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An Argus Specialist Publication  
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### Joystick with new tricks

A new idea in joysticks came about almost by accident. The result is Trickstick, available for the Spectrum at the end of the month from East London Robotics. Designer Mark Vellacott — who runs the company with his brother Roger — made a prototype of a mechanical joystick designed to last longer. For fast action and greater control he used phototransistors progressively shielded from a light emitting diode.

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### Cash crisis causes club to crash

The Microcomputer Software Club, set up to offer cut-price quality software to its members, has closed down due to cash problems. John Durrant, co-director of the company that ran it, said: "The club got far bigger than we anticipated and required investment which we could not raise." The club had been running for about eight months and had 32,000 members on its computer. Mr Durrant said: "They are still pouring in daily, which is very frustrating. I should think we'll end up with about 40,000." "It's not really possible to

Continued on page 3

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*Continued from front page*

write to each of our members individually — it would cost £4,000. We want to apologise to them for closing the club and say that we still hope to find some means of re-starting it."

Mr Durrant and Dr Roger Bilboul are co-directors of Yewacre and met through their jobs in book publishing. Mr Durrant said they had been looking at the possibility of a book club for some time and their children's interest in home computers encouraged them to set up a "book club" for computer users.

The Microcomputer Software Club sent a 48-page magazine to its members called Soft Words in which a team of reviewers rated software. Products which reached six out of 10 or more were offered at a 10 per cent discount and the highest-rated program was reduced in price by 20 per cent.

He said: "We are still selling software and we are planning to publish the reviews in book form. And we are still looking at software publishing."

He said: "It was going quite well with a small trading income but it was not paying the interest back. We had a stock of several thousand cassettes and the orders came in very slowly in July and August — half the usual amount."

"It was enough to take what cash we did have. We could have seen it through, but the poor summer neatly hit us for six."

"We did not foresee the expansion. We thought we would get 10,000 members in the first three months. In fact it was 10,000 in three weeks."

"We miscalculated. We have both worked 24 hours a day for the last nine months and we have lost money. It started small and grew and grew like Topsy."

"We have had a few investors look at it, but the amount of money needed would be £¼m."

"We have not given up hope of finding money. We are hoping that some parts can continue trading and find someone who wants to run it as a joint venture."

Although Yewacre would continue, Mr Durrant said they had been so busy with the club there had been no time for other activities.

*Microcomputer Software Club, Yewacre, A.R.C. Industrial Site, Besselsleith Road, Abingdon, Oxon*

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● ZX81 owners: there are two programs for you to type in. They're on pages 9 and 14



● After the show was over... read our two page Microfair report. It starts on page 40



● What has drink to do with computers? Michelle Brant is toasting the success of her show stand



● She's trying a new game for the BBC micro. Find out about them on page 7

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## READ-OUT



Continued from front page

## Joystick

While working on it he began playing with the device by shielding the phototransistors with his fingers — and it worked.

The production version of the Trickstick, which is about a foot long, has four phototransistors.

When gripped, the thumb moves between the two on the top for left-right movement and the index finger controls two more for up and down. There are two fire buttons.

The Vellacott brothers say Trickstick, priced at £28, allows proportional speed control as well as greater accuracy when playing computer games.

It is compatible with software that uses Kempston-type joysticks and up to eight players can take part at one time.

A third brother has produced a device which shows heart-beat and body temperature on screen with the Spectrum.

Clive Vellacott, 38, a consultant anaesthetist, said: "People are interested in the way they

function."

Tickertracer, also due out by late this month, consists of a module which plugs into the back of the Spectrum and three electrodes for wrists and body.

It picks up the heart's tiny electrical signals and amplifies them enough for screen display. To show temperature, one of the probes is placed in the armpit.

Dr Vellacott said the only connection with the Spectrum was an infra-red beam inside the module — which made Tickertrace safe to use.

He said: "It's obviously not a full medical diagnostic electrocardiograph — the ones I use cost £1,000-plus — but it will be of general interest."

Tickertracer, costing £39, will come with educational and health-monitoring software which, says East London Robotics, will teach users about how the heart works and enable them to compare week by week how the heart responds to exercise.

*East London Robotics, No. 11 Gate, Royal Albert Dock, London E16*



## Search with Chris

School leaver Chris Cannon is writing an adventure for the 48K Spectrum which he says will be even harder than his first, *The Castle*.

Chris, 16, who had just joined Liverpool software house Bug-Byte, wrote *The Castle* while still at school.

It has 30 rooms to search through, but his new program has around 100 through which players have to search to find and piece together a staff for an alchemist.

Bug-Byte is bringing out games for the Commodore 64 from the end of October. The first will be a

re-written version of its *Manic Miner*, at present available for the Spectrum.

It is a multi-level cavern game in which *Miner Willy* faces hazards like mutant telephones, killer penguins and man-eating toilets.

At the end of this month Bug-Byte is launching two £5.95 arcade games for the Spectrum — *Cavern Figher* and an as-yet unnamed racing game — and a graphics and text adventure for the BBC micro, costing £9.50.

*Bug-Byte, Mulberry House, Caning Place, Liverpool L1 8JB*

## The mouse that will roar victory?

The two-wheeled box held by these three 15-year-olds is one of the UK hopefuls off to Madrid next week.

It is one of our entries in the European micro-mouse competition in which computer-controlled devices have to make their way through a maze.

This one is sponsored by CRL. The black-painted metal box is

4½in square, sports the CRL logo proudly on its side and travels at 5mph.

The makers are (from left), Eddie Forrester, Mike Geaney and Jay Derrett, along with Andy Dukes and Matthew Hampson.

Inside the box is a 4K EPROM — the printer listing in hex stretches for more than 20ft — a 4K static RAM chip which memorises where it has been, a Z80A processor and a sound synthesiser for the victory tune.

*CRL, 140 Whitechapel Road, London E1 1EJ*



## Hunch that turned sour

Manchester-based arcade machine specialists Century Electronics is waging a war against home-computer lookalike versions of its games. And the first casualty is Manchester firm Mr Micro.

Century said that a game Mr Micro was about to release, *Hunchy*, was a copy of its own game *Hunchback*.

Based on the story of the *Hunchback of Notre Dame*, the game involve rescuing the heroine, *Esmerelda*, from the clutches of *Quasimodo*.

Now Mr Micro has agreed to withdraw *Hunchy*, to place no further ads for it, and to destroy all copies of the artwork and the game. But Jim Gregory was unrepentant.

He said: "Hunchy did involve a hunchback and a maiden, but it's got different controls and a different scoring system. It's got extra features like catching hearts and leaping on to flying carpets.

"Our solicitors said we had a 99 per cent chance of preventing the injunction that Century took out against us, but it would have cost us thousands of pounds to do it. We're a small firm, and we don't have the time or the money to fight the case.

"We're sorry to have to disappoint the dealers and customers who were waiting for the game, but we will soon be able to offer them another game equally if not more enjoyable than *Hunchy*."

David Jones, managing director of Century, said: "The people who copy arcade games for home computers have had a heyday, but if we see anybody making a copy of any of our games we'll stop them.

"Home computer copies of our games could lose us a lot of business. It's hypothetical, of course — I don't know if it would damage us. But it might.

"Though we only produce games for arcade machines, we're currently talking to two companies who we'd like to produce *Hunchback* for us under licence for home computers."

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# Race for Electron add-ons

**Competition is hotting up to be among the first with software and peripherals for Acorn's new Electron. Paul Liptrot reports**

It looks as if the race to provide the most-missed feature of Acorn's new Electron will be won by Cardiff-based Sir Computers.

In about four weeks — well ahead of Acorn — the company promises a Centronics-type parallel printer interface, costing around £30.

A prototype was on Sir's stand at the Acorn User show, but the finished version will be a slim unit designed to fit neatly into the rear of the Electron.

House in the same unit will be a four-channel analogue-to-digital interface for joysticks and other peripherals.

Sir has two more Electron products due out in the middle of next month.

A ROM board will have space for about eight ROMs, allowing the use of chip-based software like word processors and spreadsheets.

And Sir's teletext adaptor will add display mode 7, omitted when the Electron was designed as a "cut down" BBC micro.

The Electron, priced at £199, was officially launched at the show along with 12 tapes, ranging in price from £9.20 to £11.50, by the company's software arm, Acornsoft.

Cliff Michelmore and Wendy Craig were at the press launch — sitting outside a mock house — to promote the Electron as a useful micro for the home.

In another move to promote the new computer, Acorn is sponsoring race driver David Hunt, 23, for a year in a £90,000 deal.

The money is intended to take Hunt, brother of ex-world champion James, into the British Formula Three Championship. He will be driving the Acorn-sponsored Ralt RT3 for Eddie Jordan Racing. With five cars and drivers it is said to be the largest Formula Three team in the UK.

Acorn, now a £42m company after five years, intends also to develop a computer model of European racetracks.

The Electron, with 32K of RAM and 32K of ROM holding the BASIC interpreter, is based on a 2MHz6502 processor — like its parent, the BBC micro, and others — and has a 56-key typewriter-style keyboard. Ten of them are also user-definable and there is single-key entry for key words in the same BASIC as the BBC micro.

Cassette loading is at 1,200 baud and there is a built-in loudspeaker.

● In another promotional exercise, Acorn prepared a special cocktail called Electron Fizz, which uses the company's colours, green and white. It com-

prises one-tenth of a bottle of Champagne, one-sixth gill midori (melon liqueur), one-third gill brandy, one-third gill Cointreau. Melon balls should be placed in the bottom of the glass and the rim sugared.

Simon Vout, who runs **Software Invasion**, finished his latest game just in time for the show. Attack on Alpha Centauri, priced at £7.95, features giant wasp-like beings swooping over a barren landscape.

Mr Vout, 28, who trained as a musician, says he got many of his ideas while sitting practising at the Royal College of Music.

**Program Power**, trading name of Micro Power, showed its first tapes featuring a new character called Felix — as announced in Home Computing Weekly. The company said it had gained £50,000-worth of software orders at the show.

Educational specialists **LCL** brought out two more cassettes, at £5.50 for the BBC micro and the Electron, called **Picture Puzzles** and **Million Mazes**.

The **BBC** itself has a new range due out at the end of the month, including **Dr Who: The First Adventure** (£10), a graphics game; an enhanced version of the **White Knight** (£11.50) chess program; **VU-Type** (£16.10), a touch-typing tutor; and **Record Keeper** (£13.80), aimed at householders and small businesses.

**RH Software** launched seven games cassettes — including two which contain three games — and a £45.95 light pen.

A selection of new products for the BBC micro was shown by **Watford Electronics**: a 13-ROM socket board for £35; the **Beebplotter** graphics tablet (£75); a ROM-based machine code monitor called **Beebmon** (£22); the **Beeb Speech Synthesiser** (£39); and **Disc Filing System 1.1** at £42. Coming soon: **Disc-Fix**, a

ROM for £19 designed to recover data from corrupted discs.

Publishers **Addison-Wesley** were quick off the mark with three books for the Electron: **Start Programming with the Electron**, **The Electron Book: BASIC**, **Sound and Graphics and Assembly Language Programming on the Electron**.

**Cambridge Microcomputer Centre** showed its **Advanced User Guide** for the BBC Micro, costing £12.95 and written by three members of Cambridge University.

Video tapes on the Electron and BBC micros have joined the range from **Master Clas Video Cassettes**. Designed to teach programming, they are presented by David Redcliff, who has been training programmers for 12 years.

**AB Designers**, run by former graphics designer Alan Burns, offered two sophisticated drawing programs, each incorporating more than 80 functions, for the BBC micro. One version, costing £35 on cassette runs in Mode 1 and the second, at £50.50 on cassette or £60.00 on disc, uses modes 0, 1 and 4.

**Battlezone Six** is a new space game costing £9.50 from **Kansas City Systems**.

And **Deskflair** produced a 3D graphics adventure called **The Quest** (£8.50) and an arcade game, **Bandits**, at £5.50. **Asky had Adlab** (£10), an address label and filing program, and **Cashbk** (£8), a cashbook program.

Eighteen-year-olds Chris Butler and Marcus Altman, who have just left school after "A"-levels, were up until 4 am making duplicates of their games for their first public appearance as **SoftSpot**.

Marcus said: "We managed to get a bank loan to get going. It took a long time and it's not very much."

"But we've got lots of ideas for

more games and there are two more coming for Christmas. We are hoping to bring out two every two months."

Chris wrote **Transistors Revenge** and Marcus produced **Heist** and both tapes cost £6.95.

Another new name in software is **Alligata**, which grew out of Sheffield computer dealers and duplicating house **Superior Systems**.

Managing director Mike Mahoney said the company had five full-time programmers and had spend £20,000 so far on setting up Alligata. He said: "We've been writing for more than six months so we would have a reasonable selection before release."

The company launched 11 BBC titles — a mixture of utilities and games — two for the Dragon and six for the Commodore 64. More are due out this week.

Two new adventures, **The Five Stones of Anadon** and **The Eye of Zolton**, costing £7-£8, are due out soon from **Brainstorm**, along with cribbage at about the same price.

**Kay-Dee** brought out **Millipede** and a maze game called **Up Up and Away**, both at £8.50, and is soon to launch a 3D adventure called **Tutankhamen**, at £10-£12, which will come with 3D glasses.

**Broadway Electronics** had a £4.95 tape called **Broadway Boogie and Classics** which plays **Boogie Boogie**, **Air on a G String** and a prelude by Bach, all accompanied by graphics.

## Where to find them

**Sir Computers**, 91 Whitchurch Rd, Cardiff; **Acorn Computers**, Fulbourn Rd, Cherry Hinton, Cambridge CB1 4JN; **Software Invasion**, 50 Elborough St, Southfields, London SW18 5DN; **Program Power**, 8/8A Regent St, Chapel Allerton, Leeds LS7 4PE; **LCL**, 26 Avondale Ave, Staines, Middx; **BBC Publications**, P.O. Box 234, London SE1 3TH; **RH Electronics (Sales)**, Chesterton Mill, French's Rd, Cambridge CB4 3NP; **Watford Electronics**, Cardiff Rd, Watford, Herts; **Addison-Wesley**, 53 Bedford Sq, London WC1B 3DZ; **Cambridge Microcomputer Centre**, 153-4 East Rd, Cambridge; **Master Class Video Cassettes**, 172 Finney La, Heald Green, Cheadle, Cheshire; **AB Designs**, 81 Sutton Common Rd, Sutton, Surrey SM1 3HN; **Kansas City Systems**, Unit 3, Sutton Springs Wood, Chesterfield, S44 5XF; **Deskflair**, 71 Woodlands Rd, Hertford, Herts SG13 7JF; **Asky Computing**, 49 Sunydale Ave, Selsdon, Surrey CR2 8RR; **SoftSpot**, 29 South Cres, Prittlewell, Southend, Essex SS2 6TB; **Alligata**, 178 West St, Sheffield S1 4ET; **Brainstorm**, 103A Seven Sisters Rd, London N7 7QN; **Key-Dee**, 27 City Rd, Stoke-on-Trent; **Broadway Electronics**, 1 The Broadway, Bedford.

# Spectrum games for you to think over

**There's no shortage of Spectrum action games, but reflective types aren't left out either**

## Timeline/ Tasks £4.95

Gilsoft, 30 Hawthorn Road, Barry, South Glamorgan CF6 8LE

The first part of this two game package is Timeline, an adventure game where you are a time traveller who must trace your

Time Machine in order to return to the present.

The adventure is presented in screen text with no pictures. You converse with the computer by two word verb/noun phrases; more than two words and you risk misunderstanding.

The vocabulary is quite large and the game represents an interesting introduction to logical thinking, e.g. how can you use the sword if you haven't picked it up yet? In my first few games I

managed to die in several different interesting ways!

On seeing that Tasks was yet another maze game my first reaction was to groan but it is rather different in concept.

Basically you move through the maze to collect treasure whilst avoiding stinging thorns. But the difference is that from time to time the Taskmaster threatens your progress until you

have successfully completed an exercise in mental arithmetic, word puzzle, "Simon says", etc.

	<b>D.J.</b>
instructions	75%
playability	75%
graphics	60%
value for money	80%



## Vanquisher 48K £5.20

Elephant Software, 41 Haymill Road, Burgham, Berks SL1 6NE

With a name like Vanquisher you might expect a dramatic combat game, or maybe a blood-thirsty adventure, but this game is more original than either of these.

Its idea is quite simple. The word 'vanquisher' is anagrammatised and the player has to re-order the letters correctly. However, only one letter at a time can be moved, and letters have to be guided through a complex network of routes and boxes.

I was not able to solve the puzzle. But I'm afraid the real reason for not doing so is that I found it tedious.

Undoubtedly the idea is excellent. Presentation also is good. But response time is terribly slow, and messages are flashed up too quickly. Though error trapping is good, actual manipulation of the keyboard is minimal and unexciting — you don't feel as if you are involved in the game, and the task of completing it does not seem worth the effort.

All in all it feels like a game better played with pencil and paper, like many word and maze games. The average player does not have the motivation to be patient with a game like this. N.W.

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



## Detective £6.50

ASP Software, 145 Charing Cross Road, London WC2H 0EE

Board gamers will find Detective familiar. Throw computer dice, move round room grid, guess whodunnit, where, how and why, deduce solution from yes/no answers.

A code system stops opponents 'reading' your guesses, previous guesses are displayed each turn and one to six can play on two levels: Y/N answers in category order or Mastermind style. In the latter you're told how many guesses are correct but not which.

You can take less than the number of moves indicated by the dice throw, force guessed op-

ponents to jump rooms, but must reach the correct room before you can declare the solution.

Rooms are 'uncoded', so a 'yes' is readable by everyone. All players are Innocent Suspects, always allocated in the same order, which gives old hands an advantage. Daggers are duplicated in the weapons list.

A facility to input your own fictional detective name would provide more interest and allow a greater permutation. Initially great fun, but not a long lasting favourite.

	<b>D.C.</b>
instructions	90%
playability	70%
graphics	60%
value for money	70%



## Corn Cropper 48K £5

Cases Computer Simulations, 14 Langton Way, London SE3 7TL

In this excellent game you are a small farmer trying to make your farm worth £¼ million.

You estimate each month the effects of frost, drought, labour

costs etc and decide whether to plant harvest, buy or sell on the basis of weather forecasts and farm and financial progress.

These are clearly displayed each month with advice on the implications of your choices, and a monthly summary shows what you have done to your farm and your bank account.

The displays are very good,

and even the detailed and realistic financial information is easy to follow.

The program is a model user-friendly game, loads easily, has clear on-screen and insert instructions, optional sound, is well mug-trapped and allows restart without loss of the game.

The excellent presentation and five levels of difficulty make it

good fun to play whether you want to think everything through or just have a go. Recommended.

	<b>H.C.</b>
instructions	100%
playability	90%
graphics	60%
value for money	85%



## Backgammon £5.95

Hewson Consultants, 60a St Mary's Street, Wallingford, Oxon

My heart sank when I found that I had to review this game. I know how to play Space Invaders, but Backgammon is intellectual!

Not only the program instructions, but also the object and rules of the game have been fitted on to the cassette insert. You can play a single game or a series, or even bet money.

I decided to have a go after watching the demonstration mode first. It frightened me to death! It was so fast that I couldn't see who was doing what, to whom and with what! I took the plunge and started a single game.

