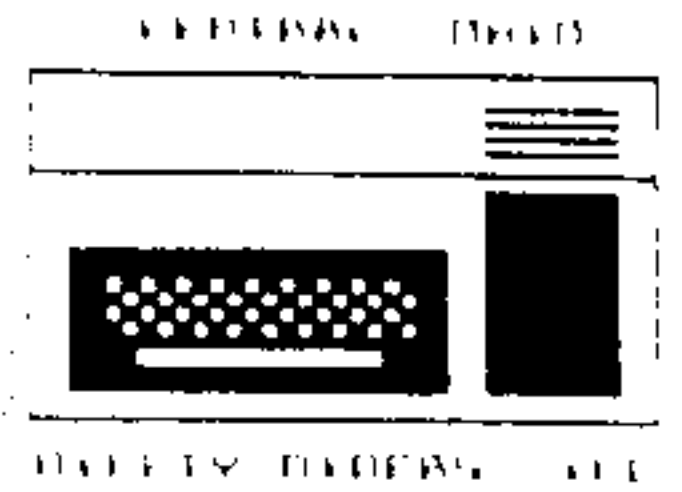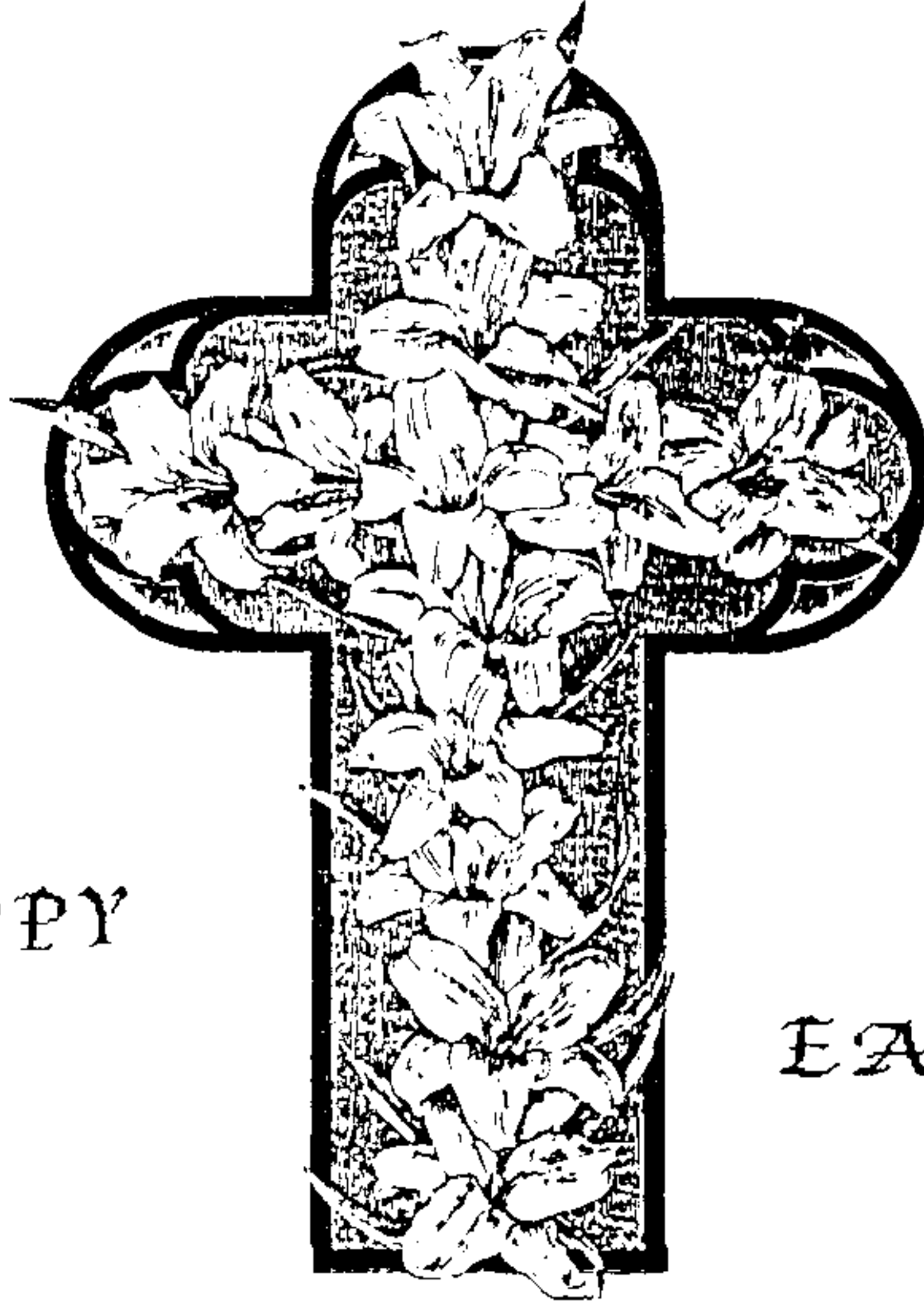# Spirit of 99

THE OFFICIAL NEWSLETTER OF THE CENTRAL OHIO NINETY-NINERS INC.

PUBLISHED MONTHLY IN COLUMBUS OHIO

HAPPY

EASTER

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Spirit of 99

THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS

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C.O.N.N.I. meetings are held the Second Saturday of each month at the Martin Janis Senior Center on East Eleventh Ave. at the Ohio State fairgrounds.

Meeting time is at 9:00 AM. Meetings are open to the public.

Membership dues $20.00) are payable yearly to C.O.N.N.I. and cover the immediate family of the member. (An application has been placed

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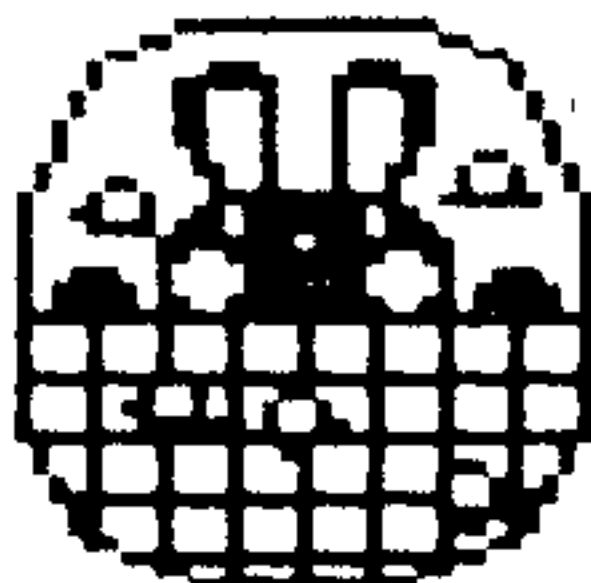
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PRESIDENT..........Irwin Hott
VICE PRES..........Jim Beltz
SECRETARY.................
TREASURER.......John Cummings

