Home Computing WEEKLY

An Argus Specialist Publication

July 5-11, 1983 No. 18

38p

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Pages of news

Your letters

PLUS: U.S. Scene and our controversial One Man's View

CHIP SHOP MAN SAYS: POP IN FOR A BYTE

Graham Barrow . . . fish and micro chips

CHIP shop owner Graham Barrow will serve you cod and chips for 80p — plus a game for your home computer.

Graham, 29, has set up a display of cassettes for the Spectrum, VIC-20 and ZX81 opposite the frying range of his shop on the busy Upper Richmond Road, Richmond, Surrey.

He became interested in computers while working for Datastream — a City financial services company. He left to take over the shop, Pisces Fish Bar, eight years ago.

Graham said: "I thought no more about it until a year ago when I bought a VIC-20 — that's when they cost £200 — because I wanted to learn about computers. I bought myself a book and taught myself to program and I wrote a program to help me with the accounts.

"I'm one of those people who does not like to have incomplete knowledge.

"I found there was nowhere to go in this area for a good selection of software — just the chain stores who only stock a small range. And, in common with most people, I don't like buying through the post. There's a time delay and you don't know what you're getting.

"I got fed up with waiting for someone to open a software

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Continued from front page

business and I thought: 'If no-one else is going to do it, then I will.'

"I decided to sell it here because I wasn't confident enough to open another shop — it would mean money, staff and rent — and I've got a lot of space in here."

Sheensoft, as the computer section is called, officially opens today with a range of tapes from major software houses.

One of Graham's suppliers is Liverpool-based Bug Byte whose joint managing director Tony Baden said: "When I heard about it my pint nearly went down the wrong way.

"But, thinking about it, it seems logical — a lot of kids go in there and a lot of chip shops have arcade games.

"I see software being sold anywhere that music cassettes are sold at present. The market's big enough for everyone to have a share."

Graham lives above the shop with his wife Wendy, 28, and two daughters, Emma, four, and 12-month-old Charlotte.

And what does W.H. Smith — with a store just a few miles away — think of the competition! A spokesman said: "I would be frightfully worried about greasy fingers on the keyboards...."

• • •

TV with a difference

Home computer users who tune into telesoftware broadcasts may be interested in Philips new 3890 TV set — because it incorporates a printer. The printer can be used to copy out listings of broadcast programs, as well as copying any teletext page.

The printer is housed in a spring-loaded drawer to the right of the screen, and uses aluminsed paper. Three rolls of paper are supplied with the set, and each roll will hold 175 screen pages.

Philips, City House, 420-430 London Road, Croydon CR9 3QR

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Assistant Editor: Candice Goodwin
Designer: Bryan Pitchford
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Advertisement Manager: Coleen Pimm
Assistant Advertisement Manager: Barry Bingham
Classified Advertising: Bridgette Sherliker
Managing Director: Jim Connell

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SOFTWARE SUPERMARKET

Over the moon

Orion Software is over the moon about its first program for the 16K ZX81. Called Moonlander, it's based on the NASA Apollo series in 1969 when Neil Armstrong became the first man on the moon.

According to Orion, Moonlander is a mixture of luck and skill. Random factors like orbit height and amount of fuel used mean that no two missions are the same. But to land successfully demands skill and practice — fortunately there's a practice mode.

Orion plans to follow Moonlander up with a graphics aid for the ZX81 and Spectrum, to be released within about six weeks. Other ZX software will be released soon.

Orion, Pippbrook Mill, London Road, Dorking, Surrey RH4 1JE

• • •

From Rubik to RAM

Patrick Bossert, who wrote You Can Do The Cube when he was 13, hopes to repeat his success with a collection of home computing games.

Called Micro Games, the book will cater for both models of BBC micro, the Spectrum, ZX81 and Research Machines 380Z and 480Z.

Philippa Dickinson, who co-authored Micro Games with Patrick, said: "There are all sorts in there — some speed-reaction types and some working-things-out games."

Patrick, who has now reached the ripe old age of 15, is currently doing O-levels. In his spare time he enjoys programming his BBC Model B, which was bought with some of the proceeds from You Can Do The Cube.

Penguin is also hoping to encourage more young programmers by organising a National Micro Competition which opens in September.

Penguin Books, 536 King's Road, London SW10 0UH

A NEW SERIES FOR FIRST TIME USERS

These titles are the latest in a new series of books which introduce newcomers to the most widely used micros in the marketplace.

The **"Learning to use"** series of books assume absolutely no knowledge about computers and the reader is shown even the most fundamental operations such as "switching on" and "loading a program". The books lead the reader through simple programming and then onto graphics, with several programs which show how to achieve pictures and even animation.

The user-friendly approach is consistent throughout the text – not only are program listings clearly shown, but in many cases, a photograph is included to show what the program looks like when actually loaded and run!

The books contain a number of specially written programs which show the full potential of these machines.

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READ-OUT

THE WIZARD'S WARRIORS: A fast moving game that matches developments in your skill as a player by becoming increasingly more devious. By offering to you the full range of options you can choose how to control your warrior through the maze. A full implementation of this program enables such features as a continuous series of sound effects, arcade quality graphics, double-point scoring, and--for the very artful --bonus lives. **Spectrum £4.95**

FORTH: A full implementation. Ideal for writing fast moving arcade type games. Allows the full colour and sound facilities of the Spectrum to be used. Future Microdrive enhancements will be made available. **Spectrum 14.95**

ADVENTURE ONE: Features a save game routine as the game can take months to complete. 'a remarkably good version....well worth the money.' ...*Sinclair User*... **ZX81 £5.95**

MAZEMAN: A fast action m/c game that reproduces the spirit of the original. '..is very accurate and fast.' ...*Which Micro?*... **Spectrum £4.95 ZX81 £4.45**

CHESS 1.4: Ten levels of play with this m/c program. Good graphic screen display. 'In a class of it's own.' ...*Your Computer*... **ZX81 £5.95**

INVADERS: Very fast m/c action. Includes mystery ship and increasingly difficult screens. **ZX81 £4.45**

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Box that talks. . .Julia Wilkins, 24, with Cheetah's Sweet Talker

Curses . . . it talks back

Don't curse your computer when it won't do what you want — it just might start talking back.

In fact Cheetah, which has just brought out the Sweet Talker plug-in unit for Spectrum and ZX81s, uses a program to check its modules which tells listeners to "P. . . off."

Joint managing director Melvin Beresford said: "That show you how wide the range is. . .the vocabulary really is unlimited."

His company makes the same claim about the £34.95 Sweet Talker as it makes about its range of RAM packs: They are cheaper than the competition.

Mr Beresford said the speech module was £5 less expensive than the two main competing products and that it did not involve opening the computer.

He expects it to be used in programming by saying things like "warning — missile attack" in space games and reckons it could even be tied in with the front door bell.

Sweet Talker, which comes with a booklet and demonstration tape, is programmed by typing in numbers for each part of a word or phrase which are then "spoken" through a 2¼in speaker.

There is no volume control and there is no facility to connect it to a larger speaker. A port at the back allows other peripherals to be attached.

Cheetah's next new product will be a Spectrum light pen.

Cheetah Marketing, 359 The Strand, London WC2

Nothing to ad?

Complaints by members of the public have got more micro companies into trouble with the Advertising Standards Authority.

This time Dragon Data is in the doghouse because of an advert in national papers.

They said that "the power of a computer is measured in units of RAM — standing for Random Access Memory". But after seeking expert advice, the ASA agreed with the complainant that amount of RAM was a measure of memory size, rather than an indication of the computer's power.

Two software companies were also criticised for advertising programs that they couldn't deliver in time. D. J. Moody Software, of Bingham, Notts, failed to deliver the goods, despite an ad that stated: "Orders despatched within 48 hours".

And a man from Winscombe complained that he had ordered a game called Mad Monk from Merlin Micro Systems, of Cleveland, in March 1982, and had not yet received it despite claims in a recent Merlin ad that it was "ready at last".

Advertising Standards Authority, Brook House, Torrington Place, London WC1E 7HN

Computers shares it out

Computers, who brought you the Lynx, is selling off shares to raise a further £900,000 for product development.

The money will go towards putting the final touches to the 128K Lynx, due out this autumn with a £445 price tag; to disc drives, scheduled for August, and to more Lynx software. It will also enable Camputers to make more of the standard Lynxes.

Should you have £850 to gamble on the stock market, you might be interested to know that holders of 5,000 or more shares, at 17p each, are entitled to a 10 per cent discount on Camputer products.

Camputers, 33A Bridge Street, Cambridge CA3 4AB

Micros? A piece of cake

If you're still deciding whether to take the plunge and buy a micro, there's a new paperback due out at the end of this month which could make your decision easier.

First Byte is, so its publishers say, "written for the ordinary person who want to know what possible use a computer could be to him" — or her, presumably.

It looks at how computers developed, explains the principles of programming, and introduces the micros you're most likely to meet, along with their accessories.

It explains the uses of a home micro, from games to word processing, and scane developments expected in the near future.

First Byte is written by Mike Scott Rohan, author of science fiction novel Run to the Stars.

Mike's enthusiasm for computers evidently extends to his meals. First Byte's book jacket features a computer made of cake, baked and iced by Mike's wife. First Byte costs £3.95.

EP Publishing, East Ardsley, Wakefield, West Yorks WF3 2JN

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More stores, more micros from Tandy

Tandy, the world's giant electronic retailing chain, is growing even bigger here with 25 new stores and 24 new dealers due to open this year.

And the company has just launched four new computers in the UK. They are:

- The Model 100, a rival for Epson's HX20, which costs £499 and is the size of A4 paper. It comes with a 40 character by eight line liquid crystal display, 8K of RAM, 32K of ROM, including a word processor, a diary as well as Microsoft BASIC, 30-hour batteries and ports for RS-232 and Centronics printers and 1500 baud cassette, compatible with the new Model 4.

- The Model 12, costing £2,299, which has 80K of RAM — expandable to 726K — screen and an 8in floppy disc.

- The Model 4, priced at £1,400 with 64K of RAM, expandable to 128K.

- The PC4, £49, an addition to Tandy's range of small hand-held micros.

Managing director ,John Sayers said this year the company would grow to 250 Tandy-owned stores — most of the new ones would be computer centres — and 117 authorised dealers.

Asked about the company's low public profile, Mr Sayers said: "We may not have marketed as aggressively as some others and maybe we are not as prolific as, say, Dragon or Sinclair, but we are very happy and we sold out of our Colour Computer at Christmas.

"With the Model 100 we have something which is exciting and this puts us at the forefront."

Tandy Corporation, Tameway Tower, Bridge Street, Walsall, West Midlands WS1 1LA

School plans autumn computer fair

A Welwyn Garden City school has hit on an enterprising way of raising funds — by holding a computer fair.

The Sir Frederic Osborn School's fair will take place on Sunday October 2, from 10.30 am to 4.30 pm.

Robert Brown, head of the school's technology and design department, who is organising the fair, said, "Ten percent of the proceeds will go to the school fund, ten percent to charity, and the rest will go towards improving the school's computer facilities.

"We've already got three Research Machines 380Zs — two we bought and one our sixth-formers won in a competition — and two Spectrums. But we'd like to buy two BBC Micros as well."

There will be a maximum of 33 stalls at the fair, and stands are £8 each.

The Sir Frederic Osborn School, Herns Lane, Welwyn Garden City, Herts AL7 2AF

Forbidden adventure

Kenema has added four new programs to its Oric software range. But before you venture into Hell's Temple, the new adventure game, you'll have to answer one question: have you got an adult with you?

Not that there's anything too hair-raising inside the Temple. According to Kenema's Brian Green, the question is really a cunning psychological ploy.

"We want to stimulate youngsters into getting involved in adventure games", he said. "If we say that they can only use the program accompanied by an adult, the first thing they'll want to do is look into the program and see what's going on.

"We're hoping to get away from zapping-type games and move towards the sort of game that makes your brain hurt."

Having said that, though. Mr Green admitted that there was a Space Invaders game, Oric Invasion, in the new collection.

The other new programs are File Star, a database program, and Extension Monitor, which allows the Oric to be programmed and debugged in machine code.

The programs will be priced around £12 — apart from Oric Invasion, which will cost around £5. They will be available in about two weeks.

Kenema, 1 Marlborough Drive, Worle, Avon BS22 0DQ

Let the buyer beware

Marketing in the microcomputer industry is a real trouble spot.

Not so many years ago, before the micro boom began, computers were only available through specialist dealers. Now mass advertising and the numerous magazines on the subject means that micros are a consumer product, on sale in high street chain stores.

But can these stores really offer the kind of support a micro buyer needs? Their staff aren't specialists; they may well have no particular interest in computers and no incentive to keep abreast of developments in the industry.

To the question, "Will it do the accounts for my corner shop?", it's very doubtful that an adequate answer or suitable demonstration could be given by a busy sales assistant in a busy open plan store, where queues of other customers are waiting.

Only recently the press stated that the Apple computer was no longer being supplied by a number of retail outlets, because these outlets couldn't give it adequate support. For whatever reason, Tandy's range of computers is now mainly stocked by its own chain of stores where, it is hoped, the staff can be given proper training.

But retail outlets aren't the worst of it. At least there you have somewhere to take a product back to should problems arise. With mail order, returning goods can be quite a problem — assuming the goods arrive in the first place.

A year ago I answered an ad in a well-known computer journal for a certain piece of software. After phoning the company and being assured that the product was available, I sent off the payment.

When the product hadn't turned up after a week, I phoned the company again and was told the goods had been sent. A further week passed, and more contact was made about the product's non-arrival.

To cut a long story short, an investigation agency discovered that the premises were vacated soon after being rented, and a lot of people had been trying to trace the company's whereabouts. Quick action was suggested.

Two courses of action were open to me (other than putting it down to experience): try and trace the owners and serve a summons though the small claims section of the county court; or rely on the Mail Order Protection Scheme that many magazines belong to.

My first act was to inform every magazine I subscribed to, and the response from some was an eye-opener.

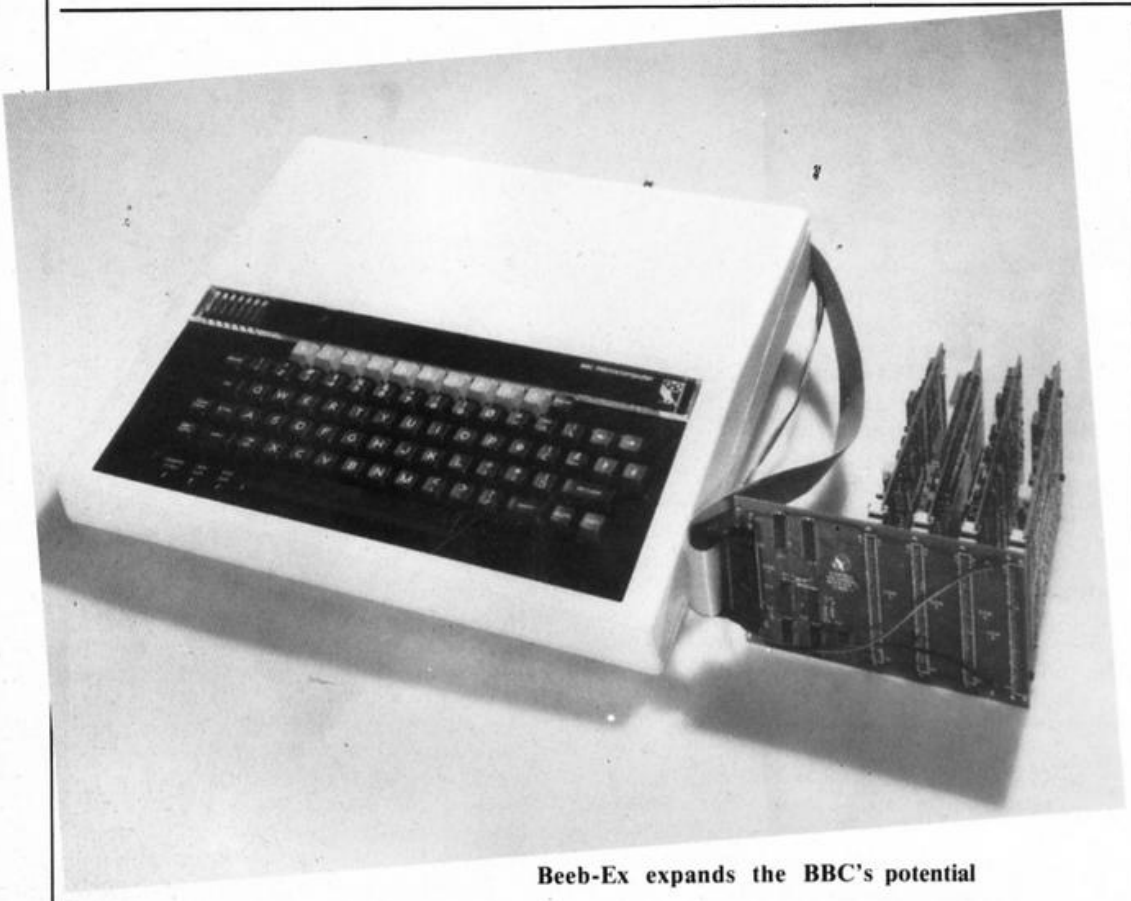
Some were unwilling to remove ads that were due to be published because they would leave a blank page. The suggestion that another advertiser was given a free, or cut-price, ad to replace it was rejected.

