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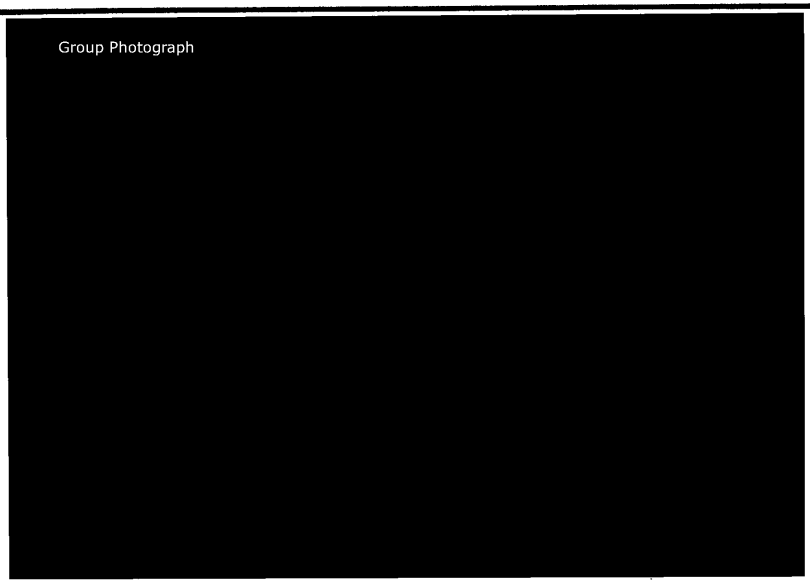

Formerly OXON TI USERS

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Even at the final stage of production, I still don't know if I managed to get the photographs photocopied successfully !!!

Magazine scanned 2023 by Stephen Shaw

B A L D I E ' S B U R B L E

Once again I seem to be embroiled in rushing around madly, trying to get an issue out in record time. In between I have been racing around odd bits of Britain (the usual 1000 miles in one week touch), trying to put together the next IT Supplement (failed dismally and now set back for at least another month), trying to sort out the inception of the ITUG TIBBS (also failing dismally, due to lack of complete software and also a cable that works - I am advised that TI's version of RS232 protocol is not everyone else's), and trying to boost the size of the group (going up bit by bit, in spite of everything else).

I have also been brushing shoulders with the Data Protection Registrar, or more correctly, with one of his staff, who seem hell bent on holding up my registration. First they said I'd missed out a piece of very important information on the application form (I hadn't - the info was not required and could not be provided in any case!), then they said that I'd wrongly classified the data (in which case my bank, my accountant, and the Inland Revenue have got it all wrong as well!). I wonder what excuse they've got lined up for next time ? At one point, it was even suggested that I not bother to register, which is a bit like a policeman telling you not to bother reporting an accident. If I take their advice and subsequently find myself falling foul of the Act, I have absolutely no defence - it's my responsibility, as usual.

As soon as I wax lyrical about a product, it changes. The DISKING people must have heard me talking about their Banana disks - the swine have just removed their library case from the deal and are "offering" it at "half the normal price of £2.19".

But, cavalry to the rescue, another firm has popped up with some cheapo disks, likewise double-sided flippies, called...FROGGY disks ???

I think I'm going bananas - or do I mean froggy ?

Anyway, at £8.95 per pack, with £1 p+p, AND a free library box with each pack of ten disks, well, who can argue with that ? They're suitable for use as double or single density, double or single-sided, 40 or 80 track and with double notches (which is a polite way of saying "flippies"!).

Guess who's buying some ?

2023 note: After 40 years the majority of failed TI disks were the flippy disks, which had a much shorter lifespan.

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The firm is CENTRETIME LTD, Roseneath, Giggs Hill Road, THAMES DITTON, Surrey KT7 OBT.

We say Hello to a small crowd of new subscribers this month: BEN JEWELL, ALAN NEWMAN and family, LANGDON SHAYLOR, NEIL WILSON, Mr ARMER, MARK PLAYLE, Mr BUTCHER, Mr BLAKESLEY, and RALPH ARCHBOLD. Frequently now, some of our recent subscribers have not been aware of the existence of ANY of the User groups - the last some of them heard from anyone was back in the days of TIHOME, which is going back to 1983!

The program listing from the TIHOME SOFTWARE COLLECTION was left out of last month's IT because of lack of space. I hope that I can manage to squeeze something into this issue, which is, like last month's, being put together in some haste - this time because it has to be ready before the Bloxwich Workshop. I am not so much stuck for what to put into each issue, as to what to leave out until next time (when there would hopefully be some space); and there is a massive number of topics about which I have scribbled notes for expansion into full articles, but the trouble, as usual, is finding time to do the research and write everything up!

In that vein, I hope that last issue's quickie on LOGO II found favour with some readers, and if I can find time I will put together another on the subject of SIERPINSKI, PEANO, and HILBERT curves, which LOGO is especially suited to producing - and maybe, if you're REALLY good, I might even bring myself to enter the murky (but fascinating, definitely fascinating) world of FRACTAL GEOMETRY.

I have been advised by MAURICE RYMILL that the listing published in the August issue and attributed to Rajesh Bakshi is also knocking around in an identical form and attributed to Penny Aspaturian (and which Maurice has had on tape for at least three years!). As both versions carry a 1983 copyright date it is not possible to say which is the "original", but it is certain that one of them is a copy - the similarity of the listings is virtually 100% and they could not have been coincidentally produced. It does leave a nasty taste in the mouth: pirating for pure commercial gain is one thing, but copying and then substituting another name for copyright purposes is something else.

Incidentally, just to clear up any misunderstanding, each listing has been produced in its 28 column format (and then modified by a program of my own) as a result of the application of a program supplied by Jim Peterson - Jim is not being named as the author of each listing!

I am advised by RICHARD BLANDEN, after a visit to the other side of The Pond, that Craig Miller is in the process of producing an enhanced operating system for his famous GramKracker, which will supplant the existing TI BASIC with an improved version of Extended BASIC. Among the

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additional commands are a version of PEEK for GROM, an enhanced RES function which allows resequencing of selected parts of a listing rather than of the whole thing every time, as well as a MOVE function to enable portions of the listing to be relocated, and a DELETE option which will permit selected blocks of line numbers to be removed rather than having to do the job a line at a time. Also included is an enhanced editing facility whereby the cursor keys allow vertical movement within a program statement (so that you don't have to run the cursor from the start of a statement along three lines of text until you reach the bit you want to edit - you just use the FCTN E and FCTN X to move about on the screen).

Also provided is a cataloguing command (presumably similar to that available on the Myarc and Corcomp controller cards) and a number of other useful facilities.

The projected date for release is not currently known.

Some readers may have noticed a tendency for JO ANN COPELAND's articles to have the occasional deprecatory comment dotted about - such as Groan! and suchlike; after chatting to one reader, I have to point out that I don't put any of those groans in - they're all Jo Ann's! If I put any comment in anyone's article, it is surrounded by braces {} and I stick my initials onto the end.

Anyway, I wouldn't do a thing like writing Groan! on anybody's work, would I now ?

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Some computers claim to have more than the usual 16 "colours" when they have the same type of video chip as our 4A does. Well, perhaps the computers themselves don't, but their suppliers do.

From time to time I have seen odd items in other newsletters about increasing the range of colours available on the 4A, but never got around to doing anything constructive about it.

Recently, by chance, I ended up with a quickie demo program to show that you need not be stuck with the standardly-available 16 so-called colours (I resent black, white, grey, and transparent being termed colours), and I have stuck it in to this issue as a titbit for others to experiment with. The listing is elsewhere, and doesn't really require a great deal of explanation. By defining a character with differing proportions of foreground over background, you can "mix" colours to give a greater range of shades. The effects will vary according to the quality of the TV display that you use, and according to the pattern definitions that you create. The drawback of course is that you are NOT increasing the real range of colours available in terms of foreground and background - you couldn't successfully create brown text on a lilac background within the space of a single 8 by 8 dot character matrix, but you CAN create pastel and other shades as "fillers" for background/foregorund work.

This should provide a cue for someone to write in with definitions for characters which cover more than the 8 by 8 matrix, and which can thus do what I just said can't be done... The ball's in your court...

I am debating about the possibility of producing an IT Bumper Annual of the 14 issues of volume 1, and another of the 12 issues of volume 2. There are lots of useful articles in these issues, but it is rather time-consuming and expensive producing the reduction-copied versions, and new subscribers don't seem too interested in back issues (I still have some that were prepared for the rush at Leeds which never came!).

The Bumper Annuals would be A4 format, comb-bound, and consist of the innards of the issues with items like the Bulletin Board deleted ('cos you can't buy anything that's being advertised in them, that's why...).

That's a hefty 400-500 pages, without a detailed index either. I'll let you know the results of my deliberations in due course...

