

TI * MIES

SHOW
ISSUE

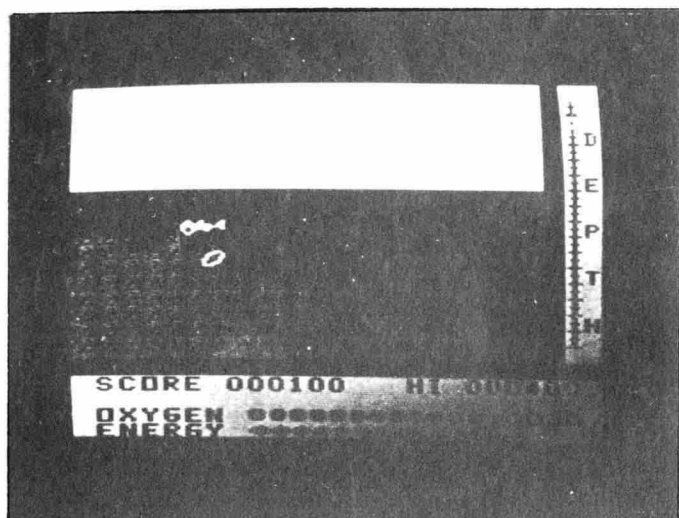


BRITISH
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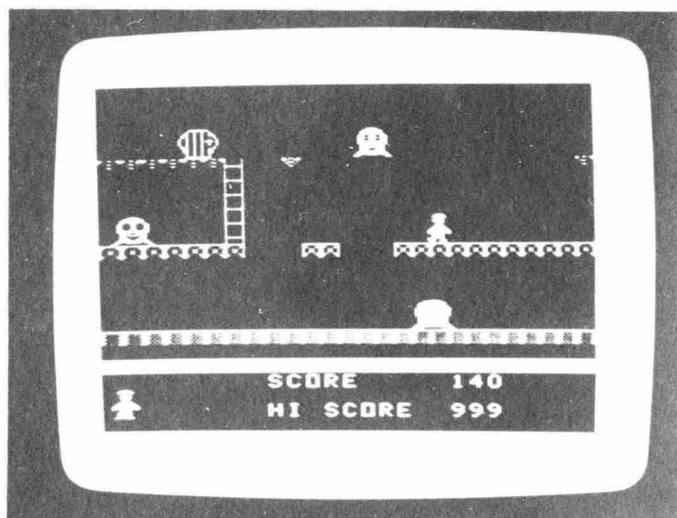
AUTUMN 1984

NUMBER 6

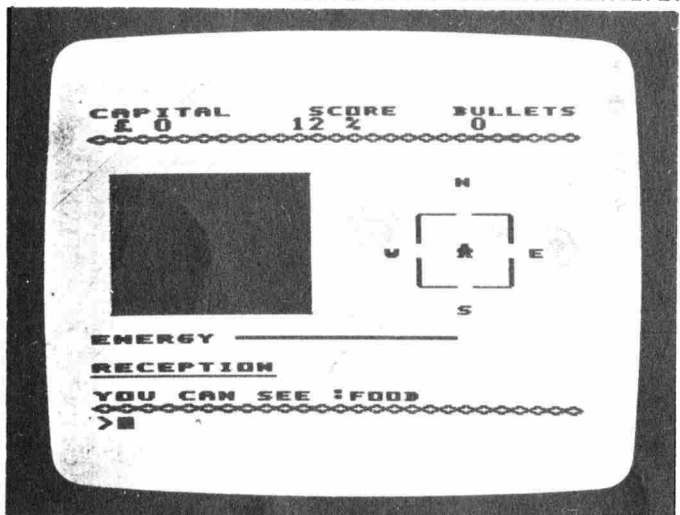
* GAMES FOR EVERYONE *



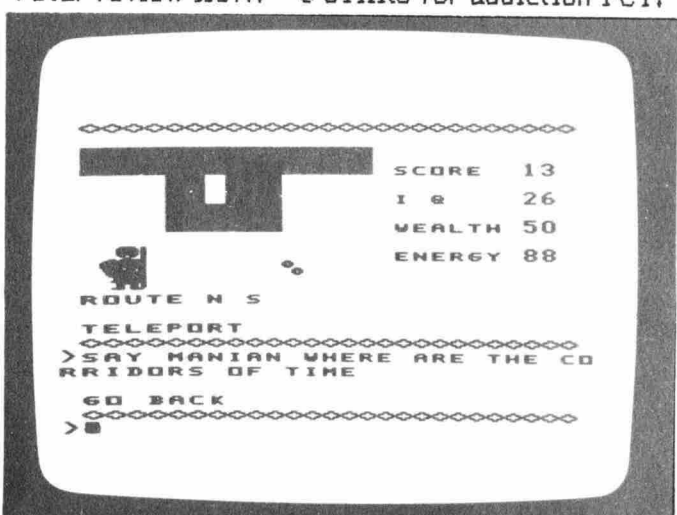
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.....

The worlds shortest TOUCH TYPING TUTOR .
 for speech and extended basic by Sydney Michel
 10 CALL KEY(O,K,S):: IF S<>1 THEN 10 ELSE CALL SAY(CHR\$(K)):: GOTO 10
 11 !

.....

TYPING PROGRAM BY H.G.MILLER of Chipping Ongar, Essex.

This program is useful when learning to type and if studied the CALL KEY function is partly explained. I found this a simple routine but difficult to extract from the instruction manual. The program will backspace and move to a new line. Press @ for new line and # for back space. These keys have been arbitrarily chosen and may be changed by using different ASCII codes in lines 210 and 220. X= row number. Y= column number. (The functions of each line has been explained in each REM statement.)

```

100 REM **TYPING PROGRAM**
110 REM **BY H.G.MILLER***
120 CALL CLEAR
130 REM INITIAL VARIABLES
140 X=3
150 Y=3
160 CALL SCREEN(16)
170 REM CURSOR COLOUR
180 CALL COLOR(1,6,1)
190 REM CURSOR PATTERN
200 CALL CHAR(33,"FFFFFFFF
    FFFFFF")
210 REM CURSOR POSITION
220 CALL HCHAR(X,Y,33,1)
230 REM CALL KEY INSTRUCTIO
    N
240 CALL KEY(O,KEY,STATUS)
250 REM CHECKS IF KEY HAS B
    EEN PRESSED
260 IF STATUS=0 THEN 240
270 REM COLUMN LIMIT
280 IF Y>29 THEN 410
290 REM ROW LIMIT
300 IF X>23 THEN 480
310 REM NEW ROW
320 IF KEY=64 THEN 410
330 REM BACK SPACE
340 IF KEY=35 THEN 470
350 REM KEY DISPLAY
360 CALL HCHAR(X,Y,KEY)
370 REM NEXT COLUMN
380 Y=Y+1
390 GOTO 180
400 REM BLANK CURSOR(32 IS
    SPACE CHARACTER)
410 CALL HCHAR(X,Y,32,1)
420 REM NEXT ROW AND RETURN
    TO Y=3
430 X=X+1
440 Y=3
450 GOTO 180
460 REM BACKSPACE
470 Y=Y-1
480 GOTO 180
490 REM CLEARS SCREEN AFTER
    ALL ROWS ARE FILLED
500 GOTO 130
    
```

WE WELCOME THE MANY NEW MEMBERS TO
TI99/4a EXCHANGE

TI*MES TI*MES TI*MES TI*MES TI*MESTI*MES TI*MES TI*MES TI*MES TI*MES
AUTUMN 1984 NUMBER SIX

40, Barrhill, Patcham, BRIGHTON, East Sussex, BN18UF. Tel: 0273 503968 (evenings)

BRITAIN'S FIRST EVER TI USERS NATIONWIDE CONVENTION...


RITZ, Whitworth Street West,
MANCHESTER, (Close to Main Railway/Bus Stations and car parks)
SATURDAY 3RD NOVEMBER 1984
Doors open 11am to 5pm Bar and Catering available.
Admission on production of membership cards. NON MEMBERS £1.00.

The first major event exclusively for the TI99/4a Home Computer. This is being held on Saturday 3rd November in the centre of Manchester. Well known people will be there and it will be your chance to come and meet them. During the day we hope to arrange a series of informative talks and demonstrations. Just in time for the Christmas shopping you can come and see for yourself what's news for the TI99/4a. There will be many of your fellow supporters of the TI99/4a in attendance. On show will be Hardware software and books.

If any of you still have doubts about future software for your TI then we have some reassurances. Make a date and come along you will be welcome to stay all day. There will be Refreshments available. See many of the cartridges coming from the States, both from remaining TI stocks and new 3rd party sources. The new expansion systems and revolutionary voice recognition units. A lightpen, printers, accessories, Cassette and disk based games and utilities from the States. The very latest here in Britain are the book and software combinations which really show up your TI99/4a capabilities even if you only have a cassette recorder. It is very exciting that a high standard is being maintained. Bring along your membership card for preferential treatment. As a member you will not be charged for admission. Non members however have to pay £1.00.

To get into Manchester is easy by many intercity trains or fast coach. If you bring the car then no problem as there are two car parks. The RITZ is near Oxford Road Railway station. If you arrive at Piccadilly railway station then its only 7 mins walk down to Whitworth Street West. Please come WE NEED YOUR SUPPORT.

This issue we welcome new contributors. Your letters reflect that more and more of you want technical editorial, thanks to HENRY CLARK we start a new series on this subject. Many thanks again on behalf of all TI Users to those who submitted news, views programs features and articles that continues to make your own TI*MES an enjoyable magazine/newsletter. See you at the Convention.



CLIVE SCALLY

TI99/4a Exchange TI*MES magazine is supported only by its subscribers. Independent of Texas Instruments this TI Users Group is completely non profit making. TI*MES is published quarterly, JANUARY, APRIL, JULY, and OCTOBER months. Editorial etc is provided by group members, other user-groups and other related sources. Views expressed are those of the writer and not necessarily those of TI99/4a Exchange. Whilst efforts are made to ensure accuracy no responsibility can be accepted by TI 99/4a Exchange as a result of the applying of such information found within the pages of TI*MES.

You are invited to contribute copy for publication in TI*MES. If you would like to make a contribution please submit copy on A4 which should be typed or be on disk or tape. Unaccepted material will only be returned if accompanied by a S.A.E. The editors reserve the right to refuse advertising.

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***** YOUR LETTERS *****

MR MOEREL, 6 Chyrose Road, St Day, Redruth, Cornwall writes:- Are there any other members in this part of the country. Please get in touch.

A.D. MOHAMMED of Bolton, Lancs writes:- One of my friends has copies of an American magazine called COMPUTE which features the TI99/4a. I would like to know if it is possible to get this in this country. Does anyone know how to draw a circle using Peter Brooks hi-res drawing routine.

ED:- We have heard from the States that Compute has now dropped the TI.

HENRY CLARKE of Peterborough writes:- As an electrical control systems designer I have found home computing a fascinating and quite addictive pastime. I was hoping to make my own expansion system but feel I would come unstuck producing the ROMs for the device service routines (DSR) Perhaps a bit of co-operation between Exchange members could overcome this problem and make expansion systems available at a lower cost. For example the chips necessary for an RS232 board would only cost £30 compared with a selling price of £100.

SYDNEY MICHEL of Gosport writes:- I plugged in and switched on my computer and instead of the test card coming up I got TIBASIC which then started to print a full line of semi-colons and that's all it would do. I removed the back from the computer and took it all to bits suspecting a faulty keyboard but I could find nothing wrong. So I started to look at the other inputs to the computer. I found the problem. Constant plugging in of the joysticks had loosened one the joystick ports and it had been pushed in. Now the computer itself is encased in a metal box and the back of the pushed in pin was making contact with the casing. Pushing the pin back cured the fault but plugging in the joysticks again would only bend it back in. So my crude but effective remedy was to jam a strip of beading between the back of the pin and the metal casing.

Mr R. CRAWLEY of HITCHEN WRITES:- Your regular contributors set a high standard, liberally sprinkle in all manner of goodies they've spent much time in discovering for our benefit, and, at the same time manage to make the reading interesting and good humoured.... Could we have in future a feature of a few of the TI99/4a 'peculiarities' The use of multiple doses of colons for one example. Please also a particular plea for keying short cuts which avoid typing words. Every letter is a potential mistake for us non-typists.

ED:- I hartily agreed with your comments.

PAUL REINHARD OF BELLFLOWEY, CALIFORNIA writes that he has a BBS on phone no. 213-634-4361 if anyone wants to increase B.Telcom's profits.

Mr. R.TRUEMAN of Canterbury writes:- I have recently purchased MINER 2049er - its excellent. I have now managed to complete all the levels! I have also tried the much praised "Buck Rogers" and although I must admit that its graphics are a masterpiece of 3D programming I must say "what a dud"!!!..As a side note, didn't TI drop an ever so slightly small clanger in admitting (let alone making) 15 million duff chips.

ED:- You certainly seem a skilled arcade player who enjoys a real challenge. The chips incidently, for those of you who may not have heard, were for various military aircraft, weapons and even the Shuttle.

AREA CONTACTS.

The following have volunteered to be contacts for the user group. If you want help or just a chat you are welcome to call BUT LOOK AT THE CLOCK FIRST.

Henry Clark, 50 St Pauls Road, New England, PETERBOROUGH, Cambs. 0733 42642

Harry Fridmore, 17 Jerrards Close, HONITON, Devon. 0404

John Carter, 16 Sherwood Ave, NORTHAMPTON. 0604 842760.

Simon Pryce, 48 Mount Street, SHREWSBURY, Salop. 0743 67799.

John Bingham, Rygghagen 7B, 4070 Randaberg, Stavanger, NORWAY. 04-599228

MINI MEM EXTRA

```

REM
REM
REM @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
REM      INTRODUCTION
REM      Anyone using my routine for multi colour mode may have come to the
REM      same conclusion that I did,very pretty but not much practical use,
REM      so here's a program to enhance TI basics screen handling
REM      capability's that far outstrip any other popular micro.so if you
REM      have a mimimem and want to work wonders with your screen;this
REM      program is a must.
REM @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
REM      INSTRUCTIONS FOR USE
REM      The program gives the user 4 new subprograms to scroll any
REM      amount of lines on the screen(ie,the whole screen,or say only
REM      lines 7 to 15).in any direction(up,down,left and right)for any
REM      specified amount of times to scroll distant objects slower than
REM      near objects to give perspective to your picture.Lastly you may
REM      also specify the mode of scrolling.Either wrap around screen
REM      mode or the vacated screen positions can be filled with blanks
REM      THE COMMANDS ARE :-
REM      1 CALL LINK("UP",R,T,B)
REM      2 CALL LINK("DOWN",R,T,B)
REM      3 CALL LINK("LEFT",R,T,B)
REM      4 CALL LINK("RIGHT",R,T,B)
REM      The parramitors R,T and B can be variables or constants and
REM      operate as follows.
REM      R-REPETITION.The number of times you want the specified part of
REM      the screen to scroll.If R is a negative number the screen will
REM      scroll that number of times in"wrap around mode",if R is a positive
REM      number the screen will scroll leaving blanks behind it
REM      T-TOPLINE.As I said,you don't have to scroll the whole screen.
REM      You may scroll only a few lines,TOPLINE is the lowest line number
REM      to be included in the scroll.
REM      B-BOTTOMLINE This is the highest line number to be included
REM      in the scroll
REM      EXAMPLE--CALL LINK("DOWN",10,3,16)
REM      will scroll lines 3 to 16 down 10 times leaving the vacated
REM      10 lines blank
REM      EXAMPLE-- CALL LINK("LEFT",-12,10,24)
REM      will scroll lines 10 to 24 left 12 times filling the right hand
REM      side of the screen with what was on the left
REM      ?????????????????????????????????????????????????????????
REM      ***WARNING***
REM      Due to blatent bad
REM      programming there are
REM      no error traps,so do
REM      not specify an R
REM      value of zero,or a
REM      screen line number
REM      less than 1 or
REM      greater than 24
REM      ?????????????????????????????????????????????????????????
REM      OK TO LOAD THE MACHINE CODE TYPE IN FOLLOWING PROGRAM SAVE CS1.
REM      RUN PROGRAM.IF THE CHECKSUM IS CORRECT,THE CORRECT CODE WILL HAVE
REM      BEEN ENTERED INTO THE MINIMEM.YOU CAN THEN "NEW"OR"QUIT". YOU ARE
REM      NOW READY TO USE THE SUBPROGRAMS AS DESCRIBED ABOVE.TRY THE SAMPLE
REM      PROGRAM ITS A GOOD DEMONSTATION OF ONE WAY TO USE THE SUBPROGRAMS.
REM
REM
REM
REM

```



```
100 REM *****
110 REM SCREEN SCROLLING
120 REM ROUTINES IN MACHINE
130 REM CODE, FOR MINIMEMORY
140 REM ONLY
150 REM *****
160 REM
170 REM *****
180 REM WRITTEN BY S.MICHEL
190 REM JULY 1983
200 REM *****
210 REM
220 REM
230 REM *****
240 REM (c) Sydney Michel
250 REM 16, Founders Way
260 REM Bridgemaary
270 REM GOSPORT
280 REM Hants. PO13 OLR
290 REM *****
300 REM
310 DATA 194,139,6,160,125,2
30,2,1,125,64,193,199,21,8,1
92,6,2,32,255,224,2,2,0,
32
320 DATA 4,32,96,48,16,6,2,3
,32,32,204,67,2,129,125,96,2
2,252,192,6,2,1,125,98,2
,2,0
330 DATA 32,2,32,255,192,4,3
2,96,48,2,32,0,32,4,32,96,40
,129,64,22,246,2,1,125,6
4,2
340 DATA 32,255,224,4,32,96,
40,193,199,21,1,5,196,6,4,22
,212,4,90,16,0,16,0,194,
75,4
350 DATA 192,2,1,0,1,6,160,1
26,24,193,32,131,74,5,129,6,
160,126,24,193,96,131,74
,5
360 DATA 129,6,160,126,24,19
3,160,131,74,4,199,193,4,17,
1,5,135,10,86,10,85,4,89
,4
370 DATA 32,96,68,4,32,96,28
,18,0,4,91,194,139,6,160,125
,230,2,38,255,192,2,1,12
5,64
380 DATA 193,199,21,8,192,5,
2,32,255,224,2,2,0,32,4,32
390 DATA 96,48,16,6,2,3,32,3
2,204,67,2,129,125,96,22,252
,192,5,2,1,125,98,2,2,0,
32
400 DATA 16,2,2,32,0,64,4,32
,96,48,2,32,255,224,4,32,96,
40,129,128,22,246,2,1,12
5,64
410 DATA 2,32,0,32,4,32,96,4
0,193,199,21,1,5,196,6,4,22,
211,4,90,194,139,6,160,1
25
```

```
420 DATA 230,2,37,255,224,19
5,5,2,2,0,32,193,199,21,4,19
2,5,4,32,96,44,16,2,2,1,
32,32
430 DATA 216,1,125,96,2,1,12
5,64,192,5,4,32,96,48,5,129,
4,32,96,40,2,37,0,32,129
440 DATA 133,22,232,193,76,1
93,199,21,1,5,196,6,4,22,226
,4,90,194,139,6,160,125,
230
450 DATA 2,37,255,224,195,5,
2,2,0
460 DATA 32,193,199,21,6,192
,5,2,32,0,31,4,32,96,44,16,2
,2,1,32,32,6,193,200,1,1
25
470 DATA 96,2,1,125,98,192,5
,4,32,96,48,6,1,4,32,96,40,2
,37,0,32,129,133,22,229,
193
480 DATA 76,193,199,21,1,5,1
96,6,4,22,223,4,90
490 DATA 127,36,127,208
500 DATA 68,79,87,78,32,32,1
25,130,85,80,32,32,32,126
,36,76,69,70,84,32,32,12
6
510 DATA 138,82,73,71,72,84,
32,126,212
520 FOR A=32130 TO 32547
530 READ B
540 GOSUB 700
550 NEXT A
560 FOR A=28700 TO 28703
570 READ B
580 GOSUB 700
590 NEXT A
600 FOR A=32720 TO 32751
610 READ B
620 GOSUB 700
630 NEXT A
640 CALL CLEAR
650 IF CS=33113 THEN 680
660 PRINT "CHECKSUM INCORREC
T": "CHECK DATA VALUES"
670 STOP
680 PRINT "CHECKSUM OK.": "T
YPE IN ""NEW""...SUBPROGRAMS
READY FOR USE"
690 END
700 CALL LOAD(A,B)
710 CS=CS+B
720 RETURN
730 REM WHEN I ENTERED THE
DATA I MADE 15 ERRORS.GOOD L
UCK, syd
```



```

100 REM *****
110 REM     SAMPLE PROGRAM TO
120 REM     SHOW TYPICAL USE OF
130 REM     SCROLLING SUBPROGRA
M
140 REM     USING MINIMEM
150 REM *****
160 REM     ***BY SYD MICHEL***
170 REM     **COPYRIGHT 1984*
180 REM *****
190 REM *****
200 REM     << INSTUCTIONS >>
210 REM     -----
220 REM     JUST TAP ANY KEY
        TO
230 REM     AVOID THE ROCKS ON
240 REM     THE ROAD HITTING
250 REM     YOUR FRONT TYRE
260 REM *****
270 REM     INITIALISE
280 OPTION BASE 1
290 RANDOMIZE
300 R=6
310 W=2
320 DEF RAND=INT(RND*6)+1
330 DIM C$(20),MILE$(12),DAM
AGE$(6)
340 RESTORE
350 CALL CLEAR
360 CALL SCREEN(5)
370 REM     SET UP CHAR COLOURS
380 DATA 2,11,5,3,9,11,4,7,9
,5,13,12,6,12,2
390 FOR I=1 TO 5
400 READ CH,FORE,BACK
410 CALL COLOR(CH,FORE,BACK)
420 NEXT I
430 REM     DEFINE CHARS
440 C$(1)="00000000183C7EFF"
450 C$(2)="0103070F1F3F7FFF"
460 C$(3)="80C0E0F0F8FCFEFF"
470 C$(4)="FFFFFFFFFFFFFFFF"
480 C$(5)="0102040810204080"
490 C$(6)="8040201008040201"
500 C$(7)="00070F0F0F0F0F0F"
510 C$(8)="0F0F0F0F0F0F0F0F"
520 C$(9)="0404BC8C8C8C8C8C"
530 C$(10)="8CFCFC8080808080
"

