TI*MES

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ISSUE NO. 25 SUMMER 1989

EDITORIAL

Welcome to all those old, or should I say, established, readers as well as newer members of our group. This is the first issue of your magazine after the increased subscription, and it will reach you after the AGM, when we will have a new Chairman. Fortunately we still have a great deal to offer you, as you will judge from the contributions in this issue. The critical area remains the unexpanded console, and it is here that you can make a real and valued contribution. Why not have a go! Don't forget Stephen's offer of transcription!

On a personal note, I have now retired, and have lost those useful and undervalued facilities on which I, and my editorial efforts, relied more heavily than I realised! Farewell Xerox! Copying will in future be much more expensive, so it will only be done if it is absolutely unavoidable. Nevertheless there will be some increase in costs.

Hoping to have seen many of you at the AGM.

Alan Bailey.

DISCLAIMER

The views expressed in the contributions in this magazine are those of the individual contributor, and not necessarily those of the group.

NEXT COPY DATE IS 1st. SEPTEMBER

WELCOME MAT FOR NEW MEMBERS

Since our last issue we have gained several new members: Eamon Doran, Mr D. Carr, Mark Swift, Robert Christian, Mark Wills and Emma Davey. Also a welcome back to Mike Kitchin and Derek Duddy. I hope you enjoy TI*MES and contact with other TIUG members.

Peter Walker, Membership Secretary.

Area membership lists will resume in next issue.
Apologies from our Membership Secretary.

4 Woodbank Park,
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Dear TIUGUK Members, Committee and Friends,

Letter from the reTIring Chairman...

When the TI99 Home Computer was readily available in most major shops during the start of the Eighties, for some reason or other, the TI99 never really was a popular machine. I had my suspicions, that the main reason was the unique TI Basic and the strange policies Texas Instruments adopted in preventing software companies producing software. This led to its downfall as the Home computer Market at that time started to hot up. Texas Instruments was forced into a price war with massive reductions being sliced off the £1000 price tag (Which Babbling Brooks keeps reminding us when he bought the TI99 for around the same price).

By 1983 the price of a TI99/4a dropped to under £200 well below its original price, thats when Audrey and myself became a TI99er. ARGOS the discount retail chain were giving £50 off its stocks. The Home computer war had started and by the end of 1983 the TI99/4a reached the top five best selling home computers.

Despite its short popularity, software was very difficult to obtain cheaply and computer magazines shunned the TI99 because of the TI Basic language, it was thanks to the efforts of people like Stephen Shaw, Peter Brooks and others (including a nieghbour of ours called Vince Apps) who wrote to the popular magazines and had written books that we saw any programmes published.

Sheer frustration of the high cost of Modules (TI call solid state software cartridges) that Audrey and myself set up a small service in providing a facility of exchanging modules for members of a National newsletter Club known at the time as "TI HOME".

The service was called TI99/4a EXCHANGE. We were amazed of its popularity, a number of TI Users liked the idea of exchanging and soon we had nearly two dozen people regulary swaping modules.

Because of the simple idea, we were put under some pressure to produce a newsletter, the idea was to offer fairly basic BASIC editorial with simple hints, Tips and programs to type in was mainly because TIHOME really only catered for those with expansion. With an old typwriter which I purchased from a nieghbour for £30., and some weeks of head scratching, Britains other TI99/4a newsletter was born. It was given a name T I * M E S.

As an A5 publication with 24 pages the name TI*MES was created from what the club did:-

T exas I nstruments 99/4a *(used as times/multiply in computing) M odule E xchange S ervice.

Everyone knew of a newspaper in the country with the same name. Rather clever we thought and its still with us today as is that newspaper!

TI*MES was a creation of its users and those who made a living from the sale of hardware accessories and software (home made in the UK). Even Books, we wanted to help and promote British goods for a Yankie computer. Thanks to all its supporters, TI*MES quickly grew to a thick 60 page magazine.

With the decline and fall of TI99/4a not being produced, oddly just when plenty of cheap software was emerging from the UK and overseas, times were quickly achanging. Those of this group who joined at the start can pick up the early copies of TI*MES and follow a whole line of events as the years passed. On May 16th in the year of 1987, a full committee was elected to serve the UK TI99/4a Users far better than ever before. Christina Mehew took on the task of Editor of TI*MES, in her words; and I quote "A Future Flowering". At long last the TI Users have come together. Now, TI*MES has a new Editor, Alan Bailey, because he has not expanded he is sincerely equally anxious to ensure not just those with expansion are served, but catering for all TI Users both in the U>K and overseas.

Suported by working Group, TI*MES has become the only survivor of the Eighties that has been consistant in producing the goods its members expect. With a truly fantastic membership and strong dedicated committee, (Oh how can I thank them enough), TI*MES is well and truly united as the TI 99/4a U sers G roup in the U K.

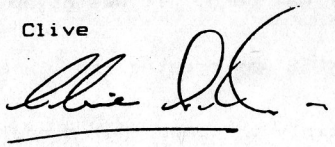
New ideas and a new incomming Chairman leading a super committee will see TIUGUK well into the Nineties.

Please continue with your support as I leave with no regrets the running and control its very capable working committee led by the new Chairman of your choice. Rest assured I will still be a 99er in the 90s and a keen supporter of TIUGUK and TI*MES.

Happy TI ing!
Clive Scally.

I cannot deny that at work the computer I use is a P.C. IBM type etc, most will admit the same. However, I still think when at home our TI99/4a gives Audrey, our children and I lasting pleasure and entertainment, for me especially the serious stuff like wordprocessing databases etc, everything we need from a computer. There still isn't anything that extra special in the market to make a change. We have three keyboards and still plenty to learn from our TI99/4a.

Clive



CONSOLE ONLY CORNER

by Peter Walker

This issue I thought we would explore KEY UNITS. You are all familiar with the CALL KEY command which has the format:

CALL KEY(key unit, return-variable, status-variable)

The Key Unit can take the values 1 to 5 and there is an explanation of the resultant keyboard mapping in Appendix III-3 of the User's Reference Guide. When are the various key units used? I hope the following helps.

Key Units 1 and 2 are used for the Split Keyboard Mode. This allows key presses on the left and right hand sides of the keyboard to be separately registered. This is necessary for many "Two Player" games programs.

Key Unit 3 effectively turns the TI99/4A keyboard into that used by the old TI99/4 ie no lower case. This is a good key unit to use when you want to do such things as "PRESS Y/N". With key unit 3 Y and N will return values 89 and 78 irrespective of the position of the alpha lock key. You don't have to separately check for 121 and 110 as well. No Control keys are active - the 99/4 didn't have these.

Key Unit 4 (Known as the Pascal Keyboard Scan) is to be used for telecommunications programs. When talking to an external computer, it will expect ASCII values 0 to 31 when the control keys are pressed, eg CONTRL Q is ASCII 17. However for most programs key unit 4 should be avoided since it alters the functioning of the keyboard for later input statements. Try the following:

```
100 CALL KEY(4,K,V)
110 INPUT X
120 GOTO 100
```

At line 110 you will find that the left and right arrow keys don't work; you have to use CTRL H and CTRL I instead. Also FCTN 4 won't "break" the program, you have to use CTRL B instead. This can be inconvenient so its best to avoid key unit 4. If you are a "Console-only" member, I doubt if you're into telecoms!

Key Unit 5 is the best general purpose key unit when you want both lower and upper case active. The difference between this and key unit 4 is that the control codes generate ASCII 128-159 while the well known FCTN keys AID through to BACK are 1 to 15. The input statement works normally.

If you hadn't already noticed, there are many other FCTN and CTRL keys active in key units 4 and 5. These are:

KEY	ASCII	KEY	ASCII	KEY	ASCII	
C,	0	F,	184	FK	193	
C0	176	F.	185	FL	194	
C1	177	F/	186	FM	195	
C2	178	C/	187	FN	196	
C3	179	F0	188	FQ	197	(NOTE)
C4	180	F;	189	FY	198	
C5	181	FB	190			
C6	182	FH	191			
C7	183	FJ	192			

F=FCTN C=CTRL

Note: On my older machine FCTN Q returns 185, my newer machine returns 197. What does yours do? Note that there is an error in the manual. In key unit 4, CTRL + Enter generates 13, as the Enter key always does, not 141 as stated. I know of no key combination that generates 141.

Just to complete, I should mention that a key unit of 0 will leave the key unit status at whatever was last used. This isn't very useful unless for some reason you are swapping key units within a program.

As usual, I hope this has been interesting and informative for console only members. Please let me know of any subjects you'd like to see covered.

Peter Walker

XBASIC TRICK
by Mark Shafer
BlueGrass 99 Computer Society
Reprinted from 99'er News
September 1987

I have just discovered a use for the edge character; hold on to your hats cause it's a worthwhile one. type in the following code:

```
100 CALL CLEAR :: CALL SCREE
N(7):: FOR X=1 TO 8 :: CALL
COLOR(X,2,16):: NEXT X :: CA
LL VCHAR(1,31,31,96):: CALL
HCHAR(7,30,31)!226
110 CALL HCHAR(8,2,32):: ACC
EPT AT(7,1)SIZE(-28):A$ :: D
ISPLAY AT(15,1):A$ !222
120 CALL KEY(0,K,S):: IF S=0
 THEN 120 !188
```

When you run the program, just type anything. Watch what happens when the cursor reaches the edge character I put in column 30. You are no longer limited to one line as usual with the ACCEPT AT. The screen may look funny, but you don't need to use a colored edge character to do this trick. What is happening is when the computer executes an ACCEPT AT, it remembers what screen address (row/column) to end the input. By putting the edge character there, the cursor will skip the next four characters, thinking it's reached an end of line. The cursor will never reach the ending screen address.

Word of caution with this trick - INSERT will cause characters to be dropped off the end of the string; DELETE doesn't work right on the first line; ERASE works fine though. Also, string variables are limited to 255 characters; enter more than that and you'll lose characters.

REPAIRS AND EXPANSION..... Mike Goddard

It has come to my attention that many people don't seem to know that I can, on behalf of the group, offer a full repair service on all TI originated equipment this includes consoles power supplies,modulators and expansion boxes including all peripheral cards 32k memory, RS232 and disk controllers also disk drives and cables etc. This of course doesn't mean that non TI gear can't be repaired as well. Most of these repairs work out at under £15.00 post extra. I hope this will put a few minds at ease because as far as I'm concerned this service will continue indefinately.

Now to the not so good news the price of second user hardware will have to go up because as things get rarer to find it seems those who have the gear seem to sense this and force the price up, to offset this to some extent I am producing some things myself sourced by other means these will be introduced in future as alternatives starting now with cassette and printer cables (see hardware list). If there is anything you should require that isn't on the list please get in touch as I can probably source most things.

EXPANSION,this is a thorny problem for the console only owner however it would appear that the best way forward is via a 32k memory expansion this is comparativly easy if you have some knowlege of electronic construction however for those who don't posess the neccesary skills I have been following up some interesting leads one is a board that fits into the console and allows 32k memory a clock and switchable extended basic in any combination as one isn't dependant on the other this is american and at the time of writing I'm still waiting for a reply. The other is to have boards made in this country for 32k memory only things do look fairly promising at the moment and if there are any developments I will let you know as soon as possible.

The other thing which can help the unexpanded owner is of course Dave Hewitts parallel printer interface which is available in kit form or ready built contact Dave for details at 53 Kennet Close, Berinsfield, Oxfordshire, OX9 8QE 0509 218259.There is a version of this interface to fit inside the P.E.B as well.

If this hasn't answered your particular question please give me a ring and I'll certainly see what I can do !!.

Mike

THE HARDWARE LIST — **Mike Goddard**

EQUIPMENT	MEMBERS	NON MEMBERS
PERIPHERAL EX BOXES FULLY FITTED	CALL	CALL
CONSOLES	20.00	25.00
POWER SUPPLIES	7.50	10.00
MODULATORS	7.50	10.00
JOYSTICKS	7.50	9.00
CASSETTE LEADS TI	3.50	4.50
CASSETTE LEADS ALT	5.00	7.50
PAR PRINTER LEAD ALT	8.50	12.00
ALPHACOM 42 PRINTER	25.00	30.00
ALPHA RS232 INTERFACE	5.00	7.50
ALPHA TI INTERFACE	5.00	7.50
SS FH,TI DISK DRIVE IN BOX WITH POWER SUPPLY	80.00	90.00
INTERNAL TI DISK DRIVE	50.00	55.00
DISK DRIVE LEAD 2X EXT	8.00	10.00
DISK DRIVE LEAD 2X INT	8.00	10.00
DISK DRIVE LEAD 1X INT`B'	5.00	6.00
MINIMEM BATTERIES (fitting extra)	1.00	1.25

ALT = ALTERNATIVE, `B'= 2nd GRADE, TI = ORIGINAL

In addition I can provide power leads for disk drives and `special' leads to your own specification call for details.

TERMS chaque or postal order by post made out to M.Goddard overseas cheque or bankers draught drawn on London.
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MIKE GODDARD, SARNIA, CEMETERY ROAD, RHOS, WREXHAM, CLWYD, WALES, LL14 2BY. Tel 0978 843547.

DISK DRIVES..... — MIKE GODDARD

There seems to be many misconceptions about using disk drives with the TI disk controller card. One of which is the type of drive which can be used the TI card will run up to three single density(40 track)5.25 drives either single or double sided.Some confusion seems to exist over whether you can use double sided drives I think this stems from the original disk manager module 1 which was only capable of formatting single sided drives although the controller is quite capable of running them, another one for the inscrutible TI boffins!!.

Then there comes the choice of disk drive itself most industry standard drives will work provided you can sort out the connections however Mr TI did help us a little here and gave us a standard interface to connect to.
I am actually using two half height double sided TEAC drives one of which was bought privately and the other came from TANDY and was the type supplied for their model 1000 computer Both of these are installed in my PEB and work perfectly.
You can't however use a TANDY disk drive cable because they remove pins from the connector to make the drive selection and on the TI you need to remove links on the drive.

The other thing which is quite important is the terminating resistor pack this is a small gadget which looks like a 14 pin DIL chip but contains resistors connected between opposite pairs of connections the purpose of which is to tell the controller card which drive is the last on the line so should always be on the highest numbered drive.
Another important point is that if you are using an external drive it must always be switched on whether you are using it or not the reason is that it supplies power to some of the lines to the controller and if its not on it can force the internal drives into writing gibberish whether in the selected mode or not!!!.

On some drives the drive selection is done by what is termed a shunt pack this again is a bit like a DIL pack but has links across the pins which must be broken if not required by snapping them with a suitable sharp object like a screwdriver these can be replaced with a DIL switch which then only needs to be set on or off on my TEAC drives they have small jumper links between pins which only need to be removed if not wanted.

The drive selection is fairly obvious as they will be numbered 1,2,3 although again my drives are numbered 0,1 2,3 in this case you would select 0 to be drive 1
the other links needed are DS,HS,HL,HU,SM..MX and HM should be disconnected or cut your particular drives may or may not have all or some of these connections the rule seems to be if it has it do whatever is neccesary if it hasn't ignore it.
The only drives which can apparently give some problems are those used with a certain other computer allied to one of our larger public utilities but I do have good reports of even these working so it would appear anything is worth a try.

You can of course make up external disk drives yourself by fitting them into a box and fixing them up with a power supply there are several power supplies available on the surplus market and only ones giving +5 and +12 volts are needed and although the power connector on the drive has separate negative connections you will usually find that on the circuit board they are in fact connected together and only one connection is actually needed, below is a list of all connections if further information is required please feel free to get in touch.

Mike

==========

CONNECTIONS

Odd numbered lined are ground

```
2  not used ! .................
4  not used ! .................
6  DS4......! not used on TI..
8  IXP......! .................
10 DS1......! .................
12 DS2......! .................
14 DS3......! .................
16 HTRON....! .................
18 DIR......! .................
20 STEP.....! .................
22 WTDATA...! .................
24 WRTGT....! .................
26 TK00.....! .................
28 WTPT.....! .................
30 RDDTA....! .................
32 SIDSEL...! .................
34 not used ! .................
```

==========

LINKS

DS	HS	HL	HU	SM	MX	HM
					cut	cut

POWER

```
/---------\     1    2    3    4
! 0 0 0 0 !   +12v  neg  neg  +5v
-----------
  1 2 3 4
```


WHAT'S MY PRINTER DOING?

by Peter Walker

Back in 1987, Peter Brooks announced in ITUG's TI-Lines magazine the availability of a new DSR ROM chip for the RS232 card which provided for a true Centronics interface on the PIO port and for split speed working on the RS232 ports. My own printer is an Epson and does not have any problem with the TI card's PIO protocol, but the split speed facility was of great interest so I decided to purchase the chip. Subsequently I have used the split speed facility to write an auto-logon program for Prestel using the 1200/75 baud speed.

So far so good. The Centronics protocol did however cause one unexpected effect. With the old chip, if a program transmitted to the printer and the printer was switched off, only the first character would be sent, since, in the absence of the necessary 'acknowledgement' on the 'Busy' lead, no further characters would be transmitted. Seeing the program 'pause' reminded one to switch the printer on and only the first character would be lost. In itself this could be irritating, especially if the first character was an escape character for printer control, but this did not represent a major problem.

The new chip is designed not to expect an acknowledgement pulse on the 'Busy' lead for each character, since this is not a feature of the true Centronics protocol. With printers working to this protocol, the 'Busy' lead only goes positive when the printer is offline, or when the input buffer is full. Returning to the situation described above, if the computer transmits to a switched off printer, it rapidly spews out the entire sequence since no busy signal is ever received. Instead of losing just the first character one loses everything. This can be very inconvenient!

Since discovering this feature I have been seeking a way to check that the printer is switched on before printing starts. With a small hardware addition I have now developed an Assembler subroutine that can detect the following 4 conditions:

- Printer disconnected
- Printer switched off
- Printer offline
- Printer ready

The essential element of the routine is the exploitation of the spare input bit on the PIO port on pin 13. I have connected this to pin 13 on my Epson printer. This pin, or similarly pin 32, goes positive when the printer is ready for data and goes off when the printer is busy. It therefore works in opposition to the state of the busy lead on pin 11 (connected to the PIO pin 10). By inspecting the states of the busy and spare leads, it is possible to detect the 4 states above. This is the logic table:

	Disconnected	Off	Busy	Ready
Busy lead	ON	OFF	ON	OFF
Spare lead	ON	OFF	OFF	ON

I cannot guarantee that this will work with every printer. With mine, the logic state OFF/OFF is created when switched off. Not all printers may do this, and not all printers may have the necessary pin to connect to the spare input lead. The Assembler routine below can be called from ExBas and returns the value 1 to 4 corresponding to the 4 states. Using this, one can warn that the printer is not ready and loop until conditions are right for data to be sent. The routine's programming is functional rather than elegant and I'm sure could be improved upon, though this is of little benefit for such a short routine. The routine inspects the two leads by testing the CRU bits >1304 (Busy lead) and >1306 (Spare lead). Incidentally the CRU bits >1304 and >1306 are also used as output bits, for the Strobe (handshake out) and spare output lead respectively.