COMPILER V1.1 - A REVIEW

by Jim Peterson

I recently received the Compiler, written by Peter Kull, from Ryte Data, and have been having fun and tearing my hair out ever since. According to the brief manual, this program generates a code-list contain- ing the jump addresses and all variable addresses, and stores them as a program so that the Basic Interpreter does not have to recalculate them each time the program is run. The resulting assembly code is appar- ently merged within the basic program, which usually becomes about twice as many sectors long - for this reason, a program over 40 sectors long probably cannot be compiled. The result of this compilation, when it works, is a dramatic increase in speed. I had two music and graphics programs which had to be written to play the music rather too slowly so that it would not be interrupted by the graphics changes being made between notes. After running one of these through the Compiler, one of them played the music too fast to be recognizable, while the graphics were almost a blur. I modified the other to run 5 times as slow, and it still ran much faster than the original after being compiled. When the changing graphics were displayed on a black screen, the patterns were broken because the TV actually could not keep up with the computer. I had three games which were rather slow and boring because the positions of several objects had to be recal- culated after each move. Compilation improved them greatly, although the increase in speed was not as extreme as with the music programs. A test program FOR A=1 TO 50 :: FOR B=1 TO 50 :: X=2 20 :: NEXT B :: NEXT A ran in about 90 seconds in Extended Basic. After being compiled, it ran in 11 seconds! However, there are limitations, and problems. The greatest limitation is that only one file can be opened during program execution, according to the manual - I have not experimented to see just what this means, but it would seem to be a severe handicap. Also, the maximum string length is 64 characters, so the Compiler is not of much use for word processing. According to the manual, DEF and SUB are not supported, and TRACE, ON ERROR, BREAK, CALL LOAD and CALL LINK may give unpredictable results, but all other commands of Basic and Extended Basic will compile properly. Programs can be easily modified to eliminate DEF, and subprograms can be rewritten as subroutines; TRACE and BREAK are seldom used in running programs and ON ERROR can usually be deleted; a CALL LOAD may be optional but if the program has a CALL LINK it is usually essential. However, there are other commands that also give trouble. CALL SAY is reported as a BAD COMMAND and ignored. Prescan routines are also considered to be BAD COMMANDS, but initialization of compiled programs is so fast (they are probably actually pre-initialized) that the prescan routine can be deleted. ON WARNING also generates a BAD COMMAND error, and there may be others. The above errors are simply listed on the screen while the program is compiled. I/O

errors flash too briefly to be read, and a string longer than 64 bytes, or longer than selected by the input prompt, will cause the computer to go into bitmap mode and lock up. A line Q$(Q)=A$(INT(22*RND)+1)B$(INT(22 *RND)+1) repeatedly caused this lockup even though it would not generate a string of 64 bytes when executed. Various other strange things occur. Some programs will just not compile properly even though no errors are reported. Graphics and colors are sometimes distorted, and there is often a problem with the left edge of the screen, especially when ASCII 1 has been used as a border. The Compiler program resides in memory, and after it has been used for a while it begins to garble the memory. One frequent occurrence is an I/O 64 error when the disk is by no means full. The compiled programs must be run with one of two loader programs which can be copied onto the disks containing your compiled programs - but the manual specifies - "please do not give copies away to all your friends or user group! We are supporting the TI 99/4A and do need your help in this matter." The one loader must be used for programs which contain floating point numbers (fractional decimal calcula- tions). The other, which is stated to be much faster, is for programs with only integer numbers. The Compiler is set up for a single- drive system, and requires a lot of disk swapping. Programs to be compiled could be loaded onto the Compiler disk but that might eventually cause badly fractured files and a garbled directory. The most important thing about this program is not its flaws, but the fact that it works at all. Imagine - a program written in primitive Basic, run through a compiler (in less than a minute!) and then running with almost the speed of assembly! There are certainly hundreds of public domain programs which could be vastly improved by this method. However, I would not recommend the Compiler to those who do not have some elementary knowledge of basic program- ming. Many programs will need some modification before they can be compiled, and using the Compiler can be a frustrating experience even for those who can understand what is causing the problems. And, where to get it? From our own Pat Saturn of Microstuph, of course!

DON'T BE SLOW PAY YOUR DUES
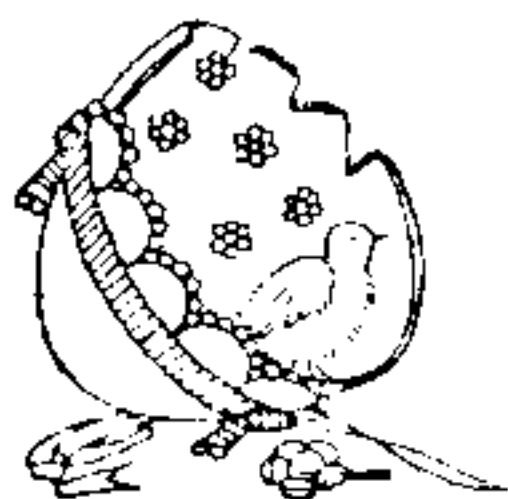
```
X   X  BBBB    Number 5
 X X   B   B
  X    BBBB    By
 X X   B   B   Jim
X   X  BBBB    Swedlow
```

[This article originally appeared in the User Group of Orange County, California ROM]

TEACH YOURSELF EXTENDED BASIC: This was released by TI to support the XB cartridge. It is available from our Users Group Library for the standard $2 fee.

A working knowledge of BASIC is necessary to understand this material. If you are new to XB or if you have not explored all of XB's features, this a a good tutorial. Even if you are an old hand you might learn something new (see next item!).

The material is clear and presents some information not in the XB book (although most is a repetition). It is primarily text but there are examples, expecially for sprites.

On a scale of 0-10 (10 being best), I would rate this at 7.5 - well worth the $2 and the time to go thru it.

LISTING TO DISK: In the XB book it suggests that you can list a program to a device but the material points you toward a printer. TEACH YOURSELF XB adds that you can list a program to disk. The command is:

    LIST "DSK1.TEST"

The program is now saved on disk exactly as you last saw it on the screen. The file parameters are DISPLAY, VARIABLE 80.

Since those are the parameters for a TI WRITER file you can load the file onto TI WRITER. Why? Well, it could be helpfull when doing a newsletter. Also, the FIND STRING command could help you locate something in a long program. Mainly, however, just to see what you could do.

I have not found a way to get the file back to program status. If you could do that there might be some interesting possibilities.

NB: This also works in BASIC. Also, some symbols may cause strange things to happen when you run it thru the Text Formatter.

DISK MENU PROGRAM: This month's program will read your disk and display a menu on the screen. After you choose a program, it is loaded and ran. If you save this on your disk as LOAD, it will auto boot when you opt for XB.

This program requires one disk drive and the memory expansion. In a month or so, I'll do a disk menu program that does not require memory expansion.

When you enter this program, save it to disk BEFORE running it. If you make an error in line 220 or 230, the system could lock up and the program would be lost.

LINES 100-150 comprise the header. This program is based on one published in the Pomona Users Group newsletter.

LINES 160-190 read the programs on the disk and display them on the screen.

LINES 200-210 wait for the user to select a program and then validate the user's selection.

LINES 220-240 change line 240 to have the selected program name rather than "1234567890" and then run that program.

After you get this working, try entering BREAK 240 before running it. When the program stops, LIST 240 to see the change.

INPUT NEEDED!!!!! I have been writing about what is of interest to me or what I am working on at at the time. This may not be what you are interested in. Questions, compliments, suggestions or even criticisms are welcome. Otherwise, I'll just keep going my own way.

