INTERNATIONAL TI-LINES

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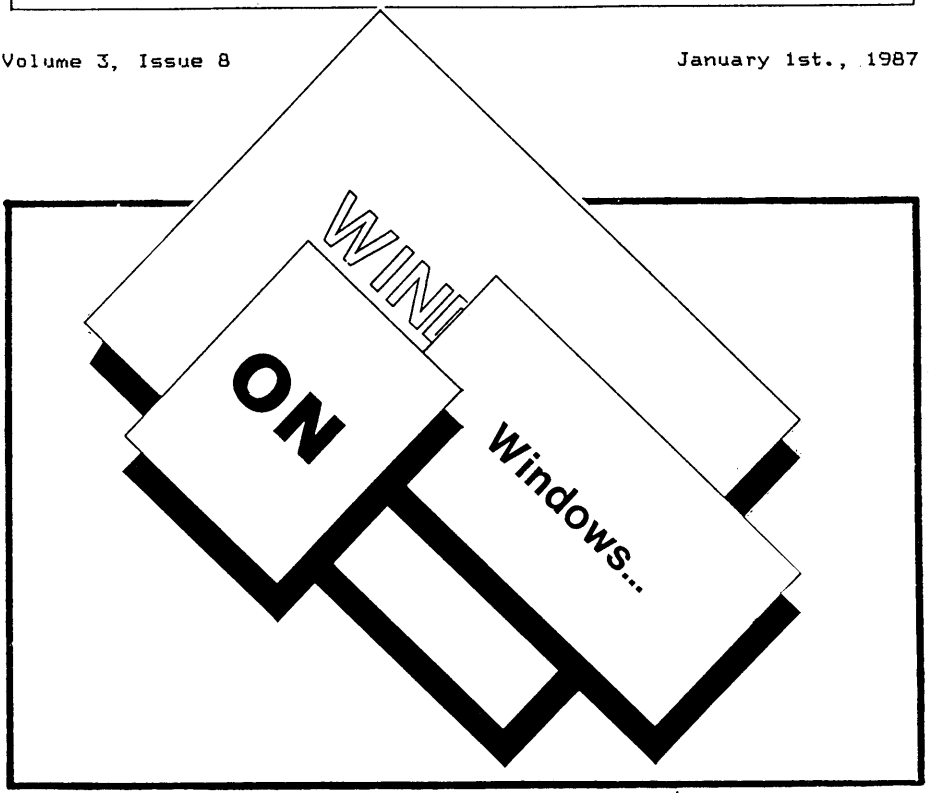

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Tel. (02357) 2360
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9-11 Mill Street, Wantage, Oxon OX12 9AB

PETER G. Q. BROOKS
96 BANBURY ROAD
OXFORD OX2 6JT

OXFORD 510822

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

Well, here we are (late) again. Happy New Year to one and all, and I hope that your Christmas was enjoyable. Mine was spent largely asleep!

For various reasons, not least of which is the current blizzard of snow which, for some curious reason, has avoided Oxford so far, it may be necessary for me to publish two issues of IT at the same time. If the threatened further falls of snow manage to stop me making the trip to the printer, I will have to publish January's and February's issues at the same time - i.e., in February.

Lots of things to chat about, so let's get on. GORDON PITT is in the process of finalising details of the next Bloxwich Workshop. The date will lie around the end of March, beginning of April, and it will be held at the Sneyd Community School as before. As I wrote in the last IT Editorial, there will also be Tutorials on TI-Writer/Funnelwriter and Multiplan.

If you are interested in attending, PLEASE do contact Gordon promptly. The cost of attendance is just £1.50 per person if you book now, or £3 per person if you pay at the door. Let Gordon know if you are likely to want refreshments during the day so that he can lay on catering, and if you feel up to demonstrating anything talk to him about space and other requirements.

Ring Gordon on 0922 476373 as soon as you can - don't leave it to the last minute.

JAMES STRINGFELLOW has kindly agreed to publication of his Window software in this issue, and I am presenting all of the material he sent to me - including the object code file for checking against the result of the assembly of the source file - for those with the capacity to do so, that is. Mere mortals with just 32K and Extended BASIC are not left out however, and there is a special version of the demonstration program at the end of the presentation.

CLIVE SCALLY of TI-EXCHANGE rang me to let me know that his group will cease to exist by MAY of this year. After the publication of the remaining two issues of his newsletter, TI*MES, he will be handing over to a new national TI User group which he has proposed. He tells me that the intention is to have elections for offices on the committee, and is asking for nominations. The hope is that group officers who attend committee meetings will have their expenses defrayed out of funds, and I gather that a likely venue for such meetings will be in the West Midlands area.

I have too much on my plate already for me to stand for any post, but I am happy to act in support in any way that I can. Contact Clive for

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more details on 0273 503968 after 7.30 pm.

I am almost happy to announce that ITUG and associated activities have been registered under the new Data Protection Act, although there is a possibility that further investigations may be necessary - the form giving the registration mentions that a number of registered entries may have to be re-registered. This is largely because the Registrar's staff don't really know what they're doing, I strongly suspect!

The Act is beginning to come under a little small arms fire, in that it has not been properly thought out, and I must admit that under its present structure I can see some gi-normous holes which will not be easy to plug.

For instance, we are coming to the period when Joe Bloggs on the street can officially ask a registered company if they have any data about him on file. Originally there was a suggested £5 fee which was to be paid to the company by Joe for the effort involved in responding to his request; now the figure of £50 is being bandied about - much to my disgust as it is totally unjustified. £5 would have been more than adequate - if a company is so badly set up that it cannot find entries of a particular type in its files, how on earth does it do its accounting ?

What is more, and this is one I haven't seen bandied about, if Joe asks company X for details of any files referring to him (and he has to be very specific in his request), and the answer is NO, this does not mean that company will NEVER have any files referring to him - which means that he must continually make the same request of the same company in order to be satisfied. This is going to cost Joe a pretty penny, and he will still not be protected. Why ? Well, firstly the Act doesn't confer the right for an individual to have an incorrect entry erased or corrected. Secondly, and most importantly, the Act ONLY refers to data which is processed electronically (which could include anything stored on a Psion Organiser, for example). There is already evidence that some companies are reverting to PAPER-based filing systems which are not covered by the Act.

It is a real farce, and it is only going to get worse. Some companies haven't bothered registering on the grounds that either it's too much like hard work, or the Act doesn't in their view apply to them. Other companies have registered under every category available on the grounds that at some stage in the future they MAY hold files under any or all of the categories - and you are required to look ahead and register in this manner - which has led to the Registrar disallowing entries of that type!

The registration period is for only three years, so in three years time I and many others will have to go through an eight month rigmarole all over again. Data Protection is necessary, but when it is implemented in this half-cocked fashion is does more harm than good.

JAMES STRINGFELLOW (see earlier) offered a tip for Multiplan Users: he was dissatisfied with the colours in Multiplan, and after trying without

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success to change them, he found that when you are on the first screen - INSTALL PROGRAM DISK PRESS ENTER TO LOAD - by pressing the space bar twice gives access to 11 colour choices.

This is apparently not indicated in the Multiplan manual and might be of interest to Multiplan buffs.

DAVE HEWITT has asked me to notify ITUGers of a temporary address at which he can be contacted until he moves: care of 311 London Road, Headington, OXFORD, OX3 9EJ.

I urgently need two more buyers for the New Horizons RAMDISK board to make up the block order of five. If I can at least get one more, then I can go ahead and make the order. The other potential buyers who have already put their names and money down are still waiting, and I would not like to keep them waiting for ever. The price for the board alone (with disks and manual, obviously) is £50. Let me know as soon as you can so that the wheels can be set in motion.

I am trying to put together a comprehensive list of my Public Domain holdings, but I am very busy at the moment and other things have a higher priority. I will get round to it just as soon as I can.

While I was away, apparently a number of ITUGers tried to ring me (tsk, tsk, not reading my Burble for the last issue...), as a result of which BT decided that I had a fault on my line. It used to be standard BT advice to take your phone off the hook if you were away from your house for any length of time, so that the phone would not ring in an empty house and alert potential burglars.

However, when I did it, my awkward phone (a Slimtel) put a fault tone on the line, which confused everyone. Now it turns out that there really IS a fault on the line somewhere...

I have an increasing backlog of articles, some of which were submitted a few months back, so my public apologies to the authors, and I will try to get them out as soon as I can. Almost all submitted material has to be modified to fit the IT format, as well as being proofed and often spaced out a little to make it more readable once it has been reduced. This all takes time, and that's one commodity which is in great demand at present.

The new subscription rate for ITUG is now confirmed at £11 for UK, £12 for all overseas subscriptions. I have managed to keep the increase to a bare minimum, which also means that IT will be sent via surface mail under PRINTED PAPERS REDUCED RATE for all overseas subscribers - the

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cost would be extortionate otherwise.

The new rates will apply from JUNE 1st 1987.

Because my costs have increased, I am unable to support any more "exchange" subscriptions with overseas User groups. After ITUG's details were (incorrectly) published recently, I received a spate of newsletters from other groups asking for a newsletter exchange. However many of the newsletters were just that - two or three pages of A4 with local information, and while I would be happy to subscribe to the more informative groups overseas (it would cost far more to send them IT each month than for me to subscribe direct!) I cannot afford to make any more exchanges, at least until ITUG has another 25 subscribers to make it possible.

The light pen project is still in the doldrums: the engineer has made final hardware modifications, and we now await the change to be checked and incorporated into the software. This is the sticking point, as the software author has recently taken on a house and a wife I believe, both of which are curtailing his activities. Watch this space...

Last year's Bloxwich Workshop still hasn't found a writer to present a brief piece about it - perhaps we were all too involved to step back and look around - and the only photos that I know of are currently in the States. I now have the capability of printing photographs, in grey of course, from colour or black & white originals, and I hope to publish a shot or two in the future. Meanwhile I will republish the pictures sent to me by MIKE HEUSER and (poorly) reproduced in the October IT last year.

The MYARC GENEVE is now in production and the first 50 units have been shipped, I understand. I also understand that the name GENEVE is being dropped in the face of threatened legal action from HEWLETT PACKARD. Yes, once upon a time HP produced a product called GENEVA, and although it isn't in production any more, HP see dollar signs flashing so they are jumping up and down. Another company with a big mouth and a small brain, do you think ? Ask any potential 9640 (Geneve) owner if he thinks there will be any confusion and you'll get a fairly straight answer...

Did you like the headers for Adventure Help and TI-Writer articles in December's IT ? They're both a font called ALGERIA, which is available on a Public Domain RLE disk. Although it is intended for use with TI ARTIST, I have examined the file format and found that it can be used in TI BASIC to tart up title pieces. I will (hopefully) present the details next issue, and while I remember: the current versions of the file are faulty - certain characters have been improperly defined, and the file format has not been properly adhered to, with the result that TI ARTIST won't respond correctly if ALGERIA is selected.

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I have re-arranged the ALGERIA_F file so that it should now work correctly, but I cannot make up for the incorrect definitions yet. I hope to publish the re-arranged file next issue when I discuss the file format.

RALPH FOWLER of TIBBS fame has finally sent through the recopied third disk - apparently he experienced unavoidable delay. The disk and its packaging sustained a deliberate attempt at damage however: both the disk box and the disk itself had been deliberately folded in half so that the disk box (made of stiff cardboard and of a standard design) had actually snapped and the disk had a permanent crease introduced into it.

