

Home Computing WEEKLY

Britain's leading weekly magazine for software reviews

An Argus Specialist Publication

No. 51
Feb 28-Mar 5, 1984

40p

Software reviews for:
Spectrum, BBC, VIC-20, Oric, Commodore 64, Atari, Texas, Electron, Dragon,

FREE COMPETITION
150 prizes to be won from



Three VIC-20 programs to type in

Two great Spectrum games to play

AND:
listings for BBC/ Electron, Dragon, Atari, Commodore 64

Creating bar charts on the Spectrum: just follow our advice

PLUS
your letters, U.S. Scene, latest news, One Man's View...



Yogi Bear software?

Well-known cartoon characters are likely to appear in computer games as a result of talks now going on.

Walt Disney is discussing a major world-wide deal with a U.S. company and Hanna-Barbera — owners of Yogi Bear and Huckleberry Hound — has been talking to several U.K. software companies.

Lynda Wilson, of Walt Disney's U.K. marketing department, said: "There is a licence pending in America.

"It's a major deal which may well be for world rights. In the same way we have licensed Coca-Cola for our theme parks.

"Software is a sphere that's going to be very large.

Continued on page 5

We'll spend more in '84

Home computers and software gave W.H. Smith a profits boost — and the boom goes on.

Merchandise controller Stewart Binnie forecast: "This year is going to be even better than 1983."

His company had just reported that sales of home computers and software had soared by 55.5 per cent, from £15m to £27m, in the 10 months ended December 3.

Smiths has 30 computer shops-within-shops and plans to open another 16-17 this year.

Mr Binnie put its success down to two main factors: longer ex-

Continued on page 5

NEW RELEASE



The Guardian

£5.95

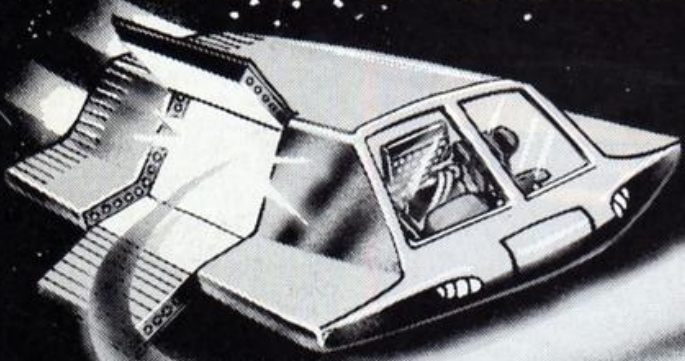
You are at the gateway to the Anti-Matter world of Migen... Do you dare enter?

SEND CHECK OR P.O. TO PLS 433 STONEY
STANFORD RD COVENTRY CV4 9DS
FOR INSTANT CREDIT CARD SALES TEL 0203667554

R&R

SOFTWARE

means value



At R&R we believe that value comes first, and we make it our business to ensure that we provide good quality programs at realistic prices... for your enjoyment.

ALL ARCADE GAMES NORMALLY HAVE CHOICE OF KEYBOARD OR JOYSTICK CONTROL. Should you have difficulty in obtaining our products from your local Dealer please send cheque or Postal Order indicating titles required, for return of post service.

CHOPPER X-1

(For any ZX Spectrum)

You command the Spectrum Chopper X-1 Gunship—Your mission is to repel invading forces and save the earth. An action packed original game in full machine code.

R.R.P. £5.50

GALAXY WARLORDS

(For any ZX Spectrum)

A fast action machine code space game in which you defend your position as Galaxy Warlord against attacking enemy starships. Both your patrol ship and rockets are steerable. The enemy never seem to give up! Full colour action graphics and sound for just

R.R.P. £5.50

JUNIOR ARITHMETIC

(For any ZX Spectrum)

An excellent educational program for 6-9 year olds. The fun way to learn and practice Addition, Subtraction, Multiplication and Division. Mistakes are corrected and explained, along with a running total of correct answers. Terrific value at just

R.R.P. £4.95

SPECTIPEDE

(For any ZX Spectrum)

Enjoy the thrill of this full machine code arcade game. Battle to keep the Spectipede at bay but watch out for a very unpredictable spider which is out to get you. For 1 or 2 players with top score and on-screen high score feature.

R.R.P. £5.50

GOLF

(For any ZX Spectrum)

Enjoy a game of golf in the comfort of your own home! With the choice of a 9 or 18 hole course and the challenge of Fairway, Rough, Trees, Bunkers, Water & Green. Displays are in realistic colour graphics with full score cards. No two games are alike!

R.R.P. £3.75

GNASHER

(For any ZX Spectrum)

The 'famous' arcade maze game with fast machine code action, excellent graphics, colour and sound. Eat-up all the dots before the Ghosts eat you, or beat them to an energy pill which will allow you to eat them! Hours of addictive fun with on-screen scoring and high-score tape-save capability for just

R.R.P. £4.95

STAR TREK

(For 48K Spectrum only)

One of the original computer space games, but this program has many up-dated features normally only found on larger computer versions. Test yourself as Starship Commander as your mission takes you to the outer reaches of the Galaxy to protect Federation Space, the Starship and yourself! Excellent value at

R.R.P. £4.95

OTHER COMPUTERS?

Send S.A.E. for a full list of our growing range of software now available for ZX81 and ORIC-1 Computers

R&R

SOFTWARE

DEALER ENQUIRIES WELCOME
R&R Software Ltd.
5 Russell Street, Gloucester GL1 1NE.
Tel (0452) 502819

CALLING ALL PROGRAMMERS...

WANTED New, Quality Software.
Send us your latest Program
for evaluation - NOW.

AVAILABLE FROM LEADING DEALERS NATIONWIDE

BUY THIS SPACE

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

**Classic
Adventure
for Spectrum**

A text-only adventure, Classic Adventure is the latest version of this age old classic that was first written in Fortran and took up over 200K of memory. Described as the ultimate adventure this version has been produced for the 48K Spectrum by Melbourne House. Classic Adventure costs £6.95.

Melbourne House, Castle Yard
House, Castle Yard, Richmond,
Surrey TE10 6TF

**Pottem with
A & F**

Anglesey Enterprises and A & F Software have joined forces to bring you a video game version of the popular board game Pottem. Several games can be played on the board original and this feature has been incorporated in the computer version. It is thought that this is the first ever link with a board games manufacturer and the company hopes that this is the start of a fruitful trend.

Unit 8, Canal Side Industrial
Estate, Woodbine St. East,
Rochdale, Lancs

Simple Software has added Simply Assemble to its range. Priced at £37, the assembler comes on tape or disc for the Commodore 64 or PET 3.0 or 4.0 versions. The makers say even beginners can understand the instructions.

Simple Software, 15 Havelock
Rd, Brighton, Sussex BN1 6GL

Two players can use Chariot Race, a new VIC-20 arcade game, at the same time, says Micro-Antics. It costs £6.95 and Micro-Antics says the theme is true — Emperor Commodus was a famous chrioteer.

Micro-Antics, Littlehome,
Hawthorne Lane, Codsall, Staffs

Home Computing WEEKLY

News	5,6
£1,000 software competition	7
Software reviews	8
Soar away with the Spectrum, BBC and Dragon	
VIC-20 program	10
Try your skill as a crane driver	
Software reviews	13
Escape with your Dragon, Spectrum or BBC	
One Man's View	14
Spectrum programming	15
How you can create bar charts	
Commodore 64 software reviews	21
Educational software reviews	23
BBC/Electron program	24
Climb the ladders — but avoid the spiders	
Spectrum software reviews	27
Commodore 64 program	29
Four to get. Can you beat your partner?	
Spectrum program	30
Grab the flags... but watch out for the monsters	
Spectrum program	33
U.S. Scene	34
Software charts	35
Software reviews	36
Games for Dragon, Atari, Electron and VIC-20	
Software reviews	38
Letters	41
Dragon program	43
You're the king: how long will you reign?	
Atari program	46
It's your turn at the bomb aimer	

Editor:
Paul Liptrot
Designer:
Bryan Pitchford
Managing Editor:
Ron Harris
Chief Executive:
Jim Connell

Divisional Advertisement Manager:
Coleen Pimm
Advertisement Manager:
Ricky Holloway
Assistant Advertisement Manager:
Stuart Shield
Classified Advertising:
Debra Stuppel

Argus Specialist Publications Ltd.
No.1 Golden Square, London W1R 3AB. 01-437 0626

Home Computing Weekly is published on Tuesdays. Distribution by Argus Press Sales and Distribution Ltd, 12-14 Paul Street, London EC2A 4JS. Printed by Alabaster Passmore & Sons, Ltd, of London and Maidstone, Kent. Design and origination by MM Design and Print, 145 Charing Cross Rd., London WC2 0EE

I'm An
**URBAN
UPSTART**
Are You?
RICHARD SHEPHERD SOFTWARE



There's lots for Spectrum owners in this issue — software reviews on pages 8, 13, 23 and 27; programs to type in on pages 30 and 33; an article on programming starts on page 15



You've got a Commodore 64? Turn to page 21 for a page of games reviews. And there's a game to type in on page 29



VIC-20 users: turn to pages 10 and 47 for three great programs to type in. Software reviews for your computer are on pages 23 and 26



We've got 150 prizes of software from CDS Micro Systems to give away in this week's competition. Turn to page 7 and see if you can spot the differences

More than fun and games!

FIRST STEPS with the Mr. Men

by Primer Educational Software

The ever-popular Mr. Men help prepare young children for reading with four simple and absorbing games designed to exercise essential skills as well as entertain.

An easy-to-use, colour-coded key guide is included with an illustrated introductory book, featuring the Mr. Men. For ages 4 to 8 years. Available now on cassette for the BBC B, Spectrum 48K and Electron. **£8.95**



QUICK THINKING!

by Widgit Software

Two mind-stretching, space-age games to test mental arithmetic and nimble fingers.