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TI-WRITER/FUNLWRITER OVERVIEW : PART 4

TI-WRITER/FUNLWRITER - OVERVIEW - PART IV (OH NO! I can't take any more!)

Strange as it seems, I forgot where we were...Okay, cut out all the applause!!!!! B.M. - did you say you were giving a tutorial on the Value File stage????

Hi again. My stick-'em note tells me I left off on New Page and the Printer. Ugh! Well let's take our Panadol now and get down to it...

Another command, New Page, - can you guess?- causes the printer to note that a New Page should start. When you are in text, Carriage Return to a new line and press CTRL 9 - a New Page symbol appears alongside of a Carriage Return symbol. When you are in text, you can just keep typing and typing, and when you print out your document the computer, as smart as it is, will put in its own pages unless you otherwise state so. Hence the CTRL 9 command. Have you noticed that, upon printing, the computer puts four lines at beginning of page, and ending? All fine and dandy, but if you wanted to start a new page, say after typing only half a page, the CTRL 9 command comes in handy. Thus you keep your text printed the way you wish.

Well, that was thrilling! What else can we do?

Well, we can get into Fixed Mode. Huh? Yup, Fixed Mode, vs. Word Wrap Mode. Did you notice that in Word Wrap Mode when you continued to type your sentences and words the sentences seemed to just 'wrap' around to the next line and you continued ? You should also have noticed that your cursor is a solid (filled-in) rectangle. However, Fixed Mode comes in handy when you don't want to 'wrap' around. Fixed Mode can be used for charts, tables, graphs, and all sorts of goodies. Press CTRL Zero. You should see a hollow cursor. Tried it ? Yup, it works! CTRL Zero pressed again returns you to Word Wrap. The only thing about Fixed Mode is several commands DO NOT work. For example:

There is no word wrapping and no reformatting. There is an 'insert character' option; however it does not work as in Word Wrap mode. Instead, FCTN 2 (insert) moves characters to the right along a line to allow you the option to insert new characters. Remember, the ending of the line cannot Word Wrap to a new line, so as each new character is inserted the last character on the line will be deleted, one at a time. If you press any other key, such as the arrow keys, or delete character you will end the Insert Character option.

If you are testing Fixed Mode, you should also notice you do not see a Carriage Return symbol. You can, however, press ENTER to return to the beginning of the next line.

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Okay, let me test all of this out and I'll be right back for - QUIT. Oh no, more applause???

Another command, Quit - HURRAY!!!! - allows you to leave the Text Editor. Entering Command Mode (FCTN 9) typing Q and pressing ENTER you will see some more options pop up. What's new? If this worked right, you should see: QUIT enter Save, Purge, or Exit.

Save is the most common, next to Exit. If you press Command Mode, Quit, (S) Save, you will see SAVE FILE, enter filename. The usual - DSK2.FILENAME saves your current text to disk under your intended file name. Purge is a different story. This completely clears your text on screen. In other words, if you spent 8 hours typing and hit this key, start crying 'cause it's gone! Hopefully, you had saved before purging. Fortunately, the computer knows better, and after pressing Command Mode, Q, (P) Purge, it asks you - PURGE FILE, are you sure (Yes or No?) Y (enter) will purge and N (enter) puts you back into text with no loss. And as noted before, the prompts help you a lot, so read along as you go before pushing keys!

Last, but not least, (E) Exit allows you to return to the main screen.

{Jo Ann will deal with Recover Edit (which can recover all but one line of your PURGEd file even after the dastardly deed has been done!) and the use of CTRL U to obtain special characters in a later article. PB}

Well guys and gals - or as I often say 'yous guys' - we have not only completed the Text Editor Options but we have also survived!!! You can stop smiling now 'cause there's still lots more to come! Sorry about that! Thought you were finally rid of me eh'?

==========

TEXT FORMATTER / Format Commands

Fill, No Fill, Adjust, No Adjust, Left Margin, Right Margin, Sex, No Sex (CTRL OOPS!) - these are the start of the format commands. More will - yes unfortunately - be discussed in a later column. So, let's just start with a brief explanation of Text Formatter commands, and a bit about each of those listed above.

After typing your text you prepare to print it out. Okay, the Text Formatter 'reads' your document first and, finding any special commands, prepares to print the document according to those commands.

Let's say you underlined some sentences, or centered several lines. The Formatter would have 'read' these commands and prepared to produce your text just as you wanted it. Hopefully, anyway. So any special commands won't come out in our printed text (via the Formatter). The special Formatter commands always appear on a line separated from text - the first character being a period or full stop (.). The period is followed by two CAPITAL letters. If you ever printed text where a period was the first character in a line you probably noticed the line never did print out. The reason is that it is used for the Formatter to recognize there is a special command following it.

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So, if we had something like - .FI - followed by a Carriage Return it would be telling the Formatter to Fill In the text - and would do so until it found a command telling it otherwise. Okay, Line 0001 in Text - .FI (Carriage Return). The lines following this command would be Filled In. So what is Filled In you say? Glad you asked.....

If you happened to start text with certain left and right margin settings that's fine. But what if you wanted to change them later? When you then wanted to print out your text you could use your Formatter command Fill In. This would tell the Formatter to put as many words between the left and right margins as it could - it actually 'fills in ' the lines.

However, if you came to a later paragraph and wanted this to print out exactly as you typed it into text, use the No Fill command (.NF) - it tells the Formatter to forget about the previous command and to accept this new one. So, if this was placed on a line preceding your paragraph (.NF) the Formatter would print out text exactly as you typed it. After this paragraph, if you wish to continue Fill In, just go to a line preceding the next paragraph and type .FI and the following lines would be filled in. Again, the Formatter reaches this command and ignores any previous commands given. Really messed up yet? If not, you will be shortly...

To adjust or no adjust - that is the question...Sorry Shakespeare. Adjust cannot be used without Fill In. Just one of the quirks of the system! However, Adjust makes an awfully pretty document printout. It causes the Formatter to 'spread' words across the line so that the right margin end looks exactly like the left margin - straight all the way down - also known as Right Margin Justification. You could actually take a ruler and have as straight a line down on the right margin as the left. Adjust is put at the beginning of a line as (.AD). Remember, it gets used with Fill In. (Example later)

Hand in hand, pops in No Adjust. Again, if you had one paragraph where you wanted it printed out Right Margin Justified use the .AD. Then, say you come to a following paragraph and want it typed as you put it into text: .NA says ignore the previous command and type this out in 'unadjusted' lines - no straight right margin. Again, reinstate the Adjust command at a following paragraph if you want your print to resume Right Margin Justification.

Okay, remember when we started our text we set up tabs and margins? We typed quite a bit, but before printing decided to change it all. Should we reset tabs and margins and type everything all over again or just use some simple special commands? Knowing what is easier in life I'll go for the commands. Just call me Lazy Jo. Left Margin can be changed by stating (.LM n) at the beginning of a line. Right Margin can also be changed by stating (.RM n) the same way.

(n) stipulates a number which you will put in. For example, I want my left margin to start at 7. So, at the beginning of a line I type .LM 7 and then Carriage Return. Your left margin will come out as 7 when printed. However, suppose you use .LM +5 - this adds 5 to the previous value of the left margin thus giving you a left margin of 12. Neat huh? Neater still, if you type in .LM -8 your margin will be at 4. Any higher numbers and I can't keep up with the addition/subtraction!

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Right Margin sets your right margin, naturally. At the beginning of a line you can indicate where you want your margin to end - replace the (n) parameter with, say, 60. So beginning of line - .RM 60 and Carriage Return. Your right margin ends at 60. Changes can again be made prior to subsequent paragraphs by starting a new line with .RM -5 (= 55) or .RM +5 which equals 65, and so on.

A few notes - if you have a text previously created in Fixed Mode and then go back into it under Word Wrap Mode using these commands you will have an entirely messed up text. So remember what was created in Fixed Mode. Also, when text is printed through the Formatter and the No Fill command was used the Left and Right Margin command and Indent commands wll be ignored. So watch where that No Fill command goes.

Okay, a few examples before I expire. Let's go into a text document and change a few things around. Let's say we want our Left Margin to start at 10, Right Margin at 60, we insert a line at 0001 or 0002 and type the following: .LM 10 and Carriage Return. Line 0003 type .RM 60 and Carriage Return. This lets the Formatter know we want the left and right margins at 10 and 60 respectively. It will print out as such.

An easier way, not to confuse you, would be to go to the beginning of a line and type in: .FI;LM 10;RM 60 (Carriage Return). This is more than one format command per line and only makes work more simple. It lets the Formatter know to Fill In the lines, with a left margin at 10 and right margin at 60. As typed, a semi-colon follows each command with a space between the command and number (LM 10). A simple typing change - .FI;AD;LM 10;RM 60 (Carriage Return) advises the Formatter to have a left margin of 10, right margin of 60, fill in each line and right margin justify. So left and right margins will have nice straight lines all the way down the page.