Here is the routine:

```
        DEF  PRTCHK
R11SAV  BSS  2
WRKSPC  BSS  32
NUMASG  EQU  >2008
FAC     EQU  >834A
GPLWS   EQU  >83E0
STATUS  EQU  >837C
DIS     DATA >4001,>0000,>0000,>0000  SET RADIX-100 NOS
OFF     DATA >4002,>0000,>0000,>0000
BUSY    DATA >4003,>0000,>0000,>0000
OK      DATA >4004,>0000,>0000,>0000
PRTCHK  MOV  R11,@R11SAV   SAVE R11 FOR EXIT
        LWPI WRKSPC        LOAD OUR WORKSPACE
        LI   R12,>1304     SET CRU BASE ADDRESS
        TB   0             TEST BUSY LEAD
        JEQ  BUSYON        JUMP IF ON
        TB   1             TEST SPARE LEAD
        JEQ  SPARON        JUMP IF ON
        LI   R2,OFF        LOAD CODE FOR PRINTER OFF
        JMP  OUT
BUSYON  TB   1             TEST SPARE LEAD
        JEQ  BOTHON        JUMP IF ON
        LI   R2,BUSY       LOAD CODE FOR PRINTER BUSY
        JMP  OUT
SPARON  LI   R2,OK         LOAD CODE FOR PRINTER OK
        JMP  OUT
BOTHON  LI   R2,DIS        LOAD CODE FOR PRINTER DIS
OUT     CLR  R0            }PREPARE FOR OUTPUT
        LI   R1,FAC        }
        LI   R3,4
LOOP    MOV  *R2+,*R1+     }LOAD 4 WORDS TO FAC
        DEC  R3            }
        JNE  LOOP          }
        LI   R1,1          SET FOR IST PARAMETER
        BLWP @NUMASG       PASS VALUE
        CLR  R0            }
        MOVB R0,@STATUS    }RESTORE CONDITIONS
        LWPI GPLWS         }
        MOV  @R11SAV,R11   }
        RT                 RETURN TO BASIC
        END
```


The routine is invoked and used as follows:

```
100 CALL INIT :: CALL CLEAR
110 CALL LOAD("DSK1.PRTCO")
120 CALL LINK("PRTCHK",P)
130 ON P GOTO 200,300,400,500
200 DISPLAY AT(12,5):"PRINTER DISCONNECTED" :: GOTO 120
300 DISPLAY AT(12,5):"PRINTER SWITCHED OFF" :: GOTO 120
400 DISPLAY AT(12,5):"   PRINTER BUSY" :: GOTO 120
500 CALL CLEAR :: STOP
```

The routine can of course be used irrespective of whether one has the new or old chip and I would be pleased to hear from anyone who gets the routine to work with other printers than the Epson. For those who find it convenient, I give here a version written as CALL LOADs:

```
100 CALL INIT
110 CALL LOAD(16376,80,82,84,67,72,75,37,54)
120 CALL LOAD(8194,37,140,63,248)
130 CALL LOAD(9460,6,28,0,0,0,1,37,46,0,0,0,0,0,0,0,0,0,0,0,0,0
)
140 CALL LOAD(9482,0,0,0,0,19,4,0,0,0,0,0,0,64,1,0,0,0,0,0,0,64,2
)
150 CALL LOAD(9504,0,0,0,0,0,0,64,3,0,0,0,0,0,0,64,4,0,0,0,0,0,0)
160 CALL LOAD(9526,200,11,36,244,2,224,36,246,2,12,19,4,31,0,19,5
,31,1,19,8,2,2)
170 CALL LOAD(9548,37,30,16,10,31,1,19,6,2,2,37,38,16,5,2,2,37,46
,16,2,2,2)
180 CALL LOAD(9570,37,22,4,192,2,1,131,74,2,3,0,4,204,114,6,3,22,
253,2,1,0,1)
190 CALL LOAD(9592,4,32,32,8,4,192,216,0,131,124,2,224,131,224,19
4,224,36,244,4,91,184,184)
```

MESSING ABOUT WITH THE GEAR

The last, not very well prepared article about the delights to be had 'mucking about with the gear' was actually about a programme I had a go at much later then the present subject. The reasons leading me to deal with 'Columns' first were that it was very short, and little altered. It was also easy to solve once you really got down to it, and so no'Top Score' needed to be carried when the computer was switched off.

This one does not want such a provision either, but it is easy with Exbas to provide for one. I used to do this by inserting at an appropriate point this sort of line -IF SC>TSC THEN TSC=SC :: Display at(Row,Column): "Top Score ="; TSC. Then I always (the 1st programme line being 100), inserted a line- 90 TSC= ? !(enter the new top score on this line then save programme). The same result can be achieved in Basic with a little trouble.

If anyone is interested, it is not at all difficult to put the record holder's name in with the top score.

This time I have taken a Life Expectancy programme published in the Best of the 99er manual, I parted with this publication some years ago, and cannot remember who was responsible for it. Apologies are offered to the Author. It is a good programme, and was the first I ever tried to 'improve', and the only real alteration was a minor lay-out re-arrangement, Exbas (very amateur indeed) and a few comments designed to raise a laugh or two by wishing my elderly friends good-bye and lowering a purple curtain on the screen (courtesy of "Hairy Harry Pridmore of 4-Front")

There the matter rested for some years, the programme being much in demand by visitors both out of curiosity and to see how alterations in their personal entries altered their life expectancy estimate.

It was not in use ever so often of course, but I remember being a little annoyed that any remarks I put into the programme had to be based on the estimate for both male and female enquirers, and when I pulled it out to print out for this article, I was, I must confess ashamed of my first effort.

So I smartened it up some, split the male-female tie up, and here it is. Also, the estimate, which if my memory serves me well, was said to be in line with that used by the Insurance companies, has been altered away from that original programme to take account of present day assessment of the effect of smoking, drinking to excess, worry and excercise.

Once again, where a £ appears in the listing, key in upper-case 3.

You will find the family will want to use it, and I hope you will enjoy it. DON'T forget it is only a Computer programme for fun!

The programme is on offer from the club libraries, to whom I will supply copies on both Cassette and Disc, if anyone is interested and does not relish keying it in.

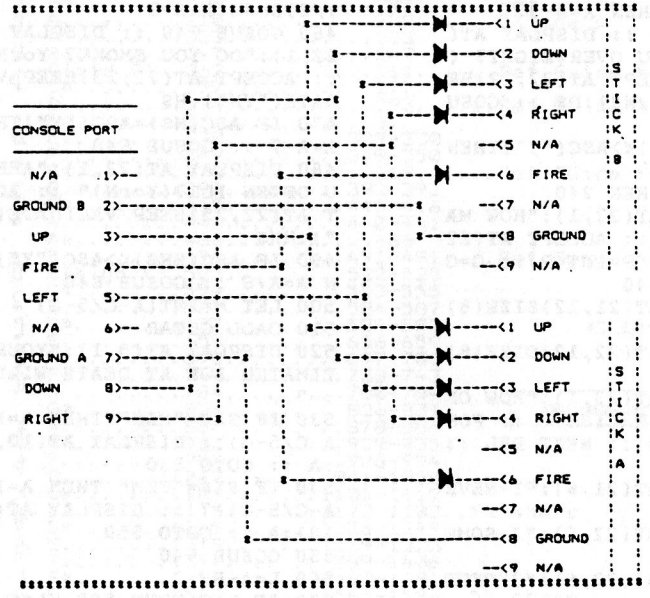
No response from the first article, if you want more, let me know, otherwise I see little point in wasting TI*MES space if there is no interest in such matters.

CONTINUED →

* * TopIcs - LA 99ERS *

THIS IS THE SCHEMATIC TO BUILD YOUR OWN JOYSTICK ADAPTER TO USE THE ATARI/COMMODORE COMPATIBLE JOYSTICKS. THE NUMBERS GO WITH THE PINS OF THE CONSOLE PORT AND THE JOYSTICK CONNECTORS. THE ▶| SYMBOL REPRESENTS A 1N914 DIODE (OR EQUIVALENT) WHICH CAN BE FOUND AT ANY RADIO SHACK. BE SURE TO INSTALL THE DIODES WITH THE BANDED END TO THE JOYSTICK SIDE.

THE BOX MENTIONED IN THE PARTS LIST REFERS TO ONE OF THOSE LITTLE PLASIC BOXES YOU GET AT RADIO SHACK. IN THE DRAWING BELOW, AN "*" DENOTES A CONNECTION, OTHERWISE NO WIRES SHOULD TOUCH.



```
100 CALL CLEAR
110 DISPLAY AT(4,8):"LIFE EX
PECTANCY"
120 DISPLAY AT(5,8):"_______
_______"
130 DISPLAY AT(8,4):" RESULT
S SHOULD NOT BE TAKEN
 TOO SERIOUSLY"
140 CALL COLOR(14,4,9):: CAL
L CHAR(143,"FFFFFFFFFFFFFFFF
"):: C=0 :: A=71 :: GOSUB 64
0
150 GOSUB 640 :: DISPLAY AT(
22,1):"SEX?(MEN or FEM)" ::
ACCEPT AT(22,18)BEEP VALIDAT
E("MEN,FEM"):SX$ :: GOSUB 64
0
160 DISPLAY AT(22,1):"HOW OL
D ARE YOU?" :: ACCEPT AT(22,
23)BEEP:B :: GOSUB 640
170 DISPLAY AT(22,1):"ARE YO
U MARRIED?(Y/N)" :: ACCEPT A
T(22,23):A$ :: IF ASC(A$)=AS
C("Y")THEN A=76 :: GOSUB 640
180 DISPLAY AT(21,1):" FOR M
OST OF YOUR LIFE HAVE YOU BE
EN 1.RICH-2.POOR-3 IN BETWEE
N?(1,2or3)" :: ACCEPT AT(23,
23)BEEP VALIDATE("123"):Z
190 IF Z<>3 THEN A=A-3
200 GOSUB 640 :: DISPLAY AT(
22,1):"ARE YOU OVERWEIGHT? (
YorN)" :: ACCEPT AT(22,27)BE
EP VALIDATE("YN"):D$ :: GOSU
B 640
210 IF ASC(D$)<>ASC("Y")THEN
 240
220 IF B<40 THEN 240
230 DISPLAY AT(22,1):"HOW MA
NY POUNDS? " :: ACCEPT AT(22
,23)BEEP:P :: P=INT(P):: C=C
+P :: GOSUB 640
240 DISPLAY AT(21,12)SIZE(8)
:"EXERCISE"
250 DISPLAY AT(22,12)SIZE(8)
:"________"
260 DISPLAY AT(23,1):"HOW OF
TEN DO YOU EXERCISE?" :: FOR
 DEL=1 TO 500 :: NEXT DEL ::
 GOSUB 640
270 DISPLAY AT(21,6):"1-NEVE
R"
280 DISPLAY AT(22,6):"2-SOME
TIMES"
290 DISPLAY AT(23,6):"3-OFTE
N"
300 ACCEPT AT(23,23)BEEP VAL
IDATE("123"):Z
310 IF Z=2 THEN A=A+3
320 IF Z=3 THEN A=A+5
330 GOSUB 640 :: DISPLAY AT(
22,1):" ARE YOU OFTEN TENSE?
" :: ACCEPT AT(22,23)BEEP VA
LIDATE("YN"):F$
340 IF ASC(F$)=ASC("N")THEN
A=A+3 ELSE A=A-3
350 GOSUB 640 :: DISPLAY AT(
21,12)SIZE(7):"ALCOHOL"
360 DISPLAY AT(22,12)SIZE(7)
:"_______"
370 DISPLAY AT(23,4)BEEP:"HO
W MUCH DO YOU DRINK?" :: FOR
 DEL=1 TO 500 :: NEXT DEL
380 GOSUB 640 :: DISPLAY AT(
21,1):"1-NEVER      2-A LITT
LE"
390 DISPLAY AT(23,1):"3-MODE
RATELY 4-FAIRLY HEAVY"
400 ACCEPT AT(23,28)BEEP VAL
IDATE("1234"):G
410 IF G=1 THEN G=-2
420 IF G=2 THEN G=0
430 IF G=3 THEN G=5
440 IF G=4 THEN G=10
450 IF B>A THEN A=INT(B+(B-A
)/2)ELSE A=A-3
460 GOSUB 640 :: DISPLAY AT(
22,1):"DO YOU SMOKE?(YorN)"
:: ACCEPT AT(22,23)BEEP VALI
DATE("YN"):H$
470 IF ASC(H$)=ASC("Y")THEN
A=A-7 :: GOSUB 640
480 DISPLAY AT(22,1):"ARE YO
U OFTEN ILL?(YorN)" :: ACCEP
T AT(22,25)BEEP VALIDATE("YN
"):HH$
490 IF ASC(HH$)<>ASC("Y")THE
N A=A+6 :: GOSUB 640
500 LET M=INT(A-C/5-G)
510 CALL CLEAR
520 DISPLAY AT(5,1):"YOUR ES
TIMATED AGE AT DEATH WILL BE
:-"
530 IF SX$="MEN" THEN A=INT(
A-C/5-G):: DISPLAY AT(10,10)
:A :: GOTO 550
540 IF SX$="FEM" THEN A=INT(
A-C/5-G)+7 :: DISPLAY AT(10,
10):A :: GOTO 550
550 GOSUB 640
560 L=A-B
570 IF L>2 THEN 580 ELSE 610
580 IF L<5 THEN 590 ELSE 600
590 DISPLAY AT(22,1):" NOT M
UCH LONGER NOW" :: GOTO 620
600 DISPLAY AT(21,1):"  CHEE
R UP,YOU STILL HAVE";L;"   Y
EARS TO GO YET (APPROX)" ::
GOTO 620
610 DISPLAY AT(22,1):"WELL,T
A-RA THEN"
620 FOR DEL=1 TO 3000 :: NEX
T DEL
630 CALL CLEAR :: END
640 FOR Q=20 TO 24 :: CALL H
CHAR(Q,1,143,32):: NEXT Q ::
 RETURN
```

TI-99/4A Sound Chip Accuracy Chart

NOTE	CALL SOUND frequency as reported on page III-7 of Users Ref. Guide.	Actual measured CALL SOUND frequencies that generate this note tune.	COMMENTS
A.	110	NA	Volume too soft to meter.
A#	117	NA	" " " " "
B.	123	NA	" " " " "
C(low C)	131	131	
C#	139	138	Off by 1HZ, also 5% flat
D.	147	147	
D#	156	156	5% sharp
E.	165	165	
F.	175	175	5% sharp
F#	185	185	
G.	196	196	
G#	208	207	Ref Guide high by 1HZ
A.	220	220	5% sharp
A#	233	233	
B.	247	247	
C(mid C)	262	261	Ref Guide high by 1HZ
C#	277	277	
D.	294	293	Ref Guide high by 1HZ
D#	311	311	
E.	330	329-330	
F.	349	349-350	
F#	370	369	Ref Guide high by 1HZ
G.	392	392-393	
G#	415	415-416	
A.	440	440-441	
A#	466	466	
B.	494	491-491	Ref Guide high by >=1HZ
C(high C)	523	522-523	
C#	554	553-555	
D.	587	584-587	
D#	587	584-587	
E.	659	656-659	
F.	698	697-701	
F#	740	738-743	
G.	784	780-784	
G#	831	826-831	
A.	880	878-884	
A#	932	929-935	
B.	988	986-994	
C.	1047	1041-1050	
C#	1109	1102-1112	
D.	1175	1172-1183	5% sharp
D#	1245	1236-1249	
E.	1319	1309-1323	
F.	1397	1389-1406	
F#	1480	1462-1481	10% flat
G.	1568	1565-1586	5% sharp
G#	1661	1657-1681	10% sharp
A.	1760	1734-1761	15% flat

CIN-DAY

November 1988

CASSETTE REVIEWS..... Nicky Goddard

==========

All of the games reviewed here are available from the group cassette library at the current library terms.

STAR RATING GUIDE.
One star = Terrible, Two stars = "OK", Three stars = quite good, Four stars = very good, Five stars = Brilliant.....

BILLY BALL PLAYS CATCH LIBRARY No G31

In this game you are a crab-like creature catching hearts on ledges on the first level, on the second level it's music notes and on the third level it's snowflakes. There are ladders on the ledges which you can climb up and down to catch the hearts etc there is also a line of squares on the bottom of the screen which fills with whatever you catch. Look out for the enemy which is a little green ball with two eyes a mouth and antennae it will change color to red every now and again when it does it picks up speed to try to catch you quicker if it does catch you you will fall off the ledge you are on and die. The ball changes back to green after about 3-5 seconds. This is a good game which I quite enjoy. You may use joystick 1 or 2 in extended basic.
STAR RATING ****

BIRD KNIGHTS LIBRARY No G34

The graphics are great in this game where you are a knight riding on an orange ostrich type bird. Your job is to fly to the enemy and try to knock him off his bird and then pick him up to be awarded bonus points. The controls are: Wing Flap=A Stop=E Left=S and Right=D. If you have over 50 points you may use the random locater(R)which will put you on any position of the screen. Scpring is quite complicated but the game is good fun to play. Joysicks are not neccessary it's a console only game for extended basic.
STAR RATING ****

BATTLESHIPS LIBRARY No G28

This is a TI version of the good old fashioned game of battleships. You can play against the computer is you want or you can play against another person. You can have a limited number of moves or you can have an unlimited number of moves if you want to the choice is optional. It is not a very fast game by the latest standards but well written in basic. I found it a quite good game to play. There are 225 possible moves as there are 225 squares to place your ships in. The computer plays just as well as any other opponent. The on screen instructions are very good and I'll play it a lot.
STAR RATING ****

RAMBLES by Stephen Shaw
(c) 1989.
For TI*MES #25.

Your letters and enquiries are always most welcome, especially those with questions or suggestions for Rambles! If you'd like a direct response, please send an S.A.E.- and if you have not had a reply within two weeks, assume a letter has got lost somewhere! In past months two members have been sitting there for MONTHS waiting for a reply from me, and too polite to ask if I'd heard from them! (Well, one member actually wrote six times, but was unaware that there was a local postal strike in his area with no letters getting out- and although the strike is now over, his letters have still not appeared...).

My address is:
10 Alstone Road, STOCKPORT, Cheshire, UK, SK4 5AH.
Overseas correspondents can send two International Reply Coupons or a US$5 note instead of an SAE.

I now have on disk and available for free copying (send blank disk and return postage!) a copy of Jim Petersons "Tigercub Software" catalogue and his "PD-Catalogue", plus an index of Tips from the Tigercub (not of too much use to us as we do not have the early issues, and have edited the copy in any case!) and also from Jim, a list of TI User Groups known to him as at 3/89 - a large number of them have not been heard of since 1987!

News is in that Adelaide TI Computer Club are tackling the problem of getting RGB output from the 4A in a very technical manner indeed... previous published circuits have not resulted in pleasing results, as the RGB signal is obtained by "undoing" the processing which results in the standard colour-difference signal output, resulting in an output which has been processed twice, rather than not at all! ATICC have decided to produce their own monolithic circuit to do the job- (hybrid VLSI) with computer checked circuits no less- with RGB TTL and Analog also CGA, EGA and VGA output for about A$85.

I suspect most members will not be aware of the work involved in producing a short-run VLSI chip, but our technically minded members should be suitably impressed. If you'd like more info, write to:
Colin Cartwright, c/o Fred Cugley,
26 Suffolk Ave, BRAHMA LODGE, South Australia, AUSTRALIA, 5109.

==========

Report from Geoff Phillips of Australia that the Horizon Ram Disk, using OS 7.3, will not handle TI Artist or TI-Pascal (referring possibly to USCD Pascal?), while one of our own members reports that TI Base is unhappy with the HRD.

==========

MICROpendium December 1988 had a useful article on connecting disk drives to the TI system, with much detail on whether you should or should not use resistor termination packs, whether additional or different value resistors were appropriate, and the different ways of selecting drives. TEAC drives are specificlly mentioned. Good article. If you do not subscribe take out a sub now and ask for the back issue!

