWSLETTER

VOL.1 NO.6 JULY

OUR NEXT MEETING

DATE: July 3, 1984
TIME: 7:00 P.M.
PLACE: Zayre's Department Store
1421 E. Cone Blvd.
Electronics Dept.

PROGRAM: Discussions of a new Forth Interest Group, our tax exempt status, and our new educational commitee. DEMONSTRATION of Tachyon Systems 32K Memory Expansion (Stand-alone), Doryt Systems Paraprint 18A printer interface, and the Star Micronics STX-80 Thermal printer. We also plan to have several programs on hand from our library to demonstrate.

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We would like to welcome Sandy Carmany aboard as our Education Chairman. Sandy works with computers in the Greensboro City Schools as a Media Aide.

We still need help with our teaching. Volunteers should contact Sandy.

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The necessary forms to give us tax-exempt, non-profit status are currently being filled out. Any questions should be directed to Ken Bailey.

COMPUTER CLASSES

DATE: July 21, 1984 TIME: 2:00 P.M.
PLACE: Zayre's Department Store
Electronics Dept.

SUBJECTS: Basic parts and functions of a computer, immediate and programming mode, program pre-planning, line numbers, PRINT, GOTO, and CALL CLEAR statements.

DATE: July 28, 1984
TIME: 2:00 P.M.
PLACE: Zayre's Department Store
Electronics Dept.

SUBJECTS: Review; FOR NEXT loops, timing and counting loops, IF-THEN statements, introduction to numeric and string variables.

Classes will last about 1 1/2 hours. Bring a pencil and paper. We also need volunteers to bring computers and monitors to class.

An Educational Questionaire is in this issue. Bring it to the July meeting or mail it to Sandy Carmany at 1504 Larson St., Greensboro, 27407. We need these filled out and turned it so that our teachers know how many people to expect so they can properly prepare for the class.

An announcement will be forthcoming on our Advanced Classes and Forth Interest Group.

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The prices on T.I. Software and command cartridges has hit rock bottom. Some retail stores are offering T.I. LOGO II for $39.95 and TI WRITER at the same price. Other command cartridges are similarly reduced in price. With the exception of EXTENDED BASIC, there does not seem to be any shortage of available titles.

THE SOFTWARE SHOPPER

This month, we are going to look at what is available in our club program library.

METEOR RESCUE

METEOR RESCUE is an arcade-type game with superb graphics. It is a one player game in which the player must sneak through a band of meteors and land on a platform to rescue a group of miners. After landing, a miner comes running out and climbs into the lander for the trip back. The game is difficult but very enjoyable.

In addition to the console, it requires 32K memory expansion, Extended Basic, and joysticks.

LOST RUINS

This game is from 99'er Magazine. It is in console basic and requires only joysticks.

The object of the game is to blast tunnels and recover artifacts and return them to the surface. The game is fairly easy---but watch out for cave-ins!

BARTENDER

This program is of the "personal enrichment" variety. It gives instructions to the novice bartender in the art of mixing drinks. It displays a picture of the finished drink and one of the options allows you to enter the ingredients you have on hand and it will supply a list of drinks that you can make.

You cannot run the program with your disk drive connected because it takes up so much memory. The program is written in console basic. It will not run in Extended Basic because some of the character sets are not available.

We will continue to describe programs that we have in our library in future newsletters.

We are always looking for original, non-copyrighted programs to add to the library. We hope to have a comprehensive list of programs out shortly.

THE HARDWARE SHOPPER

The third-party entries into the T.I. market are still going strong. CORCOMP has come out with its expansion systems and there are new products available almost daily.

9900 MICRO-EXPANSION SYSTEM

This is one of the newest and most promising expansion systems introduced. CORCOMP produces high quality peripherals and this should be no exception. The entire system is supposed to be about the size of two speech synthesizers.

