

# Home Computing WEEKLY

An Argus Specialist Publication

THIS WEEK: more software magazine  
 more than any other

No.35  
 November 1-7, 1983

38p

**FREE  
 COMPETITION**

**Spectrum  
 Microdrive  
 to be won, plus  
 100 prizes of**

**New  
 Generation  
 Software**

**NEW: Top 30  
 software chart.  
 Plus: Top 10  
 charts for  
 Commodore 64  
 VIC-20, ZX81,  
 Spectrum and  
 Dragon**

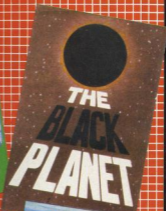
**Software  
 reviews for:**

Oric, Lynx,  
 Spectrum,  
 Texas, BBC  
 Jupiter Ace,  
 Commodore 64

**Great Guy  
 Fawkes  
 program to  
 type into your  
 Spectrum**

**More  
 programs to  
 type in for:**

Oric, Atari,  
 VIC-20, ZX81  
 and Texas



## Taiwanese micro takes on the BBC

A new computer is being designed in Bradford and made in the Midlands... by a giant Taiwanese company.

It is to make its public debut at a show next March, said Kevin Hayes, sales development manager of Tatung (UK).

Although it would be in the upper price range, Mr Hayes said many features usually sold as extras would be built in.

There would be a range of three or four and the base model would offer: a typewriter-style keyboard with cursor keys, 64K of RAM, a single three-inch Hitachi disc drive, colour, 40-column screen - with an option for 80 columns - Microsoft-continued on page 5

## Long wait for Electron

Unless you strike lucky, you'll have to wait weeks for Acorn's new computer, the £199 Electron.

There are eight possible customers for every single machine, and W.H. Smith's merchandise controller Stewart Binnie said: "Our branches are under siege."

Production in Malaysia had not got under way as quickly as hoped, said Robert Blood, for Acorn.

In a message to people waiting,

continued on page 5



**NEW FOR BBC 32K  
 SENTINEL £6-95**

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P.S.S.

# HERE COMES HORACE!

Just when you thought microcomputer games had nothing more to offer, here comes Horace!

It has been said that Horace games are in a class of their own: in fact, Horace is almost a legend.

Horace is a cute, lovable, animated character who races through adventures, creating havoc wherever he goes, and the good news is that Horace games are now available for most microcomputers.

When Horace was first introduced to computer owners in the game "Hungry Horace", he immediately became a cult figure, winning the hearts of thousands of computer owners. Now, you too can enjoy the hair-raising adventures of Horace.

The Horace series of games brings you splendid graphics, addictive games and a lovable mischievous character, for only £5.95 per cassette.



## HUNGRY HORACE

The original Horace adventure. Horace creates havoc in the park as he picks the flowers, annoys the guards and steals their lunch. Patently ridiculous, but great fun.

## HORACE GOES SKIING

Our hero attempts winter sports: First of all he must get to the ski shop, then lumbered with a pair of skis, he has to dodge the traffic once again to reach the snow. Skiing is complete with slalom flags, trees and moguls. So watch out, Horace!

## HORACE AND THE SPIDERS

Horace's task is to rid the mountain caves of spiders. But before he can do that he must climb the mountain and reach the dreaded spider bridge. To cross it, Horace must swing from spider thread to spider thread! This game is challenging and fun with some amazing animation.



# MELBOURNE HOUSE



## Melbourne House Publishers

### Spectrum

Spectrum version of Horace games are available from selected branches of WH Smith, Boots and Mercies or directly from Sinclair Research Ltd.

### Commodore 64

Commodore 64 Hungry Horace £5.95  
Commodore 64 Horace Goes Skiing £5.95

### Dragon 32

Dragon 32 Hungry Horace £5.95

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Orders to: Melbourne House 131 Trafalgar Road Greenwich London SE10

Correspondence to: Melbourne House Tring Hertfordshire

Trade enquiries welcome

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Signature

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Address

Expiry date

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Total  
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HOW 1/11



## BBC BEST NEW CATALOGUE

Send 50p stamp to:  
**Software Supermarket,**  
87 Howard's Lane,  
London SW15 6NU

### Briefly

Nigel Smith of the Which? Money team wrote Taxcalc, a program which claims to be able to tell most users exactly how much tax they should have paid. Written for the BBC B micro, it is published by the BBC and costs £17.25.

*Consumers' Association,*  
Castlemead, Gascoyne Way,  
Herts SG14 1LH

HMV shops has taken the first step into computer software retailing by opening a software department in its main Oxford Street store. The department will stock 70-80 games titles for the Spectrum, ZX81, VIC-20, Oric, BBC, Atari 400/800 and Dragon, and more titles will be added as they become available. And if they don't have the game you want, they will order it specially for you.

*HMV Shop, 363 Oxford Street,*  
London W1

New software house Acme has launched its first three games, all costing £5. Connect Four runs on the Lynx. Practically Impossible is for the Spectrum and Bridgeman is for the VIC-20.

*Acme, 49/51 The Albany, Old Hall Street, Liverpool,*  
Merseyside L3 9EJ

Longman Software is following up its first three educational programs with four new titles for the Spectrum and BBC. The Spectrum titles, all at £7.95, are Lunar Letters, Robot Runner, Sum Scruncher and Wild Words, aimed at children of around six. For the BBC, there's Sheepdog, Number Rally, Number Skills 0-20 and Number Skills 0-999, all covering the four to eight age group and costing £9.95.

*Longman Software, Longman House, Burnt Mill, Harlow,*  
Essex CM20 2JE

Pision's latest release for the BBC, Saloon Sally, is an action game with a difference. It's got a heroine rather than a hero, and the action is linked to a musical theme. There's an element of strategy, too. Price: £7.95, on sale now in W H Smith.

*Pision, 2 Huntsworth Mews,*  
Gloucester Place, London NW1  
6DD

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## BUY THIS SPACE

To advertise  
your latest products!  
Ring Coleen or Barry on  
01-437 1002 NOW!



There's a Microdrive and some great games to win on page 39



If you own an Atari you'll want to type in the first in our series of card games.  
Turn to page 31



Have fun - and be serious, too - with five programs for the ZX81 which fit into just 1K. They start on page 25

• Were you a winner in our Spot the Difference competition, run in conjunction with Rabbit Software in issue No. 31? Turn to the news pages and find out. The solution is there as well

# LOOK FOR THE 'ULTIMATE' NAME 'ULTIMATE' GAMES

**JET PAC** for the 16/28K Spectrum.  
**JET PAC** - A high speed real time racing game.  
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 Design by **ULTIMATE PLAY THE GAME**.



## 'JET PAC'

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 Design by **ULTIMATE PLAY THE GAME**.

## 'COOKIE'

**COOKIE** for the 16/28K Spectrum.  
**COOKIE** - Charlie chef and the ingredients vs Bin Monster.  
**COOKIE** - Charlie chef and the ingredients vs Bin Monster.  
**COOKIE** - Charlie chef and the ingredients vs Bin Monster.  
 Design by **ULTIMATE PLAY THE GAME**.



## 'PSSST'



## 'TRAN3 AM'

**TRAN3 AM** for the 16/28K Spectrum.  
**TRAN3 AM** - The high speed real time rough driving pursuit.  
**TRAN3 AM** - The high speed real time rough driving pursuit.  
**TRAN3 AM** - The high speed real time rough driving pursuit.  
 Design by **ULTIMATE PLAY THE GAME**.

These games should be available from **W. M. SMITH, JOHN MENZIES, BOOTS LASKY'S SPECTRUM CENTRES**, other large department stores and all good major software retailers, for immediate dispatch. Subject to availability your order is normally despatched by return.

# £5.50 each

including VAT, first class postage and packing in UK.

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Post this coupon now to **ULTIMATE PLAY THE GAME**, The Green, Ashby de la Zouch, Leicestershire LE65 5JU.

Please tick one of the following:

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TRAN3 AM

PSSST

COOKIE

I enclose cheque/PO for £

Name \_\_\_\_\_

Address \_\_\_\_\_

HCW33

## New Micro

From front page

like BASIC, RS-232 and Centronics-type interfaces and a Z80A processor. A range of software would be ready at launch.

Mr Hayes said he saw three main types of buyer:

- Owners of computers like the Spectrum who wanted to move on to a more powerful and sophisticated micro
- Educational
- Small businesses, particularly because of the new computer's operating system which would be similar to CP/M, the industry standard for business micros

Asked about Tatung's chances in the highly competitive computer market, Mr Hayes said: "We have the financial clout behind us which some other companies do not have - and they won't be around in two to three years."

He said Tatung, the largest company in Taiwan, had a \$5,000m worldwide turnover. Its range of products included ships to computer terminals for companies like Zenith, IBM and Control Data.

In the electrical goods industry, it is best known in the UK for its purchase in 1981 of Decca's consumer electronics division. The company's Bridgnorth plant now makes 10 per cent of all the country's TVs, according to industry observers.

It also makes a range of VDUs. Competition for the new computer would come from micros like the BBC model, made by Acorn.

On pricing, Mr Hayes said: "I see prices rise for items like memory while companies are bringing down the retail cost. It seems to me to be a formula for disaster."

The market for computers was growing, he said, adding: "We have a lot of experience in selling in the consumer market - everything from rice cookers to washing machines. So we do not have to buy in these services."

Tatung (UK), Hospital Street, Bridgnorth, Shrops

## Clive's plans to live in style

Builders are converting an old warehouse in central London into a luxury home for millionaire computer boss Sir Clive Sinclair.

When finished it will have a basement swimming pool and a roof-level conservatory, with ground, mezzanine, first and second floors in between.

The work is costing Sir Clive

## Electron Wait

From front page

he said: "We would like to offer our sympathy, but for some months you won't be able to walk into a shop and buy one off the shelf."

Mr Binnie said: "We have been through this before with the ZX81 and the Spectrum."

Demand had been particularly high because of the Electron's relationship with the BBC micro. The Electron is often described as a "cut down" BBC computer because the two are so similar.

He expected supplies to improve this month and advised people to check regularly with their nearest branches.

He explained that Smiths did not operate waiting lists because customers would be annoyed at seeing reserved computers on the shelves.

Mr Blood said: "The situation of supply not meeting demand is going to last at least until Christmas. It's going to be very hard to get hold of for some time yet."

The plant in Malaysia was to have been turning out Electrons at 25,000 a month but was not yet up to capacity.

Another plant, in Wales, was due to begin production at the beginning of next year with a 100,000 initial order and a third plant was also planned.

There has, however, been something of a silver lining for Acorn. Customers finding there were no Electrons have been buying £399 BBC micros instead, said Mr Blood.

- Computer sales had increased "quite markedly" in the run-up to Christmas, said Mr Binnie. But, in an increasingly sophisticated market, sales of some models had remained the same. He would not name them, commenting: "I think it's going to be a ruthless Christmas."

W.H. Smith & Son, Strand House, 10 New Fetter Lane, London EC4A 1AD

Acorn Computers, Fulbourn Road, Cherry Hinton, Cambridge CB1 4JN

£400,000 and he may well then give up his flat in London.

Gutting the building and providing an enlarged basement has meant underpinning neighbouring buildings and strengthening the foundations.

John Parry, general manager of John Willmott Western Building, said: "It's a very challenging contract - the type of work we would usually do for overseas clients. It will be quite a feather in our cap when it's finished."



The COMX 35 - with built-in joystick

## COMX comes off the shelves

Sales of the Hong Kong-made COMX 35 computer here have been halted - because more than half did not work.

U.K. distributors Computers For All sent nearly 600 back to the makers.

CFA's joint managing director, Steve Vickers, said: "Every single one was unpacked and switched on for a functional test. We had a 55 per cent failure rate."

"The company was also very poor on support, at supplying things like replacement pcbs and spares."

"We have been in touch with every dealer and returned their machines. We've managed to clean up as best as we can. I

believe less than 30 or 40 were sold.

"If they break down we will repair them if we can, or give a full refund."

Mr Vickers said his company took on the sole U.K. distribution rights because the features the computer offered, like low-power CMOS chips - leading to possible use as a portable - ANSI standard BASIC and a good memory, 35K with 32K useable.

He said negotiations with Germaine Video, of Hong Kong, had brought down the retail price to £119.95 for the 70 dealers supplied by CFA.

"All in all it wasn't a bad machine," he said. "I think it's still on sale in other parts of Europe. I estimate we lost about £1,000, without the cost of delivery and so on. But it's the principle that counts."

CFA is a distributor for a number of big-name micros, like Commodore, Sord, Laser 200 and Acorn.

## Micros in BHS

British Home Stores has joined other High Street chains offering home computers. And merchandise controller Hugh Clark said: "There's room for us to reach some meaningful sales."

Sinclair, Commodore and Dragon computers, plus software, are now in 21 new BHS electrical departments, alongside goods like TVs, radios and telephones. Two staff from each store had taken a special training course, said Mr Clark.

British Home Stores, 129 Marylebone Rd, London NW1 5QD

## Our new charts

This week we start two new software charts - a nationwide Top 30 for all computers and an additional Top 10 from Boots for the Commodore 64.

The Top 30 will be produced fortnightly, at first, by PCS Distribution, based on guidelines from the Computer Trade Association whose legal adviser, Ann Staines, will be making spot checks.

The positions are based on retail sales in individual outlets - excluding chains at present - and software from all sources is included.

The names of the retailers remain confidential and, as an extra safeguard, 25 per cent of the returns are discarded at random.

The Commodore 64 chart is based on sales of software stocked by Boots. We will continue with our weekly charts for the Spectrum, from Smiths, and the VIC-20, ZX81 and Dragon, from Boots.



Sir Clive - living in style

## Portable processing

Rotronics' computer case is fitted with foam to hold your computer equipment securely while you're carrying it about.

Versions are available for the ZX81 and Spectrum, VIC-20, Commodore 64 and Oric, and there's room for a cassette recorder, printer, printer paper, power supply and cassettes. Computer books can be stored in

the lid.

But if you own a different computer, or if you have other equipment you want to store, Rotronics sells blank foam inserts that you can shape to suit your own requirements.

All trailing wires are hidden under the form padding, so all you have to do is plug into the mains and TV and your equipment's ready to use.

The case costs £36.99. *Rotronics, 29 Octagon Parade, High Wycombe, Bucks HP11 2HZ*



Computer equipment packed away in a Rotronics case

## IBM's home computer: all the 'facts'

IBM was keeping silent, but several observers believed the company's long-awaited home computer was to be announced today (Tuesday).

With no official details available — not even the micro's name — the following is culled from reports here and in America.

There will be two models, both using domestic TVs and the same Intel 8088 processor as IBM's enormously popular Personal Computer.

The base model will have 64K of RAM and use a cassette recorder. Price estimate: \$750-\$800.

The pricier version, at \$1,200-\$1,350, will have 128K of RAM and a built-in floppy disc drive.

Both have cartridge slots and, it is said, a cordless typewriter-style keyboard. An infra-red beam will control the main unit, similar to a TV remote control.

IBM is reckoned to have cornered 26 per cent of the US micro market with the IBM PC and 650,000 have been sold worldwide since it was launched

in August 1981. And the company could sell about six times as many as it produces.

PCs are also made in the UK, where it is said to be the second most popular business micro.

If the November 1 launch date for the PC Junior — codenamed Peanut — is true, one observer says sales of 80,000-100,000 are on the cards in the US by Christmas.

Outside IBM, nobody knows when it can be expected here. The PC was in the UK within a year of its US launch. But before then some dealers were selling "grey" imports.

*IBM United Kingdom, PO Box 41, North Harbour (Baltic House), Portsmouth PO6 3AU*

## CTA awards

Oscars for software are to be awarded in February, decided by the votes of Computer Trade Association members.

Voting will take place in January for the best home, educational and business programs, an overall program of the year, person of the year and product of the year.

*Computer Trade Association, 108 Margaret Street, Coalville, Leics LE6 2LX*

## Spot the winners

Congratulations to the 25 winners of our spot the difference competition, run in conjunction with Rabbit Software in issue No. 31.