Now some critics say that there isn't any point in putting board

games on a computer. You can buy the game for less than the program. That may be so, but you'll never find an experienced player as patient as your Spectrum and one who will explain your mistakes in such detail.

At the same time, as you gain in skill and cunning you can raise the level of play. What more could you want?

This game could be criticised for not having ultra-mega-amazing graphics and sound, but these are more than made up for by the skilled programming that prevents you from crashing the game and breaking the rules.

	<b>D.M.</b>
instructions	100%
playability	95%
graphics	60%
value for money	95%



# It's fast, tough and mean . . . you'll really earn your booty

Caverns of Marz must be the fastest, toughest, meanest lander game ever written in ZX81 Basic.

It needs 100 per cent concentration and allows the player unique customising. It is surprising that the game is not sluggishly slow. And with four on-screen gauges this game is very addictive.

The object is to smuggle 20 intergalactic freighters onto the planet Psorbia, laden with weapons to support the Psorbian Rebels.

### How it works

- 5 clear screen
- 20-60 main variables
- 70-160 choose keys and gravitational power
- 170-180 clear screen and go into fast mode
- 190-400 draws screen display (landscape, fuel pods, space mines, shaft, fuel gauge and goes into slow mode)
- 410 gauges Note: 31 spaces between quotes

However, the Psorbian police are cracking down on your little operation and have laid space mines which hover in the atmosphere.

You must land each waiting ship down a shaft just the width of your ship avoiding the perilous rocks beneath you.

When the game has been typed in and RUN has been executed, the ZX81 asks you to choose your own control keys for up, left and right. You ship will move down automatically.

The speed of the craft's descent is controlled by inputting the planet's gravitational power. Five is idiot speed, 10 is average, 15 is impossible. Then the fun starts.

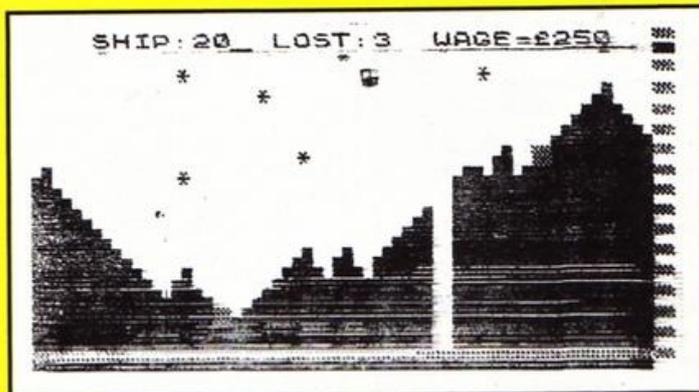
To draw the landscape of space-mines, ground and the perilous shaft, the ZX81 goes into fast mode. I have included a typical screen display.

Your ship will start at the top of the screen and work its way down according to the gravitational power you have input, and steered according to your chosen keys.

If a chosen key is pressed (e.g. right), your ship will keep moving in that direction until another is pressed. At first it will seem impossible to make the ship descend vertically down, permitting a safe landing.

If you land your ship successfully you are awarded £50 bonus plus money back on the ra-

**You're cast as a space smuggler in M. P. Hargreaves' Caverns of Marz game for the 16K ZX81. You might win a bonus . . . or blast yourself into oblivion**



How the screen looks during a game

```

5 CLS
10 REM CAVERNS OF MARZ          BY
M.P.HARGREAVES JUN.83.
20 LET A=10
30 LET B=20
40 LET C=250
50 LET D=3
60 LET D$=""
70 PRINT AT 4,7;"ENTER KEY FAC
ILITY"; AT 6,14;"UP"
80 INPUT A$
90 PRINT AT 6,13;"LEFT"
100 INPUT B$
110 PRINT AT 10,13;"RIGHT"
120 INPUT C$
130 PRINT AT 13,8;"GRAVITY STRE
NGTH"; AT 14,12;"(5 TO 15)"
140 INPUT E
150 IF E<5 OR E>15 THEN GOTO 14
160 LET E=E/10
170 CLS
180 FAST
190 FOR F=0 TO A
200 PRINT AT RND*11,RND*30;CHR$
23
210 NEXT F
220 LET G=13
230 FOR H=0 TO 30 STEP 1
240 LET I=INT (RND*30)
250 LET G=G+(I>15 AND G<18)-(I<
15 AND G>1)
260 IF I>15 THEN PRINT AT G,H;C
HR$ 130
270 IF I<15 THEN PRINT AT G,H;C
HR$ 129
280 IF I>20 THEN PRINT AT G,H;C
HR$ 8
290 FOR J=20 TO G+1 STEP -1
    
```

### Hints on conversion

The ZX81 has a 32 by 21 screen area. FAST moves the ZX81 into a mode four times faster, but loses the screen-display.

I have used CHR\$ to avoid printing errors. You may use your own, or maybe put in some user-defined-graphics.

The variable P makes the ship hit obstacles. POKE 16424,35 makes the screen display shudder. Take out the surrounding FOR-NEXT loop and replace with your own explosions.

maining fuel. The ZX81 will then go into fast mode and draw another random landscape, increasing the number of space-mines and giving one less ship to land.

However, if your ship hits a space-mine or crashes on the rocks the whole screen will shake violently with explosions.

At the top of the screen you will be told what happened. You will then lose one life from a total of three, have £50 deducted from your wage and return to complete the landing. The same applies when you run out of fuel, except you lose £70 and a new screen is drawn.

You have four gauges to monitor at the top of the screen: SHIP tells you how many more ships you must land. LOST tells you how many lives you have left. WAGE keeps track of your earnings and spending.

The fuel gauge is in the form of a vertical bar on the right hand side of the screen. Your fuel is constantly diminishing, but to completely re-fuel you must hit a fuel pod. They are randomly scattered across the planet's surface.

At the end of the game the ZX81 neatly displays your wage and asks if you wish to play again.

To begin with you will find this game very hard, but after three or four attempts it becomes more interesting and addictive.

### Variables

- A quantity of space-mines (10)
- B ships to land (20)
- C wage to begin with (£250)
- D lives (3)
- E select gravitational power — you also choose A\$, B\$ and C\$
- M total fuel (21)
- N height of ship (1)
- O horizontal axis of ship (random)
- P routine to hit obstacles
- ES Yes/No facility at end of game

## ZX81 PROGRAM

```
300 PRINT AT J,H;CHR$ 126;AT 21
H;CHR$ 136
310 NEXT J
320 NEXT H
330 FOR K=20 TO 0 STEP -1
340 PRINT AT K,I;CHR$ 0
350 NEXT K
360 SLOW
370 FOR L=0 TO 21
380 PRINT AT L,31;CHR$ 9
390 NEXT L
400 LET M=21
410 PRINT AT 0,3;"SHIP:";B;TAB
12;"LOST:";D;TAB 20;"WAGE=£";C;A
T 1,0;"
";CHR$ 9
420 LET N=1
430 LET O=INT (RND*30)
440 PRINT AT N,0;
450 LET P=PEEK (PEEK 16398+PEEK
16399*256)
460 IF P=128 OR P=129 OR P=130
THEN GOTO 610
470 IF P=23 THEN GOTO 630
480 IF P=6 THEN GOTO 370
490 PRINT CHR$ 139;AT N,0;CHR$
0
```

```
500 IF INKEY$("<>") THEN LET D$=I
NKEY$
510 IF D$=A$ THEN LET N=N-2
520 LET N=N+E
530 LET O=O+(D$=C$)-(D$=B$)
540 IF N>=20 THEN GOTO 650
550 LET M=M-0.3
560 IF D$=A$ THEN LET M=M-0.3
570 PRINT AT M,31;CHR$ 0
580 IF M<0 THEN GOTO 670
590 IF D$="" THEN GOTO 440
600 GOTO 440
610 PRINT AT 1,6;"SMASHED ON TH
E ROCKS"
620 GOTO 690
630 PRINT AT 1,6;"YOU HIT A SPA
CE-MINE"
640 GOTO 690
650 PRINT AT 1,10;"GOOD LANDING
```

```
660 GOTO 760
670 PRINT AT 1,8;"RAN OUT OF FU
EL"
680 GOTO 820
690 FOR Q=0 TO 100
700 POKE 16424,35
710 NEXT Q
720 LET D=D-1
730 LET C=C-50
740 IF D=0 THEN GOTO 920
750 GOTO 410
760 LET B=B-1
770 LET A=A+0.5
780 LET C=C+50+M
790 IF B=0 THEN GOTO 900
800 PAUSE 100
810 GOTO 170
820 LET B=B-1
830 LET A=A+0.5
840 LET D=D-1
850 IF D=0 THEN GOTO 920
860 IF B=0 THEN GOTO 900
870 LET C=C-70
880 GOTO 170
890 CLS
900 PRINT AT 10,2;"ALL 20 SHIPS
LANDED SAFELY";AT 12,8;"YOUR WA
GE=£";C+M+20;AT 21,9;"AGAIN (Y/N
) ?"
910 GOTO 940
920 CLS
930 PRINT AT 5,6;"ALL SHIPS DES
TROYED";AT 7,10;"END OF GAME";AT
9,8;"YOUR WAGE=£";C;AT 14,9;"AG
AIN (Y/N) ?"
940 INPUT E$
950 IF E$="Y" THEN GOTO 5
960 GOTO 940
```

## ONE MAN'S VIEW

# Programmers of Britain, unite!

*As computer software becomes more and more complicated, the smaller firms in the computer business must be finding it difficult to compete.*

*Unless you launch yourself on to the unsuspecting market with flashy advertising in a blaze of publicity, your chances are very slim.*

*This may rid us of the 'here today — gone tomorrow' software companies, who are just in it for a fast buck, but it means that the programmer who is not happy with the deals some companies offer, such as being contracted to work for nobody else, and having to work 'in-house', is stuck.*

• • •

*The software houses themselves already have a group to watch over the trade, but who is there to watch over them? Of the programmers I have met, quite a few were interested in an independent software group for programmers. The group would not try and set programmers and software houses against each other, but rather make sure no-one is ripping anyone off.*

*I have heard of one software company that signed a programmer up on what seemed like a good deal, got him working in-house, and then proceeded to rip him off left, right and centre. If a programmer could go to an independent group in cases like this, the sharks of the software world would be soon found out.*

*The group could run along the same lines as the Computer Trade Association, but obviously the aims would be different. Meetings would be around the country, but membership would not be strictly necessary. The things the group could check up on could include contracts, rights and advertising.*

• • •

*I myself have written a number of books and have been very displeased with the contract and the amount of advertising. The book has not yet been advertised, or reviewed in any publication, and the publishers seem very complacent about it.*

*My contract also says that the publishers are supposed to account for the sales and pay my royalties 'no later than six months from the date of publication'. But the royalties are overdue, and the publishers say they will not be able to pay me till October.*

*I would not like to see this happen to anyone else so I am enthusiastic about the idea of a programmers group, which, incidentally, was not totally my idea, but rather an outcome of many frustrated programmers.*

**An author of home computer books and software**

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

# Save us from an alien invasion

How's your aim? Type in James Burton's game for the TI-99/4A and test your skill with a laser gun

### Variables

X,Y co-ordinates of alien  
 SC player's score  
 EN player's energy (1 to 40)  
 S pointer for which stars are shining  
 C pointer for which set of laser bolts can be seen  
 The arrays A(),B(),E(),H() and M() are used to try to speed the program up by making it unnecessary to check if the alien moves off the screen etc.  
 The array F() is not strictly necessary but is used to store the characters that are GCHARed. It is quicker to access this array than to use GCHAR more than once.

the left, making the stars and alien move right and pressing the equals key moves the turret to the right.

When the space bar is pressed four laser bolts are fired, hopefully smashing the alien into little pieces.

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

**CALL HCHAR** (row number, column number, ASCII code, number of repetitions) Places character on screen at row and column specified, and repeat it horizontally the number of times stated. If this fourth value is omitted then the character is displayed only once. The character used is the one whose ASCII code appears in the command.

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

**CALL GCHAR** (row number, column number, numeric, numeric variable) Equivalent of PEEK, assigns ASCII code of character at row and column stated to numeric variable.

**CALL CLEAR** Clears the screen  
**CALL SCREEN** (Colour code) Specifies screen colour, using colour code.

**CALL COLOR** (character set number, foreground colour code, background colour code) Specifies foreground and background colours for all characters in set stated.

**CALL SOUND** (duration, frequency, volume) Produces sound with duration, frequency, and volume specified. Duration is 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 INKEYS in other computers, returns code if key pressed in variable k.

In Earth Defence you control a high power gun firing laser bolts. In the night sky an alien flits around and it is your job to shoot it down.

When the program is run, your screen becomes the view from the gun turret.

Pressing 1 moves the turret to

### How it works

- 130-320 scan keyboard, move alien
- 330-450 move laser bolts, check whether alien is hit
- 460-640 give attractive display when alien is hit
- 650-690 decrease energy, check if there is no energy left
- 700-880 give attractive display when player has zero energy and then shows score
- 890-1760 this long section sets up the numerous arrays and user defined characters and explains the game's theme

```
100 DIM A(27),B(23),E(7,1),F(27,23),H(10),K(16),Z(1)
```

```
110 RANDOMIZE
120 GOSUB 900
130 REM MAIN ROUTINE
140 CALL KEY(C,K,T)
150 IF K=32 THEN 340
160 I=K*61-(K+49)
170 IF I=0 THEN 210
180 CALL COLOR(5,2,2)
190 G=5+INT(S*1)
200 CALL COLOR(S,B,2)
210 X1=KX+SGNK(E(D),X,5+1)
220 Y1=KY+E(D,1)
230 IF F(X1,Y1) THEN 250
240 CALL GCHAR(Y1,X1,F(X1,Y1))
250 CALL HCHAR(Y,X,F(X,Y))
260 CALL HCHAR(Y1,X1,40+D)
270 X=X1
280 Y=Y1
290 D=D+RND-.7
300 D=D+H(D+1)
310 IF RND<.2 THEN 660
320 IF J THEN 390 ELSE 140
330 REM FIRE ROUTINE
340 CALL COLOR(C,2,2)
350 CALL SOUND(-300,220,0,222,0)
360 J=1
370 C=4
380 I=0
390 CALL COLOR(C,2,2)
400 CALL COLOR(C-1,2,2)
410 IF ABS(F(X,Y))-C*8-20.5 X<4.5 THEN 470
420 C=C+1
430 IF C<8 THEN 210
440 J=0
450 GOTO 660
460 REM ALIEN HIT
470 SC=SC+1
480 IF EN<33 THEN 500
490 EN=33
500 EN=EN+6
510 G=INT(EN*.25)
520 CALL HCHAR(24,12,156,G)
530 CALL HCHAR(24,12+G,152+EN-4*G)
540 CALL SOUND(-2000,-7,0)
550 IF C=7 THEN 570
560 CALL COLOR(C,2,2)
570 FOR L=1 TO 20
580 CALL COLOR(2,2,16)
590 CALL COLOR(2,16,2)
600 NEXT L
610 CALL HCHAR(Y,X,F(X,Y))
620 GOSUB 1720
630 J=0
640 GOTO 210
650 REM DECREASE ENERGY
660 EN=EN-1
670 G=INT(EN*.25)
680 CALL HCHAR(24,12+G,152+EN-4*G)
690 IF EN THEN 320
700 REM NO ENERGY LEFT
710 FOR L=1 TO 100
720 G=RND*15+1.5
730 CALL COLOR(RND*16+.5,G,G)
740 CALL SOUND(-500,G*100+110,0)
750 NEXT L
760 CALL CLEAR
770 FOR L=2 TO 7
780 CALL COLOR(L,2,16)
790 NEXT L
800 PRINT "SCORE:"
810 FOR L=1 TO SC/10
820 CALL HCHAR(25-L,12,40,10)
830 NEXT L
840 CALL HCHAR(24-INT(SC/10),12,40,SC-10*INT(SC/10))
850 FOR L=1 TO 2000
860 NEXT L
870 GOSUB 1390
880 GOTO 140
890 REM INITIALIZATION
900 CALL CLEAR
910 CALL SCREEN(0)
920 PRINT " ** EARTH DEFENCE **" "SHOOT DOWN THE ALIENS USING YOUR HIGH POW ER ACK-ACK GUN"
930 PRINT "1-ROTATE GUN LEFT" "0-ROTATE GUN RIGHT" "SPACEBAR-FIRE" "WATCH YOUR E NERGY BANK"
940 INPUT "PRESS ENTER TO PLAY." A$
950 CALL CLEAR
960 FOR L=3 TO 22
970 A(L+4)=L+4
980 B(L)=L
990 NEXT L
1000 K(6)=7
1010 K(27)=26
```

```
1020 B(2)=3
1030 B(23)=22
1040 E(0,1)=-1
1050 FOR L=1 TO 7
1060 E(L,0)=SGNK(E(L-1,1)+E(L-1,0))
1070 E(L,1)=SGNK(E(L-1,1)-E(L-1,0))
1080 NEXT L
1090 H(9)=8
1100 H(9)=8
1110 H(10)=8
1120 K(16)=8
1130 K(7)=8
1140 FOR L=40 TO 80 STEP 8
1150 CALL CHAR(L,"000001000040201")
1160 CALL CHAR(L+1,"0102040810204080")
1170 NEXT L
1180 Z(0)=""
1190 Z(1)=""
1200 FOR L=80 TO 144 STEP 8
1210 CALL CHAR(L,"000001018")
1220 CALL CHAR(L+1,"0000103030318")
1230 Z(0)=Z(0)+CHR(L)
1240 Z(1)=Z(1)+CHR(L+1)
1250 NEXT L
1260 Z(0)=Z(0)+Z(0)+Z(0)+Z(0)
1270 Z(1)=Z(1)+Z(1)+Z(1)+Z(1)
1280 DATA 1010303020408202,80607E2120202010,00030438F0300403,10202020217E6080,41
4122141C108009,00840404047E0601
1290 DATA C0201C0F1C20C0,01067E8404040409
1300 FOR L=40 TO 47
1310 READ A$
1320 CALL CHAR(L,A$)
1330 NEXT L
```

```
1340 DATA 00,C0C0C0C0C0C0C0C0,C,F0F0F0F0F0F0F0F0,F,CFCFCFCFCFCFCFC,FFFFFFFFFFFFFF
FF
1350 FOR L=152 TO 156
1360 READ A$
1370 CALL CHAR(L,A$)
1380 NEXT L
1390 RESTORE 1400
1400 DATA 0,16,2,2,2,2,0,0,2,2,2,2,2,2,2
1410 FOR L=1 TO 15
1420 READ G
1430 CALL COLOR(L,G,2)
1440 NEXT L
1450 CALL COLOR(16,7,10)
1460 CALL CLEAR
1470 FOR L=1 TO 12
1480 G=RND
1490 J=INT(RND*4+10)
1500 Z(0)=SEG(Z(0),J,20)+SEG(Z(0),1,J-1)
```

```
1510 PRINT TAB(3);Z(0);
1520 NEXT L
1530 CALL VCHAR(23,20,31,196)
1540 CALL VCHAR(23,5,31,4)
1550 CALL VCHAR(23,6,31,2)
1560 CALL VCHAR(1,27,31,2)
1570 CALL VCHAR(23,27,31,4)
1580 FOR L=3 TO 7
1590 FOR G=0 TO 1
1600 G=L*2+0
1610 CALL HCHAR(G-3,G+1,L*8+24)
1620 CALL HCHAR(G-3,32-G,L*8+25)
1630 CALL HCHAR(20-G,G+1,L*8+25)
1640 CALL HCHAR(20-G,32-G,L*8+24)
1650 NEXT G
1660 NEXT L
1670 SC=0
1680 EN=40
1690 CALL HCHAR(24,12,156,10)
1700 B=0
1710 J=0
1720 D=INT(RND*8)
1730 F(16,12)=80
1740 X=16
1750 Y=12
1760 RETURN
```