Well, before I get yelled at for taking up too much space I had better sign off until next time. We have more special commands to cover and will probably go through these very quickly. So until next time, I'll say a fond farewell and get back to my cold cup of coffee!

Bye for now..... APPLAUSE!!!! CHEERS!!!! HURRAY!!!! (She's gone!!)

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```
100 REM  TSC GA0063
110 CALL CLEAR
120 CALL SCREEN(5)
130 CALL CHAR(96,"FFFFFFFFFF
FFFFFF")
140 CALL COLOR(9,12,12)
150 CALL CHAR(104,"")
160 CALL COLOR(10,5,5)
170 CALL CHAR(112,"007E7E7E7
E7E7E")
180 CALL COLOR(11,3,5)
190 CALL CHAR(120,"FFFFFFFFF
FFFFFFF")
200 CALL COLOR(12,12,12)
210 RANDOMIZE
220 DEF RX=INT(RND*15)+1
230 DEF PM=X+15*Y
240 DEF RY=INT(RND*11)+1
250 DIM M(165),T(165)
260 DEF MP=X+15*(Y-1)
270 CALL CHAR(128,"007E7E7E7
E7E7E")
280 CALL COLOR(13,9,5)
290 FOR I=1 TO 8
300 CALL COLOR(I,16,5)
310 NEXT I
320 CALL SCREEN(5)
330 GOTO 3070
340 X=RX
350 Y=RY-1
360 IF M(PM))0 THEN 340
370 C=C+1
380 Y=Y+1
390 IF C=1 THEN 980
400 R=0
410 D=0
420 L=0
430 U=0
440 K=X+15*(Y-1)
450 M(K)=-ABS(M(K))
460 C=C-1
470 IF X=15 THEN 490
480 R=-(M(K+1))0)
490 IF Y=11 THEN 510
500 D=-(M(K+15))0)
510 IF X=1 THEN 530
520 L=-(M(K-1))0)
530 IF Y=1 THEN 550
540 U=-(M(K-15))0)
550 Q=R+D+L+U
560 IF (((Q(3)*(RND).7))+(Q=
0))=0 THEN 750
570 IF C(21 THEN 640
580 X=RX
590 Y=RY-1
600 IF M(PM))0 THEN 580
610 C=C+1
620 Y=Y+1
630 GOTO 390
640 IF (DCB=1)*(CB(166)THEN
670
650 CB=1
660 DCB=1
670 IF M(CB))0 THEN 730
680 Y=INT((CB-1)/15)+1
690 X=CB-(Y-1)*15
700 C=C+1
710 CB=CB+1
720 GOTO 390
730 CB=CB+1
740 GOTO 640
750 DT=INT(RND*4)
760 IF Q=0 THEN 570
770 ON DT+1 GOTO 780,830,880
,930
780 IF R=0 THEN 750
790 M(K)=M(K)+1
800 X=X+1
810 CALL HCHAR(Y*2,X*2-1,104
)
820 GOTO 390
830 IF D=0 THEN 750
840 M(K)=M(K)+10
850 Y=Y+1
860 CALL HCHAR(Y*2-1,X*2,104
)
870 GOTO 390
880 IF L=0 THEN 750
890 M(K-1)=M(K-1)-1
900 X=X-1
910 CALL HCHAR(Y*2,X*2+1,104
)
920 GOTO 390
930 IF U=0 THEN 750
940 M(K-15)=M(K-15)-10
950 Y=Y-1
960 CALL HCHAR(Y*2+1,X*2,104
)
970 GOTO 390
980 GOSUB 1910
990 CALL HCHAR(24,3,32,29)
1000 RR=24
1010 CC=3
1020 MM$="THE MAZE IS READY.
"
1030 GOSUB 3720
1040 FOR DEL=1 TO 200
1050 NEXT DEL
1060 CALL HCHAR(24,3,32,20)
1070 CALL HCHAR(1,1,120,31)
1080 CALL HCHAR(23,1,120,31)
1090 CALL VCHAR(2,1,120,21)
1100 CALL VCHAR(2,31,120,21)
1110 CALL COLOR(9,5,5)
1120 MM$="DRAGON MAZE."
1130 GOSUB 3720
```

PROGRAM LISTING

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```
1140 CALL HCHAR(YR*2,1,104)
1150 CALL HCHAR(RDY*2,31,104
)
1160 X=1
1170 Y=YR
1180 CALL HCHAR(Y*2,X*2,112)
1190 HX=X*2
1200 HY=Y*2
1210 SX=15
1220 SY=RDY
1230 IF (X=SX)*(Y=SY)THEN 29
50
1240 CALL KEY(0,K,SS)
1250 IF SS=0 THEN 1230
1260 CALL SOUND(100,523,4)
1270 IF K<>1 THEN 1330
1280 CALL COLOR(9,2,2)
1290 FOR DL=1 TO 50
1300 NEXT DL
1310 CALL COLOR(9,5,5)
1320 GOTO 1230
1330 GOSUB 2200
1340 IF (SX=X)*(SY=Y)THEN 29
50
1350 IF K=68 THEN 1410
1360 IF K=83 THEN 1610
1370 IF K=69 THEN 1690
1380 IF K=88 THEN 1740
1390 GOSUB 1910
1400 GOTO 1230
1410 DX=1
1420 DY=0
1430 CALL GCHAR(Y*2+DY,X*2+D
X,CC)
1440 IF CC<>104 THEN 1790
1450 FX=X*2
1460 FY=Y*2
1470 HX=FX
1480 HY=FY
1490 FOR I=1 TO 2
1500 FX=FX+DX
1510 FY=FY+DY
1520 CALL HCHAR(HY,HX,104)
1530 CALL HCHAR(FY,FX,112)
1540 HX=FX
1550 HY=FY
1560 NEXT I
1570 X=X+DX
1580 Y=Y+DY
1590 IF (X=15)*(Y=RDY)THEN 1
930
1600 GOTO 1230
1610 IF (X<>1)*(Y<>YR)THEN 1
640
1620 CALL SOUND(100,110,4)
1630 GOTO 1240
1640 DX=-1
1650 DY=0
1660 CALL GCHAR(Y*2+DY,X*2+D
X,CC)
1670 IF CC<>104 THEN 1820
1680 GOTO 1450
1690 DX=0
1700 DY=-1
1710 CALL GCHAR(Y*2+DY,X*2+D
X,CC)
1720 IF CC<>104 THEN 1850
1730 GOTO 1450
1740 DX=0
1750 DY=1
1760 CALL GCHAR(Y*2+DY,X*2+D
X,CC)
1770 IF CC<>104 THEN 1880
1780 GOTO 1450
1790 GOSUB 1910
1800 CALL VCHAR(Y*2-1,X*2+1,
120,3)
1810 GOTO 1230
1820 GOSUB 1910
1830 CALL VCHAR(Y*2-1,X*2-1,
120,3)
1840 GOTO 1230
1850 GOSUB 1910
1860 CALL HCHAR(Y*2-1,X*2-1,
120,3)
1870 GOTO 1230
1880 GOSUB 1910
1890 CALL HCHAR(Y*2+1,X*2-1,
120,3)
1900 GOTO 1230
1910 CALL SOUND(50,400,5)
1920 RETURN
1930 RR=24
1940 CC=3
1950 MM$="YOU MADE IT!"
1960 CALL SOUND(175,262,5)
1970 CALL SOUND(175,349,5)
1980 CALL SOUND(175,440,5)
1990 CALL SOUND(350,524,5)
2000 CALL SOUND(175,440,5)
2010 CALL SOUND(350,524,5)
2020 GOSUB 3720
2030 FOR DL=1 TO 500
2040 NEXT DL
2050 CALL HCHAR(24,3,32,20)
2060 MM$="WANT TO PLAY AGAIN
?"
2070 CALL HCHAR(24,3,32,20)
2080 GOSUB 3720
2090 CALL KEY(0,VV,SS)
2100 IF SS<1 THEN 2090
2110 IF VV<>89 THEN 2140
2120 CALL CLEAR
2130 GOTO 3400
2140 IF VV=78 THEN 2190
2150 CALL HCHAR(24,3,32,20)
```