C.O.N.N.I. BUSINESS MEETING   MARCH 14, 1987.
MARTIN JANIS SENIOR CITIZENS CENTER   SATURDAY A.M.

MEETING OPENED: 10:06 A.M.
MEETING ADJOURNED: 10:47 A.M.

Meeting was called to order by President Irwin Hott, assisted
by Vice President Jim Seitz.

A visitor, Richard Clark of Columbus' North Side was intro-
duced. Welcome, Mr. Clark.

President Hott reported details of the wake and funeral of
Vivian Prine and of his meeting with her family.

Dick Beery, acting Secretary, read the minutes of the
February meeting. They were approved as read.

John Cummings III, the new Treasurer, gave a brief report on
finances. Having just received a detailed report from out-
going treasurer Art Morgan, he will study the matter and help
prepare a budget for the year, to be reported on later.

Chuck Grimes, Librarian, reported on the contents of the
March Disk of the Month.

Jim Seitz and Dick Beery gave details of the recent publicity
campaign implemented with the assistance of President Hott,
Jean Hall, and Jim Peterson. Suggested by Sonny Grubb was the
possibility of using the services of TV Channel 28.

A motion to retain the name "Spirit of 99 T.I.B.B.S" for the
club bulletin board, tabled at the February meeting, was
passed unanimously. John Cummings raised again the question
of whether the club can/should continue supporting the BBS.
The matter will be considered when the budget is presented at
a later time.

The Membership Registrar reported on money received and
currently available.

Jack Montag announced the need for the club to pay $25 each
month for the use of the Center, now that Cel-Jim no longer
provides this. This is much less than their usual fee. Pres-
ident Hott appointed a committee to investigate funding for
this special need and the possibility of choosing an alterna-
tive site for meetings. A proposal to change the meeting time
to an evening apparently attracted little interest. A motion
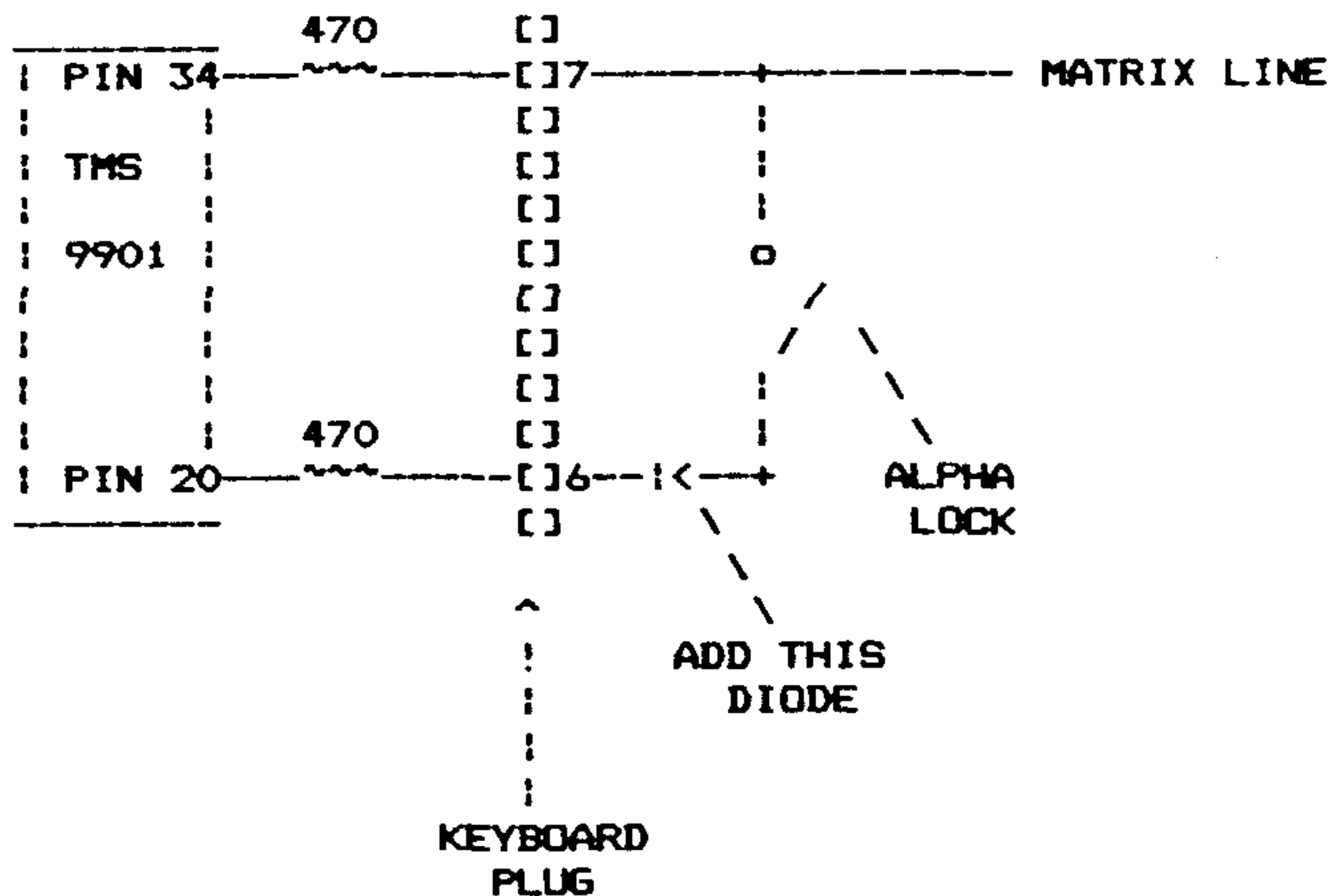to pay the $25 for at least the April meeting passed.

Jack Montag also informed us that the Center could not honor
our request for a Flea Market at any time. It had been our
plan to hold one in April.

A program demonstrating several alternative keyboards and
hardware modifications for the 99/4A followed, as well as
several games demos.

ALPHA LOCK
by MARK McCORMICK

(Micropendium, March, 1987)

I've had many folks ask why the alpha
lock key must be up to use the joystick.
This is due to the way the TI99 decodes
the keyboard matrix. If you'll add a
simple 1N4148 diode as shown in the
drawing below you'll never have to worry
which position your alpha lock key is in.
This modification involves opening the
console and soldering the diode into
keyboard line 6 which connects to pin 20
of the 9901 IC chip. Be careful,
polarity of the diode is important.

```
                   470        []
_____   ~~~        []
| PIN 34---------~~~-------[]7--------+-------- MATRIX LINE
|       |                  []         :
| TMS   |                  []         :
|       |                  []         :
| 9901  |                  []         o
|       |                  []          /
|       |                  []         / \
|       |                  []        :   \
|       |       470        []        :    \
| PIN 20---------~~~-------[]6--:<--+     ALPHA
---------                  []       \      LOCK
                                     \
                     ^                \
                     :              ADD THIS
                     :                DIODE
                     :
                     :
                  KEYBOARD
                  PLUG
```

99/4A LIGHT PEN

By Curt Borders

At one time I felt that a light pen for the 4A was 1) not possible on the TI and 2) even if it was possible, it would be overpriced. Well I was wrong on both counts.

This pen is very 'simple' both in parts and constuction. So lets get started.