We asked you to study two cartoons and mark the differences and tell us how many there were.

The correct number was 12 and this is how the two cartoons differed, from the top:

- one figure missing from screen
- bowler hat missing
- rabbit ear omitted
- two fewer bullets firing from rabbit's rifle
- bough missing from tree to right of screen
- part of keyboard on left omitted
- one less key on right
- carrots' foliage changed
- can of "Lettuce Bitter" had no hole in top
- two whiskers missing from rabbit in newspaper
- beginning of newspaper article omitted

## ASA steps in over micro ads

Computer companies including Acorn and Oric have been criticised by the Advertising Standards Authority for misleading adverts, after members of the public complained.

Acorn had advertised, along with the BBC micro, some peripherals that were not yet available, including Prestel and Teletext adaptors.

To make matters worse, they claimed that using these adaptors to load broadcast software was "another first for the BBC micro", whereas the Research Machines 380Z was actually the first machine to be able to receive telesoftware.

Lastly, Acorn has claimed that over 75% of computers going into schools were BBC micros.

What they did not make clear was that this only referred to primary schools — and even then, only to orders for computers made under the Department of Industry's Micros in Primary Schools scheme.

Oric came under attack for using in one of its ads a quotation from a computer mag. The quotation was accurate — but the magazine had got its facts wrong!

The quote, from a hardware review in Which Micro?, said that "Instead of the Spectrum's 28 look-up single character error reports, the Oric has 18 self-explanatory messages."

But a member of the public pointed out that the look-up error reports were a feature of the

● figure 20 on packet of "Carrot Fags" missing

We offered prizes of £40-worth of games from Rabbit Software's range to each of the 25 winners and these prizes will arrive from Rabbit within 28 days.

The winners were the first 25 correct entries we opened, regardless of computer owned. They are:

**VIC-20 owners:** Carl Phillips, of Salford; R. Coppock, Northwich; Christopher Davies, Swansea; Damian Maidment, Sheffield; Andrew Mason, Coventry; Craig Taylor, Bacup; Jason Clive, Belvedere; Timothy Multon, Denham Green; W. Belle, Winslow Green; Edward King, Bridgewater; Mark Arnold, Copnor.

**Spectrum owners:** B. Christie, of Tayside; E. McLean, Edinburgh; S. H. Gilbert, Camborne; Christopher Hall, Belfast; Neil Cantello, Alton; Jonathan Denham, Woodham Ferrers; Mrs K. Salfi, Leeds; Steven Horne, Hull; John Dytch, Ashington.

**Commodore 64 owners:** R. Pearso, Kettering; G.D. Clements, Elgin; Michael Payne, Hull; Steven Kirk, Bedlington; Neil Boothman, Manchester.

ZX81, not the Spectrum.

A computer add-on maker, Solidisk Technology of Southend-on-Sea, was asked to change an ad which stated that its X ROM Card could be used with the Sinclair RAM pack.

When a micro owner from London tried to order the X ROM, they were told that it would cost extra if it was to be used with the Sinclair RAM pack instead of the manufacturer's own — and that it wasn't available anyway.

Finally, a micro enthusiast from Darlington travelled 150 miles to the Scottish Personal Computer World Show in Edinburgh, only to find that the show had been cancelled.

The ASA stepped in, and show organisers Montbuild reimbursed the disappointed enthusiast's petrol costs — plus two complimentary tickets for the next show.

*ASA, Brook House, Torrington Place, London WC1E 7HN*

## 25 for the 25th

dk'tronics has brought out a bumper 25 new programs for Christmas — 13 for the Spectrum, four for the BBC micro, five for the Commodore 64, two for the unexpanded VIC-20 and one for the 16K ZX81.

Among them is Slicker, a £6.95 puzzle game available for four computers: Spectrum, VIC-20, Commodore 64 and BBC.

This latest batch means that the company now has a range of 46 titles for five micros.

### Top Ten programs for the ZX81

1	Football Manager	Addictive (8)
2	Flight Simulation	Sinclair (1)
3	Espionage Island	Sinclair (3)
4	Space Raiders	Sinclair (2)
5	Scramble	Quicksilva (7)
6	1K Games	Sinclair (4)
7	1K Chess	Sinclair (4)
8	Ship of Doom	Sinclair (9)
9	Defender	Quicksilva (6)
10	Fantasy Games	Sinclair (5)

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

### Top Ten programs for the VIC-20

1	Gridrunner	Llamasoft (4)
2	Arcadia	Imagine (4)
3	Catcha Snatcha	Imagine (-)
4	Wacky Waiters	Imagine (3)
5	Cosmiads	Bug Byte (-)
6	Bonzo	Audiogenic (-)
7	Skyhawk	Quicksilva (7)
8	Home Office	Audiogenic (-)
9	Anti-Matter Splatter	Rabbit (-)
10	Wizard and the Princess	Melbourne House (-)

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

### Top Ten programs for the Dragon

1	Nightflight	Salamander (7)
2	Ring of Darkness	Wintersoft (1)
3	Android Attack	Microdeal (8)
4	Cuthbert Goes Walkabout	Microdeal (3)
5	Space War	Microdeal (-)
6	Champions	Peaksoft (5)
7	Mined Out	Quicksilva (6)
8	Dragonfly	Hewson (-)
9	Space Shuttle	Microdeal (4)
10	Franklin's Tomb	Salamander (10)

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

### Top Ten programs for the Spectrum

1	Zzoom	Imagine (2)
2	Jet Pac	Ultimate (5)
3	Flight Simulation	Psion (1)
4	Terror-daktil	Melbourne House (-)
5	Trans-Am	Ultimate (3)
6	Pssst	Ultimate (-)
7	Zip-Zap	Imagine (4)
8	Kong	Ocean (6)
9	Horace and the Spiders	Psion/M. House (-)
10	Arcadia	Imagine (-)

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

## BEST SELLERS

# Top 30

1	Manic Miner	Bug Byte	Spectrum
2	Jet Pac	Ultimate	Spectrum
3	Trans-Am	Ultimate	Spectrum
4	Cookie	Ultimate	Spectrum
5	3D Combat Zone	Artic	Spectrum
6	Zzoom	Imagine	Spectrum
7	Chuckie Egg	A & F	Spectrum
8	Johnny Reb	Lothlorien	Spectrum
9	Krazy Kong	Anirog	VIC-20
10	Horace Goes		
	Skiing	Psion	Spectrum
11	Pssst	Ultimate	Spectrum
12	Cuthbert in the		
	Jungle	Microdeal	Dragon
13	Penetrator	Melbourne House	Spectrum
14	Frogger	Microdeal	Spectrum
15	Cuthbert Goes		
	Walkabout	Microdeal	Dragon
16	Frogger	C-Tech	BBC
17	Space Shuttle	Microdeal	Dragon
18	Splat	Incentive	Spectrum
19	Gold Mine	dk'tronics	Spectrum
20	Labyrinth	Commodore	CBM 64
21	Intergalactic		
	Force	Microdeal	Dragon
22	Hall of the		
	Things	Crystal	Spectrum
23	Horace and the		
	Spiders	Psion	Spectrum
24	Redweed	Lothlorien	Spectrum
25	Jumpin' Jack	Imagine	Spectrum
26	Kong	Ocean	Spectrum
27	Hunchback	Superior	BBC
28	Devils of the		
	Deep	Richard Shepherd	Spectrum
29	Sargon Chess	Commodore	VIC-20
30	Dungeon Master	Crystal	Spectrum

Compiled by PCS Distribution (0254 691211) and sanctioned by the Computer Trade Association. Chart is for retail sales in individual outlets in the UK and Northern Ireland for the fortnight ended October 22

### Top Ten programs for the Commodore 64

1	Hover Bover	Llamasoft (1)
2	Attack of the Mutant Camels	Llamasoft (-)
3	Frogger	Interceptor (2)
4	Escape MCP	Rabbit (-)
5	Motor Mania	Audiogenic (-)
6	Gridrunner	Llamasoft (-)
7	Scramble	Interceptor (-)
8	Laser Zone	Llamasoft (-)
9	Grand Master Chess	Audiogenic (-)
10	Tank Attack	Supersoft (-)

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

# ANIROG SOFTWARE

24 HR. CREDIT CARD SALES HORLEY (02934) 6083  
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 29, West Hill, Dartford, Kent. (0322) 92513/8

## COMMODORE

KONG

KB / JS

£7.95

A 31 K ALL M/C PROGRAM WITH BRILLIANT ANIMATED GRAPHICS



1. CHASING FIREBALLS AND BARRELS CAN BE SMASHED BY THE MALLET IF YOU CAN JUMP UP AND GET IT.



2. JUMP OVER THE PIES AS YOU RUN ALONG THE CONVEYOR BELT MAKE SURE YOU DONT END UP INSIDE THE COOKER.



3. THE ONLY WAY UP IS BY THE LEFT WHICH IS UNDER A CONSTANT BARRAGE OF GIRDERS.



4. KNOCK OUT ALL THE SUPPORTS BY RUNNING OVER THEM AND WITNESS THE SPECTACULAR COLLAPSE OF KONGS LAIR.

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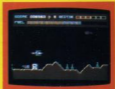
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# Motor-vated games for your micro

**Our review panel finds itself behind the wheels of cars, a motor mover and a light cycle**

## Racer 48K Lynx £6.95

Sian Software, 139 Rosebery Avenue, Manor Park, London E12 6PT

This is a simple game which involves steering a red car along a one way street occupied by numerous other yellow cars, travelling at the same speed.

The aim of the game is to drive

the red car faster than the yellow cars, avoiding collisions by weaving between them — the object being to drive the furthest distance.

However, the fuel consumption has to be taken into account, because if the car travels too slowly it will burn too much fuel and hence run out before reaching the next garage.

The amount of fuel available and the distance to the next refuelling station are continuous-

There are several levels, 24 to be precise, all of the same type but increasing in difficulty and including some very strange colour combinations too.

There are some extra features not seen in most race-type games, such as speed controls, but they aren't enough to give this game the little bit extra we find additive.

Very disappointing, to say the least, and very expensive to make a mistake on. See this game before buying it.

instructions	80%
playability	10%
graphics	30%
value for money	20%



## Hover Bover Commodore 64 plus Joystick £7.50

Llamosas, 49 Mount Pleasant, Tadley, Hants

In this very original game, your task is to mow your lawn with a hover mower — while the owner tries to get it back.

The lawn has hedges and flower beds. The hedges form impenetrable barriers, and if you run over the flower beds, then someone else comes out to chase you.

You do have a dog that can be ordered to chase after your pursuers, but it only has a certain amount of loyalty, and once this has been used up, you have no defence against the people who are out to get you.

The mower will overload if you run over the dog, and the dog only has a certain amount of tolerance to the mower — once this has been exhausted it will try and run into the mower, thus immobilising you. The dog cannot run over the flower beds, so you can use them to hide from it.

Points are awarded for every piece of lawn that you mow, and bonus points are awarded for how much dog loyalty is left

after the job is done. Once you've finished one lawn, you move on to another with different hedges and flower beds.

instructions	70%
playability	100%
graphics	100%
value for money	85%



## Light Cycle ORIC-1 £6.95

PSS, 452 Stoney Stanton Road, Coventry CV6 5DG

The object of this game is to ride your laser cycle around the game grid, leaving in your wake a solid laser wall.

Your opponent, human or computer, also leaves a similar wall, and if either of you hit any object on the grid then you 'De-rez', giving a very spectacular display.

The whole program is very well presented, giving that all important arcade quality.

There is plenty of sound, impressive graphics, a hall of fame and, most usefully, an adjustable volume control. This last feature is one I hope to see on all new Oric games, especially in

view of the Oric's rather loud sound!

Instructions are clear and concise, and the control keys (up, down, left, right and power boost) are well positioned for both players, or for player against computer.

The game itself has good graphics, and on the highest of its nine skill levels is very fast indeed. It is very addictive, and one of the few arcade action games that can be played by more than one person.

All in all, a game that offers very good, all round value for money.

instructions	75%
playability	80%
graphics	85%
value for money	85%



ly displayed on the screen.

The game ends after four collisions or when the fuel runs out. At the end of the game the five best distances travelled are displayed with the names of the drivers. This last feature is worth noting, as a group of people can take turns at driving and then compare their respective scores.

Although this game can only be played at one level, it is well

designed and amusing. If played in groups, it will certainly help pass winter evenings and maybe put a few bragging drivers in their place.

instructions	90%
playability	85%
graphics	85%
value for money	75%



## Overtaker/ Brands Hatch/ Jupiter Ace £5.95

Jupiter Cantab, Cheshunt Building, Bateman Street, Cambridge CB2 1LZ

Overtaker provides you with a large racing car on a straight track where, against a constantly decreasing clock, you seek to press on with piling up the points, which accrue only so long as you avoid a collision with any of the smaller number of smaller cars that keep coming up in your path.

If you do hit one, everything but the clock stops and you lose time. You can boost the speed as your skill increases and there's no fuzz on this road!

Brands Hatch provides an on-

screen replication of the famous circuit and a timer, but its resemblance to actual motor racing ends there. You control by means of two keys the direction of a fast moving pawl which rotates about its vertical axis in a most disconcerting way.

At various points on the track its progress is impeded by groups of parked felled pawns, which never happens even at Monza!

But if you can forget about cars and treat the game as simply a difficult piece of manoeuvring, it becomes quite a challenge and is certainly fast enough — because it is Forth — for anyone.

instructions	70%
playability	65%
graphics	80%
value for money	70%



# Will you do better than Guy?

**Guy Fawkes failed to change history with gunpowder. Now's your chance to try with either model of the Spectrum. David Nowotnik explains the plot**

If you have ever wanted to change history, here's your chance to try. While we're about to celebrate Guy Fawkes' abortive attempt to blow up the Houses of Parliament, you could take the part of Guy in my game for the Spectrum.

It will work on both the 16K and 48K models and, if you do your work, you could convert Parliament into a pile of rubble.

When you have finished typing the program into your Spectrum, SAVE it on tape first.

The program contains a short machine code routine; although there is a check line to prevent the program running should you have made a mistake in entering the machine code numbers (line 5,000 onwards), there is always a chance that you could slip through this net even if you

have made a mistake.

When you RUN the program, the screen will stay blank for a few seconds while the variables and machine code are being set up. If you get a STOP message before anything appears on the screen, then check the machine code data lines.

If everything is OK, then a plan of the basement of the Houses of Parliament will be drawn on the screen. On the left is the lawn in front of the building, the entrance is the break in the blue wall, halfway down the screen.

You'll see that the basement is made up of lots of small rooms. Guy has hired the centre room on the far right of the screen. At the start of the game, this room has a red box in it, with the number zero in the box.

Guy is standing by his barrow

(the magenta rectangle) on the lawn just by the entrance to the building.

Your mission is to guide Guy through the corridors of the building to the room in which the bombs will be placed.

If you manage to get Guy to stand next to the red square in his room, then the number in the box increases by one to indicate that another bomb has been deposited.

Guy then has to go back to his barrow (and stand on the white square at the end of his barrow) to pick up another bomb. He has to try to get a total of 10 bombs to this room. If you succeed, then Parliament is destroyed.

You control Guy with the 5,6,7 and 8 keys, his movements being in the direction of the arrows on those keys.

Inside the building is a lone unsuspecting guard. As he patrols the basement area, he keeps a sharp look-out for any intruders. If you happen to wander into his sight, then he will command you to stop. If you are carrying a bomb, arrest is inevitable.

However, if there is no suspicious evidence on you, there is a chance that he will allow you to proceed. Be sure to get out of his sight quickly otherwise he may change his mind.

If he spots you a second time, there is no way that he will let you go. Of course, if he sees the bombs in Guy's room, Guy's plot is discovered and his arrest will follow.