As the outer jiffy bag didn't bear any such marks, I assume that the damage was inflicted on the outward journey - i.e., from me to Ralph - which once again suggests strongly that there is a particularly malevolent individual working for the Post Office. Readers of this Burble may recall earlier issues when I bemoaned the fact that some nasty so-and-so had been interfering with my post; it looks as though they are back on the job again. What can you do when faced with such a mentality ?

Talking of post, a couple of letters sent to me during the Christmas period were sent to my old address - vacated almost two years ago!

Please make sure that you have an up-to-date address on your files!

No-one came back to me about JIM PETERSON's little puzzle from last issue, so I assume that either no-one gave a damn or that every one sussed it out straight away. Ahem.

The instinctive reaction is to assume that the use of DISPLAY AT means an instruction in Extended BASIC. However, TI BASIC contains the command DISPLAY which is the same as PRINT, although you hardly ever see it used.

In TI BASIC, therefore, DISPLAY AT(1,1) means PRINT AT(1,1), and as we don't have PRINT AT at all, AT(1,1) is taken as an array. As it has not previously been assigned a value, the 4A initialises it at zero, so the content of element (1,1) of array AT() is 0. The line thus tells the 4A to print 0, followed by 0 again on the next line (which is what :0 produces), hence the double zero effect.

Well, I thought it was good...

After the last issue, one brave soul said that they wouldn't mind paying £15 for a regular 40 page IT, while another gave me a suggestion for the content of future articles. Unfortunately, the suggestion was still far too vague, so that leaves me back where I started... Boo, hoo, hoo...

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MULTIPLAN MANIA

By Brenda J. Noell

Chapter 2: Building a Worksheet

Another firm is considering purchasing SPENCER CERAMICS and wants a projected income statement; the firm wants a summary of the operating budget, including projected sales, costs, and gross profits.

The Row and Column numbers are only on the electronic worksheet and do not appear on the printed copy.

THE ALPHA (A) COMMAND-begin by entering headings for the rows and columns. We'll add the titles later.

Numbers are automatically recognized as soon as they are typed but, if you want to add a title or text you use the Alpha Command. With the cell pointer at R3C1, PRESS A. Type in SALES. PRESS ENTER. To correct an error FNCT 9 to backspace. Another way to enter the word Sales is to press the DOWN key and Sales will appear at R3C1, the cell pointer is now at R4C1. The Up, Left and Right keys will also work.

The digits 0-9, =(equals), +(plus), -(minus), .(period), ((left parenthesis), or "(quotation mark), will put you in Value command. All the rest are Alpha command. Enter Cost at R5C1 and Gross Pr in cell R8C1. It should look like this:

```
    #1          1              2
     1
     2
     3 Sales
     4
     5 Cost
     6
     7
     8 Gross Pr
```

Look at R8C1. The column is not wide enough to fit Profits in. To add more characters to the column Press F (Format). Press W (Width). Multiplan shows d (for default), type in 15 characters to give yourself enough room. Since you only want to widen column 1 press ENTER.

Widen the remaining columns to 10 characters by: Press F, Press D, Press W, type 10, Press ENTER.

ENTERING NUMBERS-go to R3C2. Type 2000 (Use only numbers from the top of the keyboard, don't use commas, spaces or $). Press DOWN until you get to R5C2 and Type in 15000, Press ENTER.

ALIGNMENT-means placing the numbers and text into a cell: flush with the left edge, right edge, centred or mixed (called General).
Press F. Choose Default. Select Cells (Press ENTER or C). Choose GEN.

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SETTINGS	EXAMPLES	EFFECT
Centre	Sales $1000.25 $50.25	text and numbers centred
General	Sales $1000.25 $50.25	text flush left, numbers flush right
Left	Sales $1000.25 $50.25	text and numbers flush left
Right	Sales $1000.25 $50.25	text and numbers flush right

Any alignment choice that sets the numbers to the right would be all right since it would line the decimal points up. So choose Gen or Right. This will affect all cells.

FORMATS-right now you want a $. Here is a brief summary of formats that are more thoroughly explained in Part 2.

SETTINGS	MEANINGS	EXAMPLES
Cont	Continuous	Spencer Ce ramics!
Exp	Scientific	1.4301E-23 4.67E5
Fix	Fixed Point	4.513
Gen	General	text and numbers shown in standard format
Int	Integer	3.1416 shown as 3
$	Dollars	$20000.00 ($150.00)
*	Bar Graph	3 shown as ***
%	Percent	.0513 shown as 5.13%
-	(Do not change format)	

While in Format command, Press TAB (CTRL A), choose $ (this automatically gives you two decimal places). Press ENTER.

TRANSFER-Type T. Press S (Save). Remove the Multiplan diskette and install the storage disk. Name this file SPENCER. Type the name in, Press ENTER. Notice the TEMP and the bottom of the file is replaced with SPENCER.

Press Q (QUIT), then Y.

Chapter 3 will deal with "Entering Formulas".

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WORD PROCESSING

By JO ANN COPELAND

SPECIAL CHARACTER MODE

A book could be written on this subject - and naturally IT can't do that all at once. So how about covering this a little bit at a time? All against say 'Nay' and all for it say 'Aye'. Okay, the Nays have it! Well, the majority rules! - but here we go anyway!!

Special Character Mode, otherwise known as CTRL U, can be used several ways for several reasons. It allows ASCII character codes 0-31 (Hex 0-1F) to be used in Text in order to send escape sequences or special commands to the printer. If you press CTRL U you will see a new and different cursor - it should look like an underscore character and should be blinking. To get out of Special Character Mode, just press CTRL U again! I will be listing a "Quick Reference" sheet for special characters displayed on the screen in this mode, with an explanation on the codes, even if I don't understand them myself!

To be covered later are two notes: you can utilize Special Character Mode in two ways. When one character is to be used you just enter the character into the document from Special Character Mode. If you have a combination of two or more code characters to be used then you can use the Transliteration command. Have I covered that? Examples will follow so no one (including myself) will get lost!

To start with, let's list out the codes for the CTRL U mode:

ASCII CODE	FUNCTION ACRONYM	FUNCTION	PRESS KEY
0	NUL	Null	SHIFT 2
1	SOH	Start heading	SHIFT A
2	STX	Start text	SHIFT B
3	ETX	End text	SHIFT C
4	EOT	End transmission	SHIFT D
5	ENQ	Enquiry	SHIFT E
6	ACK	Acknowledge	SHIFT F
7	BEL	Bell	SHIFT G
8	BS	Backspace	SHIFT H
9	HT	Horizontal tab	SHIFT I
10	LF	Line feed	SHIFT J
11	VT	Vertical tab	SHIFT K
12	FF	Form feed	SHIFT L
13	CR	Carriage return	SHIFT M
14	SO	Shift out	SHIFT N
15	SI	Shift in	SHIFT O
16	DLE	Data link escape	SHIFT P

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17	DC1	Device Control 1	SHIFT Q
18	DC2	Device Control 2	SHIFT R
19	DC3	Device Control 3	SHIFT S
20	DC4	Device Control 4	SHIFT T
21	NAK	Negative acknowledge	SHIFT U
22	SYN	Synchronous idle	SHIFT V
23	ETB	End transmission block	SHIFT W
24	CAN	Cancel	SHIFT X
25	EM	End medium	SHIFT Y
26	SUB	Substitute	SHIFT Z
27	ESC	Escape	FCTN R
28	FS	File separator	FCTN Z
29	GS	Group separator	FCTN T
30	RS	Record separator	SHIFT 6
31	US	Unit separator	FCTN U

To help understand these, we'll go through a couple of the commands - please note that most of these are in conjunction with the Star Micronics Gemini 10X printer ('cause that's what I have and I am using the printer manual along with the TI Writer Manual - Sorry!) Most commands, though, should work equally with other printers, if not perhaps in their own way. (Huh?)

ASCII Code 0 (Nul) Shift 2: Null - This command is used to terminate programmed tab settings (for example: ESC-D and ESC-P). ESC-D clears current tab settings and sets new tabs. ESC-P sets vertical tab positions.

ASCII Code 7 (BEL) Shift G: Bell - This command causes the buzzer to sound for 1/4 second when this code is input. To make this effective input ESC Y1 and to 'turn bell off' input ESC Y0.

ASCII Code 8 (BS) Shift H: Back Space - This command causes the printer to shift the starting printing position to the left by one space (backspaces 1 space before printing).

ASCII Code 9 (HT) Shift I: Horizontal Tab - This command causes the printer to move the print head to the next tab set position.

ASCII Code 10 (LF) Shift J: Line Feed - Causes one line of paper feed to be accomplished after data is printed.

ASCII Code 11 (VT) Shift K: Vertical Tab - This command causes paper to be fed to the next vertical tab position.

ASCII Code 12 (FF) Shift L: Form Feed - Paper is fed to the print start line on the next page by a preset program after data is printed.

ASCII Code 13 (CR) Shift M: Carriage Return - This command causes a printout and if your Dip Switch is set appropriately one line is fed automatically.

ASCII Code 14 (SO) Shift N: Shift Out - This turns on double-width character print mode.

ASCII Code 15 (SI) Shift O: Shift In - This command turns on the compressed mode.

ASCII Code 17 (DC1) Shift Q: Device Control 1 - Causes the printer to be selected.

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ASCII Code 18 (DC2) Shift R: Device Control 2 - Cancels SI-Mode (which was compressed print).

ASCII Code 19 (DC3) Shift S: Device Control 3 - This command causes the printer to be deselected (opposite to DC1).

ASCII Code 20 (DC4) Shift T: Device Control 4 - Cancels SO-Mode (which was double-width printing mode).

ASCII Code 30 (RS) Shift 6: Record Separator - This command code ends any macro instruction.

ASCII Code 27 (ESC) FCTN R: Escape - This code is used for expansion control codes.

These all look strange and sound even worse, but if you have a 'test' TI Writer/Funlwriter file you may want to play with these commands. Let's see if we can do something with them now.....(besides the obvious one of chucking them in the bin!).....

Example:

At the beginning of your test file, insert a new line (FCTN 8) and having the cursor at the very beginning of the line go into special command mode (CTRL U). Hit the keys Shift G (Bell). Exit special character mode (CTRL U) hit enter and go down a few lines, maybe somewhere in the middle of a paragraph. Insert 2 lines and go to the very beginning of the line (CTRL V helps). Go into special character mode (CTRL U) and hold down the Shift G (Bell) keys, enter, hold the Shift O keys (Shift In - compressed mode). Exit special character mode and hit enter.

Now, if you save this test file and go to the Formatter the following should happen: After hitting the appropriate keys to start the Formatter, your printout should occur with (1) a 1/4 bell tone, (2) some printing, (3) another 1/4 bell tone, and (4) the rest of printing in compressed mode.

Most people use the bell to ring a tone when they want to be alerted to a particular area in typing, or to notify them when their paper is coming to an end (say perhaps 10 lines before paper runs out, etc.). Sometimes you can just use it for fun!

You may have noticed when playing with CTRL U special character mode that if you hit some 'normal' keys (A, B, C, D, etc.) you get strange looking characters on the screen. These are the screen displays of the special characters and not a Twilight Zone entrance. Although I feel that way every time I go into special character mode!