CONSTRUCTION

First you will need the following:

ONE- 9 pin D-plug (joystick plug)
ONE- length (your choice) of 2 conductor wire
     STAR on N.HIGH st. has joystick cable for
     $1.00 each. (use the brown & black wires.)
ONE- CDS photocells (radio shack #276-116)
TWO- Pcs. 1/2 PVC Tubing
     (one pcs. 4" Long and the other one 7/8".)

Now that you have the above, lets get to the fun part. First feed the wire thru the 4" pcs of PVC , next solder the two wires to the leads of the CDS cell .
Place the cell onto the end of the 4" pcs of PVC and the 7/8" pcs directly in front of the cell ,useing tape or heatshrink tubing to hold the two pcs together.
In the other end of the 4" pcs of PVC you will need a strainrelief To keep the wire from pulling out by accident.
For this I used 1/2" concrete wall anchors (the plastic kind NOT the lead ones). cut the anchors to about 3/8" long ,split and put over the wire or cable then push in the end of tubing & glue.

Solder the wire to the D-plug pins #7 and #9 (pin layout below). This would be the right direction for joystick #1.

Wrap tape around the D-plug to protect the wiring,or use a hood. Now you can test your new light pen. Just touch the dots on the screen with the light pen.
Depending upon your TV/monitor, you may need to adjust the contrast and/or brightness.

One more thing before you get too busy with the pens-I have to give credit to Edwin McFall of Aberdeen, Wash. Thru his work this is possible.

JOYSTICK PORT PINOUT

```
        _____
       \ 1 2 3 4 5 /
        \ 6 7 8 9 /
         _____
```

```
PIN     USE
================================
1       NOT USED
2       COMMON LINE JOYST #2
3       UP
4       FIRE
5       LEFT
6       NOT USED
7       COMMON LINE JOYST #1
8       DOWN
9       RIGHT
================================
```

Ed. note: Both the Light Pen and the Alphakey
programs were submitted to us from our own
member, Curt Borders. He wishes to inform you
that you should only try these projects at your
own risk as neither he nor the club can be held
liable for any problems incurred in doing so.
He has completed both successfully. He says he
will give a demo of the light pen at our next
meeting, and will have a display table set up
where he will display all of the parts that are
needed in the project, with a few completed.

He also informs us that he has talked to two of
our programming members, one in Basic, the other
in Assembly Language, and that both were very
impressed with his project and would be more than
happy to write more programs for use with it.
Curt currently has rewritten two programs for it
already. One is called "DOTS", and the other is
called "X&O", (like tic-tac-toe). Sounds good.

Some of my user-group friends ask me often about the graphic designs and fonts I use in my letters and in this column. "How can you make _that_ with your printer?" they usually ask.

The answer is simple and not so simple. The different fonts built into my Gemini 10X are fairly easy to get to. I made a template of my Transliteration Key and access it through my _T.I.WRITER_ (in this case, the _FUNLPLUS!_ version, though any form of TIW will work). This lets me do the following:

Underline when and where I like

Be in condensed Or enlarged

Or italics (Or other fonts and sizes)

Or letter quality. Which is what you're reading. This is normal printer type. Obviously _this_ is preferable for most people.

You may even combine:

Underlined letter-quality italics, for example.

All this is done simply and automatically through IFfing the template which has the TL codes on them.

If persons are interested I could devote a column or two to this kind of thing, complete with all the codes and how to get to them automatically. Let me know.

But the fancy stuff like the header of this column is what most people would like to be able to do.

These kinds of things (pictures, fonts, designs, labels, letterheads, signs, banners) are all done with some very special programs. Compared to the costs of similar programs for other computers they are very inexpensive, but they are not free.

I'll be devoting the next few columns to explaining how the different packages work and showing examples. These packages are the ones I use: GRAPHX, TI ARTIST, FUNLPLUS!, BETTER BANNERS, FONTWRITER, and CSGD. I use the last (CHARACTER SETS AND GRAPHIC DESIGNS III) to make the IMPACT-99! logo.

Of the six graphics/text programs listed above which is the best? None is _better_ than another. Each does something different from the others, but now — thanks to FONTWRITER — all the works done by any of them can be tied together. More on that when I take up FONTWRITER.

But first let's discuss Broderbund's PRINT SHOP, the most popular graphics program in the world. This program, which is out for most computers, is not available for the TI.

Everyone loves PRINT SHOP. It is so user-friendly a four-year-old could operate it beautifully the first time around. The program makes greeting cards, banners, signs, etc. with incredible error-free ease. And there are now hundreds (including a lot of PD files) of graphic designs and fonts for the program. The commercial disks for the whole works for the IBM or Apple is well over $200, the basic program under $50. People who HATE and FEAR computers L O V E to print with PRINT SHOP.

But you pay a price for convenience. I don't mean just money, though that is *definitely* a factor. The price you pay is sameness. A PRINT SHOP anything looks, well, printshoppy. There is not much flexibility. Granted, you can <u>choose</u> your font; you can <u>choose</u> your graphics; you can even <u>choose</u> size, form of font, layout — all to a limited degree. Limited.

With the *five commercial programs* above (and my FUNLPLUS!) I am unlimited. I can create virtually any type of font or graphic that can fit on a printed page and lots that extend beyond. I can couple any of the above with my word-processor to create dazzling text/graphic printouts, a lot like the MacIntosh stuff. (CSGD III even lets you use TIWRITER versions to type in six new, large, unusual fonts in full or split columns WITH the graphics!) But there is a price. Ease. All this stuff requires reading, learning, experimenting, time. For people willing to put the time in and invest a few dollars (GRAPHX, FONTWRITER about $25 each; TI-ARTIST, BETTER BANNERS about $20 each; FUNLPLUS! $8; CSGD about $18; and various companion disks from $7.95 [from Asgard] to $18). Probably a basic structure for someone with an Epson-compatable printer who is just starting out with this exciting design world would be FONTWRITER, FUNLPLUS! (which also contains other Fairware and PD programs), TI-ARTIST, and CSGD III. That $68 investment would give you far greater flexibility than PRINT SHOP. It would also be a fairly reasonable task to set for yourself to learn how to use these pieces of software. Each has excellent documentation providing you take the trouble to do all the things along with the manual while you are learning. (Though, to be honest, I am always too anxious to get into my new "toy" when I get it to look at the manual. I should follow my own advice because I inevitably have to redo everything because I wouldn't take the trouble to read the documentation BEFORE using the programs.)

If you've never designed your own letterheads or labels or drawn and printed any graphics with the incredible GRAPHX and/or TI-ARTIST then you are in for a real treat. Your computer is far more powerful than you have yet imagined. (Asgard even has an automatic slide-show for the GRAPHX pictures to amuse your friends and amaze your enemies.)