The ads ran for a further two months and, as I understand it, none of them were paid for.

All industries have their share of problems, particularly in the early stages. But the microcomputer industry is growing very fast and the product is very complex. Most of the buyers are either young or have no knowledge of the products or both. A lot more guidance for the buyer is needed — both from retailers and from the press.

David Bell
Telford
Shropshire

● This space if for you to sound off about the micro scene, to present bouquets or to hurl brickbats. Share your views by sending them to Paul Liptrot, Opinion, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Please include your occupation and your interest in computing



Beeb-Ex expands the BBC's potential

Pick a card — for the BBC

BBC owners with big ambitions for their machines can use Control Universal's Beeb-Ex interface to connect the micro to a range of Eurocards.

Eurocards are standard-sized printed circuit boards which can be used as the elements of a tailor-made computer system.

Used with the BBC Micro, they can provide up to 1 megabyte of extra memory in the form of switched "pages", and allow the micro to be connected to a wide selection of industrial quality input and output devices.

Beeb-Ex connects by a ribbon connector to the BBC's 1 MHz bus port, and comes in two formats. The first, costing £49, is a stand-alone unit which allows four other Eurocards to be slotted in.

The second costs £41, and will slot into a standard rack-mounted Eurocard system.

Control Universal, Unit 2, Anderson's Court, Newnham Road, Cambridge CB2 9EZ

You could be on our pages

We welcome programs articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 48 characters (use a new ribbon) and/or sent on cassette. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

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Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE

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XENON RAID 32K by John Brierley
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DIAMONDS 16K by Simon Hunt
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TIME WARP 16K by Christopher Daniel
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JUST OUT! JUST OUT! JUST OUT!
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Not only must you avoid the other cars on the track, but you must avoid stalling or over-revving the engine.

There is a choice of skill levels and you can even design your own circuit easily using DATA statements.

At the lowest skill level any mistakes are treated leniently. At the more experienced level all errors are fatal . . . so beware.

These are your control keys:

cursor left steer left
cursor right steer right
A accelerator
B brake
U change gear up
D change gear down

Hints on conversion

BBC BASIC is easy to follow and can be converted to other machines with similar graphic capabilities. Here are a few tips:

PROCedures should be replaced by GOSUBs; COLOUR defines the text colour — at least four are needed — and is used with VDU19; VDU23 sets an ASCII character, on an eight by eight grid, to define special shapes; SOUND and ENVELOPE cannot be easily converted, so I suggest you use your machine's own commands to create sounds; REPEAT...UNTIL loops should be changed to infinite FOR...NEXT loops with an escape condition; IF...ELSE should be changed to two separate IFs.

LOCAL allows two variables to have the same name, one inside a PROCedure and one outside; INKEY with a negative parameter checks to see if a specific key is pressed at that moment.

VDU28 allows a small square on the screen to be handled separately from the rest. Its colour can be changed or text can be scrolled quite independently of the rest. POINT returns the colour of the screen at position (X,-Y); *FX 15,1 clears the keyboard buffer; VDU 14 and 15 allow the screen to stop and start scrolling.

Variables

Nearly all the variables have meaningful names whose use is clear, like SPEED%, MILES_PER_LAP. Others:

W1%, W2%, W1S etc general work fields used to hold temporary value before a "proper" variable is assigned
L_TRK_ST%, R_TRK_ST% hold size of grass verges on last mile to be shown
L_CARS, R_CARS, RF_CARS etc define parts of car, combined with direction of travel. L_CARS draws car to left of current position, RF_CARS draws car in front and to right
USCHR% used in conjunction with VDU23 to hold next available ASCII code to be redefined

Highest scores are held for each of the available circuits

The code is well-structured and uses meaningful variable names throughout so modification should be easy.

To help you find the PROCedures quickly, their names are suffixed by numbers which relate to the first line number, for example, PROC_HAZARD_5 starts on line 5000.

These names and the names of the variables could be shortened and many of the spaces — left in to aid clarity — could be omit-

How it works

100-1000 is the main control routine. It starts each race and check progress by moving driver and track alternately, causing hazards on the way. Delay loop, 160-162, controls how often the driver is moved relative to the speed of the road. So the faster you go the less responsive the steering.

1000-1999 PROC_PROG_START_1 sets keyboard repeat rate, initialises several other routines to set up car shapes ect

2000-2999 PROC_START_RACE_2 sets up initial track, dashboard

3000-3999 PROC_TRACK_GEN_3 draws one mile of track ahead (one row of screen). Arrays L_TRK% and R_TRK% hold size of grass verges. Entry for current mile is used and suitable shapes added to smooth the otherwise jagged appearance

7000-7999 PROC_MOVE_DRIVER_4 checks cursor left and right keys, moves car accordingly, then checks for skid or crash

5000-5999 PROC_HAZARD_5 draws opponents' cars at random intervals, depending on skill level

6000-6999 PROC_RACE_END_6 waves flag, works out average speed, displays current top score

7000-7999 PROC_END_PROG_7 resets all special facilities used

8000-8999 PROC_CHECK_DASH_8 checks (A)ccelerator, (B)rake, gear change (U)p and (D)own, changes speed and gear accordingly, checks for stalling or blown engine. Dotted lines on dashboard show available speeds for each gear

9000-9999 PROC_ON_TRACK_9 tests colour of screen at next car position to detect collisions

10000-10999 FN_FIELD_INPUT_10 prints prompt, checks keyed input for low and high limits, highlights errors, waits for correct input. This is used to select required circuit, number of laps, skill level

11000-11999 PROC_RESULT_PRINT_11 prints stall or skid message and waits

12000-12999 PROC_DASH_SETUP_12 sets up dashboard at start

13000-13999 PROC_WHICH_RACE_13 prints instructions, records skill level, chooses appropriate DATA

15000-15999 PROC_GRID_START_15 sets up initial track

17000-22999 minor PROCedures which control sound of crashes and skidding, dashboard display

23000-28999 minor PROCedures defining special characters to draw cars, flags, track, etc. via VDU23.

ted. This would result in a faster program, so there is a price to pay for readable programs.

The PROCedures that define the circuit, cars, dashboard and flags use the VDU23 statement to construct special characters.

As there are so many special ones, I have used the variable USCHR% (user character) to hold the next ASCII code to be defined.

This avoids any confusion when new ones are added.

By giving the colour effects variable names the Teletext print statements are more readable, as in line 32050.

To define a new circuit, simply change the DATA at line 3000 onwards.

First, state how many miles there are in one lap of the new track, then supply two numbers for each mile, the left verge and the right.

There should be at least 25 miles per lap, the total of the two verges should not exceed 18 and each verge should be at least 1. The lines holding the REMarks for each circuit must not be moved.

The Brands Hatch track has been left free, so use DATA on lines 30301-30599.

A few tips on playing: Start with the easy circuit, Monza, at the easiest level. As you accelerate remember to change gear at the right time. If you stall change down a gear before continuing. If you blow your engine change up a gear before carrying on. And if you skid on the verge move away quickly.

```
100 ON ERROR GOTO999
110 MODE7:PROC_PROG_START_1
120 REPEAT
125   MODE7:PROC_WHICH_RACE_13
130   MODE5:PROC_START_RACE_2
140   REPEAT
150     PROC_TRACK_GEN_3
160     FOR MD4%=1 TO DELAY%
161       PROC_MOVE_DRIVER_4
162     NEXT
165     PROC_CHECK_DASH_8
170     PROC_HAZARDS_5
185   UNTIL RACE_END
190   PROC_RACE_END_6
200 UNTIL GAME_OVER
997 MODE7
998 PROC_END_PROG_7:END
999 MODE7:PRINTERL:REPORT:GOTO998
1000
1001 DEF PROC_PROG_START_1
1005 GAME_OVER=FALSE
1009 *FX11 0
1011 *FX 4,1
1070 PROC_INITIALISING_26
1080 PROC_DEFINE_DASH_24
1090 PROC_DEFINE_CIRCUIT_23
1100 PROC_DEFINE_CARS_27
1200 PROC_DEFINE_COLOURS_25
1250 PROC_DEFINE_FLAGS_28
1300 PROC_HEADINGS_32
1999 ENDPROC
2000
2001 DEF PROC_START_RACE_2
2002 RACE_END=FALSE:RACE_END$=""
2005 VDU19,VERGE_COL%,2,0;
2009 PROC_GRID_START_15
2300 PROC_DASH_SETUP_12
2400 PROC_FLAG_UP_DOWN_16
2860 SPEED%=10:MILES%=1
2861 PROC_MPH_DISPLAY_22(SPEED%,"A")
2998 RACE_TIME%=TIME
2999 ENDPROC
3000
3001 DEF PROC_TRACK_GEN_3
3002 LOCAL L_TRK%,R_TRK%
3050 IF MILES%=MILES_PER_LAP%:MILES%=1:
       LAP%=LAP%+1:PROC_LAP_DISPLAY_20
       (LAP%)
3055 L_TRK%=L_TRK%(MILES%)
3056 R_TRK%=R_TRK%(MILES%)
3060 W1$=STRING$(L_TRK_ST%-1,TRACK$)
3070 IF L_TRK% < L_TRK_ST% W2$=LHSL$
     ELSE W2$=TRACK$: IF L_TRK% >
       L_TRK_ST% W2$=W2$+LHSR$
3071 W1$=W1$+W2$
3075 W3$=STRING$(R_TRK_ST%-1,TRACK$)
3085 IF R_TRK% < R_TRK_ST% W2$=RHSR$
     ELSE W2$=TRACK$: IF R_TRK% >
       R_TRK_ST% W2$=RHSL$+W2$
3086 W3$=W2$+W3$
3087 W1%=20-LEN(W1$)-LEN(W3$)
3088 W2$=STRING$(W1%,SKIP$)
3090 CIRCUIT$=CHR$30+CHR$11+W1$+W2$+W3$
3095 L_TRK_ST%=L_TRK%
3096 R_TRK_ST%=R_TRK%
```

```
3099 COLOUR VERGE_COL%
3100 PRINT CIRCUIT_AREA$;CIRCUIT$;
3500 MILES%=MILES%+1
3600 DELAY%=(200-SPEED%)DIV DELAY_FCT%
3700 L_CAR$=LF_CAR$:R_CAR$=RF_CAR$
3701 O_CAR$=OF_CAR$
3999 ENDPROC
4000
4001 DEF PROC_MOVE_DRIVER_4
4002 LOCAL CAR$
4003 SOUND0,VOL%,6,1:SOUND0,VOL%,2,1
4010 COLOUR DRIVER_COL%
4100 IF INKEY(-26) X_CAR%=X_CAR%-1:
       CAR$=L_CAR$ ELSE IF INKEY(-122)
       X_CAR%=X_CAR%+1:CAR$=R_CAR$:
       ELSE CAR$=O_CAR$
4220 IF MILES%=MILES_PER_LAP% AND LAP%=
       LAPS% RACE_END=TRUE:RACE_END$=
       "OK"
4500 PROC_ON_TRACK_CHECK_9
4510 IF CRASH PROC_CRASH_CAR_17
4520 IF SKID PROC_SKID_CAR_18
4700 PRINTTAB(X_CAR%,Y_CAR%);CAR$;
4800 L_CAR$=LS_CAR$:R_CAR$=RS_CAR$
4801 O_CAR$=OS_CAR$
4999 ENDPROC
5000
5001 DEF PROC_HAZARDS_5
5002 LOCAL P%
5100 COLOUR CARS_COL%
5200 IF RND(20-SKILL%)<>1 ENDPROC
5250 P%=RND(18- L_TRK_ST%- R_TRK_ST%)
5275 PRINT CIRCUIT_AREA$;
5300 PRINTTAB(L_TRK_ST%+P%,0);OS_CAR$;
5999 ENDPROC
6000
6001 DEF PROC_RACE_END_6
6002 LOCAL FD%,FCT:FCT=2.9
6100 RACE_TIME%=(TIME-RACE_TIME%)DIV100
6105 MPH=((MILES_PER_LAP%*LAPS%) /
       RACE_TIME%)
6106 IF MPH>FCT MPH=(MPH-FCT)*200 ELSE
       MPH=10
6107 MPH%=MPH MOD 1000
6199 IF RACE_END$<>"OK" GOTO6900
6200 FOR FD%=1 TO 6
6210   PROC_FLAG_UP_DOWN_16
6215   PROC_WAIT_29(0.2)
6220 NEXT
6300 VDU28,0,6,19,4,12,10
6310 COLOUR DRIVER_COL%
6320 PRINT"YOU AVERAGED ";MPH%;" MPH";
6325 COLOUR 128+DRIVER_COL%
6330 VDU28,0,26,19,19,12
6335 VDU28,4,26,19,19
6340 COLOUR DASH_COL%
6350 PRINT"TOP  SPEEDS";'
6360 FOR W1%=1 TO 3
6370   PRINTCIRCUIT$(W1%);" ";C_MPH%(W1%
)
6375 PROC_WAIT_29(.5)
6380 NEXT
6400 IF MPH% > C_MPH%(CIRCUIT%)
       C_MPH%(CIRCUIT%)=MPH%
```

```
6405 COLOUR 128+VERGE_COL%
6900 VDU28,0,31,19,26,12
6905 COLOUR DASH_COL%
6910 PRINT''"SPACE FOR NEW GAME";
6991 W1%=TIME:REPEAT:UNTIL INKEY(-99)
     OR TIME>W1%+1000
6992 IF NOT INKEY(-99) GAME_OVER=TRUE
6999 ENDPROC
7000
7001 DEF PROC_END_PROG_7
7010 *FX12,0
7011 *FX 4,0
7012 VDU14
7999 ENDPROC
8000
8001 DEF PROC_CHECK_DASH_8
8100 IF INKEY(-66) AND SPEED%<200
       SPEED%=SPEED%+10:
       PROC_MPH_DISPLAY_22(SPEED%,"A")
8150 IF INKEY(-101) AND SPEED%<0
       SPEED%=SPEED%-10:
       PROC_MPH_DISPLAY_22(SPEED%,"B")
8200 K$=CHR$(INKEY(0) OR 32)
8225 IF K$="U" AND GEAR%<4 GEAR%=
       GEAR%+1:PROC_GEAR_DISPLAY_21
       (GEAR%,"U")
8250 IF K$="D" AND GEAR%<>1 GEAR%=
       GEAR%-1:PROC_GEAR_DISPLAY_21
       (GEAR%,"D")
8500 IF SPEED% < (GEAR%-1)*50 - 30
       PROC_STALL_19
8550 IF SPEED%>GEAR%*50 PROC_BLOWN_14
8999 ENDPROC
9000
9001 DEF PROC_ON_TRACK_CHECK_9
9002 REM LOCAL X1%,Y1%,P1%
9100 X1%=X_CAR%+64+32
9101 Y1%=(31-Y_CAR%)*32+16
9200 P1%=POINT(X1%,Y1%)
9300 IF P1%=VERGE_COL% SKID=TRUE ELSE
       SKID=FALSE
9400 IF P1%=CARS_COL% CRASH=TRUE ELSE
       CRASH=FALSE
9999 ENDPROC
10000
10001 DEF FN_FIELD_INPUT_10(PROMPT$,
      LOW%,HIGH%)
10002 LOCAL OK
10003 VDU14
10005 REPEAT
10006 *FX 15 1
10007 OK=TRUE
10100 W1%=LEN(PROMPT$)+1:W2%=38-W1%
10125 PRINTTAB(0,24);PROMPT$;SPC(W2%);
      TAB(W1%,24);
10150 W1$=GET$:PRINT TAB(W1%,24);W1$;
10200 W1%=VAL(W1$):PROC_WAIT_29(.2)
10250 IF W1%<LOW% OR W1%>HIGH% PRINT
       TAB(0,24);FLASH$;GREEN$;"ERROR
 TRY AGAIN";SPC(20);:PROC_WAIT_29(2):
 OK=FALSE
10900 UNTIL OK
10998 VDU15
10999 =W1%
11000
11001 DEF PROC_RESULT_PRINT_11(W$)
11002 LOCAL W1%
11050 COLOUR DASH_COL%
11051 VDU28,5,26,16,23
11100 FOR W1%=1 TO 5
11105  CLS:PROC_WAIT_29(.1)
11107  PRINT'W$:PROC_WAIT_29(.1)
11110 NEXT
11200 VDU28,X_CAR%-1,Y_CAR%+1,X_CAR%+1,
      Y_CAR%-1,12,26
11210 COLOUR DRIVER_COL%
11220 PRINTTAB(X_CAR%,Y_CAR%);OS_CAR$;
11999 ENDPROC
12000
12001 DEF PROC_DASH_SETUP_12
12002 GEAR%=1:SPEED%=0:LAP%=1
12010 FOR GEAR%=3 TO 1 STEP -1
12020   PROC_GEAR_DISPLAY_21(GEAR%,"D")
12030 NEXT
12035 GEAR%=1
12205 W2$="0       100       200"
12207 W1$=STRING$(20,SPEED0$)
12210 PRINTCHR$30;''W1$;W2$;
12300 PRINT"LAP   OF ";LAP%;"   ";
      CIRCUIT$(CIRCUIT%);
12350 PROC_LAP_DISPLAY_20(LAP%)
12999 ENDPROC
13000
13001 DEF PROC_WHICH_RACE_13
13002 LOCAL J%
13100 PROC_BIG_TEXT_31("GRANDPRIX",
      15,0)
13110 PRINT''GREEN$;"YOU HAVE A CHOICE O
F THREE CIRCUITS:-";''
13120 PRINTGREEN$;"  1. ";CIRCUIT$(1);"
   - FEELING LUCKY?"
13130 PRINTGREEN$;"  2. ";CIRCUIT$(2);"
   - OK, KEEP COOL!"
13140 PRINTGREEN$;"  3. ";CIRCUIT$(3);"
   - LIKE THE M1!"
13150 PRINT'RED$;"ALSO 3 SKILL LEVELS (
THE HIGHER";'RED$;"THE LEVEL THE FASTER
THE GAME) :-"''
13160 PRINT RED$;"  1. ALL DRIVER ERRORS
 COUNT AS TIME";'RED$;"      PENALTIES"
13170 PRINT RED$;"  2. CRASHING & BLOWIN
G THE ENGINE IS";'RED$;"      FATAL. SKID
DING ON THE VERGE IS OK";RED$;"      BUT
COSTS TIME"
13180 PRINT RED$;"  3. ALL DRIVER ERROR
ARE FATAL"
13190 PRINT'RED$;"NOTE - STALLING IS NEV
ER FATAL";'RED$;"        JUST SLOWS YOU D
OWN!"
13300 CIRCUIT%=FN_FIELD_INPUT_10
      ("WHICH CIRCUIT?",1,3)
13310 LAPS%=FN_FIELD_INPUT_10
      ("HOW MANY LAPS?",1,9)
13320 SKILL%=FN_FIELD_INPUT_10
      ("WHICH SKILL LEVEL?",1,3)
13400 CRASH_FATAL=FALSE
13410 SKID_FATAL=FALSE
13420 ENGINE_FATAL=FALSE
13430 DELAY_FCT%=50
13490 IF SKILL%>1 DELAY_FCT%=100:
       CRASH_FATAL=TRUE:ENGINE_FATAL=
       TRUE
13495 IF SKILL%>2 DELAY_FCT%=200:
       SKID_FATAL=TRUE
13500 IF CIRCUIT%=1 CIRCUIT_PTR%=30000
13510 IF CIRCUIT%=2 CIRCUIT_PTR%=30300
13520 IF CIRCUIT%=3 CIRCUIT_PTR%=30600
13550 RESTORE CIRCUIT_PTR%
13600 READ MILES_PER_LAP%
13605 FOR J%=1 TO MILES_PER_LAP%
13610  READ L_TRK%(J%),R_TRK%(J%)
13615 NEXT
13999 ENDPROC
14000
14001 DEF PROC_BLOWN_14
14100 PROC_RESULT_PRINT_11
      ("BLOWN ENGINE")
14200 IF ENGINE_FATAL RACE_END=TRUE
      ELSE RACE_TIME%=RACE_TIME%-500
14999 ENDPROC
15000
15001 DEF PROC_GRID_START_15
15150 L_TRK_ST%=L_TRK%(1)
15155 R_TRK_ST%=R_TRK%(1)
15200 W1$=STRING$(L_TRK_ST%,TRACK$)
15250 W3$=STRING$(R_TRK_ST%,TRACK$)
15300 W1%=20-LEN(W1$)-LEN(W3$)
15350 W2$=STRING$(W1%,SKIP$)
15375 CIRCUIT$=W1$+W2$+W3$
15450 COLOUR VERGE_COL%
15500 FOR W1%=1 TO 26:PRINTCIRCUIT$;:
      NEXT
15550 COLOUR DRIVER_COL%
15600 X_CAR%=L_TRK_ST%+2:Y_CAR%=18
15650 PRINTTAB(X_CAR%,Y_CAR%);OS_CAR$;
15999 ENDPROC
16000
16001 DEF PROC_FLAG_UP_DOWN_16
16100 COLOUR FLAG_COL%
16200 PRINT FLAG_AREA$;FLAG_UP$;
16300 PROC_WAIT_29(0.5)
16400 PRINT CHR$12;FLAG_DOWN$;
16999 ENDPROC
17000
17001 DEF PROC_CRASH_CAR_17
17050 ENVELOPE1,130,80,-4,-2,2,40,50,1,
      -1,1,1,1,0:ENVELOPE2,2,0,0,0,0,0,0,
      0,60,-1,-10,1,126,60
17051 SOUND &13,0,10,255
17052 SOUND &110,2,7,255
17053 SOUND &111,1,RND(20),255
17054 PROC_WAIT_29(0.5)
17060 FOR W1%=1 TO 4:FOR W2%=50 TO 100
      :SOUND17,-15,W2%,2:SOUND17,-15,
      W2%,2:NEXT:FOR W2%=100 TO 50 STEP
      -1:SOUND17,-15,W2%,2:SOUND17,-15,
      W2%,2:NEXT:NEXT
17100 PROC_RESULT_PRINT_11
      ("   CRASHED")
17200 IF CRASH_FATAL RACE_END=TRUE
17998 *FX15,0
17999 ENDPROC
18000
18001 DEF PROC_SKID_CAR_18
18050 FOR W1%=1 TO 15:SOUND1,-W1%,250,1
      :SOUND0,-W1%,4,1:NEXT
18100 PROC_RESULT_PRINT_11
      ("   SKIDDED")
18200 IF SKID_FATAL RACE_END=TRUE
18999 ENDPROC
19000
19001 DEF PROC_STALL_19
19100 PROC_RESULT_PRINT_11
      ("   STALLED")
19999 ENDPROC
20000
20001 DEF PROC_LAP_DISPLAY_20(LAP%)
20050 COLOUR SPEEDO_COL%
20060 W1$=STRING$(4,CHR$9)
20075 PRINT DASH_AREA$;'''W1$;LAP%;
20999 ENDPROC
21000
21001 DEF PROC_GEAR_DISPLAY_21
      (GEAR%,UD$)
21040 FOR W1%=1 TO 2:FOR W2%=7 TO 15:
      SOUND0,-W2%,5,1:NEXT:NEXT
21050 PRINT DASH_AREA$;
21100 COLOUR SPEEDO_COL%
21110 PRINT GEAR$(GEAR%);
21120 COLOUR DASH_COL%
21130 IF UD$="U" W1%=GEAR%-1 ELSE
       W1%=GEAR%+1
21140 PRINT GEAR$(W1%);
21999 ENDPROC
22000
22001 DEF PROC_MPH_DISPLAY_22
      (SPEED%,AB$)
22050 PRINT DASH_AREA$;
22060 W1%=(SPEED% DIV 10)-1
22075 IF AB$="A" COLOUR SPEEDO_COL%:
       W1$=SPEED$ ELSE COLOUR DASH_COL%
       :W1$=SPEED0$:W1%=W1%+1
22100 W2$=STRING$(W1%,CHR$9)
22200 PRINT ''W2$;W1$;
22300 VOL%=-SPEED% DIV 13
22999 ENDPROC
23000
23001 DEF PROC_DEFINE_CIRCUIT_23
23050 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,128,192,224,240,248,252,254,
      255:LHSL$=CHR$(W1%)
23055 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,255,254,252,248,240,224,192,
      128:LHSR$=CHR$(W1%)
23060 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,255,127,63,31,15,7,3,1:RHSL$=
      CHR$(W1%)
23065 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,1,3,7,15,31,63,127,255:RHSR$=
      CHR$(W1%)
23070 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,255,255,255,255,255,255,255,
      255:TRACK$=CHR$(W1%)
23100 CIRCUIT_AREA$=CHR$28+CHR$0+CHR$25
      +CHR$19+CHR$0+CHR$30
23200 DIM CIRCUIT$(3), C_MPH%(3)
23210 CIRCUIT$(1)="LEMANS "
23211 CIRCUIT$(2)="B'HATCH"
23212 CIRCUIT$(3)="MONZA  "
```