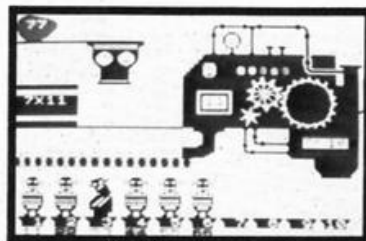
In **Sum Vaders** alien robots invade the earth. Only quick thinking and fast reactions can prevent them. Several levels of difficulty and a two-player game with a handicap option make Sum Vaders equally testing for all family members, from 8 years to adult.

Robot Tables challenges the young player to make a series of perfect robots.

Knowing your multiplication tables is the key to controlling the robot-making machine. With a learning mode and a testing mode, Robot Tables is a fun way

for early learners, and more advanced children, to master an important and often neglected skill.

Available now on cassette for the Spectrum 48K, and Commodore 64, BBC B and Electron. **£6.95**



CAESAR THE CAT

by Andromeda Software

Meet Caesar, a cheeky young cat on duty in a well-stocked larder. He's kept busy chasing a gang of hungry mice eating the family's food. Playing against the clock, you guide Caesar along crowded shelves to pounce on the mice.

A fast, colourful, all-action, arcade-style game with catchy music and a best-score record. Challenging for high-scoring arcade addicts as well as great fun to play for the novice.

Available on cassette for the Commodore 64

£8.95



Prices include VAT and post and packaging. MIRRORSOFT programs are available from selected branches of W.H. Smith and Boots, and other leading software stockists.

Trade enquiries welcome: phone 01-822 3580.

MIRRORSOFT

SOFTWARE FOR ALL THE FAMILY

To MIRRORSOFT, PO Box 50, Bromley, Kent BR2 9TT

Please send me the following (enter number required of each item in the space provided):

I enclose a cheque/PO for £..... made payable to "Readers' Account: Mirror Group Newspapers Ltd"

Or please debit my ACCESS/BARCLAYCARD for the sum of £..... card no.

HC

	Price	Spectrum 48K (01)	BBC B (03)	Electron (04)	CBM 64 (05)
First Steps with the Mr. Men (MM01)	£8.95				
Quick Thinking (QT01)	£6.95				
Caesar the Cat (CC01)	£8.95				

I understand that my remittance will be held on my behalf in the bank account named above until the goods are despatched.

Signature.....

Name.....

Address.....

Postcode.....

Offer applies to Great Britain and Eire only. Please allow up to 28 days for delivery in the UK. MIRRORSOFT is a registered trade mark of Mirror Group Newspapers Ltd. Co. Reg. No: 168660. Reg. Office: Holborn Circus, London EC1.

Cartoons

From front page

"It involves big money and we have had quite a few enquiries from U.K. companies."

She said any licence for world rights would allow for the different home computers popular in different countries.

Walt Disney's characters include Mickey Mouse, Donald Duck, Goofy, Pluto and characters from films like The Lady and the Tramp and Snow White.

Hanna-Barbera's U.K. licensing director, Tony Gabsby Peet, was more guarded.

He agreed that he had talked to a number of U.K. software houses, but stressed: "We haven't even reached first base yet — which is not to say we don't want to."

"We are part of a large U.S. company and ultimately that is where the decisions are made. It's a lengthy process."

He said that, with greater competition for sale of computer games, using a well-known character would give a big sales advantage.

Hanna-Barbera's characters include Yogi Bear, Huckleberry Hound, the Flintstones and Scooby Doo.

More in '84

From front page

perience and that, starting with narrower product range, expanding the computing side of the business had been less hazardous for Smiths.

Even so, many customers had been disappointed as their choice of computer was not available — particularly the Electron, which suffered from Acorn's production problems, and the Spectrum. The bright spot had been the Commodore 64 which was in good supply.

Mr Binnie said: "It's our experience that the demand is still unabated. And software is very strong, as you might imagine."

He said the 1983 pattern would be repeated: demand would be strong until May and would pick up again after the 'O'- and 'A'-level results in June and July.

Computer magazines had shared the success, he said, and added "We seem to have more and more titles and we sell more of them every month."

Mr Binnie warned newcomers that retailing computers and software was now a sophisticated business.

He said: "It's not something you can wander into."

● W.H. Smith & Son (Holdings) reported pre-tax profits of

£20.11m against £14.43m — a rise of 39 per cent — on a turnover of £770.31m, up by £73.92m.

Shares rose 4p to 140p on the news. This was described by a commentator as "a miserly acknowledgment of a rather impressive performance."

Pirates: probe starts

Bosses of four well-known software companies have been given the job of recommending how the industry should act against piracy.

They will be reporting back to the Guild of Software Houses on Friday next week.

Members made the decision to appoint a committee after a three-hour meeting when they heard of a massive counterfeiting operation.

They were shown copies of cassette software so good that at least one member still believes they could be originals.

Quicksilver's managing director, Rod Cousens, and GOSH chairman Nick Alexander argued in favour of an Anton Pillar order, a legal device allowing a surprise raid.

But members seem to have balked at the cost — at least £5,000, with the prospect of another £50,000 if the case was fought in court.

Mr Cousens said the meeting was shocked at the quality of the copies.

He said: "Our members wanted more information before they were prepared to embark on what could be a costly form of action. I'm prepared to back it with a large sum of money. Piracy is a major threat to the industry. I think you'll see software houses getting together on this."

Now, he said, bodies like the Inland Revenue, Trading Standards officers and the Fraud Squad were taking an interest.

He had discussed the problem with Barry Henderson MP (Lab, East Fife), who is chairman of the parliamentary committees on information technology. And he planned to see John Butcher, a junior minister at the Department of Trade.

Speaking of the GOSH meeting, Mr Alexander, managing director of Virgin Games, said: "I would have been elated if they had decided to act, but it was too much to hope."

"I don't think people are going to say: 'Here's £50,000, get on with it.' It takes a lot to get that sort of money out of people."

It has long been an aim of some leading members of GOSH to set up a legal fighting fund. Software piracy was one of the driving forces in the establishment of the

guild.

One of the committee members, Tim Langdell, of Softek, said: "We are at a stage where it's possible to make a statement, an example, by doing this. I was among those at the meeting who were still deciding. There are too many unknowns at present; that's why we set up the committee. It would be very difficult to support an Anton Pillar order regardless of cost."

Programming by rote

Specially written for young programmers, Foulshams has just released Spectrum Magic, a book about computer programming on the Sinclair Spectrum by Steve Betts. The book is written for children of 9 years old and upwards and the essence of the book is action and enjoyment. Games programs and other easy to understand routines are included in the text to keep kids interested and involved while they learn. Price: £5.50.

W. Foulsham & Co Ltd, Yeovil Road, Slough, Berks

Talk to my computer

In what is described as a development to rival that of home computers, Orion Data has brought out a low cost speech recognition package for the Spectrum.

Called Micro Command, it translates spoken words into signals. To accommodate different accents and voices, a "voice print" is taken. Commands can even be entered in foreign languages.

The package consists of the unit, two manuals, microphone and a cassette with speech loading instructions plus a free game. Price: £49.95.

Orion Data, 3 Davendish St, Brighton, East Sussex BN2 1RN

QL club

With the launch of Sinclair's QL computer, Leon Heller and Brian Pain have announced IQLUG — the Independent QL User's Club — offering monthly newsletter; free software library; free advice service; workshops; advice for local groups. A six month trial subscription costs a mere £3.25.

You could be on our pages

We welcome programs, articles and tips from our readers.

PROGRAMS must always be sent on cassette. Listings are helpful, but not necessary. 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, No.1 Golden Square, London W1R 3AB

Wait for the QL

Potential buyers of the new Sinclair QL micro are being warned that it will be April or May before they can expect to see their machines.

Sinclair admitted being taken totally by surprise by demand for the QL. A spokeswoman said: "This is a business machine aimed at a different market to our previous products. It is much more expensive than previous models and we simply didn't expect the response."

Even before the machine was advertised, enthusiasts were sending in their cheques for £399 and the advertising itself, says the company, has been very low key.

With a back-log of orders of over 6,000 and hundreds more coming in by the day, Sinclair has been writing advising them of the delays. This is to pre-empt action by the Advertising Standards Authority which has already started to receive complaints about late delivery.

It seems Sinclair will not be increasing production levels to cope with the back-log although the company was unwilling to comment on this. Production levels are, however up to original plans and are on stream for 20,000 plus units per month by the middle of the year.

First deliveries of the 128K QL were promised for the end of February and the company has said this will be honoured. Although Thorn EMI Datatech are sole suppliers at present, Sinclair is likely to seek a second source later in the year — in time to meet the June release of the QL into High Street stores.

Acorn: all the 'details'

Acorn is believed to be planning a three-pronged offensive to counter Sinclair's new QL, retain the BBC contract and to appeal to business users.

The following details are from an HCW source which is usually reliable.

- Price drops are on the way for the 32K BBC computer, now £399, and the recently launched Electron, at £199 described as a "cut-down" BBC micro. Figures range from £150 to £30 as the BBC discount and up to £70 off the price of the Electron.

- It now seems certain that the long-awaited Advanced Business Machine will not use the National Semiconductors 16032 "super chip". It is likely to be far more conventional with a later 16032 option as a second processor.

Other options may well include a Z80 processor, so the CP/M business operating system can be offered to take advantage of the vast range of business software running under this system. The other likelihood is compatibility with the IBM Personal Computer — which has rapidly set a standard. Most business computers now claim IBM compatibility.

- Acorn is being challenged for the BBC's "official" computer by Sinclair Research. It is a valuable contract, giving virtually automatic entry to schools, and Sir Clive Sinclair has long been upset that his company has not been allowed to share the success.

In a bid to retain the contract, Acorn has prepared a new model with likely names including "BBC 2" and "BBC model C". Model C would imply compatibility, a feature which the BBC would insist upon.

At £399, it may provide 128K of RAM — the same as the QL — plus separate screen memory.

A rumoured feature is the ability to create shades of colours, allowing an almost infinite palette. With Acorn's experience of The Tube, built in to the BBC to allow easy attachment of enhancements, it would make sense to use a multi-processor system, not necessarily a dual system.

Some of these rumoured details may not be made public for several months and they depend on market movements. Our source is, however, confident that this is the way Acorn staff are thinking.