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## ZX81 PROGRAM

```

68 IF B$=" " THEN GOTO 2500
69 IF C$="C" THEN GOTO 2000
70 PRINT AT X,Y;"C";AT XX,YY;"
#(XX-3,YY-7)
75 GOTO 3000
76 IF Y=YY THEN GOTO 4500
77 GOTO 4500
78 IF XX=X AND YY=Y THEN GOTO
80 8000
79 IF X=XX AND Y=YY THEN GOTO
80 8000
81 PRINT AT X,Y;"C";AT XX,YY;"
90 GOTO 40
1500 LET PO=PO+16
1510 LET SC=SC+(SK*5)
1520 GOTO 67
1530 IF PO>=1 THEN GOTO 2250
1540 LET LI=LI-1
1550 IF LI=0 THEN GOTO 5000
1560 LET Y=9
1570 PAUSE 300
1580 CLS
1590 LET X=9
1600 LET K=0
1610 LET YY=22
1620 GOTO 15
1630 LET SC=SC+(SK*10)
1640 LET XX=7
1650 LET YY=22
1660 GOTO 81
1670 LET LI=LI-1
1680 IF LI=0 THEN GOTO 5000
1690 LET X=9
1700 LET Y=9
1710 GOTO 40
1720 IF INT (RND*SK)=0 THEN GOTO
1730 7
1740 LET XX=XX-(X<XX)+(X>XX)
1750 IF INT (RND*SK)=0 THEN GOTO
1760 7
1770 LET YY=YY-(Y<YY)+(Y>YY)

```

```

4520 GOTO 81
5000 PRINT AT 18,19;"0"
5010 PRINT AT 20,0;"FOR ANOTHER
GO PRESS ""A"" OR ""Z"" TO FINIS
H"
5020 IF INKEY$="Z" THEN GOTO 999
5025 IF INKEY$="A" THEN GOTO 504
5030 GOTO 5020
5040 CLS
5050 GOTO 3
7000 LET SC=SC+1..
7010 LET K=K+1
7020 IF K<92 THEN RETURN
7030 LET SC=SC+(SK*50)
7042 LET YY=22
7044 LET X=9
7046 LET Y=9
7048 PAUSE 300
7050 GOTO 13
9999 STOP

```



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# You can count — and spell — on your micro

Four programs designed to teach arithmetic, and one for improving English.

## Number Puzzler BBC 32K £9.95

ASK, London House, 68 Upper Richmond Road, London SW15

Another maths educational program, I groan as I open the box. This one is certainly glossier than most and has better instructions than most too.

But what of the program? Does it do anything which we could not do otherwise or does it improve vastly on the presentation of something we have done for years? The short answer to both these questions is a blunt no.

Based on a game of numerical noughts & crosses, the games are meant to encourage addition and subtraction. You are given two numbers and can either place

## Hot Dot Spotter Spectrum £7.95

Longman/Micromega, Longman House, Burnt Mill, Harlow, Essex CM20 2JE

What superb title graphics! I was all a-quiver with expectation, and as the tape loaded — in several parts — and the impressive titles scrolled smoothly around the screen my appetite was well and truly whetted.

The game, an educational one, commenced. I was asked for my name, in nice big letters; duly entered "re" (wot no capitals!) and told to press P to play.

At the top of the screen were four large objects which looked like circles with four corners (or fat squares). One of these developed measles and fell, un-

dulating, to the floor where, after counting its spots, an equally undulating hook appeared and dragged it off the screen. This repeated itself several times and then I was told that I scored O!

Oh alright, I'm being even more stupid than usual. I didn't take long to work out that as they dropped you had to press the key which had the same number as the spots on the falling "dice", and that you scored more points the quicker you pressed that key.

But really! £7.95 for a simple program to recognise simple numbers for infants/lower juniors. I'll buy some dominoes instead.

instructions	80%
playability	25%
graphics	30%
value for money	5%



## Let's Count BBC 32K £9.95

ASK, London House, 68 Upper Richmond Road, London SW15

This program is an example of good practice in both the computing and educational fields. It is meant to give practice in the very early stages of number and covers one to one correspondence, symbol recognition, ordering and comparison.

All of these stages are of major importance to the pre-school and infant school child and they could do far worse than to practice using this program.

As with all software aimed at this level there should be an adult or an older child to read the early prompts and set the difficulty level, but this is extremely easy to do. One little criticism is that

there is no end to each game — they just carry on until the ESCAPE key is pressed.

There are four games in the program and all have excellent graphics and reasonable sound, which unfortunately you cannot turn off or even down! The instructions set new standards — just the right length.

One final quibble is that the BREAK key is set to flush memory. This seems rather drastic, but the standard of error trapping is otherwise excellent. This is one of very few programs I would recommend to parents and schools alike.

instructions	95%
ease of use	90%
display	90%
value for money	80%



D.C.

them on the board as they are or combine or decompose them to make other numbers still vacant. The overall aim is to win five games.

There is also a game of magic squares where both skills are used. The final option is a 'Self Test' where you answer ten questions against the clock.

If you feel that your child

needs practice in mental arithmetic then this program may be for you.

instructions	95%
ease of use	80%
display	80%
value for money	60%



D.C.

## Countabout Spectrum £7.95

Longman/Micromega, Longman House, Burnt Mill, Harlow, Essex CM20 2JE

On loading this program I was greeted by the makers' names and logos followed by the chimpanzee mascot. Once completely loaded I was offered a choice between +, - or + and -. Always one to live dangerously, I took the + and - option.

A number of fish, hens, crocodiles or telephones (telephones? to allow elephants to make trunk calls?) slide into a central box.

To the right of the box is a banana tree with a monkey at the bottom. A curt instruction "MAKE (No.)" appears and an incomplete sum is shown at the bottom (e.g. 4 + ? = 9).

A correct answer receives a tick, a little tune, and the monkey climbs a little nearer to his banana breakfast. A wrong answer prompts for retry and, if still wrong, then the correct answer is given.

A fair idea, reasonably well done, graphics are good, animation adequate, and sound is used sparingly. This a drill/practice program of the type which other companies have done better and more cheaply.

Probably intended for pre-school, infants or lower junior school children who would benefit more from experience with "real" objects.

instructions	70%
playability	19%
graphics	30%
value for money	8%



R.E.

## Building English (I) Dragon 32 £6.55

Panda Programs, PO Box 2, South Shields NE33 1EY

This is an English quiz which claims to be for seven to nine year olds, but the seven year old

on whom I tested it found it very difficult.

The cassette inlay does not indicate whether it is intended for school or home use, but it is presumably aimed mainly at schools.

The program, which is written in BASIC, loaded at the third attempt. There is a fairly lengthy instructions sequence at the beginning, which is necessary as the twenty questions which

follow do not all have the same format.

A correct answer scores one, two or three points, giving a maximum score for the test of 38 points, a number which must surely owe more to chance than deliberation. The questions may be answered by one child, or by two children taking turns.

There are around a hundred questions available, from which the twenty for each test are

selected randomly. They cover a considerable range of subject matter, including plurals, opposites, animal noises and occupations.

instructions	80%
ease of use	50%
display	50%
value for money	30%



M.N.

## 16K SPECTRUM PROGRAM

Based loosely on the popular TV game, Odd One Out is a family game for more than one player.

The object is to spot the odd item out of the four displayed. Some are easy and some are not so easy.

I have given a lot of examples in my listing, but the 16K Spectrum can hold many more. And owners of the 48K model could spend all night with a dictionary.

Each set of four items in blocks of 50 lines from 1000 to 8990 and additions are very easy, if you remember to change lines 720 and 730.

The game finishes when a player has scored 100, but this can easily be changed by altering line 9170. Line 9130 adds 10 for a correct score and line 9130 deducts five for a wrong answer.

Note: listing was produced on a Tandy four-colour printer/plotter.

### How it works

10-290 start game, instructions  
300-390 initialise player variables, names  
500-590 display scores routine  
600-660 draw game  
700-740 collect game string variables  
750-910 display game  
1000-3590 game string variables  
9000-9095 display is answer not known  
9110-9190 score, check answer routine  
9900-9970 music routines

# Who'll be first to say: 'That's odd'?

All the family can join in and play Robert Perk's game for the 16K Spectrum. And it's easy to extend to make it even more challenging

```
10 REM **ODD ONE OuT**
20 REM ** R.W.PERKS **
30 BORDER 2: PAPER 1: CLS : INK 7
40 PRINT AT 3,5;" JLL 000 000"
50 PRINT AT 4,5;" 0 0 0 0 0 "
60 PRINT AT 5,5;" 700 000 000"
70 PRINT AT 8,5;" JLL 0 0 0""
80 PRINT AT 9,5;" 0 0 0 0 0 "
90 PRINT AT 10,5;" 700 0 0 0""
```

```
100 PRINT AT 13,5;" JLL 000"
110 PRINT AT 14,5;" 0 0 u 0 "
120 PRINT AT 15,5;" 700 0 "
130 INK 7: PLOT 7,7: DRAW 241,0: DRAW 0
,161: DRAW -241,0: DRAW 0,-161
140 GO SUB 9400
160 PAUSE 150
170 CLS : PAPER 6: INK 0: CLS
180 PRINT AT 3,9: PAPER 2: INK 7;" ODD
ONE OuT "
190 PRINT AT 6,0;"The object of the gam
e is for a player to identify the odd it
em in a series of four items."
200 PRINT AT 10,0;"These four items wil
l be shown on the screen,when the odd o
ne is recognised press any key"
210 PRINT AT 14,0;"You score 10 for eac
h correct answer and lose 5 for each
incorrect answer"
230 PRINT AT 20,0;" Press any key to c
ontinue..."
290 PAUSE 0
300 CLS : PAPER 5: INK 1: CLS
310 PRINT "How many players are there ?
"
320 INPUT a
330 DIM p(a)
```

```
340 DIM b$(a,11)
350 PRINT : FOR n=1 TO a
360 PRINT "What is your name,player no
";n
370 INPUT b$(n)
380 PRINT b$(n)
390 NEXT n
410 GO TO 700
500 CLS : PAPER 4:
INK 0: CLS
510 PRINT
520 PRINT
"Your scores
are as follows:-"
530 PRINT
540 FOR n=1 TO a
550 PRINT b$(n)(. TO 11)
560 PRINT "You have scored ";p(n)
570 PRINT
580 NEXT n: PRINT "Press any key to con
tinue.."
590 PAUSE 0: PAUSE 25: RETURN
600 CLS : PAPER 1: INK 7: BORDER 1: CLS
610 FOR n=168 TO 48 STEP -40
620 PLOT 7,n: DRAW 241,0: DRAW 0,-28: D
RAW -241,0: DRAW 0,28
```

### Hints on conversion

Odd One Out should convert very easily for the ZX81 with at least 16K, provided the graphics and colours are excluded. Owners of other computers should bear in mind that the Spectrum screen is 255 by 175 pixels. The only other problem will be the music.

BORDER,PAPER,INK are the Spectrum colour commands: 1 blue,2 red,5 cyan,7 white

CLS clears the screen  
PRINT AT x,y means print down a line at vertical co-ordinate x (Spectrum maximum 21) and horizontal co-ordinate y (Spectrum maximum 31)

PLOT: the Spectrum's graphics consist of 255 x 175 pixels. The Spectrum needs to PLOT a point ready to DRAW a line from that point to the DRAW x,y co-ordinate

PAUSE is used to slow down the Spectrum and PAUSE 0 stops the program until any key is pressed

INPUT uses only lines 22 and 23 on Spectrum and awaits a reply

DIM p(a) sets up an array called p with dimension a, or alternately DIM b\$(a,11) sets up a\*11 array of characters (a string!)

THEN may have to be replaced with ELSE in an escape condition

INT(RND\*3) produces a random integer between 1 and 3

BEEP d,p is the Spectrum's voice with d being the duration and p the pitch

### Variables

a number of players  
b\$(n) name of players  
c random line number x 1000  
d random line number x 50  
e correct word in string (value 1-4)  
f input commands  
h input guess  
i finished game commands  
k variable of each players' turn  
p(n) scores  
x length of each member of string  
w\$  
w\$ four word string  
y\$ reason for being correct

# 16K SPECTRUM PROGRAM

```

630 NEXT n
640 PRINT AT 2,2;"1";AT 7,2;"2";AT 12,2
;"3";AT 17,2;"4"
650 PRINT AT 20,0;"PLAYER NO ";k;"-";b$(
(k)
660 RETURN
700 FOR k=1 TO a
710 GO SUB 600
720 LET c=1+INT (RND*3)
730 LET d=1+INT (RND*12)
740 GO SUB (c*1000)+(d*50)
750 PRINT AT 2,INT ((31/2)-(x/2));w$( T
O x)
760 INPUT "Enter(1)next word(2)guess(3)
tell";f
770 IF f=3 THEN GO TO 9000
780 IF f=2 THEN GO TO 9100
785 IF f>3 THEN GO TO 760
790 PRINT AT 7,INT ((31/2)-(x/2));w$(x+
1 TO x*2)
800 INPUT "Enter(1)next word(2)guess(3)
tell";f
810 IF f=3 THEN GO TO 9000
820 IF f=2 THEN GO TO 9100
825 IF f>3 THEN GO TO 800
830 PRINT AT 12,INT ((31/2)-(x/2));w$(1
+x*2 TO x*3)
840 INPUT "Enter(1)next word(2)guess(3)
tell";f
850 IF f=3 THEN GO TO 9000
860 IF f=2 THEN GO TO 9100
865 IF f>3 THEN GO TO 840
870 PRINT AT 17,INT ((31/2)-(x/2));w$(1
+x*3 TO )
880 INPUT "Enter(2)guess(3)tell";f
890 IF f=3 THEN GO TO 9000
900 IF f=2 THEN GO TO 9100
910 GO TO 880
1000 LET x=6
1010 LET w$="TENNISMOWER COLLARBALL"
1020 LET e=4
1030 LET y$="lawn..."
1040 RETURN
1050 LET x=4
1060 LET w$="DEALMEALTEA ROOT"
1070 LET e=3
1080 LET y$="square..."
1090 RETURN
1100 LET x=5
1110 LET w$="CROWN CAP HAT BRIDGE"
1120 LET e=3
1130 LET y$="they are dentistry terms"
1140 RETURN
1150 LET x=9
1160 LET w$="NEW YORK LONDON PARIS
ROME"
1170 LET e=1
1180 LET y$="they are capital cities."

```

```

1190 RETURN
1200 LET x=6
1210 LET w$=" MAN CHILD MORTEMERIDIEM"
1220 LET e=2
1230 LET y$="post..."
1240 RETURN
1250 LET x=5
1260 LET w$="BEAM ARCH LIGHTSUSPENSION"
1270 LET e=3
1280 LET y$="types of bridges"
1290 RETURN
1300 LET x=5
1310 LET w$=" MEM KAPPA BETAALPHA"
1320 LET e=1
1330 LET y$="the Greek alphabet..."
1340 RETURN
1350 LET x=8
1360 LET w$=" SHUTTER DOOR LENS APE
RTURE"
1370 LET e=2
1380 LET y$="parts of a camera..."
1390 RETURN
1400 LET x=8
1410 LET w$=" BORON PROTON NEUTRONELE
CTRON"
1420 LET e=1
1430 LET y$="parts of an atom..."
1440 RETURN
1450 LET x=6
1460 LET w$="VIOLET GREEN PANSYINDIGO"
1470 LET e=3
1480 LET y$="colours of the rainbow"
1490 RETURN
1500 LET x=13
1510 LET w$=" PTERANODON TYRANNOSAURUS
TRICERATOPS DIPLODOCUS "
1520 LET e=1
1530 LET y$="land bound dinosaurs..."
1540 RETURN
1550 LET x=9
1560 LET w$=" APOLLO POSEIDONAPHRODITE
JUPITER "
1570 LET e=4
1580 LET y$="Greek (not Roman!) Gods..."
1590 RETURN
2000 LET x=3
2010 LET w$=" M1 ESP16W23"
2020 LET e=1
2030 LET y$="sequence of the alphabet(a=
1).. "
2040 RETURN
2050 LET x=4
2060 LET w$="3223411422241143"
2070 LET e=4
2080 LET y$="adds to 10 ,not 9..."
2090 RETURN
2100 LET x=6
2110 LET w$="LOMOND TAY NESS CRUMMOCK"

```

# 16K SPECTRUM PROGRAM

```
2120 LET e=4
2130 LET y$="loch....."
2140 RETURN
2150 LET x=6
2160 LET w$="RIBBLE CLYDE HULL TEESDALE
"
2170 LET e=2
2180 LET y$="English rivers..."
2190 RETURN
2200 LET x=4
2210 LET w$="FIREFOWLNET LIFE"
2220 LET e=3
2230 LET y$=" wild..."
2240 RETURN
2250 LET x=7
2260 LET w$="MARINERVIKING JUPITERDANE"
2270 LET e=4
2280 LET y$="American space satellites..
"
2290 RETURN
2300 LET x=6
2310 LET w$="CYMBAL DRUM ACHE LOBE"
2320 LET e=1
2330 LET y$="ear..."
2340 RETURN
2350 LET x=5
2360 LET w$=" REP FLOORACTORWALL"
2370 LET e=3
2380 LET y$=".....tiles"
2390 RETURN
2400 LET x=4
2410 LET w$="GOODJOKEDESKPAPER"
2420 LET e=2
2430 LET y$="...news...."
2440 RETURN
2450 LET x=3
2460 LET w$="111011211001"
2470 LET e=3
2480 LET y$="binary.."
2490 RETURN
2500 LET x=4
2510 LET w$="MOONSUN GOODTUES"
2520 LET e=1
2530 LET y$="...day"
2540 RETURN
2550 LET x=4
2560 LET w$="STOPHENNEXTSTEP"
2570 LET e=3
2580 LET y$="symble shifted commands"
2590 RETURN
3000 LET x=4
3010 LET w$="LIVEGOODEVILVILE"
3020 LET e=2
3030 LET y$="the letters L-I-U-E..."
3040 RETURN
3050 LET x=4
3060 LET w$="WINEPORTFOREMIDSHIPS"
```

```
3070 LET e=1
3080 LET y$="parts of a dinghy..."
3090 RETURN
3100 LET x=6
3110 LET w$="SPHERECIRCLE CONE PYRAMID"
3120 LET e=2
3130 LET y$="three dimensional shapes..
"
3140 RETURN
3150 LET x=2
3160 LET w$="XUXXLXR"
3170 LET e=4
3180 LET y$="Roman numerals..."
3190 RETURN
3200 LET x=5
3210 LET w$="KILO POUNDMILLIMICRO"
3220 LET e=2
3230 LET y$="....gram"
3240 RETURN
3250 LET x=5
3260 LET w$="BAND PLANTBATONDINGHY"
3270 LET e=3
3280 LET y$="rubber..."
3290 RETURN
3400 LET x=5
3410 LET w$="CAVE HOUSEHEAD ABOUT"
3420 LET e=1
3430 LET y$="round..."
3440 RETURN
3450 LET x=5
3460 LET w$="SHAKETOOTHMOVE PUDDING"
3470 LET e=3
3480 LET y$="milk..."
3490 RETURN
3500 LET x=8
3510 LET w$=" ARCTIC ANTARTICATLANTICPAC
IFIC"
3520 LET e=2
3530 LET y$=".....ocean"
3540 RETURN
3550 LET x=4
3560 LET w$="RUSEBAD USERSURE"
3570 LET e=2
3580 LET y$="the letters U-R-S-E..."
3590 RETURN
9000 PRINT AT 2,INT ((31/2)-(x/2));w$( T
0 x)
9010 PRINT AT 7,INT ((31/2)-(x/2));w$(x+
1 TO x*2)
9020 PRINT AT 12,INT ((31/2)-(x/2));w$(1
+x*2 TO x*3)
9030 PRINT AT 17,INT ((31/2)-(x/2));w$(1
+x*3 TO )
9040 PRINT AT 20,0;" was the odd one,t
he link was,."
9050 PRINT AT 21,0;y$
9060 GO SUB 9400
9070 PAUSE 150
```