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```
2160 MM$="PLEASE HIT Y OR N.
"
2170 GOSUB 3720
2180 GOTO 2030
2190 END
2200 DRX=X-SX
2210 DRY=Y-SY
2220 FLD=0
2230 FLG=0
2240 IF ABS(DRX)=ABS(DRY)THE
N 2880
2250 IF ABS(DRY))ABS(DRX)THE
N 2650
2260 IF DRX)0 THEN 2540
2270 REM  *LEFT*
2280 IF SX=1 THEN 2900
2290 DX=-1
2300 DY=0
2310 CALL GCHAR(SY*2,SX*2-1,
Z9)
2320 IF Z9=104 THEN 2370
2330 IF RND).05 THEN 2900
2340 CALL SOUND(50,-5,5,110,
5)
2350 CALL VCHAR(SY*2-1,SX*2-
1,120,3)
2360 FLG=1
2370 X2=2*SX
2380 Y2=2*SY
2390 HX=X2
2400 HY=Y2
2410 FOR I=1 TO 2
2420 X2=X2+DX
2430 Y2=Y2+DY
2440 CALL HCHAR(HY,HX,104)
2450 CALL HCHAR(Y2,X2,128)
2460 HX=X2
2470 HY=Y2
2480 NEXT I
2490 IF FLG()1 THEN 2510
2500 CALL HCHAR(Y2-DY,X2-DX,
96)
2510 SX=SX+DX
2520 SY=SY+DY
2530 RETURN
2540 REM  *RIGHT*
2550 IF SX=15 THEN 2900
2560 DX=1
2570 DY=0
2580 CALL GCHAR(SY*2,SX*2+1,
Z9)
2590 IF Z9=104 THEN 2370
2600 IF RND).05 THEN 2900
2610 CALL SOUND(50,-5,5,110,
5)
2620 FLG=1
2630 CALL VCHAR(SY*2-1,SX*2+
1,120,3)
2640 GOTO 2370
2650 IF DRY)0 THEN 2770
2660 REM  *UP*
2670 IF SY=1 THEN 2900
2680 DX=0
2690 DY=-1
2700 CALL GCHAR(SY*2-1,SX*2,
Z9)
2710 IF Z9=104 THEN 2370
2720 IF RND).05 THEN 2900
2730 CALL SOUND(50,-5,5,110,
5)
2740 CALL HCHAR(SY*2-1,SX*2-
1,120,3)
2750 FLG=1
2760 GOTO 2370
2770 REM  *DOWN*
2780 IF SY=13 THEN 2900
2790 DX=0
2800 DY=1
2810 CALL GCHAR(SY*2+1,SX*2,
Z9)
2820 IF Z9=104 THEN 2370
2830 IF RND).05 THEN 2900
2840 CALL SOUND(50,-5,5,110,
5)
2850 CALL HCHAR(SY*2+1,SX*2-
1,120,3)
2860 FLG=1
2870 GOTO 2370
2880 D2=INT(RND*2)+1
2890 ON D2 GOTO 2260,2650
2900 D2=INT(RND*4)+1
2910 FLD=FLD+1
2920 IF FLD()1 THEN 2940
2930 IF DX=0 THEN 2260 ELSE
2650
2940 ON D2 GOTO 2270,2540,26
60,2770
2950 CALL SOUND(700,294,5)
2960 CALL SOUND(350,294,5)
2970 CALL SOUND(3150,392,5)
2980 CALL SOUND(700,294,5)
2990 CALL SOUND(350,392,5)
3000 CALL SOUND(3150,494,5)
3010 CALL HCHAR(24,3,32,20)
3020 MM$="THE DRAGON GOT YOU
!"
3030 RR=24
3040 CC=3
3050 GOSUB 3720
3060 GOTO 2030
3070 CALL CLEAR
3080 X=0
3090 Y=0
3100 R=0
3110 D=0
3120 L=0
```

))))))

```
3130 U=0
3140 K=0
3150 C=0
3160 Q=0
3170 PRINT "   WELCOME TO TH
E DRAGON'S
             MAZE!  YOU MAY W
ATCH WHILE"::
3180 PRINT "I BUILD A MAZE,
BUT WHEN
             IT'S COMPLETE, I
'LL ERASE"::
3190 PRINT "THE PICTURE.  TH
EN YOU'LL
             ONLY SEE THE WAL
LS AS YOU"::
3200 PRINT "BUMP INTO THEM.
 TO MOVE,
             USE THE KEYS WIT
H THE FOUR"::
3210 PRINT "ARROWS.  YOU DON
'T HAVE TO
             HIT THE 'SHIFT'
KEY.  AND"::
3220 PRINT "DO NOT HIT 'ENTE
R'!"::
3230 PRINT "HIT ANY KEY TO C
ONTINUE.";
3240 CALL KEY(0,VV,SS)
3250 IF SS(1 THEN 3240
3260 CALL CLEAR
3270 PRINT "   THE OBJECT OF
 THE GAME
             IS FOR YOU (THE
GREEN DOT)"::
3280 PRINT "TO GET TO THE DO
OR ON THE
             RIGHT SIDE BEFOR
E THE DRAGON"::
3290 PRINT "(THE RED DOT) EA
TS YOU.  BUT
             BEWARE!!!!!  SOM
E TIMES THE"::
3300 PRINT "DRAGON GETS REAL
LY MAD, AND
             CLIMBS OVER A WA
LL.  BUT"::
3310 PRINT "MOST OF THE TIME
 HE HAS TO
             GO AROUND."::::
3320 PRINT "HIT ANY KEY TO C
ONTINUE.";
3330 CALL KEY(0,VV,SS)
3340 IF SS(1 THEN 3330
3350 CALL CLEAR
3360 PRINT "   HERE IS A VER
Y USEFUL
             HINT:  YOU CAN O
FTEN TELL"::
3370 PRINT "WHERE A WALL IS
EVEN BEFORE
             YOU CAN SEE IT,
BY THE FACT"::
3380 PRINT "THAT THE DRAGON
CAN'T GET
             THROUGH IT."::
3390 PRINT :::::::::
3400 PRINT :"HIT ANY KEY TO
BEGIN.";
3410 CALL KEY(0,VV,SS)
3420 IF SS(1 THEN 3410
3430 CALL CLEAR
3440 CALL COLOR(9,12,12)
3450 FOR X=1 TO 23 STEP 2
3460 CALL VCHAR(1,X,96,23)
3470 CALL HCHAR(X,1,96,31)
3480 NEXT X
3490 FOR X=25 TO 31 STEP 2
3500 CALL VCHAR(1,X,96,23)
3510 NEXT X
3520 RR=24
3530 CC=3
3540 MM$="BUILDING MAZE... P
LEASE WAIT."
3550 GOSUB 3720
3560 X=1
3570 YR=RY
3580 CALL HCHAR(2*YR,1,104)
3590 RDY=RY
3600 CALL HCHAR(RDY*2,31,104
)
3610 FOR I=1 TO 165
3620 T(I)=0
3630 M(I)=11
3640 NEXT I
3650 X=RX
3660 Y=RY
3670 C=165
3680 CB=1
3690 DCB=1
3700 GOTO 390
3710 END
3720 Z3=CC-1
3730 FOR Z1=1 TO LEN(MM$)
3740 Z3=Z3+1
3750 CALL HCHAR(RR,Z3,ASC(SE
G$(MM$,Z1,1)))
3760 NEXT Z1
3770 RETURN
```

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GRAPHIC READ ONLY MEMORIES (GROMs)

By COLIN HINSON

On reading various letters in this and other magazines it is apparent that there is much confusion about GROMs and the way they are used in the 99/4A. In order to remove as much of this confusion as possible, there follows a description of the GROMs themselves and the way they are used in the 99/4A.

GENERAL DESCRIPTION

A GROM is a P-channel read only memory containing 6144 8-bit bytes. It has an on chip auto-incrementing address counter which selects one of the 6144 memory bytes. The address register is loaded by writing the 2 bytes of the address MSB first.

FUNCTIONAL DESCRIPTION

CPU INTERFACE

The GROM interfaces to the CPU through the 8 bit parallel data bus and various memory control lines. These control lines consist of the Chip Enable (CE), READY, and two mode control lines (M0 & M1). The GROM also requires a nominal 500kHz clock input (OSC).

GROM PAGING

The GROM has a 16 bit address register of which the lower 13 bits are used to address the 6144 byte ROM matrix. The most significant 3 bit field is used to select one of eight GROM pages. Each GROM has a fixed 3 bit page number which is DETERMINED DURING MANUFACTURE. The GROM compares this number with the address register page select field. If a match occurs, then the GROM is the "selected page" or "current page". The GROM data bus is placed into the output mode during a read data operation only if the GROM is the current page. The other GROM functions are not affected by the page select field. The page select field permits up to eight GROMs to be used in parallel.

Each GROM is tied to the same chip enable, memory control and data lines as the other GROMs. Since the page select field does not affect the data register or address register operations, all parallel GROMs are synchronised following initialisation. However, since only one GROM is the current page, only one GROM outputs data on the data bus during a read operation. If no GROM is selected (the address register page field does not match the page number of any GROM), then no GROM is placed into the output mode during a read operation. During a read address operation, all GROMs output the address byte. Since all GROMs are synchronised, no data bus conflict occurs..

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ADDRESS REGISTER AUTO-INCREMENTATION

The address counter is auto-incremented following a read data, write data, or a pair of consecutive write address operations. When the current address is 8191, the next auto-increment cycle will result in a zero address value. The page select field is NOT affected by this auto-increment.

When the value of the address register lower 13 bit field is greater than 6143, the GROM will continue to fetch data from the 6144 byte array. This condition should be avoided in order to prevent invalid data fetches and transfers.

INITIALISATION

During the console power up sequence, the microprocessor executes "dummy" read data operation. This guarantees that a newly powered up GROM will not respond to the first write address operation as if it were the second write address operation. The microprocessor then initialises the GROM address registers with two valid consecutive write address operations (i.e. it writes two 8 bit bytes).

READY

The GROM ready line is normally low and is high only when the GROM has an active Chip Enable and has read the contents of the data bus during a write operation, or has placed data on the bus during a read operation. The READY line control is independent of the page select.

ACCESS DELAY

A GROM requires that a second I/O operation should not occur before it has completed the first operation. Consequently, CE must remain high at least 2.5 GROM CLOCK cycles following the trailing edge of the last I/O operation. For a nominal 500kHz OSC input, the minimum required delay for access is therefore 5 microseconds.

I/O OPERATIONS.

When the CE becomes active (low), the mode lines determine which one of four GROM I/O operations is to occur as shown below:

MODE

M0	M1	I/O OPERATION
0	0	WRITE DATA. The write data operation was originally included for use in future read/write versions of the GROM, though no such device was ever produced. However various GROM emulators make use of this feature, as it enables data from disk to be stored in a RAM which is accessed via external TTL counters, thus emulating a GROM.

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0	1	READ DATA The read data operation transfers the data byte in the data register to the CPU if the GROM is the current page. The address register is then auto-incremented. The addressed ROM byte is fetched and placed in the GROM data register.
1	0	WRITE ADDRESS - The write address operation transfers the data byte on the GROM data I/O bus to the least significant byte (LSB) of the GROM address register. The old address register LSB is transferred to the address register MSB. Two consecutive write address operations cause the addressed ROM byte to be fetched and placed into the GROM data register; the address register is then auto-incremented. A write address operation immediately following a read data, read address or write data operation does not result in a data fetch and address auto-incrementation.
1	1	READ ADDRESS - The read address operation transfers the MSB of the address register to the CPU if the GROM is the current page. The address register LSB is automatically transferred to the MSB.

It should be noted that the M0 line controls whether the data or address register is to be affected and the M1 line controls whether the operation is an input or output cycle.

HARDWARE

The 99/4A has three internal GROMS (pages 0, 1, & 2), giving the capability of 5 more external GROMs to be added in a module via the GROM port (though with suitable external hardware, a module library of up to 16 modules can be added - the console software exists to drive this, though the hardware does not. The software gives such instructions as "INSERT MODULE" and "REVIEW MODULE LIBRARY" which you may have seen when the console crashes).

GROM CLOCK

The clock signals for the GROMs are derived from the VDP. The clock cycle time is 2.24 microseconds. A 1k pull up resistor to +5v is used to give a full 0v to 5v swing as is required by P-channel devices.

MODE CONTROL

The CPU signal DBIN (Data Bus In) is connected to M1 to control the read/write operations, and the address line A14 goes to M0 to control the data/address operations. Thus a read operation is performed when DBIN is high and a write operation when DBIN is low.

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GROM SELECT

The GROM select line is generated by decoding the appropriate addresses via two 3 line to 8 line decoders, the line going low to select the GROMs.

GROM READY

The GROM READY signal is connected to the CPU ready line via an inverter and some gates. The signal is only gated to the CPU when the GROM SELECT line is active (low).

CPU MEMORY MAP FOR THE GROMS

ADDRESS	TYPE OF INSTRUCTION
>9800	READ GROM DATA
>9802	READ GROM ADDRESS
>9C00	WRITE GROM DATA
>9C02	WRITE GROM ADDRESS

GROM PORT CONNECTOR

RESET	1	2	GROUND
D7	3	4	CRU CLOCK-
D6	5	6	CRU IN
D5	7	8	A15/CRU OUT
D4	9	10	A13
D3	11	12	A12
D2	13	14	A11
D1	15	16	A10
D0	17	18	A9
+5 V	19	20	A8
GROM SELECT	21	22	A7
A14	23	24	A3
DBIN	25	26	A6
GROM CLOCK	27	28	A5
-5 V	29	30	A4
GROM READY	31	32	WE-
GROM VSS	33	34	ROM G-
GROUND	35	36	GROUND

---------->
TOP OF CONSOLE

The above diagram is drawn looking into the Grom Port from the front of the Console, the top of the console as shown.

The Power supply rails are -5v, +5v, -0.7v (GROM VSS), and Ground

So far as a MODULE is concerned, the signals which are outputs are:

(see over page)

>>>

GROM READY
CRU IN
RESET - Yes this is an output signal, and goes either directly to -5V or through a 100 ohm resistor to -5v on all modules.

The bi-directional signals are the 8 data bits D0 to D7

All the remaining signals are inputs to the modules.

Notice that the arrangement of the signals allows modules which contain only GROMS to use a single sided printed circuit board, as all the GROM signals are on the bottom. Modules with ROMs require a double sided PCB.

GROM PINOUT