If you happen to check out James Stringfellow's article in IT (March) you'll notice you can also do some fancy artwork with CTRL U (depending on your printer, etc.). I haven't had the opportunity to get into this yet as I still use Transliteration to accomplish most of my 'artwork' (if it can be called that). However, this will be discussed at a later date (what's new?) after we have recovered from today's work! If we ever do recover! Don't feel like a failure if you don't get into this right away - the best of us take our time and repeated failures shows us where our fault lies (in my case - pure ignorance!)

So have a go with some of these, and we'll see you next time!

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R S 2 3 2 C A R D T O P R I N T E R

By PHIL WINGROVE

I have seen many cases of printer cables being wired up incorrectly, serial and parallel.

The following shows how to connect your cables.

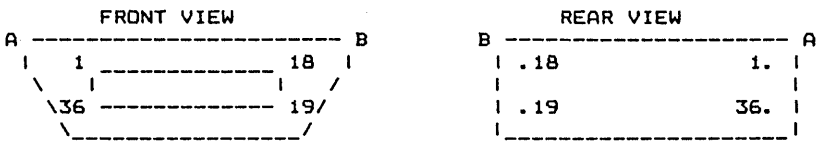
First the parallel cable:

The pin connections are:-

RS232 CARD (16 PIN CONNECTOR)			PRINTER (36 PIN)	
PLUG T&B ANSLEY 609-1630 CENTRONICS			PLUG 57-30360 AMPHENOL	
PIN #	DESCRIPTION	CONNECT TO	PIN #	DESCRIPTION
1	HANDSHAKE OUT	<----------	1	STROBE
2	DATA LSB	<----------	2	DATA 1
3	DATA	<----------	3	DATA 2
4	DATA	<----------	4	DATA 3
5	DATA	<----------	5	DATA 4
6	DATA	<----------	6	DATA 5
7	DATA	<----------	7	DATA 6
8	DATA	<----------	8	DATA 7
9	DATA MSB	<----------	9	DATA 8
10	HANDSHAKE IN	<----------	11	BUSY
11	LOGIC GND	<----------	29	TWISTED PAIR RTN
12				
13	SPARE I/P BIT	<----------	13	SLCT
14				
15				
16	LOGIC GND	<----------	16	0V LOGIC GROUND

The pin numbers of the printer may differ from printer to printer.

PARALLEL PRINTER PLUG



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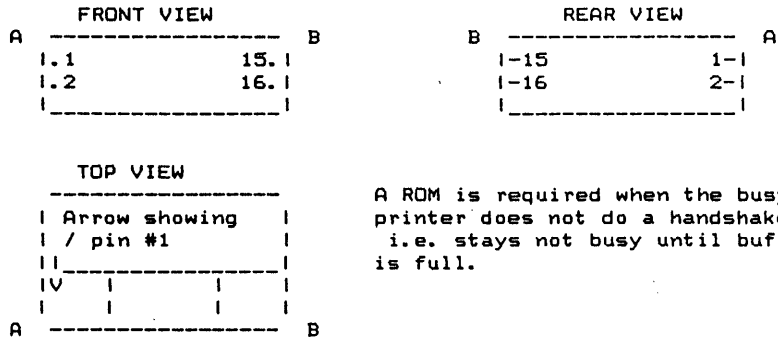
PARALLEL RS232 CARD PLUG

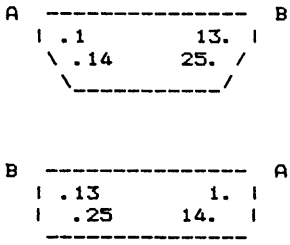


A ROM is required when the busy of printer does not do a handshake. i.e. stays not busy until buffer is full.

Now the serial cable.

Only five connections are required.

RS232 (25 PIN) PLUG D-TYPE	DESCRIPTION	PRINTER (25 PIN) PLUG D-TYPE
PIN #		PIN #
2	DATA IN	3
3	DATA OUT	2
7	GROUND	7
8	CARRIER DETECT	8
20	DTR	20



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JAMES STRINGFELLOW

...does it again!

Once again I have pleasure in publishing material from our Yorkshireman in Paris James Stringfellow. If you look back at previous issues, you will see that James has been beavering away at a wide spectrum of projects, and this issue shows his work with "Windows".

Designing it so that anyone with 32K and Extended BASIC (and possibly using other configurations for all I know) can utilise this useful facility, James has arranged to submit not just the utility and a demonstration program to illustrate its use, and not just the source code so that those with either the Funnelwriter's, or TI's own, Editor/Assembler can assemble the object code, but he has also provided a version of the program which "pokes" in, byte by byte, the same utility so that if ALL you have is a console, 32K, and Extended BASIC (not forgetting the cassette leads!) you are not left out in the cold (which at the time of writing is currently well below freezing...).

On the following pages you will find first the OBJECT CODE file (to check that your assembly of the SOURCE CODE (given later) has been correct) printed below, followed on successive pages by the DEMONSTRATION PROGRAM, the SOURCE CODE which needs to be assembled into an OBJECT CODE file called STRINGO, and then, for those readers without a disk system, the "poke-it-in-byte-by-byte" version of the demonstration program.

I have run the demonstration programs to ensure that all is well, so the versions you see here were up and running OK on my system. If you do experience problems, suspect first an "operator error", and if you are convinced there is none, contact me at Oxford. Good luck, and have fun!

```
002FE          A0000A0020A0120B0000B0000B0000B0000B0000B0000B00007F396F        0001
A012EB0000B0000B0000B0017B0017B0017B0017B0017B0017B0017B00177F35AF              0002
A0144B0017B0017B0000B0000B0000B0000B0000B0000B0000B00007F399F                  0003
A015AB0000B001FB001FB001FB001FB001FB001FB001FB001FB001F7F2B5F                  0004
A0170B0102B0405B2000BC28BB04C9B0208B0001B9820B8312C0172B130B7F300F             0005
A0186B9820B8312C0173B1637B06A0C0206B0009B1030BC242B0A19B05887F2EDF             0006
A019CB06A0C0206B0017B101FBCA42C0120B0588B06A0C0206B0017B10187F2E0F             0007
A01B2B8A42C0120B1A15BCA42C0134B0588B06A0C0206B001FB100EBCA427F2A3F             0008
A01C8C0148B0588B06A0C0206B001FB1007B8A42C0148B1A04BCA42C015C7F2ADF             0009
A01DEB0460C02E4B04E9C0120BCA60C01A0C0134B04E9C0148BCA60C01C27F285F             0010
A01F4C015CB0200B1C00B1001B0200B1F00B0420B2034B106FB04C0BC0487F2EAF             0011
A020AB0420B200CB0420B2018B12B8BC0A0B834AB0602B1103B86C2B15017F2DBF             0012
A0220B05CBB05CBB045BBC28BB04C9B0208B0001B9820B8312C0170B130B7F2A5F             0013
A0236B9820B8312C0171B16DFB06A0C0206B0009B10D8BC242B0A19B05887F2BAF             0014
A024CB0202C0020B0701BD481B04C0BC048B0420B2014BC0E9C015CB60E97F2B7F             0015
A0262C0148B0583BC103B06C4B9112B140AB7112B06C4B04C1BD072B06C17F2BCF             0016
A0278BA081BDCA0C0174B0604B16FCBC1A9C0134BC169C0120B6185B0A557F27BF             0017
A028EBA169C0148BC105B0606B1119B0224B0020BC004B06A0C02F0B02017F2DFF             0018
A02A4C0000BC083BDC60B8800B0602B16FCBC005B06A0C02ECB0201C00007F2A9F             0019
A02BABC083BD831B8C00B0602B16FCB0225B0020B10E5BC005B06A0C02EC7F27CF             0020
A02D0B0201C0021BC083BD031B0220B6000BD800B8C00B0602B16F9B04C07F2D9F             0021
A02E6BD800B837CB045AB0260B4000B06C0BD800B8C02B06C0BD800B8C027F28AF             0022
A02FCB045B7FD80F                                                               0023
50176WINDOW50226STRING7FA18F                                                   0024
:       99/4 A                                                                 0025
))))))
```

```
100 CALL CLEAR :: CALL SCREEN(5):: DISPLAY AT(12,4):"Loading please wait" :: DIM
 P$(16),Q$(16):: CALL INIT :: CALL LOAD("DSK1.STRINGO")
110 CALL CHAR(91,"FFFF808080808080FFFF010101010101010101010101FFFF808080808080FF
FF"):: CALL CHAR(95,"0000000000000FFFF010101010101010101")
120 CALL CHAR(122,"003854503814543880808080808080800000000000000000FFFF000000000
0000000000282828")
130 T$="[}}}}}}}}}}\" :: B$="^_________]" :: K$="[}}}}}}}}}}}}}}}\" :: K2$="^_______
_______]" :: T2$="[}}}}}}}}}}}}}}}}}}}}}}}\" :: B2$="^_____________________]"
140 P$(1)="[}}}}}}}}}}}}}}}}}}}}}}}\" :: P$(2)="{!!!!!!!!!!!!!!!!Page!1`" :: P$(3)=
"{!!!!!!!!!!!!!!!!!!!!`" :: P$(4)="{You!can!use!up!to!TEN`"
150 P$(5)="{overlapping!windows!!`" :: P$(6)="{in!your!programs!!!!!`" :: P$(7)=
"{To!place!the!windows!`" :: P$(8)="{CALL!LINK(~WINDOW~,!!!`"
160 P$(9)="{!!!!!!,N,TR,BR,LC,RC)`" :: P$(10)="{N!=!window!number!!!!`" :: P$(11
)="{TR=!Top!row!!!!!!!!!`" :: P$(12)="{BR=!Bottom!row!!!!!!!`"
170 P$(13)="{LC=!Left!column!!!!!!`" :: P$(14)="{RC=!Right!column!!!!!`" :: P$(1
5)="{!!!!!!!!!!!!!!!!!!!!`" :: P$(16)="^_____________________]"
180 Q$(1)="[}}}}}}}}}}}}}}}}}}}}}}\" :: Q$(2)="{!!!!!!!!!!!!!!!!Page!2`" :: Q$(3)=
"{!!!!!!!!!!!!!!!!!!!!`" :: Q$(4)="{To!place!the!text!!!!`"
190 Q$(5)="{CALL!LINK!!!!!!!!!!!!`" :: Q$(6)="{!!!!!!!!(~STRING~,Az):`" :: Q$(7)=
"{Az=Text!to!be!printed`" :: Q$(8)="{!!!!!!!!!!!!!!!!!!!!`"
200 Q$(9)="{!!!!!!!!!!!!!!!!!!!!`" :: Q$(10)="{I!hope!this!will!be!!`" :: Q$(11
)="{of!use!in!your!next!!`" :: Q$(12)="{program.!!!!!!!!!!!!`"
210 Q$(13)="{!!!!!!!!!!!!!!!!!!!!`" :: Q$(14)="{!!!!!!!!!!!!!!!!!!!!`" :: Q$(1
5)="{!!!James!Stringfellow`" :: Q$(16)="^"&RPT$("_",21)&"]"
220 R$(1)="[}}}}}}}}}}}}}}}}}}}}}}}}}\" :: R$(2)="{Press!1!or!2!to!page!!!`" :: R$
(3)="{Press!enter!to!continue`" :: R$(4)="^"&RPT$("_",23)&"]"
230 CALL CLEAR :: FOR I=2 TO 12 :: CALL COLOR(I,2,13):: NEXT I
240 FOR I=1 TO 9 :: CALL LINK("WINDOW",I,I+I-1,I+I+6,I+I+2,I+I+12):: A$(I)=SEG$(
"{Window!!",1,11)&CHR$(I+48)&SEG$("`",1,1)
250 CALL LINK("STRING",I,T$):: FOR A=1 TO 6 :: CALL LINK("STRING",I,A$(I)):: NEX
T A :: CALL LINK("STRING",I,B$):: NEXT I
260 DISPLAY AT(22,1)SIZE(15):K$ :: DISPLAY AT(23,1)SIZE(15):"{PRESS!ANY!KEY`" ::
 DISPLAY AT(24,1)SIZE(15):K2$
270 CALL KEY(0,K,S):: IF S=0 THEN 270
280 CALL LINK("WINDOW",2,1,16,2,24):: CALL LINK("WINDOW",1,4,19,8,30):: CALL LIN
K("WINDOW",3,21,24,2,26)
290 CALL CLEAR :: FOR I=1 TO 4 :: CALL LINK("STRING",3,R$(I)):: NEXT I :: GOSUB
310 :: GOSUB 320
300 CALL KEY(0,K,S):: IF K=13 THEN 330 :: IF S=0 OR K)50 OR K(49 THEN 300 :: ON
K-48 GOSUB 320,310 :: GOTO 300
310 FOR I=1 TO 16 :: CALL LINK("STRING",2,Q$(I)):: NEXT I :: RETURN
320 FOR I=1 TO 16 :: CALL LINK("STRING",1,P$(I)):: NEXT I :: RETURN
330 CALL SCREEN(5):: CALL CLEAR
340 CALL LINK("WINDOW",1,1,9,2,12):: CALL LINK("WINDOW",2,6,14,8,18):: CALL LINK
("WINDOW",3,11,19,13,23)
350 CALL LINK("WINDOW",4,16,24,20,30):: CALL LINK("WINDOW",5,5,13,20,30)
360 CALL LINK("WINDOW",8,22,24,2,25):: CALL LINK("WINDOW",7,1,9,15,25):: CALL LI
NK("WINDOW",6,14,22,5,15)
370 FOR N=1 TO 7 :: A$(N)=SEG$("{Window!!",1,11)&CHR$(N+48)&SEG$("`",1,2)
380 CALL LINK("STRING",N,T$):: FOR I=1 TO 7 :: CALL LINK("STRING",N,A$(N)):: NEX
T I :: CALL LINK("STRING",N,B$):: NEXT N
390 CALL LINK("STRING",8,T2$):: CALL LINK("STRING",8,"{!Press!1!to!7!!Stop=8!`")
:: CALL LINK("STRING",8,B2$)
400 CALL KEY(0,K,S):: IF S=0 OR K)56 OR K(49 THEN 400 :: IF K=56 THEN STOP
410 N=K-48 :: A$(N)=SEG$("{Window!!",1,11)&CHR$(N+48)&SEG$("`",1,2)
420 CALL LINK("STRING",N,T$):: FOR I=1 TO 7 :: CALL LINK("STRING",N,A$(N)):: NEX
T I :: CALL LINK("STRING",N,B$)
430 CALL LINK("STRING",8,T2$):: CALL LINK("STRING",8,"{!Press!1!to!7!!Stop=8!`")
:: CALL LINK("STRING",8,B2$):: GOTO 400
))))))
```

```
*****************************
*                           *
*   SOURCE CODE SCROLLSV3   *
*                           *
*****************************


NUMREF EQU  >200C
STRREF EQU  >2014
XMLLNK EQU  >2018
ERR    EQU  >2034
NBRARG EQU  >8312
FAC    EQU  >834A
STATUS EQU  >837C
VDPRD  EQU  >8800
VDPWD  EQU  >8C00
VDPWA  EQU  >8C02


       DEF  WINDOW
       DEF  STRING

STORE1 BSS  32
STORE2 BSS  256


TLINE  DATA 0,0,0,0,0,0,0,0,0,0
BLINE  DATA 23,23,23,23,23,23,23,23,23,23
LCOLM  DATA 0,0,0,0,0,0,0,0,0,0
RCOLM  DATA 31,31,31,31,31,31,31,31,31,31
ONE    BYTE 1
TWO    BYTE 2
FOUR   BYTE 4
FIVE   BYTE 5
NUL    BYTE ' '
       EVEN

WINDOW MOV  R11,R10
       CLR  R9
       LI   R8,1
       CB   @NBRARG,@FOUR
       JEQ  WINDO
       CB   @NBRARG,@FIVE
       JNE  ONERR
       BL   @CLASS
       DATA 10-1
       JMP  ATERR
       MOV  R2,R9
       SLA  R9,1
       INC  R8
WINDO  BL   @CLASS
MAXROW DATA 24-1
       JMP  WERR
       MOV  R2,@TLINE(R9)
       INC  R8
       BL   @CLASS
       DATA 24-1
       JMP  WERR
```