Eager Beva launches learning programmes

Good news for parents is that Specialised Education Software and Services have started to sell their range of educational software in High Street stores.

The range of programmes, developed for use in mainstream and special schools will be available for use initially on the BBC model B computer but should be brought out for other machines including the Acorn Electron and Enterprise computers in the near future.

The first two packages are Jigsaw Puzzle and Sliding Block

Puzzle. Jigsaw Puzzle contains four different pictures and the trick is to assemble them, developing memory and encouraging familiarity with the keyboard along the way. There are five levels of difficulty.

Sliding block is an electronic version of that old idea of a picture in a frame made up of movable blocks. Again there are four pictures and five levels of difficulty. Both packages cost £9.95 each and are available on cassette or disc.

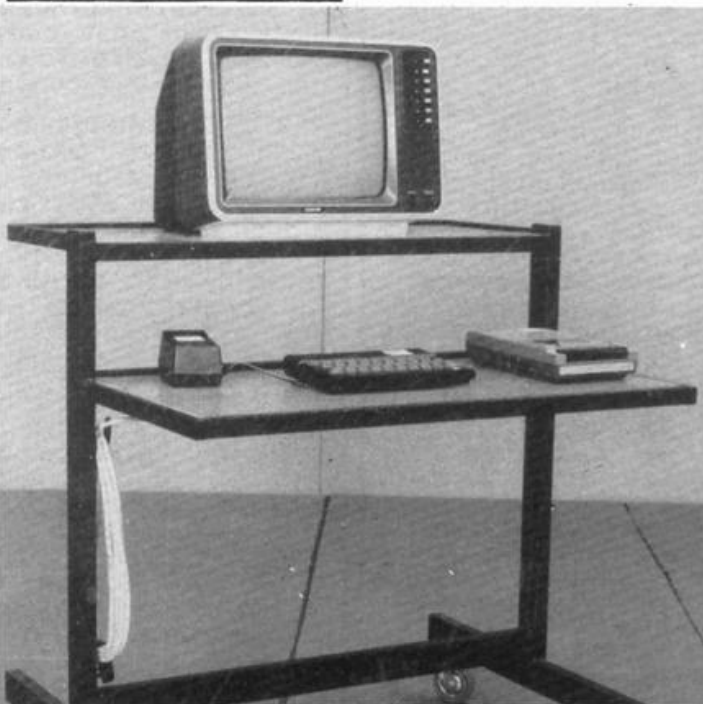
Ega Beva SESS Ltd, Central Trading Estate, 275-277 Bath Road, Bristol BS4 3EH

Wells Work station

Latest product from the King Cole Tube Bending Company is the Wells work station. It features split level work surfaces for optimum working levels, a four way electrical socket, sturdy metal frame and castors for easy movement.

All these features have been designed for easy working and a minimum of trailing wires. The work surfaces are finished with easy to clean laminated plastic and raised safety edges help prevent equipment falling over the edge.

King Cole Tube Bending Company Ltd, 40 Buckland Road, Pen Mill Trading Estate, Yeovil, Somerset BA21 5EJ



Wells computing work station



The Sony KV1430 computer TV

Computer TV from Sony

New from Sony is the 14-inch KV1430 Trinitron TV. Although it shares all the quality of the other TVs in the Sony range, its unique feature is the RF socket mounted on the front of the set. This allows the user to connect up a home computer without the bother of fiddling round the back to find the aerial socket.

There is also the usual socket on the back of the TV and selection is made by means of a button on the front panel.

Another design feature made with home computers in mind is the vertical styling which raises the screen a few inches off table level. This allows the computer to stand in front of the TV without obscuring the screen. The KV1430 is available in white or grey and costs around £249.

Sony (UK) Ltd, Staines House, 158-162 High Street, Staines, Middlesex TW18 4AZ

COMPETITION

Experience great games from



CDS Micro Systems

There's 150 prizes to be won

Enter our spot the difference competition and you could win tapes for your Spectrum or Oric from CDS Micro Systems

We've got 150 prizes of great games from CDS Micro Systems waiting to be won in this week's competition.

All you have to do is spot the differences between our two cartoons, based on the exciting new CDS release, *Winged Warlords*.

You'll see warriors, mounted on flying horses, battle it out in a program which features smooth graphics, thanks to 100 per cent machine code.

Winged Warriors, which is among the prizes you could receive, runs on either model of the Spectrum and costs £5.95.

The total value of the prizes is £1,190 and the games run on the Spectrum and the Oric-1.

The first 50 winners will get two tapes and the next 100 will receive one cassette.

The prizes

The first 50 correct entries we open will win the senders two games from CDS, whose slogan is: "...for the ultimate experience in computer games."

Senders of the next 100 correct entries opened will win one tape.

Prizes for Spectrum owners will be drawn from the following list. All except Spectrum Safari (48K) run on either Spectrum.

Caterpillar **Reversi**
Magic Meanies **Winged Warlords**
Spectrum Safari **Pool**

Prizes for Oric owners will be one or both of these two games, which run on either model:

Bozy Boa **Reversi**

The winners' names and the solution will be published in Home Computing Weekly.

How to enter

Examine the two cartoons to find the differences between them.

Mark the differences on cartoon B by marking them with a semi-opaque felt-tip pen or circling them with a ballpoint pen.

Then fill in your name and address, the computer for which you would like prize/s — Spectrum or Oric — and the number of differences you found. If you own a Spectrum, please indicate whether it is the 48K or 16K model.

Seal the coupon and cartoon B in an envelope and write clearly on the back the number of differences you found.

Post your entry to CDS Competition, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB.

Entries close at first post on March 16, 1984.

You may enter as many times as

you wish but each entry must be on the official coupon and cartoon —

not copies — and sealed in a separate envelope. Do not include anything else in the envelope.

The prizes will arrive from CDS within 28 days of the publication of the issue containing the names of the winners.

Important: please follow carefully the guidelines on entering. Incomplete or wrongly completed entries and envelopes without the number of differences on the back cannot be considered.

The rules

The first 50 correct entries opened after the closing date will win their senders two tapes and the next 100 correct entries win one tape. Entries which do not follow the guidance in the How to Enter section on this page will be discarded.

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

Closing date is first post on March 16, 1984.

The editor's decision is final and no correspondence will be entered into.

CDS Competition Entry Coupon

Name _____

Address _____

post code _____

Computer _____

Number of differences found _____

Complete clearly and fully. If you are a prizewinner, this will act as a label. Post to CDS Competition, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB. Closing date: first post on March 16, 1984. Do not forget to also write the number of differences you found on the back of the envelope.



SOFTWARE REVIEWS

2002 32K BBC £7.95

Superior, Dept BM1, 69 Leeds Rd, Bramhope, Leeds

BBC owners who enjoy flight simulations and more demanding games will appreciate this package which uses perspective graphics to simulate a space shuttle docking.

The idea is to dock the craft with a large wheel space station of the kind seen in 2001. This is done by careful use of directional thrusters and rocket motors, while a view of the station from the cockpit is drawn at each stage. Various aids such as status displays and targeting indicators can be called up at any time, and it is even possible to fly blind. Controls are varied and complex, but a function key label is provided and a comprehensive instruction booklet. With a little

perseverance the controls are soon mastered.

Six different skill levels are provided, from a straight approach to a wildly spinning crash land. Graphics are in black and white, but highly detailed, showing every aspect of the station from a tiny wheel in the distance to a huge complex structure close up. The program does however suffer from a distinct slowness, and some warning sounds are unexplained and confusing.

If you enjoy fast action games, steer clear of this, but I recommend it to anyone who wants a challenging and stimulating change. D.A.

instructions	95%
playability	60%
graphics	90%
value for money	80%



Air Traffic Control Dragon 32 £8

Microdeal, 41 Truro Rd, St. Austell, Cornwall PL25 5JE

A first class simulation that kept me hooked for hours. It's another import from Tom Mix and has

good graphics and sound.

You are asked whether your computer can handle double speed — a necessary precaution as the program could crash — and then to select level of difficulty, the greater the difficulty the more traffic. The screen shows your area of operations plus instruments in the highest resolution which in this case means black and white. The

Up, up and away ... by micro

Space and aircraft simulations for Dragon, Spectrum and BBC. Our test pilots hand in their reports

aircraft are clearly drawn with two runways in the centre.

A detailed manual explains the operations, all accomplished with a joystick. It takes a little while to get used to the commands but it's worthwhile in the end. Fortunately a collision or bad landing doesn't end the simulations — you go on until no plans are left!

Points are earned for good take offs and successful landings. Landings are more difficult

because you take manual control to glide in with crosswinds increasing the difficulty.

M.P.

instructions	95%
playability	90%
graphics	95%
value for money	100%



Nightflite 2 Spectrum £7.95

Hewson Consultants, 60A St. Mary's St, Wallingford, Oxford OX10 0EL

Reading the insert's 11 pages, with 5,000-plus words in fine type, proved a mammoth task, as did reviewing this program. For flysim officianados this is surely a must — and all in 16K, thanks to being efficiently written in machine code.

Loading was simple and revealed a menu offering seven modes, including two autopilot and one training mode. There are six levels of difficulty and a shifting perspective that shows the correct view of the runway and village lights from whichever direction the airfield is approached. Instruments are

realistic, with three greens for undercarriage, stall warning light and alarm, variable flap controls, detailed map, four beacons, realistic limitations to the aircraft performance and engine noise varying with speed. Who can doubt that the author is an air traffic controller and pilot?

Superb sound and graphics do everything claimed. At the end a personal debrief is displayed on screen that can be printed to produce a personal record, signed by the author. An interesting, enjoyable, taxing program that would absorb the student for hours — but not for the ordinary games player, perhaps. T.W.

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



Star Force Lander 32K BBC £6.95

First Byte, 10 Main St, Derby

When the BBC micro first butst on the world some three years ago now, I remember being enthralled by one of the new lunar lander programs my local software house was marketing. But that was three years ago and things have changed vastly, which means that far from being thrilled by this program it is rather old hat to say the least.