## 16K SPECTRUM PROGRAM

```

9080 GO SUB 500
9090 IF k=a THEN LET k=0
9095 NEXT k
9110 INPUT "What is your guess-1,2,3,or4
?";h
9120 IF h<>e THEN PRINT AT 20,0;"Sorry,
you were wrong";: PAUSE 50
9130 IF h<>e THEN LET p(k)=p(k)-5: GO S

```

```

LJB 600: GO TO 750
9140 LET p(k)=p(k)+10
9150 GO SUB 9460
9170 IF p(k)>=100 THEN GO TO 9200
9190 GO TO 9000
9200 CLS : GO SUB 600
9210 GO SUB 9400
9220 PRINT AT 2,2;"THE GAME HAS BEEN WON
BY"
9230 PRINT AT 7,2;"Player no. ";k;"... ";
b$(k)
9240 PRINT AT 12,2;"Press 7 to see the s
cores"

```

Symbolic

```

9250 PRINT AT 17,2;"Press 8 to play agai
n"
9260 PRINT AT 20,0;"Press 9 to end the g
ame"
9270 INPUT i
9280 IF i<7 OR i>9 THEN GO TO 9260
9290 IF i=7 THEN GO SUB 500: GO TO 9200
9300 IF i=8 THEN RUN
9310 GO SUB 9400

```

```

9320 CLS : STOP
9400 BEEP 0.3,0: BEEP 0.3,6: BEEP 0.3,3:
PAUSE 10
9410 BEEP 0.3,0: BEEP 0.3,6: BEEP 0.3,12
: PAUSE 10

```

```

9420 BEEP 0.3,15: BEEP 0.3,12: BEEP 0.3,
9: BEEP 0.3,12: BEEP 0.1,9: BEEP 0.1,6:
PAUSE 10

```

```

9430 BEEP 0.1,3: BEEP 0.1,0: PAUSE 10
9440 BEEP 0.3,6: PAUSE 5: BEEP 0.3,3: PA
USE 5: BEEP 0.3,0
9450 RETURN
9460 BEEP 0.3,6: PAUSE 5: BEEP 0.3,3: PA
USE 5: BEEP 0.3,0
9470 RETURN

```

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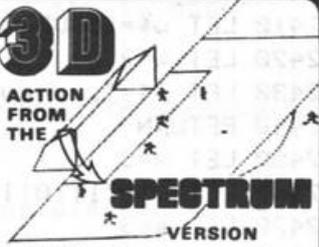
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➔ *IF YOU have always wanted to manage a football team, FOOTBALL MANAGER, from Addictive Games, is for you — The game is ideal for a football fanatic but the most interesting thing for us was the 3-D graphics used to create the goalmouth action — the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

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## Gold Digger 48K Spectrum £5.95

Blaby Computer Games,  
Crossways House, Lutterworth  
Road, Blaby, Leicester

This offering is a tunneling game in which you must dig through rock, collecting gold nuggets as you go. Your progress is impeded by three gnashers that follow you through the tunnels and eat you if they catch you.

When you have managed to feed three miners to the gnashers, the game is ended. Additional features are that you can block tunnels by dislodging underground rocks, or drop the rocks onto the gnashers to gain bonus points.

The whole game is a sort of underground PacMan, where gold bars take the place of the fruit and the gnashers double for

the ghosts. I think that the random tunnels produced by this game are an improvement on PacMan's fixed grid/maze.

A high score feature is provided, as is a variable speed (1-9). On Speed 1, it's extremely fast. Speed 9 is provided specifically for young children.

The graphics are good and it's fun to play, but one disappointing aspect of the game is that it is possible to find a screen position where the gnashers never find you. You can just sit there and watch the stupid creatures explore every tunnel except the one you are in.

M.B.

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



## Pakacuda Commodore 64 £5.99

Rabbit, 380 Station Road, Harrow HA1 2DE

Pakacuda is based on a PacMan-style arcade game with the variation of an underwater theme.

The maze is made from the standard characters obtainable directly from the keyboard — nothing special here!

The four octopuses, which take over from the traditional ghosts, and your Pakacuda are sprites, neither of which are of a high display standard.

The sound effects are very poor. They are more likely to

## Cuthbert Goes Walkabout Dragon £8

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

Cuthbert? Why do most microcharacters have such soppy names? Regardless, this is one of those maddeningly simple games which you can't put down.

A line grid of seven by five is drawn and you control Cuthbert in his rambling around the grid. Each square you complete is coloured in. Colour all 35 squares and you move onto the next sheet.

You start with five lives and get a bonus life for each sheet completed. This would be fine, except for the Moronians who chase Cuthbert around the screen, three on the first sheet increasing by one for successive

sheets. You can jump over Moronians but contact destroys both you and them.

Graphics and colour are used effectively and sound is also used, but I found it irritating after a few plays — thank goodness you can turn it down.

The cassette insert is colourful with detailed instructions and background, the program loaded easily and has an option for black and white TV and a joystick. A high score hall of fame is provided for scores of 500 plus. Excuse me, just going for a walkabout.

R.E.

instructions	100%
playability	97%
graphics	88%
value for money	96%



## And All Because... Dragon £6.95

B&H Software, Dept C1, 208 King St, Cottingham, Hull

The only clue to the object of this game was the title — and I couldn't wait to find out what lay behind it.

It turns out to be based on a highly original theme (for com-

puter games anyway), of trying to deliver a box of 'Milky Chocs' before the lady returns home.

Unfortunately, though, it's not quite as simple as that, as various hazards have to be overcome and time is always running short!

The hazards employ some very amusing hi-res graphics and are in nine stages, with varying levels of difficulty. I found cross-country horse riding, hang gliding, swinging from ski-lifts

and motor-cycle jumping particularly hard to master!

Only four keys are needed, although why the arrow keys for left and right movement were not used is a mystery.

Apart from this and one or two minor spelling errors, this is a highly entertaining game for all the family. There is also a high score table feature to encourage competition, although B & H Software always starts off in the top ten positions!

E.C.

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



# Action games with a difference

## Here our review panel takes a look at some new faces, plus some old faces in new guises

give you ear-ache than add any excitement to the game.

I am a great fan of PacMan and have seen many versions of the game. This version did not manage to hold my attention for more than a total of 10 minutes.

This program is not, in my opinion, worth considering if you're looking for an action game. I found it deadly boring and as dull as could be.

The instructions were very

brief to say the least — I found them printed on the cassette inlay card. I will say one thing for the game though, it loaded perfectly.

K.I.

instructions	10%
playability	30%
graphics	25%
value for money	25%



## Invaders Revenge Dragon £8

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

A neat twist to the Invaders theme making you the sole survivor now battling against the dreaded humans. Best played with joysticks.

This version contains some of the best sound effects yet to accompany such a game. Bombs dropping, lasers evading, enemy colliding, a sometimes confusing screen filled with action.

Your aim is to destroy the human ships prowling the space lanes and avoid that laser base. There is a two player option which greatly enhances the competitive aspect. Those suffering from sore fire-button thumbs can rest up when hitting the 'P' key which freezes the screen.

Highly addictive, fast and in all respects as near to arcade standard as makes no difference.

M.P.

A new arcade-type game, with hi-res graphics and superb sound, guaranteed to keep you at it for hours.

You, a little yellow flying saucer, have to wipe out the blue laser base and the ordinary ships and the red mother-ship. As you are the last space-invader then obviously the other ships are the humans.

All in all I think it's a very good game and it really deserves its five star rating — I thoroughly enjoyed it.

M.P. jr. (aged 8)

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



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Home Computing Weekly 3/5/83

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Sinclair User June 1983

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One of the all-time arcade favourites, Bomber, is brought to the Commodore 64 by Rossa Phelan

# Bomb your way to a safe landing

**Hints on conversion**  
It should be fairly easy to convert to a VIC-20 with memory expansion, bearing in mind that it uses the 64's 40-column screen and sound.  
Because of the number of POKEs, owners of other computers would be better advised to use the idea and start from scratch.

**How it works**  
3-180 instructions  
183-203 two routines for skill level to place aircraft on one of three ranks  
400-660 main routine  
700-898 crash routine, option to replay  
900-2010 win routine, option to replay

Manhattan is my version of the arcade favourite in which you have to bomb buildings so your original aircraft can land.

Here are a couple of hints on play: try to drop two bombs per pass from the outset and don't worry about the high buildings until you have to.

The control symbols in lines 20-50, 850-880 and 1000-1050 are alternately reverse on and reverse off.

```

3 B(1)=0:Z=40:X=205
5 POKES4276,0:POKE54277,0:POKE54278,0:POKE54283,0:POKE54284,0:POKE54285,0
7 POKE 54290,0:POKE54291,0:POKE54292,0
10 PRINT":POKE53281,7:PC=53280,0
15 PRIN "*****"
20 PRINT"  "
30 PRINT"  "
40 PRINT"  "
50 PRINT"  "

```

```

60 PRINTS C(4)*"*****DO YOU WANT INSTRUCTIONS (Y/N)?"
70 GETA:IFR#="Y" THEN 80
73 IFR#="N" THEN 200
77:OTO 70
96 PRINT":SPC(10)"*****"
98 PRINTSPC(7)"YOU ARE THE PILOT OF"
100 PRINTSPC(8)"A CRIPPLED AEROPLANE"
110 PRINTSPC(9)"WHICH HAS TO LAN"
120 PRINTSPC(12)"URGENTLY"
25 PRINTSPC(5)"UNFORTUNATELY THE MANHATTA"
130 PRINTSPC(7)"MAY LINE LIES BETWEEN YOU"
140 PRINTSPC(12)"AND SAFETY"
150 PRINTSPC(8)"YOU ARE LOSING HEIGHT"
160 PRINTSPC(9)"THE ONLY WAY DOWN IS"
170 PRINTSPC(10)"TO BOMB THE SKYLINE"
175 PRINTSPC(13)"X TO THE GROUND"
178 PRINTSPC(11)"*****"
179 GETA:IFR#="" THEN 179
180 PRINT":SPC(4)"USE /OR F TO RELEASE BOMB"
183 PRINTSPC(5)"ENTER SKILL LEVEL(1-3)"
185 GETA:IFR#="1" THEN 0=1:OTO 200

```

```

186 IF:="" THEN 0=2:OTO 200
187 IFR#="3" THEN 0=3:OTO 200
188 OTO 185
190 PRINTSPC(10)"HI! A KEY TO PLAY"
193 GET A:IFR#="" THEN 210
195 OTO 193
200 PRINTSPC(5)"ENTER SKILL LEVEL(1-3)"
201 GETA:IFR#="1" THEN 0=1:OTO 200
202 IFR#="2" THEN 0=2:OTO 200
203 IFR#="3" THEN 0=3:OTO 200
204 OTO 201
208 PRINT "*****"SPC(4)"HIT 1 KEY TO PLAY"
209 GET A:IFR#="" THEN 200
210 POKES3281,15:POKE53280,15:PRINT":
215 B=0:BM=1947:BC=56219

```

```

220 PRINT":PRINTTR(23)"SCORE:"
230 FOR W=0TO39:POKE 1984+W,150:POKE56256+W,5:NEXT W
250 FORK=0TO33
251 POKE 54296,15
252 POKE 54277,190
253 POKE 54278,240
254 POKE 54276,17
255 X=INT((X-2)*RND(1))+2:B=B+1
257 C=INT(((X-2)-2)*RND(1))+2:Z=INT(((X-2)-4)*RND(1))+4
260 IFX=2THEN271
261 IFX=3THEN280
262 IFX=4THEN290
263 IFX=5THEN300
264 IFX=6THEN310
265 IFX=7THEN320
266 IFX=8THEN330
267 IFX=9THEN340
268 IFX=10THEN350
269 IFX=33THEN POKE 54296,0:OTO 400
270 NEXT K
271 POKEBM+K,102:POKEBM+K-40,65:POKEBC+K,9:POKEBC+K-40,9
273 POKE 54296,15
274 POKE 54277,190
275 POKE 54278,240
276 POKE 54276,17:POKE 54273,3:POKE 54272,54
279 OTO 269
280 POKEBM+K,102:POKEBM+K-40,102:POKEBM+K-80,65:POKEBC+K,9:POKEBC+K-40,9:POKEBC+K-80,9
283 POKE 54296,15
284 POKE 54277,190
285 POKE 54278,240
286 POKE 54276,17:POKE 54273,4:POKE 54272,73
289 OTO 269
290 FORP=0 TO 2:POKE BM+K-(40*P),102:NEXTP:POKEBM+K-120,65:POKE BM+K-(40*P),214
292 FORP=0TO3:POKEBC+K-(40*P),9:NEXTP
293 POKE 5-296,15
294 POKE 54277,190
295 POKE 54278,240
296 POKE 54276,17:POKE 54273,6:POKE 54272,100
299 OTO 269
300 FORP=0 TO 3:POKEBM+K-(40*P),102:NEXTP:POKEBM+K-160,65:POKEBM+K-(40*P),214
302 FORP=0TO4:POKEBC+K-(40*P),9:NEXTP
303 POKE 54296,15
304 POKE 54277,190
305 POKE 54278,240
306 POKE 54276,17:POKE 54273,8:POKE 54272,147
309 OTO 269
310 FORP=0 TO 4:POKEBM+K-(40*P),102:NEXTP:POKEBM+K-200,65:POKEBM+K-(40*P),214
312 FORP=0TO5:POKEBC+K-(40*P),9:NEXTP
313 POKE 54296,15
314 POKE 54277,190
315 POKE 54278,240
316 POKE 54276,17:POKE 54273,12:POKE 54272,216
319 OTO 269
320 FORP=0 TO 5:POKEBM+K-(40*P),102:NEXTP:POKEBM+K-240,65:POKEBM+K-(40*P),214
322 POKEBM+K-(40*P),214:FORP=0TO6:POKEBC+K-(40*P),9:NEXTP
323 POKE 54296,15
324 POKE 54277,190
325 POKE 54278,240
326 POKE 54276,17:POKE 54273,17:POKE 54272,37
329 OTO 269
330 FORP=0 TO 6:POKEBM+K-(40*P),102:NEXTP:POKEBM+K-280,65:POKEBM+K-(40*P),214
332 POKEBM+K-(40*P),214:FORP=0TO7:POKEBC+K-(40*P),9:NEXTP
333 POKE 54296,15
334 POKE 5-277,190

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```

335 POKE 54278,240
336 POKE 54276,17:POKE 54273,25:POKE 54272,177
339 OTO 259
340 FORP=0 TO 7:POKEBM+K-(40*P),102:NEXTP:POKEBM+K-320,65:POKEBM+K-(40*P),214
342 POKEBM+K-(40*P),214:FORP=0TO8:POKEBC+K-(40*P),9:NEXTP
343 POKE 54296,15
344 POKE 54277,190
345 POKE 54278,240
346 POKE 54276,17:POKE 54273,34:POKE 54272,75
349 OTO 269
350 FORP=0 TO 8:POKEBM+K-(40*P),102:NEXTP:POKEBM+K-360,65:POKEBM+K-(40*P),214
352 POKEBM+K-(40*P),214:FORP=0TO9:POKEBC+K-(40*P),9:NEXTP
353 POKE 54296,15
354 POKE 54277,190
355 POKE 54278,240
356 POKE 54276,17:POKE 54273,51:POKE 54272,97
359 OTO 269
400 D=0:D(1)=0:D(2)=0
402 IFD=1THENM=1064:C=55336
404 IFD=2THENM=1104:C=55376
406 IFD=3THENM=1144:C=55416
410 V=54296:L(1)=54272:H(1)=54273:W(1)=54276:R(1)=54277:S(1)=54278
420 L(2)=54279:H(2)=54280:W(2)=54283:R(2)=54284:S(2)=54285
430 L(3)=54286:H(3)=54287:W(3)=54290:R(3)=4291:S(3)=54292
440 POKEV,15:POKE(3),15:POKE(3),240:POKE W(3),129:POKE H(3),1:POKE(3),155
445 S=0
450 POKEV,1,127:POKEV,102:POKEV+1,115:POKEV-1,2:POKEV,2:POKEV+1,1:W=205
460 IF(2)=0THENGETR:IFR#="" THEND(2)=1:0=D0:D(1)=M+40:D(0)=C+40
470 IFPEEK(D(1))=214THENPOKEV(1)-4,32:D(2)=0:POKEV(1),0
480 IFPEEK(D(1))=150THEND(2)=0:B(1)=0:POKEV(1)-40,32:POKEV(1),0
490 C=C+1:M=M+1:IFPEEK(M+1)C32THEN700
500 POKEV-2,32:POKEV-1,127:POKEV,102:POKEV-1,67:POKEV-1,2:POKEV,2:POKEV+1,0
505 POKE 192,0
510 IF(2)=1THENPOKEV(1)-40,32:POKEV(1),63:POKEV(0),0:D(1)=D(1)+40:D(0)=D(0)+40
520 IF(2)=17HENPOKEV(1),15:POKE(1),143:POKEV(1),17:POKEV(1),0:POKEV(1),P:D=0-2:P=P-3
530 IFD(2)=1ANDPEEK(D(1))C32THENS=5+1
530 PRINTTR(23)"S
550 IFD(2)=0THENGETR:IFR#="" THEND(2)=1:0=D0:P=0:D(1)=M+40:D(0)=C+0:R#="2"
570 IFPEEK(D(1))=214THENPOKEV(1)-40,32:D(2)=0:POKEV(1),32:POKEV(1),0
580 IFPEEK(D(1))=150THEND(2)=0:POKEV(1)-40,32:POKEV(1),0
590 C=C+1:M=M+1:IFPEEK(M+1)C32THEN700
600 POKEV-2,32:POKEV-1,127:POKEV,102:POKEV+1,115:POKEV-1,2:POKEV,2:POKEV+1,0
605 POKE 192,0
610 IFD(2)=1THENPOKEV(1)-40,32:POKEV(1),63:POKEV(0),0:D(1)=D(1)+40:D(0)=D(0)+40
620 IFD(2)=17HENPOKEV(1),15:POKE(1),143:POKEV(1),17:POKEV(1),0:POKEV(1),P:D=0-2:P=P-3
630 IFD(2)=1ANDPEEK(D(1))C32THENS=5+1
630 PRINTTR(23)"S
650 OTO 400
700 POKE R(1),0:POKE(3),0:POKE(1),0:POKE(3),0:POKEV(1),C:POKEV(3),0
705 C=C+39:M=M+39
710 FORL=1TO5:0:NEXTL
720 Q(0)=0:Q(1)=0:Q(2)=0:Q(3)=0
730 IFQ(0)=0ANDPEEK(M-1)C32THEND(0)=1:Q(3)=Q(3)+1
740 IFQ(1)=0ANDPEEK(M)C32THEND(1)=1:Q(3)=Q(3)+1
750 IFQ(2)=0ANDPEEK(M+1)C32THEND(2)=1:Q(3)=Q(3)+1
760 IFQ(0)=0THENPOKEV(1)-40,32:POKEV(1),127:POKEV(1),2
765 IFQ(1)=0THENPOKEV(1)-40,32:POKEV(1),102:POKEV(1),0
770 IFQ(2)=0THENPOKEV(1)-40,32:POKEV(1),115:POKEV(1),0
780 IFQ(3)=3THEN795
785 M=M+40:C=C+40
787 FORL=1TO40:NEXTL

```



# Games of the unexpected for the unafraid...

## THE WHITE BARROWS

Somewhere amid this maze of burial chambers lurks an Evil Sorcerer whom you need to trap. Trouble is, he's protected by Trolls, Dwarves, Serpents and the occasional Dragon or two! Your magic staff will block the tunnel to prevent him escaping unless, that is, he outwits you.