You may change history on screen, but be sure to enjoy the celebration of history's real outcome on November 5th.

```

50 CLEAR 32599: RESTORE : POKE 23675,88:
POKE 23676,127
60 FOR i=0 TO 7
70 READ a: POKE USR "a"+i,a
80 NEXT i
90 DATA 24,24,60,90,90,90,24,24
100 PAPER 7: BORDER 7: INK 0: CLS
110 REM Guy's variables
120 LET y=9: LET x=2
130 LET ga=22818: LET dd=0: LET bm=1
140 LET sa=PEEK ga: LET bombs=0
150 REM Guard's variables
160 LET yg=10: LET xg=20
170 LET ag=22868: LET qd=32-64*(RND>.5)
180 DIM p(4)
190 FOR i=1 TO 4: READ p(i): NEXT i
200 DATA 1,-1,32,-32
210 REM Machine code
220 LET k=0
230 FOR i=0 TO 67
240 READ a: POKE USR "b"+i,a
250 LET k=k+a
260 NEXT i
270 IF k<>5584 THEN STOP
500 GO SUB 1000: PRINT AT 10,28: PAPER 2:
bombs
510 PRINT AT y,x: INK 1:""
520 PRINT AT yg,xg: INK 3:""
600 GO SUB 2000: IF ga=22875 AND bm=1 THEN
LET bm=0: LET bombs=bombs+1: PRINT A
T 10,28: PAPER 2:bombs
610 GO SUB 3000
620 GO SUB 3500
630 IF bombs<10 THEN GO TO 600

```

```

640 PRINT AT 21,4:"You've changed history."
650 FOR i=1 TO 16
660 BORDER 2
670 BEEP .05,i
680 BORDER 7
690 BEEP .05,i+10
700 NEXT i
710 STOP
999 STOP
1000 REM Draw scene
1010 FOR i=1 TO 21: PRINT PAPER 4:" " :
NEXT i
1020 PAPER 1: LET z#=""
1030 PRINT AT 0,4:z#:AT 20,4:z#
1040 FOR i=1 TO 19: PRINT AT i,4:" " :AT i,
31:" "
1050 NEXT i
1060 LET z#=""
1070 FOR i=6 TO 26 STEP 5
1080 FOR j=2 TO 14 STEP 6
1090 PRINT AT j,i:z#
1100 NEXT j: NEXT i
1110 FOR i=6 TO 26 STEP 5
1120 FOR j=6 TO 18 STEP 6
1130 PRINT AT j,i:z#
1140 NEXT j: NEXT i
1150 FOR i=3 TO 15 STEP 6
1160 FOR j=6 TO 26 STEP 5
1170 FOR k=0 TO 3
1180 PRINT AT i+k,j:" "
1190 PRINT AT i+k,j+3:" "
1200 NEXT k: NEXT j: NEXT i
1210 PAPER 7
1220 FOR i=9 TO 19 STEP 10

```

## SPECTRUM PROGRAM

```

1230 FOR j=3 TO 15 STEP 6
1240 PRINT AT j,i;" ";AT j+2,i+2;" "
1250 NEXT j: NEXT i
1260 FOR i=4 TO 16 STEP 6
1270 PRINT AT i,26;" "
1280 NEXT i
1290 PRINT AT 10,4;" "
1300 PAPER 3
1310 PRINT AT 7,2;" ";AT 8,2;" "
1320 PAPER 7
1330 RETURN
2000 REM Move Guy
2010 LET z#=INKEY#
2020 IF z#="" OR z#<"5" OR z#>"8" THEN
RETURN
2030 IF z#="5" AND PEEK (ga-1)<>8 AND PEEK
(ga-1)<>24 AND x>1 THEN LET d=-1: GO TO 2100
2040 IF z#="8" AND ga<>22875 AND PEEK
(ga+1)<>8 AND PEEK (ga+1)<>24 AND x<31 THE
N LET d+=1: GO TO 2100
2050 IF z#="6" AND ga<>22844 AND PEEK
(ga+32)<>8 AND PEEK (ga+32)<>24 AND y<21 T
HEN LET d=32: GO TO 2100
2060 IF z#="7" AND ga<>22908 AND PEEK
(ga-32)<>8 AND PEEK (ga-32)<>24 AND y>1 TH
EN LET d=-32: GO TO 2100
2070 IF ga=22818 THEN LET bm=1
2080 RETURN
2100 PRINT AT y,x;" "; POKE ga,sa
2110 LET ga=qatd: LET sa=PEEK ga
2120 IF ABS d=1 THEN LET x=x+d
2130 LET d=d/32: IF ABS d=1 THEN LET y=y+d
2140 PRINT AT y,x: INK 1;" "
2150 RETURN
3000 REM Move guard
3010 IF RND>.7 THEN GO TO 3100
3020 IF PEEK (ag+qd)=8 OR PEEK (ag+qd)=32
THEN GO TO 3100
3030 REM Check if bomb found
3040 IF PEEK (ag+qd)=16 THEN GO TO 3200
3050 PRINT AT yg,xg;" "
3060 LET ag=ag+qd: IF ABS qd=1 THEN LET
xg=xg+qd: GO TO 3080
3070 LET hg=qd/32: LET yg=yg+h
3080 PRINT AT yg,xg: INK 0;" "
3090 RETURN
3100 REM change direction
3120 LET qd=p(INT (RND*4)+1)
3130 GO TO 3020
3200 PRINT AT 21,5: FLASH 1:"You've been
caught"
3210 STOP
3500 REM Who goes there?
3510 LET p=INT (ag/256)
3520 POKE 32618,ag/256#p
3530 POKE 32619,p
3540 LET fd=USR 32620
3550 IF fd=0 THEN RETURN
3560 IF fd=2 THEN GO TO 3800
3570 PRINT AT 21,4:"Halt! Who goes there?"
3580 FOR k=1 TO 500: NEXT k
3590 PRINT AT 21,4;" "
3600 IF bm=1 OR dd=1 THEN GO TO 3700
3610 LET dd=dd+1
3620 IF RND<.3 THEN GO TO 3700
3630 PRINT AT 21,4:"O.K. Off you go"
3640 FOR i=1 TO 20: GO SUB 2000
3650 PAUSE 10: NEXT i
3660 PRINT AT 21,4;" "
3670 RETURN

```

```

3700 PRINT AT 21,4;" You're under arrest "
3710 FOR i=20 TO -5 STEP -.5
3720 BEEP .005,i
3730 NEXT i
3740 STOP
3800 PRINT AT 21,4;"I've found the bombs!"
3810 PAUSE 200: GO TO 3700
5000 DATA 1,0,255,255,32,0,224
5010 DATA 255,0,0,0,0,62,4,33
5020 DATA 96,127,50,104,127,78
5030 DATA 35,70,35,235,42,106
5040 DATA 127,9,126,254,8,40,14
5050 DATA 254,57,40,27,254,32
5060 DATA 40,6,254,16,40,14,24
5070 DATA 236,235,58,104,127
5080 DATA 61,32,218,6,0,14,0
5090 DATA 201,6,0,14,2,201,6
5100 DATA 0,201

```



# 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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**Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.**

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

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## Movie Producer Dragon £7.95

Silly Software, 61 Thornhill, Northweald, Epping, Essex

This must be the first computer game to come complete with 3D viewing specs.

Unfortunately the 3D effect is limited to the packaging, and the game is in fact mostly text-based, hi-res graphics being used for the title page, which is accompanied by a tuneful version of a very familiar melody.

As Peeke Spenberg, film entrepreneur, you must first find a backer and then set the level of play by setting your budget and time scale.

Since you have up to \$50 million and 50 days to play with, a theoretical 25 billion levels of

play are claimed!

The game then follows conventional lines as you work your way through many locations, which vary from the cutting room, to a jumbo jet in mid-Atlantic. The commands are clumsy as they have to be in two letter form, eg NO for north.

Every so often, you will be hit by events good or bad, such as strikes or offers of finance.

No such random pattern is used to locate the film, though, and once you have found its location, there is little point in playing again, except perhaps to win acclaim from the critics or achieve box-office success. E.C.

instructions	80%
playability	60%
graphics	25%
value for money	40%



## The Black Planet 48K Spectrum £5.95

Phipps Associates, 172 Kingston Rd, Ewell, Surrey KT19 0SD

This game is a combination of arcade and adventure. You must

travel round seven planets in the galaxy, obtaining parts of a key that will enable you to destroy the Black Planet, home of space pirates who are disrupting your trade routes.

This space part of the adventure requires little skill in setting up target destinations but it is very difficult to hit pursuing ships or their energy torpedoes

## Horror Castle Dragon £6.90

A&F, 830 Hyde Rd, Manchester M18 7JD

A text-only adventure along classic lines. Your task is to rescue a princess from within a gloomy haunted castle with its many rooms, dungeons and moat.

As I confidently set off to achieve this aim, I was soon frustrated by the first of many problems — I could not get past the gate!

After numerous attempts to pass this obstacle I decided I would have to cheat and examine the program.

The program is loaded as machine code but is in fact mostly written in BASIC and uses over 30K of memory.

I was impressed by the use of

single letter entry for directions, eg. N for North. This makes any game more enjoyable and faster to play. Response time was surprisingly quick and the program even calls you by name.

Yet again, the reliable Dragon tape system had no problem loading even this size of program.

If you like text-only adventures, or have not yet tried one of these most frustrating games, then Horror Castle may be worth adding to your collection, as it is easy to use, but definitely not easy to crack. As I write, I am still having difficulty making progress. E.C.

instructions	80%
playability	60%
graphics	n/a
value for money	70%



## Gorgon 48K Spectrum £4.95

Phipps Associates, 172 Kingston Rd, Ewell, Surrey, KT19 0SD

This program does not live up to other offerings from this company either in concept or implementation.

The game and instructions are separated. The instructions are

clear and, like the game, loaded reliably. But the game itself is rather wooden, and lacks real flair.

You must reclaim a chalice entrusted to you for safe keeping and stolen and protected by the dual evils Gorgon and Grang, (sounds like a music hall duo!).

The first part of the task requires you to avoid the Gorgon's direct stare by looking at her in your shield and deflecting her glance so that she herself

becomes the victim. Your shield may be angled in different directions. You have three lives.

Well, that's loosely connected with ancient legend — except I always thought of Gorgon as a she, and here it is a he.

The Gorgon dodges round a rather crude temple 'set' and is not difficult to defeat. If you do not achieve your task you may die, or your village may be flooded by the angry gods.

Defeat of the guardian Gorgon

allows you entrance to the cave of Grang the evil swordsman. P.C.

instructions	80%
playability	60%
graphics	30%
value for money	50%



# Adventures for sale

## Our reviewers fought monsters and travelled to strange locations to bring you the inside story on these games

— your shield strength suffers if you are hit.

On landing at a planet, a mini adventure task is set, though they don't really make you think hard as suggested on the cassette insert. You will quickly remember what each planet offers and, rather like the space fights, one or two are difficult as extremely quick reactions, or memory are needed.

Landing at starbase is a considerable juggling exercise — and

it is a little difficult to understand the screen display relative to the instructions.

One side of the tape holds the game story and instructions, a hard task to remember. P.C.

instructions	85%
playability	80%
graphics	80%
value for money	80%



## Dr Who the First Adventure 32K BBC £10

British Broadcasting Corporation, 35 Marylebone High Street, London W1M 4AA

Be careful, this is not an adventure as normally understood in computing circles.

The idea is a collection of episodes in a Dr Who adventure serial. There are four 'episodes' to complete in order to taste victory. The first three are best described as action-type games, the fourth as a thinking game.

The action games are a maze game called Labyrinth, a Frogger lookalike called Prison and a Galaxians-style shooting game called Terrordactyls.

Of these, my favourite was the shooting game, with birds that

have a nasty habit of hitting you from the side, and the least attractive and poorest was the Prison game.

The final game is a 'black box' type which I can only describe as Battleships in three dimensions. You can scan the box in order to find the hidden aliens.

Overall, the games are fair value for money but you are going to take a long time to complete this adventure and graduate from the Time Lords Academy.

The theme is well maintained, and your constant enemy is Time itself — you have only one hour in which to complete the game. D.C.

instructions	80%
playability	75%
graphics	60%
value for money	60%



# Bat your way out of that

An arcade classic for your collection. David Nowotnik wrote his version of Breakout for any Oric

A mixture of BASIC and machine code are used in this simple version of the popular Breakout game for the Oric 1. The program was developed on a 48K Oric, but should fit a 16K model.

To use the program, simply key in Listing 1, save it on tape, then RUN. It is important that you save it before running, as the command in line 30 provides you with copy protection.

It ensures that, as soon as you press CTRL C or the reset button to stop the program, an automatic NEW occurs.

So if you save the program with AUTO (for an automatic start after loading), you can prevent simple copying of this program, or any program you value.

Back to Breakout. When you RUN the program you will see a title page, and the option to get instructions. In this version of the game you are served with a total of 10 balls, which you have to bounce off the bat at the base of the screen, and direct towards the bricks at the top.

Each time the ball hits a brick, the brick is removed (with an appropriate sound effect), and the ball is returned to you. If you miss the ball, you lose it, and the next is served.

As the game goes on, you will find that you will sometimes knock out several bricks before the ball is returned, but it is very difficult to tell where the ball is going.

With one point for every brick removed, the object of the game is to achieve a high score. If you succeed in removing all the bricks, a new wall is created.

You move the bat with the left and right cursor control keys (either side of the space bar). A "natural" bounce of the ball will always occur, i.e. the horizontal direction of the ball remains the same, but the vertical direction is reversed when hitting the bat.

My original version of this game was written entirely in BASIC, but the action was too slow. So to speed up the game, a machine code routine was incorporated. The machine code ap-

pears as a hex dump in lines 40 to 70, and is POKED into place by the routine starting at line 100.

The machine code routine moves the bat. It checks if the left or right cursor key is pressed, and, if so, checks that the bat is not at its extreme left or extreme right position.

If all is OK, then the entire line on which the bat appears is erased, and a new bat printed in its new position. All this happens so quickly that you won't appreciate all that is going on!

I've not included an assembly language listing of the machine code routine. But machine code enthusiasts need not be disappointed, for coming soon in Home Computing Weekly will be complete machine code disassembler program for the Oric to enable you to obtain your own listing on this routine.