Admittedly, there are six different types of landing difficulty and it uses a more interesting manoeuvrable space craft which actually turns itself round but it simply isn't enough to make the game interesting any more. The screens are fairly well laid out and the graphics are acceptable.

Unfortunately, the author decided to go for high resolution plotting and therefore uses a low number of colours which, while being accurate, means that in the current market the program is that much less attractive. It is difficult to play, however, and should provide a few hours enjoyment for those who like a challenge. The different levels involve asteroids, alien space craft firing upon you and difficult city landing pads to give variety. Key control is good and accurate but a joystick option would have been nice. Overall a fair but unexciting game. The lack of any documentation is lamentable. D.C.

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



Space Mission Simulator 32K BBC £2.99

CompuSoft, 32 Watchyard La, Formby, Liverpool L37 3JU

Just look at that price again. Yes, it does say £2.99 and that includes postage and packing. That doesn't mean of course that the program is only worth about three pounds, as you will see, but

it is nice to see at least one supplier selling his wares at a reasonable price.

What is this game then? It's based around the idea that you have to scramble for a mission to repel invaders and follows the path you must take to do so. First you have to move as fast as you can to get to your ship. Then you have to carry out all the flight checks and fuelling that your aircraft requires before finally taking off and shooting the

baddies.

The final part is rather more like a navigation program than an invader game but is still quite interesting. There is certainly nothing of special note about this game, but then what can you expect for the money? It is, however, very well done and has some addictive qualities as I found as I tried to get it to rate my efforts above Disgraceful! Certainly a buy for your spending money. Don't be put off by the

price. It is really worth about £5. D.C.

instructions	60%
playability	80%
graphics	75%
value for money	95%



PEDRO

“Vengo”

“Vengo”

“Vengo”

Pedro is one mad mexican gardener, and he's bringing his troubles your way.

Can you stop the animals eating your plants?

Can you block up the maze exits to keep them out of your garden?

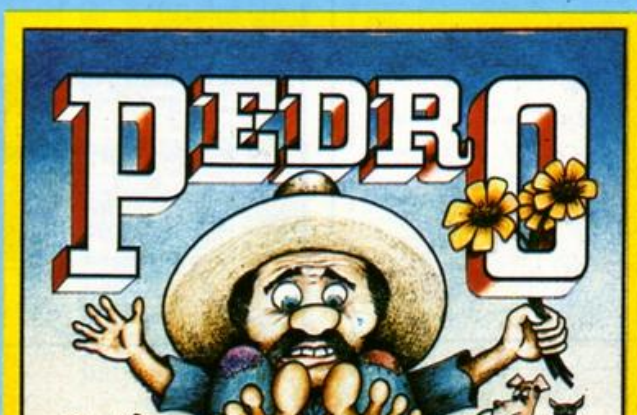
Can you scare away the thieving tramp who's after your precious seeds?

Can you stop yourself pulling out your hair with frustration?

Find out soon, with PEDRO.



For the
48K SPECTRUM
COMMODORE 64
DRAGON 32
BBC Model B
ELECTRON



ULTIMATE



THE NOT · SO · SOFTWARE

CAN YOU HANDLE THE **ULTIMATE**?
THE MOST AMAZING PROGRAMMES, THE SMOOTHEST
ACTION, THE HIGHEST RESOLUTION GRAPHICS?
ALL **ULTIMATE** GAMES ARE ARCADE STANDARD,

FEATURE PACKED, 100% MACHINE CODE.
AND PURE ADDICTION.
SO WHICH WILL BLOW FIRST - YOUR COMPUTER OR
YOUR MIND?



Cookie 16/48K ZX Spectrum



Tranz Am 16/48K ZX Spectrum



Atic Atac 48K ZX Spectrum



Pssst 16/48K Spectrum



Lunar Jetman 48K ZX Spectrum



Jet Pac 16/48K ZX Spectrum
or 8K Expanded VIC 20

ONLY £5.50 EACH Available from: W.H. Smith, Boots, John
Menzies, Spectrum Centres, large department
stores and all good software retailers. Or send the coupon direct.
We'll pack and post your order to you absolutely free in the U.K.

Okay, I dare take my computer to the edge of meltdown. Send me the following:
☐ Cookie ☐ Lunar Jetman ☐ Pssst ☐ Tranz Am
☐ Jet Pac ☐ Jet Pac - Expanded VIC 20 ☐ Atic Atac

I enclose cheque/PO for £ _____ Name _____
Address _____

Code _____

Send to:
Ultimate Play The Game,
The Green,
Ashby de la Zouch,
Leicestershire.



NEW FROM THE GAME LORDS!

SIX GREAT NEW GAMES FROM QUICKSILVA...

COMMODORE 64 STING 64 £7.95

Author: **Anton Hinxman**
Hive-cave action!
Bertie Bee needs help
defending the hive. Fight off
the invading swarms, battle
the bees and defend your
Queen!

COMMODORE 64 BUGABOO (THE FLEA) £7.95

Author: **Indescomp**
Itchy action!
Jump your way out of the
caves with Bugaboo the flea
but beware of the fearsome
Dragon as you jump around
the exotic vegetation.

48K SPECTRUM RAYMOND BRIGGS' THE SNOWMAN £6.95

Author: **David Shea**
An enchanting game based
around episodes of Raymond
Briggs' amazingly successful
book.

48K SPECTRUM ANT ATTACK £6.95

Author: **Sandy White**
Battle the Ants in the soft
solid 3D city of Anteschier.

48K SPECTRUM DRAGONS BANE £6.95

Authors: **M. Preston,
P. Hunt, R. Rose,
D. Moore.**
A mythical graphic
adventure in the dark and
deadly halls of Earthstone
Castle. Battle Dragons,
Vampires, Sphinx, Zombies,
Skeletons, Gryphons and
other legendary beasts to
rescue the beautiful Princess
Paula.

48K SPECTRUM FRED £6.95

Author: **Indescomp**
Action beneath the
Pyramids!
Fearless Fred the Intrepid
Archaeologist searches the
creepy catacombs below the
torrid tomb of
'Tootiecarmoon' for the
terrible treasures amidst
monstrous mummies,
ghastly ghosts, bats
and rats!

...NOW OFFERING
AN EVEN GREATER
RANGE!

SPECTRUM PROGRAMS

ANT ATTACK* 6.95
Sandy White
GAMES DESIGNER* 14.95
John Hollis
BUGABOO* 6.95
Indescomp
TRAXX* 6.95
Jeff Minter/Salamander
GRIDRUNNER* 6.95
Jeff Minter/Salamander
SMUGGLERS COVE* 6.95
John Keneally
VELNOR'S LAIR* 6.95
Derek Brewster
3D STRATEGY* 6.95
Freddie Vachha
XADOM* 6.95
Mike Moscoff
AQUAPLANE* 7.95
John Hollis

ZX-81 PROGRAMS

QS DEFENDA 3.95
Nick Lambert
QS ASTEROIDS 3.95
John Hollis
QS INVADERS 3.95
Dave Edwards
QS SCRAMBLE 3.95
Dave Edwards

COMMODORE 64

PURPLE TURTLES* 7.95
Mark & Richard Moore
AQUAPLANE* 7.95
John Hollis & Steve Hickman
RING OF POWER*
Mc Clement & Fred Preston
QUINTIC WARRIOR* 7.95
T.P. Watts
ULTISYNTH*‡ 14.95
Nalin Sharma

BBC PROGRAMS

THE GENERATORS* 6.95
Dave Mendes
MINED OUT* 6.95
Ian Andrew & Ian Rowlings
BEEB ART*‡ 14.95
Dave Mendes
PROTECTOR 7.95
Andy Green
WIZARD 6.95
A.R. Buckley
MUSIC PROCESSOR 14.95
Andy Williams

VIC20 PROGRAMS

TORNADO
CHARTEC
SKYHAWK
CHARTEC
TRADER‡ 14.95
PIXEL
PIXEL POWER 7.95
PIXEL

ATARI PROGRAM

MAGIC WINDOW 8.95
M. Walker
DRAGON
PROGRAM
MINED OUT 5.95
I. & C. Andrew
ELECTRON
PROGRAM
MINED OUT* 6.95

* NEW RELEASES

‡ SUPPLIED IN A
BOX WITH BOOKLET

Quicksilva games are available from:
Boots, W.H. Smiths, J. Menzies,
Microdealer, HMV, Hamleys, John
Lewis, Computers for All and
all reputable specialist
computer stockists.

QUICKSILVA

All games marketed exclusively by Quicksilva Limited.
Please send me the games I have ticked.

I enclose cheque/P.O. for _____
Send to Quicksilva Mail Order, _____
P.O. Box 6, _____
Wimborne, Dorset BA21 7PY.
Telephone: (0202) 891744

Name _____
Address _____

WARNING: These programs are sold according to
QUICKSILVA Ltd's terms of trade and conditions of sale.
Copies of which are available on request.



Fishy Business Dragon 32 £9.95

Salamander, 17 Norfolk Rd,
Brighton, Sussex BN1 3AA

Supplied in the most lavish packaging I have ever seen for a Dragon games cassette, this is the third part of the Dan Diamond (Sam Spade) trilogy of adventures. The cassette case is larger than a video case and is moulded for cassette and the well-produced booklet which contains pictures of the adventure. The idea with these adventures is that they contain no graphics, all the pictures being in the booklet. Time and memory can be saved and the pictures are of a much higher standard than if they had been on the screen.

The adventure is one of the more interesting and original for

the Dragon. You use the standard commands to move around and manipulate your largely undersea environment. What is the aim? You are not told but there are clues all around: in what people say to you, in the room descriptions and, if you had played the two earlier parts, in those as well. Salamander says, however, that you can play this adventure without having played the previous two.

I found it a challenge, quite amusing (watch out for the red herrings) and worth the price.

C.G.

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



Can you escape from these?

Adventures set undersea, in space and a dungeon, and with the SAS. Our reviewers tried their skills

tives only. Having chosen, you are presented with result of your choice and the game goes on. More often than not, you die quite quickly, as do your companions. The now clichéd Funeral March announces your demise, together with a graphic grave-stone. After a number of deaths you learn the correct responses which allow you to kill off a few terrorists and wander round the farmhouse, some of which is pictured in monochrome. At this

point you may be lucky enough to have built up sufficient "skill" to enter part two, on the other side of the cassette. Regrettably, this contains more of the same.