```

```

540 C$(11)="0"
550 C$(12)="003F4080FFA77720
"
560 C$(13)="00804020FFC9DD08
"
570 C$(14)="00804020FFD5C914
"
580 C$(15)="003F4080FFD72750
"
590 C$(16)="00187C7E3E1C18"
600 DATA 40,1,41,2,42,3,43,4
,48,5,49,6,50,3,51,2,52,4,56
,5,57,6,64,7,65,8,66,9,6
7,10,68,11,72,11
610 DATA 73,16,80,11,81,12,8
2,11,83,13,84,11,85,15,86,11
,87,14
620 FOR I=1 TO 26
630 READ ASCII,DEFN
640 CALL CHAR(ASCII,C$(DEFN))
650 NEXT I
660 REM     SET UP SCREEN
670 CALL HCHAR(2,19,40)
680 DRAW$(1)="      (
)++*                )+*
)++1*                "
690 DRAW$(2)="      )+++*  )+0+
+0+0+++*  (      )+++1+*)
+01+0+0++1+++*  )+*  "
700 DRAW$(3)="      )+0+++1+1+++1
+0++++1+++*  )0+++*  0+0+++++1+
1+++++1+++++1+++++"
710 DRAW$(1)=DRAW$(1)&DRAW$(
2)&DRAW$(3)
720 FOR ROW=3 TO 8
730 FOR COL=1 TO 32
740 CALL HCHAR(ROW,COL,ASC(S
EG$(DRAW$(1),COL+32*(ROW-3),
1)))
750 NEXT COL
760 NEXT ROW
770 CALL HCHAR(9,1,43,32)
780 A$(1)="++++3442+++++
+++++344844942++
++342+342+++++"
790 A$(2)="344484444942+3444
484842+++++444844444449
444489844442+++++34"
800 A$(3)="4444444444449448
449444442++3444"
810 A$(1)=A$(1)&A$(2)&A$(3)
820 FOR ROW=10 TO 14
830 FOR COL=1 TO 32
840 CALL HCHAR(ROW,COL,ASC(S
EG$(A$(1),COL+32*(ROW-10),1)
))
850 NEXT COL
860 NEXT ROW
870 REM     LOAD MILAGE AND DAM
AGE INFO
880 RESTORE 1710
890 FOR V=1 TO 11
900 READ MILE$(V)
910 NEXT V
920 FOR V=1 TO 6
930 READ DAMAGE$(V)
940 NEXT V

```




```

950 REM CACTUS AND SPRITE
960 CALL HCHAR(15,1,52,32)
970 CALL HCHAR(16,1,68,192)
980 CALL HCHAR(21,1,72,96)
990 CALL HCHAR(18,10,64)
1000 CALL HCHAR(19,10,65)
1010 CALL HCHAR(18,11,66)
1020 CALL HCHAR(19,11,67)
1030 CALL HCHAR(24,1,32,32)
1040 CALL LOAD(-31788,227)
1050 CALL POKEV(768,136,100,
176,13,208)
1060 IF XX<>0 THEN 1200
1070 XX=1
1080 COL=2
1090 MSG$="use any key to av
iod rocks"
1100 GOSUB 2010
1110 FOR I=1 TO 1000
1120 NEXT I
1130 MSG$=" hitting your f
ront tyre"
1140 GOSUB 2010
1150 FOR I=1 TO 1000
1160 NEXT I
1170 CALL HCHAR(24,1,32,32)
1180 MSG$="stand by going to
start line"
1190 GOSUB 1910
1200 CALL HCHAR(24,1,32,32)
1210 MSG$="press any key to
begin"
1220 GOSUB 2010
1230 CALL KEY(0,K,S)
1240 IF S=0 THEN 1230
1250 CALL HCHAR(24,1,32,32)
1260 MSG$="miles> dama
ge>"
1270 COL=2
1280 GOSUB 2010
1290 REM MAIN LOOP
1300 FOR LOOP=1 TO 10
1310 FOR I=1 TO 3
1320 ON I GOTO 1330,1370,140
0
1330 CALL LINK("LEFT",-1,2,8
)
1340 GOSUB 1870
1350 IF RND>.6 THEN 1370
1360 GOSUB 1800
1370 CALL LINK("LEFT",-1,10,
14)
1380 GOSUB 1740
1390 GOSUB 1870
1400 CALL LINK("LEFT",-1,18,
23)
1410 GOSUB 1740
1420 GOSUB 1870
1430 CALL GCHAR(22-R/6,16,RO
CK)
1440 REM HIT ROCK?
1450 IF ROCK=72 THEN 1580
1460 CALL HCHAR(24,23,32,10)
1470 CALL SOUND(-10,3000,0)
1480 CALL SOUND(100,1000,0)
1490 D=D+1
1500 MSG$=DAMAGE$(D)
1510 COL=22
1520 GOSUB 2010
1530 IF DAMAGE$(D)<>"end" TH
EN 1580
1540 CALL HCHAR(24,1,32,32)
1550 MSG$="bad luck go back
to start"
1560 GOSUB 1910
1570 GOTO 980
1580 NEXT I
1590 NEXT LOOP
1600 REM INCREMENT MILEAGE
1610 M=M+1
1620 MSG$=MILE$(M)
1630 COL=8
1640 GOSUB 2010
1650 IF MSG$<>"end" THEN 170
0
1660 CALL HCHAR(24,1,32,32)
1670 MSG$="well done,now do
it again"
1680 GOSUB 1910
1690 GOTO 1040
1700 GOTO 1300
1710 DATA one__,two__,three,
four_,five_,six__,seven,eigh
t,nine_,ten__,end
1720 DATA left wing,right wi
ng,bonnet,radiator,near fata
l,end
1730 REM MOVE CAR SUBROUTIN
E
1740 CALL KEY(0,K,S)
1750 IF S<>1 THEN 1780
1760 CALL POKEV(768,142+R)
1770 R=-R
1780 RETURN
1790 REM PLACE ROCK SUBROUT
INE
1800 ON RAND GOTO 1810,1830,
1840,1840,1840,1840
1810 CALL HCHAR(21,32,73)
1820 GOTO 1840
1830 CALL HCHAR(23,32,73)
1840 CALL VCHAR(21,1,72,3)
1850 RETURN
1860 REM MOVE WHEEL SUBROUT
INE
1870 CALL POKEV(770,178+W)
1880 W=-W
1890 RETURN
1900 REM RETURN TO START SB
R
1910 COL=2
1920 GOSUB 2010
1930 CALL LINK("RIGHT",-256,
1,23)
1940 A=0
1950 D=0
1960 I=0
1970 M=0
1980 R=6
1990 RETURN
2000 REM DISPLAY AT SUBROUT
INE
2010 FOR II=1 TO LEN(MSG$)
2020 CALL HCHAR(24,II+COL,AS
C(SEG$(MSG$,II,1)))
2030 NEXT II
2040 RETURN
2050 END

```

TI * M E S E X C L U S I V E

We bring you all the NEWS and more for your TI99/4

LOS ANGELES 99ERS USER GROUP.

We have not received any response to the offer of adopting a LAer who lives in the USAer. The only thing that may have happened is that you have been in contact direct.

Again if anyone is visiting L.A. they are automatically invited to pay them a visit telephone number is (213)271-6930.

TERRI MASTERS PRESIDENT of **LA99ers** may make a special visit to your **TIUsers Convention** held on **NOVEMBER 3RD** at the RITZ in the City of **MANCHESTER** here in U.K. You will all (hopefully) have the pleasure of meeting with her and also see whats new from the USA regarding the TI99/4a.

The LA99ers group are still going strong in spite of everything against them. Terri keeps her promise so anyone anxious to obtain hardware/software from the States should get in touch direct.

This is a marvelous opportunity which you should not miss. The address of LA 99ers is P.O.Box 3547, Gardena, CA 90247-7247.

We received a letter from ED YORK, **CINDAY** Users-Group, he is another world famous TI Author of the **EXTENDED SOFTWARE COMPANY**. They produce very good, high quality programs. **TIMELESS** Software have the market rights here in U.K. Attention all members who asked us to send subscriptions to **I.U.G.** (Enthusiast 99). These have all been sent to the group and the magazines will be sent direct to you. No more subscriptions are being forwarded by us. This is due to the present US\$ increase. You can of course write direct to I.U.G. P.O.Box 67, Bethany, OK 73008. Things in the USA for TI99 Users is becoming more desparate. Solid State modules are being sold off well below the price of the chips they are made of. This has a drastic effect on all companies trying to make a living on supporting the TI99/4a. There has been much publicity of Texas Instruments and the faulty CHIPS found in Military hardware. No doubt be another nail in the coffin for TI. Who is going to have confidence in TI products now?

IUG have reported huge losses and will be asking for much support to carry on. If you renew your subscription better get an assurance first. Hate to think that they grab your money and then will not continue to serve you for the term of that membership.

Greedy 99er now HOME COMPUTING MAGAZINE (H.C.M.).....

DO NOT RENEW your subscription with them. They have already gained a large profit by not meeting present subscriptions. If you have not received your twelve issues then write and complain. Ask for a refund.

COMPUTE the USA Magazine is reported to drop all TI99/4a programs. This means that more companies advertising TI will die. Long live the GENUINE TI Users-groups in the world who will battle on.

THE SUNCOAST BEEPER, is the newsletter of a FLORIDA TI Users group known as SUNCOAST 99ers. Anyone interested in contact should write direct to Wes Lay, Suncoast Beeper, 945 Montocello Blvd.N. St Petersburg, Florida 33703.

*** In this issue we devote a number of our pages to **Jim Peterson** of **TIGERCUB**. He is another well known personality of the TI Users-groups around the world. His knowledge of programming the TI99/4a is reflected in the articles and programs he produces. Thanks to Jim your TI Users software library has increased in size with some excellent utilities.





RANDOM SYMMETRICAL CHARACTER GENERATOR

by Jim Peterson - Tigercub Software

This month the old Tigercub would like to share with you his methods of creating random symmetrical redefined characters. I doubt that I'm the first one who ever thought of this, but I've never seen it in anyone else's programs and I don't think it can be done in BASIC on any computer other than the TI.

In its basic form it goes like this:

```
100 DIM A$(16)
110 DATA 00,18,24,3C,42,5A,66,7E,81,99,A5,BD,C3,DB,E7,FF
120 FOR J=1 TO 16
130 READ A$(J)
140 NEXT J
150 FOR L=1 TO 4
160 RANDOMIZE
170 X=INT(16*RND+1)
180 B$=B$&A$(X)
190 C$=A$(X)&C$
200 NEXT L
210 CALL CHAR(65,B$&C$)
```

Now, no one should ever use a routine without understanding it, because you won't be able to debug it and you won't be able to modify it. So, let's go through this. If you take a good look at the chart on page 109 of your "BEGINNER'S BASIC", or page II-77 of the "USERS REFERENCE GUIDE", you will see that those pairs of hexadecimal numbers in line 110 represent rows of bits which are mirror images of each other. Therefore, if we assemble a character from these pairs, it will have left-right symmetry. So, lines 100-140 read these pairs into an array. Then, lines 120-200 go through a loop four (4) times, each time picking one of these pairs at random, by randomly picking a subscript number between 1 and 16. The top half of the hex code of our redefined character is built up by adding these pairs to the end of string B\$, which starts out as a blank. For instance, if on the four (4) loops the random values generated for X are 1, 2, 3 and 4, the pairs selected are 00, 18, 24 and 3C, and B\$ is successively built up as 00, 0018, 001824, and finally 0018243C. At the same time, C\$ is built up with the same pairs in reverse order, as 00, 1800, 241800, 3C241800. Finally line 210 redefines ASCII character 65 as being string B\$&C\$, which is "0018243C3C241800", and which is symmetrical top-to-bottom as well as left-to-right.

Now that you understand how it works, let's program it a bit more efficiently.

```
100 FOR L=1 TO 4
110 RANDOMIZE
120 X$=SEG$("0018243C425A667E8199A5BDC3DBE7FF",INT(16*RND+1)*2-1,2)
130 B$=B$&X$
140 C$=X$&C$
150 NEXT L
160 CALL CHAR(65,B$&C$)
```

You can cram that into one line of Extended Basic! So, what's it good for? Well, let's add:

```
90 FOR CH=40 TO 152 STEP 8
change 160 to CALL CHAR(CH,B$&C$)
170 B$=""
180 C$=""
190 NEXT CH
```

Now we've redefined the first character of sets 2 through 16. Don't forget lines 170 and 180. Since B\$ and C\$ are formed by adding into themselves, they must be cancelled out before we start over or they will just keep on adding onto themselves. Next, let's give each character set a foreground color and a different background color.

```

200 FOR SET=2 TO 16
210 X=INT(15*RND+2)
220 Y=INT(15*RND+2)
230 IF Y=X THEN 220
240 CALL COLOR(SET,X,Y)
250 NEXT SET

```

Jim Peterson, 156 Collingwood Ave., Columbus OHIO 43213, has over 130 original programs available at only \$3.00 each. My catalog is available for \$1.00 which may be deducted from your first order.

Now for the fun...

```

80 CALL CLEAR
260 CALL SCREEN(5)
270 CALL HCHAR(INT(24*RND+1),INT(32*RND+1),INT(15*RND+1)*8+32,INT(10*RND+1))
280 CALL VCHAR(INT(24*RND+1),INT(32*RND+1),INT(15*RND+1)*8+32,INT(10*RND+1))
290 IF INT(10*RND)<>0 THEN 270
300 CALL CLEAR
310 GOTO 270

```

Or if you're in Extended Basic, let's change:

```

90 FOR CH=40 TO 136 STEP 4
155 SP=SP+1
160 CALL CHAR(CH,RPT$(B$&C$,4))
165 CALL
SPRITE(ESP,CH,INT(15*RND+2),1,1,INT(10*RND+2)-INT(10*RND+2),INT(10*RND+2)-INT(10
*RND+2))
85 CALL SCREEN(5)
200 FOR D=1 TO 100
210 NEXT D
220 CALL MAGNIFY(INT(4*RND+1))
230 GOTO 200
and delete 240-310.

```

You would prefer something a bit more useful? OK, let's try a different variation of the same principle.

```

100 CALL CLEAR
110 RANDOMIZE
120 DATA TIGERCUB PRESENTS,THE,CHAMELEON,SCREEN BORDER,AND,WIFE,by Jim Peterson,
" ", " TOUCH ANY KEY"
130 M$="1800665AC342DB667E18B100995AC3A5E78142DB24BD660081429924007E5AC3A5C32418
00FFDB5AFF7EFF009918B100660018"
140 RESTORE 120
150 FOR F=1 TO 9
160 READ A$
170 PRINT TAB(15-LEN(A$)/2);A$;" "
180 NEXT F
185 PRINT :::::
190 GOSUB 240
200 CALL KEY(0,K,ST)
210 IF ST=0 THEN 200
220 GOSUB 320
230 GOTO 140
240 CALL CHAR(128,SEG$(M$,INT(43*RND+1)*2-1,16))
250 X=INT(15*RND+2)
260 Y=INT(15*RND+2)
270 IF Y=X THEN 260
280 CALL COLOR(13,X,Y)
290 CALL HCHAR(24,1,128,64)
300 CALL VCHAR(1,31,128,96)
310 RETURN
320 T=T+1-ABS(T=2)*2
330 ON T GOTO 340,360
340 CALL VCHAR(1,3,128,768)
350 GOTO 370
360 CALL HCHAR(1,1,128,768)
370 CALL CLEAR
380 RETURN

```

In this one, M\$ consists of any of those symmetrical pairs typed in at random, and we define a character which has only left/right symmetry by randomly pulling out any sequence of 16 of these. Another way to do this is:


```

100 CALL CLEAR :: RANDOMIZE :: FOR L=1 TO 8 :: B$=B$&SEG$("0018243C425A667E8199A
5BDC3DBE7FF",INT(16*RND+1)*2-1,2):: NEXT L
110 CALL CHAR(128,B$):: B$="" :: CALL MAGNIFY(2):: CALL SPRITE(£1,128,2,8,120)
120 CALL KEY(O,K,ST):: IF ST=0 THEN 120 ELSE 100

```

Now start tapping any key until you find an appropriately evil-looking alien space ship or man-eating bug for your game program.

If you consult that chart in "BEGINNER'S BASIC" again, you will find that the first eight (8) of those pairs do not turn on the first or last bit, therefore do not fill a print space. So, let's enter another program:

```

100 CALL CLEAR
110 FOR CH=129 TO 154
120 RANDOMIZE
130 FOR L=1 TO 3
140 X$=SEG$("0018243C425A667E",INT(8*RND+1)*2-1,2)
150 B$=B$&X$
160 C$=X$&C$
170 NEXT L
180 CALL CHAR(CH,"00"&B$&C$)
190 B$=""
200 C$=""
210 NEXT CH
220 INPUT M$
230 GOTO 220

```

Now type any of the letters with the CTRL key held down - your computer has a built-in Venusian alphabet!

Many other effects and variations are possible. I use this routine frequently in my Tigercub programs. It provides the infinite variety of kaleidoscopic displays in Kaleidovision, Multivision and Ten Thousand Sights. It enables me to provide a completely different assortment of colorful cards to turn over in each new game of Match a Patch, and a new screenfull of walls in each game of Getaway. It provides the colorful characters of the Mongolian Typewriter for the little tots, and the rainbow displays that reward correct answers in Kinderminus, and many more. My Color Programming Tutor will show you ways to make the displays even more colorful, and my Random Character Generator will give you your choice of 8 different types of these characters, print out an assortment of 40 of them, display them singly and in strips and blocks and as a sprite, allow you to change their foreground and background colors, print out their hex code, and enlarge them to your choice of 3 sizes, even filling the screen.

MORE TIPS FROM THE TIGERCUB

Here's a little routine that will set up your printer to slash the /'s until you turn it off.

```

100 OPEN #1:"PIO"
110 PRINT #1:CHR$(27);CHR$(4
2);CHR$(0);
120 PRINT #1:CHR$(27);CHR$(4
2);CHR$(1);CHR$(48);CHR$(0);
CHR$(92);CHR$(34);CHR$(81);C
HR$(8);CHR$(69);CHR$(2);CHR$
(65);CHR$(34);CHR$(28)
130 PRINT #1:CHR$(27);CHR$(3
6);CHR$(1)
140 STOP

```

Just about MEMORY FULL, so
Happy hackin'

Jim Peterson

TIGERCUB SOFTWARE

156 Collingwood Ave., Columbus Ohio 43213 U.S.A.

Over 130 programs in TI-99/4A Basic only \$3.00 each!

Tigercub Software is a Kitchen Table Enterprise, Mom & Pop Division, specializing in low-cost quality programs for those who have only a TI-99/4A computer and a tape recorder. However, whenever possible these programs are written to also run in Extended Basic, and almost all of them are also available on diskette.

These are **not** public domain programs, **not** pirated programs, **not** translations from other computer languages, **not** merely brief subroutines. They are entirely original, often based on original and innovative ideas, programmed to take full advantage of the graphics, sound and color capabilities of the TI-99/4A.

Do you like games of fast action and eye/hand coordination? Try guiding your raft through the rapids of **WHITewater RUN**, follow the moves of **SIMON SAYS**, help the Munchie to gobble up the **JELLY BEANS**, defend your front lines in **PILLBOX AND TANKS!**

There are other games aplenty. Help the **DRUNKEN SAILOR** back to his ship, guide the **LOST PLANE** home, avoid the dragons to reach the **POT OF GOLD**, prospect for diamonds on the **PLAIN OF JEWELS**. Track the Nazi **SUBMARINE** across the cold waters of the North Atlantic, help Marshall Wyatt Urp and Mild Bill Hiccup shoot it out in **DRY GULCH**.