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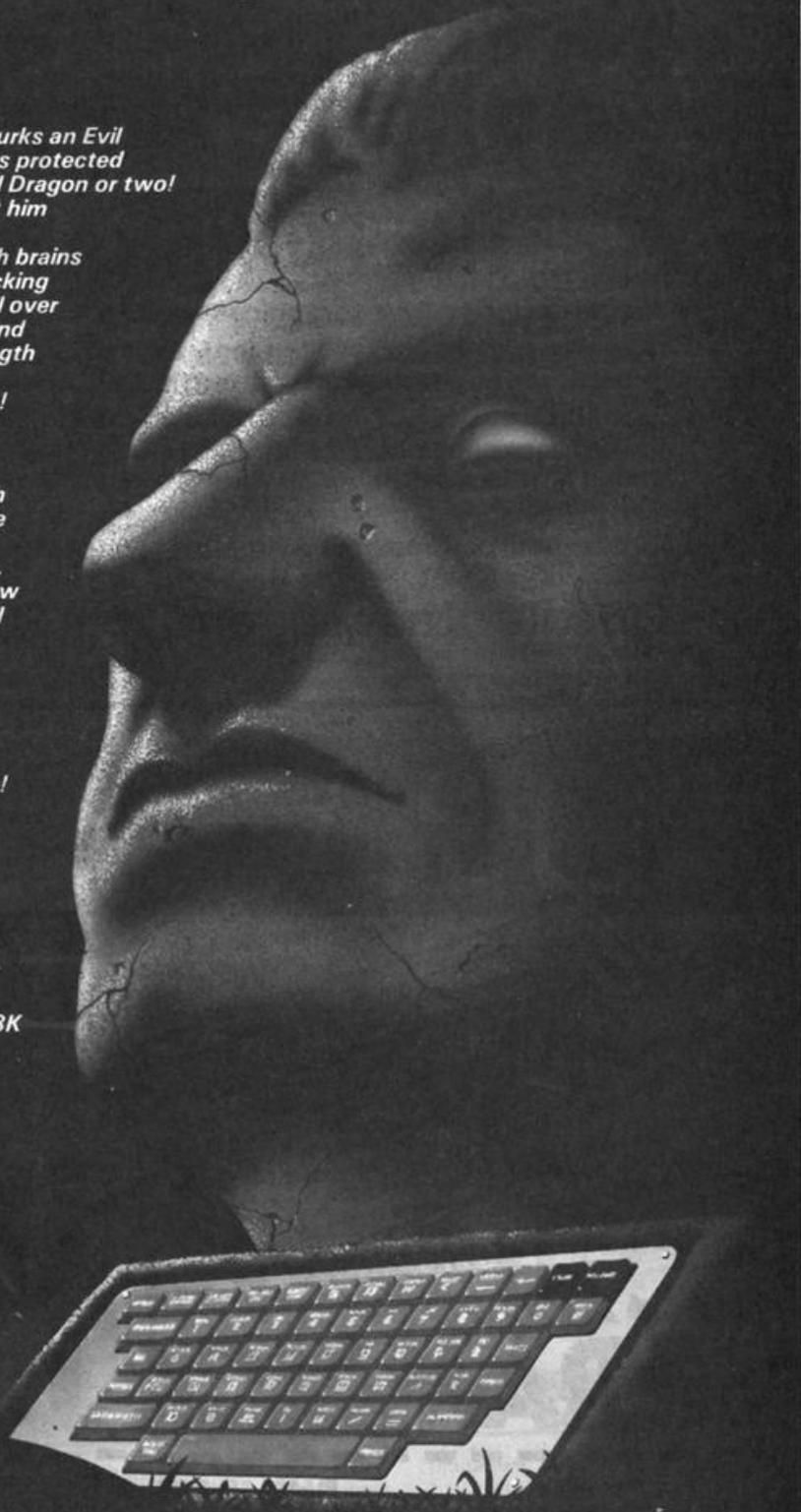
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**STARTTECH** 208 Aigburth Rd, Aigburth, Liverpool L17.051 727-7267

**Killer Gorilla  
BBC B £7.95**

Program Power, 8/8a Regent Street, Chapel Allerton, Leeds LS7 4PE

Put on your hard hat and wellies, rush along to the building site and rescue the fair maiden from the clutches of King Kong's brother.

You'll need quick reactions to play Program Power's version of this game that sends your hero climbing about a partly built skyscraper, gathering the young lady's dropped possessions as he goes.

Just to make life more interesting, the gorilla keeps throwing down a constant barrage of building site debris to obstruct the rescuer's climb.

Points are awarded for a speedy rescue and the number of reclaimed possessions. As with

most games of this type, completion of one level is rewarded by being placed in an even more difficult situation for the next.

Excellent graphics and sound effects with good use of colour. I think the effect is better if the interlace is turned off, though, as this stops the screen judder. **J.W.**

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



**Red Devils  
Oric-1 £4.95**

Pennant, 29 Hounds Road, Chipping Sodbury, Bristol BS17 6EQ

The name of this program is also the nickname of Manchester United football team, and they

share in common the tactic of obstructing the opponent!

Little red men multiply rapidly on the screen blocking your way as you travel between the castles at the four corners of the screen, where you pick up points.

If you become surrounded, you might be able to use an escape hole, otherwise all you

can do is to give up by pressing 'ESC'.

The instructions provided are very limited, but as the game is simple, this proved no real problem.

The display is colourful, and a variety of sound effects add interest to the game. However, the all-BASIC program may be a lit-

tle slow-moving for arcade game enthusiasts. **D.N.**

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



**Crazy Painter  
TRS-80 Models  
I & III  
£12**

Microdeal, 41 Truro Road, St. Austel, Cornwall PL25 5JE

The advertisement for this game does not, in my opinion, do the product justice. The object of the game is to paint the screen of the TRS-80 white, using the arrow keys or a joystick if available.

There is a dog that occasionally appears on the right of the screen and walks across your paintwork leaving black paw-prints. There is also a puppy that holds a turpentine bucket, a snake and a turpentine bucket

that you can only eliminate when it is not flashing.

In addition to the normal process of gaining points for stopping the dog, leading the snake into the turpentine bucket and painting the screen white, the game has the additional features of sound, pausing a game while in play and very fast action.

To me the game has a touch of Pac Man about it and would probably appeal to those who liked that game. One or two people may play on a variety of skill levels.

	<b>D.B.</b>
instructions	30%
playability	80%
graphics	50%
value for money	50%



**Pearl Diver  
TI-99/4A  
(Extended  
BASIC) £8**

Lantern Software, 4 Haffenden Road, Tenterden TN30 6QD

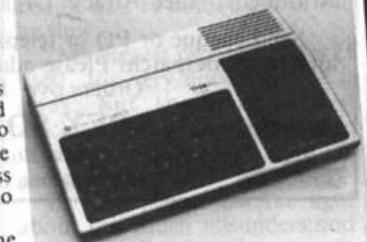
Pearl Diver must be the underwater version of Frogger. Two divers must dive to the sea bed and gather pearls, before their air runs out. But that's not all — they also have to avoid the sea creatures that swim across their path.

When the diver's air supply is running short, a siren sounds and a red flag is raised. Failure to return within the warning time means the end of the hapless diver. The game ends when no divers are left.

Control of movement is by the keyboard. It's disappointing that there is no option for a joystick.

A choice of two skill levels make this quite enjoyable to play, but it is certainly overpriced. **J.W.**

instructions	100%
playability	85%
graphics	90%
value for money	60%



**Bombs Away  
TI-99/4A  
(Extended  
BASIC)  
£8**

Lantern Software, 4 Haffenden Road, Tenterden TN30 6QD

There are no instructions with this 6K city-bombing-type program, but initially the task is to

raze to the ground 23 variable-height Empire State Buildings in order to land your aircraft safely.

Having performed this successfully you are then taken through a range of nine other scenarios, each involving the destruction of obstacles to your landing.

When you complete the tenth, you are invited to go round again

at a greater degree of difficulty. (I would have expected more than ten scenarios.) It can be quite frustrating when simple mistakes force you to begin afresh!

A running score of the destruction is displayed, being higher according to the degree of difficulty selected at the game's beginning (1: easiest, 10: hardest).

Colourful use of graphics is made, and despite the speed

limitations of even Version 110 Extended BASIC, movement is not too slow.

	<b>P.B.</b>
instructions	0%
playability	75%
graphics	70%
value for money	30%





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# The double life of Stainless Software's supremo

Most TI-99/4A owners seem to agree that theirs is a wonderful machine — but the big problem is, you can't get software for it easily.

Stephen Shaw is a great fan of the TI, whose solution to the software shortage was to set up his own company to get hold of some. Stainless Software, the UK's largest independent supplier of TI programs, was the result.

Stainless's current catalogue lists 71 programs. Of these, 26 are written by UK programmers under the Stainless label. The other 45 are imported from a selection of North American TI software companies. There's something in there for all tastes: arcade games, mind games, utilities, adventures, even a typing tutor.

Stephen and his wife Cathy run the software business from a corner of the dining room in their 1920s semi at 10 Alstone Road, Stockport. From this modest base they deal with orders, do some duplicating, and produce the Stainless catalogue — which also acts as a kind of newsletter, with information on cassette care, and details of the TI User Group.

During the day, they both work as bank clerks — Stephen at Williams and Glyn's, and Cathy at Barclays.

But though they both work in banks, they aren't exactly laughing all the way to one on the proceeds from Stainless. Their

**Britain's biggest independent TI software dealer is a dining-room business. Candice Goodwin talked to Stephen Shaw, who's a bank clerk by day and runs Stainless Software in the evening**

turnover is "big enough to register for VAT" — more than £18,000 — but in the first quarter of 1983, Stephen says Stainless made a small loss.

"With only 20,000 TI-99/4A owners in the UK, even my most popular game won't sell more than a couple of thousand copies," he explained. "Fortunately, my interest is in the TI — the sales are really just to support the user. I'm not in it for the money, so I sell at the best price I can — I deliberately keep my profit margins low." Thus speaks a true enthusiast.

Stephen's interest in com-

puting was first awakened 10 years ago when Commodore announced the PET. He said: "I've a fascination for science and maths, and though I'm not an academic sort, I like to apply logical principles. I saw computing as a way to do that."

He sent off for details of the PET — and was "decisively ignored" by Commodore. But Texas Instruments had a store in Manchester where Stephen saw a forerunner of the present TI-99/4A. He borrowed the machine at weekends, and wrote to TI to find out more. "Unlike everyone else, TI did respond to letters", he recalls.

He was attracted to the TI machine on several counts. "It's easy to program it — the BASIC's well arranged. It's easy to hook it up to peripherals. For example, other computers have a difficult disc filing command. It's very easy to use on the TI. And the computer itself is neat and attractive. It sits in the dining room very nicely." In October 1981, he finally got his hands on a TI of his own.

But despite being a charter member of the 99er, an American magazine for TI owners, and a founder member of the TI User Group, Stephen found there was "a lot of information but no software" for the TI.

After sending off to the US for programs for his own use, he decided to try and distribute US software in the UK himself. When he signed his first contract in June last year, with Not Polyoptics, there were a mere 100 TIs in this country.

With numbers like that, large software stocks just weren't on. So Stephen arranged to produce copies from a master tape supplied by the software company, and pay them a fixed percentage of the US price per copy — an arrangement which he still uses today.

But he finds that "the price difference is a problem" in selling software from the US, where consumers are used to paying \$26-27 per program. Sometimes Stephen ends up selling programs for less than their selling price in the US.

Though he's sticking to his existing US suppliers, Stephen is now trying to get hold of more material from UK software writers. He currently has two regular programmers and about 10 or 11 others, most of which he got in contact with through the appeal for programs in his catalogue.

Stephen has one regular dealer, Galaxy Software, but he's wary of retailers on the whole because he says: "They want huge discounts. Whereas in the US they'll take 30 per cent of the selling price, over here 50-60 per cent is the norm. In order to keep prices down, I can't afford to give much discount."

"And I think the TI-99/4A itself is oversold by dealers — they don't warn customers that you can't run arcade-type games in TI BASIC. Whereas in my mail-order catalogue, I can warn people that TI BASIC games will be slow."

"My biggest problem is the TI itself. It's very good at what it does, but the unexpanded machine won't do what people often buy it for — playing arcade games."

To help people see the light about this much misunderstood computer, Stephen is currently writing a book for Phoenix Publishing describing the TI. Though he's only written about 60,000 words so far, he plans to have it finished for Christmas, and says it will contain "a lot of information which isn't available elsewhere."

He's also looking forward to the new TI computer, which he "definitely will" be selling software for. A TI fan to the last, he believes this machine "will be superior to the BBC — after all, it will be faster, have more features, and more RAM. If they can bring it out by Christmas, it could wipe the English market clean."



Stephen Shaw — a true TI enthusiast

## Who Killed Cock Robin? ZX81 £4.95

JRS Software, 19 Wayside Avenue, Worthing, Sussex BN13 3JU

I always thought we knew who killed Cock Robin but according to this program there is more than one alternative. It might have been the sparrow, then again it could have been the swan, or the crow, or the eagle, or the owl or perhaps the wren! Not only that but the murder could have taken place in one of six different locations and at one of six different times.

This is all a variation of the old guessing game. You know, the computer sets up a combination of three unknowns, in this case who killed Cock Robin, where and when, and you have to guess the three variables to get the

computer's praise. Difficulty is controlled by the number of options in each group so you select from three to six options for each unknown.

Time was when this style of program was considered very clever ("How does the machine remember the answer?"), but somehow I get the feeling that we've seen it all before.

The program is written exclusively in BASIC, runs well and is bug free. The graphics are clean, uncluttered and very good.

One excellent feature is the JRS fastLOAD system.

I.H.

instructions	80%
playability	55%
graphics	85%
value for money	60%



## Blast It T199/4A £3.50

Christine Computing, 6 Florence Close, Watford, Herts

Blast It is a game of strategy for one player. With the aid of a remote controlled robot you have to disarm bombs. You have

to plan a route to enable the robot to link all the bombs in numerical sequence.

The robot cannot cross the laid down wire and it must not stay stationary for very long. Depending on the skill level a number of bombs are randomly plotted and a time limit is set.

Bombs detonate if you exceed the time or try to disarm a bomb

# It's your brain against the electronic brain

... In these games of logic and strategy, tested out for you by our reviewers

out of sequence. Be careful not to trap the robot inside a bomb or within the wire.

Each game is different and with five skill levels there is plenty of scope for player improvement. If your score is high enough you qualify for the Blast It Hall of Fame.

The instructions, which also detail the scoring system are included in the program. These are very clear. The tape loads easily and the program runs smoothly

but there is some delay in plotting bombs in the higher levels. The display is well thought out and the use of colour is good.

I enjoyed playing this game, which is good value for any TI user's money. C.E.

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



## Vanquisher Oric-1 £6.50

Elephant Software, 41 Haymill Road, Burnham, Berks SL1 6NE

The title may lead you to expect an arcade action game, but Vanquisher is actually a word puzzle.

You are presented with the word 'vanquisher' jumbled up; the object is to transport the 10 letters of the name along a series of tracks to a large box. You have to fill this box with the letters in the right order to produce the name of the program.

There are smaller boxes embedded in the tracks which are used as temporary stores for the letters. You have to shuffle the letters between these boxes to get the eventual order right.

The instructions, which appear in the program, are not very

helpful, and the spelling is atrocious!

But, once you get that feel for the game, the object becomes to complete the puzzle in the minimum number of moves.

The program loaded successfully first time (a refreshing change from a lot of Oric software), and the use of colour, sound, and graphics is good.

However, I doubt whether the program will have any lasting appeal. After all, once you have completed the puzzle a few times, what else is left to achieve?

D.N.

instructions	30%
playability	60%
graphics	70%
value for money	40%



## Paragram Spectrum £4.95

Elephant Software, 41 Haymill Road, Burnham, Berkshire SL1 6NE

An original puzzle from Elephant.

The computer generates a four by four grid on which it randomly places the first sixteen letters of the alphabet. The idea is to rearrange the letters into the correct sequence by rotating four letters at a time.

These instructions were fully given at the start of the program and full marks to Elephant here — when I began I knew exactly what I was doing.

The Spectrum does not lie when it announces "I'm thinking up a hard one for you", since I've yet to complete the puzzle. The fact that the program was

written in BASIC makes no difference — the computer responds very quickly. This is important when one is engrossed in a "If I rotate that and that then that will be there" strategy.

Graphics are used adequately to present the relevant information. My only criticism is that the grid huddles at the left of the screen and the whole program lacks that final professional touch.

Incidentally, I wonder which tape duplication service Elephant are using. The tape loaded first time but there was lots of unpleasant hash in the background. This noise may worry people new to computing. T.B.

instructions	100%
playability	55%
graphics	45%
value for money	60%



## Tumble Towers ZX81 £4.95

JRS Software, 19 Wayside Avenue, Worthing, Sussex BN13 3JU

A word of praise for the JRS fastLOAD system which downloads this large program every time, without fail, and in under 40 seconds flat!

Tumble Towers invites you to move a blob up a tower of ladders until the top is reached. Once at the top you've won and the blob celebrates by diving from the topmost ladder into a small pool making a large splash.

A split screen shows the tower on the left of the screen and the questions you have to answer are generated screen right.

These questions can be tricky! You are presented with a series of letters or numbers or graphics

characters and it's up to you to find the next in the series. Of course, you're penalised if you take too long and your score is shown at the end of each RUN.