### How it works

- 30 copy protection
- 40-70 machine code data
- 80-90 user defined graphics data
- 100-210 loads machine code and variables. Initialises main variables
- 220-280 main title and instructions option
- 290-370 set up the screen
- 320-400 deliver the ball
- 410-510 check to see what the ball has hit. Bounce as necessary, and check if ball is still in play. Remove a brick if hit and increment the score
- 600 set up a new wall if all bricks removed
- 900-940 game over message
- 1000 print wall subroutine
- 1100-1430 sound subroutines
- 5000 instructions

### Main variables

- DS,DHS,ES,RTS,LS used for cursor control and double height printing
- TS title border
- WLS a row of bricks in the wall
- C(5) the colours of the bricks
- D the direction of the ball
- B the number of balls played
- LC left corner screen address
- RC right corner screen address
- X screen address of the ball

```

10 REM ***** Breakout CCF
20 REM 1982, D.F. Nowotnik
30 DO#E1B,DEE(EEFFFC)
40 DATA#D,F0B,EO2,EC9,EBC,EF0,E07,EC9,EAC,EF0,EOE,E4C,ES9,E1B,EAS,
E50,EC9
50 DATA#2,EB0,E0D,EE6,ES0,E4C,ES9,E1B,EAS,ES0,EC9,E70,E02,EC6,
E50,E40
60 DATA#2,E69,E20,E91,ES1,EBB,ED0,EFB,E94,ES0,E99,ES9
70 DATA#2,E04,E91,ES1,EBB,ED0,EFB,E94,ES0,EF7
80 DATA#6,5,6,7,0,0,0,0,0,56,56,56,56,56,56,56,7,7,7,7,7,7
90 DATA#0,0,0,0,0,6,5,6,5,0,12,30,6,5,6,5,30,12,0,0,11,31,31,31,31
100 HIMEM#144:TEXT
120 POKE#10,10
130 DIR#(5)
140 P#E#50,14:DO#E#1,490Q
150 X#6200:REPEAT:READY#P#EX,YL#X#11UNTIL#Y#255
160 X#4680:Y#R#1#104B
170 READY#P#EX#1,Y#NEXT
180 IF#CH#F(10)#D#CH#F(4)#E#""*CH#(27):RT#CH#F(9):L#CH#F(8)
190 IN#4:PA#F#R#1
200 ML#""*F#R#1#1024:ML#L#E#CH#F(96):NEXT:ML#L#E#""*#
210 TH#""EECEEEEEECEEECEEECEEECEEECEEECEEE
220 PRINT#1:PRINT#F#R#1#1024:PL0T,1,"E":F#PL0T37,1,"E":NEXT:PL0T,25
,1#
230 PRINT#D#D#D#1:TAB(4):D#E#F#N#E#A Breakout"E#J"D#H
240 PL0T37,7,"":F#PL0T37,B#
250 PL0T9,10,"(C) 1982, D.F. Nowotnik"
260 PL0T6,20,"Do you want instructions (y/n)"
270 GET#Z#2#ASC(Z#):IF#NOT(Z#)B#R#Z#B#R#Z#1100R#121#THEN#Z#
280 CLS#IF#B#R#Z#121#THEN#G#S#B#5000
290 REM Main Routine#
300 F#R#1#1024:PL0T,1,"":NEXT
310 F#R#1#1024:PL0T,1,"":F#PL0T36,1,"":NEXT
320 C(5)#1#1#C(2)#1#C(3)#0#1#C(4)#5#1#C(5)#4
330 G#S#B#1000:CALL#L#200
340 PL0T,0,"Score 0 Breakout Ball# 0"
350 SC#0#B#LC#4#B#B#2#RC#4#B#1#Y#MAX#10#D#4#9040
360 PL0T9,20,"Press any key to start"
370 GET#Z#PL0T,20,""
380 B#B#1#G#S#B#1400:CALL#L#200:IF#B#MAX#THEN#900
390 D#3#2#INT(RND(1)+.5):X#4#4#0#G#INT(RND(1)+.5):G#S#B#1300
400 CALL#L#200#F#D#EX,95#X#X#D#1#F#G#W#THE#N#B#
410 IF#L#C#R#4#R#C#THE#X#X#D#G#S#B#1000#D#1#G#D#0400
420 CALL#L#200#IF#PEEK(X)#32#THEN#P#O#K#(X-D),32:CALL#L#200#G#D#0400
430 IF#PEEK(X)#92#THEN#X#D#G#S#B#1000#P#O#K#(X,D)#2#G#D#0400
440 IF#PEEK(X)#93#THEN#X#D#G#S#B#1000#P#O#K#(X,D)#2#G#D#0400
450 IF#PEEK(X)#94#THEN#X#D#G#S#B#1000#P#O#K#(X,D)#2#G#D#0400
460 IF#PEEK(X)#95#THEN#X#D#G#S#B#1000#P#O#K#(X,D)#2#G#D#0400
470 P#O#K#(X-D),32:P#O#K#(X+1#R#N#C#H#(30)):J#3#Score "15C
480 SOUND#4,5000,0#PLAY,0,1,1000:PLAY,1,1,500
490 IF#D#0#THE#D#D#D#R#E#S#D#B#D#B#
500 IF#D#1#B#D#INF#5#1#B#D#THE#D#0#400
510 G#D#0400
600 G#S#B#1000#MAX#MAX#2
800 P#O#K#(X-D),32:F#R#1#1024:CALL#L#200#NEXT:G#D#0380
900 PL0T16,18,"GAME OVER":SOUND#1,200,0#PLAY,0,2,2000
910 PL0T6,20,"Do you want another game (y/n)"
920 GET#Z#IF#Z#"N#D#Z#"N#THEN#CALL#L#2509
930 IF#NOT(Z#"Y#D#Z#"Y#)THEN#W#20
940 CLS#G#D#0500
990 STOP
1000 F#R#1#1024:PL0T,1#2,C(1):PL0T,1#2,W#E#NEXT#R#TURN
1100 SOUND#1,2000,0#PLAY,0,1,1000#RETURN
1200 SOUND#1,400,0#PLAY,0,1,1000#RETURN
1300 PRINT#CH#(30):PRINT#L#L#L#L#L#B
1500 RETURN
1400 F#R#1#1010#Y#C(1):SOUND#1,500,K#SOUND#2,1000,F#PLAY#0,0,0
1410 F#R#1#1041#L#C(1):CALL#L#200#NEXT#L
1420 C(5)#X#F#R#1#1024:PL0T,1#2,C(1):CALL#L#200#NEXT#L
1430 NEXT#PLAY#0,0,0#RETURN
5000 REM Instructions
5010 PRINT#D#D#E#J#E#A Breakout"D#H
5020 PRINT#D#D#E#F#E#A The object of the game is to knock"
5030 PRINT#"bricks from the wall. You do this by"
5040 PRINT#"bouncing the ball off the bat at the"
5050 PRINT#"bottom of the screen. The bat is"
5060 PRINT#"moved left by pressing the cursor left";
5065 PRINT#"key (to the left of the space"
5070 PRINT#"key), and right by pressing the"
5080 PRINT#"cursor right key."
5090 PRINT#E#F#E#A If you miss the ball, then another"
5100 PRINT#"wall will be delivered. But the maximum"
5110 PRINT#"number of balls is 10."
5120 PRINT#E#F#E#A If you manage to remove all the"
5130 PRINT#"bricks, you will get another wall."
5140 PRINT#E#F#E#A The object is to achieve a high"
5150 PRINT#"score."
5160 PRINT#D#E#F#E#A Press any key to start"
5170 GET#Z#CLS#RETURN
    
```

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## U.S. SCENE

# My Rachel, 16 months, gets the bug

*Computer Literacy Division, Human Interest Department. For the last several months our daughter Rachel has been fascinated with my computing system, especially with my printer. Whenever she would hear it going, she would run in and demand to be picked up to watch it printing. During one such session while I was holding her, I asked her if she could tell me the name of the computer.*

*Much to my amazement, she said "Apple!" in her little voice. (I am sure she figured it out because of the logo, but it still came as a surprise.)*

*Now, if any of our friends care to learn the name of Rachel's favourite computer, they need only ask. Rachel was all of 16 months old at the time she figured this out. I am sure by the time she is two or three years old, she will be a better programmer than I am. After all, I never recognized a personal computer until I was almost 30!*

★ ★ ★ ★ ★

*As long as I am in the human interest mode, here is a novel computer literacy marketing strategy. Post Cereals (a division of General Foods, a very large company indeed) in cooperation with Atari have agreed to promote computer literacy by running an advertisement campaign on the boxes of children's cereal.*

*The purpose of the campaign is to promote a 10-city tour of seminars put on by a non-profit organization called People's Computer Company. The tour is to take place during the next three months, starting in New York and heading west. At each venue, computing professionals will present 80 hours of free seminars, as well as giving out booklets and advice on computer basics. Approximately 50,000 students and adults are expected to attend these events which will be presented for 10 days in each of the 10 cities.*

*And now the answer you have undoubtedly been waiting for. Yes, you can send your box tops (or other proof of purchase) and receive "free" hardware and software from Atari. Although I do not know for sure, I would expect you would have to be a real cereal lover in order to get a free system.*

*All credit to Atari and General Foods marketers for this truly visible way of bringing computer literacy to the breakfast tables of America. Now, the question is: will it be swallowed?*

★ ★ ★ ★ ★

*Now here's something I know you've all been waiting for: Computer kitsch!*

*CompuGifts, of Mission Viejo, California, has now introduced a line of terminal gadgets. Wouldn't you love to put a Computer Caddy on your desk to hold your pens, pencils, erasers, and paper clips? Aren't you just dying to repot your Begonia into a Computer Planter? These gadgets resemble various computers, are made of plastic (of course) and measure about four by six by four inches, and of course have a clear plastic screen on one side for storing a meaningful photo.*

*I am sorry that I cannot provide a better address, because I know they would be just deluged with orders from the U.K. As for me, I shall wait until they make available an Apple II ash tray (just kidding folks).*

★ ★ ★ ★ ★

*The well known Japanese film company, Fuji Film, has just entered the floppy disc market here. They have been making discs in Japan since 1977. Just recently they have introduced a line of 8 inch discs (FD) and 5.25 inch discs (MD).*

*The firm guarantees them to be error-free, whatever that may mean, and apparently also indicates they they will still perform after 10 million passes. Anyone from Fuji care to come out to my house and count for me? Just what this country needs, one more floppy disc company.*

*That's all for this week. See you next time.*

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If you hit one, you score 100 points, but if you miss, you lose a number of points determined by the level of difficulty. This also decides how many shots you have to start off with, and how quickly you run out of time. You have one bonus shot as well as the ammunition shown at the bottom

right of the screen.

The level of difficulty also plays a part in your final score, along with number of points scored and how much ammunition was left unused.

The gallery beats you if you score more than 3010 penalty points, or if your penalty becomes higher than your score.

There's plenty to watch, and a dazzling reward for a good shot.

## How it works

- 100-120 clear screen, set high score and screen colour
- 130-150 set characters to blue
- 160-190 print title page and pause
- 200-230 difficulty level
- 240 keep T in range 1-10
- 250-310 preset variables
- 320-350 set characters to screen colour, to set up screen invisibly; clear screen
- 360 sets guns to screen colour
- 370-410 predefine characters
- 420 fills screen with background characters
- 430-490 base for guns; locate guns
- 500-520 top, sides of frame
- 530-640 set working colours to make everything appear
- 650-940 plot captions
- 950 escapes from caption plot routine
- 960-990 caption plot routine
- 1000 plots countdown indicator
- 1010-1020 record score and shots fired
- 1030-1080 initialise and plot target positions
- 1090-1120 save present target positions
- 1130 generates random number to move first target
- 1140-1190 record another turn in game sequence. If necessary, plot a countdown block and go to end of game routine, set counter back to 0
- 1200 noise for character movement
- 1210 determines the direction of the target
- 1220-1330 set the new target position
- plot the last position of the target as a space, keep the target's new coordinates in the frame
- 1340 branches to detect gunfire
- 1350-1370 if shots fired exceed ammunition, end game
- 1380-1530 repeat 1130 and 1200-1340 for second target
- 1540 if guns haven't been fired, don't plot shots/total
- 1550-1590 plot shots/total and reset flag
- 1600-1620 repeat 1350-1370
- 1630 return to start
- 1640-1660 looks for keypress, goes back to game-loop if no key pressed or wrong key pressed
- 1670 reduces K to range 1-6
- 1680 takes appropriate action on keypress
- 1690-1820 fire gun in correct column
- 1830 augments shot-counter
- 1840 sets flag to show shot fired
- 1850 branches to scoring routine if gun is fired in either target's column. Otherwise goes to penalty routine
- 1860 directs to scoring routine
- 1870 ends gunfire subroutine if points scored
- 1880 increases penalty points
- 1890 noise
- 1900-1930 prints new penalty score
- 1940 branches to end of game routine if penalty exceeds score or if penalty exceeds 3010 points
- 1950 ends gunfire subroutine if penalty points scored
- 1960 begins points scored routine by augmenting score
- 1970-2020 whizz and flash
- 2030-2060 print new score
- 2070 reset screen colour
- 2080 ends score routine
- 2090 begins end of game routine
- 2100-2110 pauses
- 2120 clear screen
- 2130-2150 sets printing characters to magenta
- 2160 totals score
- 2170-2180 convert negative scores to 0
- 2190-2200 set high score if necessary
- 2210-2270 print results and instructions
- 2280-2290 wait for keypress
- 2300-2310 reset penalty and countdown counters
- 2320 starts new game

## Variables

- HSC high score
- T level of difficulty
- A rate of scoring penalty points
- B shots fired
- G countdown rate
- P position to plot countdown block
- U ammunition at start
- SC score
- SET character set
- E,F coordinates to write captions
- MS caption
- R,C first target coordinates
- V,W stores for R,C
- R2, C2 second target coordinates
- V2, W2 stores for R2, C2
- X random number to determine moves of targets
- M flag to mark that a gun has been fired
- S variable to detect a keypress
- K ASCII value of key pressed
- CO column in which gun is fired
- L counter for penalty points

## Hints on conversion

Converting the program should be easy for most machines. Relevant commands are:

**CALL CHAR** (ASCII code number, hexadecimal string) defines characters used in the program. The hexadecimal string defines the pattern to be given to the character with the ASCII code stated

**CALL HCHAR** (row number, column number, ASCII code, number of repetitions) places character with ASCII stated, at row and column specified, and optionally repeats it horizontally the number of times stated.

**CALL VCHAR** (row number, column number, ASCII code, number of repetitions) works in the same way as CALL HCHAR only repeats vertically

**CALL CLEAR** clears the screen

**CALL COLOUR** (character set, foreground colour code, background colour code) specifies foreground and background colours for all characters in set specified

**CALL SCREEN** (colour code) specifies screen colour using colour code

**CALL SOUND** (duration, frequency, volume) produces sound. Duration in milliseconds, frequency in Hertz (or noise code), and volume in scale from 0 loudest to 30 quietest

**CALL KEY** (key unit,k,s) equivalent of INKEY's, returns code of key pressed in variable k

```

100 CALL CLEAR
110 HSC=0
120 CALL SCREEN(12)
130 FOR SET=1 TO 8
140 CALL COLOR(SET,5,12)
150 NEXT SET
160 PRINT TAB(6);"ASTRO-GALLERY!"
!!::::::::::::
170 PRINT "USE KEYS 1 TO 6 TO FI
RE AT:::"THE DRIFTING GALACTIC"
:::"TARGETS IN THE GALLERY":
180 FOR DELAY=1 TO 650
190 NEXT DELAY
200 CALL CLEAR
210 PRINT "GIVE ME A LEVEL OF":
"DIFFICULTY FROM 1 TO 10 "::::
220 PRINT "1 IS EASIEST &:::"10
IS HARDEST"::::
230 INPUT T
240 IF (T(1)+(T)10) THEN 200
250 A=(6+T)*10
260 B=0
270 B$="0"
280 G=31-T
290 P=23
300 U=102-T*2
310 SC=1000
320 FOR SET=13 TO 15
330 CALL COLOR(SET,12,12)
340 NEXT SET
350 CALL CLEAR
360 CALL COLOR(6,12,12)
370 CALL CHAR(46;"10101010101010
10")
    
```

# TI-99/4A PROGRAM

```

380 CALL CHAR(128,"FFFFFFFFFFFF
FFF")
390 CALL CHAR(136,"0040000090000
080")
400 CALL CHAR(144,"3C7E010F42358
118")
410 CALL CHAR(152,"FFFFFFFFFFFF
FFF")
390 CALL CHAR(136,"0040000090000
080")
400 CALL CHAR(144,"3C7E010F42358
118")
410 CALL CHAR(152,"FFFFFFFFFFFF
FFF")
420 CALL HCHAR(1,1,136,(24*32))
430 CALL HCHAR(23,1,128,64)
440 CALL HCHAR(22,7,128,19)
450 FOR J=11 TO 20 STEP 3
460 CALL HCHAR(21,J,73)
470 NEXT J
480 CALL HCHAR(21,7,73)
490 CALL HCHAR(21,25,73)
500 CALL HCHAR(1,1,128,128)
510 CALL VCHAR(1,1,128,72)
520 CALL VCHAR(1,30,128,72)
530 CALL COLOR(2,16,2)
540 CALL COLOR(3,2,16)
550 CALL COLOR(4,2,16)
560 CALL COLOR(5,16,2)
570 CALL COLOR(6,16,2)
580 CALL COLOR(7,16,2)
590 CALL COLOR(8,16,2)
600 CALL COLOR(13,15,1)
610 CALL COLOR(14,2,2)
620 CALL COLOR(15,12,1)
630 CALL COLOR(16,7,1)
640 CALL SCREEN(6)
650 M$="ASTRO-GALLERY"
660 E=23
670 F=9
680 GOSUB 960
690 M$="***POINTS*****"
700 E=1
710 F=8
720 GOSUB 960
730 M$="PLUS"
740 E=1
750 F=3
760 GOSUB 960
770 M$="MINUS"
780 E=1
790 F=24
800 GOSUB 960
810 M$="SHOTS***"&B$
820 E=3
830 F=12
840 GOSUB 960
850 HSC$=STR$(HSC)
860 M$="H/SC**"&HSC$
870 E=24
880 F=1
890 GOSUB 960
900 U$=STR$(U)
910 M$="AMMO**"&U$
920 E=24
930 F=23
940 GOSUB 960
950 GOTO 1000
960 FOR J=1 TO LEN(M$)
970 CALL HCHAR(E,F+J,ASC(SEE$(M$
,J,1)))
980 NEXT J
990 RETURN
1000 CALL VCHAR(13,31,79,10)