››››››

```
        C     R2,@TLINE(R9)
        JL    WERR
        MOV   R2,@BLINE(R9)
        INC   R8
        BL    @CLASS
MAXCOL  DATA  32-1
        JMP   WERR
        MOV   R2,@LCOLM(R9)
        INC   R8
        BL    @CLASS
        DATA  32-1
        JMP   WERR
        C     R2,@LCOLM(R9)
        JL    WERR
        MOV   R2,@RCOLM(R9)
        B     @RETURN
WERR    EQU   $
        CLR   @TLINE(R9)
        MOV   @MAXROW,@BLINE(R9)
        CLR   @LCOLM(R9)
        MOV   @MAXCOL,@RCOLM(R9)
ATERR   LI    R0,>1C00
        JMP   $+4
ONERR   LI    R0,>1F00
        BLWP  @ERR
        JMP   RETURN
CLASS   CLR   R0
        MOV   R8,R1
        BLWP  @NUMREF
        BLWP  @XMLLNK
        DATA  >12B8
        MOV   @FAC,R2
        DEC   R2
        JLT   GETAR1
        C     R2,*R11
        JGT   GETAR1
        INCT  R11
GETAR1  INCT  R11
        RT
*******************************

STRING  MOV   R11,R10
        CLR   R9
        LI    R8,1
        CB    @NBRARG,@ONE
        JEQ   PRINT1
        CB    @NBRARG,@TWO
        JNE   ONERR
        BL    @CLASS
        DATA  10-1
        JMP   ATERR
        MOV   R2,R9
        SLA   R9,1
        INC   R8
PRINT1  LI    R2,STORE2
        SETO  R1
        MOVB  R1,*R2
        CLR   R0
        MOV   R8,R1
        BLWP  @STRREF
        MOV   @RCOLM(R9),R3
        S     @LCOLM(R9),R3
        INC   R3
        MOV   R3,R4
        SWPB  R4
        CB    *R2,R4
        JHE   PRINT3
        SB    *R2,R4
        SWPB  R4
        CLR   R1
        MOVB  *R2+,R1
        SWPB  R1
        A     R1,R2
PRINT2  MOVB  @NUL,*R2+
        DEC   R4
        JNE   PRINT2
PRINT3  MOV   @BLINE(R9),R6
        MOV   @TLINE(R9),R5
        S     R5,R6
        SLA   R5,5
        A     @LCOLM(R9),R5
        MOV   R5,R4
PRINT4  DEC   R6
        JLT   PRINT7
        AI    R4,32
        MOV   R4,R0
        BL    @VDPADR
        LI    R1,STORE1
        MOV   R3,R2
PRINT5  MOVB  @VDPRD,*R1+
        DEC   R2
        JNE   PRINT5
        MOV   R5,R0
        BL    @WRITE
        LI    R1,STORE1
        MOV   R3,R2
PRINT6  MOVB  *R1+,@VDPWD
        DEC   R2
        JNE   PRINT6
        AI    R5,32
        JMP   PRINT4
PRINT7  MOV   R5,R0
        BL    @WRITE
        LI    R1,STORE2+1
        MOV   R3,R2
PRINT8  MOVB  *R1+,R0
        AI    R0,>6000
        MOVB  R0,@VDPWD
        DEC   R2
        JNE   PRINT8
RETURN  EQU   $
        CLR   R0
        MOVB  R0,@STATUS
        B     *R10
WRITE   EQU   $
        ORI   R0,>4000
```