BBC PROGRAM

```
23999 ENDPROC
24000
24001 DEF PROC_DEFINE_DASH_24
24100  DIM GEAR$(4)
24150  W3$=CHR$30
24200  GEAR$(1)=W3$+"--1--"
24250  GEAR$(2)=W3$+CHR$10+
       "  ---2---"
24300  W1$=STRING$(6,CHR$9)
24350  GEAR$(3)=W3$+W1$+"----3---"
24400  W1$=W3$+STRING$(12,CHR$9)
24450  GEAR$(4)=W1$+CHR$10+"----4---"
24500  DASH_AREA$=CHR$28+CHR$0+CHR$31+
       CHR$19+CHR$26+CHR$30
24700  W1%=USCHR%:USCHR%=USCHR%+1:VDU23
       ,W1%,255,255,255,255,255,255,0:
       SPEED$=CHR$(W1%)
24701  W1%=USCHR%:USCHR%=USCHR%+1:VDU23
       ,W1%,129,129,129,129,129,129,255
       ,255:SPEEDO$=CHR$(W1%)
24999 ENDPROC
25000
25001 DEF PROC_DEFINE_COLOURS_25
25100  VERGE_COL%=2:SPARE_COL%=3
25150  DRIVER_COL%=1:TRACK_COL%=0
25200  CARS_COL%=SPARE_COL%
25250  DASH_COL%=SPARE_COL%
25300  SPEEDO_COL%=DRIVER_COL%
25350  FLAG_COL%=SPARE_COL%
25700 BLUE$=CHR$132:RED$=CHR$129
25705 GREEN$=CHR$130:BKGD$=CHR$157
25710 FLASH$=CHR$136:YELLOW$=CHR$131
25999 ENDPROC
26000
26001 DEF PROC_INITIALISING_26
26050  W1$=STRING$(255," "):W2$=W1$
26051  W3$=W1$:W4$=W1$
26100  USCHR%=224
26200  SKIP$=CHR$32
26300  DIM L_TRK%(100),R_TRK%(100)
26999 ENDPROC
27000
27001 DEF PROC_DEFINE_CARS_27
27100 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,24,219,255,255,219,24,60,60:
      FT_CAR$=CHR$(W1%)
27110 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,60,60,24,219,255,255,219,24:
      BK_CAR$=CHR$(W1%)
27200 W1$=CHR$10+CHR$8:W2$=W1$+CHR$8+
      SKIP$:W3$=W1$+SKIP$
27300 LS_CAR$=FT_CAR$+SKIP$+W1$+CHR$8+
      BK_CAR$+SKIP$
27310 RS_CAR$=CHR$8+SKIP$+FT_CAR$+W2$+
      BK_CAR$
27320 LF_CAR$=FT_CAR$+W1$+BK_CAR$+SKIP$
      +W3$
27330 RF_CAR$=FT_CAR$+W2$+BK_CAR$+W2$
27340 OF_CAR$=FT_CAR$+W1$+BK_CAR$+W3$
27350 OS_CAR$=FT_CAR$+W1$+BK_CAR$+W1$
27999 ENDPROC
28000
28001 DEF PROC_DEFINE_FLAGS_28
28050 FLAG_AREA$=CHR$28+CHR$2+CHR$24
      +CHR$5+CHR$19+CHR$12
28100 W1%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W1%,240,240,240,240,15,15,15,15
28125 W2%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W2%,3,3,3,3,3,3,3,3
28175 W3%=USCHR%:USCHR%=USCHR%+1:VDU23,
      W3%,255,255,0,0,0,
28300 W1$=CHR$(W1%)+CHR$(W1%)+CHR$8+
      CHR$8+CHR$10
28310 W2$=CHR$(W2%)+W1$+CHR$8
28320 W2$=W2$+W2$+CHR$(W2%)+CHR$8+
      CHR$10+CHR$(W2%)
28330 FLAG_UP$=CHR$30+CHR$10+W2$
28340 W3$=CHR$(W3%)+CHR$(W3%)+W1$+W1$
28350 FLAG_DOWN$=CHR$30+CHR$10+W3$
28999 ENDPROC
29000
29001 DEF PROC_WAIT_29(SECS)
29100 LOCAL TIME_END
29200 TIME_END=TIME+SECS*100
29300 REPEAT:UNTIL TIME>TIME_END
29999 ENDPROC
30000 REM**CIRCUIT DATA*****
      MILES/LAP (NO. OF PAIRS) FOLLOWED
      BY PAIRS OF LEFT & RIGHT TRACK
      DATA
      *****LE MANS*******
30001 DATA40
30002 DATA8,7,7,8,7,8,6,9,6,9,5,10
30003 DATA5,10,4,11,4,11,3,12,2,13
30004 DATA2,13,1,14,1,14,1,15,1,15
30005 DATA1,16,1,16,1,17,1,17,2,16
30006 DATA2,15,2,15,2,15,2,14,2,14
30007 DATA3,13,3,13,4,12,4,12,5,11
30008 DATA5,11,6,10,6,10,7,9,7,9,8,8
30009 DATA8,8,8,7,8,7
30300 REM ********BRANDS HATCH*******
30600 REM *********MONZA**********
30601 DATA70
30602 DATA5,5,5,5,5,5,5,5,5,5,4,4,4,4
30603 DATA4,4,4,4,3,3,3,3,3,3,3,3,3,3
30604 DATA3,4,3,4,3,5,3,5,3,6,3,6,3,6
30605 DATA3,7,3,7,3,7,3,8,3,8,3,8,3,9
30606 DATA3,8,4,8,4,8,5,7,5,7,5,7,6,6
30607 DATA6,6,6,6,7,5,7,5,7,5,8,4,8,4
30608 DATA8,4,8,4,9,3,9,3,9,2,9,2,9,1
30609 DATA8,1,7,1,6,1,5,1,4,1,3,1,2,1
30610 DATA1,1,2,2,2,2,2,2,3,3,3,3,3,3
30611 DATA4,4,4,4,4,4,4,4,4,4,4,4,5,5
31000
31001 DEF PROC_BIG_TEXT_31(W1$,X,Y)
31100 PRINTTAB(X,Y);CHR$141;W1$;
31101 PRINTTAB(X,Y+1);CHR$141;W1$;
31999 ENDPROC
32000 DEF PROC_HEADINGS_32
32002 W1$=RED$+BKGD$+FLASH$+YELLOW$
32003 PRINTW1$''W1$
32005 W1$="GRANDPRIX"
32010  PROC_BIG_TEXT_31(W1$,14,0)
32020  PRINT''"AS THE DRIVER OF A FORMUL
A 1 RACING CAR""YOU MUST COMPLETE THE C
IRCUIT IN THE ""FASTEST TIME."''
32030  PRINT"CONTROLS:""  [ ](CURSOR K
EYS) ARE THE STEERING""  A IS THE ACCEL
ERATOR""  B IS THE BRAKE""  U CHANGES
GEAR UP""  D CHANGES GEAR DOWN"''
32040  PRINT"YOU MUST OF COURSE LOOK OU
T FOR OTHER""DRIVERS AND HAZARDS SUCH A
S OIL SPILLS!"
32050 PRINT''YELLOW$;BKGD$;FLASH$;RED$;"
      PRESS ANYKEY TO CONTINUE"
32055 FOR W1%=1 TO 10:FOR W2%=50 TO 100
      :SOUND 17,-15,W2%,2:SOUND 17,-15,
      W2%,2:NEXT:FOR W2%=100 TO 50 STEP
      -1:SOUND 17,-15,W2%,2:SOUND 17,
      -15,W2%,2:NEXT:NEXT:
32060 W1$=GET$
32099 ENDPROC
```


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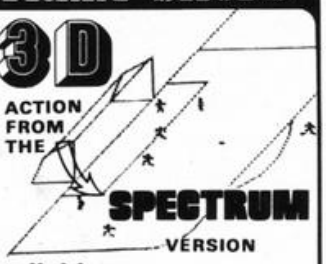

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IF YOU have always wanted to manage a football team, FOOTBALL MANAGER, from Addictive Games, is for you — The game is ideal for a football fanatic but the most interesting thing for us was the 3-D graphics used to create the goalmouth action — the game is a winner.
SINCLAIR USER FEBRUARY 1983

Although I'm no great football fan, I really enjoyed playing this game — excellent use is made of colour and user-defined graphics. The game is very logically put together, so that the development of strategy and tactics has a real effect. For example, one of my teams got through to the fourth round of the F.A. Cup where it was beaten by a second division side. This upset morale and meant that our promotion bid failed. Perhaps I should have given up the F.A. Cup run and held some good players back — the possibilities are endless. Brian Clough had better watch out!
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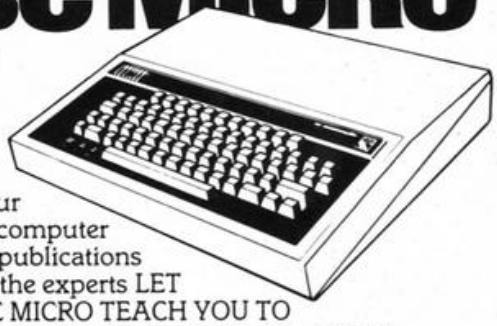

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Moria 48K Oric- 1 £6.95

Severn Software, 5 School Crescent, Lydney, Gloucs GL15 5TA

Moria is a milestone in being the first commercial Oric program I have seen to fast load into the Oric.