The program is menu driven, RUNS well, is bug free, is written completely in BASIC and uses tons of PRINT AT statements. The Menu shows the options open to you: instructions, demonstration, and three levels of difficulty.

A clever idea, thoughtfully presented and addictive in play.

I.H.

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



## DRAGON PROGRAM

Before long most home computer users want to do something more constructive than play games and my Database program makes micros useful.

Use it as a tool to store everyday information. It could be an address book — with space for birthdays — or keep track of your record or tape collections.

If you do not own a printer omit lines 1180, 1190, 1200, 1210, 1220, 1940 and 1950 to 3050 and alter line 30 to a blank REM.

### How it works

5-60 set up, DIMension arrays  
70-220 prompts to format data fields  
230-420 menu  
430-550 option to enter/add  
560-670 option to replace items  
680-1150 search routine  
1160-1360 print routine  
1370-1920 save on tape routine  
1930-3050 option to print, machine code

Before RUNNING enter as a direct command POKE25,6:NEW. This has the effect of PCLEAR0, giving 31215 bytes free to use.

If all is successful you will be greeted with the question: "NEW FILE OR TAPE INPUT N/T?" Enter N to the prompt and the following line will appear: TITLE OF 1ST DATA FIELD".

This is the heading under which the information is stored and you would enter NAME or SONG TITLE or any other heading of your choice.

Do the same for the other three fields.

If you were using the program to store names and addresses the first field would be NAME, the second would be ADDRESS, you would enter TEL No. for the

# Make your micro do some useful work

## Keep tracks of every-day information with Alan Gray's database program for the Dragon

third and BIRTHDAY for the fourth.

After you have entered this format the main menu will appear. It is self-explanatory except, perhaps, for SKIPF/MOTOR ON/OFF.

This enables you to manipulate the cassette recorder to find any data file on tape.

If you have a printer I have included a machine code screen dump which can only be used during the search routine. When you find an entry you want printed press the space bar. This will execute the machine code routine and then return for the next item.

Line 1990 and the same expres-

```
1 REM BEFORE LOADING POKE25,6:NEW
5 CLEAR 55,32600
10 GOTO30
20 POKE&HFFD6,0:MOTOR ON:SOUND120,20:CSAVE"DATABAS
E":GOTO5
30 GOTO3000
40 REM DATABASE A.GRAY 1983
50 FL=0
60 CLEAR20000:DIM S$(200),T$(200),G$(200),W$(200)
70 REM ENTRY
80 CLS
90 POKE&HFFD7,0:CLS
```

```
100 PRINT@11,"DATABASE";
110 PRINT@43,"=====";
120 IF FL=1 THEN 250
130 PRINT@258,"NEW FILE OR TAPE INPUT N/T ?"
140 NF$=INKEY$:IF NF$="" THEN140
150 IF NF$="T" THEN GOSUB 1540 ELSE 170
160 IF FL=1 THEN240
170 CLS1:INPUT"TITLE OF 1ST DATA FIELD";SS$
180 INPUT"2ND DATA FIELD";GS$
190 INPUT"3RD DATA FIELD";TS$
200 INPUT"4TH DATA FIELD";WS$
210 SP$=" "
220 SS$=SS$+SP$:GS$=GS$+SP$:TS$=TS$+SP$:WS$=WS$+SP$
230 FL=1
240 CLS:GOTO100
250 PRINT@132,"(1) INPUT ITEMS ";
260 PRINT@164,"(2) REPLACE ITEMS ";
270 PRINT@196,"(3) ADD ITEMS ";
280 PRINT@228,"(4) SEARCH FOR ENTRY ";
290 PRINT@260,"(5) LIST ALL ITEMS ";
300 PRINT@292,"(6) SAVE ITEMS ON TAPE ";
310 PRINT@324,"(7) LOAD ITEMS FROM TAPE ";
320 PRINT@356,"(8) STOP ";
330 PRINT@388,"(9) SKIPF/MOTOR ON/OFF ";
340 PRINT@458,"INPUT (1-9)";
350 Z$=INKEY$
360 IF Z$="" THEN 350
370 M=ASC(Z$)-48
380 IFM)ODRM(10THENSOUND150,1
```

```
390 IF M (0 OR M)9 THEN250
400 ON M GOSUB 430, 560, 450, 680, 1160, 1370, 1540, 1770,1800
410 GOTO70
420 REM
430 REM INPUT/ADD ITEMS:0=1
440 Y=1
450 CLS:PRINT@8,"INPUT/ADD ITEMS":0=1
460 PRINT@34,"PRESS [ENTER] WHEN FINISHED"
470 PRINT:PRINT"ITEM"Y
480 PRINT SS$:INPUTS$(Y):SOUND150,1
490 IFS$(Y)="" THENRETURN
500 PRINT GS$:INPUTG$(Y):SOUND150,1
510 PRINT TS$:INPUT T$(Y):SOUND150,1
520 PRINT WS$:INPUTW$(Y):SOUND150,1
530 Y=Y+1
540 GOTO470
550 REM
560 REM REPLACE ITEMS
570 N=0:0=1
580 CLS:PRINT@9,"REPLACE ITEMS"
590 PRINT@34,"PRESS [ENTER] WHEN FINISHED"
600 PRINT:INPUT"ITEM NO. TO REPLACE":N:SOUND150,1
610 IF N=0 THEN RETURN
620 PRINT SS$:INPUTS$(N):SOUND150,1
630 PRINTGS$:INPUT G$(N):SOUND150,1
640 PRINT TS$:INPUT T$(N):SOUND150,1
650 PRINTWS$:INPUT W$(N):SOUND150,1
660 GOTO560
670 REM
```

### Main variables

FL flag for entry to program  
NFS remember new file  
SS\$, GS\$, TS\$, WS\$ titles of data fields  
SP\$ space + colon  
Z\$ get input  
M value of Z\$  
Q flag for new data entry  
Y entry counter  
SS, GS, TS, WS data  
N replace entry counter  
CS\$ get input  
C value of CS  
AS\$ get input for target string  
LPS line print prompt

sion in line 3002 clears the printer buffer before any printing is done.

Note: there are 32 spaces between the quotes in line 1330.

### Hints on conversion

The program is written in Dragon's Microsoft BASIC — with a short machine code routine for copying off the screen — so conversion should pose few problems.

SOUND150,1 makes a short beep POKE &HFFD&,0 speeds up the Dragon and POKE &HFFS6,0 turns it off

PRINT @ on the Dragon: top left of screen is 0 and bottom right is 511

CHRS(10) is a blank line

Data files on the Dragon are stored separately from the main body of the program, so Spectrum owners will have to write their own routines to replace lines 1360-1750.

Lines 1800-1900 are commands for cassette recorder control from the keyboard.

The machine code screen dump can, on the Spectrum, be replaced by the copy command. Owners of other computers will have to re-write this routine — or do without it.

# DRAGON PROGRAM

```

680 REM SEARCH
690 CLS:PRINT"SEARCH FILE";:PRINT
700 PRINT@(139),"SEARCH BY":PRINT@199,"(1)";SS$ :P
RINT@263,"(2)";GS$ :PRINT@327,"(3)";TS$ "
710 C$=INKEY$
720 IFC$=""THEN710
730 C=ASC(C$)-48
740 IFC(10RC)3THEN710
750 ON C GOTO760,890,1020
760 PRINT:PRINT SS$:INPUT A$:SOUND150,1:CLS
770 FORX=1 TO Y-1
780 IF MID$(A$,1,2)=MID$(S$(X),1,2) THEN PRINT@64,
SS$ ;S$(X)
790 IF MID$(A$,1,2)=MID$(S$(X),1,2) THEN PRINT@160
,GS$ ;G$(X)
800 IF MID$(A$,1,2)=MID$(S$(X),1,2) THEN PRINT@224
,TS$ ;T$(X)
810 IF MID$(A$,1,2)=MID$(S$(X),1,2) THEN PRINT@288
,WS$ ;W$(X)
820 IF MID$(A$,1,2)(>)MID$(S$(X),1,2) GOSUB 1920
830 IF MID$(A$,1,2)=MID$(S$(X),1,2) GOSUB1930
840 NEXT X
850 PRINT@360,"ENTRY NOT FOUND"
860 PRINT@485,"PRESS [ENTER] TO RETURN"
870 INPUTZ$:SOUND150,1
880 RETURN
890 PRINT:PRINT GS$:INPUT A$:SOUND150,1:CLS
900 FORX=1TOY-1
910 IF MID$(A$,1,2)=MID$(G$(X),1,2) THENPRINT@64,S
S$;S$(X)
920 IF MID$(A$,1,2)=MID$(G$(X),1,2) THENPRINT@160,
GS$ ;G$(X)
930 IF MID$(A$,1,2)=MID$(G$(X),1,2) THENPRINT@224,
TS$;T$(X)
940 IF MID$(A$,1,2)=MID$(G$(X),1,2) THENPRINT@288,
WS$;W$(X)
950 IF MID$(A$,1,2)(>)MID$(G$(X),1,2) GOSUB1920
960 IF MID$(A$,1,2)=MID$(G$(X),1,2) GOSUB1930
970 NEXT X
980 PRINT@485,"PRESS [ENTER] TO RETURN"
990 PRINT@360,"ENTRY NOT FOUND"
1000 INPUTZ$:SOUND150,1
1010 RETURN
1020 PRINT:PRINTTS$:INPUT A$:SOUND150,1:CLS
1030 FORX=1TOY-1
1040 IF MID$(A$,1,2)=MID$(T$(X),1,2) THENPRINT@64,
SS$;S$(X)
1050 IF MID$(A$,1,2)=MID$(T$(X),1,2) THENPRINT@160
,GS$;G$(X)
1060 IF MID$(A$,1,2)=MID$(T$(X),1,2) THEN PRINT@22
4,TS$;T$(X)
1070 IF MID$(A$,1,2)=MID$(T$(X),1,2) THEN PRINT@28
8,WS$;W$(X)
1080 IF MID$(A$,1,2)(>)MID$(T$(X),1,2) GOSUB1920
1090 IF MID$(A$,1,2)=MID$(T$(X),1,2) GOSUB1930
1100 NEXTX
1110 PRINT@360,"ENTRY NOT FOUND"
1120 PRINT@485,"PRESS [ENTER] TO RETURN"
1130 INPUTZ$:SOUND150,1
1140 RETURN
1150 REM
1160 REM PRINT ITEMS
1170 CLS
1180 PRINT"LINE PRINT Y/N ?"
1190 LP$=INKEY$:IF LP$=""THEN1190
1200 IF LEFT$(LP$,1)="Y"THEN GOSUB1950 ELSE1220
1210 GOTO70
1220 CLS
1230 FOR X=1 TOY-1
1240 PRINT@352,"NO ";X
1250 PRINT SS$;S$(X)
1260 PRINT GS$;G$(X)
1270 PRINT TS$;T$(X)
1280 PRINT WS$;W$(X)
1290 PRINTCHR$(10);CHR$(10)
1300 PRINT@482,"PRESS [ENTER] TO CONTINUE"
1310 INPUT C$:SOUND150,1
1320 IFC$="X" THEN RETURN
1330 PRINT:PRINT@352,"
"
1340 NEXT X
1350 RETURN
1360 REM
1370 POKE&HFFD6,0
1380 CLS1:PRINT@135,"SAVE ITEMS ON TAPE
1390 PRINT@234,"POSITION TAPE"

```

```

1400 PRINT@294,"PRESS PLAY & RECORD"
1410 PRINT@388,"PRESS [ENTER] WHEN READY"
1420 Q=0
1430 INPUT R$:SOUND150,1
1440 MOTOR ON :FOR Z=1 TO 100:NEXTZ
1450 OPEN"O",#-1,"LIST"
1460 FOR X= 1 TO Y-1
1470 PRINT#-1,SS$;GS$;TS$;WS$

1480 PRINT#-1,S$(X)
1490 PRINT#-1,T$(X)
1500 PRINT#-1,G$(X)
1510 PRINT#-1,W$(X)
1520 NEXT X
1530 CLOSE#-1:RETURN
1540 FL=1
1550 POKE&HFFD6,0
1560 CLS1:PRINT@136,"LOAD ITEMS FROM TAPE"
1570 PRINT@235,"REWIND TAPE"
1580 PRINT@300,"PRESS PLAY"
1590 PRINT@388,"PRESS [ENTER] WHEN READY"
1600 INPUT R$:SOUND150,1
1610 OPEN"I",#-1,"LIST"
1620 Y=1
1630 IF EOF(-1) THEN 1750
1640 INPUT#-1,SS$
1650 INPUT#-1,GS$
1660 INPUT#-1,TS$
1670 INPUT#-1,WS$
1680 INPUT#-1,S$(Y)
1690 INPUT#-1,T$(Y)
1700 INPUT#-1,G$(Y)
1710 INPUT#-1,W$(Y)
1720 PRINT SS$,GS$,TS$,WS$,S$(Y),T$(Y),G$(Y),W$(Y)
1730 Y=Y+1
1740 GOTO1630
1750 CLOSE#-1:RETURN
1760 REM
1770 M$="":CLS:IF Q=1 THEN PRINT "NEW DATA ENTERE
D HAS NOT BEEN SAVED ON TAPE PRESS 'S' TO SAVE":
INPUTM$
1780 IFM$="S"THEN1370 ELSE1790
1790 POKE&HFFD6,0:CLS:PRINT"BYE":END
1800 CLS:PRINT@134,"SKIP (1)"
1810 PRINT@198,"MOTOR ON (2)"
1820 PRINT@262,"MOTOR OFF (3)"
1830 Z$=INKEY$
1840 IF Z$=""THEN1830
1850 Z=ASC(Z$)-48
1860 IFZ(0 OR Z)3 THEN1830
1870 IF Z=1 THEN POKE&HFFD6,0:SKIPF
1880 IF Z=2 THEN MOTOR ON
1890 IF Z=3 THEN MOTOR OFF
1900 RETURN
1910 STOP
1920 RETURN
1930 Z$=INKEY$:IFZ$=""THEN1930
1940 IF Z$=CHR$(32)THEN PRINT#-2,CHR$(24): EXEC 32
600
1945 RETURN
1950 POKE&HFFD6,0:CLS:PRINT"IS PRINTER READY ?"
1960 Z$=INKEY$:IF Z$=""THEN 1960
1970 IF LEFT$(Z$,1)="Y" THEN 1980 ELSE 1950
1980 FORX=1 TO Y-1
1990 PRINT#-2,CHR$(24)
2000 PRINT#-2,"NO ";X
2010 PRINT#-2,SS$;S$(X)

2020 PRINT#-2,GS$;G$(X)
2030 PRINT#-2,TS$;T$(X)
2040 PRINT#-2,WS$;W$(X)
2050 PRINT#-2,CHR$(10);CHR$(10)
2060 NEXT X
2070 RETURN
3000 REM M/CODE SCREEN PRINT
3002 POKE155,80:POKE328,0:PRINT#-2,CHR$(24)
3005 FORI=0 TO 51
3010 READ A$:A$="&H"+A$
3015 POKE32600+I,VAL (A$)
3020 NEXT I
3030 GOTO40
3050 DATA 86,0D,8D,80,0F,8E,04,00,10,8E,02,00,A6,8
0,81,7F,22,0E,81,20,22,04,8A,60,20,06,81,60,25,02,
84,BF,8D,80,0F,1F,10,C4,1F,26,05,86,0D,8D,80,0F,31
,3F,26,DA,39,39

```

£1,000



software to win — just find the words for your share

THERE are 25 chances to win in another free, easy-to-enter competition from Home Computing Weekly.

We're giving away £1,000-worth of software for the Spectrum and Dragon from CRL, the new force in home computer software.

And all you have to do is to find words hidden in this issue of HCW and put them together to form a sentence.

Each of the 25 prizes is software to the value of around £40 for the Dragon or for the 48K Spectrum.

If you're a Dragon owner these are the great titles you could win:

- |               |                          |
|---------------|--------------------------|
| DragArt       | Key to Wrath             |
| Handicap Golf | St George and the Dragon |
| Froglet       | Laser Racer              |

And winners with 48K Spectrum will get a selection from the following titles:

- |                  |                   |
|------------------|-------------------|
| Crawler          | Lunar Rescue      |
| Caveman          | Zaraks            |
| Test Match       | Alien Maze        |
| Galactic Patrol  | Derby Day         |
| Rescue           | Jackpot           |
| 3D Desert Patrol | Stargazer Secrets |

As a special bonus to HCW readers there's a 10 per cent discount voucher on this page which you can use for any CRL product if you order direct from CRL. It means you gain even if you're not among the winners this time.

But please remember: send the competition entries to us and any orders direct to CRL. The vouchers will not be accepted in shops.

**How to enter**

Scattered throughout this issue of Home Computing Weekly are several words, set in this type.

You have to find all the words, build a sentence from them and then write the sentence in the space provided in the coupon. Fill in the rest of the coupon, including the words Dragon and Spectrum, depending on which set of prizes you would like.

Copies of the coupon will not be accepted. And you must write in large letters on the back of the envelope the number of words you have found (treat hyphens as spaces).

Entries which do not meet these conditions will not be considered.

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

You have until first post on Friday September 23 to get your entry to us and the solution and the names of the winners will be published in the news columns of Home Computing Weekly.

The winning entries will be the first 25 correct entries we open. The prizes will arrive from CRL within 28 days of the judging.

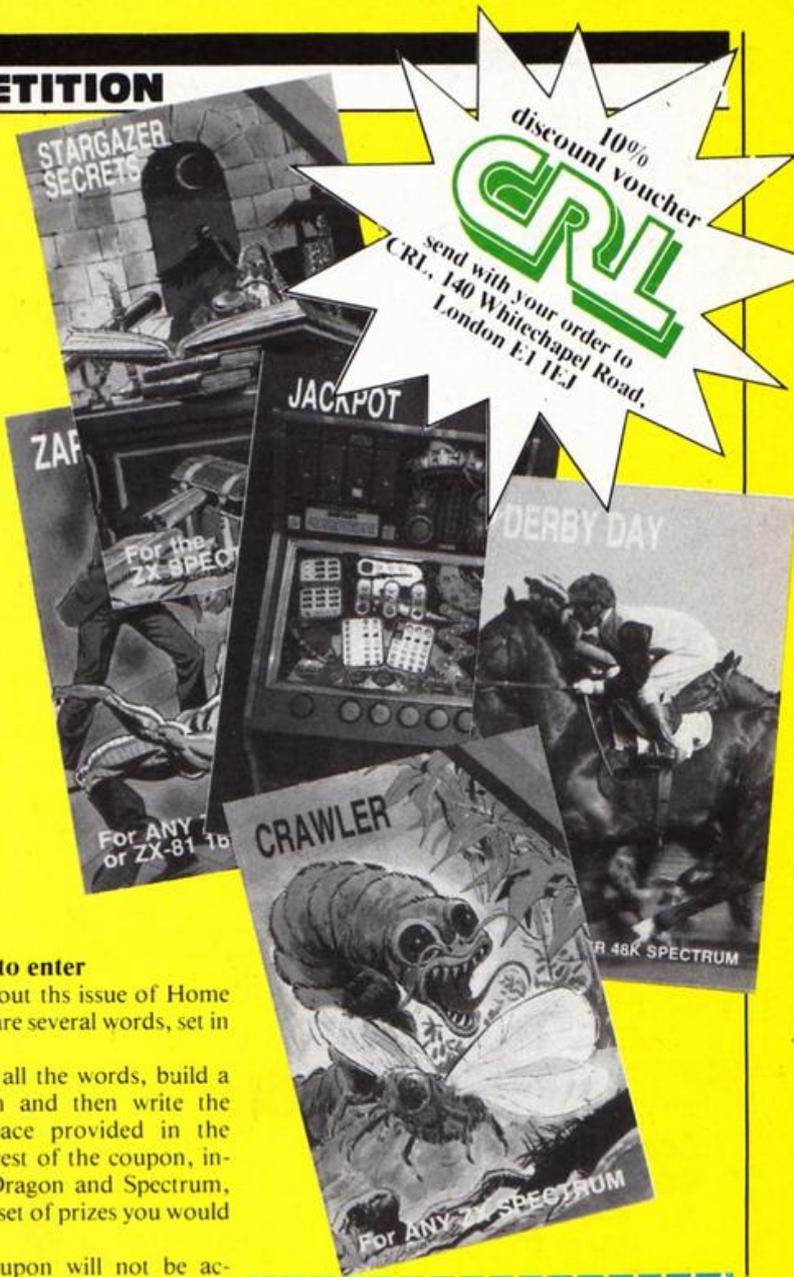
**The small print**

The first 25 correct entries drawn at noon on Friday September 23, 1983, will win the prizes.