```

```

1010 GOSUB 2030
1020 GOSUB 1900
1030 R=12
1040 R2=12
1150 IF N<>6 THEN 1200
1160 P=P-1
1170 CALL HCHAR(P,31,152)
1180 IF P=13 THEN 1610
1190 N=0
1200 CALL SOUND(-100,110,3,1047,
3,1760,3)
1210 ON X GOTO 1220,1240,1260,12
80
1220 R=R+1
1230 GOTO 1290
1240 R=R-1
1250 GOTO 1290
1260 C=C+1
1270 GOTO 1290
1280 C=C-1
1290 CALL HCHAR(V,W,136)
1300 IF R<5 THEN 1220
1310 IF R>20 THEN 1240
1320 IF C>29 THEN 1280
1330 IF C<4 THEN 1260
1340 GOSUB 1640
1350 IF B>U THEN 1360 ELSE 1380
1360 E$="GAME OVER - GAME OVER!"
1370 GOTO 2100
1380 X=INT(RND*4)+1
1390 CALL SOUND(-100,554,3,1047,
3,1760,3)
1400 ON X GOTO 1410,1430,1450,14
70
1410 R2=R2+1
1420 GOTO 1480
1430 R2=R2-1
1440 GOTO 1480
1450 C2=C2+1
1460 GOTO 1480
1470 C2=C2-1
1480 CALL HCHAR(V2,W2,136)
1490 IF R2<5 THEN 1410
1500 IF R2>20 THEN 1430
1510 IF C2>29 THEN 1470
1520 IF C2<4 THEN 1450
1530 GOSUB 1640
1540 IF M<>1 THEN 1600
1550 B$=STR$(B)
1560 FOR J=1 TO LEN(B$)
1570 CALL HCHAR(3,20+J,ASC(SEE$(
B$,J,1)))
1580 NEXT J
1590 M=0
1600 IF B>U THEN 1610 ELSE 1630
1610 E$="GAME OVER - GAME OVER!"
1620 GOTO 2100
1630 GOTO 1070
1640 CALL KEY(0,K,S)
1650 IF S=0 THEN 1950
1660 IF (K<49)+(K>54) THEN 1950
1670 K=K-48
1680 ON K GOTO 1690,1710,1730,17
50,1770,1790
1690 CO=7
1700 GOTO 1800
1710 CO=11
1720 GOTO 1800
1730 CO=14
1740 GOTO 1800
1750 CO=17
1760 GOTO 1800
1770 CO=20
1780 GOTO 1800
1790 CO=25

```

```

1800 CALL SOUND(-150,-6,0)
1810 CALL VCHAR(7,CO,46,14)
1820 CALL VCHAR(7,CO,136,14)
1830 B=B+1
1840 M=1
1850 IF (CO=C)+(CO=C2) THEN 1860
ELSE 1880
1860 GOSUB 1960
1870 RETURN
1880 L=L+A
1890 CALL SOUND(-250,110,0)
1900 M$=STR$(L)
1910 FOR J=1 TO LEN(M$)
1920 CALL HCHAR(3,26+J,ASC(SEE$(
M$,J,1)))
1930 NEXT J
1940 IF (L>SC)+(L)=3010 THEN 20
0
1950 RETURN
1960 SC=SC+100
1970 CALL SOUND(-500,523,0,650,
,784,0)
1980 CALL COLOR(14,7,7)
1990 CALL SCREEN(7)
2000 CALL COLOR(14,12,13)
2010 CALL COLOR(14,7,12)
2020 CALL SCREEN(6)
2030 M$=STR$(SC)
2040 FOR J=1 TO LEN(M$)
2050 CALL HCHAR(3,3+J,ASC(SEE$(
M$,J,1)))
2060 NEXT J
2070 CALL COLOR(14,2,2)
2080 RETURN
2090 E$="THE GALLERY HAS BEATEN
YOU!"
2100 FOR DELAY=1 TO 1500
2110 NEXT DELAY
2120 CALL CLEAR
2130 FOR SET=1 TO 8
2140 CALL COLOR(SET,14,15)
2150 NEXT SET
2160 SC=((SC-((U-B)*5))-L)*T
2170 IF SC<0 THEN 2180 ELSE 2190
2180 SC=0
2190 IF SC>HSC THEN 2200 ELSE 22
10
2200 HSC=SC
2210 CALL SCREEN(15)
2220 PRINT E$::
2230 PRINT "YOUR FINAL SCORE":
ADJUSTED FOR DIFFICULTY": "15":
::
2240 PRINT SC::
2250 PRINT "BEST SCORE SO FAR":
::
2260 PRINT HSC::
2270 PRINT "PRESS ANY KEY TO PO
Y AGAIN"
2280 CALL KEY(0,K,S)
2290 IF S=0 THEN 2280
2300 L=0
2310 N=0
2320 GOTO 200

```

## SOFTWARE REVIEWS

### Toolbox 32K BBC £21

British Broadcasting Corporation, 35 Marylebone High Street, London W1M 4AA

This package is an excellent set of programmers' utilities which I doubt if I will ever be able to do without again.

The cassette contains 25 or so programs, suitable for both cassette and disc users, which show the thought and skill one would expect from the people who brought you The Computer Programme. It is accompanied by a 208-page book too.

The utilities range from the ubiquitous Character Generator to the excellent Squeeze programs which deserve special mention.

Whether you're writing software for money or pleasure, one method of making your program

run faster and take up less space is to pack your lines with as many statements as possible. Unfortunately this makes the programs very difficult indeed to debug.

This trio of routines makes this a doddle! All you do is write your program in single statement lines and then, after testing, use the first program to get rid of all REMarks, the second to remove unwanted spaces and the third to 'pack' the statements on to as few lines as possible.

There are many other equally good and useful routines including sorts, graphic dump, disassembler and RAM tester. Fantastic value, easy to use and utterly painless. D.C.

instructions	100%
ease of use	95%
display	n/a
value for money	100%



### Super Talk 48K Spectrum £5.95

Abbex, Tavistock House, 34/26 Bromham Rd, Bedford

This is a very interesting idea that almost comes off. Load the demonstration tape, and your

Spectrum speaks recognisable words.

It will read out numbers produced at random, call red alert, and so on, in response to data produced by a BASIC program.

The second side of the tape allows you to set up words of your own, using a sound tape of the words, but this process is very difficult to carry through ef-

# Help yourself with these

**These programs are claimed to make the programmer's life easier — but do they really? See what our reviewers thought**

fectively.

The volume level of the recorded signal must be exactly right, and the actions involved need to be precisely timed. Perhaps with more time and patience, a better result might have been achieved.

The carefully-detailed instructions unfortunately contained some minor problems, such as an instruction to GOTO a non-existent line.

While that was not important

in practice, there was a definite problem over the editor routine used to set up new words, in that after an error it was necessary to re-enter the editor. As a guess, the form RANDOMISE USER EDIT was tried, and it worked.

D.T.	
instructions	75%
ease of use	50%
display	n/a
value for money	80%



### The Key Spectrum £5

Keysoft, 6 Bruce Grove, Tottenham, London N17 6RA

Copying commercial software (in the piracy of your own home!) is an infringement of the Copyright Acts, and Keysoft takes pains to advise you of this fact.

There are, of course, occasions when you will want a backup copy of your favourite program, and The Key will provide just that for you, quite easily.

What it won't do is break into a program for you, which has to be a point in its favour, although there are tapes on the market purporting to do that, with the intention, I suppose, of trying to find out a programmer's 'secrets'.

There are really only two parts to any program — the idea or concept, and the actual programming.

The first is inspiration, and the second the result of hard work learning the craft. B.B.

instructions	80%
ease of use	70%
display	n/a
value for money	70%



### Spectrum Kopykat Spectrum £4.95

Medsoft, 61 Arden Road, Doncaster, S Yorks DN2 5ER

Firstly, I have no intention of becoming involved in the debate about copying tapes. I am reviewing the program in the belief that it will only be used to make back-up copies for the owner's personal use. After all, we are all full of integrity — aren't we?

My copy was supplied without instructions, but a good program of this type should have enough prompts to make it usable without them.

The tape loaded easily and auto ran, the prompt "stop tape" appeared so I loaded a tape. Once in, the prompt "stop

tape" plus the usual SAVEing prompt appeared. I dutifully exchanged tapes and the program SAVED. As easy as that.

I tried a variety of tapes by a selection of well-known companies and all bar one copied.

One did fail, however, which makes Medsoft's claim to copy all tapes invalid. Otherwise even 41K and headerless programs copied successfully.

On side two is a tape header reader program, useful if you want to know where a routine is located in order to disassemble it. R.E.

n/a	
instructions	100%
ease of use	n/a
display	80%
value for money	



### Mikro 64 Commodore 64 £50

Supersoft, Winchester House, Canning Road, Wealdstone, Harrow

If you plan to write any machine code routines of significant size, the only logical method is to use an assembler.

This assembler comes in a car-

tridge with an A5 size instruction booklet. The cartridge auto-runs on switch on and resides in the block starting at \$9000. As a consequence you have 30719 bytes free.

This is, however, sufficient to write enough source code for about 3-4K of object code at one sitting. If your source code is very large, you can split the source code into several files and these can be assembled in a linked sequence.

The actual assembler uses standard mnemonics for the source code. The BASIC editor is used to create the source code and normal saving and loading is used to handle files.

The assembly process uses three passes and consequently, allows you to use labels and incorporate simple arithmetic in the source code. The code is assembled to RAM rather than to tape or disk: a surprisingly handy system.

The usual pseudo-op codes (WOR, END, BYT and TXT) are available, as are commands for listing the assembled code and generating a label table.

A.W.	
instructions	85%
ease of use	95%
display	n/a
value for money	100%







# VIC-20 PROGRAM

```

1140 IFRJ=5THEND=23:MS=2:IFPEEK(C-1)C27THEND=1
1150 IFRJ=6THEND=21:MS=2:IFPEEK(C+22)C27RDPEEK(C-1)C27THEND=22
1160 IFRJ=9THEND=21:MS=2:IFPEEK(C+1)C27THEND=1
1170 IFRJ=10THEND=23:MS=2:IFPEEK(C+22)C27RDPEEK(C+1)C27THEND=22
1180 IFRJ=12THEND=0:MS=0
1200 GOTO1000
2800 POKE3669:248:POKE3679:8:PRINT"YOU GOT A SCORE OF",SC:SV=VAL(SC#)
2805 K=0:FORI=1TOS:FORM=LEFT$(B*(I),6)THEN:SC=I-1=5
2810 NEXT I:FORM=FORM+102000:NEXT:GOTO2805
2815 PRINT"YOU GOT ONE OF THE TOP FIVE SCORES"
2820 PRINT"ENTER YOUR INITIALS" :INPUTI:I=LEN(I):5THEN2820
2825 FORI=1TOKSTEP=1:B*(I+1)=B*(I):NEXT:B*(K+5)*"11
2835 PRINT"CHECKER BY G.B. DURLINIA HALL OF FAME" :FORI=1TOS:PRINT"1" :B*(I) :HE
2837 PRINT"PRESS FIRE BUTTON FOR ANOTHER 00:0=0:TP=100:TP=0:LV=0
2838 IFRJ=0:GOTO2838
2840 SC=1000000:SC=0:GOTO199
2100 FORI=1TOD4:POKEC+34:SOURCE,0,0,140,15-1#2
2110 FORM=1TOD8:NEXTI:1:SOURCE,0,0,0,0:POKEC+27:D=0:C=7734:M=192
2115 IFLV=3THEND=0:GOTO2800
2120 PRINT"DIS287FOCCC":JFL=1THD4000
2130 GOTO2800
2220 FK=SC
2228 FORI=0TOS:IFC=5X(I):THENS=SC+20
2230 NEXT I:FORI=0T1:IFC=5X(I):THENS=SC+30
2240 NEXT I:FORI=0T2:IFC=5X(I):THENS=SC+40
2250 NEXT I:FORI=0T3:IFC=5X(I):THENS=SC+50
2260 NEXT I:FORI=0T4:IFC=5X(I):THENS=SC+60
2270 NEXT I:FORI=0T5:IFC=5X(I):THENS=SC+70
2280 NEXT I:FORI=0T6:IFC=5X(I):THENS=SC+80
2290 NEXT I:FORI=0T7:IFC=5X(I):THENS=SC+90
2300 NEXT I:FORI=0T8:IFC=5X(I):THENS=SC+100
2320 NEXT I:IFC=5X(I):THENS=SC+10
2400 PRINT"DIS287FOCCC"
2405 R=STR$(SC):A=LEN(R):R=R-RIGHT$(R,A-1):B=7-A:B=LEFT$(SC,B):SC=B#A#R
2410 PRINT"*****"
2415 IFLV=1THENPRINT"SC":C=7734:M=192:MS=0:GOTO2800
4018 SIM#27:SS#27:SS#27:WC#31:TP#7690:DEFNPK(C)=TP+V#44#H#2:ZL#1
4000 P=RND(1):S#27:R#128:H#9:V#10
4200 PRINT"*****"
4210 PRINTLEFT$(C,4)*****" :ZM#H#3:NEXT
4215 FORH=7680T0781:POKER,32:POKER,2,6:POKER+484,32:POKER+2+484,6:NEXT

```

```

4216 FORH=7723T08160STEP22:POKER,32:POKER+2,6:NEXT
4220 H=INT(V#RND(1)+1):V=INT(V#RND(1)+1)
4230 P#RND(1):I#0
4300 POKEP,27:H#0
4310 IFPEEK(P-44)MUCHENT(T)=02:T#1
4320 IFPEEK(P-2)MUCHENT(T)=1:T#1
4330 IFPEEK(P+44)MUCHENT(T)=1:T#1
4340 IFPEEK(P+2)MUCHENT(T)=1:T#1
4350 IFTI=THENDT:THEND(1):M#M#1:POKEP-D,S1:P#P+2#D:GOTO4200
4360 IFTI=THENDT(O):POKEP-D,S1:P#P+2#D:GOTO4200
4400 IFRH=0THEND=1
4410 M#1:P#M(I)
4420 IFPEEK(P-44)+PEEK(P-2)+PEEK(P+44)+PEEK(P+2)+R#THEN4400
4440 GOTO4300
4500 PRINT"SC":V=INT(V#RND(1)+1):H#H:HO#RND(0)+1
4510 V=INT(V#RND(1)+1):M#1:BE#RND(0)+1
4520 P#RND(1):POKEP,33:POKEP+2,3
4530 P#RND(1):POKEP,34:PO#INT(RND(1))+4
4540 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4550 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4560 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4570 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4580 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4590 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4600 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4610 D(O)=1-ZI#RND(1):C,S,D(I)=1-ZI#D(O)+1:D(O)=D(O)+ZND(O):RND(1):S
4620 B=INT(RND(1)*500)+7690:IFPEEK(B)=27THENPOKEB,#38:POKEB+1:NEXT:GOTO5000
4630 GOTO4620
4640 R#RND(0):I#RND(1):I#I:THEND=22:GOTO4700
4650 IFRJ=2THEND=22:GOTO4700
4660 IFRJ=8THEND=1:GOTO4700
4670 IFRJ=4THEND=1
4700 POKEP,27:PE#PEEK(P+D):IFPE=27THEND#P=D:POKEP,33:POKEP+2,3:PRINT"SC"
05000
4710 IFPE=38RDPE(C#8THENM#1:SD#SC+(PE-38)*10:P#P+D:POKEP,33:GOTO4200
4720 IFPE=34THENV#LV#1:TL#C:GOTO4210
4730 POKEP,33
3000 IFRH=0THEND=1:R#0:T#2=T2-10:GOTO199
3100 T#1:I#1:IFI=1THEN#3
3200 V#D(I):P#PEEK(PC+V):IFNOT(PK-ZORPK#C#8THEN#32)THENS#40
3208 T#1:T#1:T#1:T#1:GOTO5020
3240 IFP#307THEN#P:LV#LV+1:GOTO2100
3250 KP#27:IFPK#38RDPE(C#8THEN#PK
3260 POKEPC,KP:PC#PC+V:D:POKEPC,34:POKEPC+2,7:GOTO4640

```

RETRY.