The Mines of Moria, from the book Lord of the Rings, are the ancient home of Durin's folk, the dwarves. Long deserted, they contain hoards of jewels and gold, protected by ancient and evil terrors.

Your tasks is to search for Durin's Ring through a number of levels in the mines — represented each time by a grid of 36 squares.

When you meet a monster you can choose to fight or retreat, and wounds and strength levels are recorded. Lose more than 10 lives or less than nil strength and you are dead. Watch out — the cassette inlay card tells you to use y for retreat. Not so. It should be r.

To help you in your quest you can buy spells from the wizard or ointment from the trader, at a price.

S.I.

instructions	95%
playability	80%
graphics	60%
value for money	65%

★ ★ ★

Zodiac Oric-1 £6.90

Tansoft, 3 Club Mews, Ely, Cambridge 0353 2271

Zodiac is Tansoft's first adventure for the Oric, and it's pretty good.

The game begins with you being unceremoniously dumped in an icy waste. You then have to seek out the twelve signs of the Zodiac, finding new locations and items of interest as you go.

The game seems to have quite a good vocabulary of allowed words and abbreviations, though I did find some of its responses a little on the terse side.

There are quite a few locations to wander around some of which are described in surprisingly find detail.

Generally I found the game easy to play yet not easy to solve, which is a good combination — a game that won't let you out of the first room soon grows tedious. My only real complaint is that the sound, graphics and colour features of the Oric seemed a bit underused.

G.P.

instructions	40%
playability	80%
graphics	50%
value for money	70%

★ ★ ★

Pharaoh's Tomb 48K Spectrum £4.95

Phipps Associates, 99 East Street, Epsom, Surrey KT1 1EA

When first loaded, this looks like an attractive adventure game with good clear instructions. Graphics are impressive, with pictures in the top half of the screen and scrolling text in the lower half, à la Hobbit.

The aim of the game is to enter the tomb and collect the treasure from various locations, using the implements you may find there.

But there's only one creepy that I could find, and the treasure and objects were always in the same place. The problems that confront you are pretty easy to solve.

So once you've been right the way through the game there are no surprises left. To make matters worse, being written in Basic it reacts very slowly. On the other hand it's modestly priced.

N.B.

instructions	90%
playability	65%
graphics	90%
value for money	80%

★ ★ ★

Grail 48K Oric-1 £6.95

Severn Software, 5 School Crescent, Lydney, Gloucs GL15 5TA

As a knight of the Round Table, you have to explore a five-layer maze in search of the Holy Grail. In your wanderings you come across monsters, shields, swords, stairways and the like — and also gold and jewels that you can exchange for strength points and wound healer. Ten wounds, and you're a goner!

Each layer of the maze is shown as a 10 by 10 grid, and as you move about the screen display shows what items and monsters you have encountered.

The game is well presented in both packaging and program quality. I particularly liked the special typeface that was used for the on-screen instructions.

It loaded first time, even on the fast speed, and then auto-run.

All this icing is all very well, but the game itself is more a matter of luck than skill. I found it boring after a while.

R.S.

instructions	88%
playability	60%
graphics	70%
value for money	50%

★ ★ ★

Time Warp Atari 400/800 £14.95

English Software, 50 Newton St, Piccadilly, Manchester

This game is supposedly set in a deserted land, ravaged by an evil time lord (Doctor Who's a baddie ?). You have to pick up the objects they left behind to translate them into strength, treasure and so on.

Occasionally a spider will attack or rob you, but you soon learn to shoot them (bullets ? In an ancient land?). The game loads is an amazing six parts and it's far more interesting trying to find out why than it is playing the game.

I played for an hour with a friend, reached level 2 of the land, realised it was exactly like level 1, and despaired. I'd like to say something nice about Time Warp, but I can't.

M.F.

instructions	50%
playability	10%
graphics	15%
value for money	15%

★

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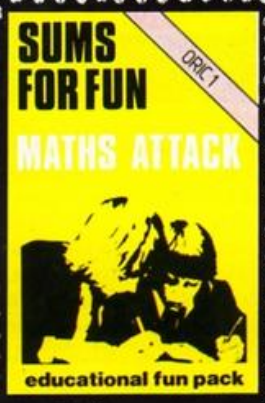
ZX Spectrum 16K/ 48K **£5.00**

Fantastic collection of arcade thorough-breds and exciting newcomers. Superb hi-res graphics make this pack a visual bonanza. This compendium starts, where others finish.

by Paul A. Thomson and Lyndon John Knowles
ZX Spectrum 16K/ 48K **£5.50**

You just love eating those green eggs. But watch out, mother hen is getting angry and when she does the feathers start to fly. A fast arcade game that can make even the bravest turn chicken.



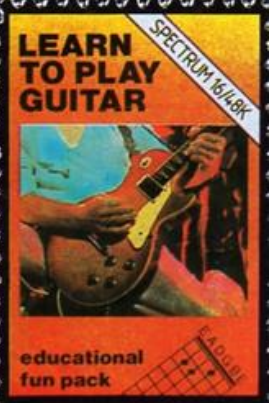
by J. S. Bailey
Oric I. **£5.00**

Fun while learning with this dual program cassette. Full colour and excellent graphics combine in a shoot-them-down concept. Only the correct answer will bring success. This cassette serves as an ideal method of introduction into computer assisted education.

Hummer house of horror
superb 3d graphics

by STEPHEN CURTIS
ZX Spectrum 48K **£7.00**

It's too late now to start crying for help. You're on your own, that is apart from the evil spectres that frequent the House of Horror. Is there escape? Or will you be forever entombed in Hummer, house of horror!



by Douglas Barr
ZX Spectrum 16K/ 48K **£6.00**

Using sound and graphics this cassette provides a progressive stage by stage introduction to guitar playing. Starting from the basics of tuning and going right through to song accompaniment. The graphics and sound facilities combine together to make every step clear and concise. This program is ideal for aspiring musicians.

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Get out of that . . . it's not as simple as it seems

You're pitted against the computer in John Wright's game for the 48K Oric-1. Who will crash first?

Now Get Out of That! is a game more of strategy than of quick reactions. You have the same objective as your opponent, the 48K Oric — to box the other in, so no choice is left except to collide with the trails you have both made.

Variables

CX, CY computer's position
PX, PY computer's proposed new position
HX, HY human's position
D computer's direction
M human's direction
Y human's score
Z computer's score
T$ contains opening tune
S decides if computer should change direction to give random element

If you are forced to crash the computer scores a point to the sound of a zapping explosion but if the computer is forced to crash you get a point to the sound of pinging.

The game is, however, not as simple as it may seem because both you and the computer can wrap around the screen when you move over the edges.

For example, if you go over the top you reappear at the bottom; if you leave the left hand side, you reappear on the right. As the game progresses, and the screen fills up with trails, you have to be careful where you emerge after wrapping around.

If you try to imagine the screen as a diagrammatic representation of a spherical playing area, you will realise how tricky the game can become.

How it works

10 turns off keyclick and cursor
130-140 calculates new human X, Y co-ordinates
150-180 wrap human's move around the screen
190 detects human collision
240 random direction change for computer
250-280 wraps computer's move around the screen
285-320 check if computer is trapped
370-380 computer and human starting positions
400-430 prints playing area
440-670 instructions
770-870 machine code to give PRINT AT facility

When the program is run, the cursor and keyboard click are turned off, the title displayed and an opening tune played. Instructions are then given and the message PRESS ANY KEY TO START THE GAME is flashed on the bottom of the screen. On doing so, a border is printed and the score line appears at the top of the screen.

You use the cursor keys either side of the Oric's space bar to change direction. You do not have to hold down a key to continue moving in any particular direction. Press a key to **change** direction.

You will seen an H and a C appear (Human's piece and Computer's piece), both of them already moving, so be careful not to turn back on yourself at the start of each round. Stop the game using control C.

Note that when the instructions are displayed, all the PRINT lines must be included (as in the listing). This is because double height characters have to be on even number of lines down from the top of the screen. Try leaving out one of the PRINT statements to see what happens.

Also note that line 240 is for the computer to change direction on a pseudo-random basis. It can be changed to:

S = INT (RND(1) * 100) :
IF S 90 THEN 350

This will speed up the computer's move time. Line 240 could be replaced by IF RND(1) .85 THEN 350. Try other values and see the effect. Note that the computer takes a little time to decide which direction to turn when its route is blocked. This gives it the edge when both of you find yourselves boxed in.

The tune played at the beginning of the game is contained in T$ and you can alter these numbers to play a different tune which can be up to 255 notes long. (255 is the maximum string length the Oric can handle).

The machine code held in DATA statements in lines 820 — 850 is POKED to location Hex 400 (or 1024 decimal) using a REPEAT UNTIL loop. This routine is given in the Oric manual on page 128 and enables the exclamation mark to be interpreted by the Oric to mean PRINT AT X, Y ; "ORIC".

It is used in the program to print the updated score line. Note that, because the code is POKED to Hex 400, it is protected from being NEWed by BASIC.

You might like to redefine the H and the C characters to give more interesting shapes, and also to speed up the computer's choice of a new direction when its forward position is blocked.

As the program stands, if the computer is moving left to right then D = 9. If this direction is blocked it will look for another direction but it could choose 9 again, thus slowing it down because it has to return again to find another number of give a new direction.

Hints on conversion

The Oric screen format is 40 by 26.

PRINT CHR$(4) sets double height characters.

PRINT CHR$(17) turns off the cursor.

PRINT CHR$(6) turns off the keyboard click.

In line 640 the N in NPRESS flashes the line using double height character. Similarly, the J of JNOW in line 460 sets double height mode. In both cases:

PRINT CHR$(27) gives access to these controls.

INK 7 sets foreground to white.

PAPER 5 sets background to magenta.

```
10 PRINTCHR$(6);CHR$(17)
20 GOSUB770
30 Q=35:M=INT(RND(1)*4)+8
40 GOSUB440
50 GOSUB370
60 GOSUB400
70 !0,0;"#YOU "Y"####################ME
"Z"#"
80 GOTO350
90 K$=KEY$
100 IFK$=""THENM=M
110 IFK$<>""THENM=ASC(K$)
120 IFM<80RM>11THENM=D
130 HX=HX+(1ANDM=9)-(1ANDM=8)
140 HY=HY+(1ANDM=10)-(1ANDM=11)
150 IFHX>35THENHX=2
160 IFHY>24THENHY=2
170 IFHX<2THENHX=35
180 IFHY<2THENHY=24
190 IFSCRN(HX,HY)<>32THENZAP:WAIT10:ZAP:
EXPLODE:Z=Z+1:GOTO50
200 PLOTHX,HY,200
210 PX=0:PY=0
220 PX=PX+(1ANDD=9)-(1ANDD=8)+CX
230 PY=PY+(1ANDD=10)-(1ANDD=11)+CY
```

```
240 S=INT(RND(1)*100):IFS>80THEN350
250 IFPX>35THENPX=2
260 IFPY>24THENPY=2
270 IFPX<2THENPX=35
280 IFPY<2THENPY=24
285 IFSCRN(PX,PY)<>32THENGOTO350
290 IFSCRN(PX,PY-1)=32THEN340
300 IFSCRN(PX+1,PY)=32THEN340
310 IFSCRN(PX,PY+1)=32THEN340
320 IFSCRN(PX-1,PY)=32THEN340
330 PING:WAIT10:PING:EXPLODE:Y=Y+1:GOTO5
0
340 CX=PX:CY=PY:PLOTCX,CY,195
345 GOTO90
350 D=INT(RND(1)*4)+8
360 GOTO90
370 CX=INT(RND(1)*34)+2:HX=INT(RND(1)*34
)+2
380 CY=INT(RND(1)*24)+2:HY=INT(RND(1)*24
)+2
390 RETURN
400 CLS
410 FORA=1TO36:PLOTA,1,Q:PLOTA,25,Q:NEXT
420 FORA=1TO25:PLOT1,A,Q:PLOT36,A,Q:NEXT
430 RETURN
440 CLS:INK7:PAPER5
450 PRINT
460 PRINTCHR$(4);CHR$(27);"JNOW GET OUT
OF THAT !"
470 PRINTCHR$(4)
480 GOSUB680
490 PRINT:PRINT:PRINT
500 PRINT"Use the cursor keys to steer"
510 PRINT:PRINT
520 WAIT200
530 PRINT"You cannot turn on yourself"
540 PRINT:PRINT
550 WAIT20
560 PRINT"Nor can you collide with"
570 PRINT:PRINT
580 WAIT200
590 PRINT"(a)The computers trail"
600 WAIT200
610 PRINT"(b)Your own trail"
620 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
630 FORA=1TO2000:NEXTA
640 PRINTCHR$(4);CHR$(27);"NPRESS ANY KE
Y TO START THE GAME"
650 IFKEY$=""THEN650
660 PRINTCHR$(4)
670 RETURN
680 T$="12341234123456789987654321"
690 FORL=1TOLEN(T$)
700 N=AS(MID$(T$,L,1))-47
710 MUSIC1,3,N,0:MUSIC2,4,N,0
720 PLAY3,0,1,1600
730 WAIT19
740 NEXTL
750 WAIT100
760 RETURN
770 REPEAT
780 READDTA
790 POKE#400+CL,DTA
800 CL=CL+1
810 UNTILDTA=#FF
820 DATA#20,#96,#D9,#AC,#F8,#02,#C8
830 DATA#8C,#69,#02,#A5,#1F,#A4,#20
840 DATA#85,#12,#84,#13,#A9,#3B,#20
850 DATA#DB,#CF,#4C,#61,#CB,#FF
860 DOKE#2F5,#400
870 RETURN
```

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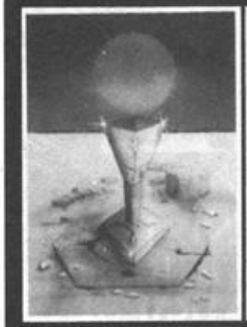

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How's your memory? It needs to be good to escape from the maze

You've got just 15 seconds to memorise the location of the doors in John Powers's game for the standard TI-99/4A. And time gets shorter as your memory improves

How it works

40-100 define characters
120-170 set colours
200-370 lays out screen, prints score, GOSUB to walls lay out
380-400 print indicator showing level
430-460 wait for key press, check if maze finished
480-590 check E pressed, test for fruit ahead, move upwards and beep
610-720 as above, except key X, move down
740-840 key S pressed. Check for invisible door, moves through if there is GOSUBS score increment, or decrement if no door.
860-910 routine for printing on screen
930-1170 set flash time according to level draw walls and places random doors
1180-1340 randomise to see of to print fruit check if fruit all used if not, GOSUB print fruit.
1270-1340 Print fruit.
1360-1450 Effects for eating fruit increase score
1470-1580 flash openings in wall for set time
1600-1700 effects for moving through opening
1720-1830 same for failing to find opening correctly
1850-1980 game finished, check score
2000-2150 game over, replay opportunity
2170-2260 new maze, score good enough
2280-2340 variables set-up

Variables

Z row of print position
V columns of print position
G level
CL column of figure
RW row of figure
GC ASCII code from GCHAR
CT column position of walls
RA/RB position of doors in walls
COUNT number of fruit on screen
BF number of fruit available
FI random position of fruit
SC score
M$ screen messages

In this game, you have to guide a figure through a maze — but it's not as easy as it sounds!

A number of vertical walls are printed down the screen, with channels in between. Random doors are set into each wall.

These openings in the walls flash for a set period of time at the beginning of the game, during which you must memorise their locations.

After 15 seconds (on the easiest level) the doors close up. You must now guide your figure across the screen using keys S and X to move up and down and E to try to move through the now invisible holes in the walls.

The figure leaves a trail behind him. For each door you successfuly pass through, your score increases by 100. If you try to pass through where there is no door you lose 35 points.

When you eat a fruit (placed randomly in the maze), the doors become visible for five seconds and you score bonus points.

There are three levels of skill. An indicator at top left shows you current level, you pass onto the next level automatically if your score is high enough. The game is farily easy to play at the lowest level but it takes a good deal of skill to navigate your way around the harder mazes.

Hints on conversion

If you would like to try to convert this program to another machine, remember that the Texas has a 24 by 32 screen, and a good amount of space can be saved by using multiple line statements — the program only takes up 5½K anyway — not available on the standard TI.