Do you prefer games of logic and strategy? The aliens are still after us in **PLANETARY DEFENSE** and **ANDROMEDAN INVASION**. Try your logic against the computer in **REVERSO** and **PICK UP STICKS**. Do you dare to tackle the 500 puzzles in one of **SCRUM** or the endless variations of **MECHANICAL APTITUDE TEST**? And if you think you're really good, pit your brains against a microchip in **CAN OF WORMS**, **NIMBO**, and the invisible **GLUNK!**

If you like to gamble, take on the computer in **ALLEY CRAPS**, play the horses in **CRABGRASS DERBY**, or put your money on **MICE IN A MAZE**.

Word games? All kinds of them! **HANGMAN PLUS**, of course, with more options than most. Also **SCRAMBLE**, loaded with a vocabulary of over 400 words, as well as **SCRAMBULATION**, **BAZOO**, **SQUINCH**, **CRYPTOGRAPHY**, **CHANGEROO** and the popular **WORDSEARCH**.

And number games? For the kids, a combination of six **NUMBER GUESSING GAMES** in one; and for you brainy ones, **LONG DIVISION CRYPTOGRAMS!**

Need to keep a preschooler occupied? Set him down in front of **DOODLE PAD** or the **MONGOLIAN TYPEWRITER**, or let him explore the wilds of **WAWALAND** or watch the race of the **HARE AND TORTOISE**. Or, start his education early with **KIDDY COUNTER**.

Yes, we have educational programs, and most of them are designed to make learning seem like fun. For beginning math students there is **KINDERMATH** for addition and then **KINDERMINUS**, **KINDERTIMES** and **KINDERDIVVY**, and for the more advanced, **MENTAL MATH PRACTICE** and others. To learn spelling, there is **FLASH CARD SPELLING**, **MISS SPELL**, and **I&E SPELLING**. Little kids can learn map directions and logic while zapping the **TIRKLE**, older kids can whistle Dixie while learning **SYNONYMY**, speed up their reading with the ridiculous sentences of **SPEEDER READER**, even translate **ROMAN NUMBERS**.

And that's only the beginning. We have programs to help you program, programs loaded with tips and tricks for programmers, programs to write programs. We have vividly colorful kaleidoscopic displays, musical compositions, music teachers, optical illusions, brain-teasers, much more.

We will send you our descriptive catalog by airmail for a pound note, which you may then deduct from your first order. Our programs are all loaded on one cassette or disk to keep prices low, and they cost only \$3.00 per program plus \$4.00 per order for cassette or \$5.00 per order for diskette, which includes packing and airmail postage. There is no minimum order. We do not have credit card service but we will accept your banknotes (at your risk) or your checks at the current exchange rate, without discount and without quibbling about pennies.

What have you to lose? Why not give us a try?

TIGERCUB SOFTWARE

156 Collingwood Ave., Columbus Ohio 43213 U.S.A.

***** BABBLING BROOKS I I *****

By Peter Brooks September 1984

Aaaagh!

Right, got that off my chest. That was the effect that the last issue of TI*MES had on me when I saw my first-ever attempt at writing something lengthy with the TI-Writer and submitting it on disk (without seeing it on paper first). I had not anticipated the effect that the FORMATTER would have on my painstakingly-formatted Babble, and in fact I avoid it like the plague now that I have finally obtained a decent hard copy facility (thanks to GARY HARDING who should have received his greasy oncers by the time you read this). I have one complaint about the printer: its typeface is larger than my typewriter's, so I cannot fit as much on a line as I used to (referring to my own newsletter, TI-LINES). But, being a crafty bug...er..person, I have found ways round it, and in the process learned a few things about the PrintFile command in the Editor. I remember one writer saying that the TI-Writer couldn't manage more than 80 columns on a line; it can do as many as you want, you know. All you have to do is to suppress the line feeds (and where necessary the carriage returns) and the machine will happily chunter out as many characters per line as you want. You simply use the SPECIAL CHARACTER MODE to insert relevant line feed and carriage return commands wherever you may require them.

This suppression is performed by using RS232.BA=nnnn.LF.CR, where nnnn is the baud rate for your printer. In fact, by inserting carriage returns in the text you can (provided you don't use Word Wrap) perform overtyping, making letters, words, or sentences much bolder. It all involves a bit of fiddling, but once it is done you don't need to do it again. For example:-

```
Peter G. Q. Brooks
29 Kestrel Crescent
Blackbird Leys
OXFORD(  OXFORD
OX4 5DY
```

will overtype the word OXFORD and make it bolder. The less than (<) symbol is placed where a CARRIAGE RETURN symbol would be. I can't get these symbols printed out on my printer, so I've had to use substitutes. Note one very important thing: the spaces between the carriage return and the second OXFORD. This is because of the space between the left-hand margin and the first OXFORD - they have to match up or the effect is garbage! The effect is:-

```
Peter G. Q. Brooks
29 Kestrel Crescent
Blackbird Leys
OXFORD
OX4 5DY
```

Or, you could achieve the same effect by duplicating lines which were to be over printed, suppressing the Line Feeds in the PF command.

Good, innit ? And what's more, I couldn't find anything in my TI-Writer manual on it but I had a go and it works, you can specify the lines to be printed with the PF command in the Editor. For example, 001 055 RS232.BA=1200 will print lines 1 to 55 inclusive at 1200 baud to the RS232 interface (and hence to your printer).

What other wrinkles do I make use of ? Well, a word count, for one. I write reviews of software for one or two mags, and they both require an exact count of the words that I've used. Now that I do it on the TI-Writer (write reviews, that is), I can delete the heading, the footing (sounds odd, but it's logical), remove any blank lines, embedded carriage returns (I tend to switch word wrap off) and then enter Tabs through the Command key. I delete the entire line with Control K, and then type LR so that the left and right margins are smack up against each other. I Enter this and then ensure that the cursor is at the top of the file with either Control H (sometimes useful) or by Showing line 1, and then I switch word wrap back on and Reformat. If the file isn't too large there are no problems. When the cursor re-appears I use the Roll Down key (4) to skip through the new, one word wide file to check for odd lines with just a full stop or a hyphen or whatever, and either make a running total of them or actually delete them, and then with Line #'s on I can use the last line number as an indicator of the number of words.

What else ? I maintain a name and address file for OXON TI USERS for printing address labels, and to avoid all the hassle of leaving the right amount of space I use SPECIAL CHARACTER MODE to insert a DC3 code at the end of the address, which on my printer sets it in 'deselect' or 'off-line' condition. All I have to do is to scroll through the rest of the unprinted label, line up the next one, and press the SELECT button on the front panel, and out comes the next address. Little fuss and no wasted file space.

Before I forget, the printer is an OKI MICROLINE 82A; it has about 10 different type faces resident from which you choose one to be current (via a finicky process with dipswitches and removal of the printer cover!). The maximum chars per line is given as 133, but I think they mean 132. Once I can discover a decent ribbon which gives crisp clear print I will reduce all my output to half the normal width, or thereabouts, and maybe reduce my photocopying overheads!

Anything else ? Suppose you're underlining something and you want to scratch your nose ? Take your finger off the Shift key; the TI-Writer will understand.

I also have a program which takes any item from the resident vocabulary of the Speech Synthesizer, decodes it into the necessary parameter codes, and then puts it onto disk in a special tabulated form that is TI-Writer compatible, so that I can incorporate the resulting table into articles, documentation, etc.

E x h u m a t i o n

In case anyone is still puzzling over it, the missing symbol from the last copy of TI*MES was the caret (^); so 10 N should have been 10^N, and so forth. The daft Formatter sees the caret as a 'required space' symbol and doesn't print it out, surprise, surprise. On top of that, some unwanted spaces crept into a line here and there in the short example routines - ignore 'em. Finally, the '&' is another symbol acted upon by the Formatter; it thinks that '&' means that it has to underline the subsequent items on the same line...

And finally Cyril... One or two more erudite readers might have mused on the significance of the parenthesised comment in last issue about the nasty case of 'month-itis' supposedly breaking out. Having used a pun on May and may, I used an 'august' (note: lower case 'a') just before the 'month-itis' comment. The Phantom of the TI-Writer rewrote that word as 'Summer'. I rest my case....

P o s t M o r t e m

I wonder what impact Dot Matrix had on you ? (Pun intended). Any ideas as to Dot's identity ? Is she another Regena ? Is her name Audrey ? Who put her up to it ? Was his name Clive ? Is her signature forged ? Where will it all end ?

I note Howard's depressing account of having deleted an article from disk in error. Once upon a time, long, long ago, I accidentally found a way to recover most of a deleted file, and I've spent every spare minute since then trying to discover how I did it. I didn't use low level access (crawling under the settee does not count as low level access unless the girl friend is sat above...) and I am reasonably sure that I managed it in TI BASIC. Everything I've tried since then has failed miserably. Maybe I only dreamed I'd done it...

I can't answer Howard's query about the possibility of writing in columns, well, as long as you keep OUT of word wrap and do some fiddling in the Tabs as well as forgetting the Formatter and using PF with the Editor and not forgetting the use of the LF and CR suppression and you'll need to insert those in the relevant places, ..er.. I'm sure you'll manage it.

Thank you GRAHAM BALDWIN for your kind, totally unsolicited, comments on my book. A cheque is in the post... It has received no reviews in the UK mags, but I'm told that reviews in Holland and Belgium hit two nails on the head - which is a nice way of saying that I agree with them - and they are (i) the 1000 word sentences, and (ii) the fact that most of the topics seem to be 'beyond the scope' of the book. I wasn't too happy about the book as it was, especially as it was a rushed job (the deadlines were brought forward three times) and I was restricted to 40,000 words (and the advertising sheets, such as they were, were wrong, and the blurb on the back of the book was blatantly untrue), BUT...I hope to begin making amends by publishing a series of booklets before the end of this year (if I can find the time) covering a host of different subjects: GRAPHICS, SORTING & SEARCHING, CASSETTE & DISK FILING, PSEUDO-RANDOM NUMBERS, TI FORTH, TMS 9900 ASSEMBLER (in conjunction with GARY HARDING), etc., etc., in fact, if YOU have a topic that you'd like to see covered, or if you've something to say but can't get the publishers interested, please drop me a line giving details. I expect each booklet to be about 20,000 - 25,000 words and cost around 3 quid or so. Depending on the demand, they'll either be photoreduced A5 (like this magazine) or printed (as Tidings was just before it slid into TIHCUC).

GOSUB

IAN SWALES mentioned that GOSUBs seemed to work faster the closer the subroutine was to the end of the program. My initial experience with my NTSC 99/4 left me in no doubt that subroutines should be placed at the beginning of a program, and I assumed, wrongly it transpires, that the 4A would follow suit. However, DAVID NEALE of Belgium wrote via my publishers and told me that a French publication quite clearly showed that not only were subroutines found faster if they lay at the end of a listing, but that the speed of location of variables depended on the position of those variables' declaration in a program. I have asked around and discovered that whenever TI produced a new version of the 99 Cassette Operating System, they re-wrote everything, and it does seem that the 4A and maybe even the PAL 99/4 apply different algorithms to searching the symbol and line number tables. The definitive answer may never be known until someone breaks into TI's HQ in Lubbock and ransacks the drawers. (Only joking, Mr Green, only joking...).

TI-LINES

There may be a few pages from OXON TI USERS newsletter appended here by Uncle Clive, so I will cease the waffle so that you can read some more. Enjoy your programming and maybe I will have seen some of you at the PCW show by the time you get to read this.

Peter Brooks, September 1984

Pete Brooks TI-LINES newsletter is sent to TI users in Oxford area at a nominal charge. If you want a copy sent outside this area Pete charges £10 p.a. subscription. 60.

U S I N G Y O U R J O Y S T I C K S

By Peter Brooks

It seems that a number of 4A owners have experienced difficulty in writing their own routines to make use of their TI Joysticks. I have been told of one owner who wrestled with the problem for 18 months before giving in and asking TI for assistance.

Shortly before the demise of the late TIHOME, I spent a few hours ploughing through the handbook, testing the joystick routine given there, and working out a routine of my own (all done without the benefit of joysticks, which I still do not possess).

I produced a massive document (it was too big to be called simply an article!) complete with diagram showing how brilliant I had been, and shoved it out with my usual waffle to Paul Dicks, who produced Tidings, the bimonthly newsletter, at that time.

Fortunately for me, that article never saw the light of day. I say 'fortunately', because only a few weeks later I saw a short routine in one of the popular monthly micromags (to my shame I have forgotten both the name of the mag, and, more importantly, the name of the author) which put my own efforts into perspective (that is, into the dustbin!).

The routine is simplicity itself. I have not included the original diagram which I drew, as it would only serve to confuse the issue. All you need to remember is that only three values are used: -4, 0, and +4. The only values your routine needs are -1, 0, and +1; ergo, divide the 'returned values', which the CALL JOYST() subprogram produces, by 4 and you are almost there. All you need to do after that is decide which variable to increment (add 1 to) and which to decrement, based on the values shown in the Users Reference Guide.

Here is the main body of the routine:

```
CALL JOYST(1,X,Y)
R=R-Y/4
C=C+X/4
```

where R and C are the variables holding the current Row and Column positions for whatever object is being moved around on the screen. In this example the 'key-unit' is 1 - that is, it refers to Joystick #1. If you set R and C to be initial values (so that they place any object at the centre of the screen) then the above three lines will move the object in 8 directions (but not all at once!), and if you don't move the joystick, neither R nor C will change.

Simple when you know how, isn't it? I haven't included any example routines just to be awkward, and to allow anyone who wants some to ask for them...

~~~~~



HOW TO MAKE IT TO THE TOP

by Edwin Strong.

Techniques for winning at Alpiner.

In Alpiner you have to climb six mountains. There are different animals and hazards to avoid.

The first two mountains are quite easy. On Mountain 3(Kenya) and from then on try and keep half your Alpiner on the left of the screen and half on the right.(Your Alpiner will be split in half) so that if a rockslide comes you can dodge it easily, unless there is an animal or tree stopping you. Even if there is an animal there it is better to take a few penalty steps than to lose a life and fall down the mountain.

On Mountains 2 or 3 you encounter vultures nests which are not very dangerous and easy to pass unless you stay still for a long time. If you want to see a vulture fly over with a rotten egg without losing points, then bump into the nest 3 times with your Alpiners head or arms(making sure there are no objects below you) and a vulture will appear.

From Mountain 5(Garmo) onwards try and get to the side of the screen as soon as possible because a rockslide can start falling as soon as you have passed the first object. At the top of Garmo you sometimes encounter mountain rams and bat holes. Only go for the bonuses if you can see the top of the mountain as there will be no more rock slides. If you want to see the bats then use the same technique as with the vultures nest only hit the bat hole 7 times. If you see bonuses on mountains 1,2 or 3 always have a go at getting them.

Mountain 6 (Everest) is the most difficult. Play exactly the same as Garmo except when your elevation gets to 7000 ft move to the RIGHT side of the screen as the abominable snowman always appears on the left side of the screen. Do not split in half as he will knock you down without you seeing him. After he has skied into you(knocking you back) he will come back again and again until you fall to about 7000ft.80% of the time you will hit an object and fall to the bottom of the mountain. Do not try to duck him as he will come back again and drive you into the trees. The only way to get past is to keep on the right side of the screen and keep on going upwards.

On all the mountains wait til a rockslide has gone then make a run for it,don't hang about.

LEVEL 2. On level 2 you go back to Hood but on Mountain 7. There are different hazards,avalanches which are curved, blue and go very fast. They will send you down the mountain if they hit you. The rock slides go faster.

LEVEL 3. I have never reached level 3, the furthest I have managed is Everest on level 2,mountain 12, where I achieved a score of 91,104. I've seen it on a test game.(To get a test game you press SHIFT down, press 8,3,8 and let of Shift. Do this when the title screen appears.) Level 3 has another hazard, the ice fall which is dark blue and extremely fast. Any hazard may come on any mountain which makes it impossible to get anywhere .

I always use the joystick as the keyboard is fiddly and you need eight fingers to play. I hope these tips will help you Alpinists out there.

\*\*\*\* NEXT ISSUE: Games techniques. How to succeed at Tombstone City without ending up on Boot Hill.

IN THE NEWSPAPERS

The Times, London, 14th August 1984: by Geoff Wheelwright

Job scene:

Michael Lunch, who began 1983 as European managing director of Texas Instruments and then left TI at mid-year to steer the Mattel toy-making company through the business of introducing their new electronic and home computer products.

By the end of the year both Texas Instruments and Mattel had pulled out of the competitive home computer market and Mr. Lunch was gone from Mattel.



\*\*\*\*\* FRIENDLY GAMES \*\*\*\*\*

Graham Baldwin.

As I was saying, the use of sound in games can be a subjective issue so all I can do is pass on what I like to hear in a game.

The playing of a short tune while the title or instructions are being displayed can add a nice touch to a program, providing it is not carried to excess and bores the player rigid after a few plays. A brief 'win' or 'lose' tune can also add to a game's entertainment value, but please don't use the Death March theme when the player loses - it has been heard in too many games now.

Musically, I find that a rising melody usually indicates optimism or victory while a falling melody signifies loss or defeat.

A short jingle of three or four notes is easiest written using separate CALL SOUND statements but a longer tune is more easily handled by placing the durations and frequencies of the notes into DATA then READING them into CALL SOUND, as this program to play 'Deep In The Heart Of Texas' demonstrates:-

```

100 FOR A=1 TO 15
110 READ DUR,NOTE
120 CALL SOUND(DUR, NOTE, 1)
130 NEXT A
140 DATA 100,392,200,523,200,523,300,659,
        100,392,200,523,200,523,400,659,
        100,784,100,784
150 DATA 100,784,300,784,100,880,100,659,
        200,587

```

This program plays single notes only but those among you blessed with musical ability could add extra frequencies and even volume values in DATA to play impressive three-part harmonies. Not being so blessed I have to pick out single notes by ear on my daughter's toy electronic organ, convert them to frequencies and 'guesstimate' the durations to arrive at the tune I first thought of. Would the TI Music Maker module make life easier I wonder?

A little experimentation on the CALL SOUND statement can be rewarding, such as:-

```
120 CALL SOUND(DUR, NOTE, 1, NOTE*2, 1)
```

or:-

```
120 CALL SOUND(DUR, NOTE, 1, NOTE+1, 1)
```

These give a richer sound quality but slow the execution speed down somewhat and you may find that the duration values need to be altered.

The use of CALL SOUND within FOR-NEXT loops can, with some trial and error, give just about any sound effect you may require. The placing of the control variable (or multiples of it) in the duration, frequency or volume of CALL SOUND is a powerful and easy to use programming trick, provided the values stay within CALL SOUND range...

This short example simulates a shell falling and exploding.

```

100 FOR A=1000 TO 700 STEP -20
110 CALL SOUND(-120,A,1)
120 NEXT A
130 FOR A=0 TO 30 STEP 2
140 CALL SOUND(-150,-7,A)
150 NEXT A

```

Of course, while a FOR-NEXT loop is being performed the rest of the program is suspended until the loop is finished (unless you jump out of it), which can slow play down somewhat, but there's no reason why you can't add bits and pieces within the loop, such as changes to colours or characters.



(Incidentally, does anyone know why the TI sound chip supplies frequencies so far above normal hearing range? Did the TI marketing department decide to aim at the canine world? It wouldn't surprise me...)

### CONTROL KEYS

As some games seem to require three thumbs and a toe to be played successfully it is a much-appreciated gesture if the player is given the chance to pick his own control keys. This routine gives a choice of left, right and fire keys and can easily be expanded to cover any combination you require.

```
100 PRINT "CHOOSE YOUR KEYS"::::
110 PRINT "LEFT ";
120 CALL KEY(3,KL,S)
130 IF S<1 THEN 120
140 PRINT CHR$(KL):::
150 PRINT "RIGHT ";
160 CALL KEY(3,KR,S)
170 IF S<1 THEN 160
180 PRINT CHR$(KR):::
190 PRINT "FIRE ";
200 CALL KEY(3,KF,S)
210 IF S<1 THEN 200
220 PRINT CHR$(KF)
230 IF (KL=KR)+(KL=KF)+(KR=KF) THEN 100
```

Note the use of 'S<1' which prevents the program going further until the chosen key has been pressed and released and the check in line 230 that foils the clever-clogs who selects the same key for each function. A method of using the variables KL, KR and KF in a program is shown below.

```
500 CALL KEY(3,K,S)
510 IF K=KL THEN (move left)
520 IF K=KR THEN (move right)
530 IF K<>KF THEN 500
540 (Fire routine)
```

If the player presses anything except a preselected key line 530 will send control back to CALL KEY, with no further action being performed.

### SCORING

Some games need a scoring system, and a high-score facility will appeal to a player's vanity, particularly if he is asked to give his name for display on the screen. This routine checks the current score (SC) against the best score (BST) and requests the player's name if the high-score has been beaten.