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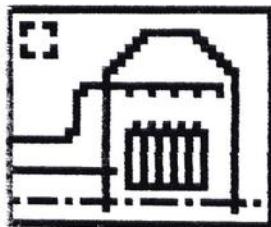
# Play, draw and calculate: five 1K programs for your ZX81

## Doodle Pad

SLOW and RUN 10 to obtain flashing cursor. This is placed at the bottom right hand corner of the available screen area. Use keys 1-8 to draw lines. Use PLOT and UNPLOT (keys Q and W) to change mode between "draw" and "erase". Press key "Z" (COPY) to dump a copy of the printer. To SAVE program with doodle intact, press key "S", type program name, switch in recorder, then press NEW LINE.

```

1 PLOT X,Y
2 RETURN
10 LET X=CODE "7"
20 LET Y=CODE "7"
30 PLOT X,Y
40 UNPLOT X,Y
50 LET Z=CODE INKEY$-CODE "0"
60 IF Z=-CODE "0" THEN GOTO CO
DE "2"
70 GOSUB CODE ***
75 IF Z=CODE "0" THEN INPUT X$
76 IF Z=CODE "0" THEN SAVE X$
80 GOSUB VAL "Z*100"
89 GOTO CODE "2"
800 LET X=VAL "X+(X(35)*(Z=2 OR
Z=3 OR Z=8)-(X>0)*(Z=1 OR Z=4 O
R Z=5)"
810 LET Y=VAL "Y+(Y(43)*(Z=1 OR
Z=2 OR Z=7)-(Y>15)*(Z=3 OR Z=4
OR Z=6)"
2599 RETURN
3200 IF INKEY$>" " THEN GOTO VAL
"3200"
3210 LET Z=VAL "PEEK 16513"
3220 POKE VAL "16513",VAL "PEEK
16513+6*((Z=246)-(Z=252))"
3499 RETURN
3500 COPY
9969 RETURN
    
```



Listing for Doodle Pad — with a sample drawn by Nick

## Day of the Week

What day of the week will April 11, 2011 fall on? This program can tell you (wow!). Operates according to current calendar rules, dates before about the 15th century will not be correct.

```

30 PRINT " INPUT D (OF MTH) "
40 INPUT D
50 PRINT D, " INPUT M, " "
60 INPUT M
70 PRINT M, " INPUT Y, " "
75 INPUT Y
80 PRINT Y
90 LET R=VAL "365*Y+INT ((Y-1)
/4)-INT ((Y-1)/100)+INT ((Y-1)/
30)-INT ((Y-1)/4E4)"
100 LET M$=" 3032323232323"
110 IF NOT VAL "Y-INT (Y/4)*4"
    
```

**ZX81 expert Nick Godwin presents five programs which fit into the ZX81's standard 1K memory. Type them in for fun as well as more serious uses**

```

AND VAL "Y-INT (Y/100)*100" OR N
OT VAL "Y-INT (Y/400)*400" AND V
AL "Y-INT (Y/4E4)*4E4" THEN LET
M$(VAL "3")="1"
120 FOR I=VAL "1" TO M
130 LET R=R+CODE M$(I)
140 NEXT I
150 LET R=R+D
320 LET U=VAL "R-INT (R/7)*7"
330 PRINT " " "SATSUMONTUEWE
DTHUFRI" (VAL "U#3+1" TO VAL "U#3
+3")
    
```

```

INPUT D (OF MTH) 15
INPUT M          6
INPUT Y          1983
    
```

WED

```

INPUT D (OF MTH) 11
INPUT M          11
INPUT Y          1945
    
```

SUN

```

INPUT D (OF MTH) 1
INPUT M          2
INPUT Y          1971
    
```

MON

Listing for Days of the Week with sample outputs below

## Primes

RUN and enter any number above 1; the program will inform you whether or not it is a prime number. Takes a while for some long numbers.

```

10 INPUT N
20 IF N<VAL "2" OR N<>INT N TH
EN RUN
23 IF PEEK VAL "16442"<VAL "3"
THEN SCROLL
25 PRINT N: " IS "
30 IF N>VAL "2" AND N=VAL "2*I
NT (N/2)" OR N>CODE "0" AND N=VA
L "5*INT (N/5)" THEN GOTO VAL "3"
40 FOR J=VAL "3" TO SQR N STEP
VAL "2"
50 IF N/J=INT VAL "N/J" THEN G
OTO VAL "90"
60 NEXT J
70 PRINT "PRIME."
80 RUN
90 PRINT "NOT "
100 GOTO VAL "70"
991 IS PRIME.
9991 IS NOT PRIME.
99991 IS PRIME.
    
```

## ZX81 PROGRAMS

```

999991 IS NOT PRIME.
999991 IS PRIME.
9999991 IS NOT PRIME.
99999990 IS NOT PRIME.
10 IS PRIME.
11 IS PRIME.
12 IS NOT PRIME.
13 IS PRIME.
14 IS NOT PRIME.
15 IS NOT PRIME.
16 IS NOT PRIME.

```

Listing for Primes with samples

### Spot the Odd One Out

RUN and enter the number of the pattern which you think is slightly different from the others. Press NEW LINE for another go.

```

10 DIM Q$(VAL "7")
20 CLS
30 FOR J=VAL "1" TO VAL "5"
40 FOR K=VAL "1" TO VAL "5"
50 LET R=INT VAL "AND#21"
60 LET Q$(K)=CHR$ VAL "R+118*"
70 NEXT K
80 PRINT " ";Q$;Q$;Q$;Q$
90 NEXT J
100 LET J=INT VAL "AND#5"
110 LET K=INT VAL "AND#5"
120 LET R=INT VAL "AND#4"
130 LET Q$=CHR$ J
140 LET C$=CHR$ VAL "K+7*R+2"
150 PRINT AT CODE Q$,CODE C$;
160 LET J=PEEK VAL "PEEK 16398"
170 LET K=INT VAL "AND#21"
180 LET K=VAL "K+118*(K>10)"
190 IF K=J THEN GOTO VAL "170"
200 PRINT CHR$ K;AT VAL "6",CODE
" " "1" "2" "3" "4"
210 INPUT J
220 PRINT AT CODE ":",CODE "":
"YES" AND J=VAL "R+1")+{"NO" AND
K>VAL "R+1")
230 SLOW
240 IF INKEY$="" THEN GOTO CODE
LIST
250 PRINT AT CODE Q$,CODE C$;"X"
AT CODE Q$,CODE C$;CHR$ K
260 IF INKEY$="" THEN GOTO CODE
IF
270 FAST
280 RUN

```



Listing for Spot the Odd One Out, plus screen dump of the game



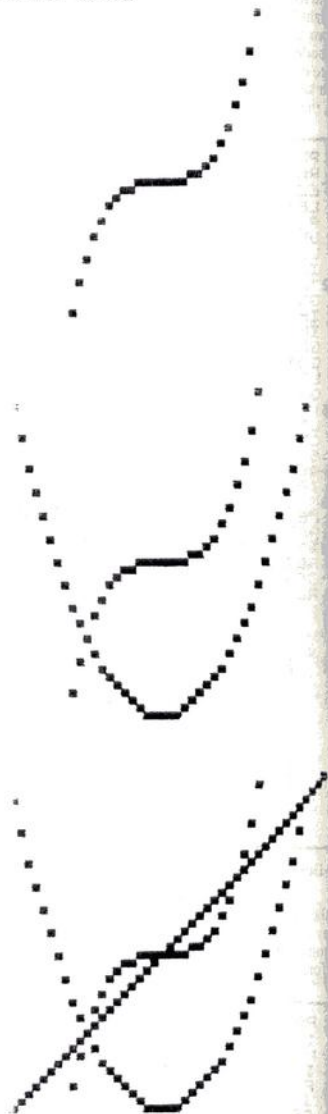
### Graph

RUN and enter the right-hand side of an equation for Y in terms of X (eg: "X/3", "(X-30)\*(X-30)/(100+2)", "X\*\*2" etc). I prefer to use this program in SLOW mode!

```

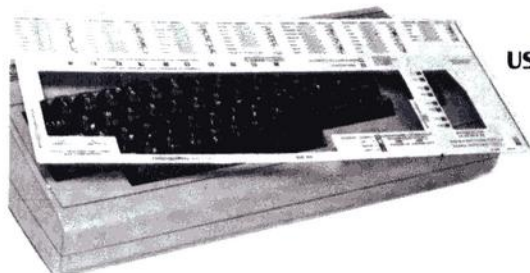
10 INPUT X$
20 FOR X=CODE "" TO CODE "Z"
30 LET Y=INT (VAL X$+1.5)
40 IF Y=>CODE "" AND Y<CODE ""
THEN PLOT X,Y
50 NEXT X
60 GOTO CODE ""

```



Listing for Graph, including how it looks when you use it

# Free yourself from the Handbook



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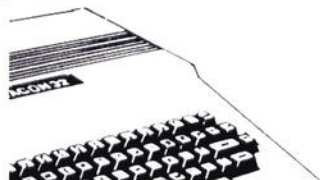
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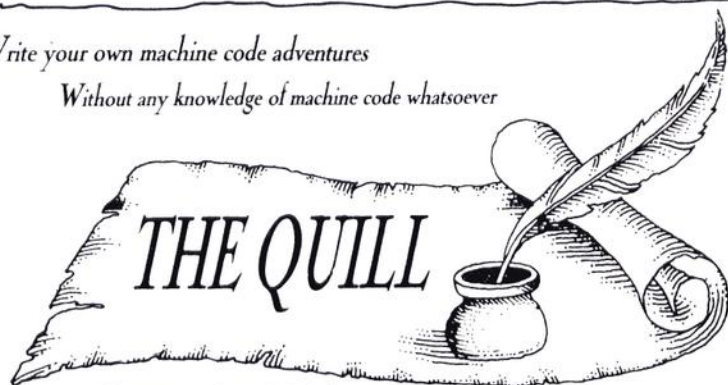
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HCW3

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#### WHAT THE PRESS SAY ABOUT IT...

**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 pitchmouth action — the game is a winner. SINCLEAR 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 overrode and meant that our promotion bid failed. Perhaps I should have grown up the F.A. Cup and had some good players back — the possibilities are endless. Brian Clough had better watch out!**

\* SPECTRUM VERSION ONLY.

HCW5

# Have a field day with these games

Our reviewers rate some games set in the wide open spaces

## Fish and Flutterer Ace Jupiter Ace £5.95

Jupiter Cantab, Cheshunt Building, Bateman Street, Cambridge CB2 1LZ

Arcade games are divided into those in which something is eaten and those in which something is

zapped. Here is one of each. In the first, a rather sad looking fish floats in the centre of the screen and ingests as much of the detritus moving across from the right as can be manoeuvred into his mouth by the use of vertical key movements.

At the same time, however, the player has to keep his scaly pal moving forward or he will be swept off screen left, together with the uneaten food, and the game will end.

## Splodge TI-99/4A £5

By Haydonsoft, from Stainless Software, 10 Alstone Road, Stockport

A game supposedly like Frogger which I found slow, difficult, and in the final analysis, rather boring.

The aim is to guide an odd-looking little character, using the E S D and X keys, through a screenful of continually moving objects.

The obstacle course is divided into two halves, in the upper of which you are forced to move diagonally, ie, up and to the right.

The two sections are separated by a 'bare area' containing moving currents which sweep you along, adding to the difficulty when choosing the moment to move.

The instructions are sparse but sufficient, although the purpose in displaying a High Score Table on the screen defeats me.

Each completed traverse — you're expected to trundle back and forth — gains you between 50 and 90 points, and the table goes up to 300 points.

Perhaps the difficulties of TI BASIC, never fast at the best of times, have contributed to the poor impact that this game has made on me.

It might have some interest for younger gamers, but I doubt if they would stay interested for very long. P.B.

instructions	70%
playability	35%
graphics	65%
value for money	30%



## Viper 32K BBC £8.95

R. H. Electronics, Chesterton Mill, French's Road, Cambridge CB4 3NP

It's hard to believe that this program has ever been released as a commercial cassette. I would even have been upset if I had spent time keying it in from a magazine.

How anyone has the audacity to charge nearly £9 for this program is beyond belief. In short, I don't like it (you'd guessed?) and it hasn't any redeeming features that I can find.

The aim of the game is to guide a snake around a box without touching the sides or the snake itself, and to eat as much as possible of the food on offer.

The snake is just a string of Teletext graphic characters which do nothing to enhance its

credibility, and the food is simply a number of hash signs scattered around.

The makers seem to believe that "difficult is exciting" which I don't find to be the case.

To get on to the high scores you have to devour 100 pieces of food with a snake moving in a manner reminiscent of a burst balloon.

There isn't even a sense of achievement as you eat the food, because each piece is replaced by another — which means you never complete the screen.

The best part of this game is without doubt the instructions, D.C.

instructions	50%
playability	0%
graphics	10%
value for money	0%



The fish's jaws snap salaciously and the score clocks up bottom right.

Sated with all this oral satisfaction, the player can next load Flutterer, the familiar game in which seeding the random function produces a vacillating but inevitably descending croaking mannikin, jerking his limbs to be zapped by missiles fired from a mobile collar staff at the

bottom of the screen.

Incredibly the missiles also have jerky legs and the score piles up as before. G.M.

instructions	70%
playability	75%
graphics	80%
value for money	75%



## Exterminator Commandore 64 £5.99

Bubble Bus, 87 High St. Tonbridge, Kent TN9 1RX

This program closely resembles the well-loved caterpillar game, albeit with differing participants.

You heroically endeavour to wipe out the sundry occupants of a field of mushrooms. The arch-protagonist is a worm which weaves its way down the screen.

If you shoot it, some of its segments are destroyed and turn into mushrooms and the beast splits into smaller, faster worms.

To annoy you, a noisy eagle flaps around trying to get you. Kill it for a random bonus.

From time to time a tarantula spider will ambly across the bottom of the screen. You can't kill it but it can certainly sort you out.

The mayhem is increased by a scorpion which creeps across the screen turning mushrooms into white poisonous ones. If the worm hits one of these it moves straight down the screen.

The occasional mosquito appears to replenish the mushrooms in the field.

The animation and design of the creatures are brilliant and the overall pace of the game is fast. As your score increases things get faster, busier, noisier and meaner.

A freeze game option is available so that you can get a coffee and you can disable the sound if desired.

On the minus side, the instructions were barely adequate. A.W.

instructions	65%
playability	90%
graphics	90%
value for money	100%



## California Goldrush Commandore 64 plus joystick £7.95

Anik, 30 Kingscroft Court, Bellingham, Northampton

You are a prospector, moving around squares on the screen trying to enclose them to stake your

claim. When one is enclosed, points are awarded proportional to the size of the claim that has been enclosed and the level that you are on.

While this is going on, there are two Indians trying their best to kill you by running into you or, on the higher levels, shooting arrows at you. They also erase the track you leave behind to encircle the claims.

You can stop them by leaving behind a stick of dynamite as you

move along. This will blow up and leave a pile of debris to obstruct them. It obstructs you, too, but the effect wears off in time.

Good graphics, with excellent representations of the prospector and Indians. Sound effects are reasonable.

There are options for a two-player game, and you can start at any of the 24 levels of play. A joystick must be used — there is no keyboard option.