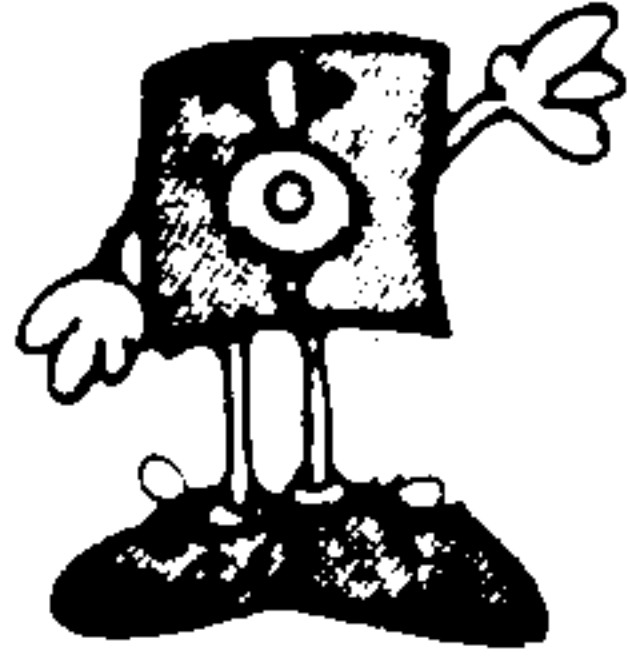In short, the world is your oyster if your TI is working toward its potential.

We'll discover a lot about that potential in the next few columns.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

3,2,1 IMPACT! until next time.

(Jack Sughrue, Box 459, E.Douglas, MA 01516)

SOFTWARE REVIEW

2 3 A B C

EARLY LEARNING FUN

Early Learning Fun was the first program I bought when I first purchased my computer. After all, I did buy the computer for my daughter (even though she was only 6 months old). Currently Early Learning Fun is the most used program we own. My 3 1/2 year old has been using the computer since she was 18 months old. For the last year she has been able to play every activity in the program.

I don't claim to be an authority on child development, but I know this program has done my daughter a lot of good. All the activities have lots of bright bold color that catch a child's eye. With input from the parent children can learn their colors using this program. Most of this program is easy to understand, but a parent's input is essential at first to teach the child how to use the program. The program does not include speech which is unfortunate but with a parent's help it is not missed. Our computer used to be set up close to our kitchen and my wife could put our daughter on it and keep an eye on her while she played. The program "rewards" the child with a series of "happy" musical notes, or flashing objects. Incorrect answers are signaled by a low key "uh-oh" which does not intimidate the child.

The program is divided into four activities: Numbers, Shapes, Sorting and Alphabet. Each activity teaches the child a different learning concept.

The three Number Activities are designed to teach and reinforce basic number concepts such as identifying numbers and counting. "Counting Up" introduces the numbers 1 through 9 in sequence by displaying the number on the screen; the child then presses the appropriate number key, the corresponding number of shapes appears on the screen, and the process repeats itself. In "Number Please", the child gets to pick a number first, then the appropriate number of shapes appears on the screen and the process repeats itself. You can test your child's ability to count by using "How Many Things". A random number of shapes appears on the screen and the child must count them and find the number on the keyboard. As you probably can already see, your child is learning a lot from this program. They will be learning much more then just the concepts taught by the different activities; they will also be learning about the keyboard, and, with a parents help, color recognition and the names of some simple shapes.

The Shape Activities introduce the concepts of sameness and difference through shape recognition and matching. In "Make a Match" the child is introduced to five simple shapes: circle, square, triangle, rectangle, and diamond. On the left side of the screen four shapes, chosen at random, appear and are numbered 1 through 4. On the right side of the screen a single shape appears. The child must find the appropriate "match" and then press the correct

number key. I always enjoyed watching and listening to my daughter play this game. She would look at the shape to be "matched", identify it and its color then look at the four shapes on the left side of the screen, identify them and their colors, find the match, state its number, press the number key, and go on to the next challange. "Shape Hunt" combines the ability to count and matching skills. A single shape appears on the top of the screen, the child must find and count the number of corresponding shapes from the bottom of the screen which are amid several other shapes.

In "Odd One Out", the single Sorting Activity, four shapes numbered 1 through 4 appear on the screen. Three of the shapes are the same, one is different. The child must choose the number key of the different shape. Picking out the different shape is a more sophisticated skill than the previous matching skills.

Alphabet Activities help your child associate a letter of the alphabet and a picture object beginning with that letter. Your child will learn to recognize letters and their sounds. "Letter Line Up" intoduces the letters of the alphabet, in order, from any starting point. The letter first "floats" on the screen, the child presses the correct keyboard key and the object starting with that letter appears. "A is for Apple" is the final activitiy on this cartridge. In this activity there are four numbered objects on the screen with a single letter in the middle of the screen. The child must find the object that begins with the letter.

We have found Early Learning Fun to be a very valuable tool in our child's education. Another thing to consider about using computer assisted learning is the computer never gets bored or tired doing the same things over and over again the way an adult would. Jim Peterson and Pat Saturn have also given us some programs that our children really enjoy. One program uses speech to say the name of any letter or number key the child presses. In today's world it is never too early to start your child's education. I read an article that stated you can use the computer in the child's nursery to provide auditory stimulation and companionship by the use of music or repetitive sounds such as buzzers and bells. The child will learn to recognize and anticipate sound patterns. The computer could also be programmed to display colorful geometric patterns (such as T-Patterns DOM-6/86) that stimulate the child's visual perception. Frankly, I find this a little frightening; now when the computer starts changing diapers I'll call that progress!

Jim Seitz

MEETING AGENDA
SATURDAY
APRIL 11, 1987.

9-9:50 AM Cassette
& Beginners Group
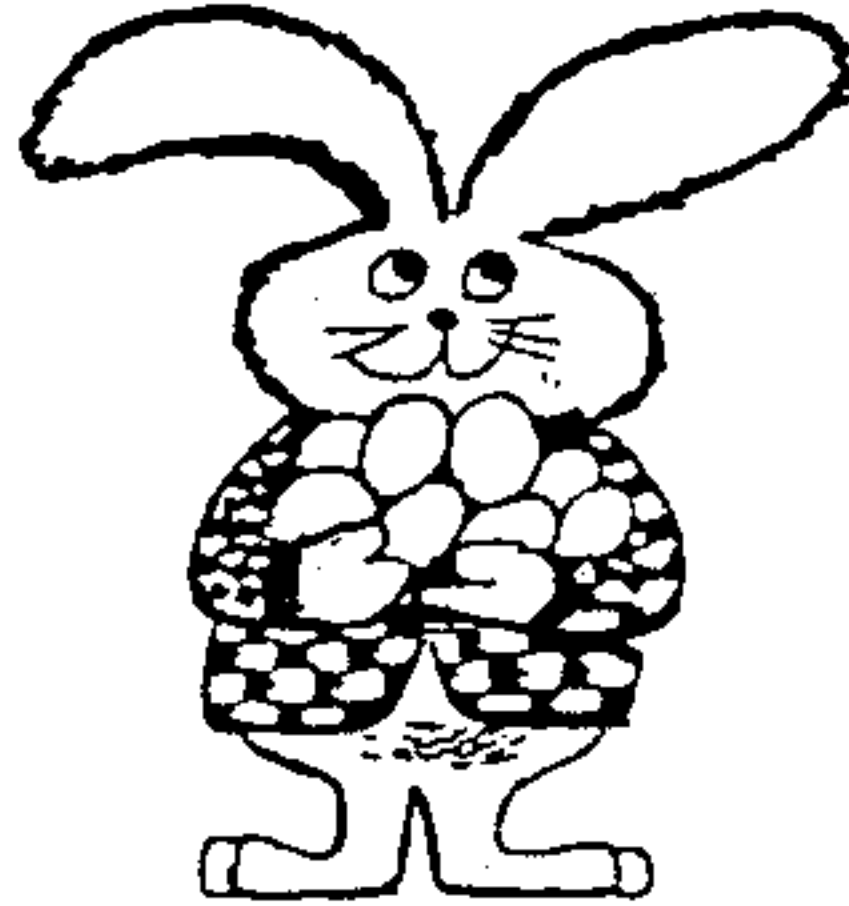
10-11:10 AM

Business Meeting

Program

11:15 AM - NOON
Music/Ex.Basic
Programming--Jim
Peterson.