D.M.

instructions	70%
playability	85%
graphics	60%
value for money	50%



Space Adventure One 32K BBC £7.95

First Byte, 10 Main St, Derby

Reviewing adventure games is never easy. One very rarely has time to finish them by the deadline and can only get a flavour before having to put pen to paper. You do, however, get time to see how the program reacts both to your imbecilic responses and in terms of pure speed.

This is a text-only adventure entirely in BASIC, the explanation for its extremely slow responses which tend to be very frustrating indeed. They might not be too bad if you were allowed to type ahead, but this is not possible either. So you are left to wait and think while the program does its best.

It is also not a large adventure, having only 34 discrete rooms, despite appearing to have more due to dead ends etc. When this is compared to the Level 9 adventures, also for the BBC, with more than 200 rooms then one has a right to feel somewhat cheated. There is no real help facility — only the shortest of curt messages — and, while there are a lot of objects to manipulate, the room descriptions are very short. The story line is reasonable but fairly standard and rather humourless. The only instructions you get are on screen. All told a rather plain program of no particular merit.

D.C.

instructions	10%
playability	50%
graphics	n/a
value for money	30%



Kosmic Pirate 48K Spectrum £5.65

Elephant, 41 Haymill Rd,
Burnham, Berks SL1 6NE

This adventure/arcade is really original. Why? Because you're the baddie! You're cast as captain of an out-dated spacecraft, Red Beard 2, wreaking havoc by zapping innocent spaceships.

After you have successfully disabled a craft you are at liberty to send your crew of drones and cellular beings on board to plunder anything which might be of future use.

Beware at all times of disaster. It's an old ship and reliability isn't guaranteed. Beware also of your crew.

Apparently the craft was built by the OOZas, who you have presumably left strewn in little pieces across the galaxy. It is said that ENTER was mystical to them, so you are warned not to touch that key. Do take this advice.

The attack simulation gives some of the best 3D effects I have seen but the controls are erratic.

Should your score exceed 9,000 you will be transported to earth as world dictator. Your first task is to have tea. After that you're really on your own.

C.B.

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



Skull 48K Spectrum £6.95

Games Machine, 40 Fretherne
Rd, Welwyn Garden City, Herts

Green slimy moss covers the crumbling walls of the dark dungeon. In semi-darkness you stumble through catacombs with one thought spurring you on: there must be some point to this

game!

There isn't. This arcade/adventure lacks the goal that has made its cousins, Atic Atac and Halls of the Things, so popular.

There is absolutely no means of escape from a 3D maze inhabited by the gruesome skulls. You must simply stay alive for as long as possible, avoiding creepy craniums while picking up coins and gems for points. Occasionally you stumble across a crucifix to ward off the skulls. You are pro-

vided with a map, but this slowly disintegrates.

The 3D effect is well created and the screen is rapidly re-drawn as you move about, but the skulls are not as intimidating as the blur would have them.

A lot of time has gone into the presentation of this package. At the start the screen slides into place very effectively. Your defeat is represented by blood trickling down the screen. There is also a facility for saving, loading and

merging your high scores which is very useful and should become the norm. Not a first then in game technique, but a first in presentation.

T.B.

instructions	100%
playability	65%
graphics	80%
value for money	85%



(0404)44425

**This is the
number for**


**TEXAS INSTRUMENTS
SOFTWARE**

**Britain's
biggest
TEXAS
software
stockist**

Send S.A.E. for full list of Hardware
and Software from our vast stocks

Extended BASIC.....	£45.00
32K Expanded memory	£89.00
Teach yourself Extended BASIC .	£9.75
Car Wars	£15.00
Hustle	£12.50
Tombstone City	£15.00
Statistics	£15.00
Adventuremania	£5.95

**PARCO
Electrics**

4 DORSET PLACE
NEW STREET,
HONITON,
DEVON

ONE WOMAN'S VIEW

St Georgina and Dragon

In the beginning, I thought it only fair. After all, I've got the cat; my daughter's got a boyfriend, so it seemed only right that my husband should have something too.

Now he has — and I don't like it at all.

I've met gardening widows and golfing widows; I've met wives who've been ditched for the au pair. But I've never yet met one who's been deserted for a Dragon. Except me!

It's supposed to be a friendly dragon — it says so on its box — but I don't trust it. Mind you, when my husband's there, it's always perfectly civil, and it said "Hello, Mary" most politely within minutes of taking up residence. But it's worming its way into my husband's life in a most underhand way.

When he gets back from work, he has to pass its lair — my dining room that was — en route for the kitchen. There am I, slaving away over a hot microwave, creating something tasty for his tea. The other night I'd made a complete sweet and sour for four before it even let him out to give me my six o'clock peck on the cheek. Barely time for a quick, "Had a good day at work, dear?" before he's off again, and for the rest of the evening he's holed up with it, INPUTting, LISTing and RUNning for all he's worth.

It's gradually, insidiously, devouring the rest of the household. It has persuaded my husband to buy it some joy-sticks, so now he and my daughter go and keep it company in the evening. Even the cat is, treacherously, showing signs of being captivated by its grunts and graphics. It has demanded a new tape-recorder to play its programs; it has become inseparable from the spare telly that I used to watch in bed, and what it wants floppy discs for, I just don't know. We now have to eat in the kitchen because it doesn't like being disturbed in the dining room. But when guests were expected to balance plates on their knees in the lounge, instead of sitting down to a decent meal, I knew it had to be war.

I am, even now, embarked upon my Terrible Revenge. Initially, I contemplated amputating its wires, or performing major surgery on its insides, but I'm not going to lower myself to use brute force. I shall match cunning with cunning. Which is why, last week, I enrolled on a computer course. I am working on a self-destruct program to load into it when it's not looking. In the meantime, I shall pretend to be its friend. While learning about loops and string variables, I'm disarming it by letting it beat me at all the games we play together.

Last night, incidentally, I was playing a really good game with it. So good that I got up early this morning to carry on with it before breakfast. And there's no doubt about it — it is far easier eating in the kitchen, besides which, my improved typing speed has been noted admiringly at work.

Now in case you're thinking that I've fallen into that old "if you can't beat them, join them" routine, I haven't. I'm just not letting my family be taken over by a computer, and I'm their St Georgina, galloping, whether they like it or not, to the rescue. In the meantime, where was I? Ah, yes.

1200 PRINT AT 930 "YOU HAVE WON. I GIVE UP."

Or have I?

**Mary Tweddle
Dragon slayer
Solihull**

● This space is for you to sound off about the micro scene, to present bouquets, to hurl brickbats, or just to share your opinions or experiences. Contributions from individuals earn a fee. Send your views to Paul Liptrot, Editor, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB

By using a computer we can readily carry out lots of measurements or calculations and end up with enormous arrays of numbers.

Having produced all of these numbers one method of presenting them is to produce a list or perhaps a table of figures. Unfortunately such a table or list of numbers is not particularly helpful when we come to interpret the results.

When examining a list of results we are usually more interested in the way the results are changing rather than the precise numbers. A much better method of displaying results is to show them visually using a graphics display or perhaps a chart.

Such a graph or chart usually shows each result as either a varying length line or perhaps as a dot whose height above some reference line is proportional to the quantity being displayed. One of the simplest types of display is the variable length strip display and an example of this in real life is the everyday mercury thermometer.

Let us start by looking at the production of a thermometer type display using the low resolution mosaic graphics symbols provided on the Spectrum.

In a conventional mercury thermometer the length of the columns of mercury indicates the temperature. We can represent the mercury column by drawing a simple vertical bar whose length is proportional to the measurement it represents, in this case temperature.

The thermometer tube can be shown by drawing a box in a different colour around the measuring column. The height of this box must be sufficient to allow the measuring column to reach the maximum value that we want to display.

In order to make sense of the reading of a thermometer we need a scale.

On a real thermometer this is normally drawn on, or alongside, the thermometer tube. On our display we shall draw the scale alongside the measurement column. Minus signs are used as graduation marks to show the calibration of the length of the column and some of these also have a number alongside which shows the corresponding temperature in degrees C. In this case only the lowest and highest temperature points are marked in this way.

As the temperature changes the length of the vertical column changes in sympathy and the top of the column indicates the measured temperature.

Suppose we want to measure from 0°C to 100°C. The mosaic symbols allow us to draw in steps

Make measures meaningful — type in a bar chart

It's easier to understand figures with a bar chart. Steve Money explains how it's done, with programs to use, in an article from his new book, Spectrum Graphics and Sound, published by Granada

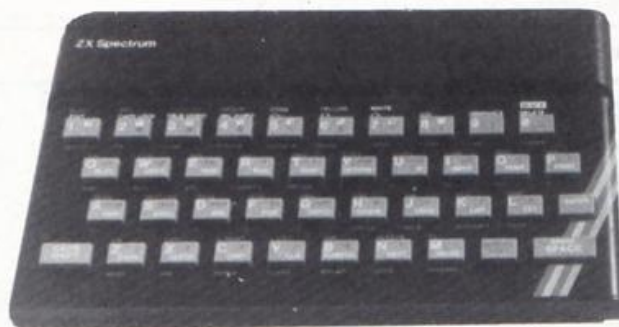
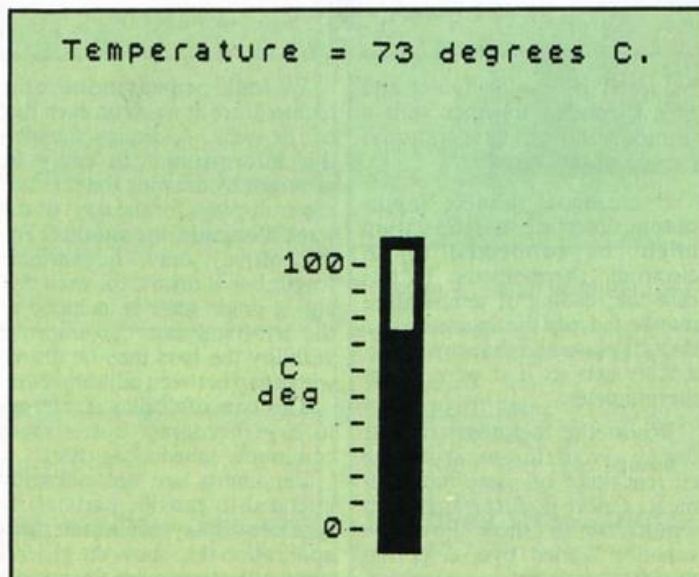


Figure 1 — typical display from Program 1



of half a text character space at a time so the maximum possible number of steps from the top to the bottom of the screen is only 44.