The system includes an RS 232 interface with both parallel and serial ports, 32K memory expansion, and enhanced disk controller that will control up to 4 double-density, double-sided drives. In addition, it has the following enhanced commands (these allow you to run assembly language without an Editor/Assembler): CALL PEEK, CALL POKE, CALL PEEKV, CALL POKEV, CALL MGR, CALL EXEC, and CALL MOVM. It retails for $369.95 and is available from CORCOMP or TENEX. There is also a drop-in controller card for the T.I. PEB for $189.95 with the same enhanced commands.

PARALLAX TI

This is a parallel interface for the T.I. that is handled by TENEX. It is supposed to offer enhanced features such as: set left margin, set line length, set line to line spacingg. It has a self-test for both the interface and printer. It retails for $89.95.

CORCOMP is also coming out with a "super" expansion system: THE 99000 EXPANSION SYSTEM in the near future.

For more information on these products, contact Corcomp Inc., 23461 Ridge Route Dr., Suite H, Laguna Hills, CA 92653 or Tenex Computer Marketing Systems, P.O. Box 6578, South Bend, IN 46660.

Tenex is the only supplier of the PARALLAX TI that I have been able to find and I do not know who manufactures the product.

FREE PROGRAM

Here is the two-part LINKER program--the first program is a data entry for demonstration.

```
100 REM Type in only line 240 through
line 270
110 REM This program is just for
demonstration purposes.It shows how
the old program should leave a data
trail
120 REM for the data linker.Notice
that all string values are preceeded
by a space.When you print a numeric
value it is printed in column
130 REM number four.This is where the
LINKER program will look for it.
140 REM
150 REM By modifying the LINKER
program you can pass more values
160 REM ************************
170 REM .
180 REM .
190 REM .Main body of the old program
200 REM .
210 REM .
220 REM ************************
230 REM
240 SCORE=10 :: TIME=524 ::
PLAYER$=" JOHN*BROWN <---NAME:" ::
CODE$=" PASSWORD <---OLD PASSWORD"
250 REM Watch what happens after the
space in "BROWN" and "PASSWORD".
260 CALL CLEAR :: PRINT SCORE:TIME:
PLAYER$:CODE$: : :
270 RUN "CS1" !This line should run
the LINKER.It can say RUN
"DSK1.LINKER" if you have the LINKER
on diskette
```

```
100 REM ******************
110 REM    DATA LINKER
120 REM         BY
130 REM  VAUGHN SOFTWARE
140 REM
150 REM  EXTENDED BASIC
160 REM
170 REM   With this sub-
180 REM  routine in your
190 REM  program you can
200 REM  pick out values
210 REM  from a previous
220 REM  program that is
230 REM  no longer in the
240 REM  computer. It
250 REM  will allow you
260 REM  to link your
270 REM  programs in end-
280 REM  less chains!
290 REM  There is no
300 REM  limit on program
310 REM     length!!
320 REM ******************
330 REM DO NOT CLEAR THE SCREEN
BEFORE RUNNING THIS SUBROUTINE!
340 FOR A=1 TO 24 :: CALL
GCHAR(A,4,SK):: IF SK<>32 THEN R=A ::
A=25 !This line finds where your data
starts on the screen
350 REM The line above assumes your
data always is left justified in
column #4
360 NEXT A
370 FOR P=R TO R+4 :: CALL
GCHAR(P,4,SK):: IF SK>45 AND SK<58
THEN GOSUB 420 ELSE GOSUB 450 !Sorts
string values from numeric values
380 REM Don't mix numbers and letters
in your data
390 NEXT P
400 CALL SOUND(1,900,0):: PRINT
VALUE(1):VALUE(2):STRING$(1):
STRING$(2)!Prints the values from the
old program
410 GOTO 410 !This line should GOTO
the main program
420 FOR C=4 TO 32 :: CALL
GCHAR(P,C,SK):: CALL HCHAR(P,C,30)::
IF SK=32 THEN C=33 ELSE
V$=V$&CHR$(SK)
!Picks out digits in numeric data
430 NEXT C
440 COUNT=COUNT+1 ::
VALUE(COUNT)=VAL(V$):: V$="" ::RETURN
!Assigns the data found to
VALUE(COUNT)
450 FOR C=4 TO 32 :: CALL
GCHAR(P,C,SK):: CALL HCHAR(P,C,30)::
IF SK=32 THEN C=33 ELSE
V$=V$&CHR$(SK)
!Picks out string characters
460 NEXT C
470 COUNT=COUNT2+1 ::
STRING$(COUNT2)=V$$ :: V$="" ::RETURN
!Assigns the string found to
STRING$(COUNT2)
```