==========

A belated welcome back to the group to C H Street who asked what was required to attach a printer to his console, and also asked about modems.

i. A modem is used to connect a telephone line to the computer, and in addition to a modem you will require an RS232 device, usually a card for the peripheral expansion box.

ii. Most printers these days come with a parallel interface and with a serial

interface available as an option- this refers to the plug on the printer side as well as to the format that the printer will accept the information in.

The bare console does NOT have any suitable output socket and you MUST purchase a separate device to attach to the computer, which is either a standalone device, or a card for the peripheral expansion box.

(A remarkable number of owners have purchased an expensive printer and then tried to connect it directly to their console! And having spent all their money on a printer, cannot afford a peripheral device to drive it....).

Standalones tend to be parallel only, while the cards often offer a parallel port as well as one or two serial ports. Connecting the output port to the printer will require a specially made cable- have a word with your supplier and/or our own Mike Goddard BEFORE laying out your money! Make sure you see the printer working with your computer before laying down the cash! There are two types of parallel output, EPSON and CENTRONIX, although the term CENTRONIX is often used when EPSON is meant! The difference is a major one if you wish to use the TI RS232 peripheral card, as it does not drive a printer with a true Centronix port (such as the Tandy range) without some additional circuitry to provide the signals the Centronix port requires!

A few printers use an "inverted data strobe" (no I have no idea whether it is catching...) such as the Hewlet Packard Ink Jet (got one going spare?) and this also needs a little circuitry to interface to the TI card correctly.

Wiring- for Epson, may be OK on others- of the parallel port is:

COMPUTER: PRINTER:

Pins 1 to 9...Pins 1 to 9 (connect 1 to 1 etc)

Pin 10,connect to Pin 11

TI pins 12 to 15 are not used.

TI pins 11 and 16 are "logic ground" and may usually be connected to printer pins 19 to 30. (NOT to be connected to printer "chassis").

The TI peripheral (and most TI software) was designed for the Epson printer range and Epson printers do not provide any problems at all. Other printers may not be fully compatible for graphics dumps.

*In addition to the peripherals, there are also modules available from Databiotics which have parallel printer ribbons coming out of the actual MODULE! These are spread sheet and word-processing modules.

Other printer considerations, apart from graphics compatability and of course print quality and noise, are serviceability- how easily can you obtain a new print head or new ribbons and how much are the ribbons and how long do they last? I recall a TI owner who got a good printer bargain only to discover the ribbons were expensive and did not last too long... and too many printer purchasers discover they cannot get replacement ribbons at all... EPSON ribbons are very widely available!

==========

Welcome to new Group member Leon Becker of London SW1.

==========

What word processors are available?

TI Writer is the standard, now upgraded to FUNLWEB, both on disk. PRESS is an upcoming program which may be a replacement. If you have no disk, then Databiotics have a module which can save and load to tape, and there is the option with that of a printer cable coming from the module.

There is also the commercial program WRITEREASE, and I hope to have by the time you read this, Art Green's version of TI WRITER, in which he has added new Formatter commands.

==========

HOW TO EDIT A BASIC PROGRAM:

From Nicky Goddard, Age 9, thank you Nicky...

Nicky wrote to me regarding a disk AUTOLOAD program which allowed you to input

a 1,2, or a 3 for drive number. Nicky pointed out that the TI disk controller card could be modified to operate 4 drives as can the Myarc and CorComp cards, while RAMdisks can take higher disk numbers.

How to edit the LOAD program:

Type EDIT 1 and press FCTN X until you see on screen:

""DISK? 1-3" and change the 3 to whatever number you wish. Press FCTN X more times until you read on screen ("123") and add your extra number(s) using INSERT (FCTN 2). Now press enter and save your program and there you are.

==========

Nicky also asks who wrote the disk AUTO-LOAD program- this appears in many formats, which all have in common a line something like "DSKN.1234567890" or something equally odd.

This originated in issue 2 of 99er Magazine back in July 1981. Lots of people have decorated the program since and it can be found with lots of extras nowadays, but the essential part is unchanged and involves "a program that writes the program", as the program name is INSERTED into that odd line by the program itself. The author? Charles Ehninger, who went on to found Futura Software, a company which advertised a lot but did not obviously sell too much and is not too well known today (no longer trading of course!).

The part of the program that reads the disk directory comes from TI and can be found in the Disk Controller documentation.

==========

PRINTER again... sorry about harping on printers but it seems I keep getting enquiries from people who have laid down money for a printer and THEN ask how they can make it work (ouch) or later how they can make it work with TI Artist.

Epson have not helped a great deal, as they keep upgrading their instruction set, thus giving us several "Epson" standards, rather than one, and "Epson compatible" may not always mean TI Artist compatible! TI Programs are generally written for the Epson FX series, but will also work with the last revision to the MX series- such as the MX80-III. Other Epson series may not be fully compatible.

Courtesy of PCW I have checked the vast range of printers for a list of printers which are inexpensive AND Epson FX compatible. These should all work fine with TI Artist and the like. I cannot comment on whether they will work with an unmodified TI Parallel port, as this level of technical information is not supplied. As always, do try to try before you buy! AND make sure you have or can get a working cable before parting with money. It is up to you to ensure you have a ready supply of printer ribbons available and only you can decide on the level of service back up (and cost) you require.

If you really cannot afford an Epson FX80, FX85, FX850, LQ500, or LX800, perhaps some of these may attract you:-

CARE: With many manufacturers, very minor changes to model name can mean a GREAT deal of difference! Only the exact models quoted apply- if an additional letter is added, it does not apply!

Brother 1109, Brother 1209, Citizen 120D, Citizen 180E, Citizen MSP15E, Mannesmann Tally MT81 (NOT MT80!), Panasonic KX-P1180, Seikosha SP-180 AI, Star LC10 or LC10C, Star LC24-10.

The QUIETIST dot matrix printer? The Epson.(50dbA- the same as an Apple Laserwriter!)*

The LOUDEST dot matrix printer? You guessed...Texas Instruments, which at 70db should carry a health warning!

(* Actually there is a printer quieter than an Epson, but I have yet to see or hear of a Wenger printer...).

==========

I have a letter from Tom Freeman of TJ SOFTWARE: Have you sent him a Midland Bank US$ draft with an order and not received your goods? If so please write to him again as he has lost your address. Mention the amount of the draft you sent and the programs you wanted. Thanx.

Remember my review of the Konix Speedking aka Epyx 500XJ joystick two issues back... MICROpendium reviewed it in Dec 88 and gave it a final grade of A- at the US price of US$20. In the same issue they reviewed CARFAX ABBEY by our very own David Vincent, available from our disk library, and marked it "send your money and buy it"-"four star in every way that I can tell"- not too many UK members taking the disk from our library but it is proving EXTREMELY popular in the USofA... it is a 100 room building to be explored, and Dracula to be vanquished, picking up treasures on the way...
Another "send your money in and buy it" review for Enhanced Display Package by Paragon Computing, which is also available from your disk library.

==========

Not yet subscribing to MICROpendium? Just to help you out, they now accept credit card subscriptions, so no excuses OK? Seamial sub is US$25, airmail is US$37, address is:
MICROpendium, P O Box 1343, Round Roack, TX, USA, 78680.
Refer to Barclaycard as VISA and to Access as MasterCard and give expiry date.

Fans of c99 will find some interesting articles in back issues of M-p, which are available for subscribers only!

==========

The Feb 89 issue of Micropendium gave a "send your money and buy it" review for Ray Kazmer's "St Valentines Day Card", which we have in our disk library as RAY KAZMERS MAZE OF GROG, it is a modified version of the game of the same name, starring who else but WOODSTOCK and further modified to play with joysticks or keyboard out of XB.

The BUNYARD HARDWARE MANUAL for the TI99/4A has already been mentioned by me, and recommended for the hard and software nut as well as anyone wanting a general read of what is, was and might have been. This is a lot more than a circuit dfiagram! Since last mentioned, US postal rates have gone up and they have also changed addresses. For your own copy, send US$26, post paid, to:
Bunyard Group, P O Box 62323, Colorado Springs, CO, USA, 80962-2323.

John Guion has a number of hardware mods for anyone prepared to delve in with a hot soldering iron, including a TI disk controller mod to allow use of a fourth drive, and access to DSK1 as a ram card or dsk1 as a real disk, and also a mod for the Triton XB module, and another mod for the RS232 card... he's also moved recently. If any of this sounds of interest send him a couple of IRCs (or a couple of $$$) to:
P O Box 4628, Lubbock, TX, USA, 80223.

NEW ADDRESSES **** NEW ADDRESSES ***
And as we are on address changes, please note that Texaments moved a while back, and are no longer at Patchoque, but are now at:
244 Mill Road, Yaphank, NY, USA, 11980

New addresses for two Freeware authors, PLEASE NOTE:

Ray Kazmer: 8614 Foothill Boulevard, Apt 221, SUNLAND, CA, USA, 91040

Ken Gilliland: 7647 McGroarty Street, TUJUNGA, CA, USA, 91042

TISHUG in Australia reprinted a modified article taken from "Texas Weekly", April 1984, called "Death of a Computer" which details the death throes of our lovable machine. The details appear- with more detail- in THE ORPHAN CHRONICLES

which may be obtained from the L A group- see last issue of TI*MES for details. (Just as this was being printed I heard LA had run out...)

Several reports of the power supply to the PE Box cards being a little over stated voltage... stated voltage being +8, +16 and -16 volts, but measured in some cases at +11.5, +22.5 and -23.5 volts, not causing damage to the cards as they have their own voltage regulators.... which generate heat. With a sparsely populated PEB there is not TOO much heat, so no problem, but with a PEB full of heavy duty cards, like those from Myarc, the heat generated is rather like having a 30 watt soldering iron stuck in the box! OK, it may work, but it will also work with less heat generated if you drop the voltage levels input to the cards!

One suggestion, which is easy if you can get the part required, is to use an autotransformer, with 240v input and a lower output, which is fed into the PEB- a variable output would allow you to set the auto-transformer to a level generating JUST the right voltages to the cards! One writer fed 180 volts into his PEB with no ill effects.

I would suggest that setting the PEB transformer for 240v input and actually sending in 200 volts would probably help with heat generation. The autotransformer could be quite small- 30 watts would be more than adequate.

Commercially, a cheap way to drop a voltage is with a series capacitor- try say a 20uF capacitor rated for at LEAST 450V continuous (.4A) connected to the active line from the on/off switch. Two VERY important points- check the output voltage with the capacitor connected- if the measured voltage (with normal load connected!!!!!) is too high, try a lower value capacitor. This method is potentially lethal to YOU due to the voltage which can be stored in a capacitor used this way- a very famous food processor manufacturer had to be reminded of this!- you *MUST* place a resistor across the capacitor, to drain the voltage, 100k 2watt would be about right.

ALSO *BEWARE* a capacitor used this way can make a hash of your PEB- when a capacitor like this fails, they can go !BANG! (very like dynamite) so enclose it in a separate STURDY well earthed metal box! Addition of a circuit breaker between the on/off switch and the capacitor would do no harm.

Capacitors are tricky things, and probably the most often met failure point of consoles which have been unused for a few months. Transformer adjustments are more reliable!

Modification of power supplies should be undertaken with very great CARE!!!

========

INFOCOM PLAYERS may already be aware that SCRIPT and UNSCRIPT are used to direct output to a printer (and off again). LEATHER GODDESSES has a further software switch you may wish to try. The default mode is SUGGESTIVE. The other one is LEWD. To avoid frequent use of LOOK for descriptions of locations as you REenter them, VERBOSE is another "software switch".

=========

The Ottawa group have a circuit for building in 32k ram using a single 32k ram chip (and three 74 series logic chips), but Mike tells me that 32k chips cost more here than using 4 8k chips...

=======

Whatever happended to...

Richard Mitchell, publisher of THE SMART PROGRAMMER, who owes subscribers several copies.... he writes LEGAL information bases for the IBM world...

Craig Miller of Millers Graphics... raking it in with custom software for the....

A young man who had a hand in Burgertime, Demon Attack, Munchmobile, Jawbreaker, Facemaker, Treasure Island, Angler Dangler, MiniMem LBLA, and a few other things... who is not yet 30 years old!... John Phillips...?

that HOPPER was the only TI module to be written on a TI99/4A, the rest used a 9900 mini.

==========

CORRECTION: ISSUE 24 : PAGE 29 : TI BASE:

The SNAP command allows anything on screen to be dumped to printer, therefor as you can display the system status and file structure on screen, you can easily dump them to printer! Therefore please read: TIB: Yes.

=========

PR BASE TO TI BASE... from LA Topics...

Maximum record size is 132 bytes AT A TIME!!! As TI Base can have 5 databases in use at a time, you can split the records up a bit!

Use the REPORT feature of PR BASE to PRINT to a DISK file, those fields you wish transferred, in a tabular format. Maxium 132 characters remember!

Now use the CONVERT feature of TI BASE.

If the report file has field one from column 1, for 28 characters, followed by a space before field 2 starts, then tell TI Base CONVERT that field one is 29 characters long (eg include the space!), then CONVERT will be able to follow that field 2 starts at column 30!

========

PERSONAL RECORD KEEPING TO TI BASE...

IT IS POSSIBLE...

Especially if you refer to page 30 of TI*MES issue 21, and instead of displaying the PRK data on screen with CALL D, save it to a disk file in the format DISPLAY FIXED N, where N is enough to hold a single record of PRK data. Display format is easier to handle if you concatenate all the fields into a single string and write each record to disk with a single PRINT command, remembering that TI BASE requires each field to start at a fixed position in the string!!!

Try to keep your BASIC program as short as you can... you may need to reduce the CALL P a little (say to CALL P(10000), and to conserve VDP memory, use a CALL FILES(1) -and NEW- as well, after the CALL P and its NEW.

The D-F N file can then be handled by the TI Base convert program- remember to note the position each field starts at so you can tell TI Base Convert!

==========

And a belated welcome back to the Group to R J Bates, who asks what is the maximum size RAMcard you can have? Any RAM device used as a RAMCARD has a maximum of 1600 sectors of disk space (400k) due to the way the disk bit map is used. In a Myarc 512k ram card, the remaining RAM is used for a print spooler and also to replace the 32k ram TI allowed for- or if you use Myarc's own XB, to place the 128k operating system into! It is possible, if a device is configured to be divisible into several disk emulations, for each disk emulated to have up to the 1600 sectors maximum. Until recently if you bought an IBM PC and fitted a 60Meg hard disk, you had to divide it and pretend it was two 30Meg disks, all that IBM allowed!

The limitation of 1600 sectors is not placed by the disk controller card you have, which is usually bypassed for ramdisk operation, but rather by the need to maintain compatability with TI software, and of course, it reduces the amount of code the manufacturer actually has to originate.

In facing the decision to buy a RAM card, I decided on the Myarc ram card, as it is simplicity to operate, enables me to use Myarc XB, and with only one exception all programs run with it (Text to Speech does not like it), whereas the New Horizon Ramdisk continues to baffle me with its operating system, and there are several programs I use that are unhappy with the HRD (as reports go- both programs and HRD ROS are amended regularly of course!). However, a number of our members are happy with their HRD, so each has to make his own choice!

I gather the battery back up is a feature well liked for the HRD, but loading the Myarc ram disk from disk is extremely fast, and it can be filled with a different assortment of goodies as the need arises!

======

Submitted with this text is a short program in "G", with an equivalent in Myarc XB, and in Triton's Super Extended Basic too!

Would you like to see more/less programs in these "minority" languages? If we don't print them you won't see them anywhere else! And if we don't print them, you may never know how many languages are available out there, or what they are capable of!

=========

CALL SOUND.... reminder...

CALL SOUND does NOT produce a frequency with the tone you input! and SOME "musical" tones are impossible, leading to music which even the tone deaf can recognise as being UGH!

Example:

CALL SOUND(100,1657,0) will produce a note with EXACTLY the same frequency as CALL SOUND(100,1681,0). Any frequency between these also produces the same note.

Example 2:

CALL SOUND(99,1661,0) should be note G sharp. It is 10% more sharp than it should be, while the next note:

CALL SOUND(99,1760,0) which should be A, is 15% flat- the period between the two notes is 25% out!!!

The rate of error grows as the frequency rises, due to the way in which the sound chip works. However even a few low frequencies are fairly way out, as D sharp (156 Hz), F (175 Hz) and A (220 Hz) are all 5% sharp.

SO, if you hear a "bum" note in a music program, it might not be the programmer at fault, but rather the sound chip.

================

TI PLANNER... ANOTHER BUG...

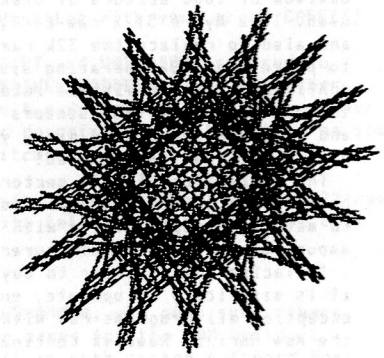
If you enter a formula which divides one cell by another, make absolutely certain that all the cells which are being divided have a non-zero value, otherwise the program seems to lose track of printer buffer space, and attempting to print causes a colourful lock out. Problem only applies to printing, and anyway YOU would not want to find out how many eights there are in zero would you....

================

MYARC XB 2.12 BUG...

```
100 DEFINT A1
110 DEFREAL A2,A3
120 A1=2000 :: A2=2000
130 A3=A1*A2
     WARNING : NUMERIC OVERFLOW
???
CURE:
130 A3=INT(A1)*A2
```

Strange I know but it solves the problem...



Similarly...

```
100 DEFINT A,B
110 A,B=2000
120 IF A^2=B^2 THEN PRINT "SURPRISE"
     WARNING : NUMERIC OVERFLOW
```

==========

! I N V I T E !

FOURTH EUROPEAN TI-TREFFEN.
October 7th 1989. from 10am.
"Kolping Huis", NIJMEGEN.
(Opposite Nijmegen Central Railway station).
You are invited to attend.

Advised to me by:
Tonny Brouwer,
Dam 19, 4331 GE, MIDDELBURG, HOLLAND.

Do you enjoy playing TI Runner? This excellent little game, which we have permission to copy, and for which versions are available from us on disk or cassette (32k ram required) and commercially on module, has a number of utilities which claim to allow you to create your own "screens" for the game (for disk only). I have received two copies of a "faireware" program direct from the author, and have been unable to make either work. I received a commercial product, which did not work, made it work and sent details to the publisher. In return I got back a much modified commercial version which did not work and which I was unable to make work! Be careful before parting with any money for a TI Runner Editor.

Micropendium recently published a fair review of the same commercial editor- as no version numbers were quoted I cannot tell if the bugs HAVE been finally ironed out of if the reviewer was merely not as thorough as me! If you buy a commercial version and it don't work, write me with the master copy!

I shall continue to seek out a freeware copy that does work- keep up with disk library news!

============

Sorry we missed the TIMES of the AGM in Issue 24.... it's all been and gone by the time you read this... if you made it to Romiley, hope you enjoyed it, and if you didn't make it, watch for a report in our NEXT issue, as the meeting is June 17th and copy for this issue has to be in for June 1st!

We received only a few offers of consoles, no offers of help, and no requests for demos (as at date this was written, before the show), so if you came and did not like it, it is up to you to give some input next year! The more you put in, the more everyone gets out!