A convenient length for the column might be 20 units. Each block in the column therefore represents 5°C. At this point we can draw the thermometer tube. The bottom of the tube is produced by printing mosaic symbols with codes 129, 131 and 130 roughly at the middle of text row 20.

A loop is then used to draw the tube itself and the graduation marks by printing symbols in successive lines moving up from line 20.

Finally the top of the tube is produced by printing three mosaic symbols on line 8 and the scale calibrations are printed at appropriate positions alongside the thermometer tube.

To draw the mercury column the temperature reading is first scaled into 5° steps by dividing t by 5. Note here that 5 is first added to t before it is scaled. This takes account of the fact that the — sign indicating 0°C is actually halfway up the lowest symbol position in the mercury column. After scaling the temperature value is rounded off and converted to an integer number y .

Next a loop is set up with a limit of $y/2$ since there are two steps per symbol position. This loop prints completely filled character spaces working up from the bottom of the tube giving a length rounded down to the nearest 10°.

Finally $y/2$ is compared with $INT(y/2)$ to see if a further 5° step is needed and if so the next higher character space is filled with a half block symbol.

Program 1 produces the thermometer display on the low resolution screen. Random temperature readings are displayed as text at the top of the screen and also on the thermometer display. In this program before each new temperature is displayed the previous reading of the mercury column is erased by printing solid blocks in all of the column positions using INVERSE which effectively resets the column to the background or PAPER colour. The mercury column itself is drawn in red INK colour. The result on the screen is as shown in **Figure 1**.

Of course, the vertical column may be used to represent any quantity you like so this display could be used as a fuel gauge, speed indicator or even to indicate relative scores in a game.

An alternative form of presentation would be to have the moving indicator strip horizontal so that it acts like the speedometer displays sometimes fitted to cars. In choosing the layout

SPECTRUM PROGRAMMING

and screen position of these strip displays it is important to avoid having two different ink colours in any symbol space.

A major problem with the thermometer display using the low resolution graphics mode is that it can only resolve quite large steps in the quantity being measured.

By changing to the high resolution mode we can produce a rather more accurate readout. It is perhaps slightly easier to draw the tube and column using high resolution graphics but in order to add text to the display the graphics drawing needs to be carefully placed relative to the text symbol positions.

This is also important to avoid colour problems since graphics colours are tied to symbol spaces.

The tube is easily drawn as a rectangle using PLOT and DRAW commands. Producing the scale marks is quite straightforward and uses DRAW commands in a loop. For convenience the scale mark for 0 is drawn separately before the start of the scale mark loop. The scale calibration values and the legend 'deg C' are simply printed at the appropriate positions by using PRINT AT commands.

Drawing the mercury column involves producing a filled rectangle of height t units. The temperature scaling in this case is 1:1 and the maximum height of the mercury column is set at 100 screen units.

With the high resolution thermometer there is no need for the 5° offset that we used for mosaic graphics since the scale graduation marks can be drawn at any required point on the screen. However, the position of the tube does need to be chosen so that the text symbols line up with their calibration marks.

The actual column is filled in by drawing six vertical lines alongside one another with each line of length t units. To take advantage of the DRAW command alternate lines are drawn up and down respectively relative to the cursor position and x is increased by one unit after each line is drawn.

Program 2 draw a thermometer style display using high resolution graphics, and the results on the screen are shown in **Figure 2**. Of course the gauge can also be drawn with the moving measurement bar horizontal.

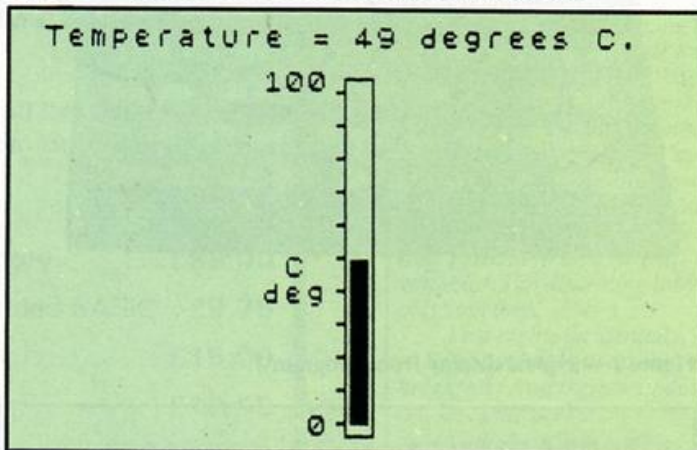
This means rearranging the drawing sequence to produce horizontal lines instead of vertical ones and again the calibration numbers and text for labelling needs to be placed in appropriate positions relative to the actual measuring strip.

In this program the temperature values are generated

Program 1 — thermometer display using mosaic graphics

```
100 REM Thermometer by mosaic graphics
110 CLS
120 INK 0: PAPER 7
130 LET xo=118: LET yo=16
140 REM Draw thermometer tube
150 PRINT AT 20,15;CHR$ 129;CHR$ 131;CHR$ 130;
160 FOR n=1 TO 11
170 PRINT AT 20-n,14;"-";CHR$ 133;CHR$ 128;CHR$ 138;
180 NEXT n
190 PRINT AT 8,15;CHR$ 132;CHR$ 140;CHR$ 136;
200 REM Draw Scale
210 PRINT AT 19,13;"0";
220 PRINT AT 9,11;"100";
230 PRINT AT 13,11;"C";
240 PRINT AT 14,10;"deg";
250 REM Display loop
260 FOR k=1 TO 100
270 LET t=INT (100*RND)
280 INK 1
290 PRINT AT 1,1;"Temperature = ";t;
300 PRINT " degrees C. "
310 GO SUB 500
320 PAUSE 200
330 NEXT k
340 STOP
500 INVERSE 1
510 REM Erase previous reading
520 FOR n=1 TO 11
530 PRINT AT 20-n,16;CHR$ 143;
540 NEXT n
550 INVERSE 0
560 REM Draw new reading
570 INK 2
580 LET y=INT ((t+5)/5+0.5)
590 FOR n=1 TO INT (y/2)
600 PRINT AT 20-n,16;CHR$ 143
610 NEXT n
620 IF INT (y/2)=y/2 THEN GO TO 650
630 LET y=INT (y/2)
640 PRINT AT 19-y,16;CHR$ 140;
650 RETURN
```

Figure 2 — typical thermometer display from Program 2



randomly by the computer and then displayed together with a printed readout of temperature at the top of the screen.

By using a suitable input-output interface the Spectrum might be connected to an electronic thermometer. In this case the reading of temperature may be fed into the Spectrum and then displayed so that the screen display acts as if it were a real thermometer.

Whilst the thermometer style display is useful to show the current state of some measurement, a more useful arrangement would be to show how the situation varied over a period of time.

We could perhaps measure the temperature at noon on each day of the week. A display showing this information can easily be arranged by drawing the thermometer displays for the days of the week alongside one another. For this display only the variable length bar is drawn for each day and a single scale is included at the left-hand side. To improve visibility the bars may be drawn with a gap between adjacent bars.

This type of display is referred to as a histogram but is more commonly called a bar chart.

Bar charts are not normally intended to provide particularly accurate displays since their main application is to show the general trend of the variable being dis-

played.

They are frequently used in business applications to show the trend in sales over a year, or perhaps the stock level, number of orders, or income over a period. It is very easy to see the trend of the results on such a chart.

A useful enhancement of the bar chart is to arrange that the colour of the bar is changed if its level goes above, or perhaps below, some predetermined limit. This can provide an easily recognised warning that a situation is becoming dangerous or needs attention. In such cases either the whole bar changes colour or the part above the limit line might change colour.

The low resolution mosaic graphics can be used to draw a bar chart since, although the vertical resolution is relatively coarse, the resultant display can be quite effective for this type of chart.

Program 3 draws a bar chart using mosaic graphics. In this program a separate bar is drawn for each day of the week and each bar is drawn using the same technique as for the mercury column in the thermometer program.

The data in this program is read into an array so that the drawing of the bars can use a common drawing loop. It could easily be arranged that the temperature data is typed in from the keyboard by using an INPUT statement instead of READ to set up the temperature values.

The display produced on the screen is as shown in **Figure 3**. By altering the scales and legends this program can readily be adapted to display any desired variable on the chart.

Program 4 draws a bar chart using high resolution graphics and the result on screen is shown in **Figure 4**. In this program the bars have been drawn in a different way from those of the thermometer.

Here the loop limit is set to the desired reading in screen units and a series of short horizontal lines is drawn with one line above the other to produce the filled bar. This technique involves more passes around the loop than the vertical line version but is equally effective in producing bars.

As in the case of the thermometer, the position of the bars relative to the text symbol positions must be carefully chosen to avoid problems with display colour.

● **Spectrum Graphics and Sound**, £6.95 for 195 pages, covers techniques to use in programs, including games, three-dimensional displays, sound effects and music. The 10 chapters include listings to type in.