Enter the first program and run it.Then, without clearing the screen, run the second program after it is loaded by the last line in the first program. You will find that the values are recovered despite he fact that r ogram #1 is no longer in memory.

ENTERTAINMENT

This month, we have another "word find" puzzle. The hidden words are all titles of T.I. game cartridges. Titles comprised of more than one word have been combined without a space or hyphen between them. Good luck!!!

GAME TITLES

```
*****************************
*OBKQMCZPUWGVWETTAWNFUNQGM*
*UPPHJVPNPQAEFIKDZBYFMURDX*
*RYPMBBOQFXNKEYOTYOEJYWSBN*
*AJHOPPERLSLEDCJKGEGRTNRQR*
*BEDFWLXTUJCRNLTHGNOMUMOEQ*
*YLAOXFNRGBPTGMFPXARSWKGLT*
*QZHHKVHDPIVKUWSLLKSSWPNBJ*
*ZUQSVFMCMJHAUHBNSHERBXOPJ*
*GWTITVGASIWTTLENEEZZUXBLU*
*ZXYRMONJXKESLUAHZGCQNAOCV*
*EMOFFRAJLTFARIZTOXGTRZGDF*
*RATNEBHZPGBWJTHVADLIARNWF*
*NSHANWALLTXEUAGWGX16TLOAD*
*ZHEMIUTIOHJWYCMILOBSSNCRH*
*ANLHMRKORENIPLAKDUDRLLEAS*
*PDLCNGFYVUBIDMHSRIEHQXHNF*
*GMONOOVUPBPGTEAGODSFFITVT*
*FOFUOWKWBHOHSIEMAHKWQUCPF*
*FBXMMARHZSDMLRYVJHACPVTQD*
*AXVZXZOXOBRETLNCWWAXXKODY*
*TOPHNTDEUEAISIWCARWARSJJI*
*HCESRAPJEEMMIYYGOMPOSGSZQ*
*OQGUVRFKAELTHCEOXJDVNDUCA*
*MXWSFQZTJKAGIWRFALBTYXXWI*
*LJQQYZAQKKOHUSTLEXEPKFHMN*
*****************************
```

The words hidden in the puzzle may be forwards, backwards, diagonal, or a combination (ie. backwards and diagonal). The words in the puzzle are: BURGERTIME, OTHELLO, CONGO BONGO, MASH, SNEGGIT, ALPINER, FOOTBALL, MUNCHMAN, HUSTLE, YAHTZEE, HANGMAN, ZEROZAP, BLASTO, PARSEC, MOONMINE, HOPPER, SLYMOIDS, STAR TREK, CAR WARS, TI INVVADERS, and FATHOM.

I hope you found them all. Next month, we will try another crossword puzzle.

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HARDWARE REVIEW
BY BOB CARMANY
****

T32K-S
TACHYON SYSTEMS
5125 S. Westwind Way
Kearns, UT 84118
Price: $125.00

The T32K-S by Tachyon Systems is a 32K Memory Expansion stand-alone for the T.I. 99/4A that is functionally equivalent to the 32K card in the PEB. It supports the same programming capabilities and its performance is superb.