The game is simple to learn and play, and is amusing — at first. The problem is that after a few plays it gets boring. There are no new surprises (apart from the arrows) as the game progresses. M.R.

instructions	70%
playability	30%
value for money	50%



## Electron by Joystick

I thought other TI owners would like to know about a conversion I have made, which allows the Electron game in HCW 28 to be played with joysticks. This may also be used to create general-purpose joystick subroutines — something I found hard at first.

My conversion also includes changes to CALL KEY statements, so that they will accept lower case letters as well as upper case.

```
860 CALL JOYST(I,X,Y)
870 (ENTER)
880 IF X=4 THEN 885
    ELSE 890
885 IF Y=0 THEN 890
    ELSE 890
890 IF X=0 THEN 895
    ELSE 900
895 IF Y=-4 THEN 1020
    ELSE 900
900 IF X=0 THEN 905
    ELSE 910
905 IF Y=4 THEN 1110
    ELSE 910
910 IF X=-4 THEN 915
    ELSE 860
915 IF Y=0 THEN 1200
    ELSE 860
1840 CALL KEY(O,K,S)
1860 IF K=121 THEN 100
2470 IF K=121 THEN 2500
2480 IF K=110 THEN 2490
    ELSE 2420
2930 CALL KEY(O,K,S)
2950 IF K=114 THEN 2500
```

Also thought you'd like to know my high-score on Parsec — 309,200. It would be interesting if other TI owners who read your magazine and own Parsec could write in with the high scores that they have got on this very hard game.

By the way, on a recent holiday to Corfu I was surprised to find a copy of HCW on sale in a newsagents there! R. C. Sanderson, Rotherham, South Yorks

## The bubble explodes

We were utterly amazed to read your review on our program called Hustler, a pool game for the Commodore 64. At the time we read it we had just sold out of them at the PCW show at the Barbican.

Your review mentions the program hanging up, and highlights various other defects. Unfortunately you have reviewed an early development copy which bears little resemblance to the finished article.

We would deem it a favour if you would put the record straight for your readers.

Mark Meakings, Bubble Bus, Tonbridge, Kent

Send your letter to Letters, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Don't forget to name your computer — the best letter could win £5-worth of software. Got a problem with your micro? We'll soon be starting a queries page, so send your technical questions to Queries at the above address



## Missing symbols

I was pleased to see my COMX 35 program in HCW 31, but some of the program seems to have got lost along the way!

In case any readers were puzzled by the program, the missing bits are:

```
230 between A and 3 should
    be a less than sign
236 between B and I1 should
    be a less than sign
232 between A and 20 a
    greater than sign
234 between B and 28 a
    greater than sign
240 the character between
    quotes is shift S
Deborah Horne
```

## Checking out checkers

I understand that some people have been having difficulties with my Micro Checkers program, published in HCW 31.

The program will run as listed, provided that the CTRL key is held down while the positions are chosen. This ensures that moves have to be made deliberately.

If a line 1105 is added; 1105 IF (R<4) + (R>19) THEN 1070 and line 1170 is altered to 1170 IF (C<8) + (C>23) THEN 1130 then keys pressed without the control button being held down will have no effect, and it will be impossible to pick a square off the board.

The program works in this way because lines 1070 and 1130 use key unit 4, in which control codes 1 to 31 are active. This way, the values returned when a key is pressed translate directly into positions on the board.

If you want to avoid having to press the CTRL key, then you should alter line 1170 to read

```
1170 IF (R<69) + (R>83)
    + (C<72) + (C>86) THEN
    1210
```

In this way, the program

will work in its original form. If the line value 1210 is changed to 1070, the choice of squares off the board will be prevented.

If you choose to amend the program in this way you will also need to add two more lines

```
1171 R = R - 64
1172 C = C - 64
Lance Booth, Burton-on-Trent, Staffs
```

## Invader: Arcadia's answer

I was pleased to read the letter titled Mushroom Mix in your No. 26 edition, which gave me a ray of hope regarding Oric Invader which I ordered in March 1983 from Arcadia.

After reading Mr. Love's letter regarding Arcadia problems, I wrote to Mr. Love explaining that I sent a cheque for Oric Invader, that the cheque had been cashed at that I have not received a cassette yet.

After waiting one month for a reply from Mr. Love (which seems to be normal reply time for computer companies), I thought it was time I wrote to Home Computing Weekly to let other readers know what they are letting themselves in for.

Mr. Love's way of dealing with queries seems to be to forget them.

After reading several computer mags, my problem seems to be the norm. Is it the way British firms get the working capital? M. Schofield, Wakefield West Yorks

Mr. Love, of Arcadia, says "Oh dear! That must have been one of the first orders we received for Oric Invader. I'll make sure Mr. Schofield gets another tape. We did experience delivery delays when we switched duplicating companies due to loading problems, but now we've got delivery down to within a week of receiving the customer's order. Our tapes are also being distributed to some retail stores now."

## Is this a record?

In HCW 24 you had an article about Pasesoft which said that Tony Reid had achieved a score of 124,000 on TI Parsec.

I have beaten this score easily with a score of 1,080,500 on my TI-99/4A.

Has any other reader of HCW beaten this score? If not, is this an all-time high? Paul Hopkins, Downend Bristol

# Deal yourself in for patience galore

For anyone who likes playing patience games, here is the ultimate solitaire — no less than six different games.

The first, Hole in One, is here. There will be two more in next week's issue of Home Computing Weekly, two the week after, followed by the sixth game.

But you can start playing straight away after typing in the following listing.

Being very partial to all card games, I started with the idea of creating one or two patience games. However it has grown and continues to grow.

It is now quite a long listing and will require at least 32K to accept all six games.

Owners of 16K machines need not despair, though, because the games can be separated. Each will need the main initialisation and subroutines, which are common to all games.

Since the listing is modular, it is easy to add or delete games.

Most card players know the standard patience games of Klondike or one of its many variations (building up suit sequences on aces). I would have liked to include this one but couldn't quite get enough cards on screen when a column contains the maximum number of cards. This restriction is due to the need to get the denomination and suit of each card clearly visible.

So the six games are all entirely different from Klondike and also offer quite a variety.

A player missile cursor is used in each game to highlight the chosen card. Joystick (0) is used to move the cursor.

**Hole in One** is not easy to complete but provides a good challenge. The object of the game is to collect all the cards into one pile and some thought is needed when choosing the card to be picked up.

Any number of cards can be taken in succession providing they match or are in suit/sequence, either up or down, to the top card of the discard pile. Cards can only be taken from the bottom of a column so it is important to note what card becomes available as you remove the lowest one.

Sometimes, picking cards up in a certain order will gain extra cards from the layout.

For example: Top card of discard pile is a three of Clubs. Immediately available from the layout are three of Hearts, three

**If you're an Atari owner who's keen on cards, Les Howarth has a great set of programs for you to type in. You can play straight away — and add more games with the next three issues of HCW**

of Diamonds, or four of Clubs. Suppose above the three of Hearts there is four of Diamonds. Take them in this order 3/H, 3/D, 4/D, 4/C, and you get them all but taken any other way would only get one or two cards at the most.

**Note:** Owners of 16K machines should SAVE this listing twice, one version minus the lines which are unique to game one — 600-660, 810-930 and 9100-9150. You will need the second listing for the next five games.



## How it works Hole in One and initialisation

**20-60** set up player cursor. Strings are used to hold the data, which allows fast vertical movement in player missile graphics. **Important:** Player strings must be DIMensioned immediately. The reason is that each variable is placed in a table within memory, in the same order that you type them in. Player/missile data is then tied to the first string in the table so be sure to type line 20 first.

**70** branches to subroutines for initialisation, introduction and rules for each game.

**200-540** subroutines common to all games. This section decides denomination and suit of a card and prints on screen.

**600-660** set up game 1. Cards are shuffled and dealt to the layout. The deck is stored in Array P, and at this stage the cards are simply numbered, 1 to 52. As cards are dealt card value is also placed into array D. This same arrangement is used in each game.

**700-740** joystick routine, again common to all games. This also constantly checks to see if any function keys have been

pressed. Pressing Option Key will re-start the game you are currently playing. Pressing Start Key will return menu to allow a different game to be re-selected.

**810-930** belong to game 1 only. Card selection and movement is dealt with here. Check is also made to see if game has been completed or if deck is empty.

**1000-1300** sound routines.

**8000-8005** sets up a table of constants, memory saving device well worth using in such a long program. Each of these constants save six bytes of memory each time they are used, as opposed to normal numbers.

**810-8040** DIMensions and initialises strings. Cursor control characters are used extensively within strings to force the cursor to move to different starting points, avoiding lots of position statements.

**8050** fills A \$ with hearts. Hearts are used in player/missile strings as spaces.

**8060** clears Array D which is used to hold the layout for each game.

**8100-8310** introduction, menu. A display list interrupt is put into page six in order to add extra colour.

**9000** onward. Instructions

## Special Instructions

Parts of this listing contain graphic characters and cursor arrows. The letters U, D, L, R, indicate arrows characters which must be printed within the statement.

For example: U indicates an arrow facing up, D indicates down etc.

To print an arrow, first press Esc key then hold down the CTRL key and at the same time press the appropriate arrow key.

Other characters are obtained by pressing the keys indicated.

**25 B \$ (1) = ESC/DEL B \$ (36) = ESC/DEL.** The other characters printed on this line are hearts CTRL/COMMA

**200 NU \$; "D L L "; SU \$**

**530** each suit character appears on this line in this order CTRL/P CTRL/FULL STOP CTRL/COMMA CTRL/SEMI COLON

**600** print HOLE IN ONE in inverse characters

**840** CTRL/Z CTRL/R CTRL/R CTRL/C

**900** clear screen character ESC/SHIFT/CLEAR

**8020** CTRL/Q CTRL/R CTRL/ED L L L L, A vertical line using shift/Down Arrow, 2 spaces, vertical line D L L L L. Vertical line, 2 spaces, vertical line D L L L L, vertical line, 2 spaces, vertical line, D L L L L, CTRL/Z CTRL/R CTRL/R CTRL/C

**BLANK \$** is similar to CARD \$ but contains only the cursor arrows in exactly the same positions.

**8030** FD \$ is a face down card. Same as CARD \$ but the vertical lines and the spaces are printed in inverse.

**8050 A \$(1) = CTRL/COMMA. A \$(512) = CTRL/COMMA**

**8103-8104** gives each game title preceded by a graphic character. When the menu is displayed these characters will appear as numbers. This is done for more colour. Print as: CTRL/Q(space)HOLE IN ONE. CTRL/R(space) Title. CTRL/S (space) Title. CTRL/T etc, CTRL/U etc, CTRL/V etc

**8105** inverse for words OPTION and START

**8109** will accept any game number from 1 to 6. As there is only one game at the moment it would be advisable to alter GM (greater than) N6 to GM (greater than) N1 to avoid any errors. As each game is added this number (N) can be increased by one.

**8120** ESC/SHIFT/CLEAR

**8250** use inverse CTRL(SEMI-COLON

**10020** ESC/SHIFT/CLEAR





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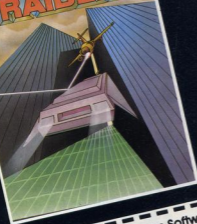
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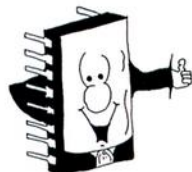
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## Space Cavens 32K BBC £6.95

Byteware, Unit 25, Handyside Arcade, Newcastle NE1 4PZ

The quality of home computer software has risen dramatically over the last year with the vast growth in the market for the products.

This means that games which would have been perfectly acceptable a year ago have to compete with games of a much higher standard today. This game is written to last year's standard, and unfortunately has little to recommend it now.

The aim of the game is to penetrate further and further into the caverns, using the Lunar Lander technique of thrust against gravity and directional movement in short bursts. The

graphic screens are acceptable but in no way exceptional, and have one major problem.

When you finish one screen by thrusting off the right hand edge you arrive on the left hand of the next cavern. Unfortunately, though, there is no sideways scroll routine, so the screen blanks for a second or so while a new screen is drawn.

This means that you lose control at a time when it is needed, which can end the game prematurely.

Overall, most disappointing — a game to avoid. **D.C.**

instructions	50%
playability	10%
graphics	30%
value for money	10%



## Outland/ Megafighter TI-99/4A plus MiniMemory, joysticks £17

By Roach Software, from Stainless Software, 10 Alstone Road, Stockport

Outland is an Asteroids clone which achieves its arcade quality of movement through spiries.

You can control your ship using the keyboard, rotating clockwise and anti-clockwise, moving forward in the direction in which your ship is pointing, firing similarly, and there is also a shield which stops you from getting crunched but lets the

asteroids push you around the screen at a rapid rate of knots.

Only one key can be acted upon at a time, but even no reasonably good control can be achieved. When you clear the screen of one batch of asteroids along come another crowd.

The running score is shown, but no record is kept of the highest to date — feasible because of the battery-backing of the module.

The second game, Megafighter, is a Berzerk-type

game requiring joysticks and there is some awkwardness because of that alphanlock key — it must be pressed to issue instructions for loading, but released to ensure the joystick works correctly. **P.B.**

instructions	60%
playability	90%
graphics	85%
value for money	75%



## Protector 48K Lynx £6.95

Sian Software, 139 Rosebery Avenue, Manor Park, London E12 6PZ

This package consists of two programs. The first is an introduction, explaining the main rules of the game, and the second is the main program.

This starts by asking for the user's name and explaining the scoring.

The user then becomes commander of a protector ship with a mission to exterminate aliens from 10 sectors of space. The first task is a tedious space scan to detect the mother alien ship.

The game now begins by the mother ship attacking with four consecutive waves of different aliens. The protector ship, which can be moved from left to right using the arrow keys, must

destroy the aliens by shooting darts from below.

Each alien destroyed from the first wave counts 10 points, from the second 20, 30 from the third and 40 from the fourth. Once all these aliens have been destroyed, the mother ship must be eliminated.

After refuelling and a further space scan the process is repeated until all 10 sectors of space are free of aliens. The score is displayed during the game and at the end is incorporated into an honours list.

Although the game may at first appear repetitive, it is well presented and challenging. **R.S.**

instructions	90%
playability	80%
graphics	85%
value for money	70%



## Planet Destroyer TI-99/4A £6

Stainless Software, 10 Alstone Road, Stockport

As the commander of the Starship Patscam, your mission is to guide your ship to the heart of the alien planet. You must steer your ship through twisting tunnels, avoiding or destroying the enemy missiles and refuelling as necessary.

There are 20 sectors to go through before your mission is complete. I have only mastered half of them, but this just adds to the excitement of this very good game.

Full instructions are given on an inlay card, and brief prompts are contained in the program. The graphics are very well presented and so is the sound

which is generated while the game is in progress. The sound which accompanies the on-screen instructions is rather excessive, though.

On several occasions I have had trouble in loading the lengthy program but the error at the beginning of the tape — the leader may be too long.

The program seems to be bug free with one exception. The refuelling instructions say fire your gun at the fuel dumps to refuel, but I have found that colliding with them has the same effect.

This game is well thought out, and makes the most of TI BASIC and colour. **C.E.**

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



## Spacefighter Pilot/Missile Man Jupiter Ace £5.95

Jupiter Cantab, Cheshunt Building, Bateman Street, Cambridge CB2 1LZ

The unexpended Jupiter Ace has only about 1K of user RAM

available for programs, but these two demonstrate convincingly what a lot can be done by a skilled programmer within this limitation.

Using a mixture of Forth and machine code, Spacefighter Pilot speeds off down a realistic runways into a flickering galaxy of stars.

Moving lines produce a most realistic sensation of motion until the jump into hyperspace, with a choice of two warp

speeds, both good and fast.

There are the usual space noises for background, while a running total of missiles zapped or evaded is conspicuously signalled at the bottom of the screen.

The instructions are barely adequate, but the user will sort them out eventually, though if he can operate the one to shut off the space noises he'll do better than I did.