```
100 IF SC<=BST THEN 170
110 BST=SC
120 PRINT "PLEASE ENTER YOUR NAME"::
130 INPUT BEST$
140 IF LEN(BEST$)<25 THEN 170
150 PRINT "TOO LONG. TRY AGAIN.":::
160 GOTO 130
170 PRINT ::"YOUR SCORE WAS";SC::"BEST SCORE IS";BST;"BY":BEST$
```

You may like to have a 'hall of fame' for the top five or ten scores, with the results saved to a cassette file but I feel this is going a bit far, both in execution time and memory useage, although a 'top three' score table is quite feasible using a simple sort routine.

## LIVES

Depending on the type of game you are writing you may like to give the player several 'lives', as he may become discouraged after being repeatedly wiped-out while learning the game. You could make the idea more sophisticated by awarding an extra life for each screen completed or 1000 points scored but careful judgement is needed as young players with better reactions than yours may accumulate more lives than you thought possible.

## GRAPHICS

When writing a game it is all too easy to rush into things and put some crude graphics onto the screen just to see if the game works, and sadly these sometimes get left in the program. By all means use simple shapes while developing the program but spend some time and sweat on the graphics later - the results are always worthwhile. After all, you may know that the blob in the top left-hand corner of the screen is a tank or an aeroplane but would anyone else recognise it?

There are several character generator programs on the market (and Home Computing Weekly published one a year or so back) which can make graphics design a pleasure instead of a chore. The better ones even print out the hex code of the completed character.

Colours can present a problem in that, ideally, a game should be playable using either a colour or monochrome television, and if you write your game using a colour set you may find that some colours are completely invisible when viewed in monochrome. Some compromise in your choice of colours may be required to put matters right.

## THE END OF THE GAME

When the game ends don't just let it stop, forcing the player to type RUN if he wants to play again. A simple PRINT "PLAY AGAIN?" and CALL KEY routine to re-start the program will give a much better impression, but don't forget that some variables may need resetting to zero or null if the program logic is to be retained.

## FINISHING TOUCHES

When your game is complete you'll probably be sick of the sight of it so put it away for a week or two, then reload it and attack it with the intention of finding faults. Try everything you can think of to crash the program. Does the logic hold up in all circumstances? Are graphics and sound OK? Are printed characters appearing neatly? If you can find errors or crashes so will someone else so now is the time to correct them.

Now that your program is perfect it is safe to invite criticism. Get friends or family to try the game and watch them carefully while they play. Look, for example, for worried frowns when the game begins; your instructions may not be clear enough. Is the game so complex that only you, the writer can understand it, or is it so simple that three year old children fall asleep while playing? Listen to criticism; you are probably too close to the program to see the blindingly obvious improvement that could lift it out of the ordinary and make it sparkle.

If your critics have to be dragged away from the console after an hour of play you can safely say that you have written a good game.

END

If anyone wants to get in touch, about this article or any TI subject my address is:-

32, Ellesmere Drive, SOUTH CROYDON, Surrey. CR2 9EJ

Happy computing,

*Graham Baldwin*

Graham Baldwin.

Graham Baldwin.

As I hinted in the last issue I have a love-hate relationship with the magazines. Some support our machine (and since TI pulled out of the market 'our' is the right word) while others refuse even to mention it. Those on our side include Home Computing Weekly, Games Computing, Personal Computing Today, Computer & Video Games and, to a lesser extent, Personal Computer News. The last two have even published programming articles, notably by Stephen Shaw and Gary Marshall, as well as the usual games and utility listings.

Regretably, some magazines ignore our existence, and one (wish I could remember which!) told me that if they printed a TI-99/4A program their readers would complain because 'hardly anyone uses this machine anymore'!

It's worth remembering that the magazines can only publish what they receive, so if no-one sends them TI articles or programs they won't print any!

If anyone is interested in submitting material to the magazines a quick phone call to the editorial offices will get you the information you need about content, layout etc. Alternatively, this brief, unrepresentative survey (based on my own experience and hearsay) may be of interest.

HCW - No acknowledgment of receipt, variable delay for decision (I'm told they wait for a batch of TI programs then farm them out for testing). Fairly prompt payment, minimum about £15, usually more.

GC and PCT - Prompt acknowledgment, quick decision (8 to 10 weeks), normally prompt payment of £40 upwards.

C&VG - No acknowledgment of receipt but vague telephone confirmation when pressed, very long wait for a decision (sent in January and still waiting), standard payment £25.

Do computer retailers see us TI owners coming? A local shop recently advertised console dust covers at a discount and they were indeed selling them for most computers at the reasonable price of £3 to £4. All except the TI cover which was priced at £5 - 15. The moral is obvious - buy through this user group!

Another local shop is still vainly trying to sell adventure tapes (NOT the module) at £23 - 95...

Staying with retailers for a moment, I visited my local branch of D\*x\*ns a while back to buy a C15 tape, which was offered at a price of £1-15 (yes, for ONE!). My reply shocked me, let alone the assistant, who promptly apologised and said the correct price should be 99p. I subsequently bought a pack of 10 cassettes from W.H. Smith's at the special price of £4.

Having wrestled with the TI cassette filing system for a year or more I confess myself beaten over the amount of data that can be saved on each segment of tape. Despite careful data compression using STR\$ and VAL and so on I still find the time to load and save significant quantities of data is unacceptable. Is there any way round the 192 byte limit for each segment or am I more obtuse than I realise? Please don't tell me to buy a disk system - my home accounts program says I can't afford it!

If you own one of the newer V2.2 consoles and would like to use the Atari or other modules that won't run at present then help may be at hand. I've heard about a device called Grom-Buster that allows the use of these modules, but as yet have no details on price, availability etc. This issue may contain some information on the subject, but if not perhaps someone would like to do some digging...



Have you ever wondered what might have happened if TI had included Extended Basic in the console instead of supplying it as an expensive and hard-to-obtain extra? My guess is that the TI-99/4A would have been an immediate and lasting best-seller, still in production today, albeit at a slightly higher price...

When you consider that even the basic console gives us RES, NUM, decent editing, simple-to-use sound and graphics sub-programs and many other advantages (except speed) over its rivals I'm sure you'll agree that if the console had Ex BAS built in instead of TI BASIC the impact on the competition would have been devastating.

Let's consider sprite graphics. Several other computers are advertised as having sprite capabilities but their implementation baffles all but the most experienced of users, while the TI system is comprehensive and simple to use, with LOCATE, COINC, MOTION and so on all easily controlled, but I still wish our sprites could be multi-coloured and individually magnified...

When the BBC computer was introduced a great fuss was made about its user-written PROCedures. I'm sure the reaction of many TI-99/4A owners was, "So what? We've already got 'em!". OK, we call them sub-programs, but as far as I can see they do the same job, if in a slightly different way. As I understand it, the TI system assumes all variables in the sub-program to be local unless told otherwise and the BBC uses the exact opposite method, ie you must declare variables to be local to the PROCedure. Not a great difference really, and guess which I prefer...

Going back to magazines for a moment, good old Computer & Video Games excelled itself recently. No longer content with illegible 'blue on blue' listings it has now published a chess program for the TI-99/4A, along with a faintly condescending remark about graphics quality. Unfortunately it will only run on a Dragon. I can't wait for their next trick.

Do you believe machines can have souls? A friend of mine does. He reports that he was within one move of checkmating his chess module when it all happened. Or rather it did'nt. His computer thought about its next move for a few seconds then stopped. All keys were inactive and he had to switch off to let it cool down and regain its senses. When he switched it on again he found his computer had died and had to be replaced under guarantee by TI. Had it committed suicide rather than lose the game?

QUICKIES...

...Sprites. Reference to non-existent sprites in a program can cause puzzling errors, so don't refer to them until they exist...

...The expression in TAB( ) is evaluated (like so many others) before execution, so PRINT TAB(14-LEN(A\$)/2);A\$ will print A\$ neatly in the middle of the screen, assuming A\$ contains 28 characters or less...

...When using the 'print at' simulation in TI BASIC, if the string you want to print is only one character long why bother with 'print at'? Using the ASC value in HCHAR is much easier. Also, one or two programs I have seen recently go to the trouble of deleting a character before replacing it with another in the same screen position. The TI-99/4A does this for you whether you like it or not!

That's all from the waffle-iron (as my wife calls my typewriter) for this issue, so enjoy your computing.

*Graham Baldwin*

## HOWARD WRITES AGAIN

Some comedian rang me up and said, "by the way, I think that the piece you did for TI\*MES no.5 was the worst you've done yet". Thanks very much ! Does that mean that the piece I did for the second edition was better ? If you don't have issue no.2 then what I wrote is at the bottom of the page. If you see nothing, that's your answer. The problem was that Arcade Hardware, (my business) had taken off in a spectacular manner and sooner than write nothing, I just jotted whatever came into my head down and posted it off in time to meet the deadline of 5 minutes away. To compensate, I'm writing this piece virtually from the minute the Summer 84 edition landed through my letterbox.

As always, comments on the last edition. No messing or false flattery, TI\*MES is now as good as Tidings was. No disrespect to Tidings (or Paul Dicks either who did a wonderful job) but I also think that TI\*MES is also friendlier.

Is TI\*MES becoming a mailbox ? I seem to leave messages and in the next edition I receive them ! So here's one to Dot Matrix (is that your real name !!?). Love the style, keep on writing.

Stephen wrote about Atari's modules and the attitude taken by Atari U.K. He's not joking. If I set up a subsidiary in the U.S.A. and discovered that the people I was employing were as obstructive as they are at the U.K. end, then an awful lot of heads would be rolling. Maybe the situation will improve now that Jack Tramiel (Mr. Commodore) has control over the company. He doesn't seem the type to stand for sales staff refusing to sell his companys products. By comparison, Atari in Europe have proved themselves more than efficient and courteous. Thank goodness they all speak English !

Another American company who have a U.K. distributor who pretends the Texas doesn't exist is Tiger Electronics. Their U.K. agents gave me the runaround for three days before I lost patience with them and went direct to Tiger. As a result, I now have the brilliant Miner 2049'er for sale. I hope someone else is going to review this game because my opinion is biased since I sell the thing. Mind you, the game is that good that whoever reviews it is going to look as though I'd paid for a round-the-world cruise for him/her and family. If Indiana Jones is taking over in James Bond territory, then Buck Rogers had better watch out ! Bounty Bob is hot on your tail ! *How's that for impartial writing.*

Graham Baldwin raises an interesting point. How the magazines are finally taking an interest in the TI99/4A. I make no bones about my own dedication to cynicism. The sole reason the magazines are now acknowledging the TI's existence is because they are all (apart from C&VG) in trouble. Advertisers are getting harder to come by, so they have to include comment about the Texas if they are to persuade Texas vendors to advertise. Although some magazines have always commented on the TI, I shall remain loyal to those who have always printed material that affects us.

On the subject of magazines, I will no longer be advertising in Home Computing Weekly. It's a terrible magazine and I suspect that the reason that so many TI advertisers displayed their wares in it was simply because they published a TI program every so often. I can't find any editorial material worth reading, (even about the Spectrum). If you want a weekly magazine, then I suggest PCN. They may not publish TI programs every other week, but at least there's something to read in it. They even mentioned that I had the Thermal Printers and MBX's. Three weeks later they published an apology for not checking with me first to ensure that I did have them. (At the time they said I did have them I didn't and by the time the apology was published, I did.) Ah well. All of this is subjective of course. I also enjoy Computer Answers, but I now have it in writing from Dr. Turcan (Editor) that they will no longer publish material on the 99.

A couple of very competent programmers are coming to light. Alastair McMath has written a very cute Golf game and has now added a second version, (Not an update, but a new game.) Neil Lawson, with whom I've had numerous conversations, has written a very original bow and arrow game called Robin Hood. What really knocked me out about Robin Hood wasn't the game itself, but the character set. I'm a fan of multifont printing, but I'd never seen Olde English characters done on a computer. When I think of the hours of work that must have taken, I shudder. Nice one Neil, keep on at it. (Both these programmers have their wares and others marketed by Stainless Software.)

Stephen mentioned that he'd had 'problem mail' concerning some of his programs. Unfortunately, I'm preaching to the wrong audience here, but it makes sense to tell as many people as possible **DO NOT EXPECT BASIC (OR EVEN EXTENDED BASIC) PROGRAMS TO MATCH THE SPEED OF ARCADE GAMES.** It seems a lot of newcomers to the TI expect our computer to match the nature of the games machines masquerading as computers. Ever tried computing on a Spectrum ? Or a QL ? (Ever tried finding a QL). If you want a machine code program for the TI on tape, then try the 'SPY'S DEMISE' from Stainless Software. (Please remember you need the Mini-Memory !)

A couple turned up on the doorstep asking if I could supply them with an Extended Basic. I had them in stock, and they duly bought one. But that was the second Extended Basic module they'd bought. The first one, they never saw. It was a case of 'once bitten, twice shy', as far as they were concerned with mail order. In the first instance, they'd ordered one from Mark Faulkner (trading as Kenilworth Software.) When after a reasonable period had elapsed, they didn't receive the ExBas, they wrote, and wrote. No reply, so going through directory enquiries they telephone Mr. Faulkner. Some explanation about goods being held up at the docks. Fair enough, carry on waiting. Try 'phoning again, but the 'phone has been disconnected. In desperation, this couple actually went to Kenilworth to talk to Mr. Faulkner. He refused to come to the door, despite the neighbours remarking that he was in. Finally, this couple accepted that they weren't going to get any pleasure from Mr. Faulkner and looked elsewhere to purchase their goods. Home Computing Weekly have stopped taking Mr. Faulkners adverts.

As many of you are aware, nearly all magazines offer a mail order protection scheme. But, and it's a very **BIG** but, **NOT WITH CLASSIFIED ADS.** Because Mr. Faulkner advertised through the classified section of Home Computing Weekly, they were not entitled to recompense through the magazine.

I've only once ever had a cheque bounce on me, and I regard Texas owners as a remarkably honest cross section of society. So it annoys me all the more to learn of a dishonest trader in the Texas field.

Latest update is that the fraud squad are taking an interest in Mr. Faulkners activities.

An apology to everyone who ordered anything around the end of July/beginning of August. Manchesters central sorting office went into dispute.

Quick review : Diablo from Timeless Software. Quite the most remarkable piece of programming in Extended Basic I've seen. This has to be the ultimate in Brain Teasers. The screen is composed of a grid of tiles on which are two tracks leading to the next tile and set of tracks. In the centre of the screen is a ball, which once set in motion won't stop moving. As it rolls over a piece of track, that piece is erased, leaving less and less track. The object of the game is to keep the ball moving over every piece of track until all the tracks are removed. The tracks are moved by means of the keyboard/joystick so that you can manipulate sections of track ahead of the ball. It sounds easy and looks it. At first the game appears too slow, but you soon find out that it's not slow enough ! Whoever wrote this one must be distantly related to Machiavelli. It really is feindish to play. I spent three days wondering if it could be done. It can, but like most good games, a route doesn't exist so it's impossible to remember where to go next. I recommend this to everyone with Extended Basic. For the money, (£8.95 at last knowledge), it's the best game for the money there is.

## Howard writes again !

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Right, back to the T.I. I was recently presented with a problem whereby only my teetotal nature saved me from becoming a raging alcoholic. Someone I know wanted to hook up his Tandy printer to his T.I. No problem I thought. (What an idiot !) The first problem was in acquiring an RS232 card. For some reason, this card has been granted holy grail status, and until Cor-Comp come on line and really produce the things in quantity, then that's the status it's keeping. Since I make up the cables myself, I thought I'd try it out first. Plug in cables at both ends, ensure the printers set to parallel and start cranking out reams of paper. (I was naive in those days !) Set the thing to print, on comes the RS232 cards l.e.d. to show it's trying to send and nothing happens. Hmm. Flick the on/off line switch and presto, it starts printing.

One character. Flick it again and another character. Using this method, it worked, but it was going to take a very long time to print a sheet of A4, never mind the Encyclopedia Britannica. I checked the cable with my own printer and it worked, so did my own card. The problem had to be with the Tandy printer. Yet this worked fine with the TRS 80 computer it was usually hooked up to. I 'phoned TI and their normally helpful backroom boys were baffled. Tandy's helpful backroom boys were equally baffled. I was getting nowhere. By then I'd spent four days on and off trying to sort out this little problem and was on the verge of a nervous breakdown when I realised I wasn't going to solve this on my own. Reaching for my HELP key (telephone to you) I called my freindly electronics genius, Bob. (Readers of issue no.3 will recall that Bob designed my memory expansion card off the top of his head using only the TI99, a Mini-Memory and the Editor/Assembler manual.) I couldn't believe that Bob wouldn't be able to make the blasted printer work with the cursed computer and of course I wasn't dissapointed. (You can tell I was becoming voluble by this time.) But it still took him three hours ! It also involved adding a P.C.B. between the two plugs. Nothing too sophisticated, just a chip and a couple of resistors. It seems that there was nothing wrong with the Tandy printer, but the TI's centronics output is not bog standard. Almost but not quite. In very loose terms, the strobe line is slightly out of synch. The purpose of the P.C.B. Bob added was to ensure the printer and computers synch timing coincided. This was why the printer received one character at a time. By taking the printer off line, the strobe could drop and the character got through. By synchronising the strobes, there was no need to manually drop the pulse. If anyone is considering buying a Tandy printer, (and they do make some very good ones) by all means do so. But don't try and connect it to your Texas, and if you do, and if you run into problems, don't call me. I've had enough !

I promised I'd let you know how I was getting on with my modem. Well, the answer is not encouraging. Yes it works still, but only half way. You might think that something either works or doesn't work, but in this case, I know what I said. To explain. In order to communicate properly, you must have a modem that can be used in both *originate* and *answer* modes. Bulletin boards are set to answer so my modem had to be set to originate. Which was just as well, because that's all it can do. This is fine for digging information out of a bulletin board, but modems should also enable you to communicate with other users. When Ian Martin and I first tried this out, we both had the same modem which meant both were set to originate which meant that we couldn't communicate. Ian has since bought an originate and answer modem and we then accordingly swapped information. It can be done and it does work. But oh boy is it slow ! Ian is something of a masochist. (No not that type !) It seems he enjoys reading this, so having nothing else to send, I sent the file of this text down the line. Now just go back ask yourself how long it took you to read from the beginning of this article to this point. I read fairly fast, but I'd still guess you did it in ten minutes or less. It took the TE 2 running at its fast speed of 300 baud more than half an hour !

As I said to Ian afterwards it would have been quicker to read the article to him ! But of course I couldn't read a program to him. And even if I could, Ian wouldn't have assimilated it all. Ian sent a program to me, which because it was in machine code meant that it was reasonably compact. Even so it still took ten minutes. For those of you with the disc system the timings work out that it transfers (very approximately) 3 sectors per minute. So, to date, I'm



not that impressed with what a modem can do, although all this may change soon. 1200 baud software is now available in the U.S.A. and is on its way here. 1200 baud modems certainly are available since that's what Prestel uses. So, things may get better.

Another hardware sob story. It's said that the word processor is the solution to problems you've never envisaged. Certainly, I can't imagine life without my TI-Writer any longer. I don't need to. August was not my month. As if it wasn't enough that the postal dispute half ruined my business for the whole month, my computer started playing up. Only though, when the memory expansion was being used. Since the TI-Writer won't function without the memex, I had to get another. I borrowed one back, but the problems were identical. I was going frantic. So was Bob who had better things to do with his time than repair my memex's. But he did take them in. Since I have two computers, I could lend him one and let him get on with it. (Those who remember the original story will remember that my memory expansion boards were designed to work inside the box, and as a stand alone unit). Two days later Bob phones back to say that if I didn't solder all the pins, what could I expect, but that the first unit and the one I regularly use worked properly without a fault continuously for all the time he'd had it. Trying to teach my grandmother to suck eggs, I explained to him that without the memory expansion in the box, all the other cards worked fine. The printer still responded and I could still load discs or save to them. The only time I ever had any grief was when the memory expansion was in, so if he wouldn't mind could he get back to it/them. I should have known better. Receiving (belatedly) some official TI built 32k expansions, I promptly had exactly the same trouble. I thought I was losing my mind. In desperation I tried out a new interface card (you know, the one that connects the computer to the box) and what do you think happened. You're way ahead of me. That's right, the thing worked, constantly. Now why the interface card should work with the disc drive, controller and RS232 card but not the memory expansion is a mystery to me. I'm not sure I'd understand if anyone explained either so don't start sending reams of technical jargon in my direction although thanks for the offer anyway. Just goes to show that when someone whose opinion I pay money for tells me something, I really ought to take his advice.

#### Hardware problem part 2.

This story too is a tale of idiocy on my part, also a piece of advice to Globe-trotters who want to take their TI's around the world with them. Serious peripherals have been hard to come by for a while. I decided that the number of requests I was receiving for boxes, RS232s, memory expansions etc. justified my purchasing some of these items from the U.S.A. Now I happen to know the the TI peripheral expansion box is multi voltage. With a little work, the box can be internally converted to work on any of the four major voltage supplies around the world. England uses 240 volts, Europe uses 220 volts and the U.S.A. uses 110 to 120 volts. There are tapings on the main transformer inside the box which enable the same box to work virtually anywhere. (Cycles don't matter since all the boxes power supplies are D.C.

Now I've had my box apart more than once so I knew what I was doing. The boxes I received from the U.S.A. would obviously be 110 volts so reading my P.E.B. manual, I worked out that I had to swap the black input wire for the orange. A simple task although not a short one since it involves removing the casing of the box to do a 10 second task. (It takes about quarter of an hour to dismantle the box. It is very well built using an awful lot of screws. Now hands up all those who knew that there were two different designs of TI boxes. As it happens I did too, but I'd assumed that the main difference was that the newer design had a different on/off switch. There is more to it than that. Knowing what to do, I took one of the newly received boxes apart with a view to converting it for U.K. voltage. Once I'd got the cover off, I discovered that the alternative terminals weren't there. Aaaarggh I thought. Don't tell me I've bought single standard boxes. No I hadn't. Instead of the terminal block being where it was on my own box, (older design), it had been moved to the back as an integral part of the mains flex connector cum fuseholder. I could see that I'd have to do some work dismantling this before I could finish the job.

### 30 Howard writes again !

Try as I might, I couldn't figure out how to swap those wires. Finally I turned the thing round and discovered to my astonishment and disgust that I'd never needed to open the box in the first place. If you have a new style box (with rocker switch), look at the fuseholder. At the top is an arrow and the fuseholder itself can be inserted in any one of four ways. All that had to be done was to insert the fuseholder with the arrow pointing to 240 volts. So, screwing the box back together, I duly made a 10 second adjustment which need never have involved me in that lengthy piece of surgery.

You can learn from this though.

1) If you do want to go globetrotting and take your box with you, it can be modified to work on any voltage. (Although you may still need a different computer to handle the appropriate T.V. signals.)

2) If you do have to change a fuse on the newer style box, make sure you put it back in with the arrows pointing to the correct voltage. You could make an expensive mistake by not doing so.

Right, last topic and thn I'm going to let someone else have a say in this magazine before I start sounding like Gary Kaplan.

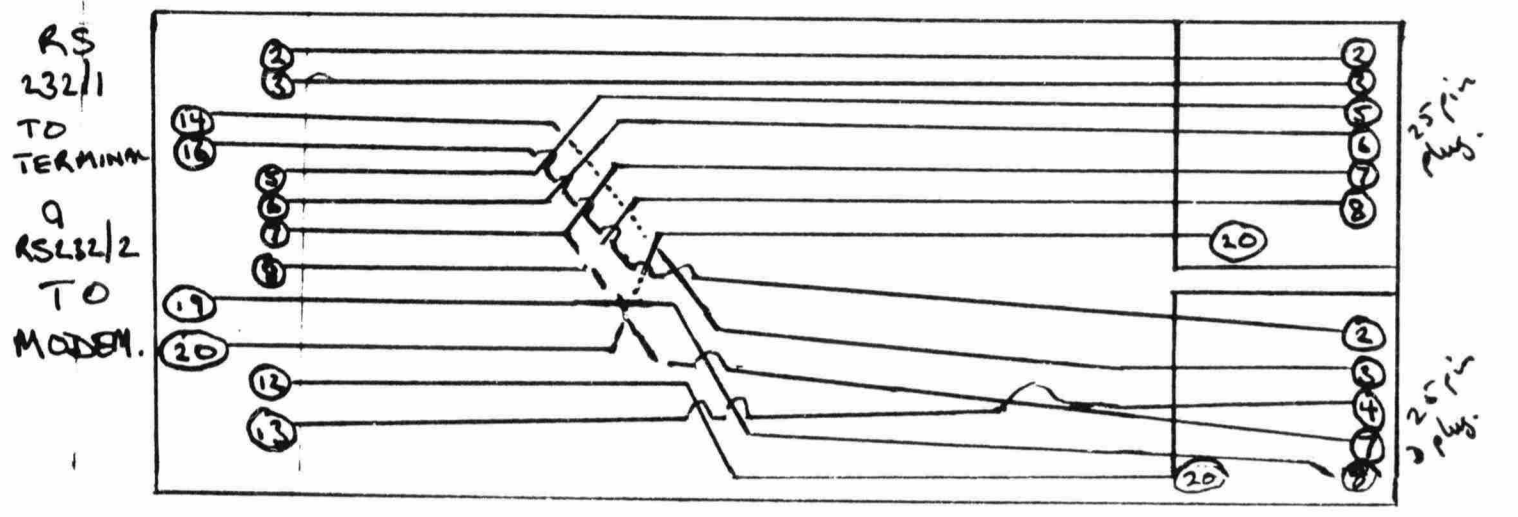
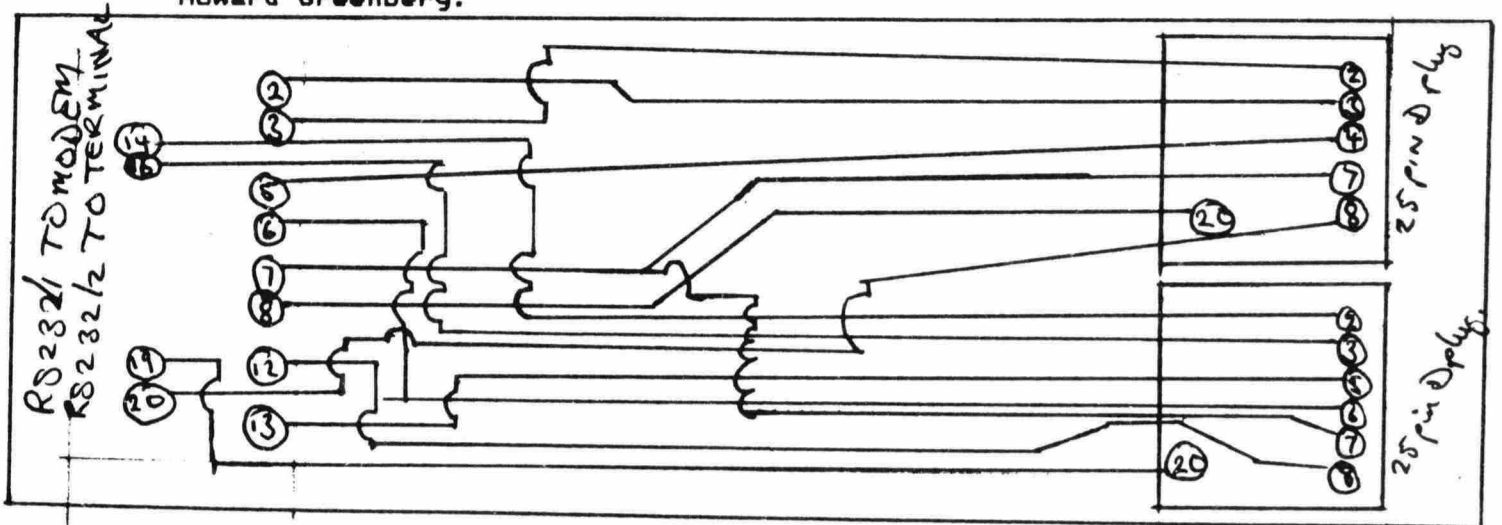
RS232. Yech ! Not a pleasant topic, but one that's necessary if you're interested in using a modem or even a printer. I don't want to take credit for what's coming, the following information was supplied to me by a gentleman who will remain anonymous, but is one of our readers.

There are essentially two types of RS232 interface. One is termed D.T.E. (for data terminal equipment) the other is termed D.C.E. (for data communications equipment). The following diagrams were supplied to me and I am passing them on to assist anyone who wants to make their own cables to connect RS232 interfaces from their TI to in theory anything. (Not in practice because the aforementioned Tandy printer didn't work on RS232 either.)

For me, in terms of words, all I have to say is BYE.

*Howard*

Howard Greenberg.



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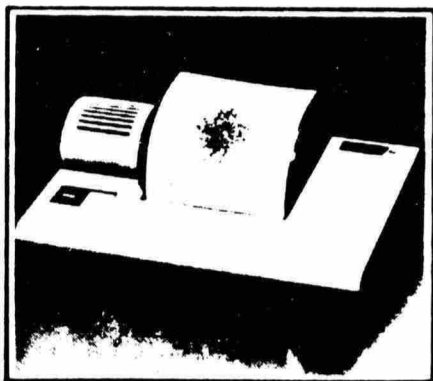


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|                                |         |
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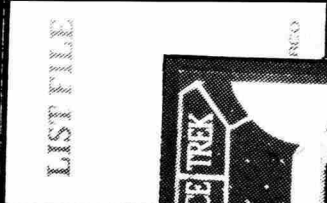
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A few new programs since the last issue of TI\*MES, but first let's celebrate:

FOUR programs heralded in the last issue have now received FIVE STAR REVIEWS in Home Computing Weekly:

THE WALL by Neil Lawson, Extended Basic, £6.00

Many many screens each with a different puzzle to solve as you scamper up a wall!

SPY'S DEMISE by Mark Sumner (Not available outside UK)

In Extended Basic or in machine code for mini memory. £8.00 (State which version!).

FLIP FLAP in Extended Basic by R Trueman (Joystick required) £6.00

An arcade type board game

BILLY BALL PLAYS CATCH in Extended Basic by R Trueman, Joystick required, £6.00

A different fun sort of arcade game, not too hard.

### NEW:

BOWLS in TI BASIC by A McMath, £6.00

The follow up to the very popular GOLF (£8.00), another sporting simulation. For one or two players who select bowling position, strength, direction and bias... block your opponent or knock him into the gutter!

ROBIN HOOD in EXTENDED BASIC is Neil Lawsons next game, £6.00, and super sprite graphics as Robin shoots targets stationery & moving, sheriffs men, deer and an apple. Super program requiring skill, but not that difficult! As you get better, play to a time limit and see how high you can push the score in ten minutes!

CHARACTER CREATOR in TI BASIC by Stephen McKearnev. £4.00

The ultimate character creation program. Will run on a bare console but can take advantage of extended basic, a disk system and a printer. Define your characters the easy way....

Best seller for a while has been GOLF(see above). Winging It has been hanging around the top ten for a while.... despite the catalogue warning "not easy" 3D Race (£6 TI Basic) has been selling well, although some purchasers concur with that warning! Kong has been selling well at £5.

Most promising programs not yet selling well are Starprobe (£7), Hang Glider Pilot (£8) and Cu\*Bert, TI Basic & £6.

Remember, only your purchases will ensure the continued availability of software!

Large SAE for a catalogue please to:

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# RAMBLES

by Stephen Shaw

Welcome to another Rambles, especially to new TI\*MES members.

This article was commenced at the beginning of August, due to a huge accumulation of material for inclusion, and a county wide postal strike, which has reduced sales of software to nil, but is giving me the time to write this!

So much material, that I am asking Clive to consider splitting it, with the rest to follow in January... when I may be a little busier (optimist!) and have less to write!

Way back in the Spring issue of TI\*MES I concluded by advising that my console had died. Actually it was the power supply. And it took TI two months to replace it! Hence I needed to buy a second hand console to keep me going...! I am not filled with optimism regarding TI's commitment to service our machines.

My console was pretty old, and the power supply was a revamped 99/4 model, which appears to have been rated below the current 4A model. It was just a matter of time before it burnt out. Not more than a few weeks later I heard of another TI\*MES member who had the same problem. The model 4 PSU looks like a sewing machine foot control, and gets quite warm! The 4A model is smaller and runs much cooler.

My apologies to anyone who wrote to me in August for not replying promptly - with no postal deliveries or collections, we had problems here!

TI\*MES has a lot of established members... and maybe some newer owners too. If newer owners have any queries, send them in and they will be dealt with under a special heading! Some items previously reported may be repeated there!

More experienced owners: what needs do YOU have? What are you doing and what have you discovered? I would be pleased if members would write to tell me of any special interests they have: assembly language, forth, pascal, mini memory, multiplan, ti writer, personal record keeping, Logo, whatever. I need to know how many have an interest in each minority area, and also I need information from members active in those areas.

Information will be passed on in future Rambles if there are sufficient members interested, or if the number is very small (perhaps for pascal!) it may be possible to pass members addresses to each other for more personal contacts.

When writing, if you would like a reply, please send an SAE. A reply may take up to 2 weeks! My address:

10 Alstone Road STOCKPORT Cheshire SK4 5AH

I am interested in any problem (or solution) you may have. There are still many things to discover about our console!

One discovery which a lot of people need to make relates to EXTENDED BASIC. A US company sent a program to TI\*MES and myself...and it would not work. Not for me, not for Clive, although at least some US owners raved over it... why the problem?

Not all consoles are alike! There are MANY operating systems in various consoles, and there are special variations of sprite action.

The program in question used a sequence of CALL SPRITEs to set up a screen pattern. The pattern was dependant on the time the console took to move from one CALL SPRITE to the next. Unfortunately, not all consoles work at the same speed... in fact, it is probably good fortune if any two consoles DO run at the same speed!

continued.....>

35

Here is a very simple EXTENDED BASIC test program, which simulates what the problem program was doing:

```
100 INPUT "TIME VALUE";TIME
110 CALL CLEAR
120 CALL CHAR(42,"FF000000FF")
130 CALL SPRITE(#1,42,2,50,100,10,0)
140 FOR T=1 TO 20
150 CALL SPRITE(#2,42,16,50+TIME,106,10,0)
160 NEXT T
170 CALL SOUND(200,660,0)
180 GOTO 100
```

Run this program in YOUR console. Try an initial input of 30.

When the tone sounds, and the sprites are moving at the same speed, are they level with each other... exactly?

On my console an input of 30 places the two sprites together (or a value of 47 when using ExBas Vn.100).

What is the value on YOUR console? If you are writing to me, please try this and mention it. A higher number required to be input means your console is running slower than mine, and a number lower than 30 indicates a faster console.

If there are ANY differences around the membership, it indicates very clearly that consoles work at different speeds, and relying on the speed of program execution to place a sprite is a very risky business!!!

As at August 3rd, still waiting for Issue 3 of TIHCUC newsletter. I understand they will give refunds to anyone who asks. If they don't, try complaining to TI or even the police: TIHCUC is operating unlawfully in not stating on its letter headings a) it has limited liability b) its registered number c) its registered office and d) its directors. (As required by the Companies Acts). You cannot of course have legal documents served on a post box address.

And you may wish to note these requirements: many suppliers fail to give these details, mainly through ignorance perhaps, but it makes legal action impossible if you don't have it! A sole proprietor or partnership should indicate the owners name(s), and an address for service if different from the trade address.

If any TI\*MES members have lost money with KENILWORTH SOFTWARE, my every sympathy. Members may wish to note that this person did not advertise in TI\*MES. There should be no problem in dealing with TI\*MES advertisers!

Hi LA'ers! (One of the worldwide family of 99 User Groups now taking TI\*MES!)

Items from last TI\*MES:

Howard: TI WRITER:

Page 22 of the TIW manual, dealing with CARRIAGE RETURNS is not correct. When you use WORD WRAP MODE, pressing ENTER will always place a carriage return in your text regardless of whether or not you are at the end of your document. It will not place a CR in text IF there is already text or a CR on the line after the position you press ENTER at, but a CR on the line but outside the tabs is ignored and will be duplicated.

For column one of a two column document, set up a blank sheet of sav 66 lines, using INS LINE. Then type your text as usual but NEVER press ENTER. Instead of pressing enter, hold down the CTRL key and press key X then key V. These have the same effect as ENTER, but no CR.

For column TWO however, word wrap is not available at all: at the end of the line, word wrap inserts a new line, which will disrupt your column one, so



Also, the INSERT and DELETE functions become a problem! Perhaps it is easier to print column one, wind the paper back and then print column two? Printing two columns at a time, you cannot right justify!

Howards other problem is also solved: the PLACE that you put the .HE instruction is important. It needs to immediately precede your text if you want it on page 1. No other instruction between!

The lending library mentioned by Clive last issue was acting in breach of contract, as many of the titles it was lending were sold subject to the condition that they not be lent.

Home copying is having a bad effect on Spectrum software: on TI software, with only a small market anyway, the effect is appalling. Please try to resist the temptation to borrow a friends programs to copy them...or to give a friend a copy!!!

Graham: RUN as a program command need not start the program from the beginning! You can use for instance RUN 600, which will run the program from line 600... worth experimenting with???

A TI\*MES member reminds me that as well as RUN "DSK1.PROGRAM" as a program command, you can use RUN "CS1" ...unfortunately, the usual cassette instructions WILL mess up your screen display, but we can't turn them off.

The program on page 21 of TI\*MES Number 5 has a BUG in it (yeuch!).

Sorry about that, please change line 150 to:

```
150 IF X=0 THEN 140
THEN the program will operate as
described.
```

Richard Blanden has purchased a program from the US which had a rave review in ENTHUSIAST 99, and it fails to work on either of his consoles, which each have a different operating system. It is yet another gem from the States which directly addresses memory with no cares for different console versions.

Column Two.

(Typing without word wrap can be a problem!)

I have so far seen no sign from the USA that anyone there is aware of the problem with Atari modules, or with differing console operating systems! So...LAers: were YOU aware of problems?

Anyone with Vn.2.2 has REAL problems by the way: even if they invest in a device to enable them to use ATARI modules, the relevant graphics are not just 4 bytes out, but nearly 40!

Whoops. Parco's ad duplicated everyone elses error....did you spot it? RAM EXPANDABLE TO 48k!!! Nope. With Mini Mem make that 52k. And you CAN buy bigger cards in the states....

MULTIPLAN...well, some time later I come to the conclusion that TI Multiplan is sloooow. Setting up the spread takes so long, you need to use it often to recoup the time spent.

And entering data takes so long that you need a lot of calculating or a lot of output to make THAT worthwhile ....any TI Multiplan USERS out there?

Let me know what YOU use it for, and if you consider it a worthwhile investment of your time setting it up!

TI FORTH...proceeding well, many thanks to THE SMART PROGRAMMER (from Timeless Software) which has regular pages on FORTH, including setting up your work disk, and comparing it with TI BASIC input and output routines.

Want a copy? My manual is a 6th generation copy, but legible. As it is public domain (not copyright) I can copy it for you. Disk only is three pounds, disk and bound manual 35.00 (sorry, it's thick!) or try PARCO first! who may be able to do it at lower cost.

Another Forth book to hand: DISCOVER FORTH by Thom Hogan. Pricey at 14.00 but I need as many approaches as pos. It is based on a 'mythical forth' and makes interesting reading. Suitable for a 2nd or 3rd book but not as a main tuition manual.

Last TI\*MES I mentioned Meteor Belt (Module). That conflict of targets has kept me with it, and my score against the computer is now 184,850.. anyone beat that? A few program bugs have come to light too .....over..

Phew...back to one column...

Meteor Belt, continued...

Bugs... such as errors in satellite speeds: from time to time one dashes across the screen at maximum sprite speed! and errors in detecting which sprite has collided with which:

Sprite handling does not permit you to quickly discover which sprite has collided with which, and with a lot of sprites moving around, it looks as though Meteor Belt is taking some short cuts:

Two satellites collide; and two explosions occur at other parts of the screen! Or you shoot...nothing! and hear an explosion! It all makes it so much more of a challenge...!

## MINI MEMORY

A few members have asked me what MiniMem can do, and is it worth buying. I'll duck the last question! In previous issues (and in my book...plug) I mention how you can:

Amend the cursor definition, have a program rewrite itself, and even have a sprite or two in TI BASIC!

Further discoveries, some of which follow (or all if Clive has room!) include sound envelope shaping, automatic sound generation, speech. Thats enough!

Playing (well, experimenting...) with Mini Memory in TI BASIC can give a good guide to how the system works, of great value when you are ready to try a program in machine code.

(Complaint: to date, no UK programmer has submitted a m/c program to me: come on, we can do better!!!)

To start off with MINI MEM programs, here is a short one:

```
100 CALL CLEAR
110 PRINT " ]";" ]];" ]];" ]];"
120 CALL PEEKV(1152,A,B,C,D,E,F,G,H)
130 CALL POKEV(1232,A,B,C,D,E,F,G,H)
140 FOR T=1152 TO 1231
150 CALL PEEKV(T,A,B,C,D,E,F,G,H)
160 CALL POKEV(1512,A,B,C,D,E,F,G,H)
170 NEXT T
180 GOTO 140
```

TRY IT! Lines 120 and 130 are equivalent to:

```
120 CALL CHARPAT(48,A$)
130 CALL CHAR(58,A$)
```

THAT should give you a hint of what we are doing....!

We are dealing with the area of VDP RAM in which character definitions are handled.

The characters are stored sequentially, each one occupying 8 bytes. Thus, character 48 is in bytes 1152,1153,1154,1155,1156,1157,1158, & 1159

Then follows character 49 then 50 then 51 and so on.

The number 0 has been duplicated after 9 as well as before 1 for smooth operation of this demonstration.

Having placed some ] on the screen, defined in memory in VDP 1512 etc, we then read the definitions of the numbers and define ] accordingly, but instead of merely reading the definition of the numbers in 8 byte chunks, we move up in memory in mere one byte jumps, having the effect you see.

Note that changing from 1 to 2 involves 8 cycles through the loop, in which we read a total of 64 bytes and pokev a total of 64 bytes. Thats 128 memory operations.

☞ More for mini memory later.

I notice another softwarehouse, specialising in TI programs, has copied, almost word for word the introduction to my catalogue (which is of course copyright!). As an indication of the amount of copying, the copied text takes up 3 pages of his catalogue. And he keeps his name secret too.

Please be aware if you see it, that he has no connection with me at all, and is using the text without my consent.

I was sorry to have sent to me for possible inclusion in my catalogue a program by another TI supplier. Only the name of the programmer had been altered, otherwise it was byte for byte the same program.

Not just robbery either. The programmer died tragically some time ago, and his widow is trying to keep things going. Very very nasty. I reported the attempted crime to the lady, but you will appreciate she is hardly in a position to defend herself.

On to more merry things....

with

### RAMBLING REVIEWS....

Anyone not got BUCK ROGERS? (Planet of Zoom). Possibly one of the better modules around. If you do havit, have a look at MOON SWEEPER, which has the same ground effect, but a full colour bit map mode background, and perhaps more interesting play. Moonsweeper is one I can advise you to buy!

From orbit round Jupitor, you fly down to one of the moons (colour coded for difficulty level) and rescue stranded men while fighting off alien craft which swoop around the screen bombing you. When you have a full load of men, its through the accelerator hoops back to orbit. Nice format, beautiful graphics.

RETURN TO PIRATES ISLE is a new adventure module, with graphics. NOT for the beginner, quite definately. I hated the sign which said I had to complete Adventure 2 first, though the manual does give you a hint of what you are expected to know. If you HAVE finished the original PIRATE adventure, try this, at least it has hi res graphics! Module ONLY, no tape!

Last issue I briefly mentioned HONEY HUNT, which I now have. It is actually quite a bit better than MB make it sound. Like all their educational games, it comes with a manual full of advice on how to use it educationally, and how to relate it to 'normal' play activity! However, forget that, its a nice game! As a bee you have to collect pollen, from flowers which open and close in a pattern, avoiding spiders webs, a dragonfly, a killer bee, and a bear which likes pollen too! Lovely graphics, and a fun idea, especially for younger owners.

DEMON ATTACK is an interesting module. Have you seen the mini mem cassette program KIPPY'S NIGHTMARE? Then you will have some idea of the animated graphics and the music.... Ian tells me Melfi did do some work for Imagic, and although he is not credited, the two games are too similar for there not to be that connection! From a planets surface, fight off hordes of demons, of various shapes, who are bombing you. Between waves there is a complex second screen. Although I have survived it, I haven't really worked out what is going on...who has time to notice small details when fighting for your life! An interesting program, with useful graphics.

Miner 2049er is another that like BUCK, most of you will by now have come across. If not...its pretty good! Eight screens, if you can make it that far....screen 3 is pretty hard. MINER is a sideways module, which plugs into the RIGHT HAND port, not the usual module socket. In each screen you must cover every part of the floor, while avoiding a whole host of nasties and hazards. Very very careful planning is required.

COPYRIGHT again....

I had a phone call from MCPS (you must have seen those initials on your records! they stand for Mechanical Copyright Protection Society).

MCPS have the task of policing copyright as it applies to recorded music, and they consider music used in a computer program as a mechanical recording.

They were complaining that one of my programs has THREE NOTES from a copyright work of music. It was an import, so I passed on the phone number of my supplier....but in the end liability rests with me, and the program may have to be withdrawn...for 3 notes!!!

So be warned! and do not use any music in your programs which has been written by somebody who has not been dead 50 years yet! Or MCPS could be coming your way....

Before we move on to the technical stuff! a few more  
**REVIEWS:**

STAR TREK is a module I obtained from the USA. It is a TI module, courtesy of SEGA. The program is very simple....you move your ship around space blasting Klingons. There is a viewscreen with crosshairs, and a small radar display. Very simple. However, each screen has more and more Klingons, making survival that bit more difficult. The graphics are not that good, but the game is very playable.

AMBULANCE is a FUNWARE module, with Howard MAY still have available, which features you as ambulance driver racing to collect casualties and racing them to hospital (or a first aid centre!), while avoiding the other traffic. The time limits become tighter as you go along, and you may only lose so many patients (or crash so many ambulances!). Two street layouts alternate. As usual with Funware modules, a simple idea, which works, and has a slowly increasing level of difficulty.

ESPIAL is another Tigervision sideways module, which requires joystick TWO. On a B&W tv the display is far from clear, and I am told it is not too hot on British colour tv either! Simple game...flying over the huge alien craft, drop bombs where they hurt while avoiding fire from the defending turret guns. Within that description, its a good game, but one you will love or hate.

CAVERNS is a machine code program I purchased from the International User Group for US\$15. Their failure to complete the customs declaration correctly did lead to a small penalty (could have been confiscation!) but still good value. My copy is on disk for Ed/As or MiniMem plus 32k. A very fast program in which you leap around avoiding balls and spiders. I am still in the 'test' mode, which gives you 16 lives but no scoring! A bonus if you like difficult games, and the graphics ARE in bit map mode.

From Arcade comes the MOONBEAM programs... all on cassette for Extended Basic... and despite my fears, they are nearly all very playable! Avoid however STRIKEFORCE which seems to be at least partly system dependant...and also has poor sprite collision detection.

GARBAGE BELLY requires a colour tv set! Cavern Quest is an unusual combination of games...in screen one you leap over moving sprites to reach a door, and what follows could be anything!

ASTROMANIA seems to be just like so many programs, with your ship in the centre, shooting rocks coming from 4 directions... but it is well programmed, and requires something a little tougher than the TI Jovsticks!

Robot Runner and Zero Zone are also very playable...and you may find yourself losing deliberately at ZERO ZONE just to see what happens! [colourful].

Not entirely original perhaps, but lots of original touches with some nice programming. Worth looking at.

(And is anyone going to review my games? Text to Clive direct please!)





It seems like a good month for phone calls from strange people.... now I've had one, at work, from the Inland Revenue, in Bristol. They had been in touch with my local tax office, who had been in touch with the tax office which deals with me.... and they were a trifle surprised that I should have heard of THEM....

For the benefit of anyone who doesn't know, the Inland Revenue have set up a special investigation unit in Bristol which is checking back EVERY advert in the computer magazines, to ensure that proper tax returns are made!

( I'm OK, but there are many who do not even consider the tax angle when they start selling programs... until they get a big bill!!!)

On program prices, which vary a lot, and seem to have little to do with quality....

The COST of a particular program can vary VERY considerably, depending on how many tapes the supplier sells, how he spreads his overheads and how he sells most of his tapes.

If he deals with dealers or distributors, they take a huge cut, but of course a lot of that is offset in larger turnover and lower costs.

He may spend a lot or a little on advertising (often the biggest budget item), and may use the cheapest possible tape, or pay three times as much for premium grade tape.

There are MANY variables, and as each supplier decides on what he considers is most important.... and sells differing numbers of tapes... there WILL be very considerable price variations.

The failure of some suppliers to consider fully the 'hidden' costs of overheads is a frequent reason for some low prices. Sometimes only the direct costs... eg the tape!... are considered.

Based on my sales for the 2nd quarter of 1984, and the relevant costs, here is a breakdown of my AVERAGE costs. Individual program costs can vary widely!

|                    |     |
|--------------------|-----|
| RETAIL PRICE:      | 10  |
| VAT.....           | 1.3 |
| DEALER DISCOUNT... | .7  |
| ROYALTY.....       | 2.7 |
| DIRECT COSTS.....  | 1.3 |
| PRINTING.....      | .9  |
| ADVERTISING.....   | 1.4 |
| POSTAGES.....      | .6  |
| DEPRECIATION.....  | .8  |

Those of you with calculators handy will see I didn't make very much in the quarter... and the 3rd quarter is headed for a good loss, due to low sales!!

Thought it might interest some of you! (eg my competitors.....!)

A few pages ago I mentioned LOGO...here are a couple of books you might like:

SPRITES A TURTLE & TI LOGO by CONLAN & INMAN  
pbk 228pp RESTON (Prentice Hall) About 13.00 to 14.00

Inman may be known to you as the author of INTRODUCTION TO TI BASIC, a book with so many errors even 99er Magazine stopped selling it.

Sadly, proof reading computer books is rather like proof reading Sanskrit, and errors crop up. The first error I found in this Logo book was page 9, where CS was used instead of CB.

However, LOGO is a language in which errors are an important part of the learning process, and there should be nothing in this book to cause undue worry. It is a very readable book, and as TI UK never bothered to bring us the excellent LOGO CURRICULUM GUIDE, you should buy this book as an adjunct to the LOGO manual. I would consider this an essential buy if you want to get to know your LOGO!

NB: It deals with the 4A, but with LOGO 1. The additions of LOGO 2 aren't there!

In the UK, the centre of LOGO activity has been Edinburgh. (To be precise, the Department of Artificial Intelligence, University of Edinburgh).

And it is pleasant to see a book come forward:

LOGO PROGRAMMING by Peter Ross. pbk.249pp. About 9.00 from Addison Wesley.

For those members who thought LOGO was for children, a quote, from page 25:

" it is the state-transparent parts that catch the attention

The idea of studying such a subjective hypothesis may surprise you if you are not of a scientific turn of mind. "

Well... this is a serious book, looking deeply at LOGO. The text deals with Terrapin (Apple) LOGO, but there is an appendix for TI LOGO, which differs very slightly... you will be able to follow the text. This is not an expensive book, and is worth getting as a 2nd book after the Inman book. Not so readable, but you may get more out of it. Not all of the text is quite as heavy as the quotation above!

My local bookshop still has in stock MINDSTORMS by Seymour Papert, who virtually invented LOGO. The book is a discussion of the learning process and how LOGO fits into Paperts ideas. It is easy and interesting background reading, especially if you are using LOGO with a youngster, but Papert says:

LOGO IS NOT A 'TOY', A LANGUAGE ONLY FOR CHILDREN and thats from its inventor!

Be warned! Logo has a lot to offer.

MINDSTORMS, Harvester Press, pbk 230pp, around 5.00 to 6.00

LOGO PROCEDURES WELCOME FOR RAMBLES!!!

I had another phone call the other day, from a user who had just bought a disk system and had lots of tapes in Extended Basic: protected, so he couldn't save them to his new disks!

He was asking how to remove the protection, but without doubting his (or anyone's) honesty, I do feel that information is best kept to as few as possible!

So: any solution? Well, as far as my programs are concerned, I am happy to transfer programs to disk, at cost. Disk packaging is costly, so it is three pounds, for disk and post and packing, suitable for up to 6 or 7 programs.

For other peoples programs, try them first, or send the tape to me: to protect the other issuers, tapes will only be transferred if they are originals, sent to me with original documentation. The documentation will be sent back with the disk but the cassette retained (it would be unlawful for you to give it away and retain the disk!), and a record kept. If you have more than 7 programs, it is 2.50 extra per extra 7 programs or part thereof.

Transferred disks will contain the programs in protected format, and will also have proprietary disk protection added...sorry, thats to safeguard other peoples rights!

From one of the largest TI cassette software houses in the USA:

"Our business, too, is slumping badly of late. As a matter of fact we were seriously considering a going out of business sale in late September or early October. We know piracy has had a major effect on our sales, and indeed may be THE factor that will stop us from becoming a long term company. TI's modules are still available over here at lower and lower costs."

... so if you have an interest in continuing supply of cassette software, resist the temptation to copy, to lend for copying or to accept copies. The alternative is an early end to new programs.

Now onto something really juicy. SPEECH. Old hat huh? Well, this information will give you speech in TI BASIC with the mini memory, or if you have EXTENDED BASIC with 32k ram, will give you speech just a mite faster than using CALL SAY...which slows programs down no end!

For this information I am indebted to Neil Lawson who has been delving

## SPEECH:

Requires either: EXTENDED BASIC + 32K RAM  
or : MINI MEMORY

Program framework (for timing purposes):

```
20 CALL INIT                                ( YOU ALSO NEED THE
30 S=-27648                                SPEECH SYNTHESISER!)
100 FOR I=1 TO 1000 :: NEXT I
110 PRINT "START....."
120 FOR X=1 TO 20
130 REM TEST ROUTINE HERE
140 FOR T=1 TO 30
150 PRINT ">";
160 NEXT T
170 NEXT X
180 PRINT "END....."
```

This standard routine sets up a framework to test our new routine in, and gives a basic time reference.

NB: Times quoted are for MY system: yours may be different, but the ratios should be similar.

Running the above program, with the loop in line 140 running 30 times as shown, takes 18.7 seconds from "START" to "END".

Change line 140 to loop just 20 times and the timing is 12.7 seconds.

Now we can insert our two possibilities:

The first is available only in Extended Basic:

```
130 CALL SAY("#THAT IS INCORRECT#")
```

RUN the program again: If line 140 is looped 20 times, time is 44 seconds. If line 140 is looped 30 times, time is 50 seconds.

The time for the speech is constant, it adds about 21 seconds to the program.

Now for something different, also works with Mini Memory!!!:

```
130 CALL LOAD(S,70,"",S,65,"",S,72,"",S,70,"",S,64,"",S,80)
```

If you now run the program, it says the same thing as many times, but look at the timing:

```
140 looped 20 times: 26.3 secs    Looped 30 times: 26.5 secs!!!
```

We KNOW that looping 140 an extra 10 times adds 6 seconds... so where have those 6 seconds gone?

The CALL SAY routine holds everything up until it has finished speaking. But using the CALL LOAD equivalent, while the computer is speaking, it gets on with the next chore too... the 'dead time' is used, and soaks up those 6 seconds.

Thus using the CALL LOAD equivalent, the computer speaks faster, and also permits you program to run more quickly if there is work for it to do between speech outputs.

Thats the clever demonstration! (Impressed!) Now for the theory, now you're interested!

References: Editor Assembler Manual: pages 351, 355, 422 to 427

(Errata: The reference in para 1, page 355, should be to Section 22.1.4, not as printed in the manual)

continued.....>



I understand TI are not too worried if Clive reprints their tables, so he may be prepared to print the memory addresses from pages 422 to 427.... if there is ever any space in TI\*MEB!

Address -27648 is the SPEECH WRITE address. We keep on feeding it with bytes, and in due course the computer speaks!

The bytes to load to that address are found out as follows:

First decide what you want to say from the standard vocabulary.

Then look in the table (pp422-427) for the address of that word or phrase.

"THAT IS INCORRECT" is given as 6816.

This is a hexadecimal number, not a decimal number!

The four numbers are reversed, and become 6186.

Now we offset them by Hex 40 and feed them in. As we are dealing with decimals with our Call Load, that means that we ADD decimal 64 to each digit in turns:

|        |        |        |        |
|--------|--------|--------|--------|
| (64+6) | (64+1) | (64+8) | (64+6) |
| 70     | 65     | 72     | 70     |

(If the numbers were hex A/F these have a decimal value as follows:

A=10 B=11 C=12 D=13 E=14 F=15 )

Now we must indicate end of word by loading a zero, again offset, thus 64+0 = 64.

And finally, instruct the computer to speak by loading hex 50, decimal 80.

Thus we have loaded, in order, 70,65,72,70,64, and 80.

Check back to the listing.

Note the way CALL LOAD has been used: a single command to load the same address with several different values.

To assist your experimentation, here are some HEX addresses from the manual. Remember to reverse them, translate to decimal and offset!

|                          |                      |                      |                |
|--------------------------|----------------------|----------------------|----------------|
| TEXAS INSTRUMENTS...6696 | THAT IS RIGHT...68FE | WHAT WAS THAT...77E9 |                |
| READY TO START.....56B3  | YOU WIN.....7DDB     | ABAIN.....17A5       |                |
| ANSWER.....1913          | CHECK.....1D82       | CHOICE.....1DA2      | COMMAND...1F1A |
| ELSE.....27B6            | GOODBYE...3148       | HELP.....3571        | HURRY.....3757 |
| INSTRUCTIONS..39BD       | I.....3793           | I WIN.....37CF       | JOYSTICK..3AED |
| NAME.....47C0            | NICE TRY..49A5       | PLEASE.....5093      |                |

This is not only a useful programming aid in its own right, but by demonstrating a part of the Editor Assembler manual's sometimes complex instructions, it should assist you when you are ready to move on to Forth or Assembly Language proper.

the next topic for discussion is a faster CALL SOUND....



Referring to the bit mapping on the previous page:

#### OPERATION:

The values placed in these three bits determine what you are doing & to which of the three tone generators:

|                           |                           |                       |
|---------------------------|---------------------------|-----------------------|
| 000...Frequency of tone 1 | 001..Volume of tone one   | 110...Noise generator |
| 010...Frequency of tone 2 | 011..Volume of tone two   | 111...Noise volume    |
| 100...Frequency of tone 3 | 101..Volume of tone three |                       |

#### FREQUENCY:

The actual frequency is held in ten bits, which is split between the two tone bytes, and is determined as follows:

What frequency do you want? Say 110 Hz (or 110 cycles per second!):

We find out how many time the frequency will go into 111860.8  
(Strange number, but thats how the computer works!)

Thus:  $111860.8 / 110 = 1017$

Now, turn this into a binary number: 111111001

and split it into the 6 left most bits and the four right most bits:

6MSB=111111      4LSB=1001

And these values go into the tone bytes as shown on previous page.

NOISE: Noise Type: 0=periodic noise, 1= white noise

Shift Rate: If set at 11, sound varies with frequency of tone 3.

VOLUME: SIXTEEN levels are available from full volume (0000) to silence (1111)  
The sound varies by 2db between levels.

TIME: Notice: no time input! To switch off a tone, load the relevant generator with a zero volume. Actual timing is external: you have to do it!!

#### WORKED EXAMPLE:

TONE ONE SET AT 110 Hz, 2db volume, with white noise, shift rate 00, vol 20db:

Tone one: Byte 1:

1..0..0..0..1..0..0..1 (1001=4LSB as shown above)

Tone One, byte 2:

0..0..1..1..1..1..1..1 (111111=6 MSB as above)

Tone One, volume:

1..0..0..1..0..0..0..1

NOISE type:

1..1..1..0..0..1..0..0

Noise volume:

1..1..1..1..1..1..0..1..0

To use CALL LOAD we have to transfer these 8 bit bytes into a decimal value: the right most bit has a value of one if set, the 2nd from the right has a value of 2, then 4,8,16,32,64 and 128.

From which we can work out:

10001001=137      00111111=63      10010001=145

11100100=228      11111010=250

continued.....

USING EXTENDED BASIC PLUS 32k RAM or MINI MEMORY ON ITS OWN:

```
10 CALL INIT
20 S=-31744
30 CALL LOAD(S,137,"",S,63,"",S,145,"",S,228,"",S,250)
40 BOTO 40
```

To end the sound, set Tone 1 and Noise volume to zero... or use a negative call sound...CALL SOUND(-1,110,0)

NOTE:

1. You can change the frequency while the tone is still sounding. It takes two bytes so it is not as smooth as it could be...
2. You can change the volume while the sound is still present... and it is faster than using several negative CALL SOUNDS, making it possible to do some envelope shaping...as we shall see in the first of our example programs:

SAMPLE ONE: A sort of bell sound:

```
100 CALL INIT
110 S=-31744
120 CALL LOAD(S,137,"",S,63,"",S,171,"",S,26)
130 FOR A=0 TO 15
140 CALL LOAD(S,144+A,"",S,176+A)
150 NEXT A
160 CALL LOAD(S,159,"",S,191)
170 GOTO 120
```

Line 160 turns the sound off. What happens if you omit it?

Let the program run for a long time. What happens when 'garbage collection' takes place?

Try an experiment:

Change line 130 to:

```
130 FOR A=1 to 14 STEP 2
```

Notice the change?

Working out all those numbers from binary can be pretty hard work... why not let the computer do it? Neil Lawson, who passed this information on to me, has written an Extended Basic program to do just that. Here is the program...its use should be fairly self evident as you run it.

Tell the computer what you want, and it will give you the value to use AND LOAD IT...thus you can hear the effect of your inputs to -31744 as you go along.

Remember: there are two bytes for frequency

there is no sound until you give a volume!

```
100 ON ERROR 590
110 CALL INIT
120 CALL CLEAR :: ON WARNING NEXT
130 CALL SCREEN(5):: FOR N=1 TO 14 :: CALL COLOR(N,16,1):: NEXT N
140 PRINT "BOUND DEMO ": : " IT CAN BE IMPROVED": : "QUITE EASY ADDING FREQUENCY": : "SLIDES AND VOLUME SLIDES.": :
150 REM
160 PRINT "PS will run in mini mem if program changed to tibasic.": :
170 PRINT ">PRESS ANY KEY TO CONTINUE<"
180 CALL KEY(3,K,8):: IF S=0 THEN 180
190 REM
200 DISPLAY AT(1,5)ERASE ALL:"NEIL'S SOUND SYNTH" :: CALL D(B$,BS$,BY,HZ)
210 DISPLAY AT(12,1):"PRESS","FOR": : " N","NOISE": : " T ","TONES"
220 BS$="" :: HZ=0
```



did you notice CALL D in line 200...see subprogram at end...