Here are the more unusual commands:

CALL KEY(M,K,S) Where K is is the ASCII value of the key pressed, and S returns 1 if pressed. You can replace this with INKEY or GET.
CALL SOUND(D,N,V) Where D is duration, N is note in Hertz, V is the volume. Most machines have some sound capabilities — so it's easier to write your own.
CALL CHAR(A,NS) Defines characters in Hexadecimal. N is the ASCII character to be redefined. Characters are defined left-to-right from the top. Each digit represents the pattern in a 1×4 horizontal block of pixels; so there are 2 Hex digits for each line of the 8×8 square.
CALL HCHAR(R,C,A,P) Positions ASCII character A, and repeats horizontally from coordinates C and R P times.
CALL VCHAR(R,C,A,P) As above except repeats vertically.
CALL COLOUR(S,F,B) Defines character foreground and background colour. Replace with GCOL or INK or other command.
CALL SCREEN(X) Sets screen colour. Replace with PAPER or VDU 19 or COLOUR statement.
CALL CLEAR Clears screen. Use CLS.
CALL GCHAR(R,C,V) Returns ASCII code of character at position R,C in variable V. Use a POINT or screen PEEK.

```
30 REM **DEFINE CHARACTERS**
40 CALL CHAR(96,"0000001818000000")
50 CALL CHAR(104,"030404C7E7E7E3C")
60 CALL CHAR(112,"000000FF00FF0000")
70 CALL CHAR(120,"1818181818181818")
80 CALL CHAR(129,"1818181818181818")
90 CALL CHAR(136,"FFFFFFFFFFFFFFFF")
100 CALL CHAR(145,"183C7EFF7E3C1800")
110 REM **SET COLOURS**
120 CALL COLOR(9,2,8)
130 CALL COLOR(10,13,8)
140 CALL COLOR(11,10,15)
150 CALL COLOR(13,5,8)
160 CALL COLOR(14,8,15)
170 CALL COLOR(15,7,8)
180 GOSUB 2270
190 REM **SET UP SCREEN**
200 CALL CLEAR
210 CALL SCREEN(15)
220 CALL HCHAR(5,1,136,576)
230 M$="MEMORY MAZE"
240 Z=3
250 V=2
260 GOSUB 870
270 M$="SCORE="&STR$(SC)
280 Z=3
290 V=20
300 GOSUB 870
310 CALL HCHAR(4,3,112,28)
320 CALL HCHAR(2,3,112,28)
330 CALL HCHAR(23,3,112,28)
340 GOSUB 920
350 M$="
```

● This replaces an incorrect listing in last week's issue

```
360 Z=24
370 GOSUB 850
380 FOR LS=1 TO G
390 CALL HCHAR(1,2+LS,145)
400 NEXT LS
410 CALL HCHAR(RW,CL,145)
420 REM **SCAN KEYBOARD**
430 CALL KEY(0,K,S)
440 IF S=0 THEN 430
450 IF CL<=3 THEN 460 ELSE 480
460 GOTO 1840
470 REM  **KEY E**
480 IF K<>69 THEN 610
490 CALL HCHAR(RW,CL,96)
500 IF RW<=5 THEN 510 ELSE 520
510 RW=23
520 RW=RW-1
530 CALL GCHAR(RW,CL,GC)
540 IF GC=104 THEN 550 ELSE 570
550 GOSUB 1350
560 GOTO 430
570 CALL HCHAR(RW,CL,145)
580 CALL SOUND(-50,-1,2)
590 GOTO 430
```

```
990 GOSUB 850
1000 FOR CT=30 TO 4 STEP -2
1010 CALL VCHAR(5,CT,129,18)
1020 NEXT CT
1030 FOR CT=30 TO 4 STEP -2
1040 RANDOMIZE
1050 RA=INT((21-5+1)*RND)+5
1060 RB=INT((21-5+1)*RND)+5
1070 IF G=1 THEN 1080 ELSE 1110
1080 CALL VCHAR(RA,CT,120)
1090 CALL VCHAR(RB,CT,120)
1100 GOTO 1180
1110 IF G=2 THEN 1120 ELSE 1170
1120 IF RA=21 THEN 1040
1130 CALL VCHAR(RA,CT,120)
1140 RB=RA+1
1150 CALL VCHAR(RB,CT,120)
1160 GOTO 1180
1170 CALL VCHAR(RA,CT,120)
1180 IF INT(RND*7)+1=3 THEN 1190 ELSE 1220
1190 IF COUNT=BF THEN 1220 ELSE 1200
```

```
600 REM  **KEY X**
610 IF K<>88 THEN 740
620 CALL HCHAR(RW,CL,96)
630 IF RW>=22 THEN 640 ELSE 650
640 RW=4
650 RW=RW+1
660 CALL GCHAR(RW,CL,GC)
670 IF GC=104 THEN 680 ELSE 700
680 GOSUB 1350
690 GOTO 430
700 CALL HCHAR(RW,CL,145)
710 CALL SOUND(-50,-1,2)
720 GOTO 430
730 REM  **KEY S**
740 IF K<>83 THEN 430
750 CALL GCHAR(RW,CL-1,GC)
760 IF GC=120 THEN 790 ELSE 770
770 GOSUB 1720
780 GOTO 430
790 CALL HCHAR(RW,CL-1,96,2)
800 CL=CL-2
810 CALL HCHAR(RW,CL,145)
820 GOSUB 1600
830 IF CL<=3 THEN 1840
840 GOTO 430
850 REM  **PRINT ROUTINE**
860 V=16-INT(LEN(M$)/2)
870 FOR I=1 TO LEN(M$)
880 CD=ASC(SEG$(M$,I,1))
890 CALL HCHAR(Z,V+I,CD)
900 NEXT I
910 RETURN
920 REM  **SET UP WALLS**
930 CALL COLOR(12,2,8)
940 IF G=1 THEN 950 ELSE 970
950 M$="15 SECS TO MEMORIZE THE MAZE."
960 GOTO 980
970 M$="8 SECS TO MEMORIZE THE MAZE."
980 Z=24
```

```
1200 COUNT=COUNT+1
1210 GOSUB 1280
1220 NEXT CT
1230 GOSUB 1470
1240 IF G=1 THEN 1250 ELSE 1260
1250 GOSUB 1470
1260 RETURN
1270 REM  **PRINT FRUIT**
1280 RANDOMIZE
1290 F1=INT((21-5+1)*RND)+5
1300 IF F1=RA THEN 1280
1310 IF F1=RB THEN 1280
1320 IF CT<=4 THEN 1340
1330 CALL HCHAR(F1,CT-1,104)
1340 RETURN
1350 REM  **EAT FRUIT**
1360 CALL SOUND(-500,-5,2)
1370 CALL HCHAR(RW,CL,96)
1380 SC=SC+200
1390 M$=STR$(SC)&"  "
1400 Z=3
1410 V=26
1420 GOSUB 870
1430 CALL HCHAR(RW,CL,145)
1440 GOSUB 1470
1450 RETURN
1460 REM  **FLASH WALLS**
1470 FOR X=1 TO 5
1480 CALL COLOR(12,2,8)
1490 CALL SOUND(-100,880,2)
1500 FOR T=1 TO 250
1510 NEXT T
1520 CALL COLOR(12,8,8)
1530 CALL SOUND(-100,880,2)
1540 FOR T=1 TO 250
1550 NEXT T
1560 NEXT X
1570 CALL COLOR(12,5,8)
1580 RETURN
1590 REM **THROUGH WALL**
```

TI-99/4A PROGRAM

```
1600 CALL SOUND(-500,440,2)
1610 CALL SOUND(-500,523,2)
1620 CALL SOUND(-500,659,2)
1630 CALL SOUND(-500,440,2)
1640 CALL SOUND(-500,784,2)
1650 SC=SC+100
1660 M$=STR$(SC)
1670 Z=3
1680 V=26
1690 GOSUB 870
1700 RETURN
1710 REM **HIT WALL**
1720 CALL SOUND(-500,196,2)
1730 CALL SOUND(-500,165,2)
1740 CALL SOUND(-500,131,2)
1750 IF SC<=0 THEN 1830
1760 SC=SC-35
1770 IF SC<0 THEN 1780 ELSE 1790
1780 SC=0
1790 M$=STR$(SC)&" "
```

```
2190 RW=14
2200 CL=31
2210 SC=0
2220 COUNT=0
2230 IF G>=3 THEN 2250
2240 BF=BF-1
2250 G=G+1
2260 GOTO 190
2270 REM **SET-UP VARIABLES**
2280 COUNT=0
2290 BF=3
2300 SC=0
2310 G=1
2320 RW=14
2330 CL=31
2340 RETURN
```

```
1800 Z=3
1810 V=26
1820 GOSUB 870
1830 RETURN
1840 REM  **FINISH ROUTINE**
1850 CALL SOUND(-500,523,2)
1860 CALL SOUND(-500,659,2)
1870 CALL SOUND(-500,784,2)
1880 CALL SOUND(-500,659,2)
1890 CALL SOUND(-500,880,2)
1900 CALL SOUND(-500,698,2)
1910 CALL SOUND(-750,698,2,880,2,1047,2)
1920 M$="WELL DONE YOU MADE IT!"
1930 Z=24
1940 GOSUB 850
1950 IF (G=1)*(SC<1000)THEN 1990
1960 IF (G=2)*(SC<900)THEN 1990
1970 IF (G>=3)*(SC<700)THEN 1990
1980 GOTO 2160
1990 REM  **GAME OVER**
2000 CALL CLEAR
2010 CALL SCREEN(8)
2020 PRINT "*****************************"
2030 PRINT "**********GAME  OVER********"
2040 PRINT "*****************************"::
2050 PRINT " PRESS..":::
2060 PRINT "*****************************"
2070 PRINT "*******  SPACE  BAR  *****"
2080 PRINT "*****************************"::
2090 PRINT "      ..TO PLAY AGAIN.":::::::
2100 CALL KEY(0,K,S)
2110 IF S=0 THEN 2100
2120 CALL CLEAR
2130 IF K=32 THEN 2150
2140 END
2150 GOTO 180
2160 REM  **NEW SHEET**
2170 FOR X=1 TO 500
2180 NEXT X
```


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When you discover number 1, this remains uncovered, and so on for 2, 3 etc, until all the numbers have been exposed in the correct sequence. (You've probably played this type of game with cards laid face down on a table.)

Puzzler is a computerised version of another game you've probably played before, where you shuffle letters around in a little plastic tray until they're in alphabetical order.

The programs are well written, well crash proofed and well presented, but I don't think they will set any pulses racing. New themes are needed, not old wine in new bottles.

M.B.

instructions	90%
playability	50%
graphics	30%
value for money	50%

★ ★

Dallas 48K Spectrum £6

CCS, 14 Langton Way, London SE23 7TL

Do you have visions of nubile nymphets and repulsive magnates doing mega deals over breakfast on the wind-swept South Fork patio? If so, this program has almost nothing to do with it, apart from pinching the music!

It's basically a simulation of oil discovery, well development, and oil production which, if successful, results in your taking over Euing Associates (sic). If you fail, they take you over.

Strangely, the program doesn't auto-run when loaded. When run it reveals a map of an area near Dallas with grid co-ordinates, together with lots of financial/production info.

You can survey the plots for oil before they come up for auction. If you bid high enough, you then start on the rather long-winded process of well development.

D.M.

instructions	90%
playability	60%
graphics	60%
value for money	50%

★ ★ ★

Code Break TI-99/4A £3.50

Christine Computing, 6 Florence Close, Watford, Herts

Code Break works on the same principle as Mastermind (the game, not the TV programme).

You have 12 attempts to guess a hidden sequence of colours and shapes, and after each attempt the computer tells you the number of correct colours, correct shapes and objects in the correct position. From the information it gives you, you have to work the sequence out.

If you have a TI-99/4A but no Extended BASIC cartridge, this type of game is really your best bet, since fast response is not crucial. Arcade games in TI BASIC are bound to be a washout.

D.G.

instructions	90%
playability	60%
graphics	40%
value for money	40%

★ ★ ★

Othello 48K Oric 1 £6.50

Kenema, 1 Marlborough Drive, Worle, Avon

Also known as Reversi, this game involves the capture of opponents pieces by reversing them to your colour. The object is to get more of your coloured counters on an eight to eight board at the end of the game than your opponent. In this version, you can play against a friend, against the computer, or watch as the computer plays itself.

My copy suffered from loading difficulties (even though it was saved at 300 baud) and, despite several attempts, I could not obtain the on-screen instructions without a program crash.

The high resolution display is well laid out, but for a "thinking" game I fear the sound effects are a little overdone; ZAPs when reversing pieces, PINGs at the end of a move.

Oric's thinking time is painfully slow, and to have the computer play itself gets boring very quickly. Luckily, a human can take over at any stage.

D.N.

instructions	80%
playability	70%
graphics	80%
value for money	70%

★ ★ ★ ★

Awari 48K Oric 1 £5.50

Kenema, 1 Marlborough Drive, Worle, Avon

Awari is a game with origins in tribal Africa, where it was played with sticks and stones. The rules are very simple, but the strategy is complex. So it makes a fascinating computer game for those who prefer to use their wits rather than their reactions.

In this version, the display is clear and colourful, and the pieces move about at great speed once you or the computer select a move.

Movement is a little too fast to allow a novice to appreciate what is happening, though this is particularly relevant when, as sometimes happens, the computer gets two moves in one turn, and both moves are taken at once. But at least the computer's move decisions are made in seconds.

The two pages of on-screen instructions are clear. However, in pressing SPACE to move from page 1 to 2, delay in removing your finger from the key, and you miss the second page. The only way to get it back is to re-load the program.

D.N.

instructions	80%
playability	70%
graphics	70%
value for money	60%

★ ★ ★

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Wipe out the Tazz — before they do it for you

Your opponents in this game are a self-destructive race called the Tazz. You may want to destroy them — but not as much as they want to destroy themselves. Race against time in Marc Freebury's program for the Atari

In a far-off galazy, under the sickly green light of a rather exotic atmosphere, is the planet Kayloff. The inhabitants, known as the Tazz, are rather peculiar — both as a race and as individuals.

They spend most of their time bouncing up and down. They also tend towards mass self destruction, and congregate in rooms with walls that move in and crush them.

Several years after their entry into the federation, a galactic tribunal ordered them to cease this practice, in case the whole galazy started to like it, and the galactic economy fell into dust.

You are the Tazzman. Your job is to seek out and destroy all the Tazz who still practise these rituals, without being crushed.

This game is for Atari computers with joysticks.

You must enter the rooms of moving walls, and shoot the Tazz. The walls and Tazz are radioactive, and must not be touched. Shoot by pressing the fire button, then pushing the stick in the direction to fire.

The Tazz are worth 10 galactic credits each, but you lose 10 if a Tazz succeeds in being crushed. When all Tazz are destroyed, exists will appear for you to make your escape to the next room. As you progress, the walls move faster and the Tazz militants become more numerous. Can you stop the Tazz?

Tazz fits into 8k of memory, and must be typed as shown but withOUT the REM statements. This is ultra-important.

When typed in, save the game, then type PRINT PEEK(140)+PEEK(141)*256. If this gives a number larger than 8099 (roughly), then the game will crash. Cut all unnecessary statements from the game — this does not include the front page, which is accounted for. Tazz incorporates character set redefinition and switching, with a little machine code to keep the game moving at a brisk pace.

Reaching scores of over 2000 and getting past screen 8 means that you are a true Tazzman.

Variables

LWALL,RWALL,LCHAR, RCHAR used by machine code.
DEAD,CRUSH values returned from machine code.
DIFF,DELAY,NUM, TAZZ vary difficulty.
MEM,MYMEN used to access character sets.
SCORE,HISCORE obvious.
X,Y TAZZMAN position.
BX,BY,BVEC bullet position.
COUNT,C,I,J general purpose.

How it works

100-270 initialisation. Character set redefinition, machine code installation.
280-420 front page. Difficulty level is automatically incremented and not alterable from here.
430-640 set up screen. This draws the screen, places the TAZZ and sets up the necessary constants.
650-710 man move routine.
720-800 fire bullet routine. Man may not move while bullet in transit.
810-830 alternate the character sets.
840-860 slowriter subroutine. Takes string and slowly writes it in the centre of line Y.
870-1230 data. This is characters, machine code.