A member now departed to other machines has passed to me a bunch of Australian user group mags from 1983 and 1984. A few tit bits I did not know before...

a. TI Consoles were sold the "Amway way", which if you have not met this American cleanser manufactuer (they sell in the UK), is a tiered system of distributors with direct home sales at the bottom. Sometimes called pyramid selling, some of the grosser aspects are illegal in the UK, but the Amway system is legal and operative here (and their products are ecologically sound, and economic in use too!).

b. The author of Diablo, Manuel Constantinidis, was a founder member of TiSHUG and also designed the fancy logo they use to this day!

TI BASE TIP: Command files that call command files...

When you RETURN from a called command file, any local variables used by that command file are free'd up, but if a command file calls up another command file, local variabes are not cleared until you finally get to return from the command file that specified that local variable, and a big stack of command files can eat up that scarce variable memory real fast... the CASE structure may help to limit the number of command files you need to stack, and you can also restrict the number of local variables specified by "higher" levels of the stack.

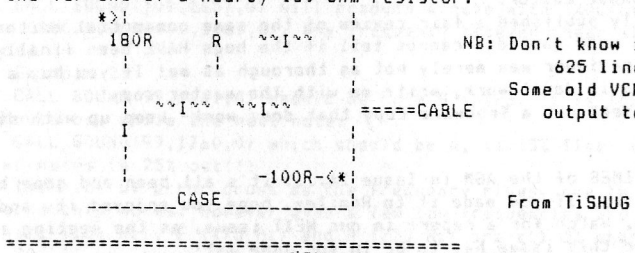
==========

Warning on "commercial" cassette tapes- funny thing about cassette tapes is that they do not age gracefully, with continual storage, without playing, and probably not in too good conditions, the tape can take on a memory of its reel shape, and become less flexible, resulting in numerous drop outs after many years of unplayed storage. Any commercial tape for the TI has been made several years ago now, so be careful about paying large amounts of dough out for old tapes- they may not even be capable of recording your own programs! I have seen

some VERY sorry looking old TI tapes.... back when magnetic tape was a novelty, the recommendation was that spools should be rewound every year or so! (and kept in metal containers too!). The thinner tape used in compact cassettes although more flexible than the older tapes, and with less loss of coating, does still deteriorate in storage. We can possibly supply many tape programs fresh recorded on new tapes for you so please ask the cassette or disk librarian...

==========

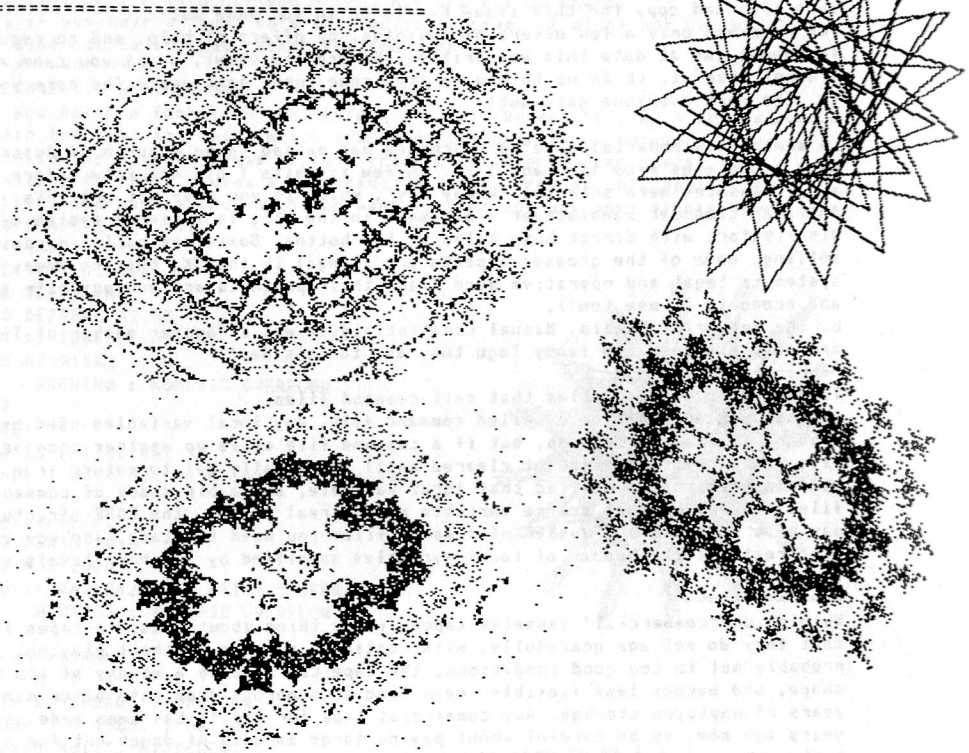
Does anyone still have a VHF tv set? Apparently the modulators by SIEL of Italy (PHA2036) have VHF capability (Channel 2)- for UHF the central wire for the output to your tv is connected to the right of a 100 ohm resistor tucked in the corner- for VHF, disconnect this and instead connect the central wire to the TOP end of a nearby 180 Ohm resistor.



NB: Don't know if the VHF output is 625 lines or not!!!!!
Some old VCRs tune VHF and can output to Ch36 UHF!

From TiSHUG May 84

==========



BLOXWICH WORKSHOP... APRIL 15TH 1989

Now titled: The National TI Users Workshop VI, organised by the West Midland TI User Group and supported by ITUG.

Your reporter made his second Bloxwich visit on April 15th, after attending the first show some time ago, the intermediate absence being more due to lack of transport than anything else, and thanks Bill for the lift down.

This sixth Bloxwich meeting of TI Users was attended by about 25 users, and several rigs were in use, including two Geneves (the only two in the UK???), which were showing off their paces, including the coloured tiger and a super super (jet propelled) lines program running in native mode.

Also on display and demonstration were Myarc XBII, Mechatronic 80 column peripheral with 80 column Funlweb and Multiplan, Horizon Ram Disks, and a demo of a new TI only bulletin board (The After Hours National TI Users Bulletin Board, 2.5 Meg of downloads- more information has been requested and will be passed on when received).

As usual, the Bloxwich meeting was also attended by a small handful of Corte users- the Cortex if you can t rmember,being a home-built computer using the 9900 chip and TI "Power Basic".

Of some interest were the scrapyard refugees- two disk drives wrenched from discarded computer thrown into a dustbin- one drive requiring just a dab or tw of superglue and some jumper wires, the other perfect. Also a 10 Meg hard driv dug up from some Irish bog where it had suffered the fate of disposal in a landfill (as, we understand, a number of TI modules suffered- Rhode Island way). With two plattens, one was unusable but the other perfect, making a workable 5 meg hard disk (!!!) running on the Myarc HDC.

Your reporter enjoyed seeing for the first time a full and complete version of Wing War,and in a module at that. I gather that as with so many unreleased modules it is available to Gramkracker owners on disk, but I dont have one of those devices!

Showing on the Geneve was a specially adapted version of Ray Kazmers Xmas Demo with little Woodstock receiving his present- modified for the different speed of the Geneve, and looking absolutely brilliant on the colour monitor.

There was a Miller GramKracker present, and also a similar device produced b the Cologne User Group in Germany.

Some readers may have heard of the Sinclair Z88 portable computer, which is just A4 sized, runs on alkaline batteries, has an LCD display, and comes with terminal emulator and comms and word processing software on board. It was show connected to a TI99/4A, swapping text back and forth, using TELCO on the TI99/4A. It was also demonstrated in use as a "dumb" terminal, which I gather makes it very handy for Geneve owners, who need one for debugging purposes, as the Geneve can be debugged without interfering with its own screen display, by using a "remote" dumb terminal!

An unusual and eye catching display, generated on a TI99/4A using Myarc XBII and the clock in the Myarc HDC, was a high resolution picture of an analogue watch, with the hands drawn (and redrawn) by Myarc XB after reference to the clock device in the HDC... extremely impressive.

Thanks to Gordon Pitt for arranging the event.

Stephen Shaw April 1989

WANTED...

Member Peter Hutchison is prepared to pay up to 60.00 for a standalone 32k ram

SECOND ALTERNATIVE MICRO SHOW REPORT:

The show was held on Saturday April 1st, in the New Horticultural Hall in London, a mere half mile from the Palace - no doubt having heard of the show, the Royal Family took themselves off to Balmoral in Scotland, apart from Lady Diana who was recovering from the removal of four wisdom teeth and was obviously not up to attending, and the Princess Royal who had another engagement at Buck House. Despite the close-by "Queen Mother's Sports Centre" (honest) the Queen Mum also did not attend. Never mind, quite a few other people made it...

The Hall is in a part of London which managed to be both very quiet and yet handy for public transport- your author, arriving at Euston at 9.30 am, managed to get a Tube to Victoria and walk to the Hall in time to arrive by 10 a.m.!

Given the Capital location, and the larger number of orphaned machines covered at this show, I was expecting a horrendous crush, which did not turn out - possibly connected with the almost total lack of publicity, which the first show also suffered from. The aisles were wide and the stalls large (12 feet) so ample room for all.

Machines supported this time included almost everything apart from PC's, Amstrads and Amigas- the list included : TI99/4A, Coleco Adam, Atari 8 bit, Sinclair QL, Electron, Tatung Einstein, Jupiter Ace, MSX, Commodore 8 bit, Dragon, and possibly a few others... the TI99/4A managed a remarkable representation with FOUR stands, taken by TI Users Group (U.K.)., the East Anglia Region 99ers, Dorset TI Group, and a "commercial" stall taken by the Parrish family, well known for former trading as Parco Electric.

There were cheap computers on sale (a second hand TI99/4A was snapped up on the bring and buy stall with speech synth and three modules for a mere twenty pounds), cheap printers from sixty pounds a piece, and plenty of cheap disks. The Konix Naxigator joystick- superb joystick- was selling for a mere eight pounds, about half usual retail price.

The TI community representation was hit a little by motor troubles- one rig for the TIUGUK was stranded following a car break down, while the second rig for the East Anglia group was also well delayed by a car breakdown, finally arriving in time for an early lunch!

Dortig had almost 100% of their members present and had brought along a Mechatonic 80 column card, so I was able to see the 80 column version of Funlweb at last! -the monitor used was a Tatung Einstein monitor, which usefully plugs directly into a UK model TI99/4A, as the Einstein used the same unusual colour-difference video output. Amongst much software Dortig were showing was Computer War and Slymoids.

East Anglia were playing TI Tennis, as well as Leather Goddesses of Phobos and the superb machine code game of Mancala, while TIUGUK were demoing TI Base and PR Base, as well as playing TI-TRIS (a version of the game for the Spectrum was on sale at the bring and buy table for six pounds), and Micro Pinball.

TIUGUK also had both Mechatronic AND Triton versions of Extended Basic, able to show the graphics capabilities of each, and also showing off the graphics utilities EDP, DEP and XDB! A Horizon RAM disk was installed in the TIUGUK system.

TIUGUK tried to demo The Nutcracker Suite and the German Pop Music program, plus Bert and Ern speech demo- demo's using sound were badly affected by one stall holder who was selling keyboards, and using amplification more suitable to a major pop concert, giving all the other stall holders a bit of a pain in the... perhaps it was fortunate the organisers had changed their name and were thus attending in an entirely anonymous capacity... Ken Gilliland having sent a demo of his dinosaurs disks over, visitors were also duly impressed by Thug learning to fly.

Copies of Micropendium sold out very quickly, as did the laminated keyboard function strips from SW99ers (good idea there, clearly a vast unsatisfied

unexpressed need!!!).

Francis Parrish had a good range of the older modules and even some of the newer ones (eg Micro Pinball), and managed to shift some of the more unusual limited quantity items that just aren't worth advertising!

The only computer related clothing seen was worn by your scribe, a colourful Tex-Comp tee-shirt, and in the morning a 1988 TI-Fest cap, in the afternoon a "I Love my TI99/4A" cap.

Cuisine was adequate, at the lowest level, with hot food limited to catering quality meat pies and sausage rolls, other food consisting of a ploughmans platter, strange miniature sandwiches buttered on the wrong side, and cakes.

A word on pricing. In Manchester it is possible to buy a can of soft drink (not a major brand name) for 16 pence. The major brand names sell for 22 to 25 pence a can. On InterCity trains- not renowned for low pricing- a can can cost you 40 pence. At Euston station, three shops sell cans for 35p, 37p, or 42p. At the New Horticultural Hall, cans of the cheapest non-major brand cans were selling for an alarming FIFTY pence each. This is robbery chaps!

Overall- the Show formed a good get-together for the TI user groups - unfortunately there was no representation from ITUG (virtually dormant since Feb 88) or from the West Midlands Group, who had their own meeting on April 15th. Anyone who heard of the Show will have been made aware that there was still life for the TI99/4A!

The THIRD show is still planned for "Stafford", now as a one day event, on Saturday November 12th. I put quotes there, as the Bingeley Hall is three miles out of town, and the organisers have now recognised the inadequate nature of public transport to the hall (why send a bus regularly three miles out of town to a big field?) by laying on a chartered bus service from Stafford.

If they couldn't get a crush in London what chances for a big field? Your reporter is not optimistic about the attendance at the November show!

And offers apologies to under-reporting of the other TI Groups, as he was attending on behalf of TIUGUK!

* * TopIcs - LA 99ERS * *

TI-WRITER reminders

For a heading on each page:

.HE Ctrl-U, shift "N", Ctrl-U (Enter title here) Ctrl-U, shift "T",Ctrl U

For a numbered footer:

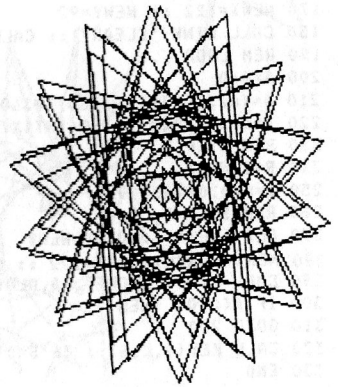
.FO^^^^^^^^^^^^PAGE% (the percent sign)

And this reminder from Jack Sughrue, of IMPACT-99

How many of you know you can use an "I" with the TAB instructions to automatically Indent each new paragraph? (I have used "L" and "R" for left and right margins, but was unaware of the Indent option). I now use:

L on 1, I on 5, and R on 38.

This sets the margins at the wicth of the screen, and indents each new paragraph. You'll be able to read everything ON your screen - no more windows.



OUR ROSES AROSE IS A ROSE CICEROS...

ATI have a graphic routine to demo their DMD5620 terminal, and Peter Maurer (a mathematician of ATI) published the algorithm in The American Mathematical Monthly, Vol 94, pages 631 to 645. This was in turn picked up by Keith Devlin and published in The Gaurdina on Thursday June 2nd 1988.

Member Mike Cavanagh wrote a very nice (fastish!) program in C based on this, and passed the general algorithm to me. While waiting for an article on his C code, I have written versions in Myarc XB and Triton SXB, and these appear below.

Good values to input are: N=4, D=43 or
N=5, D=97.

The code to "draw" or "line" etc is in the form : X * SCALE + ORIGIN.

The listings use the same scale for X and Y axes, and may result in a squashed effect due to the way the UK TI99/4A display works- to unsquash just try reducing SLIGHTLY one of the scaling multipliers, until you get what you want! Can also be adjusted for odd effects for some plots!

Adjust the origin constant to move the whole image around the screen but watch you don't fall off the edges!

Some plots are utterly simplistic -possibly just a point!- while others can be remarkable complex, and all done with nothing but STRAIGHT LINES!

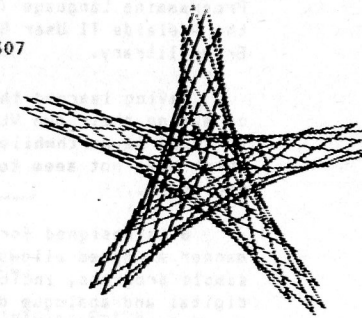
(These graphics programs answer a subtle request from a member for some graphics plotting related material!!! More? Do say...).

```
100 REM REQUIRES JBM103 LIBRARY DISK AND TI XB AND 32K RAM
110 CALL LOAD(-31890,56,0):: CALL LOAD(-31964,56,0)
120 CALL CLEAR
130 DISPLAY AT(5,1):" N=":" D="
140 ACCEPT AT(5,4)SIZE(3)VALIDATE(DIGIT):N :: IF N>359 OR N<1 THEN 140
150 ACCEPT AT(6,4)SIZE(3)VALIDATE(DIGIT):D :: IF D>359 OR D<1 THEN 150
160 A=0
170 NEWX=122 :: NEWY=92
180 CALL LINK("CLEAR"):: CALL LINK("SCR2")
190 REM LOOP ....
200 A=A+D
210 A=(A/360-INT(A/360))*360 :: A=INT(A+.0001)
220 X=N*A :: X=(X/360-INT(X/360))*6.283185307
230 REM STEP 3
240 R=SIN(X)
250 T=A*0.0174532925
260 REM STEP 5
270 OLDX=NEWX :: OLDY=NEWY
280 NEWX=R*SIN(T)*86+122 :: NEWY=R*COS(T)*86+92
290 CALL LINK("LIGNE",16,OLDY,OLDX,NEWY,NEWX)
300 IF A<0.01 THEN 320
310 GOTO 200
320 CALL KEY(0,K,S):: IF S=0 THEN 320 ELSE CALL LINK("SCR1"):: RUN
330 END
```

TI EX BAS + JBM103 + 32K

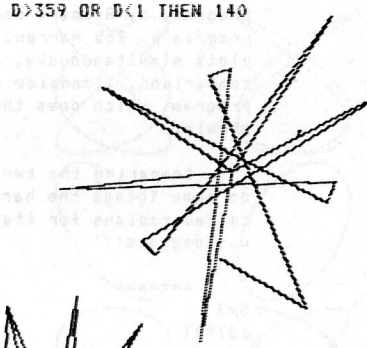
MYARC XB

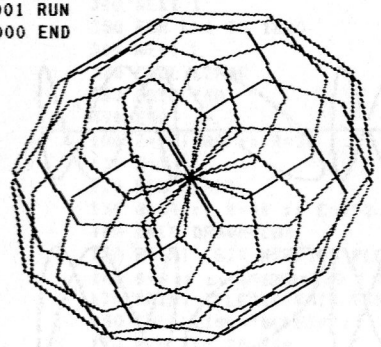
```
100 CALL GRAPHICS(1)
110 DEFINT N,D,A
120 DISPLAY AT(7,11)ERASE ALL : "N=" :: DISPLAY AT(9,11) : "D="
130 ACCEPT AT(7,13)SIZE(3)VALIDATE (DIGIT) : N :: IF N<1 OR N>359 THEN 130
140 ACCEPT AT(9,13)SIZE(3)VALIDATE (DIGIT) : D :: IF D<1 OR D>359 THEN 140
150 A=0
160 CALL GRAPHICS(3)
170 CALL POINT(0,122,92)
180 REM LOOP
190 A=A+D
200 A=(A/360-INT(A/360))*360
210 X=N*INT(A) :: X=(X/360-INT(X/360))*6.283185307
220 R=SIN(X)
230 T=A*0.0174532925
240 NEWX=R*SIN(T)*86+122 :: NEWY=R*COS(T)*86+92
250 CALL DRAWTO(1,NEWY,NEWX)
260 IF A<0.001 THEN 280
270 GOTO 180
280 CALL WRITE(2,1,29,"ANY KEY TO CONTINUE")
290 CALL KEY(0,S,D) :: IF D<>1 THEN 290
300 RUN
```

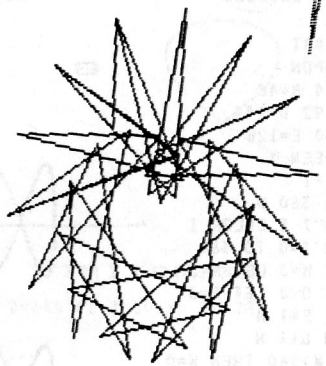


TRITON XB

```
100 CALL CLEAR
110 CALL LINK("GCLEAR")
120 DISPLAY AT(5,1):"N=":"D="
130 ACCEPT AT(5,3)VALIDATE(DIGIT)SIZE(3):N :: IF N>359 OR N<1 THEN 130
140 ACCEPT AT(6,3)VALIDATE(DIGIT)SIZE(3):D :: IF D>359 OR D<1 THEN 140
150 A=0
155 CALL LINK("MOVE",122,92)
160 REM LOOP ..........
170 A=A+D
180 A=(A/360-INT(A/360))*360 :: A=INT(A+.00001)
190 X=N*A :: X=(X/360-INT(X/360))*6.283185307
200 REM STEP 3:
210 R=SIN(X)
220 T=A*.0174532925
230 REM STEP 5
240 NEWX=R*SIN(T):: NEWY=R*COS(T)
250 CALL LINK("DRAW",NEWX*86+122,NEWY*86+92)
260 IF A<0.001 THEN 2000
270 DISPLAY AT(12,12):A
280 GOTO 160
2000 CALL LINK("SHOW")
2001 RUN
5000 END
```







G

G

Title's a bit short up there... G is a Graphics Programming Language (No, not TI's GPL...) which comes from the Adelaide TI User Group. It is available on disk from the Group library.