```
230 CALL KEY(3,K,S):: IF K=78 THEN 240 ELSE IF K=84 THEN 430 ELSE 230
240 REM SET UP NOISE
250 HZ=0 :: BS$=""
260 DISPLAY AT(1,1):TAB(8);"SET UP NOISE" :: DISPLAY AT(12,1);"PRESS","FOR": ;"
T","TYPE OF NOISE": ;" A","ATTENUATION"
270 CALL KEY(0,K,S):: IF K=84 THEN 340 ELSE IF K<>65 THEN 270
280 BY=240 :: CALL BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
290 DISPLAY AT(12,1);"ENTER DESIRED ATTENUATION ? (0 TO 30 DB)" :: CALL HCHAR(
14,1,32,160)
300 ACCEPT AT(14,1)SIZE(2)VALIDATE(DIGIT):DEC :: IF DEC>30 THEN 300 ELSE CALL BI
N((DEC),BIN$):: BIN$=SEG$(BIN$,LEN(B$)-4,4):: CALL DEC(ATT,(BIN$))
310 BY=BY+ATT :: CALL BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
320 CALL LOAD(-31744,BY):: GOTO 190
330 REM SET UP NOISE CONTROL
340 BY=224 :: CALL BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
350 DISPLAY AT(12,1);"PRESS","FOR": ;" W","WHITE NOISE": ;" P","PERIODIC NOISE"
360 CALL KEY(3,K,S):: IF K=80 THEN 380 ELSE IF K<>87 THEN 360
370 BY=BY+4 :: CALL BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
380 DISPLAY AT(12,1);"SHIFT RATE.": ;"PRESS","FOR": ;" 1";TAB(12);"SHIFT RATE-66
91": ;" 2";TAB(12);"SHIFT RATE-3496": ;" 3";TAB(12);"SHIFT RATE-1738"
390 DISPLAY AT(22,1);" 4";TAB(12);"DETERMINED BY": ;TAB(12);"TONE GEN. 3"
400 CALL KEY(0,K,S):: IF K<49 OR K>52 THEN 400 ELSE BY=BY+(VAL(CHR$(K))-1):: CAL
L BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
410 CALL LOAD(-31744,BY):: CALL HCHAR(12,1,32,13*32):: GOTO 190
420 REM SET UP TONE CONTROL
430 DISPLAY AT(12,1);"WHICH TONE GENERATOR 1 2 3 ?" :: CALL HCHAR(13,1,32,200)
440 CALL KEY(0,K,S):: IF K<49 OR K>51 THEN 440 ELSE TG=VAL(CHR$(K))
450 BY=128+((TG-1)*32):: CALL BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
460 DISPLAY AT(12,1);"PRESS","FOR": ;" F","FREQUENCY": ;" A","ATTENUATION"
470 CALL KEY(3,K,S):: IF K=70 THEN 530 ELSE IF K<>65 THEN 470
480 BS$="" :: HZ=0 :: BY=BY+16 :: CALL BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
490 DISPLAY AT(12,1);"ENTER DESIRED ATTENUATION ?0 TO 30 DB" :: CALL HCHAR(13,1
3,32,32*4)
500 ACCEPT AT(14,1)SIZE(2)VALIDATE(DIGIT):DEC :: IF DEC>30 THEN 500 ELSE CALL BI
N((DEC),BIN$):: BIN$=SEG$(BIN$,LEN(B$)-4,4):: CALL DEC(ATT,(BIN$))
510 BY=BY+ATT :: CALL BIN((BY),B$):: CALL D(B$,BS$,BY,HZ)
520 CALL LOAD(-31744,BY):: GOTO 190
530 REM SET FREQUENCY
540 DISPLAY AT(12,1);"ENTER DESIRED FREQUENCY ?": ;"HERTZ" :: CALL HCHAR(13,1,32,
160)
550 ACCEPT AT(14,1)VALIDATE(DIGIT):HZ :: IF HZ<110 OR HZ>55938 THEN 550 ELSE HZ=
111860.8/HZ :: HZ=INT(HZ+.5):: CALL BIN((HZ),B$)
560 B1$=SEG$(B$,7,6) :: B2$=SEG$(B$,13,4):: CALL DEC(H,(B2$):: BY=BY+H :: CALL B
IN((BY),B$)
570 BS$="00"&B1$ :: CALL DEC(HZ,(BS$):: CALL D(B$,BS$,BY,HZ):: CALL LOAD(-31744
,BY,"",-31744,HZ):: GOTO 190
580 REM ERROR HANDLING
590 CALL ERR(EC,ET):: IF EC=14 THEN DISPLAY AT(14,1)ERASE ALL BEEP:"CHECK MEMORY
EXPANSION": ;"IS CONNECTED"
600 RETURN 610
610 END
620 REM BINARY TO DECIMAL
630 SUB DEC(DEC,BIN$):: DEC=0
640 FOR I=1 TO LEN(BIN$):: DEC=DEC-2^(I-1)*(SEG$(BIN$, (LEN(BIN$)+1-I),1)="1")::
NEXT I :: SUBEND
650 REM DECIMAL TO BINARY
660 SUB BIN(D,B$)
670 B$="" :: D=D/16^4 :: FOR I=0 TO 15 :: D=2*(D-INT(D)):: B$=B$&STR$((-D>=1))
:: NEXT I :: SUBEND
680 SUB D(B$,BS$,BY,HZ)
690 IF B$="" THEN B$=RPT$("00",8)
700 DISPLAY AT(5,8):SEG$(B$,9,8);" BYTE 1";BY
710 IF BS$="" THEN BS$=RPT$("0",8)
720 DISPLAY AT(7,8):BS$;" BYTE 2";HZ: ;"[2 USED ONLY FOR TONE FREQ.]"
730 SUBEND
```

How did you enjoy that program? Even if you do not like to experiment with sound, look at the listing... try to follow what is going on, there is some neat programming here!

Stainless Software has two of Neil's game programs on sale (The Wall: 5 star review) and Robin Hood, but they are protected. The above program is your chance to see how Neil programs! (& thanks to Neil for permission to use that program too!).

~~~~~

A little rest here...

The long hot DRY spell may be contributing to a number of unexplainable system lock outs: due to STATIC zaps. Here I deal with this by using a powered humidifier, an earthing strip along the front of the computer desk (to earth body static) and also when computing I wear cotton clothing; no man made fibres!

As more people now have Extended Basic, reports of faulty modules are coming in... the bad news is the modules are in perfect condition, it is the consoles which are wearing out. The module socket is perhaps the weakest part of the console, and with extended games use, can show signs of wear well inside the guarantee period! There is also contamination by dirt to contend with...

My first solution was to rip the console apart and replace the badly worn socket (also removing the clipped on foam cleaning strip).

Then (and something more of you can do perhaps!) to extend that job, the purchase of a cartridge extension port (the Navarone Widget!) which plugs into the console socket AND STAYS THERE. It gives you three sockets for your modules, which can be cleaned easily, and (although made by TI!) are made to last longer than the console socket. I think Arcade Hardware are bringing some in if you are interested. NB: If using a new games module, the other two expander sockets cannot be used! Only one game module may be inserted at a time. Utility modules may however be plugged in 3 at a time and you can switch between them.

The problem shows itself with ExBas as this is the 'biggest' module and uses all the contacts!

ANOTHER problem now appearing has to do with users attaching disk systems for the first time: they use up memory! Using CALL FILES(1) followed by NEW will increase the amount of memory available, but there is still a little less!

If you have a lot of programs on tape, some of them will not run, and some will not load:

If there is insufficient VDP ram for the program to load (attaching the 32k ram does not affect this!) the tape load will fail almost immediately the pilot tone ends. You must switch off everything, and then switch the console back on but NOT the disk controller, before you can load! (If you did not use CALL FILES(1) however, try using it, it may just allow you to load)

There may be insufficient memory for the program to run: in ExBas, the 32k ram will avoid this chance, but has no effect on TI Basic programs.

And remember to use CALL FILES(1)!

If you have Mini Mem plus 32k ram, you have the means of implementing CALL FILES(0).

Your program on disk?		Your program on tape?
CALL FILES(1) [ENTER]		
NEW [ENTER]		
OLD DSK1.PROGRAM [ENTER]		
SAVE EXPMEM2 [ENTER]		
		~~~~~CALL LOAD(-31888,63,255) [ENTER]
		~~~~~NEW [ENTER]~~~~~
OLD EXPMEM2		OLD CS1 [ENTER] etc
RUN		RUN

NB: DO NOT then try to access the disk system!!!!

Confirmation from the USA that our consoles do not all work at the same speed...

Another test program, from LAer Bernard Falkin, who some time ago visited Rambles HQ:

```
100 CALL SPRITE(#1,32,1,100,1,0,60) :: FOR C=1 TO 71 :: NEXT C :: CALL POSITION(#1,C,C) :: CALL DELSPRITE(#1) :: PRINT C :: GOTO 100
```

Now, when you run this tiny ExBas program, a string of numbers will scroll up the screen. They will fall between two values, with a difference of 5 or 6 between the upper and lower limits.

On my consoles the range is 53 to 59. However, on US consoles, operating more slowly, the sprite can travel farther, and on 26 US consoles, the value range is 64 to 69.

Craig Miller is aware of 8 different operating systems (and possibly a ninth) but cannot explain this fairly large difference.

The moral is: never rely on internal timing for your programs! On my systems, even though the range is the same, the average differs from system to system. Note also: there is a range of numbers, not one number, as some of you may have anticipated!

Try this little program, and if you have a different result, let me know!

Now, back to the Sound....

In this program we will be using the keyboard as a Music Player, and using the 'direct sound' facility to do some simple envelope shaping:

Program is in TI BASIC and requires Mini Memory:

```
100 M=-31744
110 FOR X=1 TO 10
120 READ R,B,T
130 L1(X)=R
140 L2(X)=B
150 A(X)=T
160 NEXT X
170 E=159
180 DATA 137,63,144,141,56,146
190 DATA 134,53,148,137,47,150
200 DATA 134,42,152,143,39,153
210 DATA 139,35,154,140,31,155
220 DATA 133,28,156,139,26,157
230 CALL CLEAR
240 CALL INIT
250 CALL SOUND(40,500,9)
260 PRINT "PRESS KEYS 1 TO 0 TO PLAY"
270 PRINT "HOLD KEY DOWN TO SUSTAIN"
280 PRINT "OR HOLD SPACE BAR DOWN TO ACT AS A SUSTAIN PEDAL:"
290 PRINT "YOU MAY PRESS NUMBER KEYS AT SAME TIME AS HOLDING SPACE BAR DOWN!"
300 CALL LOAD(M,E)
310 CALL KEY(3,K,B)
320 IF B=-1 THEN 310
330 IF B=0 THEN 300
340 P=POS("1234567890",CHR$(K),1)
350 IF P<1 THEN 310
360 REM TURN OVER PAGE
```

THIS PROGRAM WILL ALSO
RUN IN EX BAS IF YOU
HAVE THE 32k RAM!!!!!!

51

```

370 CALL LOAD ( M, L1(P), " ", M, L2(P))
380 REM NOW WAVEFORM:
390 REM A(1)=LOUD A(10)=QUIET
400 REM TRY: FOR T=1 TO 10 STEP 2
410 REM OR TRY FOR T=10 TO 5 STEP -1
420 FOR T=10 TO 5 STEP -.5
430 CALL LOAD(M,A(T))
440 NEXT T
450 GOTO 310

```

You may find the sound a little rough still, as each CALL LOAD is done through a loop, which takes time.

Try instead:

```

420 REM
430 CALL LOAD(M,A(10),"",M,A(9),"",M,A(8),"",M,A(7),"",M,A(6),"",M,A(5),"",
M,A(6))
440 REM
450 GOTO 310

```

Notice any difference? Experiment a little!

Quick break again for those with either mini memory or exbas, a program which gives a different sort of display!

```

100 FOR X=9 TO 13
110 CALL COLOR(X,2,16)
120 NEXT X
130 CALL CLEAR
140 PRINT "ONE MOMENT..."
150 FOR X=48 TO 90
160 CALL CHARPAT(X,B$)
170 CALL CHAR(X+48,B$)
180 NEXT X
190 REM
200 INPUT "TEST MESSAGE:";A$
210 IF LEN(A$)>28 THEN 200
220 CALL CLEAR
230 ROW=10
240 STARTCOL=4
250 FOR X=1 TO LEN(A$)
260 CALL HCHAR(ROW,STARTCOL+X-1,ASC(SEB$(A$,X,1))+48)
270 CALL HCHAR(ROW,STARTCOL+X-1,ASC(SEB$(A$,X,1)))
280 NEXT X
290 GOTO 200
300 END

```

My address for comments queries and so on:

10 Alstone Road, STOCKPORT, Cheshire, SK4 5AH

For a direct reply, a stamped self addressed envelope is essential... overseas, send an International Reply Coupon (4 IRC's may be required for long replies!). Could take a couple of weeks to get back to you.

DO YOU OWN TI-WRITER?

This bits for you.

A common complaint: Text Formatter keeps giving a form feed before it starts work! How to stop it....

Simple really, you rewrite the program....

I now have, from the States, modified TI-Writer programs:

EDITA now has true lower case, plus a slashed zero

FORMA now has a single line feed instead of the initial form feed, and an RS232 printer default. The first form printed is one line lower, all the rest are as they should be.

If you'd like copies, please send your original TI disk and I'll overwrite the original files. Technically a breach of copyright, but you need the module to use the programs, so nobody can lose! Please send 1.00 to cover post & packing plus a bit for time and depreciation! Pack your disk carefully!

OK. Now the difficult one....

Before I bought my console, so many years ago, I thought of writing a program which would enable me to shape a sound, controlling attack sustain decay and release... after all, CALL SOUND worked to the millisecond!

Then came the bad news: Each call sound took around 40 milliseconds and envelope shaping was not too good.

Using Neil Lawson's 'direct sound' given earlier, a degree of control on the sound envelope could be found... but better is possible.

Remember SPRITES: magic things: you tell the computer to start one moving, and off it travels, and your programs can do anything... the sprite keeps moving.

Wouldn't it be nice to have music do that? Give the computer the score, tell it to start playing, and then ignore it?

Are you sitting down? Our lowly TI99/4A can do three things at once: follow a program, keep a sprite moving, and play a piece of music after you tell it to 'start'.

The catch is, you need to place the music score somewhere... and that somewhere is VDP RAM. Normally, there is not a great deal of unused space in the VDP RAM. Any spare space tends to be pushed into by the variable garbage....

Fortunately it is possible to reserve VDP RAM, and the following program will amaze you. It comes from Neil Lawson again, who was using a machine code program printed in THE SMART PROGRAMMER to give him access to VDP using Extended Basic.

I can't reprint that program so I have amended it to work with MINI MEMORY.

First the program set up:

Turn your console on and select TI BASIC.
Now to reserve some VDP RAM for the music:

If you have a disk controller, you can use:
CALL FILES(8)
then NEW.
then key the program in and RUN it.

If you do not have a disk controller, you can still reserve memory. The CALL FILES reserves space at the top of VDP ram, and this is controlled by a couple of bytes in CPU RAM... we can use CALL LOAD to do the same thing...

Type in CALL LOAD(-31888,50,0)
then enter NEW.

then enter the program and RUN it!

That NEW is important. It tells the computer to remap VDP. This it does after reference to location -31888.

Loading -31888 with 50 and 0 tells the computer the TI BASIC program can commence not at its normal 16383, but instead at $256*50+0=12800$.

This gives us about 3.5k for the music, far more than this program needs!

The program now, then the enlightenment. The CALL SOUND in line 100 is essential: don't miss it out!

```

100 CALL SOUND(-2,30000,0)
110 CALL CLEAR
120 REM DURATION IN 1/60th
130 REM OF A SEC.1 SECOND=60
140 REM 1/2 SECOND=30
150 REM *****
160 REM
170 REM BELOW LOADS SOUND TABLE
180 CALL POKEV(14096,3,142,15,144,30)
190 CALL POKEV(14101,3,133,13,144,60)
200 CALL POKEV(14106,3,128,15,146,30)
210 CALL POKEV(14111,3,142,15,144,15)
220 CALL POKEV(14116,3,141,17,145,15)
230 CALL POKEV(14121,3,142,15,146,30)
240 CALL POKEV(14126,3,129,20,146,30)
250 CALL POKEV(14131,3,141,17,144,15)
260 CALL POKEV(14136,3,129,20,146,15)
270 CALL POKEV(14141,3,131,21,146,30)
280 CALL POKEV(14146,3,140,23,146,30)
290 CALL POKEV(14151,3,139,26,144,60)
300 CALL POKEV(14156,3,141,17,146,30)
310 CALL POKEV(14161,3,141,17,144,60)
320 CALL POKEV(14166,3,142,15,146,30)
330 CALL POKEV(14171,3,133,13,144,60)
340 CALL POKEV(14176,3,128,15,146,30)
350 CALL POKEV(14181,3,142,15,144,15)
360 CALL POKEV(14186,3,141,17,145,15)
370 CALL POKEV(14191,3,142,15,146,30)
380 CALL POKEV(14196,3,129,20,146,30)
390 CALL POKEV(14201,3,141,17,144,15)
400 CALL POKEV(14206,3,129,20,145,15)
410 CALL POKEV(14211,3,131,21,146,30)
420 CALL POKEV(14216,3,140,23,146,30)
430 CALL POKEV(14221,3,129,20,144,60)
440 CALL POKEV(14226,3,134,00,159,30)
450 CALL LOAD(-31796,55,16)
460 CALL LOAD(-31794,1)
470 REM
480 REM
490 REM THIS LOOP WILL BE
500 REM PROCESSED WHILE THE
510 REM MUSIC PLAYS
520 REM =TWO PROGRAMS
530 REM SIMULTANEOUSLY!
540 REM -----
550 CALL CLEAR
560 PRINT " ]"," ]]" ]]]" ]]]]
570 CALL PEEKV(1152,A,B,C,D,E,F,G,H)
580 CALL POKEV(1232,A,B,C,D,E,F,G,H)
590 REM CHR$(58) DEF AB ZERO
600 REM
610 FOR T=1152 TO 1231
620 CALL PEEKV(T,A,B,C,D,E,F,G,H)
630 CALL POKEV(1512,A,B,C,D,E,F,G,H)
640 CALL PEEK(-31796,A,B)
650 IF A<55 THEN 690
660 IF B<150 THEN 670 ELSE 690
670 NEXT T
680 GOTO 610
690 REM MORE OVERLEAF

```

```

700 REM END OF LOOP
710 CALL SOUND(-20,30000,0)
720 REM
730 REM "READY FOR NEXT RUN"
740 REM WHEN SOUND TABLE DONE
750 J=J+1
760 IF J<40 THEN 750
770 J=0
780 CALL LOAD(-31796,55,16)
790 CALL LOAD(-31794,1)
800 GOTO 610

```

LINE 100 is required for the MINI MEM. For the EXTENDED BASIC version Neil had to use:

```

455 CALL PEEK(-31747,A) :: CALL LOAD(-31747,1 OR A)
      [thats a logical OR]

```

Neil's program used CALL LINK("POKEV"...) to access VDP via a machine code utility.

The music is loaded next, and you will see the area of VDP memory used is within the reserved area.

The first item of the POKEV is the address the first byte is going to be loaded at. The sound table has to be sequential!

Then we load that and successive memory locations as follows:

1. Length of sound information, excluding duration, normally 3.
- 2 & 3. The tone generator data, exactly as in the previous direct sound programs, as yielded by Neil's Utility program earlier.
4. Attenuation (or volume) value, again as in direct sound.
5. The time the note is to sound, is 60th's of a second.

Therefore the minimum note is 1/60th of a second!

Line 550 tells the computer where the SOUND TABLE can be found:
 $55*256+16 = 14096$. (Check line 280!)

Line 580 is an instruction to the computer: START PLAYING

Then we go into a loop which demonstrates that the computer carries on playing without further instruction.

Problem: How do we know the music has ended? The computer only does as it is told, and will carry on through memory until you tell it to stop... corrupting the program as it goes along...

My attempt at this was to wait til the end of the tune, BREAK and find out the values at -31796 and -31795. Then I test for those values, as above.

Line 710 restores sound to normal, and lines 750 to 770 put in a small delay before we start again by loading the start of the sound table and tell the computer to PLAY!