```
    ----\ /----
D7  | 1   -  16 | VSS
D6  | 2      15 | GROM READY
D5  | 3      14 | -5V
D4  | 4      13 | GROM CLOCK
D3  | 5      12 | M1
D2  | 6      11 | M0
D1  | 7      10 | GROM CLOCK
D0  | 8       9 | +5v
    ------------
```

{Colin's follow-up article on DSR Subprograms mentioned in his last article has been held over until next issue. PB}

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form which can be carried by a telephone channel. The obvious solution is to convert the data pulses into analgue signals within the voice band, similar to those carried by the phone network. The zeroes and ones of the data transmission from the sending computer are converted into two distinct frequencies between the 300 to 3400 Hz range by a modem, which passes these tones to the remote modem where the process is reversed - the modem not having operated on the data at all, merely changing it into a form suitable for transmission.

Putting it another way, the modem modulates an analogue signal (the carrier) with the data which it passes down the phone network to another modem, which in turn demodulates the signal back into its original form.

One interesting point to note is that some frequencies within the phone channel cannot be used by a modem. This is because certain frequencies are used by the phone company to transfer control information between exchanges, and thus use of the same frequency by the modem could have catastrophic results for the call.

Another interesting question which has is arisen concerns the reason why, when calling a Bulletin Board or exchanging programs, one modem must be in ORIGINATE mode and the other in ANSWER mode.

Let us consider a low speed connection between a home computer User and a Bulletin Board, where the Bulletin Board (BB) by convention is set in the answer mode. The usual arrangement is for the transmission to be FULL duplex where transmissions can occur in both directions at once. To stop the bi-directional transmissions interfering with one another, the modemswill split the opposing transmissions into two separate frequencies within the channel.

This frequency splitting is accomplished when the person calling the BB uses his modem in the ORIGINATE mode, which uses a frequency separate from that of the ANSWER mode.

An added advantage of the BB's use of the ANSWER mode is that the high pitched tone on answering will inactivate any suppression equipment in the circuit which might otherwise interfere with the data exchange.

Once both of the modems are put on-line, certain procedures or PROTOCOLS must be observed in order for data to be exchanged. The sending computer must notify its modem that it is ready to transmit data, and this modem passes the message down to the other modem, which in turn will check that its computer is ready to accept transmission.

This basically what is meant by the commonly-used term "handshaking".

When the transmitting modem is informed that the other modem and computer are ready, it will inform its own computer which will then commence data transfer.

If HALF-DUPLEX (one direction at a time) is in use, then at the end of a transmission the sender may want a reply, which means that the direction of the flow of data must be reversed. Consequently, the "handshaking" must be done again.

If FULL DUPLEX is in use (both directions at once) then two separate carrier frequenciesare in use (as already stated), and the handshaking need only occur once during the initial setting up.

››››››

A NEW DEFINITION FOR THE COLOUR MONITOR.

Even at first glance, it's no ordinary colour monitor.

It's more stylish than many. And better than most. (You'd expect nothing less from one of the world's leading electronics companies).

But it's the inside story of the new TM01 monitor from Tatung that calls for a new definition of the term. Turn it on and you'll see clearly what we mean: a new kind of clarity and definition.

The TM01 will accept not only RGB (TTL) input signals, but RGB (Linear) and YUV (Linear) as well.

That means you can use it with the majority of available micros.

As one of the largest manufacturers of colour televisions and electronic components in the world, Tatung is uniquely placed to design and manufacture high definition monitors which meet the highest standards of performance and reliability.

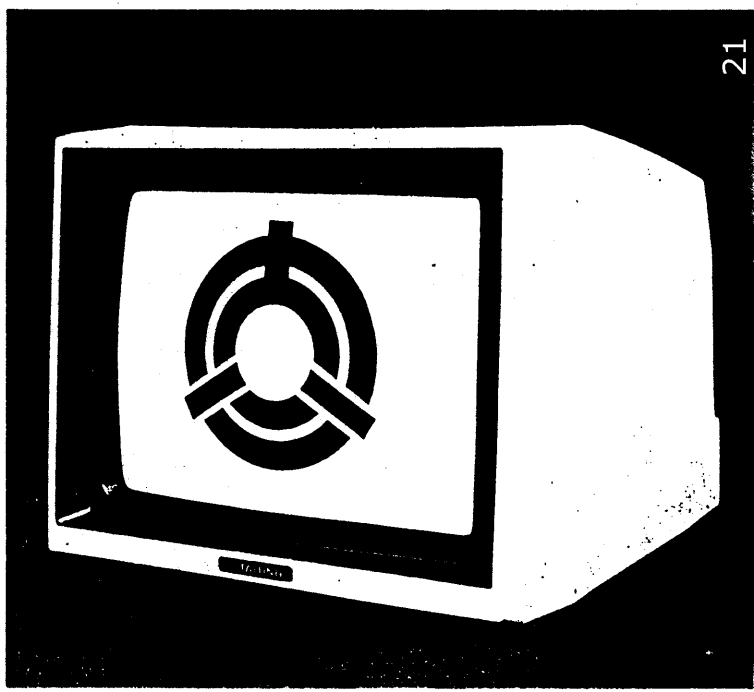
On the TM01, a three position switch selects TTL, Linear or Green Screen options. Changeover from RGB (Linear) to YUV (Linear) is achieved automatically within the display – it adjusts automatically to the input applied to the 6 pin DIN socket.

The Green Screen mode being particularly suitable for word processing and other business applications.

Now the competition will have to redefine terms.

Features

* Large Display – Small Package
* Fully isolated switch mode power supply
* Low power consumption
* Quality and reliability built in by design
* 625 line/50Hz or 525 line/60Hz operation
* Three input signal options YUV/RGB Linear, RGB TTL
* Green Screen mode
* Pre-converged, In line, stripe pitch, CRT
* Designed and Manufactured in the UK



TATUNG COLOUR MONITOR TM01

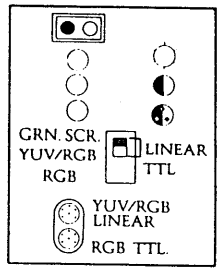
TATUNG

THE DEFINITION OF COLOUR MONITORS

TM01 COLOUR MONITOR SPECIFICATION

CRT	Size:		14" (Min. Viewable diagonal 13")	
	Deflection Angle:		90°	
	Phosphor Stripe Pitch:		0.63 mm	
Display Format	Recommended display character number:		1,000 (40 x 25)	
	Tube resolution: (Pixels)		436 (h) 585 (v) interlaced scan	
	Area:		275 x 201 sq.mm.	
Input Signals		YUV	RGB Linear	RGB TTL
Display Colours		Multiple	Multiple	8
Video	Input Level:	Y + SYNC 1V	0.7V (POS)	TTL Active High
		UO.7V (POS)	–	–
		VO.7V (POS)	–	–
	Input Impedance:	75Ω	75Ω	High
	Bandwidth (–3dB)	7 MHz	8 MHz	8 MHz
Composite Sync		Negative on Y	Negative	Active Low
	Amplitude:	0.3V	1V	TTL
	Input Impedance:	75Ω	75Ω	High
	Frequency, Hor:	15.625 KHz	15.625 KHz	15.625 KHz
	Vert:	50/60 Hz	50/60 Hz	50/60 Hz
Power Supply	Voltage:		220-240V ~ 50 Hz	
	Power Consump:		60 Watts approx	
EHT	EHT (Ib = 0)		23KV	
Geometry	Raster Distortion:		1.5% Max	
	Scan Linearity:		7% Max	
	Focus:		Internal Control	
Environmental Operating Limits	Ambient Temp:		5°C-40°C	
	Humidity:		5%-90%	

Controls (Situated at Rear)

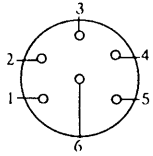


Brightness:	Rotary Linear and
Contrast:	Rotary TTL Modes
Saturation:	Rotary YUV Mode only
Mains On/Off:	Push button switch
Mode Switch:	1. Green Screen Linear
	2. YUV/RGB Linear
	3. RGB (TTL)

Connectors

YUV and RGB Linear + Synch:	6 pin DIN Socket
RGB (TTL) + Synch:	6 pin DIN Socket

Socket Configuration



View from rear of socket

Pin	YUV Linear	RGB Linear	RGB (TTL)
1	V (R – Y)	Red	Red
2	Y and Synch	Green	Green
3	U (B – Y)	Blue	Blue
4	Reserved	Synch	Synch
5	OV	OV	OV
6	Reserved	Reserved	Reserved

Dimensions	Nett/Gross (mm)	356/435W, 289/345H, 395/483D
Weight	Nett/Gross (kg)	11.67/11.79
Safety	Conforms to the requirements of BS415 1979 Class I.	

TATUNG (U.K.) Ltd., Stafford Park 10, Telford, Shropshire TF3 3AB.
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ADVENTURE HELP

By JO ANN COPELAND

HITCHHIKER'S GUIDE TO THE GALAXY - If you're not insane now, you soon will be.....

Action Taken	Points Gained
Taking Analgesic	10
Drink Beer	5
Drink Beer	5
Drink Beer (good Adventure so far)	5
Arrive at the Vogon Hold	8
Getting Babel Fish in ear (really)	12
Listening to Poetry (and surviving it)	15
Typing in the keyboard code	25
Entering Engine Room	25
Making trip to the war chamber	25
Get interface and paint chipper	25
Bring back Jacket Fluff	25
Surviving Presidential Speedboat trip	25
Surviving trip to Earth	15
Entering Sauna - growing plant	25
Getting through Marvin's Door (alive)	100
Drinking Tea	25
Opening the Hatch	25
Total Points Needed	400

You need to accumulate the following (besides other stuff):
Four (4) Fluffs (Yes - fluffs)

Points to note: Five senses = Taste, See, Hear, Feel, Smell
Aft=South, Starboard=East, Port=West, Fore=North

****
*****NUMBERS BEING CRUNCHED***** A SPERM WHALE?!?! SPLAT!!!!!
****

Starting off this Adventure you are Arthur Dent. Poor Arthur. If he had known what was in store for him he would have stayed in bed!!!!!!