Having learned that Adelaide are in the happy position of making their own VLSI chips for their consoles, I thought it would be worthwhile taking another look at this language, which does not seem to have made much of a splash outside Adelaide...

G is designed for fast bit-map graphics, in as simple a manner as speed allows. It comes complete with several sample programs, including an emulation of a clock in both digital and analogue displays (not really a clock, but could possibly be made into one?).

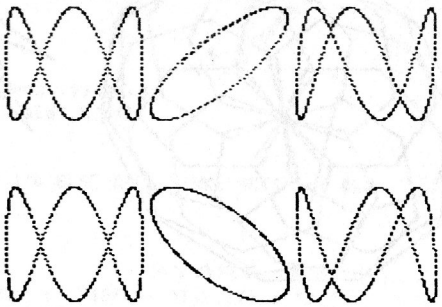
To give you a feel for G, I am listing below a sample program, by Richard Earl of Adelaide, based on a lisajou program by Bob Warren. This program will plot on screen SIX plots simultaneously, and not too slow either. For comparison, alongside I have printed the MYARC XB equivalent program, which does the same thing but very very much more slowly.

Comparing the two listings you will see that we have to do some things the hard way with Myarc, which uses something called radians for its trig, while all I learned at school was degrees!!!

=======

```
G=3
:START
WRAPON
A=64 B=48
C=192 D=144
J=30 E=128
SCREEN 1
F=F+1
RND 360 W
RND 7 I COLOR I
FOR T=0 TO 360
LET M=J LET N=J
LET O=J LET P=J
COS F*T M
SIN G*T N
IF W>360 THEN W=0
COS G*W O
SIN F*W P
COLOR I+3
SET A+P D+O
COLOR I+4
SET A+M B+N
COLOR I+5
SET C+M B+O
```

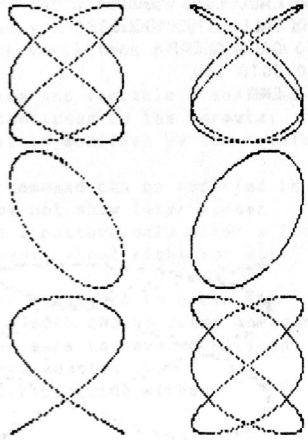
G




```
COLOR I+6
SET C+P D+N
COLOR I+7
SET E+O B+N
COLOR I+8
SET E+M D+P
W=W+1
NEXT T
FOR L=1 TO 2500
NEXT L
CLS
CLS
GOTO :START
```

```
100 DEFINT A,B,C,D,J,E,T,G,F,W,I,R
110 Z=PI/180 :: R=30
120 CALL CLEAR :: CALL GRAPHICS(3) :: G=3
130 REM START
140 A=64 :: B=48 :: C=192 :: D=144 :: J=30 :: E=128
150 CALL SCREEN(2)
160 F=F+1 :: W=RND*360 :: I=RND*7
170 FOR T=0 TO 360
180 M=COS(F*T*Z)*R :: N=SIN(G*T*Z)*R
190 IF W>360 THEN W=0
200 O=COS(G*W*Z)*R :: P=SIN(F*W*Z)*R
210 CALL DCOLOR(I+3,1)
220 CALL POINT(1,D+O,A+P)
230 CALL DCOLOR(I+4,1)
240 CALL POINT(1,B+N,A+M)
250 CALL DCOLOR(I+5,1)
260 CALL POINT(1,B+O,C+M)
270 CALL DCOLOR(I+6,1)
280 CALL POINT(1,D+N,C+P)
290 CALL DCOLOR(I+7,1)
300 CALL POINT(1,B+N,E+O)
310 CALL DCOLOR(I+8,1)
320 CALL POINT(1,D+P,E+M)
330 W=W+1
340 NEXT T
350 FOR L=1 TO 1600
360 NEXT L
370 CALL CLEAR
380 GOTO 140
390 END
```

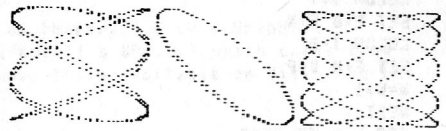
MYARC XB

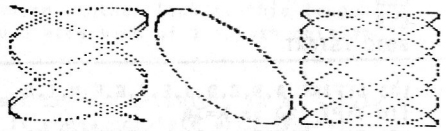


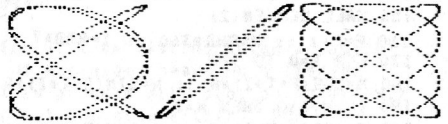
```
100 Z=PI/180 :: R=30
110 G=3
120 REM START
130 A=64 :: B=48 :: C=192 :: D=144 :: J=30 :: E=128
140 CALL DRAWNPLOT
150 PRINT "SIX MINUTES PLEASE..."
160 F=F+1 :: W=RND*360 ! NO COLOUR
170 PRINT "PLEASE WAIT FOR CHIMES"
180 CALL LINK("GCLEAR")
190 FOR T=0 TO 360
200 M=COS(F*T*Z)*R :: N=SIN(G*T*Z)*R
210 IF W>360 THEN W=0
220 O=COS(G*W*Z)*R :: P=SIN(F*W*Z)*R
230 REM PLOTS:
```

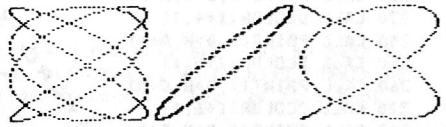
TRITON XB

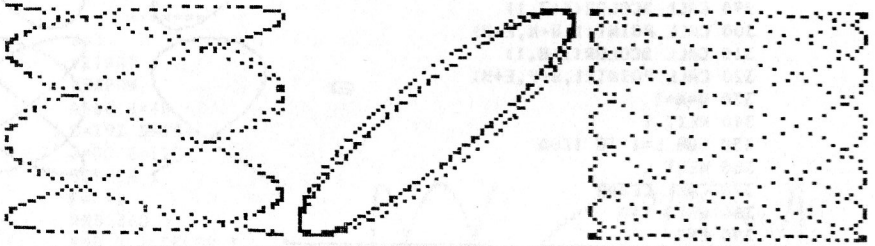
```
240 CALL LINK("MOVE",A+P,D+O)
250 CALL LINK("DRAW",A+P,D+O)
260 CALL LINK("MOVE",A+M,B+N)
270 CALL LINK("DRAW",A+M,B+N)
280 CALL LINK("MOVE",C+M,B+O)
290 CALL LINK("DRAW",C+M,B+O)
300 CALL LINK("MOVE",C+P,D+N)
310 CALL LINK("DRAW",C+P,D+N)
320 CALL LINK("MOVE",E+O,B+N)
330 CALL LINK("DRAW",E+O,B+N)
340 CALL LINK("MOVE",E+M,D+P)
350 CALL LINK("DRAW",E+M,D+P)
360 W=W+1
370 NEXT T
380 CALL CHIMES
390 PRINT "PRESS E FOR NEXT"
400 CALL LINK("MOVE",90,90)
410 CALL LINK("LABEL","E)xit")
420 FOR T=1 TO 900 :: NEXT T :: CALL SOUND(3,3000,30)
430 CALL LINK("SHOW")
440 CALL LINK("MOVE",90,90)
450 CALL LINK("LABEL","      ")
460 CALL LINK("GDUMP","PIO.CR")
470 CALL LINK("GCLEAR")
480 CALL CLEAR
490 GOTO 130
500 END
```

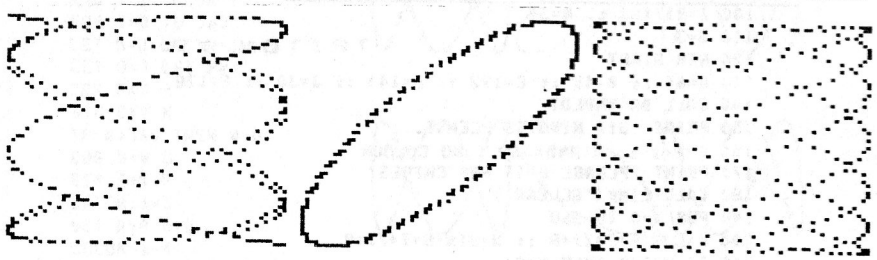












FRACTALS:

We have in our disk library a program FRACTAL EXPLORER which allows you to plot and optionally print sections of the MANDELBROT SET, a specific form of Fractal Graphic.

Fractal graphics are produced by repetitive iteration - constant repetition of a formula which modifies a value it has just modified. The Mandelbrot and Juliet Sets are specific popular equations which produce interesting graphics- no matter how much you magnify a portion of the picture new detail keeps appearing.

Readers of old may know that I have a habit of purchasing the first issue of just about every magazine going... this time I have really triumphed by obtaining Issue -1 (Release 7!) of Fractal Report, a magazine which is intended to look at the various forms of fractals. Issue -1 gave a short program, slightly modified in Issue 0, which produces interesting graphics, and I have given these listings below.

Note how relatively simple the repeated formula is- and then see how detailed the graphics are! The listings are in Myarc XB but can be modified for other languages which allow bit map graphics. Variables x and y are initially set at the plot starting point- see how small variations of these can modify the plot.

Variable a modifies the y axis and variable c modfies the x axis- variable b is a constant used in the formula, which modifies only x. The y plot is modified by the x value also.

The multiplier in the POINT command can be modified to produce a quick pattern which does not show later larger detail (high value) or to produce a pattern only after a long time(low value). A value of 10 seems about right for most plots.

Allow at least 30 minutes for a pattern to begin to stabilise. Few patterns will show much change after an hour (in Myarc XB). A pattern which appears to have stabilised may suddenly explode in a plague of measles....

The ON ERROR allows off screen plotting without crashing!

If you are interesteed in FRACTAL REPORT- 20 pages, A4, intended to be about bi-monthly, and with a tiny circulation, maybe smaller than OUR membership! the cost is Ten Pounds for 6 issues (UK), Thirteen pounds overseas, for six issues, from:

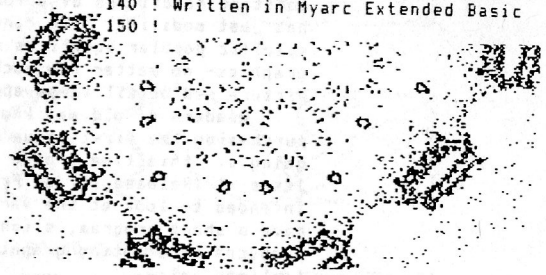
Reeves Telecommunications Laboratories Ltd.,
West Towan House, Porthtowan, TRURO, Cornwall, TR4 8AX.

Try experimenting by small changes to the variables a,b,c,x,y and also the formula for X, possibly even Y, as well as the scale multipliers. Let me know if you find an interesting pattern!

```
100 ! ALGORITHM BY DR BARRY MARTIN
      ASTON UNIVERSITY
      110 ! Published in The Armchair Universe
      A K Dewdney 1988
```

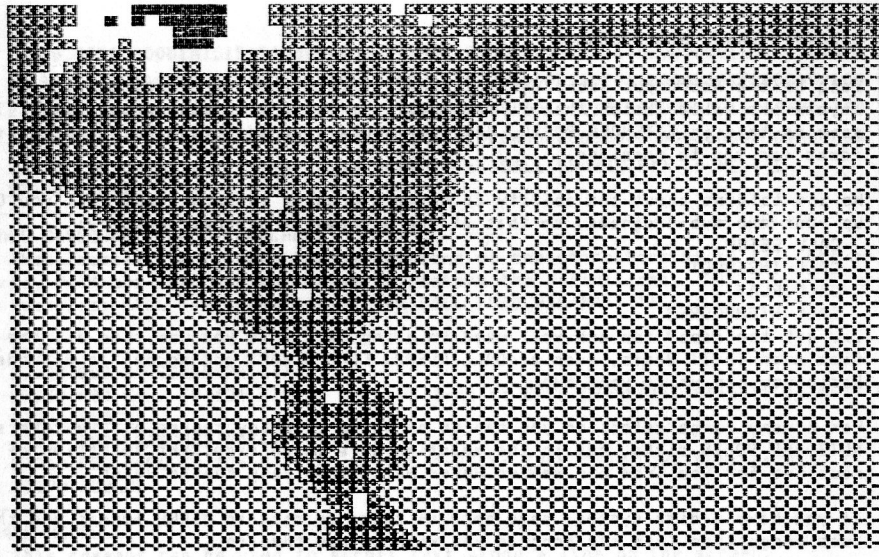
```
 160 ON ERROR 280
 170 CALL GRAPHICS(3)
 180 a=1.01 :: b=1 :: c=0.9
 190 REM
 200 x,y=1
 210 REM
 220 CALL POINT(1,INT(x*10+95
 ),INT(y*10+125))
 230 REM
 240 xx=y-SGN(x)*(ABS(b*x-c))
 ^0.5
 250 yy=a-x :: x=xx :: y=yy
 260 GOTO 220
 270 STOP
 280 ON ERROR 280 :: RETURN N
 EXT
 290 END
```

```
120 ! Extracted from
Fractal Report
Issue -1 April 1989
130 ! For TI99/4A by Stephen Shaw May 89
140 ! Written in Myarc Extended Basic
150 !
```



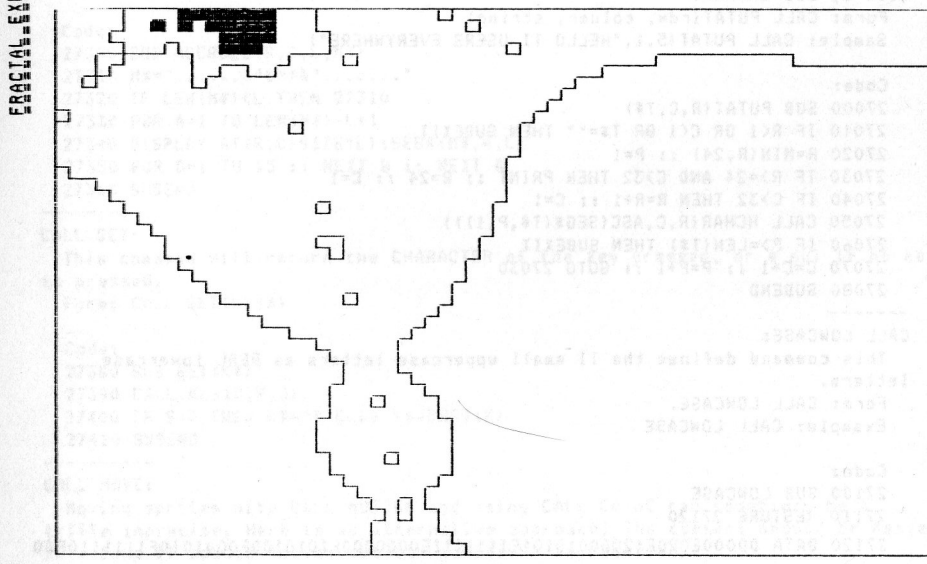
```
! REVISION TO FRACTAL          PROGRAM
! USING SQR INSTEAD OF        ^0.5
! ORIGINAL PROGRAM             John de Rivas                Revised by
      Simon N Goodwin              6.12.88  Rev 2.1
! Based on an algorithm      by Dr Barry Martin of        Aston University,
    Birmingham
! Myarc Extended Basic       version by Stephen Shaw      1st May 1989
!
ON ERROR 250
CALL GRAPHICS(3)
A=1.01 :: B=1 :: C=0.90
X,Y=1
REM
CALL POINT(1,INT(X*10+95),INT(Y*10+125))
XX=Y+SGN(X)*SQR(ABS(B*X-C)) :: Y=A-X :: X=XX
GOTO 210
STOP
ON ERROR 250 :: RETURN NEXT
END
```

```
! REVISION TO FRACTAL          PROGRAM
! USING SQR INSTEAD OF        ^0.5
! ORIGINAL PROGRAM             John de Rivas                Revised by
      Simon N Goodwin              6.12.88  Rev 2.1
! Based on an algorithm      by Dr Barry Martin of        Aston University,
    Birmingham
! Myarc Extended Basic       version by Stephen Shaw      1st May 1989
!
ON ERROR 250
CALL GRAPHICS(3)
A=1.01 :: B=1 :: C=0.90
X,Y=0
REM
CALL POINT(1,INT(X*10+95),INT(Y*10+125))
XX=Y+SGN(X)*SQR(ABS(B*X-C)) :: Y=A-X :: X=XX
GOTO 210
STOP
ON ERROR 250 :: RETURN NEXT
END
```

Beginning Real Value : -1.941981993 Length of Side : .9E-08

Beginning Imag Value : -0.000279330 Filename : KISS



Beginning Real Value : -1.941981993 Length of Side : .9E-08

Beginning Imag Value : -0.000279330 Filename : KISS

EXTENDED BASIC SUB PROGRAMS

Long before Acorn put sub-program capability into the BBC-Micro, and told anyone who would listen that it was the first Basic with that capability, TI gave us this in EXTENDED BASIC. Not many users take advantage but here are some ideas for you to consider.

We are talking about the ability to write a program in such a way that you CALL up your own sub-programs, so that at the extreme as program could be:

```
  CALL SETUP
  CALL INSTRUCT
  CALL PLAY
  CALL HIGHSCORES
```

... get the idea? You are well used to using CALL's as you use them all the time even in TI Basic, such as CALL CLEAR, CALL HCHAR, and so on! In Extended Basic you can write your own.

For a very large selection you can do no worse than buy copies of Jim Petersons NUTS AND BOLTS disks, but in the meantime here is an excellent selection of routines for you from our member Peter Hutchison- many thanks Peter.

If you have a disk system, save each of these on disk in MERGE format and then just merge them into any program you wish to use them in.

CALL PUTAT:

This command uses the whole screen (32 x 24) rather than the limited 28x24 used by DISPLAY AT.

Form: CALL PUTAT(row, column, string)

Sample: CALL PUTAT(5,1,"HELLO TI USERS EVERYWHERE")

Code:

```
27000 SUB PUTAT(R,C,T$)
27010 IF R<1 OR C<1 OR T$="" THEN SUBEXIT
27020 R=MIN(R,24) :: P=1
27030 IF R>=24 AND C>32 THEN PRINT :: R=24 :: C=1
27040 IF C>32 THEN R=R+1 :: C=1
27050 CALL HCHAR(R,C,ASC(SEG$(T$,P,1)))
27060 IF P>=LEN(T$) THEN SUBEXIT
27070 C=C+1 :: P=P+1 :: GOTO 27030
27080 SUBEND
```

CALL LOWCASE:

This command defines the TI small uppercase letters as REAL lowercase letters.