The set-up and checkout of the device is simple. With the console turned off, plug the T32K-S into the expansion port on the right side of the console (or the expansion port on another device) and then plug in the power pack. Turn on the console and insert the Extended Basic module (Memory Expansion cannot be accessed by console Basic). Then type in SIZE. The monitor will show 13K+ stack space and about 24488 bytes of program space. If your Extended Basic programs run properly, the unit is ready to go. Incidently, the unit comes with a brochure detailing these proceedures.

With the T32K-S attached, you now have access to 24K+ bytes of program space (the other 8K is in Low Memory Expansion). This enables you to run much larger Extended Basic programs. It also allows the use of CALL PEEK, CALL INIT, CALL LOAD, and CALL LINK. These commands can greatly enhance your programming capabilities. With the use of CALL INIT you can load and recall routines from the 8K Low Memory Expansion (ie. PEEKV, POKEV, POKER etc.). These routines stay in memory until the unit is turned off or they are erased by the use of another CALL INIT.

The T32K-S has an expansion port on its right side for "daisy-chaining" other peripherals but you cannot use another memory expansion device. The unit is attractive, economical, and the performance is excellent. If you are going with stand-alone expansion, I would reccommend it.

WRITING MUSIC PROGRAMS FOR THE TI 99/4A

By

CARL O. FOSTER

As you may known the TI 99/4A contains a synthesizer chip which allows the operator to write music programs with a one part melody, two part or three part harmony. Fortunately the TI 99/4A's basic language includes a "Call Sound" statement which allows the programmer to produce tones of different pitch, volume, and duration. The basic form of the Call Sound statement is: Call Sound(D,P,V)

Before going further we must deal with and understand some basic music fundamentals. Therefore let's take a look at the kinds of notes we'll be dealing with, and their duration(d).

the first kind of note is the quarter note whis is a darken oval shape (♩)with a stem, which may go up or down, attached to it(♩).

Quarter note- ♩

The quarter note has the value of 1 beat, or the duration of 1 beat.

The half note is an oval note, not darken on the inside, and has a stem(𝅗𝅥) attached to it. The half note has the value twice that of the quarter note (2x1=2) or a duration value of two beats.

Half Note- 𝅗𝅥

The whole Note is an oval shaped note (𝅝) which is not darken in the middle and does not have a stem attached to it. It has a value of 4 Times that of a quarter note, or four beats.

The next kind of note to consider is the eighth note which looks like the quarter note except that a flag (♪) is attached to the stem, and has 1/2 the value of a quarter note. When a Pair of eighth notes appear in print they are conected with a bar(♫), and of course the two together equal one beat.

Let'S review these kinds of notes and their values.

Eighth Note =1/2 beat ♪

Quarter Note = 1 beat ♩

Half Note = 2 Beats 𝅗𝅥

whole Note = 4 Beats 𝅝

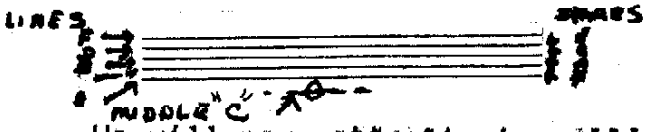
In order to succesfully Program music, these basic fundamental as well as others to follow in subsequent columns must be mastered.

Pitch is the frequency of the sound to be Produced. When the frequency is high the Pitch is high, and when the frequency is low, the Pitch is low. The note frequencies the synthesizer chip will handle range generally from a low of 110 to a high of 1760. (See chart in User's Reference Guide, P.III-7).

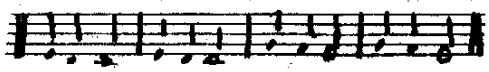
Volume, the last Part of the CALL SOUND Statement is represented by numbers 1-30. The number 1 represents the highest volume and 30 represents the lowest. Choosing the correct volume value wil be discussed in subsequent articles. We will use the example that follows to demonstrate how a music Program is Put together.