Hints on conversion

This game will not lend itself to any ready conversion. The best thing to do is to take the principle of the game and design your own code around that. Best of luck.

```
105 REM ****************
115 REM *                *
125 REM *  ATARI TAZZ!   *
135 REM * BY M.FREEBURY  *
145 REM *                *
155 REM ****************
160 LWALL=8339:RWALL=8341:LCHAR=8334:RCH
AR=8335:DEAD=8338:CRUSH=8337
170 RESTORE 1180:FOR I=1 TO 144:READ Z:P
OKE 8191+I,Z:NEXT I
180 RESTORE 1150:FOR I=1 TO 32:READ A:PO
KE 1535+I,A:NEXT I
190 DIM A$(40)
200 DIFF=15
205 REM * SET UP THE CHARACTER SETS *
210 GRAPHICS 0:SETCOLOR 2,0,0:SETCOLOR 4
,0,0
220 MEM=PEEK(106)-20:MYMEM=MEM*256:RESTO
RE 880
230 X=USR(1536,57344,MYMEM):X=USR(1536,5
7344,MYMEM+1024):X=USR(1536,57344,MYMEM+
2048)
240 MYMEM=MYMEM+776:RESTORE :FOR I=0 TO
2:FOR J=0 TO 7:READ Z:POKE MYMEM+I*1024+
J,Z:NEXT J:NEXT I
250 RESTORE :FOR I=0 TO 2:FOR J=0 TO 7:R
EAD Z:POKE MYMEM+(2-I)*1024+J+8,Z:NEXT J
:NEXT I
```

```
260 SET=0
270 FOR I=0 TO 2:RESTORE 940:FOR J=0 TO
143:READ Z:POKE MYMEM+I*1024+J+16,Z:NEXT
 J:NEXT I
275 REM * FRONT PAGE *
280 GRAPHICS 0:SETCOLOR 2,0,0:DL=PEEK(56
0)+PEEK(561)*256+13:POKE DL,6:POKE DL+1,
6
290 IF SCORE>HISCORE THEN HISCORE=SCORE
300 POKE 82,5:? CHR$(125):VEC=4:POKE 752
,1:POKE 756,MEM
310 ? "aabaa      a      bbaba    abbab"
320 ? "  a       b b         b        a"
330 ? "  a      a   b     aabba    bbbba"
340 ? "  b     ababb     a         b    "
350 ? "  b     b   a     ababb     aaabb"
360 A$="HISCORE 00000":A$(14-LEN(STR$(HI
SCORE)))=STR$(HISCORE)
370 POSITION 3,8:? A$
380 A$="SCORE TABLE":Y=10:GOSUB 840
390 A$="_____ _____":Y=11:GOSUB 840
395 REM * PREVIOUS LINE,CHARACTERS ARE U
NDERLINES FROM '-' KEY SHIFTED *
400 A$="EACH TAZZ  a  10 POINTS":Y=14:GO
SUB 840
410 A$="BONUS 100/SCREEN CLEARED":Y=17:G
OSUB 840
420 A$="PRESS BUTTON TO START":Y=20:GOSU
```

```
B 840
430 SCORE=0:DIFF=15
440 SOUND 0,255,10,8:SOUND 1,253,10,8
450 GOSUB 810:IF STRIG(0) THEN 450
455 REM * MAIN GAME STARTS HERE *
460 SOUND 0,0,0,0:SOUND 1,0,0,0
470 SCORE=SCORE+10*NUM-10*LOST
480 GRAPHICS 18:POSITION 4,6:? #6;"DIFFI
CULTY ";DIFF-14
490 FOR J=1 TO 5:FOR I=1 TO 5:SOUND 0,40
,10,14:NEXT I:FOR I=14 TO 0 STEP -1:SOUN
D 0,40,10,I:NEXT I:NEXT J
500 FOR I=1 TO 500:NEXT I
510 GRAPHICS 0:SETCOLOR 2,12,0:SETCOLOR
4,12,0:POKE 756,MEM:POKE 82,2:POKE 752,1
520 FOR I=0 TO 38:POSITION 1,0:? "J":POS
ITION I,23:? "J";:NEXT I
530 FOR I=1 TO 22:POSITION 0,I:? "c":POS
ITION 38,I:? "l":NEXT I
540 POKE 756,MEM:NUM=INT(DIFF-5+RND(1)*7
):FOR I=1 TO NUM
550 X=INT(RND(1)*36)+2:Y=INT(RND(1)*20)+
2:LOCATE X,Y,POS
560 IF POS<>32 THEN 550
570 IF RND(1)>0.5 THEN POSITION X,Y:? "a
":GOTO 590
580 POSITION X,Y:? "b"
590 NEXT I
600 POSITION 20,22:? "k"
605 REM * BOARD SET UP.NOW CONSTANTS *
610 SET=0:VEC=2:POKE LCHAR,99:POKE RCHAR
,108:A=PEEK(88)+PEEK(89)*256+40
620 POKE LWALL,A-(INT(A/256)*256):POKE L
WALL+1,INT(A/256)
630 A=PEEK(88)+PEEK(89)*256+79:POKE RWAL
L,A-(INT(A/256)*256):POKE RWALL+1,INT(A/
256)
640 X=20:Y=22:TAZZ=NUM:COUNT=0:LOST=0:DE
LAY=5-INT(SCORE/400):IF DELAY<0 THEN DEL
AY=0
645 REM * MOVE MAN,CHECK COLLISIONS *
650 GOSUB 810:COLOR 32:PLOT X,Y:A=STICK(
0):X=X+(A=7)-(A=11):Y=Y+(A=13)-(A=14):LO
CATE X,Y,C
660 IF C<>32 AND C<>186 THEN 680
670 IF C=186 THEN DIFF=DIFF+1:SCORE=SCOR
E+100:GOTO 460
680 COLOR 107:PLOT X,Y
690 COUNT=COUNT+1:IF COUNT<DELAY THEN 72
0
700 COUNT=0:XX=USR(8192):IF PEEK(DEAD)=1
 THEN 280
710 Z=PEEK(CRUSH):LOST=LOST+Z:TAZZ=TAZZ-
Z:IF TAZZ=0 THEN POSITION 19,0:? "::":PO
SITION 19,23:? "::";
715 REM * PREVIOUS LINE,COLONS ARE INVER
SE *
720 IF STRIG(0) THEN 650
725 REM * FIRE ROUTINE *
730 BX=X:BY=Y:BVEC=STICK(0):IF BVEC<>7 A
ND BVEC<>11 AND BVEC<>13 AND BVEC<>14 TH
EN 650
740 COLOR 32:PLOT BX,BY:BX=BX+(BVEC=7)-(
BVEC=11):BY=BY+(BVEC=13)-(BVEC=14):LOCAT
E BX,BY,C
750 IF C=97 OR C=98 THEN COLOR 32:PLOT B
X,BY:TAZZ=TAZZ-1:IF TAZZ=0 THEN POSITION
 19,0:? "::":POSITION 19,23:? "::";
755 REM * PREVIOUS LINE,COLONS ARE INVER
SE *
760 IF C<>32 THEN 650
770 COLOR 116:PLOT BX,BY:GOSUB 810:COUNT
=COUNT+1:IF COUNT<DELAY THEN 740
780 XX=USR(8192):Z=PEEK(CRUSH):TAZZ=TAZZ
-Z:LOST=LOST+Z:IF TAZZ=0 THEN POSITION 1
9,0:? "::":POSITION 19,23:? "::";
785 REM * PREVIOUS LINE,COLONS ARE INVER
SE *
790 COUNT=0:IF PEEK(DEAD)=0 THEN 740
800 GOTO 280
805 REM * CHARACTER SET ALTERNATOR *
810 POKE 756,MEM+SET:SET=SET+VEC:IF SET=
12 THEN SET=8:VEC=-4
820 IF SET=-4 THEN SET=0:VEC=4
830 RETURN
835 REM * SLOWRITER SUBROUTINE *
840 TAB=INT((40-LEN(A$))/2):FOR P=1 TO L
EN(A$):POSITION P+TAB,Y:GOSUB 810:? A$(P
,P):GOSUB 810
850 FOR I=1 TO 10:NEXT I:NEXT P
860 RETURN
865 REM TAZZ 1st Pos.
880 DATA 60,126,90,255,255,36,68,129
895 REM TAZZ 2nd Pos.
900 DATA 0,60,126,90,255,255,36,68
915 REM TAZZ 3rd Pos.
920 DATA 0,0,60,126,90,255,255,36
935 REM WALLS 1-8 L.H. SIDE
940 DATA 128,128,128,128,128,128,128,128
950 DATA 192,192,192,192,192,192,192,192
960 DATA 224,224,224,224,224,224,224,224
970 DATA 240,240,240,240,240,240,240,240
980 DATA 248,248,248,248,248,248,248,248
990 DATA 252,252,252,252,252,252,252,252
1000 DATA 254,254,254,254,254,254,254,25
4
1010 DATA 255,255,255,255,255,255,255,25
5
1025 REM MAN Standing UP/Down View
1030 DATA 60,126,24,255,24,24,90,100
1045 REM WALLS 1-8 R.H. SIDE
1050 DATA 1,1,1,1,1,1,1,1
1060 DATA 3,3,3,3,3,3,3,3
1070 DATA 7,7,7,7,7,7,7,7
1080 DATA 15,15,15,15,15,15,15,15
1090 DATA 31,31,31,31,31,31,31,31
1100 DATA 63,63,63,63,63,63,63,63
1110 DATA 127,127,127,127,127,127,127,12
7
1120 DATA 255,255,255,255,255,255,255,25
5
1130 DATA 0,0,0,24,24,0,0,0
1145 REM M/C CHARACTER RELOCATION
1150 DATA 104,104,133,204,104,133,203,10
4,133,206,104,133,205,162,4,160,0
1160 DATA 177,203,145,205,136,208,249,23
0,204,230,206,202,208,240,96
1175 REM M/C FOR WALL MOVEMENT
1180 DATA 104,169,0,141,145,32,141,146,3
2,173,147,32,133,0,173,148,32,133,1,173,
142,32,141,144
1190 DATA 32,32,77,32,173,149,32,133,0,1
73,150,32,133,1,173,143,32,141,144,32,32
,77,32,238
1200 DATA 142,32,238,143,32,173,142,32,2
01,107,208,16,169,99,141,142,32,169,108,
141,143,32,238,147
1210 DATA 32,206,149,32,96,169,0,141,151
,32,160,0,177,0,201,97,208,6,238,145,32,
76,115,32
1220 DATA 201,98,208,6,238,145,32,76,115
,32,201,107,208,5,169,1,141,146,32,173,1
44,32,145,0
1230 DATA 169,40,24,101,0,133,0,144,2,23
0,1,238,151,32,173,151,32,201,22,208,197
,96,0,0
```

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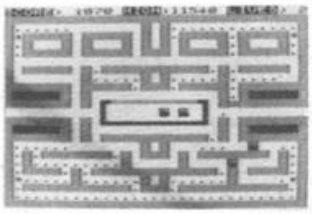

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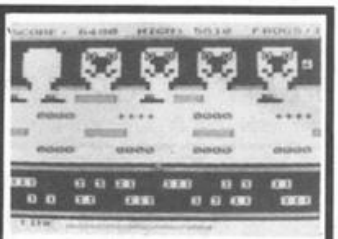

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Backing up the electronic granny

ASK's founder thinks that children will soon do most of their learning at home, with the aid of their friendly micro. MD Peter Lever told Candice Goodwin how ASK is catering for the home schoolroom of the future

Peter Lever recruited for his business know-how

Last month Kenneth Baker announced to a waiting world the publication of a book called Wealth of Information. Written by Professor Tom Stonier of Bradford University, it predicted among other things that children will increasingly do their learning in the home, via their "electronic grandmother" the microcomputer.

School, Stonier argued, would become a place where children learn to mix socially and where they can discuss what they have learned at home.

Not content simply to put his ideas down on paper, Stonier had decided to set up a software company whose sole aim would be to produce educational software for the home. He talked investors Jeremy Raphaely and Tom Blumenau into putting up the money, recruited businessman Peter Lever to set up the company, and Applied Systems Knowledge — ASK for short — was in business.

ASK's first four programs, all for the VIC-20, appeared on the market in August last year. Now it has 10 VIC programs, and has just announced four for the BBC micro. Aimed at children aged three-12, they are designed to teach basic concepts like number, shape, and use of vocabulary. Ultimately, ASK wants to provide programs for all ages, up to and including adult education.

But the company doesn't want people to think of its products like computerised textbooks. According to ASK's marketing manager Joe Duignan: "Just putting books straight on to a new medium would be a waste. Our programs owe nothing to textbooks. They're interactive, rather than passive.

"The programs aim to help children understand concepts rather than pass exams." They're also intended to be fun to use, so that children will as Joe puts it "learn by stealth. Children shouldn't know that they're learning."

An electronic grandmother may not sound very friendly, but Joe argues that "the impersonality of the machine is in fact an advantage. The computer doesn't criticise you — it doesn't destroy your expectation of yourself."

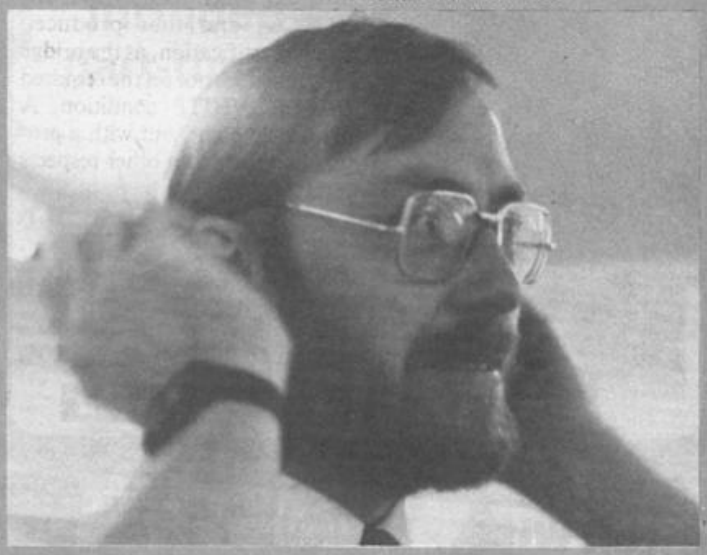
The "scripts" or specifications for ASK's programs are all written by working teachers. One of their authors for example, Gloria Calloway, is head teacher of a primary school in Hackney, north east London.

When the script has been drawn up, it is discussed with ASK's consulting editor Mike Thorne and graphic designers Mike Barrett and Piers Letcher. Then it is passed on to one of the company's six full-time programmers, who work under the guidance of technical manager Ian Morton at the company's headquarters at 68 Upper Richmond Road, London SW15.

Once the program has been written, it is tested in schools in Cambridgeshire and north London — and ASK's employees try it out on their kids, too. Not until everyone is satisfied is the program released on the public. The whole process takes about six months on average.

In making sure that the programs are educationally sound, ASK doesn't want to neglect the business side — hence Tom Stonier's decision to take on Peter Lever as MD. Peter's background was in commodity trading, so the software market has been a new experience for him — though not, he says, a bad experience.

But it was business know how rather than computer experience that Tom Stonier was after. "Tom wanted professional teachers and computer people involved. But he wanted good business people too, who knew how to apply business concepts to the product. It isn't enough just to build a better mousetrap."



Technical manager Ian Morton

ASK's programs are currently sold both by mail order and in High Street shops. Its VIC programs are marketed jointly under ASK's and Commodore's names, and this is a policy the company hopes to continue in future with software for the Dragon, Atari and TI-99/4A.

"That way, we can take advantage of the computer manufacturer's marketing organisation and concentrate on producing good programs ourselves", Peter said. "But we'll have to be careful not to lose our identity."

The programs are selling well in Australia, South Africa, New Zealand and Spain, where they have been translated into Spanish. In fact, they're selling better overseas than they are in the UK at present. Why should this be?

Peter Lever said: "The market here is slow because people haven't yet made up their minds what they want a micro for.

"There are two schools of thought. One sees a micro as an in-house pin-table. The other is that the micro is for learning to program. People haven't yet perceived that it can be useful in education." ■

Food for thought

If you're feeling intellectual, these programs are designed to bend your mind. Here are our reviewers' thoughts on them . . .

Bridge Master Spectrum £24.95

Bridgemaster, PO Box 163, Slough

What a delight to encounter a really professional program for a microcomputer! Bridge Master is well conceived, smoothly executed, and aimed with accuracy at a worthwhile objective.

Four double-sided cassettes are supplied, with an instruction book and Begin Bridge with Reese, by Terence Reese. Two of the cassettes talk to your computer, and the other two talk to you, giving a smooth commentary to guide you through the intricacies of 55 bridge hands.

You can play each hand yourself, a subdued beep telling you when you try to play an unsuitable card, or you can let the computer play for you, taking the rounds at any pace you choose. The bidding of some hands is covered, though this is not introduced in the earliest hands.

For a learner, this offering is ideal. For those who already play, there is much value, rather on the lines of the old 'Auto Bridge' system, but much more extensive. True, there are only the 55 fixed hands, and each hand can only be played one way, but it would need a gargantuan feat of memory to recall the characteristics of each.

There was only one hint of trouble. It so happened that the first cassette was loaded after a program which had set PAPER BLACK, and that produced much mystification, as the bridge program does not set the required PAPER WHITE condition. A minuscule point, but with a program so perfect in other respects it rather stood out.

D.T.

instructions	100%
playability	100%
graphics	90%
value for money	100%

★ ★ ★ ★ ★

Black Box TI-99/4A £6

Stainless Software, 10 Alstone Road, Stockport, Cheshire SK4 5AH

Black Box is the scientific version of Mastermind. Originally a board game, it transfers well to a computer.

You use your powers of deduction to locate a given number of atoms (up to 10) which are hidden in an 8 ⅛ 8 grid. There are 32 rays positioned around the edge of the grid which are used to detect the co-ordinates of each atom, depending on whether a ray is absorbed, deflected or reflected.

When you think you know where the atoms are, you enter your guesses. A score is given based on the proportion of atoms you track down and the number of rays you use.

Understanding exactly how rays are deflected and relected took time to fully comprehend. The instructions give full details on the origins of the game, but provide only a few sentences and one example for the complete beginner.

J.W.

instructions	50%
playability	70%
graphics	60%
value for money	60%

★ ★ ★

Match Wits TI-99/4A £7

Pewterware, from Stainless Software, 10 Alstone Road, Stockport, Cheshire SK4 5AH

Loosely based on the card game Pelmanism, Match Wits is a memory testing game for two to four players.

Each player has a field of 12 coloured squares that conceal six pairs of abstract pictures. In turn, each player attempts to uncover a match for a random picture in the centre of the screen, to score one point.

If a player reveals both of a pair of pictures then that player has the chance to uncover a square on a different player's board, to gain two bonus points. There are two skill levels to the game — the higher level uses less easily distinguished shapes in one colour, but is otherwise similar.

Good use is made of graphics and sound and the game was fairly absorbing once the barely adequate instructions were fathomed. You could of course play the same game with a pack of playing cards — but that's progress!

V.A.

instructions	40%
playability	60%
graphics	70%
value for money	40%

★ ★ ★

Backgammon Dragon £8

Microdeal, 41 Truro Road, St Austell, Cornwall PL25 5JE

A machine code version of Backgammon with high resolution graphics and full colour.