Form: CALL LOWCASE.

Example: CALL LOWCASE

Code:

```
27100 SUB LOWCASE
27110 RESTORE 27120
27120 DATA 00000E020E120D0010101E1111111E0000000F1010100F0001010F1111110F00
27130 DATA 00000E111E100E00060908C0B0B0B0000000E11110F010E10101E1111111100
27140 DATA 04000C040404040E020002020202040410101214181412000C04040404040600
27150 DATA 00001A1515151100000016090909090000000E1111110E0000001E11111E1010
27160 DATA 00000F11110F0101000016191010100000000F100E011E000B081E0B0B090600
27170 DATA 0000121212120D0000001111 0A0A040000001111151 50A000000110A040A1100
27180 DATA 0000111111 0F011E00001F020408 1F0000000000000000000000000000000000
27190 FOR C=97 TO 121 STEP 4 :: READ P$ :: CALL CHAR(C,P$) :: NEXT C
27200 SUBEND
```

CALL SAVECHAR / CALL LOADCHAR:

These commands will save the definitions of the characters 96 to 127 into a array PAT$ and then use the array to restore the definitions.

Examples: CALL SAVECHAR(PAT$()) and CALL LOADCHAR(PAT$())

Code:

```
27220 SUB SAVECHAR(PAT$())
27230 FOR C=96 TO 124 STEP 4 :: EL=C/4-23 :: CALL CHARPAT(C,P$(EL)) :: NEXT
27240 SUBEND
27250 SUB LOADCHAR(PAT$())
27260 FOR C=96 TO 124 STEP 4 :: EL=C/4-23 :: CALL CHAR(C,P$(EL)) :: NEXT C
27270 SUBEND
```

CALL HSCROLL:

This command can be used to scroll text along a line on the screen.

Form: CALL HSCROLL(row, column, length_displayed, text$)

Sample: CALL HSCROLL(5,9,10,TEXT$)

Note: Text$ is limited by the system and the code below to a length of 240 chars!

Code:

```
27300 SUB HSCROLL(R,C,L,M$)
27310 M$="......."&M$&"......."
27320 IF LEN(M$)<L THEN 27310
27330 FOR A=1 TO LEN(M$)-L+1
27340 DISPLAY AT(R,C)SIZE(L):SEG$(M$,A,L)
27350 FOR B=1 TO 15 :: NEXT B :: NEXT A
27360 SUBEND
```

CALL GET:

This command will return the CHARACTER of the key pressed, or a nul if no k is pressed.

Form: CALL GET(KEY$)

Code:

```
27380 SUB GET(K$)
27390 CALL KEY(0,K,S)
27400 IF S=0 THEN K$="" ELSE K$=CHR$(K)
27410 SUBEND
```

CALL MOVE:

Moving sprites with CALL MOTION and using CALL COINC can sometimes be a trifle imprecise. Here is an alternative approach! The command should be nest in a loop if smooth motion between positions is required.

Form: CALL MOVE(sprite, updown, leftright)

Sample: CALL MOVE(1,0,2)

```
 Code:
 27440 SUB MOVE(S,R,C)
 27450 IF S<1 OR S>28 THEN SUBEXIT
 27460 CALL POSITION(#S,RW,CL) :: NR=RW+R :: NC=CL+C
 27470 NR=MIN(NR,256) :: NR=MAX(NR,1)
 27480 NC=MIN(NC,256) :: NC=MAX(NC,1)
 27490 CALL LOCATE(#S,NR,NC)
 27500 SUBEND
----------
```

CALL REPLACE:

This command replaces a part of a string with another.

Start is the position in the string to be changed where the new TEXT$ is to be inserted and LENGTH is the number of characters to be replaced (eg removed):

An example to clarify matters:

To change "12ABCD789" into "123456789":

where C$="12ABCD789":

CALL REPLACE(C$,3,4,"3456")

```
Form: CALL REPLACE(startstring$, start_pos, length, insert$)

Code:
27540 SUB REPLACE(T$,C,L,R$)
27550 IF S<1 OR S>LEN(T$) OR L<1 OR S+L-1>LEN(T$) OR T$="" THEN SUBEXIT
27560 IF LEN(R$)>L THEN R1$=SEG$(R$,1,L) :: GOTO 27580
27570 IF LEN(R$)<L THEN R1$=R1$&RPT$(" ",L-LEN(R$)) ELSE R1$=R$
27580 F$=SEG$(T$,1,S-1) :: L$=SEG$(T$,S+L,LEN(T$)-(S+L-1))
27590 T$=F$&R1$&L$
27600 SUBEND

=======END======
```

REVIEW:

SUPER EXTENDED BASIC by TRITON. Module.

Availability: TexComp, Tenex, etc.

Price: Around US$50 plus p&p.

This is not a particularly new product, carrying a copyright date of 1987, but I have only just bought one, and as no-one else seems to have reviewed it, here goes...

This is a standard beige module, and it replaces TI Extended Basic, with which it is compatible. New and altered features are listed below...

CALL VERSION returns 120. CALL INIT is not required if you wish to CALL LOAD into the scratch pad ram addresses, and does not transfer unwanted data to 32k ram, as TI XB does!

LIST now enables printer output to be any width you wish, 28 to match screen. I found this useful for debugging a members program typed in from a magazine with a 41 column listing!

PERMANENT and RESEQUENCE have been deleted as no-one seems to use them, RES is still available and has been modified to enable you to resequence a PART of a program. You can also move, copy or delete blocks of lines. Resequencing or moving blocks will amend all line references throughout the program.

TRACE can now be sent to a printer.

The standard cursor is now an underline, and eight new cursor controls are available, using ESDX with FCTN and SHIFT, or with CTRL.

New calls...

CALL ALL quickly fills the screen with a designated character;

CALL ALOCK, CALL SHIFT, CALL FCTN and CALL CTRL all return a 0 or 1 depending on whether the relevant key is pressed- CAUTION' there is a "bug" whereby pressing the FCTN key causes the other CALLs to SOMETIMES give false return values!

CALL CHIMES, CALL BEEP and CALL HONK may impress you...

CALL CLOCK and CALL CLKOFF give you the usual interupt driven clock, in the top right hand corner, which assumes 60 interrupts per second and so runs slow outside the USA. The clock can be set/reset with a CALL LINK.

CALL CLSALL will close ALL open files (handy).

CALL COLORS will quickly change the colours of ALL character sets.

CALL GOSPRT and CALL STSPRT will stop and start sprite motion, allowing you to set up a multiple-sprite image which does not tear apart as it starts moving.

CALL GOTO and CALL GOSUB allow you to use numeric variables for the line numbers- I really dont like this idea at all at all at all...

CALL RESTORE also allows numeric variables to be used for the line number.

CALL KEYS is a really nice one. Let's look at an example:

```
  OLD TI XB:                      TRITON SXB:
 100 CALL KEY(0,A,B)              100 CALL KEYS("ESDX",B)
 110 IF B<>1 THEN 100
 120 B=POS("ESDX",CHR$(A),1)
 130 IF B<1 THEN 100
      NOTICE ANY DIFFERENCE...
```

CALL NEW and CALL BYE are fairly obvious! CALL RUNPROG allows the use of a string variable.

CALL CAT to obtain a disk directory FROM COMMAND MODE ONLY is very useful.

CALL PEEKV and POKEV read and write VDP ram, while CALL PEEKG reads GROM. There is also a POKEG should you have a module with GRAM (know of any???).

CALL QUITON and CALL QUITOFF fairly understandable...

CALL SCROFF and CALL SCRON turn the screen display on and off.

In addition, IF you have 32k ram, you can access a bit-map graphic utility, which is Quality Software's DRAW N PLOT, actually built into the module. Set up is a little awkward as you must use CALL FILES(2) rather than the default (3), but otherwise quite easy.

CALL DRAWNPLOT sets it up, and CALL LINK("GCLEAR") sets up memory for you.

You can then construct a picture in a pad area, using CALL LINK's to MOVE, DRAW, CIRCLE, SQUARE, LABEL, and then move the picture from pad to screen with SHOW.

OR you can use your joystick to draw a picture by linking to EDIT, which gives a number of single-key press commands for clearing the screen, inputting text, drawing lines, squares and circles, filling shapes with black, toggle write/erase. From both SHOW and EDIT exit is by pressing Key E.

Pictures can be dumped to printer in two sizes- manual error here. Don't use "PIO" as suggested, but the more normal graphics "PIO.CR".

Pictures can also be saved and loaded to disk.

EXTRA EXTRA EXTRA... READ ALL ABOUT IT...
It is NOT mentioned in the manual, but the disk files are compatible with TI Artist, and you can scan a disk of TI Artist pictures (print them even) without loading any external programs. Here is the SXB program to do that:

a. Set up in command mode:

```
CALL FILES(2)
NEW
CALL INIT
CALL DRAWNPLOT
CALL LINK("GCLEAR")
```

b. Now run program:

```
100 DISPLAY AT(4,2)ERASE ALL:"TI ARTIST FILE NAME?"
110 DISPLAY AT(6,6):"DSK1.        _P"
120 ACCEPT AT(6,9)SIZE(-10):A$
130 A$="DSK"&A$&"_P"
140 CALL LINK("GLOAD",A$)
150 REM PRESS E TO EXIT
160 CALL COLORS(2,15)
160 PRINT "PRESS S TO PRINT SMALL PIC"
170 PRINT "PRESS L TO PRINT LARGE PIC"
180 PRINT "PRESS C TO CONTINUE"
190 CALL KEYS("SLC",A)
200 ON A GOTO 300,400,500
300 CALL LINK("GDUMP","PIO.CR"):: GOTO 500
400 CALL LINK("LDUMP","PIO.CR")
500 CALL LINK("GCLEAR")
510 GOTO 100
520 END
```

NOTE: The DRAWNPLOT machine code is transferred from the module to low mem - the 8k area of the 32k ram- so there is little room for other machine code routines to co-reside. The actual plotting takes place in hi-mem (the 24k area used by your XB program) so there is only some 17k available for your XB program.

In practice, I have found that when using a SMALL XB program to do some heavy plotting, there has been interference with VDP RAM, which is not supposed to be used until you transfer the image with SHOW. At the lowest level this interference took the form of odd recolouring or character redefinitions, but at the extreme, frame hold was lost and the console locked up.

I encountered no problem using EDIT or GLOAD, only in producing hi res graphics from a running XB program using the LINKs provided, and then only after heavy repetitive use.

Provided you are not using GSAVE, it appears to be an adequate solution to insert a CALL DRAWNPLOT (not documented but you CAN use it in a running program),in between each plot in order to clear this problem, but if you use GSAVE, I have not yet found a solution, and would welcome suggestions! As it stands, if you use an XB program to plot a picture then GSAVE it, you really need to restart the program for a further plot, otherwise the XB screen will corrupt and you may lock-out.

A little extra still... when you press 2 for SXB and let go, auto-load is still operational, but if you hold 2 down, you bypass autoload, which can be a real timesaver!

What do I think of SXB? It is a powerful programming tool, with its amendment to TRACE and LIST and its MOVE, DELETE and COPY procedures. The ability to loo at TI Artist pictures (and print them) is also very handy.
The ability to get a quick ON SCREEN disk directory without loading any other program is also very useful.

ALL IN ALL- at less than half what I paid for my TI XB- a very useful programming tool.

Authors: D.C.Warren, Danny Michael, Mike Dodd, and the graphics routines by M. Shillingburg (and of course TI).

Review by Stephen Shaw. March 1989.
==========

```
 TTTTT  EEEE   SSS  TTTTT
   T    E     S       T
   T    EE     SS     T
   T    E        S    T
   T    EEEE  SSS     T
```

Here is a little test presented in our last issue, which drew a total of FOUR entries- guess you don't really want me to take up room with these things huh! Entries came in as follows: three in basic, two in c99, and one in Forth.

First the question:

TEST #1:
Here is an example first:
1. Take a four digit number (3025)
2. Separate it into two halves, of two 2-digit numbers (30 and 25)
3. Add these two numbers (30 + 25 = 55)
4. Square the result (55 x 55 = 3025)
5. And we have our first number!!

REQUIRED: A PROGRAM (in any language) which will print out (to screen) every four digit number for which this is true.

This is a programming test in which the problem is spelt out. Now you must put together the best problem solving algorithm you can and program it!!! If you find BASIC easy, send in your Basic entry then try to do it in another language- you have several to try: XB, Forth, Pilot, Lisp, Logo, Assembly, c99, TP99, what have you?!

Note that under REQUIRED you were not required to follow the algorithm given, merely to obtain answers which conformed to it!

The BASIC language is often thought of as slow, and TI versions especially so. If you consider that switching from a 4Mhz computer to a 12Mhz computer will- all other things being equal- give you a speed increase of a mere 3x, it is interesting to note that between the fastest and slowest submission, there wa a time difference exceeding 1300x.

Firstly, taking the algorithm as given, there is an obvious choce of putting the four digit number into a string and splitting it with SEG$- SO:

```
  For I=1000 TO 9999
     N1$=SEG$(STR$(I),1,2)
     N2$=SEG$(STR$(I),2,2)
```

giving us the two separate two digit numbers as specified. Nothing wrong with that- except that string handling is really too slow for math work. Better to do without it.

Instead of starting from the four digit number, we can work from the intermediate number of step 3 above- this number, by specification:

a. is an integer
b. has two digits.
c. when multiplied by itself gives a four digit number.

Looking at our number 55 as given in the example:

The target number at the end is 55 x 55.

To obtain the first two digits of the four digit result:

```
   30 = INT ( 55*55/100 )  [work it out!].
```

The LAST two digits of the four digit result can be obtained:

```
   25 = 55*55 - (30*100)  [try it!]
```

Try looking at this code:

```
FOR I=11 TO 99
Z=I*I
X=INT(Z/100)
Y=Z-(X*100)
IF X+Y=Z THEN PRINT Z
NEXT I
```

Code similar to this was submitted by member Trevor Taberner.
It yields the result in a mere 3.87 seconds, when programmed in a slightly more optimised form, which I have not given here for clarity.

The slowest submission took some 50 minutes, using strings.

The fastest? Yes, there is one faster way...

Look at the specification for that intermediate number from step 3. That two digit number must be between 32 and 99, so we can cut down on the looping if we can limit ourselves to values between these, and work from the intermediate number!

Now it is a LONG time since I studied math, but I am assured that the math formula can be rearranged as follows, and certainly this code does yield the right results:

```
 FOR N=32 TO 99 :: IF N*(N-1)=99*INT(N*N/100) THEN PRINT N*N
 NEXT N
```

And this runs in a mere TWO SECONDS!! Due to the complex math involved, I don't think many mebers would fall into this solution! but the 3.8 second solution is not too difficult to follow, merely requiring a little strategy in your approach to the problem.
Now you have the fastest Basic result (anyone beat it?) the TEST remains open for ALL other TI languages!! Can you beat the BASIC time? It doesnt matter if you take a lot longer- lets see some more entries for other languages!

In view of the low input from members I shall not set a test this time. If you want another one, I shall need at least six letters (from different people!) asking for it!
We have I think demonstrated that BASIC need not be as slow as you may think it is... END

DISK LIBRARY REPORT...

DISKS ADDED since last issue of TI*MES:

Remember- just send along three disks and return postage for full library catalogue on disk, which has a NEW/DISKS file for your attention. Or send SAEs for a printed copy of "new disks" about every 2 or 3 months.

>MCOP1. Has added PANIC, which appears very like Junkman Junior, a good game in which you collect treasures while dodging bullets.

>RLE26, FULL- Apgirl, Aslan, Birds, Black, Boot, Carol, Chairie, Cover, Ingrid, Kymberly, Nagel and White Christmas, plus Version 2 of MAX-RLE: this version will save a 2-colour pic to TI ARTIST format without wasting time with a _C file. EA load.

>RLE/27 full- Cat1, Cat2, Cat3, Clipart 1,2,3 and 4- each have 6 small pics, Exchange, Girl, Ingrid/2, Pam, Sec, Smurf Love, and 4 Tiny Tigers.

>GAMES 19 is now full, with added: RAT INFESTATION, an interesting game of avoidance, and TI-TRIS, an unusual and original strategy catching game which once you have worked out the basic strategy becomes slightly habituating. Most playable XB program I've seen for a while...

>UTIL22. 307 sectors used so far. A program to print cassette labels; a sector editor/utility by Guy Boudreault which has some interesting features such as sector move/copy; KWIKFONT by Wayne Stith, which is a machine code character definition program, together with a utility to move Kwikfont data files into a CHARA1 program file; a disk speed tester for Myarc controllers ONLY, and two LOGO utilities: One allows you to dump to PIO a picture of the definitions of tiles and characters (uses 8x8 or 16x16 printer characters); and- when you load a LOGO procedure, ever wondered what to type to make it go? Now a utility to make your LOGO files self-starting!!! And a machine code utility to use in your XB programs, two LINKs to quickly restore lower case letters and to define upper case letters as the BIG title screen character set. You can also use the separate GPL/DSRLNK routines in your own m/code utilities for XB. Four "1-Liner" programs inc disk directory display, dv80 reader, word counter and a graphic display; and another small but SUPERB program, this time from Holland, SQUEEZER, which will reduce your TI Artist pictures to quarter (area) size (half size linear), in a very intelligent manner, makes the American programs look silly! A MUST for TI Artist owners!

>FUNLWEB Version 4.13..(FEB 89 REVISION). .TWO DISKS...can it really be 3 months since Vn 4.12!!! Only slight modifications this time, to make it more usable with HRD and AVPC cards, and a neater printout through SD. If your present version is 4.0 or earlier, get this one!!

>MCQR1 now has the docs for RIVER RESCUE.

In the last list I advised of a disk called "McGovern M-Code Tutorial Disk", which is clearly too long a name so it is now called "TONY_MCG1". This disk contains the 80 column version of the Funlweb Editor, and works with the Dijit and Mechatronic 80 column cards as well as the Geneve.

>TONY_MCG2: From Tony himself comes a review of the Dijit 80 column card, and a new ROS for the HRD, which is more friendly to Funlweb- and while nice for owners of HRD+Funlweb, it is essential if you also use an AVPC card. Not by Tony but added to the disk are an article on using joysticks without worrying about alpha lock; a review of Fortran 99, and a long article on fault finding in the console, with suggested cures for common faults (assumes you have a schematic and test meter).

SPECTRUM/4: Another eleven Spectrum program screens with a converter to TI Artist format! Target Renegade Rudy, Pssst, Raid over Moscow, Bubble Bobble, Driller, Thundercats, CoConut Capery, Knight Law, the RLE Tiger IN COLOR and two unidentified pics.
NOTE: It has been brought to my attention that the SPECTRUM programs will not function on Model 3 consoles, that is, the ones which give odd characters with some early Atarisoft modules such as Picnic Paranoia.

COMIC SHOW Vn 4.0 has had an extra demo added to the disk, an animated version of a screen from the Spectrum program Pyjamerama (this new demo will not load directly from Funlweb- use the loader on the disk!).

>5EDAS-DEF4 has had added a new Dutch program, BIRDIE SLANG or Dutch Snake, in which you guide an ever lengthening snake around a maze trying not to bump into yourself. Starts off very easy.