Writing Music Cont'd

Let's learn the names of the lines and spaces on a musical staff. When we identify the name of the line a note appears on that is also the Name of the note.



We will now attempt to apply the concepts presented as we work with the follwing example:



After learning the name of the note we must determine toe note's value or duration.

Next we check the Musical Tone Frequency Chart P.III 7 in the User's Guide to determine the frequency Pitch of the note identified. As we find the duration, Pitch, and volume of each note we write the Call Sounds in sequence on Paper.

When writing you Program you must give the value of a quarter not in a Program statement. In this case we will save that a quarter note is = to A, and A=500.

Looking at the example above we see that the first note is a quarter note and it duration is 1 which is = to A. The statement will be numbered 100 CALL SOUND(A,.....)

Notice that the comma is Placed after the duration(A). After identifying the name of line or space the note in question appears on, we look for it on the Frequency Chart and record that number inside the Parentheses of the CALL SOUND Statement. In the case of our first note, its name is "E" because is appears on the "E" line above middle "C" and we find that the frequency number is 330. We continue to fill in the CALL SOUND Statement by adding this number. CALL SOUND(A,330,.....). Notice that a comma must also be Placed after the frequency number. The last data to be added to the CALL SOUND Statement is the Volume figure. In most cases it remains constant and for Practical Purposes we will use the number 4.

THE Proredure is repeated to treat the second note that appears in the melody line. The kind of note is a quarter note, Duration (A), its name is "F" above middle "C", the freq. is 294 and the Volume is 4.

The CALL SOUND Statement is as follows: CALL SOUND(A,294,4)

The same Proredure is used for the third note and the Call Sound is as follows: CALL SOUND(A*2,262,4). The duration is A*2 because the note is a half note and receives twice the value of the quarter note, which is = to A.

The Call Sound statement for notes 4,5,and 6 are the same as notes 1,2,and 3 respectively.

Note #7 is a quarter note and is on the "G" above middle "C". Its duration is A, its freq. is 392, and the V is 4.

The Call Sound Statement is: CALL SOUND(A,392,4)

Notes 8 and 9 are a Pair of eighth notes and each must have a its own Call sound Statement. Each had a duration of 1/2 of A, They are on the "F" line, and have a freq. of 349, and Volume of 4. The individual Call Sound Statements are: CALL SOUND(A/2,349,4)

Note #10 is a half note with a duration of A*2, is on the "E" line above middle "C", and has a freq. of 330.

SOFTWARE

Writing Music Cont'd.

The Call Sound Statement is: CALL SOUND(A*2,330,4). A*2 because the note is a half note and twice the value of A, it is located on the "E"line above middle "C" and has a freq. of 330, and the Volume is 4.

Now lets list the total Program.

```
10 CALL CLEAR 15 A=500 20  CALL SOUND(A,330,4)
25 CALL SOUND(A,294,4)
30 CALL SOUND(A*2,262,4)
35 CALL SOUND(A,330,4)  40 CALL SOUND(A,294,4)
45 CALL SOUND(A*2,262,4)
50 CALL SOUND(A,392,4)
55 CALL SOUND(A/2,349,4)
60 CALL SOUND(A/2,349,4)
65 CALL SOUND(A*2,330,4)
70 CALL SOUND(A,392,4)
75 CALL SOUND(A/2,349,4)
80 CALL SOUND(A/2,349,4)
85 CALL SOUND(A*2,330,4)
90 END
```

Make sure you understand the procedures we have followed up to this point. Also be sure to save this program on tape or disk for we will be using it as a basis for expansion in our next article.

If there are Pressing problems and you would like an explanation before our next months meeting, feel free to call me at my home any time after five o'clock.

This approach is one of many that can be used to Program music for the TI 99/4A and as we advance to writing two and three Part songs we will begin to incorporate different techniques for some surprising results.