Neil had a different idea... place a silent note (eg 30db attenuation) at the end of the sound table. Then test another location:

```

Add: 545 CALL POKEV(-14231,3,159,191,223,0)

```

```

THEN instead of 640 to 660, use: 650 CALL PEEK(-31747,A)
                                660 IF A=0 THEN 780

```

I hit a problem translating this for mini memory: it did not work. The solution was to reintroduce that dropped location, -31747, by adding to the above program, in place of 750 to 770:

```

750 CALL LOAD(-31747,1)

```

----->

Now some more experimenting:

Get the sound table going and before it has finished try:
USING CALL SOUND with a positive time value...
 with a negative time value
using direct sound access

OK? That's your work for today (sorry if you don't have mini mem. Try Arcade Hardware or Parco Electric).

My work was cutting the sound length down to 1/60th of a second for better envelope shaping... and note you can change the frequency as fast as the volume, for interesting glides...

And all this on a 99/4A.

Oh...if you have a disk system and wish to load the program from disk, a tiny problem: you have to move the VDP floor before loading from disk, and depending on the value you load it could lock up the disk system. Save the program to EXPMEM2 as shown earlier, then move the VDP floor!

~~~~~  
Neil has a short snippet for you too:  
100 INPUT D :: D=D/16^4 :: FOR X=0 TO 15 :: D=2\*(D-INT(D)) :: PRINT (D>=1) ::  
      NEXT X

When D is a decimal number, output is its binary equivalent... the decimal number must be capable of expression in 16 bits!!

\*\*\*\*\*

\* Neil has also written a utility program for using auto-sound. As he has passed on so much information freely already, this is available from me for Three Pounds inc p&p. This is in TI BASIC for the Mini Memory.

\* Sudden inspiration departments: it isn't that our consoles work faster than the US consoles: processing time is identical. What differs is the rate at which the VDP Interrupt operates: on our system it is 50 cycles per second, to tie in with the video output to the tv.

\* The VDP interrupt controls the speed of the sprites, so a loop working at the same speed linked to sprites moving slower equals a lower number on our consoles when using the second test program given earlier.!!!

\* This accounts for the major timing difference! There are however still variations in individual console speeds of operation as well.

Best wishes,



Stephen Shaw  
10 Alstone Road STOCKPORT Cheshire SK4 5AH  
(SAE for a reply!).

ADDENDUM TO RAMBLES.

"BUG OUT" has now been rewritten and is saleable.

TI WRITER - Please advise PIO or RS232 when ordering rewritten disc.

SOUND UTILITY PROGRAM is now available in TIBASIC for Mini-memory or Extended basic +32k ram.



# TI 99/4A Console Hardware

by Henry Clark

Being an inquisitive sort of person I like to know how things work. So soon after acquiring a TI 99/4A I set about trying to discover what made the machine tick. By a process of trial and error I worked out the joystick and cassette port pin connections but was rather daunted by the 44 connections to the expansion port. More in hope than expectation, I rang TI at Bedford seeking information. I was pleasantly surprised to learn that there is a manual available called "TI 99/4A Console and Peripheral Expansion System, Technical Data" for £8.97 including p.& p. from TI, P.O. Box 50, Market Harborough, Leics.

This manual gives a wealth of information about the internal operation of the console, the TI expansion system and design guidelines for using the peripheral expansion port.

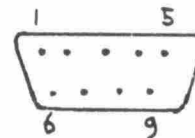
Having read through it a few times I realised how little I knew about microprocessor techniques, despite having used and designed industrial electronic equipment for several years. I felt, however, that many TI\*MES readers would like to know a bit about their computers, so I foolishly volunteered to write something about the TI 99/4A hardware. So here goes.....

## The Console

Before we look at the insides of the console here are the pin connections for the external connections.

### Cassette Port

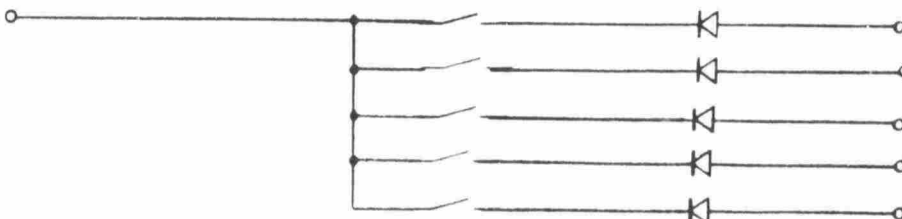
| <u>Pin</u> | <u>Function</u>       | <u>Pin</u> | <u>Function</u> |
|------------|-----------------------|------------|-----------------|
| 1          | CS1 Control +ve       | 6          | CS2 Control +ve |
| 2          | CS1 Control -ve       | 7          | CS2 Control -ve |
| 3          | Data Out, Screen      | 8          | Data In         |
| 4          | Audio Gate (not used) | 9          | Data In, Screen |
| 5          | Data Out              |            |                 |



### Joystick Port

| <u>Pin</u> | <u>Function</u> | <u>Pin</u> | <u>Function</u> |
|------------|-----------------|------------|-----------------|
| 1          | Not connected   | 6          | Not connected   |
| 2          | Joyst 2 common  | 7          | Joyst 1 common  |
| 3          | Up              | 8          | Down            |
| 4          | Fire            | 9          | Right           |
| 5          | Left            |            |                 |

The joystick contacts are diode isolated to prevent interaction giving odd results. Any joystick should be wired thus.



Footnote: The information in this article is given in good faith, but no responsibility can be accepted for any errors or omissions.

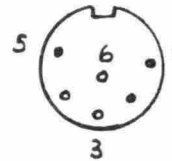
Remember, the Alpha Lock key must be up for the joysticks to work properly. The Fire button is scanned using a CALL KEY command where it returns a value of 18 with key units 1 and 2 for joysticks 1 and 2 respectively.

Video Port

The manual shows a TMS9918A as the video display processor whereas the European TI 99/4A uses a TMS9929A; this is essentially the same except for the colour video section which is suitable for the PAL modulator.

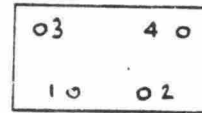
The connections are believed to be as follows:

| <u>Pin</u> | <u>Function</u> |
|------------|-----------------|
| 1          | 12V +ve power   |
| 2          | Red-Yellow      |
| 3          | Sound           |
| 4          | Yellow          |
| 5          | Blue-Yellow     |
| 6          | Common          |



Power supply Plug

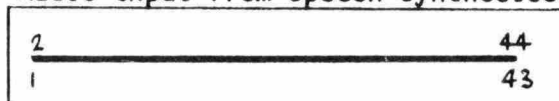
| <u>Pin</u> | <u>Function</u> |
|------------|-----------------|
| 1          | 16V AC          |
| 2          | Common          |
| 3          | 8V AC           |
| 4          | Not connected   |



Expansion Port

| <u>Pin</u> | <u>Notation</u> | <u>I/O</u> | <u>Description</u>                        |
|------------|-----------------|------------|-------------------------------------------|
| 1          | +5v             | 0          | 50 mA max. for Speech Synthesiser         |
| 2          | SBE             | 0          | Speech Block Enable                       |
| 3          | RESET           | 0          | Master Reset, Low active                  |
| 4          | EXTINT          | I          | External Interrupt, Low active            |
| 5          | A5              | 0          | Address bit 5                             |
| 6          | A10             | 0          | Address bit 10                            |
| 7          | A4              | 0          | Address bit 4                             |
| 8          | A11             | 0          | Address bit 11                            |
| 9          | DBIN            | 0          | Data Bus In, Buffers & 9900 in input mode |
| 10         | A3              | 0          | Address bit 3                             |
| 11         | A12             | 0          | Address bit 12                            |
| 12         | READY           | I          | External memory ready                     |
| 13         | LOAD            | I          | To 9900 load pin                          |
| 14         | A8              | 0          | Address bit 8                             |
| 15         | A13             | 0          | Address bit 13                            |
| 16         | A14             | 0          | Address bit 14                            |
| 17         | A7              | 0          | Address bit 7                             |
| 18         | A9              | 0          | Address bit 9                             |
| 19         | A15             | 0          | Address bit 15 (LSB), CRU Output          |
| 20         | A2              | 0          | Address bit 2                             |
| 21         | GND             | 0          | Signal Ground, 0V                         |
| 22         | CRUCLK          | 0          | CRU Clock (Inverted)                      |

|    |              |     |                                                          |
|----|--------------|-----|----------------------------------------------------------|
| 23 | <u>GND</u>   | 0   | Signal Ground, 0V                                        |
| 24 | <u>D3</u>    | 0   | Clock phase 3 (Inverted)                                 |
| 25 | GND          | 0   | Signal Ground, 0V                                        |
| 26 | <u>WE</u>    | 0   | Write Enable                                             |
| 27 | GND          | 0   | Signal Ground, 0V                                        |
| 28 | <u>MBE</u>   | 0   | Memory Block Enable                                      |
| 29 | A6           | 0   | Address bit 6                                            |
| 30 | A1           | 0   | Address bit 1                                            |
| 31 | A0           | 0   | Address bit 0 (MSB)                                      |
| 32 | <u>MEMEN</u> | 0   | Memory Enable                                            |
| 33 | CRUIN        | I   | CRU data in, Input data line                             |
| 34 | D7           | I/O | Data Bus Line 7 (LSB)                                    |
| 35 | D4           | I/O | Data Bus Line 4                                          |
| 36 | D6           | I/O | Data Bus Line 6                                          |
| 37 | D0           | I/O | Data Bus Line 0 (MSB)                                    |
| 38 | D5           | I/O | Data Bus Line 5                                          |
| 39 | D2           | I/O | Data Bus Line 2                                          |
| 40 | D1           | I/O | Data Bus Line 1                                          |
| 41 | IAQ          | 0   | Instruction Acquisition, CPU is acquiring an instruction |
| 42 | D3           | I/O | Data Bus Line 3                                          |
| 43 | -5V          | 0   | → <u>50 mA max</u> for Speech Synthesiser                |
| 44 | AUDIO IN     | I   | Audio Input from Speech Synthesiser                      |



Notes

1. An overlined function indicates that this is active in the low state, 0.
2. I indicates an input to the console. 0 indicates an output. I/O indicates a bidirectional line.
- !! 3. Pins 1 and 43 are not intended for use by anything other than the speech synthesiser. Overloading may blow up the console power supply.
4. Beware of connecting anything to the expansion port unless you are sure that is designed to work with the TI 99/4A. Serious, i.e. expensive, damage could result.

Peripheral Expansion Philosophy

The expansion port gives access to the 16 bit address bus, the eight bit data bus, bus control, memory control, timing and control signals, and speech module signals.

Any peripheral connected to the console must have a device service routine (DSR) ROM, in order to be recognised by the TI 99/4A. On start up, either software or hardware, the TI 99/4A interrogates the I/O port for the presence of any peripherals. The DSR of any peripheral will respond giving information about the nature of the device and the relevant communications protocol.

This system has the advantage that types of peripheral are not restricted by console hardware limitations. The drawback is that it makes it difficult for amateurs like me to make peripherals, as I cannot write the DSR's or program the ROM's which would contain them, without learning 9900 Assembly Language and getting access to a PROM programmer.

In future issues I hope to describe more about the operation of the console's 40 odd integrated circuits, plus, if possible, information on how to build your own low cost peripherals. Meanwhile keep on supporting your TI 99/4A, it is a good little computer which deserves a better fate than TI felt forced to give it.

Regards, Henry Clark 59

## ODE TO A TI99/4A PARTISAN

"Why do I bother?" Every TI owner must have asked himself this question at some point in his life. Maybe not out loud; but in the back of his mind or subconscious, and probably more than once. It tends to occur at those annoying moments when a TI peripheral is "out of stock" with every TI supplier he can think of, or when the owner of a different micro can have an equivalent peripheral costing many times less. This question is known unaffectionately as the wrong-choice syndrome, and the reasons why any TI owner worth his salt decides to stick to his machine as the "Partisan Effect".

You see, the computer owners in today's society can generally be split into two categories - you have the users, and you have the programmers. A user is a rather unintelligent specimen, probably between 8 and 25 years of age. Some Christmas past, he promised his far-sighted or simply unconcerned parents that if they bought him a micro then he would learn about computers, it would be a great help in his education, and look-what-Eugene-Evans-did etc., etc., etc. Yet from Christmas morn onwards, all he did was bash away at that invariably half-demented rubber keyboard or joystick, playing Invasion of the Mutant Trogs.

A programmer, in complete contrast, however, is infinitely more intelligent and is fully capable of understanding that there is more to computers than blasting screaming multicoloured aliens out of hyperspace. Indeed; he will realize that games (i.e. leisure activities) represent only a small part of a computer's capabilities and should be treated as such, rather than nurture this games-equals-computers-and-vice-versa attitude of the user.

You tend to get a high density of users in owners of such machines as the Spectrum, Dragon, and the Commodore and Acorn series. This is partly due to the plethora of aim and zap games for these machines.

The majority of TI owners, however, are programmers. This is partly due to the high cost of aim and zap games (in that they are in modular form or are at least modular dependent in some way) and that the cassette games in BASIC are not as fast moving or blinding or deafening as the slush available for Spectrum type machines. Instead, the appeal of the Texas is in that it is ideally suited for the jaded hobbyist with its 16-bit chip, Ansi standard BASIC and thousands of other features too long to list here or anywhere.

We programmers are certainly a minority. Alone we stand, TI Partisans in this battlefield of dead aliens and mutant camels. The gregarious instinct tends to bring us together into user groups (hardly ever for users!) where we hope to find others like ourselves to communicate with. I must stress that of the TI groups TI Exchange is by far the best. It is written by

continued.....





By DOT Matrix

(AGONY PAGE FOR BOTH READER AND WRITER)

My little page caused some comments last issue but I'm thick skinned and have put finger to wordpro again.

Let me start with some advice for you girls. The first few weeks we gave a home to a computer I lost my husband. All evening was spent tapping away until after midnight. The alarm was set for 6am and to top it all he woke up in the middle of the night shouting "Eureka" and then going downstairs to type it in. It couldn't get worse - or could it. I began to feel neglected (big AAHs). It seemed I had married for byter or cursor. Does the plot sound familiar? Tug a few heartstrings? Well here's some tips on man retrieval.

1. Try shouting "FIRE". This is not very successful for instead of dashing about of the room clutching the budgie, photograph album and his collection of matchbox labels all he will do is press full stop and groan "missed again". 1/10.
2. Show him the electricity bill. 7/10
3. Remind him the Miss Universe/World/England/Bolas Magna contest is being broadcast tonight (Bound to be one on). This will hold his attention briefly during the swimming costume bit. 4/10.
4. Threaten to play your complete collection of Barry Manilow albums until he switches off. 8/10.
5. Greet him home from work wearing a housecoat and smile. Liberally spray the air with Avon No.5. Success rate varies between 0 and 10; 0 usually accompanied by frantic searching of wardrobes, cupboards and attic.
6. "Accidentally" switch off the mains supply while getting the Hoover from under the stairs. Mutter oaths about power cuts etc. Man tears out hair having nearly finished long program and not recording it in bits like Stephen Shaw told him to do. 9/10.
7. An alarm clock strategically placed should jolt him back to reality provided it is a repeater. 5/10.

The only surefired way of succeeding if you can't beat it is to join him. Women have a distinct advantage over men when it comes to computing. It's an inherent ability to be able to type with 3 or more fingers. So offer to key in while he reads out. (The crafty bit is that he won't get any practice to speed up his typing and you will be acknowledged as an essential ingredient in hubby's hobby.)

The computer world is overloaded by men but lurking in the shadows, waiting for their opportunity are lots of other 'alfs and little womin. When you gents have left to earn the bread we weaker mortals are beginning to peruse your peripherals and fiddle with your floppies. SO BEWARE.

Any road up, he's not such a bad'un and for his birthday I got him a great printer table. It's a Binatone music centre unit on special at Woolies for under £10. There are six drawers each designed to take 12 cassettes which will each take 10 modules. The printer sits on top and fanfold paper feeds up through a slot in the back of the unit. Plus there's room for a few manuals, and castors too. Really neat.

This article may be thought frivolous/sexist/interesting/ timewasting (delete where necessary) Well next time there will be a little more meat to chew on. I have a book "Kids and the TI" and I intend getting my teeth into it. Should be about my level. I'll let you know how I get on.

Dot.

HIGH SCORES from an honest and modest Edwin Armstrong (aged 12), and he has witnesses to prove it.

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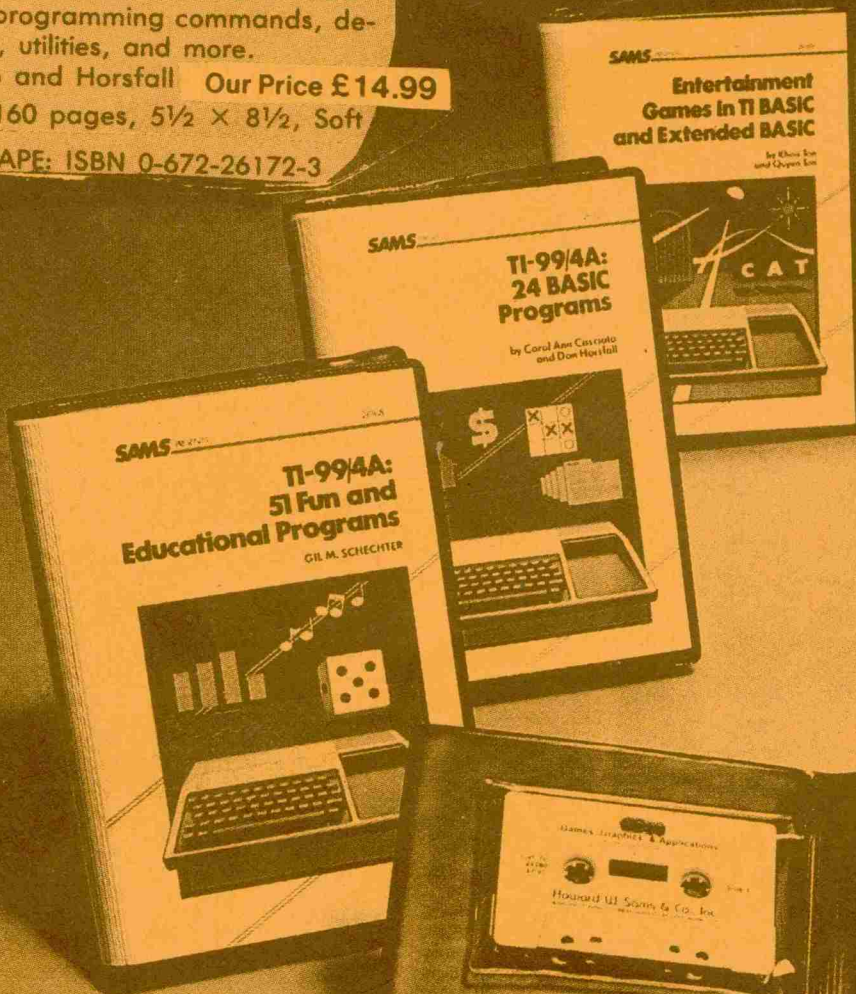
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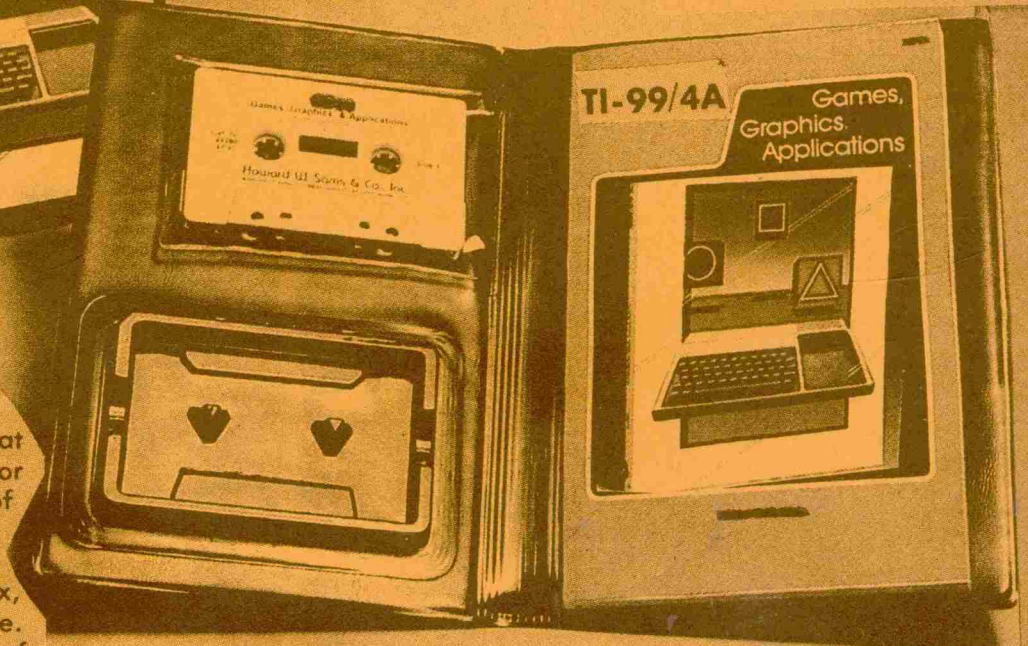
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