MACFLIX DISKS: The disks listed below are for use with the COMMERCIAL program MAC FLIX sold by Genial Software (further details for SAE!) which is REQUIRED to use these disks. A SuperSpace module or similar is a help.
CARE: Many of these disks are somewhat rude and you may wish to avoid them. It's your choice.
Disks marked (U) are generally clean.
File names marked % are over 90 sectors and will give a small degree of corruption at the bottom of the picture if a Super Space is not used. Files marked %% are over 130 sectors and will give some corruption even with Super Space.

>MACFLIX1. This disk requires the use of the commercial program MACFLIX. It contains three screens of clip-art and one girly pic.

>MACFLIX2. Four pics of girls, H&E standard.
Irene, Irene1, Judy and Kerstan.

>MACFLIX3. BABYRUTH, %BIGSEC, CAROL, COSMIC, DRUSILL1

>MACFLIX/4. DEBBIE1. %DEEFRONT. DOMINATE. DOMINIQ.

>MACFLIX/5. ELLY1. EXPECTNT. RRATED8. RRATED9.

>MACFLIX/6. %%BROOK. %%CHAIRIE. COVER.

>MACFLIX/7. %BEDNUDE. %INGRID2. %%PAM.

>MACFLIX/8. ANATOMY. BLAKHAIR. BUSTY2. CRIXON. DENISE. ORGY(6 topless girls, nothing too heavy).

>MACFLIX/9. (U) EIGHT PICTURES OF FELINE CATS. Nice!

>MACFLIX/10. AILEEN1. GRLIB11A,B,C- three files of clip art. File C is corrupted and only 15 small pics are usable.

>MACFLIX/11. %DUSTY. DVGIRL01. DVGIRL03. %GIRL2.

>MACFLIX/12. BOOT. EXER3. GRAPES. SLAVE. TOPLESS.

>MACFLIX/13. INGRID1. MADONMOD. RRATED16. RRATED17. SHOWER/MAN (yes, one naked man in the shower).

>MACFLIX/14. (U). BILL THE CAT; CUTTER; MOCK MAC DESKTOP SCREEN; EXCHANGE; MOEBIUS (Escher pic); and the FULL size TIGER.

>MACFLIX/15. (U) APPLE GIRL(sexist but in lingerie); BEST-SS; BIRDS ; BMW (logo). BRAIN (ugh).

>MACFLIX/16. (U). AIRFORCE. AMERICA. APE. APPLE. BI-BOMBER. COINS.

>MACFLIX/17. (U). CRYING SMURF. DRIVING SMURF. EXPIRED (parking meter!); KIRK (super Star Trek, with Uhura); L CARTER, Mickey Mouse, Brooke Shields.

>MACFLIX/18. (U). CARSON. FARSIDE. FERRARI. HONOR. SMURF LOVE. JESSIE. K TURNER(super pic).

>MACFLIX/19. CARS. COKE. %CLIPART. RRATED15.

>MACFLIX/20..BATMAN. BEATLES. "COUNTACH". DONNA. EXPOSE.

SPECIAL OFFER: All 20 Macflix disks, in one order, on disks supplied by me, for 30.00 instead of the usual 40! (No reduction if you send the disks!).

XBMOD5: More "hidden code" XB programs for fast trouble free loading. On this disk are: ASTROFIGHTER, CONNECT 4, FISH(Angler Dangler), HENHOUSE, SI NICK, TOPPER (still with the scoring bug) and the EdAs version of Space Station Pheta by J Bunting.

XBMOD6: more of the same format: CANNONBALL BLITZ; COMPU-CAR; ET AT SEA(no need for the EdAs module this way!); J FREDDIE FROG by JP Hoddie; STARTRAP; and two new ones: TI-MAZOGZ, another PacMan variant, and GRAPHICS, a demo put together by German firm APESOFT.

TI MAILING LIST: the original disk based database by Texas Instruments, item PHD5001 started life at US$55! NO DOCS but pretty easy to pick up without. A remarkable if slightly inflexible product well worth looking at. Really shows what TI BASIC is capable of when you try hard enough! A good classic, aged well.
(DOCUMENTATION WILL BE ADDED, ON THIS DISK OR ANOTHER,FOR THE NEXT LIST, TIME PERMITTING)

CAVANAGH/C: For C programmers, a complete C99 library file for use with RAG SOFTWAREs LINKER program (available from the group disk library), and a revised sample CONTROL file for the same utility. Plus Vn 2.5 of the Wible optimiser, slightly amended, in both C and Program format, plus a new STRING handling library made up from all that has appeared before, and a graphic demo program in C.

TI-PWRITER plus NAMEIT. A word processor and a database, which originally would have cost you US$70 for the two! (At this time TI Writer was US$75).The word-pro is cassette compatible. NO DOCS but see sample files on disk. Fairly easy to pick a usable idea of operation up. Database is slightly limited but includes a mail-list capability. Word Pro has availability of all printer codes, justification, centering, margins and so on.

GAMES20 is far from full just yet! but has PARATROOP, and two from TX Software, FOUR IN A ROW (Connect 4) and GERMAN WHIST (play against computer, 99 starting hands). 85 sectors used SO FAR...

TEACH YOURSELF BASIC from TI- only 9 of the 10 lessons, cos thats all the disk would hold.

TONY_MCG2 has a new optional ED file for Vn 4.13, which allows you to use CTRL Z as an optional TAB key, useful if like me you have smallish hands and find FCTN 7 a bit of a two handed effort! NO other difference.

TONY_MCG3 has one 60 sector text article on it by Tony, discussing the various forms of DSR links and their operation. NO code, this is for information only but may help assembler authors.

>MULTIPLAN SYLK CONVERSION DISK has added a new Multiplan utility: TIMP PRINT Vn 1.6 by J&B Mathis, which allows you to transfer printer commands from a supplied external file to a blank cell in your spread, allowing for instance some cells to be italic, emphasised etc etc. Mainly for Epsons but several other printers supported, and author will provide custom command files on request.

>UTIL12 has now been filled with another Speech DEMO program, which allows you access to the speech from MOONMINE at the press of a key. Speech synth required.

>POT POURRI from Harrison Software, copied with consent (permission granted to this group does not pass to its members or other groups!) this is another fine collection of music on TWO DISKS with a total of 28 pieces on them by: Morley, Dauquin, Purcell, J S Bach, Handel, Wasner (no not a miss-spelt Wagner), CPE Bach, Mozart, Martini, JCF Bach, JC Bach, Dittersdorf, Haydn, Beethoven, Hummel, Chopin- and one of the pieces is the Jawbreaker theme. TWO DISKS!!!

>UTIL20 is now FULL with the addition of a superb machine code version of LIFE which uses a universe of size 40x24, and operates very fast indeed. Written in c99 by Mike Cavanagh.

>FRACTAL EXPLORER now into Version 3.0, has been speeded up a little, and has a new "border" print facility to just print the edges between shades. Also the math has been improved to ten decimal points.TWO DISKS PLEASE.

>UTIL21- Archiver is upgraded to Version 3.03, dated 12th April 1989. New improvements include ability to print DV80 files to printer, and screen colour change to indicate work complete or errors.

>DSKU by John Birdwell is upgraded to Vn 4.12- the list of changes between 4.0 and 4.1 runs to 130 lines! but I can't find a list of changes between 4.1 and 4.12... we have a more recent version anyway.

>DSKU/M Vn 4.12... you must have this version if you have a Myarc disk controller but do not have either the 80 track Eprom in it, or a Geneve.

>ASSEMBLY ROUTINES BY COOK AND JOHNSON: TWO DISKS. Many spelling errors in the documentation make me feel uneasy with this (Identicle, Charcters) but it is nice to see colour spelt colour for a change... a considerable collection of small assembly routines for you to incorporate into your own assembly programs. Filenames include BLCLR and BLWPCLR, BLWPHCHAR, DISPLAYAT, INTTOSTRING, TEXT40 and so on.

>PAUL1...by Paul Scheidemantle, his first name makes a better disk name! This disk contains a DISK LABELLER program- Version 2.0, 226 sectors, which will print to 1 and 1.5 inch labels (1.5 inch is 1 7/16) in a variety of styles, one two or three columns across on the same size label. One column allows comments to be added to the listing. Program is to print labels to stick on your disks. Also a small utility on the disk to print a chart of what characters are available in all your TI ARTIST fonts-this requires TWO disk drives.

>PAUL2...by the same author,Two A4 text posters to be printed out using GRAPHX. You COULD convert to other formats, but only GRAPHX will easily print out properly, as true A4 with no visible joins! Text is jokey eg the one about Lucky the dog with missing one ear, one leg, and other bits...

>MAC-LABELS. Its labels time again! A disk of label utilities by Mike and Ed Machonis, for 1 7/16 labels, which produces a variety of effects in a variety of ways. Even two colour labels if you have an Epson 80/85 series printer and buy two ribbons! Includes facility to prepare a disk catalogue on a label, and also to print on paper a function strip for a variety of programs, including custom ones of your own design.

>X. Animated pictures which must not be shown to children, no matter how pythonesque they may be. Please honor this request. This disk may cause offence. You have been warned. It's your choice! NOTE: Payment for this item must be by cheque drawn on the account of the group member, else other satisfactory proof of age supplied.

>RLE/15- I've managed to squeeze a pic of Garfield onto this one.

Is that enough new material for you? Would the other 75% of disk owners not presently using the library consider a new disk or two!

DISK LIBRARY CATALOGUE- send three disks and return postage to:
Stephen Shaw, STOCKPORT, Cheshire, SK4 5AH.

TREASURE TRAIL

by Peter J Hutchinson

Welcome to the new TI Adventure column. I m not an Adventure expert, I ve only just completed Pirate and Adventureland, but I hope to play and complete the entire Scott Adams series!

This column is to pass on hints -and pleas of help- to and from members. Do write- and send an SAE for a direct reply please:

6 Moorlands View, Free School Lane, Savile Park, HALIFAX, HX1 2XQ

(Tel 0422 55857)(Adventures you write are welcome!).

Here are some important tips...

Always MAP your adventure. This is particularly necessary when you are in a maze - Adventurelands maze has just seven locations- the directions do NOT necesarily go in the direction intended!

Always try different verbs- this makes a difference when you meet the hungry bear in Adventureland!

Always save at critical points and in any case fairly regularly. If your next move seems risky, SAVE GAME first then try it out. Then if you botch it you can return to your last healthy point.

You cannot carry everything. Some objects are to be used once and can then be dropped, others you may need to find handy places to store them, and don't forget where you put them.

Always make a list of the objects you find and where you found them.

Write down any messages you are given.

Stuck with PIRATE ADVENTURE?

Stuck in the apartment? esackoob enimaxe.
Can't get rid of a pirate? ekil ll eh gnihtemos mih eviq.
Can't get past the crocodiles? eas eht ni si tahw.
Can't find any keys? tnemtrapa eht yrt.
Can't find second treasure? yretsanom eht ot og.
Can't get past snakes? srekcarc naht rehto ekil.sdrib od tahw.

STUCK WITH ADVENTURELAND?

No where else to go? pmaws eht yrt.
Chigger bites killing you? wodeam ni ngis daer.
Ending up in bog? exa esu, muminim yrrac.
Lamp not lit? eloh eht yrt.
Bees too much for you? wodaem ni ngis daer.
Window stuck? sag yrt
Wasting honey? cigam sti, rorrim eht esu.
Stuck in maze? gur eht esu.
Lava too hot? niaga rorrim esu.
Not got all the treasure? ezam ni sngis daer.
Unable to move bees far? tropsnart retsaf yrt.
Need fish? esu nemrehsif od tahw.

[Contact librarians for Adventure module,tapes and disks.]

TI BASIC PROGRAM.

WONKAPILLAR is written by Mark Sumner, and was commercially released in the UK by Stainless Software. It is one program I do enjoy playing. Key this in and see how you like it! The caterpillar can plant one time bomb at a time! He must not collide with himself or the walls. It is bad luck to blow your head up!!! (Don't worry too much about your body, losing weight may be good for you!). The length of the fuse is determined by how long you hold the space bar down. Move with usual arrow keys. In essence, to escape off the screen you MUST blow up lots of walls! The bomb will remove the square it is on and each of the 8 squares around it (e.g. a 3x3 block).

Can be played in TI BASIC ONLY. Disk owners can play from XB if they add the utility VDPUTIL.

```
1 REM WONKAPILLAR/TI BASIC
100 U=69
110 R=68
120 D=88
130 L=83
140 B=32
150 MEN=3
160 SC=0
170 BON=3000
180 M=1
190 CALL CLEAR
200 CALL SCREEN(2)
210 CALL COLOR(9,5,2)
220 CALL COLOR(10,7,2)
230 CALL COLOR(11,13,2)
240 FOR A=1 TO 8
250 CALL COLOR(A,16,1)
260 NEXT A
270 F$="FFFFFFFFFFFFFFFF"
280 CALL CHAR(96,F$)
290 CALL CHAR(104,"BD7EDBDBF
FBD423C")
300 CALL CHAR(112,"003C7E7E7
E7E3C00")
310 CALL CHAR(120,"0204183C7
E7E3C")
320 CALL COLOR(12,14,2)
330 CALL CHAR(128,"000018 3C7
E3C1800")
340 CALL COLOR(13,12,2)
350 CALL CHAR(136,"004020183
C3C1800")
360 CALL COLOR(14,10,2)
370 CALL CHAR(144,"000202060
60C38E0")
380 CALL COLOR(15,11,2)
390 GOSUB 2150
400 CALL CLEAR
405 BT=7
410 CALL HCHAR(1,3,96,28)
420 CALL HCHAR(3,5,96,24)
430 CALL HCHAR(5,7,96,20)
440 CALL HCHAR(7,9,96,16)
450 CALL HCHAR(14,9,96,16)
460 CALL HCHAR(16,7,96,20)
470 CALL HCHAR(18,5,96,24)
480 CALL HCHAR(20,3,96,28)
490 CALL VCHAR(1,3,96,20)
500 CALL VCHAR(3,5,96,16)
510 CALL VCHAR(5,7,96,12)
520 CALL VCHAR(7,9,96,8)
530 CALL VCHAR(1,30,96,20)
540 CALL VCHAR(3,28,96,16)
550 CALL VCHAR(5,26,96,12)
560 CALL VCHAR(7,24,96,8)
570 CALL HCHAR(11,27,120)
580 CALL HCHAR(11,6,120)
590 CALL HCHAR(10,16,104)
600 CY=0
610 CX=1
620 PY=10
630 PX=16

640 REM KEY
650 BON=BON-10
660 SC=SC+1
670 IF BT>0 THEN 1320
680 CALL KEY(0,K,S)
690 IF K<>U THEN 720
700 CY=-1
710 CX=0
720 IF K<>R THEN 750
730 CY=0
740 CX=1
750 IF K<>D THEN 780
760 CY=1
770 CX=0
780 IF K<>L THEN 810
790 CX=-1
800 CY=0
810 IF K=B THEN 940
820 IF PY+CY<1 THEN 1470
```

```
830 IF PY+CY>24 THEN 1470
840 IF PX+CX>32 THEN 1470
850 IF PX+CX<1 THEN 1470
860 CALL GCHAR(PY+CY,PX+CX,G
)
870 IF G<>32 THEN 1060
880 CALL HCHAR(PY+CY,PX+CX,1
04)
890 CALL SOUND(-50,-7,5)
900 CALL HCHAR(PY,PX,112)
910 PY=PY+CY
920 PX=PX+CX
930 GOTO 640

940 REM PLANT BOMB
950 BT=1
960 CALL KEY(0,K,S)
970 IF K<>B THEN 1020
980 BT=BT+1
990 IF BT=9 THEN 1020
1000 CALL SOUND(-50,-5,5)
1010 GOTO 960
1020 CALL HCHAR(PY,PX,BT)
1030 BY=PY
1040 BX=PX
1050 GOTO 820

1060 REM MAN LOST
1070 IF G>119 THEN 1270
1080 CALL SOUND(250,-2,5)
1090 PRINT
1100 MEN=MEN-1
1110 PRINT "MEN:";MEN
1115 BT=Z
1120 PRINT "SCORE:";SC
1130 FOR A=1 TO 1000
1140 NEXT A
1150 IF MEN<1 THEN 1170
1160 GOTO 1610
1170 PRINT "*********GAME OV
ER**********"
1180 IF SC<=HIS THEN 1230
1190 PRINT : :
1200 PRINT "     * NEW HIGHS
CORE! *"
1210 INPUT "INPUT YOUR INITI
ALS: ";H$
1220 HIS=SC
1230 PRINT "PRESS ANY KEY TO
 RESTART"
1240 CALL KEY(0,K,S)
1250 IF S=0 THEN 1240
1260 GOTO 150
1270 CALL SOUND(-100,440,5)
1280 CALL SOUND(-100,880,5)
1290 CALL SOUND(-100,1760,5)
1300 SC=SC+50*M
1310 GOTO 880
1320 BT=BT-1
1330 CALL HCHAR(BY,BX,48+BT)
1340 CALL SOUND(-50,-1,10)
1350 IF BT>0 THEN 680

1360 REM EXPLOSION
1370 CALL SOUND(-100,110,5,-
5,0)
1380 CALL HCHAR(BY-1,BX-1,32
,3)
1390 CALL HCHAR(BY,BX-1,32,3
)
1400 CALL HCHAR(BY+1,BX-1,32
,3)
1410 IF ABS(BY-PY)>1 THEN 14
60
1420 IF ABS(BX-PX)>1 THEN 14
60
1430 CALL SOUND(300,-5,1)
1440 PRINT "OOPS! YOU BLEW Y
OURSELF UP!"
1450 GOTO 1060
1460 GOTO 640

1470 REM MAZE COMPLETED
1480 PRINT "MAZE";M;"COMPLET
ED!"
1490 M=M+1
1500 IF BON>0 THEN 1520
1510 BON=0
1520 PRINT "BONUS:";BON
1530 PRINT "SCORE:";SC
1540 PRINT "TOTAL:";BON+SC
1550 PRINT "MEN:";MEN
1560 SC=SC+BON
1570 FOR A=1 TO 1000
1580 NEXT A
1590 IF M<9 THEN 1610
1600 M=1
1610 ON M GOTO 400,400,1780,
1780,1620,1620,1930,1930

1620 REM MAZE 2
1630 CALL CLEAR
1640 FOR X=3 TO 32 STEP 2
1650 CALL VCHAR(1,X,96,24)
1660 NEXT X
1670 CALL HCHAR(1,3,96,28)
1680 CALL HCHAR(24,3,96,28)
1690 FOR Y=9 TO 11
```



```
1700 CALL HCHAR(Y,12,32,10)
1710 NEXT Y
1720 CALL HCHAR(4,16,136)
1730 CALL HCHAR(20,16,136)
1740 CALL HCHAR(12,5,136)
1750 CALL HCHAR(12,27,136)
1760 BON=4000
1770 GOTO 590

1780 REM  MAZE 2
1790 CALL CLEAR
1800 FOR Y=1 TO 23 STEP 3
1810 CALL HCHAR(Y,3,96,28)
1820 CALL HCHAR(Y+1,3,96,28)
1830 NEXT Y
1840 CALL VCHAR(1,3,96,24)
1850 CALL VCHAR(1,30,96,24)
1860 FOR Y=8 TO 13
1870 CALL HCHAR(Y,12,32,12)
1880 NEXT Y
1890 BON=3500
1900 CALL HCHAR(6,16,128)
1910 CALL HCHAR(18,16,128)
1920 GOTO 590

1930 REM MAZE 4
1940 CALL CLEAR
1950 FOR X=3 TO 15 STEP 2
1960 CALL VCHAR(1,X,96,24)
1970 NEXT X
1980 FOR X=18 TO 30 STEP 2
1990 CALL VCHAR(1,X,96,24)
2000 NEXT X
2010 CALL VCHAR(1,16,96,48)
2020 FOR Y=1 TO 24 STEP 2
2030 CALL HCHAR(Y,3,96,28)
2040 NEXT Y
2050 CALL HCHAR(10,12,32,10)
2060 CALL HCHAR(12,12,32,10)
2070 CALL HCHAR(11,12,32)
2080 CALL HCHAR(11,21,32)
2090 CALL HCHAR(4,4,144)
2100 CALL HCHAR(20,4,144)
2110 CALL HCHAR(20,29,144)
2120 CALL HCHAR(4,29,144)
2130 BON=5000
2140 GOTO 590

2150 REM TITLE SCREEN
2160 BT=0
2170 PRINT "pppppppppp"
2180 PRINT "       WpNKAPILL
AR"
2190 PRINT "        p"
2200 PRINT "        pppppppp
h"
2210 PRINT : : :
2220 PRINT "       BY M.C. S
UMNER"
2230 PRINT :
2240 PRINT "    (C)1982 PS S
OFTWARE": : :
2250 PRINT "  HIGHSCORE:";HI
S
2260 PRINT "  MADE BY  : ";H
$
2270 PRINT
2280 PRINT : : : :
2290 PRINT "PRESS: S TO STAR
T       "
2300 PRINT "       C TO CHAN
GE CONTROLS"
2310 PRINT "       H FOR HEL
P"
2320 PRINT "       E TO EXIT
 PROGRAM"
2330 CALL KEY(5,K,S)
2340 IF S=0 THEN 2330
2350 IF K=83 THEN 2410
2360 IF K=67 THEN 2420
2370 IF K=72 THEN 2800
2380 IF K=69 THEN 3070
2390 GOTO 2330
2400 GOSUB 2420
2410 RETURN

2420 REM DEFINE KEYS
2430 PRINT : : : :
2440 PRINT "WHICH KEY FOR UP
?"
2450 CALL KEY(0,K,S)
2460 IF S=0 THEN 2450
2470 CALL SOUND(100,440,0)
2480 U=K
2490 PRINT "WHICH KEY FOR DO
WN?"
2500 CALL KEY(0,K,S)
2510 IF S=0 THEN 2500
2520 IF K=U THEN 2500
2530 CALL SOUND(100,440,0)
2540 D=K
2550 PRINT "WHICH KEY FOR RI
GHT?"
2560 CALL KEY(0,K,S)
2570 IF S=0 THEN 2560
2580 IF K=U THEN 2560
2590 IF K=D THEN 2560
2600 CALL SOUND(100,440,0)
```

```
2610 R=K
2620 PRINT "WHICH KEY FOR LE
FT?"
2630 CALL KEY(0,K,S)
2640 IF S=0 THEN 2630
2650 IF K=U THEN 2630
2660 IF K=R THEN 2630
2670 IF K=D THEN 2630
2680 CALL SOUND(100,440,1)
2690 L=K
2700 PRINT "WHICH KEY FOR BO
MBS?"
2710 CALL KEY(0,K,S)
2720 IF S=0 THEN 2710
2730 IF K=U THEN 2710
2740 IF K=R THEN 2710
2750 IF K=D THEN 2710
2760 IF K=L THEN 2710
2770 CALL SOUND(100,440,1)
2780 B=K
2790 RETURN

2800 REM HELP SCREEN
2810 PRINT "   * WONKAPILLAR
 RULES *"
2820 PRINT : : :
2830 PRINT "  WALL    =-> "&
CHR$(96)
2840 PRINT "  SEGMENT =-> p"
2850 PRINT "  HEAD    =-> h"
2860 PRINT :
2870 PRINT "THE OBJECT OF WO
NKAPILLAR   IS TO GUIDE THE
WONKAPILLAR TO ESCAPE FROM 8
 MAZES. "
2880 PRINT "AT FIRST THIS AP
PEARS IMPOSS-IBLE, BUT BY PL
ACING TIME  BOMBS YOU CAN BL
OW YOUR WAY"
2890 PRINT "THROUGH THE MAZE
 WALLS AND  ESCAPE."
2900 PRINT : :
2910 PRINT "THE CONTROLS ARE
 FIRST SET: E=UP, D=RIGHT, X
=DOWN,     S=LEFT, AND
THE SPACE BAR"
2920 PRINT "CONTROLS DROPPIN
G BOMBS."
2930 PRINT "(PRESS ANY KEY T
O CONTINUE)"
2940 CALL KEY(0,K,S)
2950 IF S=0 THEN 2940
2960 PRINT "THE WONKAPILLAR'
S HEAD CAN'T TOUCH ANY WALLS
 OR SEGMENTS OR ITS DOOMED.
 YOU MUST "
2970 PRINT "ALSO BE CAREFULL
 IN THE     PLACEMENT OF YOU
R BOMBS.   "
2980 PRINT : :
2990 PRINT "THE LONGER YOU H
OLD DOWN THE SPACE BAR, THE
LONGER IT   WILL TAKE FOR TH
E BOMB TO GO"
3000 PRINT "OFF (MAXIMUM: 8
SECONDS).   BE SURE TO ALLOW
 YOURSELF   TIME TO ESCAPE!"
3010 PRINT : : :
3020 PRINT "(PRESS ANY KEY T
O RETURN)"
3030 PRINT : : : : : :
3040 CALL KEY(0,K,S)
3050 IF S=0 THEN 3040
3060 GOTO 2150
3070 END
```