If you guessed the title of this song to be THREE BLIND MICE, you were correct. So long until next month.

QUESTIONS & ANSWERS

WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF A DISK SYSTEM AND A CASSETTE SYSTEM ?

The major advantages of a disk system over a cassette system fall into three basic categories: speed, file processing, and programming.

A disk system is much faster when it comes to SAVE-ing and LOAD-ing data and programs. If fact, the cassette system has been described as "stone age" by comparison.

A disk system allows you much more flexibility when it comes to processing files and data. With a cassette system you are restricted to processing files sequentially. That is item one, two and three, etc. A disk system allows you to access items randomly (ie. out of order).

The third aspect is a programming function available by using the MERGE option. You can save subprograms on diskette and insert them in previously loaded programs and save yourself the trouble of having to type them in every time you need to use one of the subprograms.

With all of these advantages, why use a cassette system? The major advantage of a cassette based system is the $200.00 that it does not cost you. A cassette based system is about that much less in initial expense.

How do they compare? A C-60 tape will hold just about the same amount of data as a single-sided, single density, 92K disk. The cassette is cheaper by far but the disk system is faster and more versatile.

Remember, diskettes are generally more expensive per unit than tapes, too. Most programs can be purchased on either cassette or diskette with the diskette version usually a couple of dollars more than the cassette version. If you want the speed and versatility, go with a disk system. If money is a consideration and you do not mind slower loading programs and data, go with a cassette system.

The PARALLAX TI is produced by AXIOM Corporation, 1014 Griswold Ave., San Fernando, CA 91340 and is available locally at Software City, 4614-B W. Market St.

PROGRAMMING TIPS

USING "AND" AND "OR"

When programming in basic, "*" is used for "AND" and "+" is used for "OR" in conditional statements. For example:

```
10 IF (X=10)*(Y=20) THEN 100
```

The above line reads "if X=10 and Y=20 then GOTO line 100".

If either or both of the conditions are not true, the computer would not go to line 100. Instead it would execute the line following line 10. In Extended Basic either the symbols or words will work. You also have access to more conditional statements in Extended Basic which allow more flexibility in programming.

If you are RUNning a program, and you get a BAD VALUE IN LINE xxx message after reading a DATA statement into a line, this next tip might be of some help. Here is the line that might be listed in this case:

```
BAD VALUE IN 220

LIST 220
220 CALL HCHAR(A,B/2,16)
```

The problem is usually an error in typing in the DATA statement which gives a value outside the limits of the statement into which it has been read. Since we are using READ A,B to get our values in the CALL HCHAR statement, if you type in PRINT A,B without clearing the screen and without a line number, you can discover where the error is.

The computer will print the last two values that it read prior to the error message being displayed. This technique can help you de-bug your programs.

THE GUILFORD 99'ER USERS' GROUP NEWSLETTER IS FREE TO DUES PAYING MEMBERS OF THE USERS' GROUP (ONE COPY PER FAMILY, PLEASE). DUES ARE $6.00 PER FAMILY PER YEAR. SEND CHECK TO P.O. BOX 21691, GREENSBORO, N.C. 27420. THE CLUB'S SOFTWARE LIBRARY IS FOR DUES PAYING MEMBERS ONLY.

EDUCATIONAL QUESTIONNAIRE

NAME : _____

ADDRESS : _____

PHONE : _____ AGE : _____

HAVE YOU WRITTEN AND RUN YOUR OWN PROGRAMS? _____

WERE THEY IN _____EXTENDED BASIC _____ BASIC _____ OTHER

DO YOU HAVE? ___ EXTENDED BASIC ___ 32K MEM EXPANSION ___DISK DRIVE
___ TI FORTH ___ EDITOR/ASSEMBLER

ARE YOU INTERESTED IN ___ BEG. BASIC ___ ADV. BASIC ___ ASSEMBLY LANG.
___ FORTH INTEREST GROUP