Fortunately, I was able to locate and obtain the four books by this maniacal author, Douglas Adams. Trying to follow the storyline was something else! I was quite disappointed in So Long And Thanks For All The Fish but it did 'complete' the series. However, none helped with the Adventure itself. Although following the storyline you still had to 'change' some things to accomplish what was needed. Anyway, very recommended reading! Now on to Adventuring! Remember, you start off as Arthur Dent - I'm not assuring you that won't change!

))))))

You awake in bed, with no less then a migraine headache. Well, we all know what to do for that (and it's not sex). Try the alternative. Remember, in all Adventures - examine all, touch, feel, smell, open, push, pull - the usual stuff. Then hearing a noise, you go outside to see none other than a bulldozer rushing towards your house. What to do? The obvious thing - well, you can kill the bulldozer driver, or climb inside the bulldozer, or go back inside the house, or run, or - how else can you stop a bulldozer? Do you think lying in front of it would stop the driver or not bother him a bit? Or, ask Ford for help. The least that could happen is you get killed or run over! Fortunately, Ford Prefect arrives to save the day. Why not ask Ford what he can do about your house?

If Ford takes care of it, what else can you do but follow him to the pub for some extra good beer partying. Examine the pub and see what you can find. And don't get drunk! When you hear the final SMASH, go check out your less-than-perfect house! A push on a button helps here too!

You taste nothing, see nothing, hear nothing, feel nothing, smell nothing. In fact, you don't even know who you are. >Look.
You taste nothing, see nothing, hear nothing, feel nothing, smell nothing. In fact, you don't even know who you are. >Look.
You taste nothing, see nothing, hear nothing, feel nothing, smell nothing. In fact, you don't even know who you are. >Look.
You taste nothing, see nothing, hear nothing, feel nothing. In fact, you don't even know who you are. What other sense is missing?

This is fun? Okay, I trudge on. Arriving at the Vogon Hold, I, of course, look all around and examine everything. Hmmmm, I see a vector plotter in a glass case. A dispenser. What was that about a Babel fish? Hmmm, I think I need my gown, towel, junk mail (if you don't have it go back and get it - Sorry!), and Ford's satchel here. Plop - Wow, I may be one of the only people to say 'I got the Babel fish!' OH NO! I'm taken away - did I hear poetry? Don't tell me I not only have to listen to it but enjoy it at the same time? Okay, but let's not overdo it! Geesh, back in the Vogon hold. Time for the vector plotter! Was it the first word of the second verse, second word of the second verse, or first word of the first verse? HELP! ***BOOOOOMMMM!*** Oops, wrong word. Restore. Let's script this sucker out!

Picked up on the Heart of Gold. Well, look who's here! Small world! Let's check this ship out. Hum, aft corridor. It says we can go South. >South. No you don't want to do that. >South. You really don't want to do that. I think we have to be really persistent here. >South. Okay okay. If you really want to. But there's nothing there. >Look. I told you there's nothing here. >Look. Don't believe me, do you? I think we may have to be really persistent again! Geesh - what you have to do in Adventures! Hey! An Improbability Drive! What can we do with that?

Slightly bordering on the insane, I continue to trudge on. 2:00 AM. How much more can I take? >North. Hey, fore corridor. Wonder if there's anything of sustenance in the galley. Doesn't hurt to check it out does it? Wow, a dispenser. Check it out! Touch panel and get some tea? Well, it's not PG or Lipton but it'll do. Now, do I know if it is fit for drinking? Up to the bridge. If you are lacking anything else to do, Eddie, the shipboard computer, will hold a conversation with you. Don't expect any outstanding words of wisdom

>>>

though. What was that about putting the dangly bit into the advanced tea substitute? Now I'm past bordering insanity - I have gone completely insane - deranged. 4:00 AM. What to do now. Examine all, see what you can do with the switches. 4:30 AM. Reached insanity.

You taste nothing, see nothing, hear nothing, feel nothing, smell nothing. In fact, you don't even know who you are. >Look.
You taste nothing, see nothing, hear nothing, feel nothing, smell nothing. In fact, you don't even know who you are. >Look.
You taste nothing, see nothing, hear nothing, feel nothing, smell nothing. In fact, you don't even know who you are. >Look.
You taste nothing, see nothing, hear nothing, smell nothing. In fact, you don't even know who you are. Again, what sense is missing?

You mean, you never did feed the dog???!! Shame on you - you're in trouble now...

Wow, what a trip! Hope I don't have to do it again! (Don't count on it) What do I do know? ..... Wait for another Adventure help column. Too much hitchhiking at one time can cause permanent insanity! I can testify to that!

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MISSION IMPOSSIBLE (Secret Mission)

In this Adventure there is NO scoring. Either you make it or..... Good morning Mr. Phelps. Your Mission (should you decide to accept it)..... My bomb detector..politely beeps..angrily buzzes..wails ALARMINGLY! */*/*/*/*B/O/O/O/O/O/O/O/O/O/M/!/*/*/*/* .... Oh Boy...I think I did something!!

Welcome to Mission Impossible a/k/a Secret Mission. Not too original, but fun all the same. All you need do is prevent an automated nuclear reactor from being destroyed by a saboteur's time bomb. If you don't end this one right - the phrase "TV deactivated" won't be the only thing deactivated!

Number of Verbs = 58 Number of Nouns = 62 Locations = 24
Length of Nouns/Verbs = 3 Messages = 79 Objects = 50
You can carry = 7 objects

VERBS:

ACTivate	AUTo	BREak	CHAnge	CLEan	CLOse	CUT
DISconnect	DROp	EMPty	ENTer	EXAmine	FINd	FOLd
FRIsk	GET	GO	HELp	INSert	INVentory	JUMp
KICk	KNOck	LEAve	LOAd	LOCk	LOOk	MOP
MOVe	OPEn	PLAy	POUr	PREss	PUL1	PUT
PUSh	QUIt	READ	REMove	RUN	SAVe	SCOre
SEArch	SHAke	SHOw	SIT	SMAsh	SPI11	STArt
SUIt	TAKe	TOUch	UNAttach	UNBreak	UNLock	WAIt
WALk	WEAr	WITh				

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NOUNS:

ANTi-	ANY	AROund	AUThorization	BADge	BLUe
BOMb	BOX	BUTton	CAMera	CARtridge	CASe
CHAir	CUTters	DEBris	DETonate	DIAl	DOOr
DOWn	EASt	ENVelope	FEEt	FILm	FISt
FLOor	FOOt	GAMe	GAUges	GLASs	GREen
HANd	HARd	HIM	INVentory	KEY	LEAflet
MANila	MAP	MOP	NORth	PAIl	PASs
PICture	PLAstic	PROjector	RADiation	RECorder	RED
SABoteur	SOUth	SUIt	TAPe	THE	UP
VAT	WALl	WATer	WEST	WHIte	WINdow
WIRe	YARn	YELlow			

MISSION IMPOSSIBLE:

How do I get through the white door?
Sit in the chair and push the appropriate buttons. (You'll have to figure that out for yourself!)

How do I get through the yellow door?
There's a yellow key to match of course! Where is it? Aw' come on. Okay - remember our hint about using the tape recorder for something besides its normal use.

Hey, your bomb goes off after getting the key?
What did you expect? Remember how you got into the white room. Try frisking the saboteur and see what he can offer.

Still having problems with that D___ yellow door? (That's -darn- folks - not what you thought, although I know what you were thinking!)
Sit in the chair and again push the appropriate buttons. White is usually for the good guys.

Oh no, now a blue door!
Let's do some cleaning up - remember our clue about Adventurer tactics. Sorry, not reading the column regularly is no excuse. Check out those back issues!

Now, a jammed door?
You caused it! Well, there's a 6 inch window to look through. Look in the verb/noun list above - you'll get it.

Defusing the bomb?
Simple. You found the pail, you found the water. Can you get it from here?

Didn't work huh?
I remember seeing a sign - did you read it?

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If you have any Adventure questions you can put them to Jo or Scott at:

PO Box 5927, RAF Lakenheath, BRANDON, Suffolk, IP27 9PN

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SHADES OF THE TI

A piece of terrible programming by a balding individual...