TURBO PASC 99 TUTORIAL Part 1.
By Stephen Shaw.
January 1989.

My first article on TurboPasc99 (a LIFE simulation) was perhaps a little over the top, but once I had TP99 it made me very happy and excited to be able to write something like this!
This article is going to start a tutorial which I hope will show you that TP99 is an extremely easy language to actually use, and by no means difficult to program in. The better a TI Basic programmer you are, the easier you will find TP99- and looking at TP99 may even make you a better TI Basic programmer!

We are going to start with a program every TI owner has, from the manual supplied with the console- look up GOTO in your manual and you will find a little TI Basic program:

```
100 REM HOW MANY GIFTS ON
THE 12 DAYS OF CHRISTMAS?
110 GIFTS=0
120 DAYS=1
130 COUNT=0
140 COUNT=COUNT+1
150 GIFTS=GIFTS+1
160 IF COUNT=DAYS THEN 180
170 GOTO 140
180 DAYS=DAYS+1
190 IF DAYS<=12 THEN 130
200 PRINT "TOTAL NUMBER OF G
IFTS IS";GIFTS
210 END
```

(The total number of gifts is 78).
That is a fairly short program to convert, but by no means simple as you will see.
To start off using TP99, first insert your Editor Assembler module- at the time of writing TP99 insists on using only this module as direct access is made to the ROM. You can also use (as I do) a Super Space module, which has the Editor Assembler ROM inside it.
Select the Editor Assembler option 5. RUN PROGRAM FILE and with your TP99 disk in drive number one, press ENTER- this will automatically load the file UTIL1 and the following files, which contains the editor and the compiler.

The opening screen will tell you that your workfile is empty, and the cursor is down at bottom left (quite invisible on my tv set, which cuts off that left hand column!).
Type in ED and press enter. The cursor is now at top right (still invisible to me!). If you cannot see it, press space bar a few times!

Now you are ready to type in the code which follows. You can type it all in with the alpha lock in the up position, and do not need to use the SHIFT key at all... the capitals you see listed have been put there automatically by the TP99 editor.

The left hand column margin is set from the column you start typing- all subsequent new lines will start off underneath the first character of the last line, UNLESS you move the cursor with the arrow keys.

The indentations in the listing are not required, but help you to follow the code, and are in general accordance with the usual Pascal practice. The most common error in typing TP99 code in is omitting those semi colons at the end of so many of the lines. They are essential! And you may experience a little difficulty with the equals sign... note that we have here used := (colon equals). There is a little more to it than that but lets keep it easy this time!
In transferring the Basic code to Pascal, there is one difficulty. Pascal does not have a GOTO, nor any means of branching back into previous code - indeed, Basic is a little unusual in allowing such freedom to jump backwards and forwards, and for that reason met with some hostility from professional programmers! That does not concern us- what does is making the transfer!

Examining the Basic program, there are three jumps, so we can connect with arrowed lines a jump form 160 to 180, and two backwards jumps, from 170 to 140 and from 190 to 130.
To deal with the backward jumps we have to use one of the LOOPing procedures in Pascal, and have quite a variety:
  DO WHILE, FOR...NEXT, and REPEAT UNTIL.
As with Basic, there are many ways of doing the same thing, and what I show here is just one way of converting the Basic program- there are other equally valid ways.
As we have two backward jumps, that means two loops, an inner loop (140 to 170) which increments COUNT and DAYS. The loop is controlled by a test of equality between COUNT and DAYS.

The outer loop (130 to 190) in addition to the inner loop, resets COUNT=0, increments DAYS, and in controlled by testing the value of DAYS against a value of 12.
Outside these loops we have the variables initialised and the result printed.

Now lets take a look at how that can be put into Pascal code:

```
PROGRAM xmasgifts;

VAR gifts,days,count : INTEGER;

PROCEDURE  innerloop(VAR count,days,gifts : INTEGER);
BEGIN
 WHILE count <> days DO BEGIN
   count := count+1;
   gifts := gifts+1;
 END;
END;

PROCEDURE  outerloop(VAR count,days,gifts : INTEGER);
BEGIN;
 WHILE days < 13 DO BEGIN
   count := 0;
   innerloop(count,days,gifts);
   days := days+1;
 END;
END;
```

(-continued on next page->)


```
BEGIN
 CLS;
 gifts := 0;
 count := 0;
 days := 1;
 outerloop(count,days,gifts);
 writeln("  total no of gifts",gifts);
 readln(days);
END.
```

Pascal requires that we start with a program name, that is at the top, and although required is of little consequence.

Next we have declared the global variables- these variables, in this position, are available to every part of the program. In addition to these it is possible to declare in each procedure, local variables, which like variables in Extended Basic user written sub-programs, can have different values to the "outer" global variables. All the numbers we are dealing with in this program are integers, so for greater speed and reduced memory usage we declare the variables as INTEGER (this is a good language for learning not to spell that word with an extra R!).

Declaring variables is necessary in Pascal, and many other languages. In Basic it is taken care of with the PreScan, which TI gave us so much more control over in Extended Basic. It sets aside a bit of memory to hold the values!
We then have the two loops, which I have here written as separate PROCEDURES. In Pascal, a procedure must appear in the code BEFORE it is called so we first have the innerloop, then the outerloop.

After the identifying word PROCEDURE and the name of the procedure, we list the variables that are being transferred to the procedure, and as we wish to pass them back to the calling routine, we add the word VAR at the start of the list. The type of the variable is also declared in this list. Not very different to an EXTENDED BASIC CALL...

The innerloop should be fairly easy to compare to the Basic program. We are incrementing both COUNT and DAYS, and then when count equals days, returning to the calling routine.

The outerloop is not that hard... just that instead of testing for DAYS<=12, we jump out of the loop when DAYS=13, which is just another way of saying the same thing! You can see here how one procedure is using a previously defined procedure, as we use the procedure innerloop.

After the two PROCEDURES follows the actual but of program!!! I have added the input (READLN) at the end so you can see the answer! It requires you to input a number before leaving the program and returning you to the title screen.

Once you have typed all this in using the EDITOR, press BACK (FCTN 9) to return the cursor to the bottom of the screen, and do a test compile by entering CO (then press ENTER). If compilation is complete, you may save the code by entering SA DSK2.DAYS/P and then compile to disk with CO DSK2.DAYS/S.

continued---->

You may of course use your own file names! I use /P to indicate PASCAL source code, and /S to indicate 9900 Source code.

If you have an error, the program will place you in editor mode with the cursor near to the error point- it will actually apear at the point at which an error has become apparent, so a missing semi colon may result in the cursor appearing after the first word in the line below that which does not have that necessary punctuation. Check out the manual and your code! It is fairly straight forward.

In preparing this article I left off two semicolons! and also miscounted my BEGIN/ENDs, which have to balance out.

You now have on disk your Pascal source code in DV80 format, and some 9900 source code, also in DV80 format. Now you have to assemble it! My TP99 disks had the assembler ready for use, so just choose the Editor Assembler option ASSEMBLE, and with a source code file of DSK2.DAYS/S, and an object file of say DSK2.DAYS/O, off you go. I choose to use just the R specifier when assembling (habit!).
NOTE: When assembling, you MUST have your TP99 disk in drive one, as the source code (DAYS/S) has an include directive to copy in RUNLIBEQ from the TP99 disk!!!
Your assembled object code is now ready to run- but will NOT run on its own! You MUST use the LINKER! Choose the Editor Assembler option 5. RUN PROGRAM FILE and input the name DSK1.LK99.

The "module name" to input once the linker is operational is DSK2.DAYS/O - that is, the object code file. As there is only one module, press enter next, then you are asked if you want a memory image file- type Y, and input the file name- I chose DSK2.DAYS/MI.

Then when asked if you want to RUN the program, type Yes!

NOTE: You must at this stage have in drive one your TP99 disk, as the LINKER uses the file RUNLIB.
Once the memory image file has been prepared and the program run, your disk directory may look something like this:

```
DAYS/MI      3 Program          ) Memory image produced with
DAYS/MJ      4 Program          )          LK99
DAYS/O       6 Dis/Fix  80      = Object code from TI Assembler
DAYS/P       4 Dis/Var  80      = Pascal source from TP99 editor
DAYS/S       6 Dis/Var  80      = 9900 source from TP99 compiler
```

Yes, two files for the memory image form!

The memory image files will run without having to use the LINKER, but INSIST that RUNLIB is in DSK1, and also REQUIRE the use of the Editor Assembler module (or at least its ROM!).
This series will not be monthly, but periodic. I welcome your queries and requests, and would love to see your code! If you would like me to reply to you direct, a couple of International Reply Coupons, or a couple of dollar notes would be most helpful.
TURBO PASC99 is a major language for the TI99/4A - and will be a lot better when we have access to graphics and sound! - and really is very easy to use!
Best wishes, Stephen Shaw

(Author unknown. Found on disk...)

XB SCREEN COLORS

QUICK AND EASY COLOR
(Extended Basic plus 32k ram required)

Here's a super short, super FAST, assembly routine for X-BASIC that allows you to change screen and character colors instantaneously!

There's lots of possible uses for the thing including games, but the real feature of this program is that it changes the color of the EDIT Mode screen as well! Yep, no more black on cyan if you don't want to!

HOW DOES IT WORK?

The color change is inserted into the USER-DEFINED INTERRUPT and is constantly "re-performed" every 1/60 of a second. This makes it seem like the EDIT Mode screen has been changed. In order to return control of the color commands CALL SCREEN and CALL COLOR, you must load the User-Defined Interrupt with zeros. (e.g. CALL LOAD(-31804,0,0). Any use of CALL COLOR or CALL SCREEN while the routine is operational will just cause the screen to flash briefly.
DEMO PROGRAMS

Along with the program that loads in the original routine, below is a demo routine to show off your new screen colors.

A SIMPLE CALL LOAD WILL DO IT

Of course, you don't need a program to change to screen colors once the original file is loaded. All you have to do is poke a single byte value into CPU address 9460. This value is found by doing the following:

Foreground color (0-15)x16
plus
Background color (0-15)

For instance, to set the screen to black and the characters to white you'd do the following:

```
15x16+1=81
CALL LOAD(9460,81)

NOTE: 0=transparent, 15=white
```

PROGRAM #1: SCRNCOLR/X

```
100 ! ****************
110 ! *              *
120 ! * SCREEN COLOR *
130 ! *              *
140 ! ****************
150 !
160 !      11/84
170 !
180 !    SUBFILE99
190 !
200 CALL CLEAR :: CALL INIT
210 MEM=9459
220 !
230 ! *LOAD IN PROGRAM*
240 !
250 FOR I=1 TO 50
260 READ X
261 TOT=TOT+X
270 CALL LOAD(MEM+I,X)
280 NEXT I
285 IF TOT<>3951 THEN 420
290 !
```

```
300 ! *START UP PROGRAM*
310 !
320 CALL LOAD(8194,37,38,"",
-31804,36,246)
330 END
340 !
350 ! *PROGRAM DATA*
360 !
370 DATA 244,0,2,1,0,135,208
,96,36,244,216
380 DATA 1,140,2,6,193,216,1
,140,2,2,1,0,72
390 DATA 216,1,140,2,6,193,2
16,1,140,2,2
400 DATA 0,0,32,216,32,36,24
4,140,0,6,0
410 DATA 22,251,4,91
420 PRINT "DATA LINES ENTERE
D WRONG.   CHECK AGAINST LIS
TING!"
430 END
```

PROGRAM #2: CLRDEMO1/X

```
100 ! *****************
110 ! *               *
120 ! *  COLOR CHANGE *
130 ! *               *
140 ! * DEMONSTRATION *
150 ! *               *
160 ! *****************
170 !
180 !       11/84
190 !
200 !    SUBFILE99
210 !
220 ! *---------------*
230 ! NOTE:
240 !     YOU MUST HAVE
250 ! ALREADY  LOADED &
260 ! RUN "SCRNCOLR/X"!
270 ! *---------------*
280 !
290 CALL CLEAR :: RANDOMIZE
:: DIM C$(15)
300 M$="Screen Color Change
Demo"
310 !
320 FOR C=0 TO 15 :: READ
C$ (C):: NEXT C
330 !
340 !
350 DISPLAY AT(1,1):M$::DISP
LAY AT(2,1):RPT$("-",LEN(M$)
)
355 DISPLAY AT(10,1):"FRGRND
 COLOR:"
356 DISPLAY AT(16,1):"BKGRND
 COLOR:"
360 !
370 FC=INT(RND*15)
380 BC=INT(RND*15)
390 DISPLAY AT(10,14):C$(FC)
400 DISPLAY AT(16,14):C$(BC)
410 !
420 CVAL=16*FC+BC
430 CALL LOAD(9460,CVAL)
440 !
450 GOTO 370
460 !
470 DATA Transparent,Black,M
edium Green,Light Green
480 DATA Dark Blue,Light Blu
e,Dark Red,Cyan
490 DATA Medium Red,Light Re
d,Dark Yellow,Light Yellow
500 DATA Dark Green,Magenta,
Gray,White
510 END .

<* End of file *>
```

STOP PRESS

M.G.POSKITT writes:
I have dealt with "TEX-COMP", the U.S.A.authorised dealer for T.I.
on a couple of occasions recently, and have been pleased with their
prompt service and packaging.
I am sure many members are reluctant to buy from abroad, but it really
is quite painless. In my experience, air-mail takes about 2-3 weeks
and sea-mail up to 7 weeks. Thefy may or may not be duty to pay on
receipt of the parcel.
There are some very good offers on new original T.I. products from
"TEX-COMP"(P.O. BOX 33084, Granada Hills, California, CA91344, U.S.A.)

TI Multiplan	$14.95
TI-Writer	$14.95
Logo II	$12.95
Editor/Ass.	9.95
Minimemory	$12.95(with free Mini Writer I word processor

T.E.II can be bought with any of the above for $4.95!(normally $9.95)
They accept VISA and Mastercard(Access)(add 2%), and I would advise
sea-mail for all above(except perhaps Minimemory) as they are heavy
packages.
I recently, for example, ordered TI Logo II via surface mail and the
total cost was approx £15!