SPECTRUM PROGRAMMING

Program 2 — high resolution thermometer display

```

100 REM Hi-res thermometer
110 CLS
120 INK 0: PAPER 7
130 LET xo=118: LET yo=16
140 REM Draw thermometer tube
150 PLOT xo,yo
160 DRAW 10,0
170 DRAW 0,108
180 DRAW -10,0
190 DRAW 0,-108
200 REM Draw Scale
210 PLOT xo,yo+4
220 DRAW -3,0
230 DRAW 3,0
240 FOR n=1 TO 10
250 DRAW 0,10
260 DRAW -3,0
270 DRAW 3,0
280 NEXT n
290 PRINT AT 19,13;"0";
300 PRINT AT 6,11;"100";
310 PRINT AT 13,12;"C";
320 PRINT AT 14,11;"deg";
330 REM Display loop
340 FOR k=1 TO 100
350 LET t=INT (100*RND)
360 INK 1
370 PRINT AT 1,1;"Temperature = ";t;
380 PRINT " degrees C.      "
390 GO SUB 500
400 PAUSE 200
410 NEXT k
420 STOP
500 INVERSE 1
510 REM Erase previous reading
520 PLOT xo+2,yo+1
530 LET y=104
540 FOR n=1 TO 6
550 DRAW 0,y: DRAW 1,0
560 LET y=-y
570 NEXT n
580 DRAW 0,y
590 INVERSE 0
600 REM Draw new reading
610 INK 2
620 PLOT xo+2,yo+4
630 FOR n=1 TO 6
640 DRAW 0,t: DRAW 1,0
650 LET t=-t
660 NEXT n
670 DRAW 0,t
680 RETURN

```

Program 3 — bar chart using mosaic graphics

```

100 REM Simple bar chart
110 REM using mosaic graphics
120 BORDER 3
130 INK 0: PAPER 7
140 DIM d$(7,2): DIM t(7)

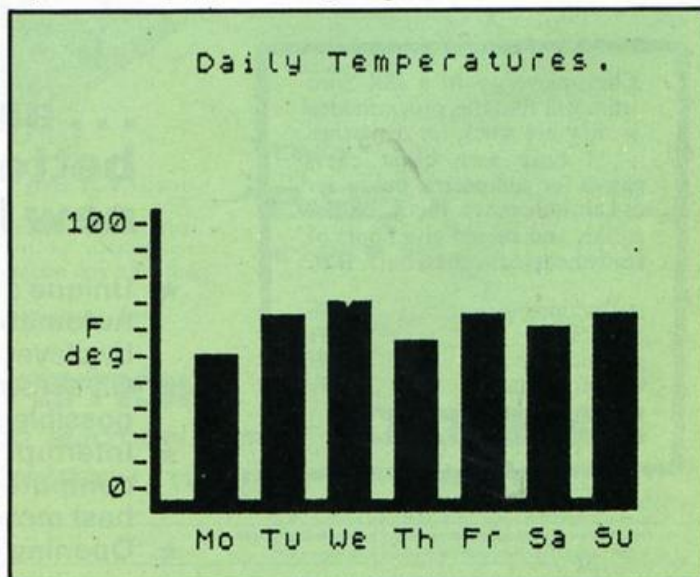
```

```

150 REM Set up data
160 FOR n=1 TO 7
170 READ d$(n),t(n)
180 NEXT n
190 DATA "Mo",60,"Tu",65,"We",80
200 DATA "Th",55,"Fr",65
210 DATA "Sa",70,"Su",65
220 REM Draw scales
230 FOR n=1 TO 22
240 PRINT AT 19,7+n;CHR$ 131
250 NEXT n
260 FOR n=1 TO 11
270 PRINT AT 19-n,7;"-";CHR$ 138
280 NEXT n
290 FOR n=1 TO 7
300 PRINT AT 20,7+3*n;d$(n);" ";
310 NEXT n
320 PRINT AT 18,6;"0";
330 PRINT AT 8,4;"100";
340 PRINT AT 12,5;"F";
350 PRINT AT 13,4;"deg";
360 FOR j=1 TO 7
370 GO SUB 500
380 NEXT j
390 PRINT AT 2,10;"Daily Temperatures."
400 STOP
500 INK 2
510 REM Draw bar
520 LET y=INT ((t(j)+5)/5+0.5)
530 FOR n=1 TO INT (y/2)
540 PRINT AT 19-n,7+3*j;CHR$ 143;CHR$ 143;
550 NEXT n
560 IF INT (y/2)=y/2 THEN GO TO 590
570 LET y=INT (y/2)
580 PRINT AT 19-y,7+3*j;CHR$ 140;CHR$ 140;
590 RETURN

```

Figure 3 — display produced by Program 3



Program 4 — high resolution bar chart listing

```

100 REM High res bar chart
110 CLS
120 BORDER 3
130 DIM d$(7,2): DIM t(7)
135 REM Set up data
140 FOR n=1 TO 7
150 READ d$(n),t(n)
160 NEXT n

```


SPECTRUM PROGRAMMING

```

170 DATA "Mo",15,"Tu",18,"We",25
180 DATA "Th",12,"Fr",17,"Sa",20,"Su",18
185 REM Draw axes and scales
190 INK 0
200 LET xo=48: LET yo=20
210 PLOT xo,yo
220 DRAW 168,0
230 PLOT xo,yo
240 FOR n=1 TO 6
250 DRAW 0,20
260 DRAW -3,0
270 DRAW 3,0
280 NEXT n
290 PRINT AT 20,7;;
300 FOR j=1 TO 7
310 PRINT d$(j);" ";
320 NEXT j
330 PRINT AT 19,2;"0";
340 PRINT AT 4,2;"30"
350 PRINT AT 11,2;"C";
360 PRINT AT 12,1;"deg"
365 REM Draw bars
370 INK 2
380 PLOT xo,yo
390 DRAW 4,0
400 FOR k=1 TO 7
410 DRAW 8,0
420 LET y=t(k)*4
430 FOR n=1 TO 4
440 DRAW 0,y
450 DRAW 1,0

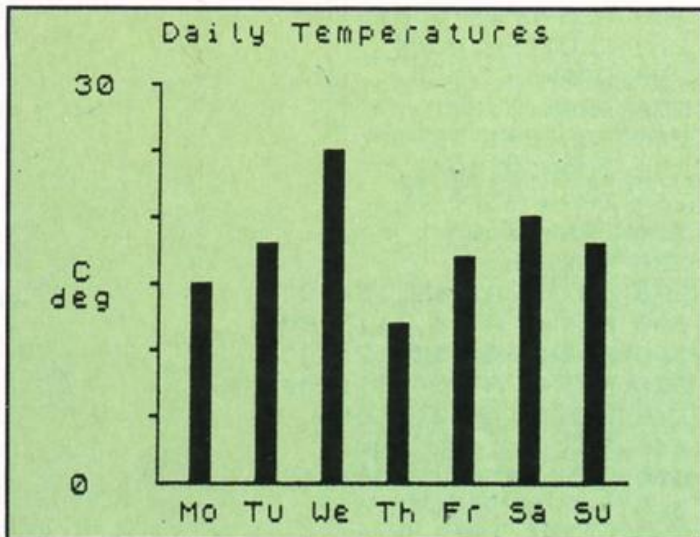
```

```

460 DRAW 0,-y
470 DRAW 1,0
480 NEXT n
490 DRAW 8,0
500 NEXT k
510 REM Print legend
520 INK 1
530 PRINT AT 2,6;"Daily Temperatures";
540 STOP

```

Figure 4 — high resolution bar chart from Program 4



It was the best then...

Chess-players with a 48K Spectrum will find this program ideal if they are stuck for a partner.

I have seen other chess games for computers, but as far as I am concerned, this is the best so far, and should give hours of enjoyment to the chess buff. **B.B.**

instructions	95%
playability	100%
graphics	75%
value for money	100%



Ten levels of play ★ graphic display of board ★ can change sides or level in midgame ★ board can be set to any position
history of moves ★ copy display & history to printer at any time
★ can save game at any point ★ displays your moves and computer's

...and now it's even better, with these new features:

- ★ Unique digital chess clock. Automatically records time taken by player and computer
- ★ On-screen indication of total possible moves
- ★ Interrupt facility — forces computer to play current best move
- ★ Opening book of over 5,000 moves!



**FOR 48K
SPECTRUM
ONLY**

Masterchess — the game for the real player £6.95



**PHONE YOUR VISA
OR ACCESS
NUMBER**

Available from leading retailers or direct from Mikro-Gen (please make cheque/PO payable to Mikro-Gen & add 40p post & packing per order)



Tel: Bracknell (0344) 4 27317

MIKRO-GEN

MIKRO-GEN, 1 Devonshire Cottages, London Rd, Bracknell RG12 2TQ

AGF

PROGRAMMABLE JOYSTICK INTERFACE for Spectrum or ZX81

MICRODRIVE
COMPATIBLE

ONLY
26.95
+£1.00pp

AGF PROGRAMMABLE INTERFACE

Recognised as the only true Hardware Programmed joystick interface this product offers all the features associated with such a design.

You can use *any* Atari-compatible joystick controller with *any* software for your Sinclair Spectrum or ZX81, not just those with a joystick option.

Movement of the joystick is recognised by the computer *exactly* the same as pressing the appropriate control keys, and can therefore give the most immediate response to that movement. The hardware programmed design works with *all* possible key-reading methods, both BASIC and Machine Code.

Eight directional movement, with or without the fire button being pressed, can be achieved by only programming the left, right, up, down and fire keys required by the game.

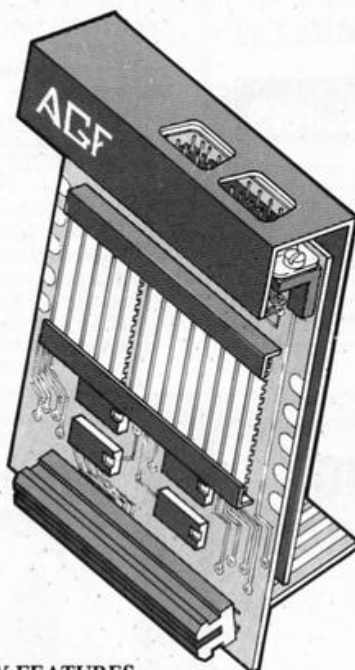
Programming is achieved by a two-digit code, which is looked up on the Programming Chart supplied, for each direction and firing button. These two numbers are then selected on a pair of leads which are clipped onto appropriately numbered strips on the interface.

Once configured this can be marked onto a Quick Reference Programming Card for storing with the game. As the programming is *not* power dependent the interface can be immediately used when next switched on.