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

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

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



**CRL Competition**

**Entry Coupon**

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

post code \_\_\_\_\_

Computer: \_\_\_\_\_

Your sentence: \_\_\_\_\_

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Post to CRL Competition, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Closing date: first post Friday September 23

# Arcade action to take home

**Zap...pow...splat...it's all happening in these arcade lookalikes, played and rated for you by our reviewers**

## Cosmic Debris 48K Spectrum £4.95

Artic, 396 James Reckitt Ave, Hull HU8 0JA

Cosmic Debris is a version of Asteroids. I have always enjoyed this arcade classic more than space invaders and Artic's version lives up to my expectations. The graphics are excellent and

smooth and the sound effects have true arcade tone.

If you get in the way of an asteroid, which happens quite frequently, your spacecraft explodes and a series of radial lines expand outwards and bounce off the sides of the screen. This striking visual effect is coupled with a lot of noise and the overall effect is quite spectacular.

An occasional alien craft appears shooting haphazardly, to make life more difficult for you.

## Scramble 64 Commodore 64 £7

Interceptor Micros, Lindon House, The Green, Tadley, Hants

You are the pilot of a space ship and you have to travel across the planet and into the caverns of this hostile and alien world.

Your fuel is limited. It can be supplemented by destroying the force field projection dishes but beware of the heat seeking missiles determined to blast you off the screen.

You have bombs and laser with which to defend yourself and destroy the dishes.

The instructions are clear but my fingers were not nimble enough to cope with keyboard

control. With a joystick you still needed the return and shift buttons for the bombs and laser.

Once you have crossed the surface of the planet (this gives you a little control practice) you enter the caverns with their restricted space for manoeuvring. If you lose a life here you go back to the beginning of the cavern not back to the beginning of the game.

Even if you still have all five lives when you enter the caverns, it's not easy to get through them. I found this not as compulsive as some other games but enjoyable all the same.

B.P.

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



## Avenger VIC-20 £20 (Cartridge)

From Commodore dealers.

Hiding somewhere in most software catalogues is that classic among computer games, Space Invaders. Seldom is it immediately apparent which of the listed titles is the invaders clone,

## Space Fighter 32K BBC £7.95

Superior Software, 69 Leeds Road, Bramhope, Leeds

This arcade-style game is based on features found in Defender and Scramble. Your spaceship whizzes over the surface of a planet while you mete out justice to six types of nasty, making sure to hit the occasional fuel dump to keep your supply topped up.

The aliens have different characteristics. The Baiters move towards your ship, the Trimorts must be shot three times before they go down and you can only kill the Baryons with a smart bomb, of which you have three. After that, you just avoid them.

The game has six levels and you can select which one to start with — very useful if you haven't quite managed to work your way

through to the different stages. The program loaded perfectly and the screen display and graphics are excellent, although I would have liked to see the aliens explode when hit rather than just vanish.

There are no humanoids to save or corridors to navigate and although it may not be completely fair to call it a poor man's Defender, the lack of such features limits the number of times you will come back to play it.

Why is BBC software more expensive than that for other micros? Prices for such games as these should now be £5-£6.

I.W.

instructions	100%
playability	90%
graphics	90%
value for money	75%



When you have managed to write off three spaceships, your overall score is displayed and gets into the "Hall of Fame" if it's one of the highest since play commenced.

The only disappointing feature of this program, is that you are not asked to input name or initials along with your score. But that does not seriously detract

from the game as a whole. My family found it so addictive that I had a struggle to get a turn at the keyboard.

M.B.

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



## Defender Atari 400/800 £30 (Cartridge)

From Atari Stockists

There is only one question to be answered here — is the BBC version better?

The answer is yes — and no. Graphically speaking, the BBC version has a slight edge. The bombers, baiters, swarms and pods, along with the deadly mutants, are closer to the arcade.

In play however, the Beeb is left standing. Ship control is from the joystick, with the space bar for smart bombs and any other key for hyperspace.

The game plays well, but I felt slightly that the attacking types lacked conviction — the swarms sometimes wander off, whilst the baiters can change course for no apparent reason.

Despite this, it is definitely not a game for people with less than three hands.

M.F.

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



as most publishers are somewhat bashful about admitting that their games are not all new and original. Is it Alien Attack? Is it Space Blitz? No, folks, it's Avenger!

This cartridge contains a fast and graphically precise copy of the old favourite; "blip-blip-blip" go the aliens as they shuffle across the screen. "zap-zap-KAPPOW" goes the laser cannon as it trundles to and fro...

Die-hard traditionalists may like this game but the rest of us gimmick-starved hedonists probably won't. This cartridge is spectacularly over-priced.

T.D.

instructions	70%
playability	40%
graphics	60%
value for money	10%



# Bamby

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# DRAGON

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### for SPECTRUM 48

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Set in the City of the future, this game combines the best elements of both arcade and adventure games. Destroy the evil Drones before they destroy you and your City. Three levels of difficulty. Hi-res graphics and text. **£8.45**

### BOPSWIZZLE: (DRAGON)

A splendid fun game! Beat the ghastly Gloops and the yucky Yerkies, amongst other nefarious nasties. Collect pearls at the same time! Low and hi-res graphics and text. **£5.95**

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### ALONE AT SEA: FOR THE TI99/4A (TI-99/4A)

Try and escape the sinking ship, but don't forget your supplies which are hidden somewhere. Text **£6.50**

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A mind-bender. Cover the squares once only using the knight and its valid moves. Easy?! Full graphics. **£6.50**

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Find the murderer before he (or she) finds you and your career as Detective Solvit! Graphics and text. **£6.50**

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stands



HILTON  
COMPUTER  
SERVICES

# Prepare for battle — the enemy subs are on their way

You are in command of a nuclear submarine, cruising the Mediterranean on routine patrol. Suddenly a message comes through from base: "Enemy Fleet sighted at vector 14/13 in Sector Stigma. Preparing to launch attack on Horne Base. Your mission — to seek out and destroy the enemy. Message ends."

You immediately set a course for Sector Stigma and prepare for battle.

## How it works

10 set up colour for instructions  
20-30 set up title  
90-94 display title character by character BEEPing between each character  
100 set up UDGs from DATA on lines 9000-9020  
110 set up auto-scroll  
120-140 print instructions. Graphics: 140 A,CD,EFG,HJK  
160-200 set up position of enemy ships. Graphics: 170 HIJK,176EFG,182CD,188A  
355-440 input of X,Y co-ordinates  
1000-1020 check if hit, miss  
1030-1100 display hit ship, increase score. Graphics: 1050H,I,J,K  
2000-2020 give up routine  
2100 display positions of enemy ship  
2520 win routine (if all ships are hit), display score with bonus  
3000-3100 replay routing  
9000-9020 data for UDG

On arrival, you switch on your targeting computer showing the grid of the enemy zone. Your job is to locate and destroy all of the enemy's 20 ships.

Seek out and destroy the hostile fleet — those are your orders in Peter Telfer's exciting game for the 48K Spectrum

```

10 BORDER 1: PAPER 1: INK 7: C
LS
20 LET z$=""

" LE          BATT
          "
30 LET z$=z$+"
PS          SHI
          "
& PETE TELF
ER 1983"
40 LET END=2000
90 FOR a=1 TO LEN z$
92 IF z$(a)="" THEN PRINT " "
;: NEXT a
94 BEEP .01, CODE z$(a)-100: PR
INT z$(a);: NEXT a
100 FOR a=144 TO 154: FOR b=0 T
O 7: BEEP .01,30: READ c: POKE U
SR CHR$ a+b,c: NEXT b: NEXT a: P
OKE USR CHR$ 156,255: FOR a=1 TO
6: POKE USR CHR$ 156+a,129: NEX
T a: POKE USR CHR$ 156+7,255
110 POKE 23692,255: PRINT AT 21
,0;
120 PRINT ".....INSTRUCTIONS....."
You aim by entering two letters.
First the across co-ordinate
(A-Y)

```

## Main variables

Z\$ Battleships title  
AS position of enemy ships  
BS input of X,Y co-ordinates  
X down co-ordinates of target computer  
Y across co-ordinates of target computer  
End end of game routine  
S score  
AMO ammunition  
Hit number of hits on ships  
Point score for particular hit  
A + B FOR...NEXT loops

## Hints on conversion

The POKE on line 100 switches the Spectrum to auto-scroll. If your computer doesn't have this feature, then the screen could be displayed by having a pause/wait followed by CLS between each page.

The POKE in line 320 switches the caps-lock on (upper case letter).

The input of the X,Y, co-ordinates works using the ASCII code of the letter pressed (ie the letter A = 65, the letter B = 66 and so on). If the character code of your computer is different then alter the (-64) in line 370 and 410 to suit your computer.

Paper x where x is the background colour of a character square.

INK x where x is the colour of the character.

BORDER x where x is the border.

Spectrum colour codes: 0 black, 1 blue, 2 red, 3 magenta, 4 green, 5 cyan, 6 yellow, 7 white. FLASH1 (on line 1070) alternates PAPER and INK colours.

```

& then the down co-ordinate (A-D)
;: "Press (SPACE) to give up"
130 PRINT ".....PRESS ANY
KEY....."
140 PRINT ".....POINT TABLE....."
+
= 20 Points. "....." = 40 P
oints. "....." = 60 Points. "....."
= 100 Points. "....." Plus Bonus
points for..... remaining amu
nition.....
160 DIM a$(15,25)
162 FOR a=1 TO 3
164 GO SUB 200: IF a$(x,y TO y+
3)<>" " THEN GO TO 164
170 LET a$(x,y TO y+3)="":
NEXT a
172 FOR a=1 TO 5
174 GO SUB 200: IF a$(x,y TO y+
2)<>" " THEN GO TO 174
176 LET a$(x,y TO y+2)="": N
EXT a
178 FOR a=1 TO 9
180 GO SUB 200: IF a$(x,y TO y+
1)<>" " THEN GO TO 180
182 LET a$(x,y TO y+1)="": NE

```

```

XT a
184 FOR a=1 TO 5
186 GO SUB 200: IF a$(x,y)<>" "
THEN GO TO 186
188 LET a$(x,y)="": NEXT a
190 GO TO 300
200 LET x=INT (RND*15)+1: LET y
=INT (RND*22)+1: RETURN
300 PRINT AT 21,0:"Press any ke
y to play": PAUSE 0: PAPER 5: FO
R a=1 TO 22: PRINT "
": NEXT a: B
ORDER 5: PAPER 5: INK 0: CLS
310 FOR a=1 TO 15: PRINT AT a,1
,".....": NE
XT a
320 POKE 23658,0: LET HIT=0: LE
T amo=300: LET s=0: LET x=1: LET
y=1
330 FOR a=65 TO 89: PRINT AT 0,
a-64: PAPER 7: CHR$ a: AT 15,a-64;
CHR$ a: NEXT a
340 FOR a=65 TO 79: PRINT AT a-
64,0: PAPER 7: CHR$ a: AT a-64,26;
CHR$ a: NEXT a
350 PRINT #1: AT 1,1: " SCORE=";S
;: AT 1,17: " AMUNITION=";AMO;

```

## SPECTRUM PROGRAM

```

352 IF HIT=46 THEN GO TO 2500
355 PRINT AT 20,1;"Enter across
>": LET b$=INKEY$: IF b$="" THE
N GO TO 350
357 IF INKEY$="" THEN GO TO EN
D
360 IF CODE b$>89 OR CODE B$<65
THEN GO TO 350
370 LET y=(CODE b$)-64: PRINT A
T 20,15;b$
380 BEEP .1,6
385 IF INKEY$<>"" THEN GO TO 38
S
390 PRINT AT 21,1;"Enter Down
>": LET b$=INKEY$: IF b$="" THE
N GO TO 390
395 IF INKEY$="" THEN GO TO EN
D
400 IF CODE b$>79 OR CODE B$<65
THEN GO TO 390
410 LET X=(CODE b$)-64: PRINT A
T 21,15;b$
420 PRINT AT X,Y;"X"
430 GO SUB 1000
440 PRINT AT 20,15;" ";AT 21,1;
: GO TO 350
1000 IF amo<=0 THEN PRINT #1;AT
1,7; FLASH 1;"OUT OF AMUNITION":
BEEP 1,-6: FOR A=-6 TO -30 STEP
-1: BEEP .05,A: NEXT A: GO TO 2
000
1010 FOR a=5 TO -30 STEP -5: BEE
P .06,a: PAUSE 10: NEXT a
1020 LET amo=amo-1: IF a$(X,Y)="
" THEN RETURN
1030 LET HIT=HIT+1: PRINT AT X,Y
: PAPER 7; BRIGHT 1;a$(X,Y)
1040 LET point=20:
1050 IF a$(X,Y)=" " OR a$(X,Y)="
" OR a$(X,Y)=" " OR a$(X,Y)=" "
THEN LET point=25
1060 LET s=s+point
1070 FOR B=-40 TO -30: FOR A=0 T
O 7: BORDER A: BEEP .08,B: NEXT
A: NEXT B: PRINT AT X,Y; FLASH 1
: PAPER 2; INK 6;" "
1080 IF HIT=46 THEN GO TO 2500
1100 BORDER 5: RETURN

```

```

2000 PRINT #1;AT 0,0; FLASH 1;"
DO YOU REALLY WANT TO GIVE UP "
or
2010 IF INKEY$="Y" THEN GO TO 21
00
2015 IF INKEY$="N" THEN BEEP 1,3
0: PRINT #1;AT 0,0; PAPER 5;"
":
GO TO 350
2020 GO TO 2010
2100 FOR A=1 TO 15: FOR B=1 TO 2
5: BEEP .05,A+B: PRINT AT A,B; P
APER 5; INK 0;A$(A,B): NEXT B: N
EXT A
2110 GO TO 3000
2500 FOR A=1 TO 5: FOR B=1 TO 7:
BORDER B: BEEP .01,A*10: NEXT B
: NEXT A
2510 FOR A=16 TO 21: PRINT AT A,
0;"
": NEXT A: PRINT #1;AT 0,0;"
"
2520 PRINT AT 17,2;"CONGRATULATI
ONS YOU'VE HIT THE LOT.
AND SCORED ";S" WITH A BON
OUS OF ";AMO;" GIVING YOU
";AMO+S;" POINTS"
2550 GO TO 3000
3000 PRINT #1;AT 0,0;"Do you wan
t to play again. " =Yes.
=No
3010 IF INKEY$="Y" THEN POKE 236
92,255: GO TO 120
3020 IF INKEY$="N" THEN POKE 236
92,255: GO TO 3050
3030 GO TO 3010
3050 FOR A=0 TO 5: FOR B=0 TO 7:
BEEP .01,A*5: BORDER B: PAPER B
: CLS : NEXT B: NEXT A
3060 INK 0: PRINT " " OK. Tha
nk you for playing

```

```

L E S H I P S " " " This program
will self destruct" " in 1
0 seconds."
3070 PAUSE 10: PRINT AT 10,3;" "
: FOR a=9 TO 0 STEP -1: PRINT AT
10,10;a: BEEP .01,-20: PAUSE 40
: NEXT a
3100 NEW
9000 DATA 0,0,0,24,24,255,126,60
,40,157,73,58,170,109,26,255: RE
M single ship + explosion
9010 DATA 1,1,1,3,3,63,127,255,1
28,0,0,192,192,252,254,255: REM
sub

```

```

9020 DATA 0,48,14,14,255,255,255
,127,15,10,15,15,255,255,255,255
,0,6,56,56,255,254,252,240: REM
battle ship
9030 DATA 62,42,62,62,255,255,25
5,127,0,32,62,220,255,0,255,255
,0,65,125,40,255,255,255,255,0,0
,240,160,255,252,248,240: REM a.
carrier
9999 STOP : SAVE "B.Ships" LINE
1: BORDER 0: PAPER 0: CLS : BEEP
.1,6: VERIFY " "

```

# 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.

Competitive rates are paid.

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

**Top Ten programs for the Dragon-32**

- |    |                         |                |
|----|-------------------------|----------------|
| 1  | Mountain                | Dragon (-)     |
| 2  | The King                | Microdeal (1)  |
| 3  | Frogger                 | Microdeal (4)  |
| 4  | Android Attack          | Microdeal (3)  |
| 5  | Space War               | Microdeal (2)  |
| 6  | Nightflight             | Salamander (5) |
| 7  | Shuttle                 | Microdeal (9)  |
| 8  | Planet Invasion         | Microdeal (6)  |
| 9  | Ring of Darkness        | Wintersoft (-) |
| 10 | Cuthbert Goes Walkabout | Microdeal (8)  |

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

**Top Ten programs for the ZX81**

- |    |                   |                 |
|----|-------------------|-----------------|
| 1  | Space Raiders     | Sinclair (1)    |
| 2  | Espionage Island  | Sinclair (2)    |
| 3  | Flight Simulation | Sinclair (3)    |
| 4  | Fantasy Games     | Sinclair (9)    |
| 5  | 1K Games          | Sinclair (7)    |
| 6  | Defender          | Quicksilva (8)  |
| 7  | Scramble          | Quicksilva (10) |
| 8  | Football Manager  | Addictive (6)   |
| 9  | Asteroids         | Quicksilva (-)  |
| 10 | The Ship of Doom  | Sinclair (-)    |
| 11 | History           | Sinclair (4)    |

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

**Top Ten programs for the VIC-20**

- |    |                |                |
|----|----------------|----------------|
| 1  | Arcadia        | Imagine (1)    |
| 2  | Wacky Waiters  | Imagine (2)    |
| 3  | Skyhawk        | Quicksilva (6) |
| 4  | Cosmic Crunch  | Commodore (8)  |
| 5  | Sargon 2       | Commodore (4)  |
| 6  | Catcha Snatcha | Imagine (7)    |
| 7  | Cosmiads       | Bug Byte (3)   |
| 8  | Panic          | Bug Byte (5)   |
| 9  | The Count      | Commodore (-)  |
| 10 | Asteroids      | Bug Byte (-)   |

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

**Top Ten programs for the Spectrum**

- |    |                        |                      |
|----|------------------------|----------------------|
| 1  | Jet Pac                | Ultimate (2)         |
| 2  | Flight Simulation      | Psion (1)            |
| 3  | Horace and the Spiders | Psion/M. House (4)   |
| 4  | Football Manager       | Addictive (-)        |
| 5  | 3D Tanx                | dk'tronics (-)       |
| 6  | Hobbit                 | Melbourne House (-)  |
| 7  | Horace Goes Skiing     | Psion/M. House (-)   |
| 8  | Transylvanian Tower    | Richard Shepherd (8) |
| 9  | Chess                  | Psion (-)            |
| 10 | Ah Diddums             | Imagine (10)         |

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

# Improve your moves by micro

Being a chess player myself, I rarely miss reading a review of any new chess software. Recently I have come across an innovative chess program worthy of mention. The price seems to be right, and it certainly takes a new approach compared with most such programs. Its name is Cyberchess and it is made to run on the Tandy Models I and III, the LNW Models I and II, with versions soon to run on the Commodore, VIC-20 and 64. At present, it requires NEWDOS+ 2.1, TRSDOS 2.3, NEWDOS-80, TRSDOS 1.3, or NEW-DOS-80, 32K of RAM, and, without modification, two disc drives. It costs only \$29.95.