PROGRAM:

Light Pen explan
ation, demo.--
Curt Borders

T.I. Writer Mail
List demo.

Demo of several
Peterson games
listed by Jack
Sughrue in the
March newsletter.

ELECTION NOTICE

Because of the death of
our Secretary, Vivian
Prine, we will be elect
ing a secretary during
the April meeting to
complete her term.

The Nominating Committee
endorses the candidacy of

JERE SINGLETON

Other nominations will be
accepted from the floor.

DUES WERE DUE IN MARCH

From Out 'N About

TI WRITER MNEMONIC (MEMORY) TRICKS

CTRL	MNEMONIC	FUNCTION	ALTERNATE
A	ADVANCE DOWN	ROLL DOWN	F4
B	BACK UP	ROLL UP	F6
C	COMMAND MODE	COMMAND MODE	F9
F	FLYAWAY CHARACTER	DELETE CHARACTER	F1
G	GET A HOLE FOR CHAR	INSERT CHARACTER	F2
H	HOP BACK TO LAST	LAST PARAGRAPH	C6
I	INDENT	TAB	F7
J	JUMP TO NEXT	NEXT PARAGRAPH	C4
K	KILL TO END OF LINE	DELETE TO END OF LINE	--
L	LEAP HOME	HOME CURSOR	--
M	MAKE NEW PARAGRAPH	NEW PARAGRAPH	C8
N	NO MORE LINE	DELETE LINE	F3
O	OPEN BLANK LINE	INSERT BLANK LINE	F8
P	PAGE BEGINNING	NEW PAGE	C9
R	REFORMAT	REFORMAT	C2
T	TAB BACK	BACK TAB	--
V	VEER TO LEFT	CURSOR TO LINE START	--
W	WORD TAB	WORD TAB	C7
Y	YANK MARGIN CONTROL	LEFT MARGIN RELEASE	--
Z	ZIP BACK	OOPS!!	C1
-	----------	SCREEN COLOR	C3
-	----------	DUPE LINE	C5
-	----------	NEXT WINDOW -->	F5
-	----------	WORD WRAP	C∅
-	----------	LINE NUMBERS OFF/ON	F∅

NOTE: THE ARROW KEYS WORK THE SAME WITH EITHER
THE CONTROL KEY OR THE FUNCTION KEY

1	2	3	4	5	6	7	8	9	∅	
OOPS!	REFORMAT	SCREEN COLOR	NEXT PARAGRAPH	DUPE LINE	LAST PARAGRAPH	WORD TAB	NEW PARAGRAPH	NEW PAGE	WORD WRAP LINE	
DEL CHAR	INS CHAR	DEL LINE	ROLL DOWN ↓	NEXT WINDOW →	ROLL UP ↑	TAB	INS LINE	COMMAND/ ESCAPE	LINE ↑↓	QUIT

REPRINTED FROM NOVA FEB 1987......
SUMMARY OF FAST-TERM COMMANDS.....Written by Jim Ely, Phoenix, AZ
==

USING THE PRINT SPOOLER...
    PRESS: CTRL<2> to start printing
    PRESS: CTRL<2> again to stop. Buffer
        will empty and printing will
        stop.
RECIEVING ASCII FILES...
        (logging to a file)
    PRESS: FCTN<B>: Name the file.
        logging starts as soon as you
        press enter. If you don't want
        to start logging at that time:
    PRESS: FCTN<.> to stop logging.
    PRESS: FCTN<.> again when you want to
        start logging. When you have
        all data you want in the log:
    PRESS: FCTN<.> again to stop logging.
    PRESS: FCTN<B> to write to file and
        rename a new log file. If you
        are not going to log again,
        enter a blank line at prompt.
    PRESS: FCTN<Y> to clear log at any
        time.
NOTE: YOU MAY ALSO LOG TO YOUR PRINTER
 BY ENTERING YOUR PRINTER DESCRIPTION
 AFTER PRESSING FCTN<B>.
        ****
SENDING ASCII FILES...
    PRESS: FCTN<N>; give name of file
        sending.
    PRESS: FCTN<,>;select whether you are
        sending line by line or all at
        one time. Chimes or Beep ring
        when transfer is complete.
        X-MODEM PROTOCOL

SENDING FILES...
    PRESS: FCTN<N>; give name of file
        sending. PRESS: <ENTER>
    PRESS: FCTN-SHIFT<X> to enter X-modem
    PRESS: <S>end. (<S> is the default.).
 Transfer is automatic. Beep or chimes
 ring when transfer is complete.
        ****
RECIEVING FILES...
    PRESS: FCTN<N>; give name of file
        recieving.
    PRESS: FCTN-SHIFT<X> to enter X-modem
    PRESS: <R>ecieve. Choose error check-
        ing (CRC/CHECKSUM).
 Transfer is automatic. Beep or chimes
 ring when transfer is complete.

IN SENDING OR RECIEVING FILES:
    PRESS: FCTN<4> to abort at any time.

PRINTING THE SCREEN (SCREEN DUMP)...
    PRESS: FCTN<O> To freeze screen
        you may scroll to a desired
        spot by pressing the SPACEBAR
        to move fast or <S> to move
    PRESS: FCTN-SHIFT<P> to print
    PRESS: FCTN<O> To unfreeze screen &
        return to where you were.
....
        TEII PROTOCOL

    PRESS: FCTN-SHIFT<T> to enter TE 2.
SENDING FILES.....
        At prompt to start send file
    PRESS: FCTN<N>; Give name of file
        sending. PRESS <ENTER>
    PRESS: FCTN<,> (NOT CTRL<4> to start
        sending. Beep or chimes ring
        when transfer is complete.
        ****
RECIEVING FILES...
    BEFORE SELECTING FILE TO DOWNLOAD:
    PRESS: FCTN<N>; enter name of file
        saving. PRESS: <ENTER> select
        file to transfer; PRESS<ENTER
        transfer begins: beep/chimes
        ring when transfer's complet.
IN SENDING OR RECIEVING FILES:
    PRESS: FCTN<4> to abort at any time.
    PRESS: FCTN-SHIFT<T> again to exit.
....
ADDITIONAL COMMANDS...

: 1 :Transmit 7F <DELETE>
: 4 :Transmit BREAK
: 5 :WINDOW RIGHT
: 1 :WINDOW LEFT
:*7 :CHANGE TEXT COLOR
:*8 :CHANGE SCREEN COLOR
: 9 :GET DISK DIRECTORY
:*J :LINEFEED AFTER CARRIAGE RETURN
: K :START TIMER; RESET TIMER TO ZERO

:CTRL: COMMAND

:*0 :SCREEN WIDTH (40/80)
:*1 :CHANGE MODEM BAUD RATE
:*3 :CHANGE MODEM PARITY
:*4 :CHANGE MODEM RS232 PORT
: 5 :CHANGE SERIAL PRINTER PARITY
:*6 :CHANGE PRINTER PORT
: 7 :CHANGE SERIAL PRINTER BAUD RATE

 FCTN-SHIFT<D> TOGGLE DUPLEX HALF/FULL
 FCTN<=> OR CTRL<=> TO LEAVE PROGRAM
==(*) These parameters can aslo be pre-set using the basic program DEFAULT.)===

TIPS FROM THE TIGERCUB

#38

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```

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For descriptions of these send a dollar for my catalog!