>>>

```
VDPADR EQU  $
       SWPB RO
       MOVB RO,@VDPWA
       SWPB RO
       MOVB RO,@VDPWA
       RT

       END
```

```
100 CALL INIT :: CALL CLEAR :: CALL SCREEN(5):: DISPLAY AT(12,5):"Loading Please
 wait"
110 CALL LOAD(16368,83,84,82,73,78,71,39,26,87,73,78,68,79,87,38,106,"",8194,39,
242,63,440)
120 DATA 0,0,0,0,0,0,0,0,0,0,0,0,203,20,203,53,203,78,203,231,204,71
130 DATA 204,150,204,228,205,29,205,75,205,96,33,131,35,253,38,184,40,183,41,182
,42,195
140 DATA 43,193,44,179,45,194,47,196,58,181,59,180,60,191,61,190,62,192,94,197,2
55,58
150 DATA 58,130,65,84,240,71,79,133,73,70,132,79,78,155,79,82,186,80,73,221,84,7
9
160 DATA 177,255,65,66,83,203,65,76,76,236,65,78,68,187,65,83,67,220,65,84,78,20
4
170 DATA 66,89,69,3,67,79,78,1,67,79,83,205,68,69,70,137,68,73,77,138,69,78
180 DATA 68,139,69,79,70,202,69,88,80,206,70,79,82,140,73,78,84,207,76,69,78,213
190 DATA 76,69,84,141,76,79,71,208,77,65,88,223,77,73,78,224,78,69,87,0,78,79
200 DATA 84,189,78,85,77,4,79,76,68,5,80,79,83,217,82,69,67,222,82,69,77,154
210 DATA 82,69,83,6,82,78,68,215,82,85,78,169,83,71,78,209,83,73,78,210,83,81
220 DATA 82,211,83,85,66,161,84,65,66,252,84,65,78,212,86,65,76,218,88,79,82,188
230 DATA 255,66,65,83,69,241,66,69,80,238,67,65,76,76,157,67,72,82,36,214,68
240 DATA 65,84,65,147,255,128,255,0,255,0,255,0,255,0,255,0,255,0,255,0,255,0
250 DATA 255,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
260 DATA 0,23,0,23,0,23,0,23,0,23,0,23,0,23,0,23,0,23,0,23,0,23,0,0
270 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,31
280 DATA 0,31,0,31,0,31,0,31,0,31,0,31,0,31,0,31,1,2,4,5,32,0
290 DATA 194,139,4,201,2,8,0,1,152,32,131,18,38,102,19,11,152,32,131,18,38,103
300 DATA 22,55,6,160,38,250,0,9,16,48,194,66,10,25,5,136,6,160,38,250,0,23
310 DATA 16,31,202,66,38,20,5,136,6,160,38,250,0,23,16,24,138,66,38,20,26,21
320 DATA 202,66,38,40,5,136,6,160,38,250,0,31,16,14,202,66,38,60,5,136,6,160
330 DATA 38,250,0,31,16,7,138,66,38,60,26,4,202,66,38,80,4,96,39,216,4,233
340 DATA 38,20,202,96,38,148,38,40,4,233,38,60,202,96,38,182,38,80,2,0,28,0
350 DATA 16,1,2,0,31,0,4,32,32,52,16,111,4,192,192,72,4,32,32,12,4,32
360 DATA 32,24,18,184,192,160,131,74,6,2,17,3,134,194,21,1,5,203,5,203,4,91
370 DATA 194,139,4,201,2,8,0,1,152,32,131,18,38,100,19,11,152,32,131,18,38,101
380 DATA 22,223,6,160,38,250,0,9,16,216,194,66,10,25,5,136,2,2,37,20,7,1
390 DATA 212,129,4,192,192,72,4,32,32,20,192,233,38,80,96,233,38,60,5,131,193,3
400 DATA 6,196,145,18,20,10,113,18,6,196,4,193,208,114,6,193,160,129,220,160,38,
104
410 DATA 6,4,22,252,193,169,38,40,193,105,38,20,97,133,10,85,161,105,38,60,193,5
420 DATA 6,6,17,25,2,36,0,32,192,4,6,160,39,228,2,1,36,244,192,131,220,96
430 DATA 136,0,6,2,22,252,192,5,6,160,39,224,2,1,36,244,192,131,216,49,140,0
440 DATA 6,2,22,252,2,37,0,32,16,229,192,5,6,160,39,224,2,1,37,21,192,131
450 DATA 208,49,2,32,96,0,216,0,140,0,6,2,22,249,4,192,216,0,131,124,4,90
460 DATA 2,96,64,0,6,192,216,0,140,2,6,192,216,0,140,2,4,91,255,0
470 FOR I=9460 TO 10227 :: READ N :: CALL LOAD(I,N):: NEXT I
480 CALL CLEAR :: CALL SCREEN(5):: DISPLAY AT(12,4):"Loading please wait" :: DIM

))))))
```

```
 P$(16),Q$(16)
490 CALL CHAR(91,"FFFF80808080808080FFFF0101010101010101010101FFFF80808080808080FF
FF");.: CALL CHAR(95,"0000000000000FFFF0101010101010101")
500 CALL CHAR(122,"003854503814543880808080808080800000000000000000FFFF000000000
0000000282828")
510 T$="[}}}}}}}}}}\" :: B$="^__________]" :: K$="[}}}}}}}}}}}}}}\" :: K2$="^______
_______]" :: T2$="[}}}}}}}}}}}}}}}}}}}}}}}}\" :: B2$="^________________________]"
520 P$(1)="[}}}}}}}}}}}}}}}}}}}}}}\" :: P$(2)="{!!!!!!!!!!!!!!!!Page!1`" :: P$(3)=
"{!!!!!!!!!!!!!!!!!!!!`" :: P$(4)="{You!can!use!up!ten!!!`"
530 P$(5)="{overlapping!windows!!`" :: P$(6)="{in!your!programs!!!!!`" :: P$(7)=
"{To!place!the!windows!`" :: P$(8)="{CALL!LINK(~WINDOW~!!!`"
540 P$(9)="{!!!!!!,N,TR,BR,LC,RC)`" :: P$(10)="{N!=!window!number!!!!`" :: P$(11
)="{TR=!Top!row!!!!!!!!!!`" :: P$(12)="{BR=!Bottom!row!!!!!!!`"
550 P$(13)="{LC=!Left!column!!!!!!`" :: P$(14)="{RC=!Right!column!!!!!`" :: P$(1
5)="{!!!!!!!!!!!!!!!!!!!!`" :: P$(16)="^_________________________]"
560 Q$(1)="[}}}}}}}}}}}}}}}}}}}}}}\" :: Q$(2)="{!!!!!!!!!!!!!!!!Page!2`" :: Q$(3)=
"{!!!!!!!!!!!!!!!!!!!!`" :: Q$(4)="{To!place!the!text!!!!`"
570 Q$(5)="{CALL!LINK!!!!!!!!!!`" :: Q$(6)="{!!!!!!!(~STRING~,Az):`" :: Q$(7)=
"{Az=Text!to!be!printed`" :: Q$(8)="{!!!!!!!!!!!!!!!!!!!!`"
580 Q$(9)="{!!!!!!!!!!!!!!!!!!!!`" :: Q$(10)="{I!hope!this!will!be!!`" :: Q$(11
)="{of!use!in!your!next!!`" :: Q$(12)="{program.!!!!!!!!!!!!`"
590 Q$(13)="{!!!!!!!!!!!!!!!!!!!!`" :: Q$(14)="{!!!!!!!!!!!!!!!!!!!!`" :: Q$(1
5)="{!!!James!Stringfellow`" :: Q$(16)="^"&RPT$("_",21)&"]"
600 R$(1)="[}}}}}}}}}}}}}}}}}}}}}}}}\" :: R$(2)="{Press!1!or!2!to!page!!!`" :: R$
(3)="{Press!enter!to!continue`" :: R$(4)="^"&RPT$("_",23)&"]"
610 CALL CLEAR :: FOR I=2 TO 12 :: CALL COLOR(I,2,13):: NEXT I
620 FOR I=1 TO 9 :: CALL LINK("WINDOW",I,I+I-1,I+I+6,I+I+2,I+I+12):: A$(I)=SEG$(
"{Window!!",1,11)&CHR$(I+48)&SEG$("`",1,1)
630 CALL LINK("STRING",I,T$):: FOR A=1 TO 6 :: CALL LINK("STRING",I,A$(I)):: NEX
T A :: CALL LINK("STRING",I,B$):: NEXT I
640 DISPLAY AT(22,1)SIZE(15):K$ :: DISPLAY AT(23,1)SIZE(15):"{PRESS!ANY!KEY`" ::
 DISPLAY AT(24,1)SIZE(15):K2$
650 CALL KEY(0,K,S):: IF S=0 THEN 650
660 CALL LINK("WINDOW",2,1,16,2,24):: CALL LINK("WINDOW",1,4,19,8,30):: CALL LIN
K("WINDOW",3,21,24,2,26)
670 CALL CLEAR :: FOR I=1 TO 4 :: CALL LINK("STRING",3,R$(I)):: NEXT I :: GOSUB
690 :: GOSUB 700
680 CALL KEY(0,K,S):: IF K=13 THEN 710 :: IF S=0 OR K)50 OR K(49 THEN 680 :: ON
K-48 GOSUB 700,690 :: GOTO 680
690 FOR I=1 TO 16 :: CALL LINK("STRING",2,Q$(I)):: NEXT I :: RETURN
700 FOR I=1 TO 16 :: CALL LINK("STRING",1,P$(I)):: NEXT I :: RETURN
710 CALL SCREEN(5):: CALL CLEAR
720 CALL LINK("WINDOW",1,1,9,2,12):: CALL LINK("WINDOW",2,6,14,8,18):: CALL LINK
("WINDOW",3,11,19,13,23)
730 CALL LINK("WINDOW",4,16,24,20,30):: CALL LINK("WINDOW",5,5,13,20,30)
740 CALL LINK("WINDOW",8,22,24,2,25):: CALL LINK("WINDOw",7,1,9,15,25):: CALL LI
NK("WINDOW",6,14,22,5,15)
750 FOR N=1 TO 7 :: A$(N)=SEG$("{Window!!",1,11)&CHR$(N+48)&SEG$("`",1,2)
760 CALL LINK("STRING",N,T$):: FOR I=1 TO 7 :: CALL LINK("STRING",N,A$(N)):: NEX
T I :: CALL LINK("STRING",N,B$):: NEXT N
770 CALL LINK("STRING",8,T2$):: CALL LINK("STRING",8,"{!Press!1!to!7!!Stop=8!`")
:: CALL LINK("STRING",8,B2$)
780 CALL KEY(0,K,S):: IF S=0 OR K)56 OR K(49 THEN 780 :: IF K=56 THEN STOP
790 N=K-48 :: A$(N)=SEG$("{Window!!",1,11)&CHR$(N+48)&SEG$("`",1,2)
800 CALL LINK("STRING",N,T$):: FOR I=1 TO 7 :: CALL LINK("STRING",N,A$(N)):: NEX
T I :: CALL LINK("STRING",N,B$)
810 CALL LINK("STRING",8,T2$):: CALL LINK("STRING",8,"{!Press!1!to!7!!Stop=8!`")
:: CALL LINK("STRING",8,B2$):: GOTO 780

))))))
```

ADVENTURE HELP

Adventure Help Line By JO ANN COPELAND

This particular Adventurer has reached 275 points out of 400 in Starcross and is STUCK! Rumour has it I may order a hint book but don't you believe it! Would a true Adventurer do anything like that? (We'll see if I don't get any further within the next week!) Just in case, anyone out there have one for sale.....?

Cut Throats

Cut Throats (Aptly named) - Visit Hardscrabble Island and see how many times it happens to you! "The tourist folks come here in June with a clean shirt and a ten-dollar bill...and they don't change either one the whole summer."

Many people who played this Adventure got nowhere - simply by not winding (setting) their watch! How else can you tell what time it is? And in this game you can set your watch by what happens!

Hints for the Sao Vera

Optional items are flashlight and shark canister among other optional expenditures (depending on how much to have to spend): net, spear gun, small air compressor (if you like to breath).

The bunks and bars will go hand in hand - Feel like fooling around with a skeleton? - the entrance to this ship and the exit lie in the same spot - to decide which chest is best (oak or maple?) try using a piece of equipment from Outfitter's International - feel like a walk on the ocean floor? There's an exit provided for you to do so.

Hints for the Leviathan

Optional items are (among others) flashlight, compressor, shark canister, putty, electromagnet, drill.

There are three decks to this ship - you will have to use all of them. Take a trip through the supplies locker, cabin, purser's cabin and the airtight room (which should remain airtight!). An electromagnet helps you along the way, some putty relieves your pains if you're cracking from the pressure - drilling teeth is not as much fun as drilling what is necessary!

))))))

Getting off Hardscrabble Island is, in itself, a chore! Don't leave without the right items from Outfitter's International, and don't forget the envelope that's on McGinty's desk! Good luck!

Enchanter

Spells needed to complete Adventure:
Melbor, Gondar, Cleesh, Zifmia, Krebf, Ozmoo, Exex, Vaxum, Rezrov, Gnusto, Blorb, Nitfol, Frotz, Kulcad, Filfre, Guncho, Izyuk.
Just for kicks: Zifmia Implementers

Places of interest (to do things or find things): Inside shack, Shady brook, hovel, outside gate, jewel room, bedroom, Hall of Mirrors 1, closet, gallery, cell, secret passage, library (2), north gate, forest, swamp, map room (2), guarded door, engine room, beach, control room, winding stair.

Witness

This Adventure gives you several opportunities to prove yourself an idiot - instead of immediately going to the front door for entrance, try going to the back door and hanging around to see what you can see - you'll find some interesting things out, but later won't be given admission to the house 'cause you're too late for your appointment!

Times to be somewhere: 10:59 Monica returns to the garage (if you're hiding in the right spot you can see some interesting stuff). 11:33 The Coroner comes. 11:47 Phong's room. 12:05 Mr. Linder's (Ex-Mr. Linder's) office (the lounge).