```
100 CALL SCREEN(2)
110 CALL CLEAR
120 CALL CHAR(33,"AAAAAAAAAAAAAAAA")
130 CALL CHAR(34,"AA55AA55AA55AA55")
140 CALL CHAR(35,"CCCC3333CCCC3333")
150 CALL CHAR(36,"FFFFFFFFFFFFFFFF")
160 CALL CHAR(37,"")
170 FOR R=1 TO 12
180 CALL HCHAR(R,1,33,16)
190 CALL HCHAR(R,17,34,16)
200 NEXT R
210 FOR R=13 TO 24
220 CALL HCHAR(R,1,35,16)
230 CALL HCHAR(R,17,36,8)
240 CALL HCHAR(R,25,37,8)
250 NEXT R
260 FOR F=2 TO 16
270 FOR B=2 TO 16
280 IF F=B THEN 320
290 CALL COLOR(1,F,B)
300 CALL KEY(0,K,S)
310 IF S<1 THEN 300
320 NEXT B
330 NEXT F
340 GOTO 340
```

The effect of this routine will depend largely upon the quality of the display given by the TV/monitor that you use (best in colour, for obvious reasons!).

You could try different definitions for the panels, to try to uncover the optimum proportion of foreground to background for your display.

The bottom right hand quadrant contains the two "pure" colours used in the other three with varying proportions, and if your display is pretty ropey then you may not see anything to write home about.

In which case, don't write home...

Line 280 avoids the silly situation where both foreground AND background colours are the same, and the initial state for the screen is BLANK - you will have to press a key to begin examining the proportions.

I have included no information indicating which colours are current - you might try that yourself.

And some programmers please note (Denis The Menace chiefly!): the use of S<1 to prevent fall-through when pressing keys. If you can't see why this is so all-fired fantastic, write in and ask and I will devote huge tracts next issue to the explanation...

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BEGINNING BASIC

By PETER BROOKS

First thing to note: DON'T try using this tutorial with EXTENDED BASIC - it may not work as you would expect. Treat TI BASIC and EXTENDED BASIC as two distinctly different languages; it is possible that we may have a tutorial series later specifically for Extended BASIC (XB) if I can twist the intended author's arm a little...

This is yet another attempt by me to cover BASIC for Beginners (yes, there are still beginners around today, mostly those who have just bought a TI second- or even third- hand!).

In the past, (in TI-LINES, and prior to that, in Tidings) I tried to produce a series which would proceed logically and which would take the absolute beginner and lead them along the tortuous route towards proficiency in TI BASIC.

Each time, lack of time to adequately prepare has meant that I have had to call off my attempts.

Third time lucky, as they say, so here is my third attempt to maintain a continuing monthly tutorial on Learning TI BASIC.

We'll start with a little theory, some simple rules to observe, and then get into the thick of practical examples next time.

THE THEORY

Computers no more "understand" BASIC than a car "understands" that turning the key in the ignition means "start the engine".

That's the first message to put over. As they stand today, computers cannot "understand" in the way in which we take the word "understand" to mean. Computers respond to instructions typed in at the keyboard simply because they are designed to, not because they are intelligently evaluating what you type in.

Once a car engine is ticking over, if you put your foot on the accelerator the engine speed should increase. There is a MECHANICAL linkage between the pedal and the carburettor which controls the amount of fuel and air mix which is passed to the engine.

In much the same way, there is a mechanical (or, more correctly, ELECTRICAL) linkage between what you type at the keyboard, and what the computer does in response.

Generally, if you type in a word or a phrase at the keyboard (often referred to as the "console" on the 4A) and then press the "ENTER" key (often called CARRIAGE RETURN on other machines, and used to indicate to the machine that you have something for it to work on), the computer's

internal electronics will compare what YOU have typed with a list or vocabulary or dictionary of things which it has been designed to respond to. If what you have typed cannot be found in the dictionary (i.e., the computer cannot "understand" what you have said), the machine will place a message on the screen to indicate a possible fault on your part.

The type of message gives some indication of where your mistake may lie (CAN'T DO THAT; INCORRECT STATEMENT; BAD NAME; and so on).

The Guide, or manual, for the TI-99/4A is the USER'S REFERENCE GUIDE, and although it tells you WHAT the understandable commands and other functions are, it doesn't tell you HOW to put them together in order to make up a "program".

You wouldn't really expect it to. If you buy a car, the car usually comes complete with a driver's manual - but does that manual assume that you cannot drive, and does it contain a complete course on How To Drive, or does it even tell you how the car works ? Do you get a copy of the Highway Code with every model ? The assumption usually is that if you have bought a car, you must know how to drive.

The same is generally (but not always) true of computers.

In the Early Days, TI used to provide a book in addition to the User's Reference Guide, which taught the rudiments of TI BASIC and some simple programming techniques. It may still be available - you'd have to check with TI on that.

Later, presumably in a cost-cutting exercise, they stopped providing the book as part of the package, and charged for it separately.

There are a number of independently-produced books which cover TI BASIC, and even more about BASIC in general, so if at all possible don't restrict your reading to just this series. Most things only become fully understood when they have been explained several times over, each explanation being presented differently, so don't regard BEGINNING BASIC as your sole source of information.

SOME SIMPLE RULES

The simplest rule of all is this: sooner or later, you're going to get the hang of it, so don't give up just because you can't get to grips with the explanations first time round. Or second. Or third... If you can't understand something, ask for it to be explained again - but differently. Eventually you'll hit on an explanation which suddenly clicks. That's the point at which you may feel a bit of a fool.

Don't worry about this; it happens to us all (some of us more than others, cough, cough. Who, me ?).

Ignore the embarrassment, be prepared for it to happen again and again, and get on with your next problem area. Onlyan absolute jerk is going to point at your ignorance and roar with laughter, so although the more knowledgeable might manage a quiet smile or even a chuckle, it's usually because they've just been reminded of their own failure to comprehend in the past.

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I am quite happy to admit that it was almost 2 years before I finally got to grips with cassette file handling - not so much because I didn't understand the concept, more because I was totally ignorant of the practice.

Next simple rule: there are certain internationally-agreed ways of spelling things. It can involve some exhausting mental gymnastics to cope with mixes of "disc" and "disk", "programme" and "program", etc., so by and large, in this publication you'll find that "disk" and "program" are the order of the day. If you think about it carefully, it makes sense. YOU can spell things how YOU like, but when you want to impart some information to another individual, it is sensible to use agreed meanings and spellings.

Another simple rule:to begin with, any examples which have to be typed in usually need to be followed by pressing the "ENTER" key. Initially, this will be indicated with ⟨ENTER⟩. This does NOT mean that you type out "⟨", "ENTER", "⟩", but that you press the ENTER key.

It is important that you realise this now, or you will experience that embarrassment rather early in this series!

Anything which has to be typed in by you will be "indented" like this:

```
PRINT ⟨ENTER⟩
```

Isolated this way, it should be obvious what is text, and what is computer instruction(s) for you to type in.

That's about it for the moment. Further "rules" will crop up as we go along, but nothing too drastic.

SUMMARY

THEORY: Computers are infinitely more dense than the average worm, who is considerably thicker than you. Ever met a worm who wears a digital watch ? (Don't say it...!)

RULES:

1. Never, EVER, give up.
2. He who laughs last, usually sounds a bit of a twit 'cos no-one else is.
3. If in doubt, press the ENTER key - never type the word ENTER out in full.

Anyone got any complaints ? Well, put talcum powder on it and don't wear nylon underwear.

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B U L L E T I N B O A R D

WANTED / 4 SALE / WANTED / 4 SALE / WANTED / 4 SALE / WANTED / 4 SALE /

I have a BROTHER HR5 thermal printer for sale at £65. It can operate on either mains or batteries (not supplied but available at extra cost), and can use either ordinary paper (supplied with three thermal transfer ribbons) or special thermal paper. It is RS232 compatible (a lead can be supplied at extra cost).

I also have a set of new, boxed TI joysticks at £12.50 plus post and packing if you cannot collect.

Contact me on Oxford 510822.

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If you want some good quality disks at a low price, contact me at Oxford for MEMOREX SINGLE SIDED at £10.50 plus £1.50 p+p for 10 disks (includes well-constructed plastic disk box), or MEMOREX DOUBLE SIDED at £12.54 plus £1.50 p+p for 10 disks (including plastic box).

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DAVE HEWITT has a TI THERMAL PRINTER for £40. Contact him on OXFORD (0865) 863565.

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JONATHAN TYLER has an ALPHACOM 42 PRINTER for sale, complete with a minimum of 5 rolls of paper. The unit is about 9 months old, and cost £152. Jonathan is asking only £110 or nearest offer, and you can contact him on 0977 792833 between 6pm and 9pm Monday to Friday, or at any time over the weekend.

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THE TIHOME SOFTWARE COLLECTION

Pricing for TSC disks has been reorganised, although the full Collection is still offered at £35 inclusive.

Check the TSC Catalogue (available free to ITUG subscribers on request) to find out what the TSC entries stand for. Make sure that you indicate clearly what your choice is, specifying the name of the disk/s you want.

GAMES:	TSC ENTRIES:
TSC_DSK_A	GA0001 - GA0011
TSC_DSK_B	GA0012 - GA0022
TSC_DSK_C	GA0023 - GA0032
TSC_DSK_D	GA0033 - GA0043
TSC_DSK_E	GA0044 - GA0055
TSC_DSK_F	GA0056 - GA0066
EDUCATIONAL:	
TSC_DSK_G	ED0001 - ED0009
TSC_DSK_H	ED0010 - ED0017
DEMONSTRATION:	
TSC_DSK_I	DE0001 - DE0006
MUSIC:	
TSC_DSK_J	MU0001 - MU0009
TSC_DSK_K	MU0010 - MU0017
TSC_DSK_L	MU0018 - MU0026
UTILITIES:	
TSC_DSK_M	UT0001 - UT0011
TSC_DSK_N	UT0012 - UT0022
TSC_DSK_O	UT0023 - UT0033
TSC_DSK_P	UT0034 - UT0044

PRICING

The number of programs on a disk can vary between about 7 and 11, dependent upon the sizes of the programs in terms of sectors used.

The exception is the DEMONSTRATION disk, which alone is offered at £2.95 inclusive of post and packing

The rest are priced as follows:

£ 3.95	for ANY 1 DISK
£ 6.90	for ANY 2 DISKS (SAVE £ 1)
£ 9.85	for ANY 3 DISKS (SAVE £ 2)
£12.80	for ANY 4 DISKS (SAVE £ 3)
£14.75	for ANY 5 DISKS (SAVE £ 5)
£16.70	for ANY 6 DISKS (SAVE £ 7)
£18.65	for ANY 7 DISKS (SAVE £ 9)
£20.60	for ANY 8 DISKS (SAVE £11)
£22.55	for ANY 9 DISKS (SAVE £13)
£24.50	for ANY 10 DISKS (SAVE £15)
£26.45	for ANY 11 DISKS (SAVE £17)
£28.40	for ANY 12 DISKS (SAVE £19)
£30.35	for ANY 13 DISKS (SAVE £21)
£32.30	for ANY 14 DISKS (SAVE £23)
£34.25	for ANY 15 DISKS (SAVE £25)
£35.00	ENTIRE (SAVE £27.20)

All programs are recorded on Single-sided disks.

You may elect to be supplied with software on Double-sided disks, when you should deduct £1 from the prices shown above.

If you prefer, you may send in your own disks, in which case deduct 50p for each disk from the prices shown above.

For example, 8 disks supplied by you would work out at £20.60 - (8 x 50p = £4) = £16.60 nett.

All the above prices are inclusive of post and packing.

The pricing for programs recorded on cassette remains £1 per program, with an overall charge of 65p for post and packing.

PLEASE MAKE ALL CHEQUES PAYABLE TO "PETER BROOKS"