I have discovered a rare bug in the 28-Column Converter, published in Tips #18, which will cause an I/O 25 ERROR if the very last line of the program being converted happens to have exactly 80 characters. You can fix it by adding a line -
215 IF EOF(1)=1 THEN 260

There is also a rare bug in the SIDEWAYS subroutine on my Nuts & Bolts #2 disk, which prevents turning some

redefined character sets sideways. If you are one of those who BOUGHT that disk from me, you can fix it by changing the L=LEN(B$) in line 21639 to L=64.

I was in too much of a hurry to go fishing when I put the last couple of Tips together. In the Gordian Knot in Tips #35, I left out some essential instructions. Please add -
131 DISPLAY AT(11,1):" When you cross your track,":"press 0 to go over, U to go":"under, C to go across."

To make that fit, you will have to change the DISPLAY AT in line 130 to (8,1), in line 140 to (15,1) and in line 150 to (20,1), also the ACCEPT At in 160 to (20,11). And this change will prevent a lockup when you reach a border -
200 D=D-1 :: IF ABS(D-D2)=2 OR R+(D=1)=0 OR R-(D=3)=25 OR C+(D=4)=2 OR C-(D=2)=31 THEN 180 :: GOSUB 510 :: IF D<>D2 THEN GOSUB 450

I wrote the dulcimer music in Tips #36 in Basic, but I forgot to test it in Basic. It actually runs much better in Extended Basic, but will run fairly well in Basic if you delete the delays in lines 280 and 300.

If you liked the ESCHER ART in Tips #37, these modifications will improve it considerably -
110 DISPLAY AT(12,1):"Press -": :" 0 for new pattern":" B to change background":" F to change foreground":" R to reverse colors": : :"Any key to start"
280 A=INT(6*RND+3):: H=INT(24/A):: RX=24-H*A :: HC=INT(28/A):: CX=28-HC*A :: W=ABS(HC/2=INT(HC/2))-(RX>0):: DIM M(8,8):: FOR P=1 TO A
330 IF K<>66 THEN 346
340 BC=BC+1+(BC=16)*15 :: IF BC=F THEN 340 ELSE 347

346 IF K<>70 THEN 360 :: F=F+1+(F=16)*15 :: IF F=BC THEN 346
347 FOR S=7 TO 14 :: CALL COLOR(S,F,BC):: NEXT S :: GOTO 310
350 ! **DELETED LINE **
360 IF K<>ASC("R")THEN 310 :: T=F :: F=BC :: BC=T :: GOTO 347
600 GOSUB 900 :: FOR T=1 TO A :: DISPLAY AT(R-1+T,C):M$(V,T):: NEXT T :: NEXT C
601 IF CX>0 THEN AA=A :: GOSUB 800
605 GOSUB 1000 :: NEXT R
606 IF RX=0 THEN 610
607 GOSUB 1000 :: FOR C=1 TO A*HC STEP A :: GOSUB 900 :: FOR T=1 TO RX :: DISPLAY AT(R-1+T,C):M$(V,T):: NEXT T :: NEXT C
608 IF CX>0 THEN AA=RX :: GOSUB 800
800 GOSUB 900 :: FOR T=1 TO AA :: DISPLAY AT(R-1+T,C):SEG$(M$(V,T),1,CX);:: NEXT T :: RETURN
900 V=V+1+(V=4)*4 :: RETURN
1000 V=V+W :: V=V+(V>4)*4 :: RETURN

I had a letter from a teacher who was using the PRK module to keep student grades, and wanted to know how to average them. It can be done, but is so impractical that I wrote this program. While I was at it, I speeded up the loading and saving to cassette greatly by converting the grades to an ASCII string and combining the student's name and all grades into one record.