Places to be and things to see: Entry; Butler's room and window; Garage; Side yard; Work shop; Office (desk, lounge); Monica's bedroom; Bathroom Tub window; Freeman's bedroom window.

Things you can find (among others) and helpful words: putty, gun receipt, note, mystery book, cast, powder, telegram, handcuffs, snub-nosed colt, match book, ticket stub, medical report, side-yard cast, back-yard cast, muddy handgun, hidden handgun, clock key. (Words): Dust, examine, analyze, compare, accuse, arrest, call, cuff. Show (item) to (someone). Compare (something) to (something).

This Adventure has THREE solutions to it - only ONE is the COMPLETE solution and you will see the statement "You have reached a complete solution to the story. If you like, you may see the author's summary of the case."

Planetfall

80 points to score in this one - 3 days in an Adventure (according to Current Galactic Standard Time (adjusted to your local day-cycle)). Become a GALACTIC OVERLORD by completing this the right way!

))))))

"Wixin xe last fiiv senshureez, xe riiz uv xe Nuu Teknakrasee haz reeturnd sivilizaashun tuu xe levul ataand beefor xe Hiiaatus."

Points	Reason
3	entering escape pod
3	entering the Crag
2	turning Floyd on for the first time
2	firing the Laser for the first time
4	entering Storage West
4	entering Admin Corridor North
4	entering the Kitchen
4	entering the Tower Core
4	entering the Kalamontee Platform
4	entering the Lawanda Platform
1	taking the Kitchen Access Card
1	taking the Shuttle Access Card
1	taking the Upper Elevator Access Card
1	taking the Lower Elevator Access Card
1	taking the Miniaturization Access Card
2	causing Floyd's 'death'
6	fixing the communications system
6	fixing the planetary defence system
6	fixing the course control system
4	entering the Strip Near Station
4	entering the Auxiliary Booth
8	fixing the computer
5	entering the Cryo-Elevator

Accomplish this correctly and you will have your just revenge - get Blather demoted to Ensign Twelfth Class and have him assigned as your personal toilet attendant!

))))))

REVIEWS

By JO ANN COPELAND

SID MICHEL's The Big Texas Spy Adventure offers you the opportunity of tracking down the evil 'SAXET'. Easier said than done! Sid has done a great job of improving this latest release and it has many advantageous points. You can save your files (in case you think you're going to get killed - which you will) to Disk 1 or Disk 2 and can save under different filenames. There are a total of 158 locations which must have taken Sid a lot of time and effort coordinating! There are several modes of transport, including a submarine, an amphibious vehicle, a tigermoth airplane, etc. He supplies his own choice of Help clues, which can be run at your own convenience. I originally thought this was great - however, I still haven't completed the Adventure (shame of all shame). There is also a list of helpful words which you will find yourself looking at more than once. The screen colours are good and there are many 'stick-points' and a clever use of the objects in the Adventure. What you see is not always what you think!

I'd definitely encourage TI'ers to get their teeth into this one - just make sure you have plenty of mapping paper and a pencil sharpener!

Other Adventures to check out:

Lost Treasure of the Aztec (and/or) Jack and the Beanstalk

))))))

```
100 REM  TSC GA0061
110 REM  CHECKERS BY
120 REM  PRISCILLA WALLING
130 REM  DARIEN, ILLINOIS 60
559
140 REM  JANUARY 1981
150 CALL CLEAR
160 CALL SCREEN(6)
170 CALL COLOR(3,2,16)
180 CALL COLOR(4,2,16)
190 CALL COLOR(5,2,16)
200 CALL COLOR(6,2,16)
210 CALL COLOR(7,2,16)
220 CALL COLOR(8,2,16)
230 CALL COLOR(2,2,16)
240 CALL COLOR(9,2,2)
250 CALL COLOR(10,7,7)
260 CALL COLOR(11,15,7)
270 CALL COLOR(12,2,7)
280 CALL CHAR(103,"FFFFFFFFF
FFFFFFF")
290 CALL CHAR(104,"FFFFFFFFF
FFFFFFF")
300 CALL CHAR(112,"00003C7E7
E3C")
310 CALL CHAR(120,"00003C7E7
E3C")
320 CALL CHAR(113,"005A5A7E7
E7E7E")
330 CALL CHAR(121,"005A5A7E7
E7E7E")
340 CALL CLEAR
350 PRINT "           CHECKER
S":::::::::::::
360 GOSUB 3380
370 PRINT "THIS PROGRAM WILL
 PLAY CHECKERS. THE COMPUTER
 IS GREY,";
380 PRINT "AND YOU ARE BLACK
. THE COMPUTER WILL GO  FIRS
T.----NOTE----"
390 PRINT " SQUARES ARE IN T
HE FORM-(X,Y) AND SQ. 1,1 IS
 THE TOP LEFT."
400 PRINT " IN THE CASE OF A
 DOUBLE JUMP. ENTER ONLY ONE
 JUMP AT A TIME."
410 PRINT "YOU MUST JUMP IF
POSSIBLE."
420 PRINT "THE COMPUTER WILL
 MAKE THE FIRST MOVE."
430 PRINT "PLEASE WAIT FOR A
 PROMPT (ENTER FROM X,Y) BEF
ORE YOU MOVE."
440 PRINT "IF YOU DON'T LIKE
 THE FORCED JUMP PROMPT REEN
TER IT AND YOU WILL BE RETUR
NED TO NORMAL PROMPTS."
```

PROGRAM LISTING

```
450 FOR DELAY=1 TO 4000
460 NEXT DELAY
470 GOSUB 2820
480 XM=3
490 YM=20
500 COMP=12
510 OPP=12
520 LOOP=0
530 LOOP1=0
540 M$="HAVE PATIENCE. I AM
THINKING."
550 GO SUB 3270
560 RANDOMIZE
570 FOR Y=8 TO 1 STEP -1
580 FOR X=1 TO 8
590 IF LOOP1)3*COMP THEN 270
0
600 IF LOOP+1)COMP THEN 720
610 CALL GCHAR(8+Y,12+X,YX)
620 IF YX=112 THEN 650
630 IF YX=113 THEN 680
640 GO TO 700
650 LOOP=LOOP+1
660 GOSUB 840
670 GO TO 700
680 LOOP=LOOP+1
690 GOSUB 1270
700 NEXT X
710 NEXT Y
720 X=INT(8*RND)+1
730 Y=INT(8*RND)+1
740 CALL GCHAR(8+Y,12+X,YX)
750 IF YX=112 THEN 780
760 IF YX=113 THEN 810
770 GO TO 720
780 LOOP1=LOOP1+1
790 GOSUB 840
800 GO TO 570
810 LOOP1=LOOP1+1
820 GOSUB 1270
830 GO TO 570
840 REM  SUBROUTINE TO MOVE
COMPUTER'S PIECE
850 FOR A=-1 TO 1 STEP 2
860 U=X+A
870 V=Y-1
880 CALL GCHAR(V+8,U+12,VU)
890 IF U(1 THEN 1250
900 IF U)8 THEN 1250
910 IF V(1 THEN 1250
920 IF V)8 THEN 1250
930 IF VU()104 THEN 1130
940 IF LOOP1=0 THEN 1250
950 IF LOOP1)2*COMP THEN 111
0
960 TU1=U+A
970 TV1=V-1
980 TU2=X
```

))))))

```
990 TV2=Y-2
1000 TU3=X+2*A
1010 TV3=Y
1020 CALL GCHAR(TV1+8,TU1+12
,TST1)
1030 CALL GCHAR(TV2+8,TU2+12
,TST2)
1040 CALL GCHAR(TV3+8,TU3+12
,TST3)
1050 IF TST1=120 THEN 1250
1060 IF TST1=121 THEN 1250
1070 IF TST2=104 THEN 1110
1080 IF TST2=112 THEN 1110
1090 IF TST2=113 THEN 1110
1100 IF TST3=104 THEN 1250
1110 GO SUB 1720
1120 GO TO 1260
1130 IF VU=112 THEN 1250
1140 IF VU=113 THEN 1250
1150 U=U+A
1160 V=V-1
1170 IF U<1 THEN 1250
1180 IF U>8 THEN 1250
1190 IF V<1 THEN 1250
1200 IF V>8 THEN 1250
1210 CALL GCHAR(V+8,U+12,VU)
1220 IF VU<>104 THEN 1250
1230 GOSUB 1720
1240 GO TO 1260
1250 NEXT A
1260 RETURN
1270 REM  KING MOVES
1280 FOR B=1 TO -1 STEP -2
1290 FOR A=1 TO -1 STEP -2
1300 U=X+A
1310 V=Y+B
1320 IF U<1 THEN 1690
1330 IF U>8 THEN 1690
1340 IF V<1 THEN 1690
1350 IF V>8 THEN 1690
1360 CALL GCHAR(V+8,U+12,UV)
1370 IF UV<>104 THEN 1570
1380 IF LOOP1=0 THEN 1690
1390 IF LOOP1>2*COMP THEN 15
50
1400 TU1=U+A
1410 TV1=V+B
1420 TU2=X
1430 TV2=Y+2*B
1440 TU3=X+2*A
1450 TV3=Y
1460 CALL GCHAR(TV1+8,TU1+12
,TST1)
1470 CALL GCHAR(TV2+8,TU2+12
,TST2)
1480 CALL GCHAR(TV3+8,TU3+12
,TST3)
1490 IF TST1=120 THEN 1690
1500 IF TST1=121 THEN 1690
1510 IF TST2=104 THEN 1550
1520 IF TST2=112 THEN 1550
1530 IF TST2=113 THEN 1550
1540 IF TST3=104 THEN 1690
1550 GOSUB 1720
1560 GO TO 1710
1570 IF UV=112 THEN 1690
1580 IF UV=113 THEN 1690
1590 U=U+A
1600 V=V+B
1610 IF U<1 THEN 1690
1620 IF U>8 THEN 1690
1630 IF V<1 THEN 1690
1640 IF V>8 THEN 1690
1650 CALL GCHAR(V+8,U+12,UV)
1660 IF UV<>104 THEN 1690
1670 GOSUB 1720
1680 GO TO 1710
1690 NEXT A
1700 NEXT B
1710 RETURN
1720 M$="I AM READY TO MOVE
NOW.       "
1730 GOSUB 3270
1740 CALL HCHAR(Y+8,X+12,104
)
1750 IF YX=113 THEN 1770
1760 IF V<>1 THEN 1810
1770 CALL HCHAR(V+8,U+12,113
)
1780 LOOP=0
1790 LOOP1=0
1800 GO TO 1840
1810 CALL HCHAR(V+8,U+12,112
)
1820 LOOP=0
1830 LOOP1=0
1840 IF ABS(X-U)<>2 THEN 189
0
1850 CALL HCHAR(8+(Y+V)/2,12
+(X+U)/2,104)
1860 OPP=OPP-1
1870 GOSUB 3590
1880 IF OPP=0 THEN 2760
1890 M$="O.K. IT'S YOUR TURN
 TO MOVE.  "
1900 GOSUB 3270
1910 GOSUB 4290
1920 IF FLAG=1 THEN 2220
1930 M$="ENTER FROM (X,Y)
          "
1940 GO SUB 3270
1950 CALL KEY(0,KEYE,STATUS)
1960 IF STATUS=0 THEN 1950
1970 IF KEYE<=48 THEN 2400
1980 IF KEYE>=57 THEN 2400
1990 E=KEYE-48
```