There are nine levels of play. A game can be played against a friend, the computer, or you can sit back and watch the computer play itself. The computer throws the dice or you can input your own moves.

Apparently you can use a Microdeal light pen — I don't possess one so I didn't try this option. There is even an option to switch off the sound — good thinking, Microdeal! Actually the sound effects are quite good.

I played many games using different options each time and found each game thoroughly enjoyable. This is an excellent representation of the game with good presentation on screen.

J.M.

instructions	90%
playability	90%
graphics	95%
value for money	90%

★ ★ ★ ★ ★

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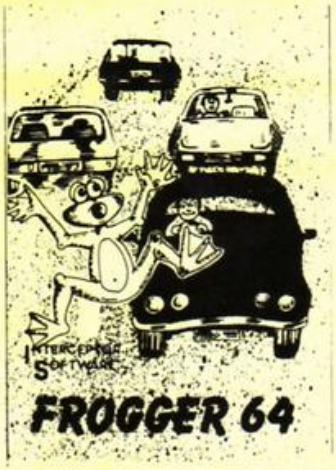

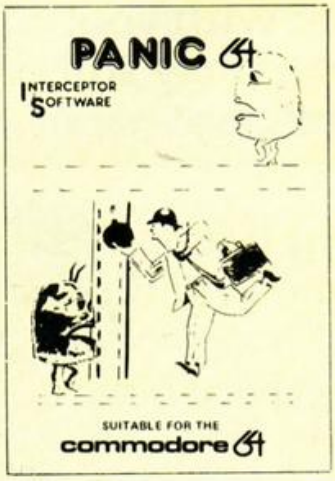

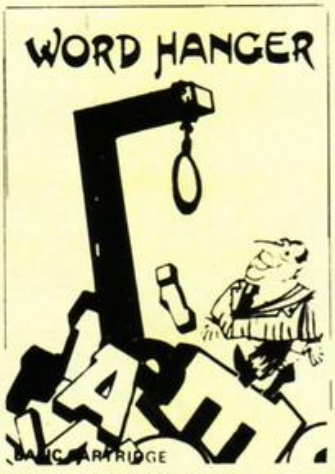

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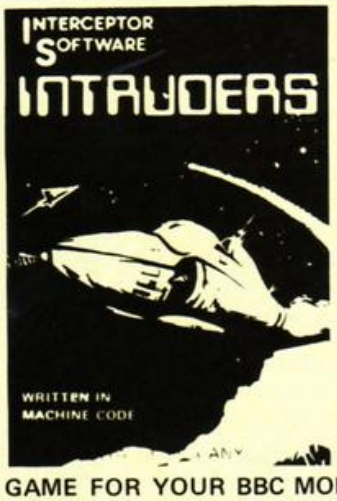

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Learn a thing or two from your micro

Younger members of the family can use the micro too, with games that will teach them maths or improve their spelling.

Three Games For Children 48K Oric-1 £7.95

Burslem Computer Centre, 74 Waterloo Road, Burslem, Stoke-on-Trent, Staffs ST6 3EX

One of the main difficulties in writing "educational" software is getting the right mixture of challenge and interest. Without either of these the child soon loses interest. **'Three games for children'** (not the greatest of titles) scores highly on the former but falls down rather on the latter.

The program loaded first time and then offered a choice of three options — counting shapes, spelling colours or, rather strangely, typing.

Counting shapes draws some nice geometric shapes onto the screen and asks how many of each there are. Spelling colours produces three large numbered shapes and asks, in turn, for the child to spell out what colour they are.

The final game appears to be rather out of place on a educational tape. **G.P.**

instructions	45%
playability	55%
graphics	60%
value for money	40%

★ ★ ★

Word Build 32K BBC £5.95

GTM Software, 864 York Road, Leeds, Yorks

Educational programs are improving all the time. This program, is an advance due to the carefully-planned display, superior error trapping and user friendliness.

Clear, detailed instructions come with the cassette and are reinforced on screen.

The program offers a menu of four sets of words (House, Animals/Birds, Games/Toys and miscellaneous words) each with three levels of difficulty. Words range from cat to flamingo and are displayed with letters "rearranged" in alphabetical order.

The player has to recorganise the letters to spell the correct word, a score is kept and a picture of a house is built up as each correct letter is entered.

Colour is used and sound is optional. The program was well received by pupils in my local school and the teachers were impressed by the ease with which their own word lists could be substituted. **R.E.**

instructions	92%
playability	87%
graphics	70%
value for money	95%

★ ★ ★ ★

Words, Words, Words VIC-20 plus 16K £8.95

ASK, London House, 68 Richmond Road, London SW15 2RP

Children do have fantastic imaginations. If they use them for making up a story and making up for the limitations of VIC graphics they'll love this program.

The idea is to practice spelling for five-eight year-olds using scenes chosen from a street, farm, city, orchard, field meadow, house or castle.

Objects appear, and if you complete the line "I see a ..." with the correctly-spelled word, the object joins the scene.

You're allowed two goes and a certain number of alternatives are permitted: man or farmer, lorry or truck. While some objects are easy to identify, some are more problematic. Is it a man or a boy, dog or cat and is that **really** meant to be an ant?

For the adult assistant there is a dictionary of the 50 or so words that appear. **B.J.**

instructions	85%
playability	75%
graphics	82%
value for money	77%

★ ★ ★

Hide and Seek VIC-20 plus 8K £8.95

ASK, London House, 68 Richmond Road, London SW15 2RP

This is a game with educational aspirations. It describes itself as a variation on Pelmanism — you know, turn over the cards from a face down pack trying to get a pair. It develops your short term memory, so they say.

With a nominal age range of five to 12, I fancy that many older and even some younger will get fun out of it. My three year old and I did.

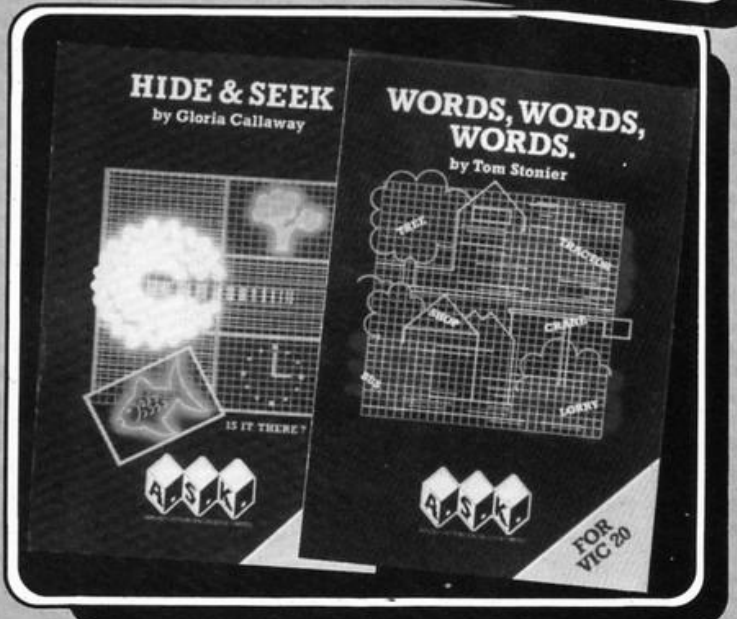
In fact, it's two programs, side A for beginners, side B for advanced. Basically you see things put in boxes, then have to remember what went where.

Side A has six boxes with objects like a clock, a pig, a fish to remember. Side B has nine boxes and you choose between nine flowers and nine faces as the objects. It also offers five grades of difficulty, from hard to super hard (like it!)

The graphics are excellent, the instruction book clear. **B.J.**

instructions	88%
playability	90%
graphics	94%
value for money	86%

★ ★ ★ ★



What's the use of your micro?

These programs have an answer for anyone who's asked what home computers can be used for

Vu-File BBC cassette & disc £14.95

Psion, 2 Huntsworth Mews, Gloucester Place, London NW1 6DD

First go and buy Vu-file before they sell out!! Then read on.

Vu-file is so versatile I can't list all the possibilities. But the main idea of the program is to provide a user definable data base, in which you can set up a screen format of your own design and then enter in data. This can then be saved to tape, or disk.

The whole file is loaded into working memory, so it is limited in size to 16K, but some very sophisticated methods are used to pack an awful lot in there. The demonstration file supplied, Gazetteer, has 152 records and eight fields and still only uses 63% of memory!

To say the program is well documented is an understatement — it comes with the best user manual I've ever seen. Every option is covered by this booklet.

J.H.

instructions	100%
playability	90%
display	n/a
value for money	100%

★★★★★

Key Trainer 48K Oric 1 £5.50

Kenema, 1 Marlborough Drive, Worle, Avon

This program took seven minutes to load. After trying it out, I'm not sure it was worth the wait.

The tape contains eight exercises in using the keyboard, of progressive difficulty, sort of. Instructions for the first six are included in exercise one, though you're not told this.

To start with, you hit any key, and the computer confirms it! From then on you have to press the key corresponding to one chosen at random by the computer — the further you've progressed, the greater the selection it chooses from. When you've had enough, you can look at your percentage success rate and get back to the main menu.

The last two exercises are slightly different. In exercise 7 you type in 1 to 10 lines of text, which are then justified as in a word processor. Exercise 8 simply requires you to copy the text you have just typed in. I couldn't see the point of this.

D.N.

instructions	20%
ease of use	40%
display	30%
value for money	20%

★

Beebsynth BBC B Cass. £7.95 Disc £10.95

Clares, 222 Townfield Road, Winsford, Cheshire CW7 4AX

What is Beebsynth? Having played with it for hours, I can safely say I think it's two programs for the price of one — a rare event these days.

The first part is a utility to help you design sounds for inclusion in games, or for use in the second part of the program. You can change all the parameters of the sound envelope either singly or in steps of ten, and when you've got the effect you want, see the command to produce it displayed at the top of the screen.

The second part turns your micro into a music keyboard. I spent many happy hours trying it out and annoying the dog with a selection of high-pitched discordant musical sounds. As for a more musical friend of mine, his reaction to the wildly varying possible sound combinations was only tempered by the restrictions of the keyboard layout.

J.H.

instructions	90%
playability	80%
display	50%
value for money disk	75%
cassette	80%

★★★★

Comp-U-Share 48K Spectrum £9.95

Micromega, Quantec Systems & Software, 230-236 Lavender Hill, London SW11 1LE

This investment management system is provided in an attractive purple box containing the master program and a 19-page user guide. It doesn't include the extra cassette(s) you will need to hold the files of data on your shares.

Up to 36 investments (shares, loan stock or unit trusts) can be 'managed' by this program. The program doesn't advise on which investment you should make. Its main purpose is to calculate most of the ratios investors need, and analyse gain and earnings, to aid decision making in investments.

The file will only store information at the time of share purchase and current details. This allows now-and-then comparisons to be made, but you will not be able to get any trend analysis. However, data from a number of points in time can be stored as separate files.

An almost identical version is available for the ZX81.

D.N.

instructions	80%
ease of use	90%
display	60%
value for money	80%

★★★★

Best for software — every week

A switch in time for your Oric-1

Want to hear a secret? To make would-be programmers' lives easier, David Nowotnik reveals some of the Oric-1's hidden system variables

You won't find any mention of system variables in the Oric-1 manual. A minor omission, you might think, but as I will demonstrate, the addresses and function of these variables can be very important to programmers.

You can't get this information from Oric Products. When I requested details, I was curtly informed that the Oric's system variables are secret! So it's up to programmers to find it out for themselves.

This article is about some of the variables which I have discovered. As the title suggests, they concern switches and time.

When Oric 1 is powered-up, the machine is in CAPS mode, and the keyboard sounder and flashing cursor are turned on. These (and other) functions are switched on and off by a 'toggle switch' action from within a progam (with a PRINT CHR$(x) command), or direct from the keyboard with the CTRL key.

This turns on a function previously off, and off if previously on, but does not exert absolute control of these functions.

This limitation is acceptable if every program is loaded into the computer straight after power-up, when the status of these functions are known. However, it would be very inconvenient to disconnect the power and reconnect in order to reset the machine every time we wanted a new program.

The system variable at address 618 contains 'flags' which indicate whether some of these functions are on or off. These are shown in table 1.

The way to control these functions within a program is to POKE an appropriate value into address 618. These values can be calculated from the table.

For example, if you wanted to have the flashing cursor on and keyclick off (with VDU on and double height and escape off), add up the appropriate values in the table (1+8+2+0+0=11); POKE 618,11 ensures that the cursor is on and keyclick is off. For cursor off and keyclick on, you would use POKE 618,2.

The 'flag' for CAPS lock is bit 7 of byte 524. I'm not sure of the purpose of the other bits, so I would suggest the following program line:

IF PEEK (524)>127THEN PRINTCHR$(20); to ensure that CAPS lock is off, and:
IF PEEK (524)<×+&THEN PRINTCHR$(20); to turn on CAPS lock.

Time is an important element in many games; a task has to be accomplished within a time limit, or success is a measure of the time taken.

The calculation of time on the Oric 1 makes use of the system variable at addresses 630 and 631. The value of this variable drops by 100 every second.

Therefore, to measure time, this 'clock' is set to a high value at the start, and the value at the end is examined. The time, in seconds, is the difference divided by 100.

For example, start the clock with the command POKE 630,65535 (which is the highest possible value).

The time elapsed at the end of a game is:
TIME = (65535-DEEK(630))/100 (seconds)

If you are checking for a time limit, use a line such as:
IF PEEK(630)<65535-100* TIMETHEN. . .
where TIME is a pre-defined variable equal to the time limit in seconds.

Note that, as the system variable drops by 100 every second, it will take 655 seconds to drop from the highest possible value to zero. The value to follow zero is 65535. Therefore, this timing method can only be used for time periods up to 10.9 minutes.

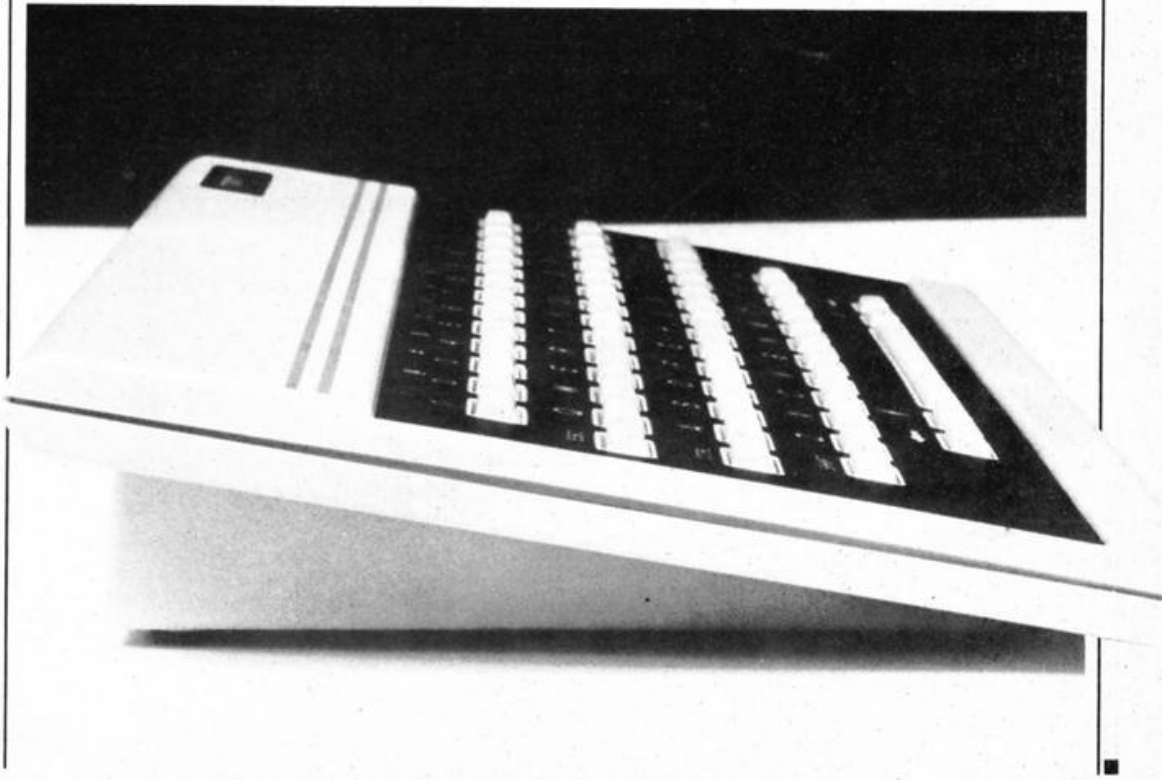
A final Oric tip: the system variable at address 520 holds a value which varies according to which key is pressed. If no key is pressed, the value is 56. The BASIC command KEY$ does not work as smoothly as the manual suggests. So, if you have a game in which you wish to check for any keypress, the line:
IF PEEK(520)<>526 THEN. . .
is better than:
IF KEY$ <> ""THEN. . .

If you have discovered other Oric system variables, why not write and tell us about them. Then we can let everyone in on the secret!

Table 1 — some Oric 1 'toggle switch' functions

Function	PRINT CHR$(x)	CTRL key	Byte on	618 value off
CAPS lock	20	T	—	—
Keyclick	6	F	0	8
Flashing cursor	17	Q	1	0
VDU	19	S	2	0
double height	4	D	64	0
(escape	27	—	16	0)

Although 'escape' has a flag in byte 618, it is not strictly a 'toggle' function.