The novel approach that this program takes is that it does not program the computer to play chess! It instead makes the attempt to match its human opponent against some of the better players in the world. What the program does is play chess instructor by comparing your moves against those made by the winners of major chess competitions playing key games. It is not intended to teach beginners; you must know the basic moves already. Although the program as it comes requires two disc drives, this is not necessary if you can find someone to transfer the data from the data disc to the program disc.

To use the program, you will need a board and pieces; there is no screen display as such. When you run the program, you are presented a list of games from which to choose. Once you make a choice, the program give you further information on the game: its level of difficulty, opponent's names, game plan, and source. Three play modes are available. One is for instructional purposes. The other three offer time constraints and no analysis. After you select the game, you furnish the program your own level of ability. Ratings are given in the USCF rating system from unrated to 1650 (amateur), and from 1650 to over 2200 (professional). Once you choose either amateur or professional, you then rate yourself on a scale from 1 to 4 which affects how you are scored, but no the game itself.

The program then gives you the five opening moves, which you set up on your board. The screen displays the board as it should look. The screen display is updated every 10 moves to keep all in order. The screen displays the status of the game at all times. This includes the number of the game, level of difficulty, move number, and the game clock (when applicable). The cursor tells you how well you are doing. After a good move, it is moved toward winning, vice versa after a poor move. Moves are selected on a multiple-choice basis, one of six.

If you select the instruction mode, you get a point score depending on whether the program figures you to have made a more better, worse, or equivalent to the move made in the original game. That value is then added to or subtracted from your score. If a move is sufficiently disastrous, the game immediately terminates. If you wish, you can get a short analysis of each choice. If you selected one of the other modes, you play against time and receive no analysis.



As long as we are on the subject, here are some more bits and pieces that will be of interest to Tandy owners. If you plan to use Super Scriptsit with a non-Tandy printer you will need a printer driver to go with it. This is an assembly language program that provides control codes for the printer. You can buy a printer driver for most standard printers from American Small Business Computers, 118 S. Mill Street, Pryor OK 74361 (918) 825-4844 for only \$39.95. I highly recommend these people as a source of discount hardware and software for all Tandy machines.

Rumor has it that Tandy will be coming out with an IBM PC compatible computer in the not too distant future. It is expected to use the Intel 80186 processor comparable in power to the Motorola 68000.

That's it for this week  
Bud Izen

Fairfield, California

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# SPECTRUM

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**One more we bring you the best Microfair report. Paul Liprot went to Alexandra Palace, where the next Microfair will also be held on December 3 and 4**

# All the

255 accounts and, with an adaptor, produces an 80-column print-out. OCP also has The Address Manager which, it says, can store more than 400 full names and addresses — or more than 1,500 individual items — on a 48K Spectrum with three-way in-

dexing and easy entry and editing.

More business program are to follow.

New educational tapes from **Poppy Programs** include Hidden Letters, priced at £5 for the Spectrum in which children from the age of five establish which letters are hidden by black spots. Parents and teachers can adjust the difficulty.

Telling the Time, written by 15-year-old Stephen Holland for children of three-10, has eight levels of difficulty. Due soon is Reading Readiness I, for the two-six age group, in which children match pictures to words. It will come with a keyboard overlay for small children so they need not find a particular key.

A clip-on Spectrum joystick was shown by **Barry Watson**. On sale this month for £9.95, it fits over the top row of keys and depresses the cursor keys.

**Remsoft** had £9.50 printer interface to link the Jupiter Ace with four-colour printer-plotters marketed by Tandy and other companies. And, for £2, the firm has a set of contact pads which fit under the keys and are designed to improve contact. Remsoft is also working on a text editor for the BBC micro.

Britannia Software brought out two new Spectrum arcade games for £4.95 — Home Runner and Stomping Stan. ▶

Teenager Joe Nicholson took time off from studying for GCEs to sell his self-written software — five tapes for the Spectrum and one for the Jupiter Ace.

Joe, 14, is the part-time proprietor of **JN Software** which he runs from his home in Didcot, Oxfordshire.

He bought his first computer, a ZX81, in 1980 and is now studying for 10 'O'-levels.

He said: "If it does get quite big I'd quite like to go into business — but I'm not sure if that's exactly what I want to do."

"My mum and dad think what I'm doing now is quite a good idea, but they think I should be spending more time studying."

Joe's Spectrum programs are Mysterious Island, a £5.95 adventure set on a lonely South Pacific island; Sanctuary, a space arcade game costing £4.95; Spectrum Voice, which creates music and speech on the Spectrum for £2.95; a £3.75 version of Star Trek; and a program for making back-up copies called Spectrum Reflex and priced at £2.50.

His Jupiter Ace tape, costing £5.95, is called 10 All-Time Greats and features versions of familiar games.

Joe's next release will be a Spectrum arcade game called 3D Trailer.

Your favourite programs can be available fast using ROM-SP, says **Camel** whose Spectrum add-on allows 8-16K of data to be read into either computer.

Priced at £34.44, the case opens to allow a 2764 or 27128 EPROM to be plugged in. Other add-ons can be plugged in at the back. Data is transferred to RAM with the PRINT USR command.

Camel, trade name of Cambridge Microelectronics, is soon bringing out a low-cost 2764 EPROM programmer.

Geoff Mathias, who set up his **Premier Software** in mid-May, has four Spectrum programs with three more promised for autumn release.

Kid's Korner, for children aged six-nine, is £4.95; Integer Compiler and Graphics Editor are £5.95 each; and Jason, an adventure based on mythology, is £7.95.

Coming soon are Dril Phab-



ble, a familiar-sounding name for a game which involves rounding up sheep; Andromeda, in which your space fleet is challenged to conquer the galaxy; and Tennis. A Spectrum amplifier costing £9.95 should be available from the end of the month.

Michael Belk, proprietor of **Kelwood Computer Cases**, was showing his Sound Power Base, costing £19.95, which fits under the Spectrum — tilting it forward 15 degrees — and contains a speaker with controls for load and save, clear screen and power and volume.

There is a £13.50 model with no sound generator and a battery powered amplifier for £7.

**Oxford Computer Publishing** launched a new range of software designed to help run small companies and clubs and for home management.

Finance Manager, costing £8.95, is said by writer Francis Ainley to be faster and better than its rivals because it is entirely in machine code. It can handle



# best at the Microfair

◀ **Richard Shepherd Software**, best-known for adventures, launched *Invincible Island*, written by 26-year-old maths teacher Peter Cooke whose children convinced him it was worth sending to the company.

And Richard Shepherd himself has a new graphics adventure called *Devils of the Deep*. Both cost £6.50.

Just five months ago Liz and Alick Newman decided to produce educational software under the **Image** name... and their first four programs were on show.

Mrs Newman, 34, an art teacher and mother of children aged four and 12, said: "We started because we could not see anything suitable for bright children to get them going. They need something visually appealing to grab their attention."

Image's tapes are *Animal Anagrams* and *Spelling Bee*, both at £4.95 for the Spectrum, and *Multifont*, which offers a choice of six alternative character sets, also £4.95.

Haven Hardware, best-known for its range of add-ons, showed *Wonder Worm*, an adventure

costing £5.50 for the 48K Spectrum. More software is also due from the company under its newly-launched **Havensoft** trademark.

**Alan Firminger** brought out *All-Sort S-1*, a £15 Spectrum program which generates sophisticated sorting routines.

**Microsphere's** new *Train Game* puts you in charge of a rail network featuring two track layouts and seven levels of play. You have to pick up passengers — if they are kept waiting they will refuse to pay or hijack the train — and avoid driverless

trains. It costs £5.95 for either Spectrum.

**Hewson Consultants** brought out a new arcade game at £5.95 for the Spectrum: *3D Space Wars*. Dragon software is due soon from Hewson and in two months there will be the first four of a new range of BBC software.

Three new printer interfaces for the Spectrum were shown by **Hilderbay** at £45 for the Standard Interface, £55 for the de luxe package and £99 for the Professional Interface. All three will support printers which accept Centronics-type parallel input and include a word processor program.

**Quicksilva** is starting a club called the Quicksilva Game Lords Club, named after its slogan. For £1 a year members will get a quarterly magazine, discounts, competitions, and special offers on pre-release tapes and shows.

*Drawmaster* is a sophisticated utility from **Campbell Systems** for the 48K Spectrum, priced at £5.95, which allows picture drawing on the screen. Among the 50 commands are *FILL* and *RESCALE* and status and coordinates are constantly on display.

Stephen Hughes, 23, wrote *Bedlam*, a £4.95 Spectrum space game, for **AWA Software**.

*Cyber Tanks*, a new arcade game for the Spectrum at £5.50 was launched by **Star Dreams**.

Useful for programmers, *Pixel Pad* is 50 sheets on which to design graphics. Produced by **Computer Agencies**.

**Treetop**, which markets a case at £47.45 for Spectrum, printer and cassette player, is bringing out a new version which will hold a Microdrive instead of cassette player.

*Telesound 84* is a "beep booster" for the Spectrum from **Compusound** which fits inside the computer — using three clip-on connectors — which feeds sound through the TV speaker. It costs £9.95, including a sound effects program.

Now available from **Fuller Micro Systems** is RS-232 and Centronics interface for the Spectrum. And more software is out using the company's £54.95 three-channel sound and speech generator.

## Photograph Key

- 1 Michelle Brant with Compusound's Telesound 84 "beep booster"
- 2 Joe Nicholson — software and studying
- 3 Michael Belk with his £7 battery-powered Spectrum amplifier



*Barmy Burgers* is the latest novel game from **Blaby**. You have to make hamburgers using baps, burger steaks, cheese and lettuce — not so easy when you are being chased by a fried egg and sausages. Blaby's other two new games are *Dodo* and *Killer Kong* and all three are priced at £5.95.

**Vortex** launched a ZX81 adventure called *Serpent's Tomb* and priced at £3.95. Three more games are promised for the next Microfair.

In the next few months **dk'tronics** is bringing out five new tapes — three of them its first for the Commodore 64 and the other two for the Spectrum, said managing director David Heelas. At the Microfair dk'tronics launched two Spectrum games: *Hard Cheese* (£4.95) and *Maziacs* (£6.95).

## Where to find them

In order of appearance in article.  
**JN Software**, 11 Latton C1, Chilton, Didcot, Oxon OX11 0SU;  
**Cambridge Microelectronics**, 1 Milton Rd, Cambridge CB4 1UY;  
**Premier Software**, 1 Hollington Rd, Upper Tean, Stoke on Trent ST10 4JY;  
**Kelwood Computer Cases**, Downs Row, Moorgate, Rotherham S60 2HD;  
**Oxford Computer Publishing**, Brimrod, 4A High St, Chalfont St Peter, Bucks SL9 9QB;  
**Poppy Programs**, Richmond House, Ingleton, via Carnforth, Lancs LA6 3AN;  
**Barry Watson**, 1 Whitehouse Cl, Chalfont St Peter, Bucks SL9 0DA;  
**Remsoft**, 18 George St, Brighton BN2 1RH;  
**Britannia Software**, 116 Woodville Rd, Cathays, Cardiff, S Glam CF2 4EE;  
**Richard Shepherd Software**, Elm House, 23 Elmshott La, Cippenham, Slough, Bucks;  
**Image Systems**, 185 Elm Rd, New Malden, Surrey KT3 3HX;  
**Alan Firminger**, 171 Herne Hill, London SE24 9LR;  
**Microsphere**, 72 Roseberry Rd, London N10 2LA;  
**Hewson Consultants**, 60A St Mary's St, Wallingford, Oxon OX10 0EL;  
**Hilderbay**, 8/10 Parkway, London NW1 7AA;  
**Quicksilva**, Palmerston Park House, 13 Palmerston Rd, Southampton SO1 1LL;  
**Campbell Systems**, 15 Rous Rd, Buckhurst Hill, Essex IG9 6BL;  
**AWA Software**, 50 Dundonald Rd, Didsbury, Manchester M20 0RU;  
**Star Dreams**, 17 Barn Cl, Seaford BN25 3EW;  
**Computer Agencies**, c/o Robert Gibson & Co, Station Maltings, Newport, Saffron Walden, Essex CB11 3PL;  
**Compusound**, 32 Langley Cl, Redditch, Wores B98 0ET;  
**Fuller Micro Systems**, ZX Computer Centre, 17 Sweeting St, Liverpool 2;  
**Blaby Computer Games**, Lutterworth Road, Blaby, Leicester;  
**Vortex Software**, 280 Brooklands Rd, Brooklands, Manchester M23 9HD;  
**dk'tronics**, Unit 2, Shirehall Industrial Estate, Saffron Walden, Essex.

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**Tit for tat**

I decided to start a club and wondered what to call it, so I decided to call in the Texas Instrument Tappers Society (or T.I.T.S. for short).

What prompted the name was one of your outstanding features on your front cover (or should I say two).

Anyone interested in becoming a T.I.T. (Texas Instrument Tapper) particularly in the Chester area.

Write to the address below — if we get enough response we will start a club.

Mrs J. A. Mendelssohn, 5 King Street, Chester, Cheshire CH1 2AH

**Troll King gets cheaper**

With regard to the review of our text-based adventure Troll King in HCW 24, I would like to make it clear that, as with all Lantern products, a full instruction sheet is provided with this cassette although sadly it was not possible to include in-program instructions due to the length and complexity of the program.

Secondly, although originally marketed at £8, Troll King now retails at £6.50 which I think you'll agree is not an unfair price for an adventure that accepts full sentences.

Your continued support of the TI-99/4A and your high standard of program reviews is greatly appreciated, not only by us, but by our customers who constantly refer to your magazine in their letters. Keep up the good work!

S. W. Sursbie, Lantern Software, Tenterden, Kent

**Clubbing together in Bloxwich**

We are Bloxwich Computer Club, and we meet at Frank F. Harrison school in Leamore Lane, Bloxwich, every Wednesday evening between 7 and 9 pm.

We have members with many makes of machine, as well as use of the school's BBCs and Tandy. We have a few VDUs available, but prefer members to bring their own.

We welcome experts and beginners, owners or otherwise. Admission is free. Details from myself at the address below.

M. Warden, 64 Nursery Road, Bloxwich, Walsall, West Midlands WS3 2DU

**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. Queries cannot be answered on this page**

**Cover girl controversy — 1**

When my rather embarrassed newsagent handed me my copy of Home Computing Weekly No 23, the poor chap didn't know if the computing world had gone sex mad, or whether a sex mag had gone computerised.

While I am sure that sales of your mag are not declining, surely it is not necessary to resort to this level. No, I am not a prude — if I need titillating, then there are lots more mags on the market better able to do that.

Having read your publication from week one (my Mrs made me clear them out of the lounge only this week and rehouse them in a cupboard in the shed), I feel you are a good micro family mag that is above having to resort to sex to help it along.

How about more software reviews on other things except games? Are there educational programs for the not so young?

Please keep up the good work — and keep it clean.  
Patrick Reith, Northfield, Birmingham

**Cover girl controversy — 2**

I feel I should protest most strongly at the way certain aspects of your publication are developing. I refer to the recent growth in the numbers of pictures of young ladies holding micros in strange positions.

As the chairman of a micro users' group, I am thrilled to see the number of women who attend and are keen to learn the intricacies of the machines. There are still not enough of them. But what are they to think if your publication suggests, by its visual content, that their only purpose is to decorate an ugly computer?

By all means show ladies, yes all manner of persons, using the machines sensibly, but I am in danger of cancelling my regular order if your

content continues in this manner. Surely you are able to provide more interesting photographs than these, or at least more relevant ones.

No more girly pics.  
D. Ambrose, Leeds

**Service with a smile from Salamander**

I recently bought Salamander's Oric Trek from a shop called the Computer Discount Centre. The cassette was saved in fast mode and it would no load on to my computer.

I took the cassette back to the shop twice but they kept refusing to refund my money. So I decided to return the cassette to Salamander.

They returned the cassette within the week, along with a very nice letter apologising for the trouble caused. With the letter and cassette they sent me another copy of Oric Trek saved in slow mode.

I'd like to express through your pages my gratitude to Salamander for their help and their speedy service.

William Bailey, Hatfield, Herts

**Extended complaint**

As an HCW addict, I am writing to stand up for all us TI owners. Why is it that when you do review any TI games, you review the less-spectacular ones, which are almost inevitably in TI BASIC?

I recently discovered that the top-selling module for the TI-99/4A was Extended BASIC, so why not review some of the great games that are written using this module?

What about Up Periscope (Pewterware), Attackman, Cross Country Car Rally and Super Frogger (Norton), Battlear Attack and Operation Moon (Lantern), Laser Tank (Not Polyoptics) and PS Pesteroids and Space Rescue (PS Software), to name but a few?

Philip Longshaw, Packmoor, Stoke-on-Trent

*Though the Extended BASIC module may be selling well, it is pretty expensive and most TI owners still don't have it yet. That's why we've concentrated on games in TI BASIC, and will continue to do so until more people have the EB module.*

*We do aim to include a reasonable amount of EB games, though, and more will be coming up in future issues.*

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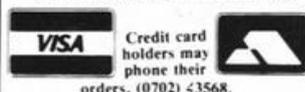
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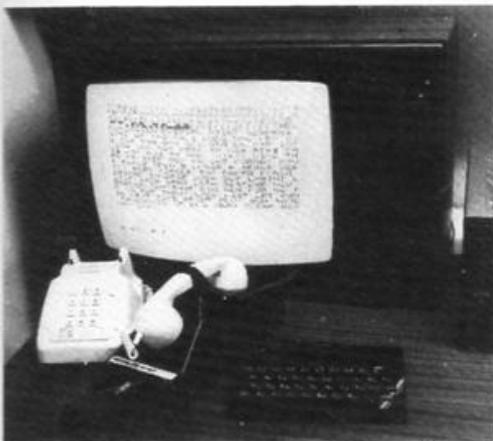
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