>>>

```
2000 CALL SOUND(100,330,2)
2010 FOR DELAY=1 TO 100
2020 NEXT DELAY
2030 CALL KEY(0,KEYH,STATUS)
2040 IF STATUS=0 THEN 2030
2050 IF KEYH(=48 THEN 2400
2060 IF KEYH)=57 THEN 2400
2070 H=KEYH-48
2080 CALL SOUND(100,330,2)
2090 M$="ENTER FROM ("&STR$(
E)&","&STR$(H)&")
"
2100 GOSUB 3270
2110 CALL GCHAR(H+8,E+12,Z)
2120 IF Z=104 THEN 2170
2130 IF Z=103 THEN 2400
2140 IF Z=112 THEN 2400
2150 IF Z=113 THEN 2400
2160 GO TO 2200
2170 M$="NO ONE OCCUPYING TH
AT SPACE  "
2180 GOSUB 3270
2190 GO TO 1930
2200 M$="ENTER FROM ("&STR$(
E)&","&STR$(H)&")"&" TO (X,Y
)  "
2210 GOSUB 3270
2220 CALL KEY(0,KEYA,STATUS)
2230 IF STATUS=0 THEN 2220
2240 IF KEYA(=48 THEN 2400
2250 IF KEYA)=57 THEN 2400
2260 A=KEYA-48
2270 CALL SOUND(100,330,2)
2280 FOR DELAY=1 TO 100
2290 NEXT DELAY
2300 CALL KEY(0,KEYB,STATUS)
2310 IF STATUS=0 THEN 2300
2320 IF KEYB(=48 THEN 2400
2330 IF KEYB)=57 THEN 2400
2340 CALL SOUND(100,330,2)
2350 B=KEYB-48
2360 M$="MOVE  FROM ("&STR$(
E)&","&STR$(H)&")"&" TO ("&S
TR$(A)&","&STR$(B)&")"
2370 GOSUB 3270
2380 CALL GCHAR(B+8,A+12,SYM
)
2390 IF SYM()103 THEN 2430
2400 M$="THAT MOVE IS ILLEGA
L........."
2410 GOSUB 3270
2420 GO TO 1930
2430 IF SYM=104 THEN 2470
2440 M$="THAT SPACE IS OCCUP
IED       "
2450 GOSUB 3270
2460 GO TO 1930
2470 IF ABS(E-A))2 THEN 2400
2480 IF ABS(E-A)=0 THEN 2400
2490 IF ABS(E-A)=1 THEN 2520
2500 CALL GCHAR(8+(H+B)/2,12
+(E+A)/2,JP)
2510 IF JP=104 THEN 2400
2520 CALL GCHAR(H+8,E+12,Z)
2530 IF Z=121 THEN 2550
2540 IF B()8 THEN 2580
2550 CALL HCHAR(B+8,A+12,121
)
2560 CALL HCHAR(H+8,E+12,104
)
2570 GO TO 2610
2580 IF (H-B)=1 THEN 2400
2590 CALL HCHAR(B+8,A+12,120
)
2600 CALL HCHAR(H+8,E+12,104
)
2610 IF ABS(E-A)()2 THEN 267
0
2620 CALL HCHAR(8+(H+B)/2,12
+(E+A)/2,104)
2630 COMP=COMP-1
2640 GOSUB 3960
2650 IF FLAG=1 THEN 2220
2660 IF COMP=0 THEN 2700
2670 M$="HAVE PATIENCE. I AM
 THINKING."
2680 GOSUB 3270
2690 RETURN
2700 M$="VERY GOOD. YOU WIN.
I QUIT.   "
2710 GOSUB 3270
2720 GOSUB 3380
2730 FOR DELAY=1 TO 500
2740 NEXT DELAY
2750 GO TO 2810
2760 M$="UHOH I BEAT YOU!!!!
!!!!!!!!!!"
2770 GOSUB 3270
2780 FOR DELAY=1 TO 500
2790 NEXT DELAY
2800 GOSUB 3380
2810 END
2820 REM  BOARD SUBROUTINE
2830 CALL CLEAR
2840 FOR K=1 TO 8
2850 FOR I=1 TO 8 STEP 2
2860 TEST=K/2-INT(K/2)
2870 IF TEST)0 THEN 2910
2880 CALL HCHAR(8+K,13+I,103
)
2890 CALL HCHAR(8+K,12+I,104
)
2900 GO TO 2930
2910 CALL HCHAR(8+K,13+I,104
)
2920 CALL HCHAR(8+K,12+I,103
```

))))))

```
)
2930 NEXT I
2940 NEXT K
2950 M$="12345678"
2960 YM=8
2970 XM=12
2980 GO SUB 3270
2990 GOSUB 3330
3000 M$="X SQUARE"
3010 YM=17
3020 XM=12
3030 GOSUB 3270
3040 M$="Y SQUARE"
3050 YM=8
3060 XM=21
3070 GOSUB 3330
3080 FOR K=1 TO 3
3090 FOR I=1 TO 8 STEP 2
3100 TEST=K/2-INT(K/2)
3110 IF TEST)0 THEN 3140
3120 CALL HCHAR(8+K,12+I,120
)
3130 GO TO 3150
3140 CALL HCHAR(8+K,13+I,120
)
3150 NEXT I
3160 NEXT K
3170 FOR K=6 TO 8
3180 FOR I=1 TO 8 STEP 2
3190 TEST=K/2-INT(K/2)
3200 IF TEST)0 THEN 3230
3210 CALL HCHAR(8+K,12+I,112
)
3220 GO TO 3240
3230 CALL HCHAR(8+K,13+I,112
)
3240 NEXT I
3250 NEXT K
3260 RETURN
3270 REM  LETTERING SUBROUTI
NE
3280 FOR I=1 TO LEN(M$)
3290 CODE=ASC(SEG$(M$,I,1))
3300 CALL HCHAR(YM,XM+I,CODE
)
3310 NEXT I
3320 RETURN
3330 FOR I=1 TO LEN(M$)
3340 CODE=ASC(SEG$(M$,I,1))
3350 CALL HCHAR(YM+I,XM,CODE
)
3360 NEXT I
3370 RETURN
3380 REM  SUBROUTINE TO PLAY
 INTRODUCTION "ALLEY CAT"
3390 CALL SOUND(400,165,1,19
6,1,262,1)
3400 CALL SOUND(400,165,1,19
6,1,247,1)
3410 CALL SOUND(400,131,1,16
5,1,220,1)
3420 CALL SOUND(400,131,1,16
5,1,208,1)
3430 CALL SOUND(400,131,1,16
5,1,196,1)
3440 CALL SOUND(400,131,1,16
5,1,208,1)
3450 CALL SOUND(400,131,1,16
5,1,220,1)
3460 CALL SOUND(66,44733,1)
3470 CALL SOUND(66,165,1)
3480 CALL SOUND(66,175,1)
3490 CALL SOUND(66,175,1)
3500 CALL SOUND(66,185,1)
3510 CALL SOUND(66,196,1)
3520 CALL SOUND(400,131,1,16
5,1,196,1)
3530 CALL SOUND(400,131,1,16
5,1,208,1)
3540 CALL SOUND(400,131,1,16
5,1,220,1)
3550 CALL SOUND(400,131,1,16
5,1,233,1)
3560 CALL SOUND(400,123,1,17
5,1,247,1)
3570 CALL SOUND(400,44733,1)
3580 RETURN
3590 REM  CAN COMPUTER JUMP
AGAIN
3600 FOR G=-1 TO 1 STEP 2
3610 FOR A=1 TO -1 STEP -2
3620 CALL GCHAR(8+V,12+U,UV)
3630 Z=V+G
3640 W=U+A
3650 IF W<1 THEN 3920
3660 IF W>8 THEN 3920
3670 IF Z<1 THEN 3920
3680 IF Z>8 THEN 3920
3690 CALL GCHAR(Z+8,W+12,WZ)
3700 IF WZ=104 THEN 3920
3710 IF WZ=112 THEN 3920
3720 IF WZ=113 THEN 3920
3730 W=W+A
3740 Z=Z+G
3750 IF W<1 THEN 3920
3760 IF W>8 THEN 3920
3770 IF Z<1 THEN 3920
3780 IF Z>8 THEN 3920
3790 CALL GCHAR(Z+8,W+12,WZ)
3800 IF WZ<>104 THEN 3920
3810 CALL HCHAR(8+V,12+U,104
)
3820 CALL HCHAR(8+(Z+V)/2,12
+(W+U)/2,104)
3830 IF UV=113 THEN 3870
3840 IF Z=1 THEN 3870
```

>>>

```
3850 CALL HCHAR(8+Z,12+W,112
)
3860 GO TO 3880
3870 CALL HCHAR(8+Z,12+W,113
)
3880 OPP=OPP-1
3890 U=W
3900 V=Z
3910 GO TO 3610
3920 NEXT A
3930 IF UV=112 THEN 3950
3940 NEXT G
3950 RETURN
3960 REM  SUBROUTINE FOR YOU
R JUMP
3970 FOR L=1 TO -1 STEP -2
3980 FOR K=-1 TO 1 STEP 2
3990 FLAG=0
4000 CALL GCHAR(8+B,12+A,AB)
4010 C=A+K
4020 D=B+L
4030 IF C<1 THEN 4250
4040 IF C>8 THEN 4250
4050 IF D<1 THEN 4250
4060 IF D>8 THEN 4250
4070 CALL GCHAR(8+D,12+C,CD)
4080 IF CD=104 THEN 4250
4090 IF CD=120 THEN 4250
4100 IF CD=121 THEN 4250
4110 C=C+K
4120 D=D+L
4130 IF C<1 THEN 4250
4140 IF D>8 THEN 4250
4150 IF C>8 THEN 4250
4160 IF D<1 THEN 4250
4170 CALL GCHAR(8+D,12+C,CD)
4180 IF CD<>104 THEN 4250
4190 E=A
4200 H=B
4210 FLAG=1
4220 M$="JUMP  FROM ("&STR$(
E)&","&STR$(H)&") TO (X,Y)
 "
4230 GOSUB 3270
4240 GO TO 4280
4250 NEXT K
4260 IF AB=120 THEN 4280
4270 NEXT L
4280 RETURN
4290 REM  SUBROUTINE TO MAKE
 SURE YOU JUMP
4300 FOR A=1 TO 8
4310 FOR B=1 TO 8
4320 CALL GCHAR(8+B,12+A,AB)
4330 IF AB=120 THEN 4360
4340 IF AB=121 THEN 4360
4350 GO TO 4380
4360 GOSUB 3960
4370 IF FLAG=1 THEN 4400
4380 NEXT B
4390 NEXT A
4400 RETURN
```

Formatted listing produced partly by a program kindly supplied by JIM PETERSON of TIGERCUB SOFTWARE.

>>>

S O U N D S G O O D

The next couple of pages are taken up with three machine language programs published by RICK KELLOGG in the December '86 issue of CIN-DAY NEWS, the newsletter of the CIN-DAY USER GROUP. The programs form part of a suite written originally by BILL GRONOS and published in the R/D COMPUTING NEWSLETTER produced by RYTE DATA of Box 210, Mountain Street, Halibirton, ONTARIO K0M 1S0, Canada. Rick didn't publish the text that goes with these programs (which must be assembled obviously before they can be run), but suggests that the full story should be obtained by taking out a subscription to R/D COMPUTING NEWSLETTER (given as $17 for overseas - that's in US$, which will need converting and even then may not be enough).