Close encounters of the hostile kind

Intergalactic harmony is the last thing on the minds of the aliens in these new action games.

PS Pesteroids TI-99/4A £10.00

PS Software, from Stainless Software, 10 Alstone Road, Stockport, Cheshire

"Your ship has entered a mysterious zone of shifting reality. Wave after wave of strange objects drift through this starless void endangering your ship." Asteroids, in other words.

It's true to say that as the game progresses, the asteroids adopt some very strange shapes indeed, including, at one stage, the logos of rival computer manufacturers.

Colour graphics are adequate, making extensive use of Extended BASIC's sprites facility. Sound effects could be improved, though.

Dedicated asteroids addicts will probably find this game too slow and easy. But it's worth a try for less skilled gamers.

V.A.

instructions	70%
playability	60%
graphics	60%
value for money	30%

★★★

Mission Mercury VIC-20 £7.95

Virgin Games, 61/63 Portobello Road, London W11

First the bad news. Mission Mercury turns out to be just a boring old rescue scenario. You have to rescue marooned humans from a planet surface by steering a small shuttle craft through a meteor storm.

The good news is that the game is well written, with nice smooth multicolour graphics. The animation is well thought out and effective.

I found it enjoyable to play, if difficult to maintain interest. If Virgin can keep up the quality, but spice their products up with a little more originality, they should do well in their new venture.

A.W.

instructions	70%
playability	90%
graphics	85%
value for money	70%

★★★★

99 Vaders TI-99/4A £10

Stainless Software, 10 Alstone Road, Stockport, Cheshire

If you're still a Space Invaders fan, you'll enjoy this version. A mothership hovers over Earth releasing small attacking craft which you blow to bits with the aid of three cannons.

After enough craft have been zapped, the mother ship takes off and the game resets quickly for the next wave.

Good graphics, and the movement is fast for TI BASIC.

If you beat a score of 5,000, you qualify for the hall of fame. I think that at £10 the game is a bit overpriced, though.

C.E.

instructions	100%
playability	100%
graphics	95%
value for money	60%

★★★★

Space Adventure BBC B £7.95

Virgin Games, 61/63 Portobello Road, London W11

Not just an adventure, nor yet a reaction game, but a bit of both. You must wander the rooms of an alien spaceship, collect four keys to locked rooms containing crystals, grab them and escape.

Out to thwart you are robots which must be destroyed. Once your life support or weapons are exhausted you expire, but power packs are dotted around to revitalise you.

This is a first class program, with instructions on both insert and on screen. Graphics, colour and sound are superb. The status display is easy to read and gives you all the information you need (including a map with your present position).

The only problem I had with Space Adventure was in prising my friends away from it.

R.E.

instructions	100%
playability	98%
graphics	97%
value for money	99%

★★★★

Bug Bomb BBC B £7.95

Virgin Games, 61/63 Portobello Road, London W11

Fancy deliberately putting bugs in a program! This is an entomologist's nightmare (or dream, depending on his suicidal tendencies).

You move around a grid trying to destroy the power sapping bugs. Touching a bug loses one of your three lives — they also fire back at you. You have up to three mines which are launched behind you and continue to move in that lane until hitting a bug or yourself.

The screen layout was simple, with good use of colour and sound, and the keys were very responsive. A bit **too** responsive, perhaps — I found it hard to launch one mine at a time and often had two or three travelling in line.

R.E.

instructions	90%
playability	87%
graphics	90%
value for money	95%

★★★★

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The sound of breaking micros

Do other computer enthusiasts share my problems? I've tried every computer, and they've all had their snags. Jelly and tea have fallen down through the keyboard, ruining the circuitry and chips.

I've had a wobbly RAM packs, the electricity goes off every 10 minutes, I lose colour and picture from my television, and all my tapes get chewed up either by my brother or in the cassette recorder. Could I possibly be accident prone?

Because of these difficulties I've damaged not only my own but also my friends' computers, thus losing my friends.

It has got to the stage where even my local computer dealers say they'll phone the police if I step into their shops.

Has anyone got any ideas for a computer which is unbreakable and which you get out of a cornflakes packet (no, not a ZX81. I've already tried that)?

Should I commit suicide? Perhaps I should never have taken up computing as a hobby. Oh hang it all!

Over Desperate, Belfast

East Londoners club together

The East London Amateur Computer Club meets on the second and fourth Tuesday of each month in the main hall of the Harrow Green Library, Leytonstone. Meetings start at 7pm, and visitors are welcome.

The first meeting in the month is usually a talk on micro-related subjects, and the second meeting gives members a chance to discuss problems ideas, and programs.

Micros of all types are shown, including Beebs, Uncle Clives, TRS80, Nascom, Pet Sorceror, Apple, Dragon, Oric, and a 7768 (mine).

On the last Thursday in the month we have a special meeting for user groups, and a lecture on Basic for members.

The current membership fee is five pounds a year, half price for juniors and pensioners. Anyone interested in learning more about the club should ring the chairman, Fred Linger, on 554 3288, or myself on 558 3681.

J. Turner, London E11

Interface intrigue

We ordered the Sinclair Spectrum RS232 C interface from Cobra Technology, and waited 12 weeks for it to arrive, even though our cheque was cashed immediately.

Despite what it states on the packaging, the Cobra interface will not allow you to use LPrint or LList — surely the main reason for buying such a product.

Despite a personal visit to Cobra and several telephone calls, we have not received a refund.

Automata has been in the micro business a little longer than most. Behaviour like Cobra's harms all of us, and we see it time and time again, from the biggest in the land down to the back street cowboys.

To all of you in the micro industry — you must not advertise goods that are not readily available, you must not stick money in the bank before your despatch the goods, and you must not mislead the customer by your advertising.

Automata, Portsmouth, Hants

Jack Allison of Cobra said: "We have never claimed that the Cobra Interface will do LPrint or LList — if Automata had asked us about that before ordering, we would have told them. If Automate want their money back, they can have it — but they haven't asked us for a refund.

"We have production problems, like everyone else, due to a shortage of 6850 chips. But we sent Automata a word processor package with the interface to make up for the delay."

Why you should dissect your games

Having just read One Man's View in HCW no 15, I would like to make a few points.

Firstly, Mr Foreman compares learning to program to knowing what is going on under a car's bonnet, and argues that you don't neet to know how the car works to "drive thousands of miles". While computer owners need not know how the electronics of computers work — I certainly don't — they do need to know about the program that "drives" the computer.

Secondly, it is all very well for the computer owner who is only interested in games not to understand programming, but business users need to understand the jargon in order to know whether they will need a disk drive, a GP/M-compatible computer, 48K or 1148K of RAM.

Thirdly, though I am interested mainly in games, I have learned a great deal through learning to program, and hope to make a career out of it.

So, all you games players — do dissect games if you want. It is most rewarding, especially if it enables you to subsequently write your own games and programs. And who knows? it may provide you with a job in years to come.

David Lester, Pinner, Middlesex

★ *Software winner*

Is your reviewer krazy?

May I assure your readers that it was not a bug that prevented your reviewer from mounting the lifts is the third screen of Krazy Kong, as thousands of customers who have bought this game will testify. It requires perfect timing and that is all. It is always difficult to create a game that will provide enjoyment and excitement for a length of time yet be easy for a beginner.

I must also correct your reviewer over Pharach's Tomb. You do not have to reload the programme again if you meet sudden death. You just answer the question. Try again.

A Gupta, Anirog, Horley, Surrey

Top Ten programs for the Dragon-32

1	The King	Microdeal (1)
2	Planet Invasion	Microdeal (3)
3	Space Wars	Microdeal (2)
4	Dragon Trek	Salamander (5)
5	Defense	Microdeal (–)
6	Katerpillar Attack	Microdeal (4)
7	Chess	Dragon (9)
8	Grand Prix	Salamander (7)
9	Computer Voice	Dragon (–)
10	Dragon Quest	Dragon (–)

Compiled by Boots. Figures in brackets are last week's positions

Top Ten programs for the ZX81

1	3D Monster Maze	New Generation (1)
2	Flight Simulation	Psion (2)
3	QS Scramble	Quicksilva (4)
4	Alien Dropout	Silversoft (7)
5	Galaxians	Artic (5)
6	Chess	Psion (3)
7	10 Games for 1K	J K Greye (9)
8	Asteroids	Silversoft (–)
9	Avenger	Abacus (8)
10	Night Gunner	Digital Integration (–)

Compiled by W. H. Smith. Figures in brackets are last week's positions

Top Ten programs for the VIC-20

1	Panic	Bug Byte (1)
2	Arcadia	Imagine (3)
3	Cosmiads	Bug Byte (4)
4	Wacky Waiters	Imagine (2)
5	Catcha Snatcha	Imagine (8)
6	Amok	Audiogenic (7)
7	Asteroids	Bug Byte (6)
8	Blitz	Commodore (–)
9	Intro to Basic 1	Commodore (5)
10	Choplifter	Audiogenic (–)

Compiled by Boots. Figures in brackets are last week's positions

Top Twenty programs for the Spectrum

1	Penetrator	Melbourne House (2)
2	Flight Simulation	Psion (1)
3	Jet Pac	Ultimate (4)
4	Transylvanian Tower	Richard Shepherd (3)
5	The Hobbit	Melbourne House (5)
6	3D Tanx	dk'tronics (6)
7	Ah Diddums	Imagine (8)
8	Horace Goes Skiing	Psion/M. House (7)
9	Hungry Horace	Psion/M. House (12)
10	Chess	Psion (11)
11	Planetoids	Psion (19)
12	Test Match	Computer Rentals (13)
13	3D Tunnel	New Generation (15)
14	Ground Attack	Silversoft (14)
15	Time Gate	Quicksilva (16)
16	Orbiter	Silversoft (9)
17	Arcadia	Imagine (10)
18	Starship Enterprise	Silversoft (–)
19	Football Manager	Addictive (20)
20	Pssst	Ultimate (–)

Compiled by W. H. Smith. Figures in brackets are last week's positions

Now they'll talk our language

I suppose this item does not strictly fall under the heading of what you conside home computers, but it will certainly affect a lot of homes over here.

In the last month, Prestel has restructured its marketing and distribution plans. Unlike all other videotext-like services, Prestel is no longer running on a mainframe computer. After outbidding the competition, responsibility for making the service profitable has been taken over by Torch Computer Ltd.

Now, instead of running on a centrally located GEC mainframe, the Prestel database will be run from a network of Torch computers connected to 40Mbyte disc drives, each of which can apparently store up to about 40,000 text screen pages. When it was first introduced, Prestel was received with something other than wild abandon. I feel that this was probably due to the fact that the initial database was mostly European, and therefore not entirely relevant to our needs.

Torch feels that by creating local and therefore more interesting and relevant data bases that interest can be renewed. Torch must do this all on their own, as apparently no more money will be put into the project by Telecom. I believe that if Torch can indeed come up with a relevant data base, that they have every chance of being successful.

★★★★

Unitronics, a company based in Oakland, California, has introduced a new home micro with a built-in "stringy-floppy." The product, called the Sonic Home Computer, is expected to be able to run Apple II and CP/M software in addition to those created especially to run on the company's proprietary operating system called "Rosy." The computer is expected to cost less than $200, and will be out around September.

This computer takes advantage of the "Waferdrive" device which I described in last week's column. The drive can store up to 128K, and can be expected to load a 48K program in less than 20 seconds.

The unit will allow memory expansion up to 80K RAM, will accept Atari compatible joysticks, has an RS-232 port, and will also accept a disc drive. Using a 6502 microprocessor, the unit will have 16 colour capability, will display upper and lower cae in 40 columns, and will have a 70 key typewriter-like keyboard having 10 special function keys, and will use 4K of ROM to auto-boot the machine and load programs from the stringy floppy.

The machine will come with a great deal of software included in the price. This includes the software for the Waferdrive, BASIC by Microsoft, a spreadsheet program, a word processor, and game software, with CP/M to follow shortly. The unit will also be offered with an adapter enabling Atari and Colecovision game machine owners to link their machines to the computer.

In this way games, presumably in progress, can be stopped and saved to the Waferdrive. Unitronics is planning to release games for the Atari and Coleco machines on special game wafers.

This same company is also getting ready to announce an expansion unit for the VIC-20 which will have a built-in 64K Waferdrive. The device will look like a disc drive to the VIC.

They are working on developing similar units for the Commodore 64 as well. I will let you know what happens when the machine actually hits the marketplace.

Out of space again. See you next week.

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You have my absolute Guarantee of the complete authenticity of every claim, cheque, document, letter, etc, contained herein.

I do have losing weeks, but ON AVERAGE my winnings show over SIX DIVIDENDS **EVERY WEEK** for the past 25 years.

I know that you are now utterly flabbergasted, it always happens to everyone with whom I come into contact. Please just sit back and **imagine** for a moment my **FIRST DIVIDEND** wins alone – they now number 765, (seven hundred and sixty-five) and will probably be even more by the time this advertisement appears in print.

I AM NUMBER ONE IN THE WORLD AND NO ONE DISPUTES IT.

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I only wish that space would allow me to give you photographs of my winnings slips, cancelled cheques, etc, but it is of course impossible – they now number, 8,201 dividends. I have however given JUST A FEW EXTRACTS from ORIGINAL LETTERS I hold from my small clientele.

I am the Inventor and Sole Proprietor of my method, Registered as EUREKA – (I have found it). I am known as the Professor, in Pools Circles – I am of the highest Rank in Forecasting – this is beyond dispute. I am marketing a limited number of copies under my registered Company – FOOTBALL ENTERPRISES.

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I charge NO COMMISSION on any of your wins – no matter how BIG they may be.

I realised a long time ago that it was no good sitting down and **dreaming** about winning the pools, so I burnt the candle at both ends, working late into the night, occasionally RIGHT THROUGH THE NIGHT, I **KNEW** there was a way, eventually it all paid off and has been doing so ever since.

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Winnings cheque received today, sincere thanks. **D.N., Devon.**

I congratulate you on your achievement. **R.R., Wales.**

I should like to thank you for a most exciting season and look forward to hearing from you again. **J.C., Hants.**

I would like to acknowledge cheque and say how much I appreciate your Integrity. **J.M., Scotland.**

Many thanks for your system. It is all you say and more. **J.C., Lancs.**

Your wonderful system won me £3,527. I intend to visit London soon and will be able to come and see you Personally. (Overseas Client). **P.M., Kampala.**

Many thanks for trying so hard to please us all, your brother should be thanked also. One of our daughters, **whose husband you helped enormously,** has just phoned, the four of them have just spent a wonderful holiday in Spain. **K.R., Isle of Man.**

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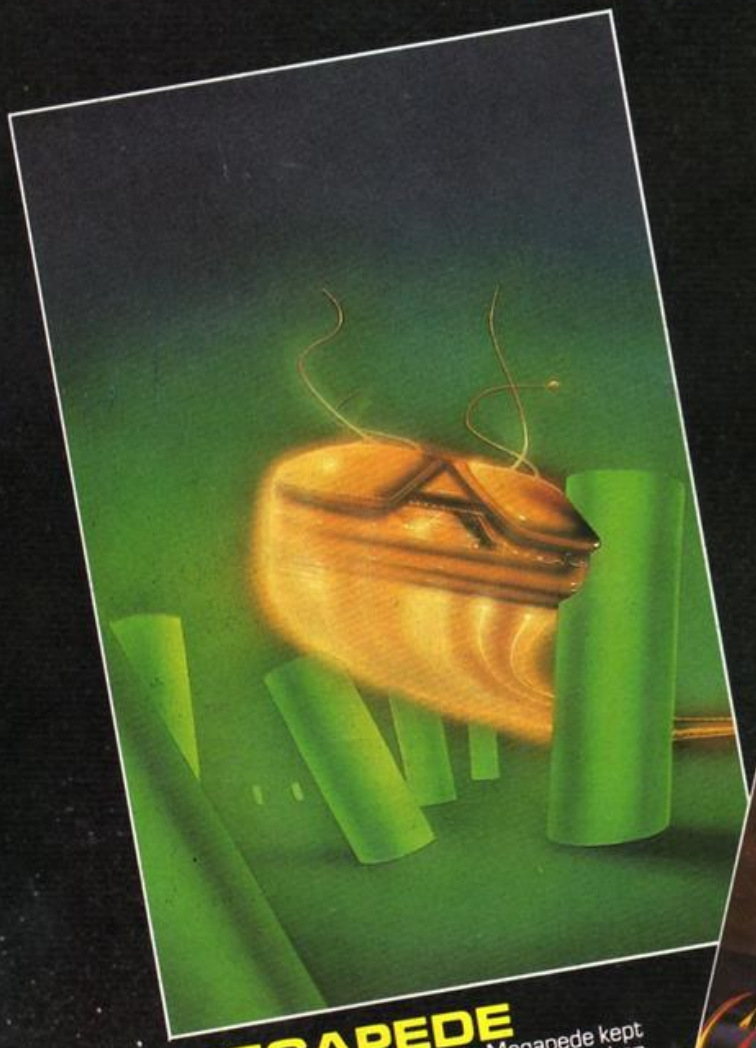

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