100 DIM N$(50),T(50,20)
110 CALL CLEAR
120 PRINT "   TEACHER'S HELPER": : : :
130 REM - by Jim Peterson
140 PRINT "(1)CREATE A FILE?":"(2)ADD TO FILE?":"(3)LOAD A FILE?":"(4)SAVE A FILE?":"(5)PRINT A FILE?"
150 PRINT "(6)CORRECT A FILE?":"(7)COMPUTE AVERAGES?":"(8)QUIT?"
160 CALL KEY(0,K,S)

```
170 IF (S=0)+(K<49)+(K>56)TH
EN 160
180 ON K-48 GOTO 190,250,610
,800,380,990,1120,1510
190 X=0
200 INPUT "SUBJECT? ":S$
210 GOSUB 1370
220 INPUT "TEST #? ":N
230 GOSUB 1440
240 GOTO 140
250 PRINT ::;"(1)ADD NAMES?"
:"(2)ADD GRADES?"
260 CALL KEY(0,K,S)
270 IF (S=0)+(K<49)+(K>50)TH
EN 260
280 ON K-48 GOTO 290,310
290 GOSUB 1370
300 GOTO 140
310 INPUT "TEST #? ":Q
320 IF T(1,Q)=0 THEN 350
330 PRINT ::;"TEST #";STR$(Q
);" ALREADY RECORDED"
340 GOTO 140
350 N=Q
360 GOSUB 1440
370 GOTO 140
380 CALL CLEAR
390 PRINT "OUTPUT TO":"(1)SC
REEN?":"(2)PRINTER?"
400 CALL KEY(0,K,S)
410 IF (S=0)+(K<49)+(K>50)TH
EN 400
420 IF K=49 THEN 460
430 INPUT "PRINTER DESIGNATI
ON? ":P$
440 OPEN #2:P$
450 F@=2
460 PRINT "PRESS ANY KEY TO
PAUSE": :
470 PRINT #F@:S$: :
480 FOR J=1 TO X
490 PRINT #F@:"":N$(J)&" ";T
AB(10);
500 FOR K=1 TO HN
510 PRINT #F@:T(J,K);
520 NEXT K
530 CALL KEY(0,K,S)
540 IF S<>0 THEN 530
550 NEXT J
560 PRINT #F@
570 IF F@=0 THEN 140
580 F@=0
590 CLOSE #2
600 GOTO 140
610 PRINT ::;"(1)CASETTE?":"
(2)DISK?"
620 CALL KEY(0,K,S)
630 IF (S=0)+(K<49)+(K>50)TH
EN 620
640 ON K-48 GOTO 650,670

650 OPEN #2:"CS1",INPUT ,FIX
ED
660 GOTO 690
670 INPUT "FILENAME? DSK":F$
680 OPEN #2:"DSK"&F$,INPUT
690 INPUT #2:X,HN,S$
700 FOR J=1 TO X
710 INPUT #2:K$
720 N$(J)=SEG$(K$,1,POS(K$,C
HR$(255),1)-1)
730 K$=SEG$(K$,POS(K$,CHR$(2
55),1)+1,255)
740 FOR K=1 TO HN
750 T(J,K)=ASC(SEG$(K$,K,1))
-50
760 NEXT K
770 NEXT J
780 CLOSE #2
790 GOTO 140
800 PRINT ::;"(1)CASETTE?":"
(2)DISK?"
810 CALL KEY(0,K,S)
820 IF (S=0)+(K<49)+(K>50)TH
EN 810
830 ON K-48 GOTO 840,860
840 OPEN #2:"CS1",OUTPUT,FIX
ED
850 GOTO 880
860 INPUT "FILENAME? DSK":F$
870 OPEN #2:"DSK"&F$,OUTPUT
880 PRINT #2:X:HN:S$
890 FOR J=1 TO X
900 K$=""
910 FOR K=1 TO HN
920 K$=K$&CHR$(T(J,K)+50)
930 NEXT K
940 PRINT #2:N$(J)&CHR$(255)
&K$
950 K$=""
960 NEXT J
970 CLOSE #2
980 GOTO 140
990 CALL CLEAR
1000 INPUT "STUDENT'S NAME?
":Q$
1010 FOR J=1 TO X
1020 IF N$(J)=Q$ THEN 1060
1030 NEXT J
1040 PRINT ::;"NAME NOT FOUN
D": :
1050 GOTO 140
1060 INPUT "CORRECT WHICH TE
ST? (0 TO QUIT) ":C
1070 IF C=0 THEN 1110
1080 PRINT ::;N$(J);"'S TEST
#";STR$(T(J,C)): :
1090 INPUT "CORRECT TO? ":T(
J,C)
1100 GOTO 1060
1110 GOTO 140

1120 CALL CLEAR
1130 PRINT "OUTPUT TO":"(1)S
CREEN?":"(2)PRINTER?"
1140 CALL KEY(0,K,S)
1150 IF (S=0)+(K<49)+(K>50)T
HEN 1140
1160 IF K=49 THEN 1200
1170 INPUT "PRINTER DESIGNAT
ION? ":P$
1180 OPEN #2:P$
1190 F@=2
1200 PRINT #F@:S$
1210 FOR J=1 TO X
1220 PRINT #F@:N$(J);" AVERA
GE ";
1230 FOR K=1 TO HN
1240 TT=TT+T(J,K)
1250 NEXT K
1260 AV=TT/HN
1270 TAV=TAV+AV
1280 PRINT #F@:AV
1290 TT=0
1300 NEXT J
1310 PRINT #F@:"CLASS AVERAG
E ";TAV/X
1320 TAV=0
1330 IF F@=0 THEN 1360
1340 F@=0
1350 CLOSE #2
1360 GOTO 140
1370 PRINT ::;"STUDENT'S NAM
ES - ":"type END when finish
ed": :
1380 X=X+1
1390 M$="NAME #"&STR$(X)&" "
1400 INPUT M$:N$(X)
1410 IF N$(X)<>"END" THEN 13
80
1420 X=X-1
1430 RETURN
1440 FOR J=1 TO X
1450 M$=N$(J)&"'S GRADE? "
1460 INPUT M$:T(J,N)
1470 NEXT J
1480 IF N<HN THEN 240
1490 HN=N
1500 RETURN
1510 END
```

The reason that 50 is added to the value in line 920, before saving, and subtracted again in line 750 after loading, is because of a quirk of the computer that I don't recall seeing in print anywhere. Did you know that INPUT will read a string beginning with ASCII 0, 2, 4, 7, 10, 12, 14, 18, 20, 26, 27, 31, 32, or 44 as a null string (a blank), and will drop these characters at the end of a string? And ASCII 32 will be dropped at the beginning or end of a string. And ASCII 0 within a string, or ASCII 34 anywhere, will crash, while ASCII 44 within a string will lose the rest of the string. I should have known what ASCII 0, 32 (the space), 34 (quotes) and 44 (comma) would do, but why the others?

LINPUT will accept any-thing, of course, but I wanted to keep this in BASIC for the teachers who are struggling along without the XBasic module or disk drive.

Chick De Marti published in LA 99ers TOPICS the sur-prising discovery that PRINT USING and DISPLAY USING can read the IMAGE format from a variable, array or string!

Which led me to some fooling around -

```
100 !PRINT USING DEMO by Jim
 Peterson, based on a discov
ery by Chick De Marti
110 CALL CLEAR :: RANDOMIZE
:: CALL SCREEN(5):: FOR S=2
TO 14 :: CALL COLOR(S,S,S)::
NEXT S
120 N=INT(13*RND+1):: C$=CHR
$(8*N+32-(N=4)*11)
130 FOR J=N TO 12 :: A$=RPT$
(" ",J)&"#"&RPT$(" ",26-J*2)
&"#" :: PRINT USING A$:C$,C$
:: NEXT J
140 FOR J=12 TO N STEP -1 ::
A$=RPT$(" ",J)&"#"&RPT$(" "
,26-J*2)&"#" :: PRINT USING
A$:C$,C$ :: NEXT J :: GOTO 1
20
```

Here is one last Tigercub challenge. What is the long-est possible one-liner? And what is the longest possible one-liner that actually does something?

MEMORY FULL

Jim Peterson

IN
MEMORIAM

VIVIAN L. PRINE

1925 - 1987

She was a valuable member. She was our good friend. She
was our Secretary. We lost her suddenly and unexpectedly
with a heart attack on March 5th. But, although she went
into and out of our lives rather quickly, she will long
endure because of the fine qualities which she gave us.

She was born Vivian Lorraine Larson, in Hammond, Indiana,
on July 15, 1925 and grew up there with her three sisters
until she married George Prine in July, 1957. They moved to
Columbus shortly thereafter and made their home here.

After an eight year illness through which she took care
of him, Vivian lost George in 1984. She then had to start a
new life again, and she did it with determination,
integrity, and courage. She went to work in the office of
St. Peter's Lutheran Church and for Food Services in the
Columbus Public Schools.

It was shortly thereafter that Vivian bought a computer
and came to us in December of 1985. After about three
months in the group, she was elected Secretary and rapidly
became more involved with the people and the computer. She
filled her position very capably and immensely enjoyed doing
all that was involved. She had even agreed to serve for
another term. During this time, also, she joined both the
Extended Basic and Multiplan classes and furnished her TV
and P-Box for their use.
Although we know many facts about Vivian, to know only these
is not to fully know her. She was always pleasant with a
ready smile and was always ready to do what she could or was
asked to do. The qualities which she so naturally and
profoundly displayed in her associations are those which she
left us to remain within us now - her sincerity, her depth
and generosity, and a love for people and pets. We feel the
warmth of them still.

We loved her, we miss her, and we will for some time to
come. Perhaps we can find comfort in the words of the poet
Helen Steiner Rice when she says,

If we did not go to sleep at night, we'd never awaken to see the light.
Or meet the dawn by some quiet lake, with the joy of watching a new day break.
And death, too, is a time of sleeping, for those who are done in God's keeping.
There is a sunrise for each soul, for life - not death - is God's promised goal.
So, trust God's promise and doubt Him never, for only through death can we live forever!

So, let us bid our farewells to Vivian in Hawaiian
traditon. The Hawaiians have no word in their language for
GOODBYE. Instead, ALOHA. "Til we meet again!"

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