A few details are available: the sound is supplied via your cassette player hooked up to the port using just the 'ear' lead. One program is a primitive 'sound analyser' and is supposed to produce a wave form on the screen similar to that produced by an oscilloscope. Another is a 'spectrum analyser', representing any sounds on a graduated bar chart. The third program is a 'light show' and should take any music played to the computer and turn it into a psychedelic experience (a bit like looking at the pictures in 'TODAY'...?).

These are untried and untested, so I cannot vouch for them at all. I would welcome some feedback from successful implementers!

))))))

```
0033  IS2     TB 27
0034          JEQ IS2
0035  IS3     INC 2
0036          TB 27
0037          JNE IS3
0038          SRL 2,1
0039          MOV 3,0
0040          LI 1,>100
0041          LIMI 2
0042  IS4     CLR @>83D6
0043          TB 2
0044          JNE IS4
0045          INC @ICOUNT
0046          C @ICOUNT,@IMAX
0047          JNE IS4
0048          CLR @ICOUNT
0049          LIMI 0
0050          BLWP @VSBW
0051          MOVB @COLORS(2),1
0052          MOV 2,0
0053          AI 0,>380+11
0054          MOV 0,3
0055          BLWP @VSBW
0056          JMP IS1
0057  IMAX    DATA 1
0058  ICOUNT  DATA 0
0059  COLORS  BYTE 6,8,9,11,10,3,2,12,7,5
0060          BYTE 4,13,14,15,6,8,9,11,10,3
0061  BARS
0062          DATA BARWS
0063          DATA $+2
0064  BARS1   MOV 4,5
0065          MOV 3,0
0066  BARS2   BLWP @VSBW
0067          INC 0
0068          DEC 5
0069          JNE BARS2
0070          AI 1,>800
0071          INC 4
0072          AI 3,32
0073          DEC 2
0074          JNE BARS1
0075          LI 0,2
0076          LI 1,FREQS
0077          LI 2,6
0078          BLWP @VMBW
0079          LI 0,290
0080          LI 1,FREQS+6
0081          BLWP @VMBW
0082          LI 0,547
0083          LI 1,FREQS+12
0084          DEC 2
0085          BLWP @VMBW
0086          LI 0,707
0087          LI 1,TITLE
0088          LI 2,26
0089          BLWP @VMBW
0090          LI 0,>380+6
0091          LI 1,>F100
0092  CL1     BLWP @VSBW
0093          INC 0
0094          CI 0,>380+12
0095          JNE CL1
0096          RTWP
0097  BARWS
0098          DATA 0,>6000,20,9,4
0099          BSS 22
0100  FREQS   TEXT '5000CS1000CS500CSZ'
0101  TITLE   TEXT 'THE BILL GRONOS SOUND SHOW'
0102          END
```

2023 note- very clever but the first audio recording scratched in sooty paper was clearer... this is less than low-fi.

))))))

```
0001  ********************************
0002  *   AUDIO SPECTRUM LIGHT SHOW  *
0003  *     Bill Gronos July 1986    *
0004  *   (RYTE DATA - SEPT. 1986)   *
0005  *                              *
0006  *   Makes a spectrum colored   *
0007  * light show and modulates it  *
0008  * with sounds from the cassette *
0009  *       recorder input.        *
0010  ********************************
0011
0012          DEF RUN
0013          REF VWTR,VSBW,VMBW
0014  RUN
0015          LI 0,>0701
0016          BLWP @VWTR
0017          LI 0,>800+768
0018          CLR 1
0019  BP1     BLWP @VSBW
0020          INC 0
0021          CI 0,>800+768+1280
0022          JL BP1
0023          LI 0,>380+4
0024          LI 1,>1100
0025          BLWP @VSBW
0026          BLWP @BARS
0027          LI 1,COLORS
0028          LI 0,>380+12
0029          LI 2,20
0030          BLWP @VMBW
0031          LI 3,>380+11
0032  IS1     CLR 2
0033  IS2     TB 27
0034          JEQ IS2
0035  IS3     INC 2
0036          TB 27
0037          JNE IS3
0038          SRL 2,1
0039          MOV 3,0
0040          LI 1,>100
0041          LIMI 2
0042  IS4     CLR @>83D6
0043          TB 2
0044          JNE IS4
0045          INC @ICOUNT
0046          C @ICOUNT,@IMAX
0047          JNE IS4
0048          CLR @ICOUNT
0049          LIMI 0
0050          BLWP @VSBW
0051          MOVB @COLORS(2),1
0052          MOV 2,0
0053          AI 0,>380+11
0054          MOV 0,3
0055          BLWP @VSBW
0056          JMP IS1
0057  IMAX    DATA 1
0058  ICOUNT  DATA 0
0059  COLORS  BYTE 6,8,9,11,10,3,2,12,7,5
0060          BYTE 4,13,14,15,6,8,9,11,10,3
0061  BARS    DATA BARWS
0062          DATA $+2
0063          LI 0,>200
0064          MOV 0,@IMAX
0065          CLR 1
0066          LI 2,736
0067          LI 3,32
0068          LI 7,>6000
0069  L1      MOV 1,4
0070          BL @L3
0071          MOV 2,4
0072          BL @L3
0073          AI 1,33
0074          CI 1,363 396
0075          JH DV
0076          AI 2,>FFE1 (-31)
0077          DECT 3
0078          AI 7,>800
0079          JMP L1
0080  L3      AI 4,>4000
0081          SWPB 4
0082          MOVB 4,@>8C02
0083          SWPB 4
0084          MOVB 4,@>8C02
0085          MOV 3,6
0086  L2      MOVB 7,@>8C00
0087          DEC 6
0088          JNE L2
0089          B *11
0090  DV      CLR 6
0091          LI 4,32
0092          LI 3,22
0093          LI 1,>6000
0094          LI 5,33
0095          JMP DV2
0096  DV3     CI 6,2
0097          JEQ END
0098          LI 4,63
0099          LI 3,22
0100          LI 1,>6000
0101          LI 5,31
0102  DV2     MOV 4,0
0103          MOV 3,2
0104  DV1     BLWP @VSBW
0105          AI 0,32
0106          DEC 2
0107          JNE DV1
0108          A 5,4
0109          AI 1,>800
0110          DECT 3
0111          JNE DV2
0112          INC 6
0113          JMP DV3
0114  END     RTWP
0115  BARWS   BSS 32
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B U L L E T I N B O A R D

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

I have managed to scrounge another DOUBLE-SIDED FULL HEIGHT DISK DRIVE. It is without power supply or case, (which can be supplied at extra cost) but would fit into the PEB. Necessary cables can be supplied if required. It can be used as double-sided by the TI disk controller, and as double-density as well by other controllers with that capability.

The price is £100 including delivery by Datapost, and guaranteed for a year. Contact me on Oxford 510822.

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JOHN RICE has a whole stack of goodies for sale - I could have listed it all here, but it does run to seven pages! Send John a large stamped, self-addressed envelope to 7 Lincoln Road, SWINTON, Manchester M27 3WR.

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STEPHEN SHAW has some goodies on offer:

*Modules without documentation:

PAC MAN	Atarisoft	£3.00
BUCK ROGERS	TI	£3.00
PERSONAL RECORD KEEPING	TI	£4.00
PERSONAL REPORT GENERATOR	TI	£3.00

TI-WRITER module only - no manual, no disk	£3.00
TI-Writer disk, if required, (copy)	£4.00

ZERO ZAP	Milton Bradley	£2.00
DISK FIXER	Navarone - documentation is part of the program	£4.00

*Several copies of "GETTING STARTED WITH THE TI-99/4A" by you know who. Yours for £2.00 each, autographed as required.

All the above prices include post and packing.

There is also one item for collection only: a 4A console with psu and modulator. The cable connecting the keyboard to the pcb has snapped and will need resoldering. The unit is otherwise thought to be in good order. Useful for spares or repairable if you have a soldering iron. Remember, for collection only - it is heavy, and there are no packaging materials available. £6.00

The supply is limited, so phone 061 432 6097 between 8pm and 10pm only. Phoned orders will be held for three days only. Alternatively, write to Stephen Shaw, 10 Alstone Road, STOCKPORT, Cheshire SK4 5AH.

))MORE)

ALAN DAVEY has a system for sale at £400 or nearest offer. The system comprises a console, PEB, 32K card, RS232 card, disk controller card, internal single-sided drive, and at least the Editor/Assembler module with possibly a TE2 module as well.

He is also on the lookout for a standalone 32K, and a standalone disk drive controller at reasonable prices.

Phone him at home on 04606 4511, but remember not to ring on Sunday - he runs his 4/ABC Bulletin Board on that day, which ties up the phone!

>>END

L E T T E R S

I received a number of letters asking about memory expansion, and I will respond to those in due course. Full details were published in earlier issues of IT concerning the "Matchbox" RAM Expansion for those who have the relevant issues.

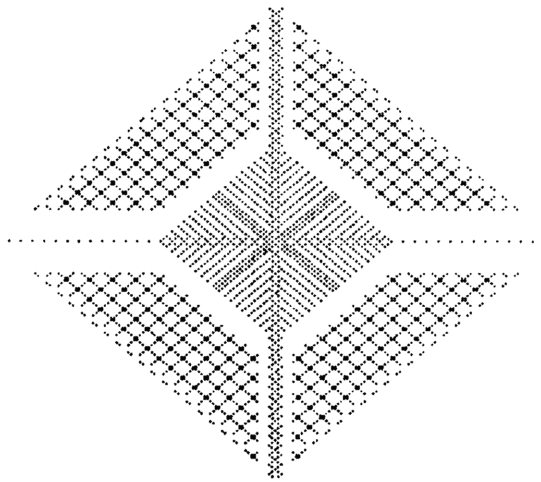
Meanwhile, DAVE HEWITT has a request for someone conversant with C99: Can anyone provide a function in either C or Assembly to show a disk directory, and can anyone provide a function to perform the equivalent of Extended BASIC's CALL CHARPAT() which is not included in the GRF1 library.

Anyone able to help should write to Dave at the address given in this month's Burble.

Finally, I have been sent a short list of Bulletin Boards in the Dallas area by BOB LUCKIN (thanks, Bob). Bob has no idea what they're like, and knowing the exhorbitant cost of using BT to phone anywhere, I guess that few other UK Users are likely to find out, but here they are just the same. The Dallas area code of 214 should be inserted after the international code for the USA, but before the codes given below:

99ER CONNECTION	272 2786. A 300 baud TE2 transfers only; fee required for complete access to messages and downloads.
LONGHORN TIBBS	240 4608. A 300/1200 baud, brand new TIBBS in Dallas, providing new messages and several new downloads.
THE FLUG TIBBS	321 4238. 300/1200 baud, with Xmodem and TE2 transfers.

>>END



THE TIHOME SOFTWARE COLLECTION

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

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

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

PRICING

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

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

The rest are priced as follows:

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

All programs are recorded on Single-sided disks.

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

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

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

All the above prices are inclusive of post and packing.

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

PLEASE MAKE ALL CHEQUES PAYABLE TO "PETER BROOKS"