Missile Man has only one gun

in this remarkably successful attempt to reproduce something of the traditional arcade space invaders game within the limits of monochrome 1K. **G.M.**

instructions	70%
playability	90%
graphics	95%
value for money	95%



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# Games to give you a new direction

So you think you know your way about? These maze games could be for you. But first, read our reviewers' ratings

## Spook 64 Commodore 64 £7.95

Byteware, Unit 25, Handyside Arcade, Newcastle-upon-Tyne NE1 4PZ

Another Pacman clone. The thing that goes around eating all the dots is there in all his glory, the dots are there, the power pills are there, and the proverbial ghosts

are there ready to eat you. All that's missing is the fruit.

Graphics are good — a straight reproduction of the original — but the sound is hopeless, amounting to a few feeble clicks when you eat a dot and a few beeps when you eat a power pill.

There is a joystick option, so all movement is from the keyboard, and the response could be a lot better.

## Mazeman Lynx 48K £4.95

Abersoft, 7 Maes Afallen, Bow Street, Dyfed SY24 5BA

This machine-coded game is fast, well designed and enjoyable to play. It can be operated by the Computers joysticks or by using the arrow keys.

The maze displayed on the screen is divided into squares, and the aim of the game is for a Mazeman to collect these squares by passing through them. Each square is worth ten points.

However, also in the maze are found Hobgoblin monsters searching for the Mazeman to gobble him up.

The Mazeman can counter attack by passing through one of four special squares. These give him about 10 seconds to slay as many of the monsters as possible, so enabling him to pass

through more squares before other hobgoblins are released from the central cage.

Notwithstanding its simplicity, this game is very challenging and addictive. One soon begins to hate the hobgoblins, constantly trying to avoid them with manic fervour.

Improvements could have been made to the game by having more variations built into the program — such as different levels of difficulty — and by having more sound effects during the different operations.

But considering all these factors and the price, Mazeman is a good buy. **R.S.**

instructions	85%
playability	85%
graphics	80%
value for money	95%



## Corridors of Genon 48K Spectrum £5.95

New Generation Software, Freeport, Bath, BA2 4TD

Way back in the annals of Sinclairology, this company produced a classic for the ZX81 called 3D Monster Maze. Many

variations of the 3D theme followed, but this time they have nevered a variation which is just as brilliant.

The maze in this program is circular and has doors which open and close. The beastie is a Bogul which drains your mental power and you have to reach the centre, deactivate the computer (a mastermind-type exercise) and escape.

The 3D effect is achieved by perspective and should not be

confused with the latest 3D via red and blue glasses. Nevertheless, it is a superb program graphically and a well-conceived plot.

Sound is very effective — those footsteps really spur you on.

The cassette insert is colourful and contains full instructions plus scenario. Also supplied is a keyboard overlay, and the program loaded easily. Control is via the cursor keys, with a special

section converted to a numeric keypad.

You can practice your computer deactivating skill or choose to play the full game — one of three levels and at one of three speeds. **R.E.**

instructions	92%
playability	97%
graphics	98%
value for money	100%



## Sultan's Maze Dragon £6.95

Gem Software, 22 Prestwick Drive, Bishop's Stortford, Herts CM23 5ES

Your task is to search a maze to find and collect six jewels stolen from the Sultan. However, these are protected by the demented Sultan's ex-bodyguard who attacks everyone in sight.

Every action depletes your energy and, at best, you can easily carry two jewels at a time to the exit. There are nine options at each move, you can jump the inner hedges or look at the map for a few moments.

The displays for both maze and map are clear and easily understood. The maze is well constructed in 3D perspective which is redrawn after a few seconds delay — very good for a BASIC program. Colours are

green, yellow and blue and are used well, sound is limited but effective.

Instructions are only supplied on screen and are well written and comprehensive, but I would have liked a copy on the insert.

The game is enjoyable to play, it provides a challenge to players who enjoy a thoughtful exercise, but it will probably be too slow for those who prefer arcade action.

Loading presented no problems and 10 difficulty levels are offered. It took me quite a while at level one, the easiest. This is a game which, though not addictive, I will play occasionally. **R.E.**

instructions	70%
playability	80%
graphics	76%
value for money	70%



always get revenge.

Graphics are good — a straight reproduction of the original — but the sound is hopeless, amounting to a few feeble clicks when you eat a dot and a few beeps when you eat a power pill.

There is a joystick option, so all movement is from the keyboard, and the response could be a lot better.

Overall, though, this is a pretty faithful reproduction of the original. **M.R.**

instructions	70%
playability	80%
graphics	90%
value for money	70%



## Labyrinth Lynx 48K £7.55

Quazar Computing, 17 Teg Close, Portslade, Sussex BN4 2GZ

Loading this tape proved to be very difficult, but in the end the effort was well worth while. The aim of this game is to find the quickest way through a maze. At the start there is the option of seeing its plan with the position of the player and the exit clearly marked.

The player can be moved in all directions through the maze by the use of the arrow keys while the screen displays a three-dimensional view from the player's position inside the maze. This has been accomplished simply but ingeniously by line drawings.

If the arrow keys are pressed quickly the different images of

the maze also change quickly, so creating a feeling of running through the maze.

At any time the user feels he will hopefully lose, pressing H will display the plan with the latest position.

Once the exit has been found you are told how many moves it took to escape and how many times help was required.

The last amusing surprise of this program is the display of the progress through the maze. Although this game needs a little more refining it is still an excellent and imaginative production. **R.S.**

instructions	80%
playability	85%
graphics	95%
value for money	90%



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- **Corridors of Genon (C)** — bend your mind as you attempt to track down the computer that rules the universe. But watch out for Bogul.

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Then cut around the broken lines, seal the drawing with coupon attached in an envelope — and write clearly on the back of the envelope the number of differences you found.

Post your entry to New Generation Competition, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE.

Entries close at first post on Friday November 18. The winner of the main prize will be the first correct entry opened. And the 100 software winners will be the next 100 correct entries opened.

You may enter as many times as you wish, but all entries must be on the official coupon — copies must not be accepted — and in separate envelopes.

The solution and the names of the winners will be published in the news columns of Home Computing Weekly and the prizes will arrive from New Generation within 28 days of the publication date of that issue.

### The rules

The first prize winner will be the first correct entry opened after the closing date, first post on Friday November 18, 1983. The other 100 prizes will go to entrants with the next 100 correct entries opened.

Coupons which are not fully completed and envelopes without the number of differences found on the back will not be considered.

Entries will not be accepted from employees of Argus Specialist Publications, New Generation Software and Alabaster Passmore & Sons. This restriction also applies to employees' families and agents of the companies.

The winners' names and address will appear in Home Computing Weekly. The editor's decision is final and no correspondence will be entered into.

## New Generation Competition

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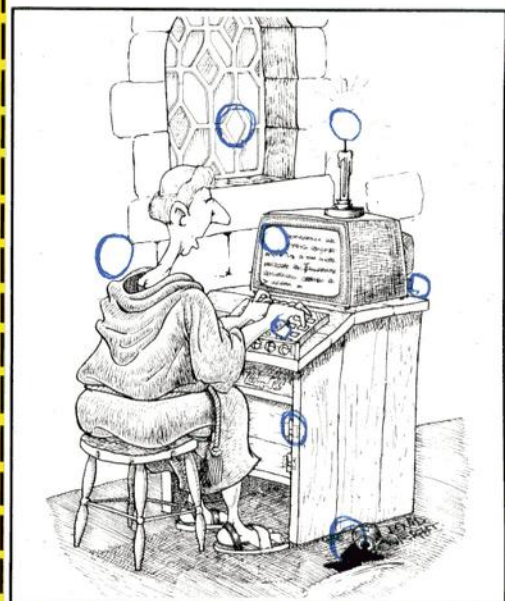
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Post to New Generation Competition, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Closing date: Friday November 18.



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TIS manifests itself in a number of ways, one of the most dramatic symptoms being a victim's complete inability to relax at ease in the world of reality. Other symptoms include insomnia, a desperate need to play a Mysterious Adventure, and an overwhelming sense of acute enjoyment.

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When questioned about this epidemic, a representative of DIGITAL FANTASIA, a company who are actively involved in research and development work on Mysterious Adventures said, "There is probably no cure for TIS other than medication, faulty RAM chips etc. which can be at best only a Temporary solution". "In the absence of a more permanent cure, I would advise TIS sufferers to submitt to the Syndrome and obtain Mysterious Adventures from any source available to them". "TIS is highly contagious and in view of the current Worldwide Epidemic, I would say enjoy it while you can, resistance is futile".

If you have a BBC Computer, Commodore 64, 48K Spectrum, Atari 400/800, or Dragon 32 you can obtain Mysterious Adventures in any of the following doses:-

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# Mysterious Adventures

## WHAT ARE MYSTERIOUS ADVENTURES?

**MYSTERIOUS:** (Adjective):- "Baffling, full of mystery, strange or unaccountable".

**ADVENTURE:** (Noun):- "An enterprise full of risk or danger, an experience of unforeseen events endangering the participants life, a gamble on failure or success".

To start play on a MYSTERIOUS ADVENTURE is to take a step out of the world of reality and into the world of dreams. Your computer is your guide on these fantastic journeys in time and space where danger is ever present and solutions to problems seldom come easy.

By typing in simple commands in plain English you can "talk" to your computerised guide and tell it what your next actions are to be.

MYSTERIOUS ADVENTURES bring a frightening reality to the surreal situations in which you will find yourself. You will become involved in these strange worlds of the imagination, you will feel anger when things seem to be moving against you, you will feel elated when you overcome obstacles that are set in your way. Eventually you will feel overjoyed as you reach the climax of your mission and success is yours.

Any MYSTERIOUS ADVENTURE is not a mission to be taken lightly, success will never be instant - just as Rome was not built in a day, so each Adventure can rarely be completed in one session. To this end a "SAVE GAME" feature has been incorporated in each of the Adventures. This means that at any given time during play of an Adventure, you can store on tape your precise whereabouts, your equipment carried, and any other pertinent details about your present status.

## NEW DEVELOPMENTS ON MYSTERIOUS ADVENTURES

Over the past few years, Adventure programs on Computers have almost always been presented in the classic "Text only" mode. For most Adventure players this has indeed been the way they prefer to play Adventures. The mental imagery generated by such an approach is limited only by the player's own imagination. One of the main reasons for the "Text only" approach has been the lack of hardware capabilities with regard to Graphics resolution - Pictorial Adventures could at best be only very limited in scope.

This situation is changing now however, and Brian Howarth, author of the MYSTERIOUS ADVENTURES series, has spent many hours incorporating Graphics into the Adventures. By working in close conjunction with Jon Blacow, a professional Artist, Brian has produced a series of extremely vivid and imaginative Adventures. Each MYSTERIOUS

ADVENTURE now features, in addition to the Text description, pictorial "views" of your current location and surroundings. As you enter each new location, a high resolution, colour picture is rapidly drawn. The effect of this is to bring much more reality to the Scenario, you can actually see the situation you are faced with and act accordingly. It must be stressed that each picture has been designed so that it will enhance, rather than conflict with your mental imagery. At the single stroke of a key, you can erase the picture and carry on with your Adventure in text only if this is your preference. We are confident that no other Adventure programs can boast such breathtaking realism and imagination combined with the flexibility and ease of play that have made MYSTERIOUS ADVENTURES such a phenomenal worldwide success.

In addition, the Adventures now features full sentence decoding as standard. These mean that you are no longer restricted to inputting single or two-word commands. You can now type in whole sentences in more or less plain English. Your computer will quickly analyse the sentence and perform a whole string of your commands. Just another feature designed to maximise your enjoyment of these world beating games!



The "New style" MYSTERIOUS ADVENTURES are currently available for the 48K SPECTRUM, COMMODORE 64. More releases are planned this year which will include DRAGON 32, ORIC-1, APPLE II & IIe, ATARI LYNX, MATTEL AQUARIUS, IBM PC etc. Please write or phone for availability.

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# Confessions of an old whizz-kid

One of the problems of making it in the software business is that you no longer have time to write programs. Don Priestley had gone home for a peaceful afternoon's programming on dk'tronics forthcoming "all-



**Don Priestley** — an evening class started him on a new career

singing, all-dancing animated picture puzzle", away from the interruptions of the office.

No sooner had he sat down at the keyboard than HCW interrupted him. It would never have happened in the early days.

dk'tronics started life in a back bedroom in Great Yarmouth. David Heelas, dk'tronics' managing director, used to make ZX80 and ZX81 add-ons and memory expansion units in the time he had to spare from running a one-man car repair business. Gradually, the demand for add-ons grew, and the computer business started to take over from the car repairs.

In 1981, David Heelas became aware that though computer add-ons sold well, the demand for software was even greater. He'd written a couple of ZX81 programs himself, and started to commission software from freelance software writers. And that was how he met up with Don Priestley.

David Priestley had been a teacher until, as he remembers it, "one happy day in 1975 I just stopped." He did various odd jobs, including selling double glazing door to door, then finally

## Candice Goodwin heard how a car-repairer and a double-glazing salesman became directors of dk'tronics



**David Heelas** — his software business developed from selling ZX81 add-ons

questions about 3D Tanx, and he turned out to be from Smiths. The number of tapes he wanted for his first order — 4,000 — came to more than all the tapes we'd then sold by mail order."

By then, David Heelas had a business that was growing almost in spite of himself. "He's first and foremost an entrepreneur rather than a businessman", according to Don, "but he was told that his business would have to be put on a firm footing." So he decided to move from Great Yarmouth to the rather less inaccessible Saffron Walden, and asked Don to move down from Lancaster and join him full time.

Don is now software director, supervising dk'tronics' two in-house programmers Andy French and Paul Johnson, as well

old whizz kid", Don reckons that on the whole, young means good as far as games programming is concerned. "Young people do tend to be better. We've got a 15-year-old programmer who can do a program conversion in about a week."

He also has to take care of program evaluation. "We get about four programs a day to evaluate. It's the middle-of-the-road ones that take the most time."

Though dk'tronics now has 46 software titles, for the Spectrum, BBC, Commodore 64, Atari and VIC-20, about half the titles are for the Spectrum. But the company is bringing out some of its Spectrum best-sellers, like 3D Tanx and Dictator, for the BBC and Commodore 64 too. And Don says that dk'tronics has got "a first" for all the machines but the Atari. "It's a puzzle called Slicker which is as simple but as complex as the Rubik's Cube."

Now dk'tronics is looking around for the next computer to back with a software support, but it's not an easy decision. "It's a chicken and egg situation", Don says.

"Machines have failed because of lack of software support, but on the other hand we don't want to write software for a machine that isn't a good seller. We've approached manufacturers and manufacturers have approached us, but we're still making our minds up — it'll take a major commitment."

# dk'tronics

got interested in computing after a computer evening class he attended, "to show willing", with his son. He invested £100 of his unemployment money in a ZX81, in kit form, and a RAMpack, and started to write programs.

One of his early ZX81 programs was Mazogs. Bug-Byte got that one, but dk'tronics was one of the companies in the bidding, and Don subsequently wrote several ZX81 and Spectrum programs for David Heelas, including 3D Tanx and Dictator. "I didn't even see him for nine months, because I was living in Lancaster and he was in Great Yarmouth", Don recalls. "We actually met for the first time at a ZX Microfair in September 1982."

That Microfair also marked dk'tronics' entry into chain store sales. Don recalled: "This bloke came along and started asking

as 20 or so outside programmers. Though he describes himself as "the wrong side of 40 — a sort of



**Programmers Andy French**



**... and Paul Johnson**

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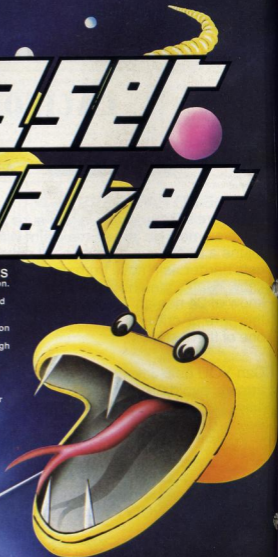
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