The keyboard remains fully functional and can be used simultaneously with the joystick.

An integral rear expansion connector means there is no need to remove the interface to connect other peripherals.

NB. A recent design improvement now means that the AGF Programmable Interface works with the new Quickshot II rapid "Auto Fire" feature.



KEY FEATURES

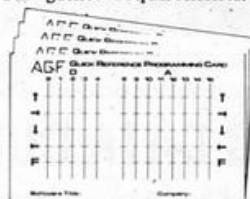
- ★ Programmable design gives TOTAL software support.
- ★ Accepts Atari, Competition Pro, Wico, Starfighter, Quick Shot, Le Stick etc.
- ★ Rear extension connector for all other add-ons.
- ★ Free demo program and instructions.

PACKAGE CONTENTS SUPPLIED

- Programmable Interface Module as illustrated, complete with clip-on programming leads.
- Self adhesive programming chart detailing how to define which key is simulated by UP, DOWN, LEFT, RIGHT, and FIRE.



- One pack of ten Quick Reference Programming Cards for at-a-glance setting to your games requirements.



- 12 months guarantee and full written instructions.

ONLY
16.95
+£1 P&P



Quickshot II® JOYSTICK

NEW IMPROVED GRIP : BUILT-IN STABILIZING SUCTION CUPS

TRIGGER FIRE BUTTON : RAPID AUTO FIRE SWITCH : TOP FIRE BUTTON

FROM: MR/MRS/MISS

ADDRESS

SEND C.W.O. (NO STAMP NEEDED) TO: A.G.F. HARDWARE, DEPT. HCW.

FREEPOST, BOGNOR REGIS, WEST SUSSEX, PO22 9BR.

QTY	ITEM	ITEM PRICE	TOTAL
	PROGRAMMABLE INTERFACE	27.95	
	JOYSTICK(S)	17.95	
	PACK(S) QUICK REFERENCE CARDS	1.00	
ZX81 <input type="checkbox"/> ZX SPECTRUM <input type="checkbox"/> Please tick		FINAL TOTAL	
DEALER ENQUIRIES WELCOME		EXPORT PRICES ON APPLICATION	

NEW ORIGINAL GAMES FOR THE COMMODORE 64

● **NIGHTMARE PARK** is in fact a compendium of 14 games. The task of the user is to gain as many points as possible travelling through a maze beset by obstacles at every turn. These infuriating obstacles are overcome by a combination of skill, sharp reflexes or by sheer good luck making Nightmare Park a suitable game for all ages.

PRICE £7.99

● **DOTS & BOXES** is an intelligent game where the user and the computer take turns in completing boxes by drawing a line between two dots. The aim of the game is to win the most boxes whilst skilfully minimising the number of boxes given away to the computer.

PRICE £6.95

● **HEXAPAWN** For strategic and persistent play. The opponent (computer) has no initial strategy but is programmed to learn from the user's wins to improve its own strategy.

PRICE £5.95

● **CHOPPER LAND** Your chopper is chartered to transfer goods from your base and land SAFELY. An exciting new game full of surprises.

PRICE £7.99

Send Cheques/PO:

A.R. SOFTWARE

86 Avonbrae Crescent

Hamilton, Scotland

Tel: 0698 282036

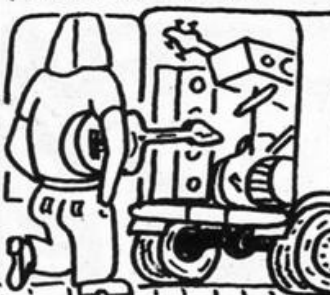
DEALER ENQUIRIES
WELCOME

2 Vouchers

Collect this voucher and either 1 or 3 from the last or next issue of Home Computing Weekly and when you purchase either: NIGHTMARE PARK, DOTS & BOXES or CHOPPER LAND you will get HEXAPAWN completely FREE.

CEDRIC.. REVEALED (PART TWO)

CEDRIC STARTS HIS FIRST JOB....



BUT LOSES IT....



COMPETITION CORNER



ACROSS
2. CAN YOU TELL IT (4)
DOWN
1. NOT SMALL (3)
CRYPTIC
1&2 CAN YOU MAKE IT

PUZZLE NO.1 SOLUTION
IT WAS A TRICK QUESTION
IT WAS X'S TURN TO GO

MEANWHILE... THE BAND OFFERS CEDRIC HIS JOB BACK IF HE REMOVES THE PAPER BAG....



48K SPECTRUM OWNERS!!

Can you afford to miss out on Cedric's zany adventures? **BIGTIME**, a humorous tantalizing game for the 48K Spectrum, is set in the world of music and is out now, only from **Mushroomsoft**.

The price is just £4.49 so anyone can afford it!! (There are no hidden extras to pay!!) Send Cheque or PO for £4.49, made out to "Mushroomsoft". Find us at **BYE!!**

MUSHROOMSOFT
13 HARNORLEN ROAD,
PEVERELL,
PLYMOUTH PL2 3NU

JLC DATA DUPLICATION CASSETTES — DISCS — EPROMS

- ★ 7 YEARS DATA EXPERIENCE ★
- ★ HIGH LEVEL OF SECURITY ★
- ★ NORMALLY NO MASTERING FEE ★
- ★ NORMALLY 7-10 DAY TURNAROUND ★
- ★ 24 HOUR TURNAROUND SUPERFAST SERVICE IF REQUIRED ★

Cassette Duplication — for most micros.

Disc Duplication — 35, 40, 80 track S/S, D/S, S/D, D/D.

Eprom Duplication — most types.
All data verified.

Blank Cassettes, Discs, Eproms — bulk sales only.
Blank Labels — most colours — bulk sales only.
Labels in sheets or rolls.

★ NEW SERVICE ★

Letter-heads and forms in rolls or fanfold for computer printing.

Telephone: (0226) 87707 24 hours
7 days a week

Enquiries and accounts to:
**JLC DATA, 49 CASTLE STREET, BARNSLEY,
SOUTH YORKSHIRE S70 1NT**

In the interests of security, callers without appointments or proof of company status will not be seen.



Wizard Software

CONTACT:
"THE WIZARD"
22 CARNER ST.,
SHEFFIELD S14FS
TEL: 0742-752732

Have you written a program with that little bit of magic? If so The Wizard is interested. Top Royalties will be paid for Spellbinding games for Spectrum, Vic 20 Commodore 64 BBC or Electron.

Games simple and games complex...

Pub games, space games, underwater and oily games. How do they play on the big memory machine?

Neptune's Daughters

English Software, Box 43, Manchester M60 3AD

Neptune's daughter has been captured by an evil Sea Serpent, and your aquaman's mission is to swim through the underwater caverns to rescue her, armed with a harpoon with which to shoot away the sucker plants blocking his way and kill the octopuses and other sea monsters.

What the other monsters are like I never discovered, as my skill with a joystick was not sufficient for this game, but I'm getting better — I'll rescue the fair maiden one of these days!

It's a challenging and quite addictive game, with good

graphics and reasonable sound effects. I would have preferred, though, to return to the start of the current screen on losing a life instead of going right back to the start of the game every time. High scores can be obtained quite easily by standing your ground and shooting octopuses, but that's not really the point of it; the challenge is to complete the mission, not to score thousands of points without going anywhere.

The high-score table is a definite weak point. Otherwise, though, it's a well written and constructed game. **M.N.**

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



Super Pipeline £6.90

Taskset, 13 High St., Bridlington YO16 4PR

Now this is a game worth having. As in most good games, the scenario is simple. You control a man whose job is to oversee the operation of an oil pipeline. The problem is that a saboteur keeps

climbing to the top of the screen and dropping plugs which stop the oil flow. When this happens your man summons a fitter who, with a hammer, removes the plug. The bad news is that there are Venusian spiders and lobsters which walk along the pipe and, if given the chance, will savage the fitter or your little man.

Graphically the game is superb with nice use of the shades of grey

to give a 3D effect to the pipeline. The animation is brilliant. The high spot is the use of sound. Throughout the game music of the highest standard is played.

The usual options of pause, choice of level, number of lives, starting screen, joystick/keyboard option etc are available. In all a testing game

which has been programmed immaculately. Get it and enjoy. **A.W.**

instructions	70%
playability	100%
graphics	95%
value for money	100%



Neoclypse

PSS, 452 Stoney Station Rd, Coventry CV6 5DG

This is a truly amazing game. Its loading time of over 22 minutes hint at its length and complexity. The game is of the Defender/Scramble concept and gives you a small plane flying over a changing terrain. The graphic detail of the ground shows factories, cranes, space ships on launching pads etc. all superbly depicted. The scenario is of you being the good guy Vs the bad guys who have taken over the planet Neoclypse. It is divided into four quadrants and in each quadrant is a number of radar towers, each defended by an enemy ship. Your job is to shoot

the ship and duck down between the buildings to blast the radar tower. Normally you are destroyed if you hit the ground. Different levels bring more bad guys per quadrant and later on there are ground to air homing missiles.

The long loading time might put some people off, but the game is well put together and is very addictive as it had me playing it for hours. The graphics are amazing, the sound is good and there are quite a lot of options to chose from. **M.R.**

instructions	100%
playability	98%
graphics	85%
value for money	80%



Domino6/ Domino 9 £4.99

Challenger Computer Software, 24 The Woodfields, Sanderstead, S. Croydon, Surrey

Domino 6 follows the principles of the popular pub game of dominos very closely and fulfils all the needs of an avid player (although you will have to provide your own beer!)

Play it against the computer. First a choice of dominoes is made from the pool and play starts as usual with the placement of the highest double.

The graphics were good although they couldn't be described as spectacular and despite my best efforts the game proved to be crash proof.

The instructions are clear and concise. Also included in the

game are three levels of play but I couldn't distinguish between them! Domino 9 is the same game with nine spots on each side of the domino piece. This makes life a little more difficult, but the snag is that a stalemate is reached much more frequently and in my view spoils the game.

As a slight improvement for both games I would introduce different colours to correspond with the numbers of spots, thus making the game suitable for youngsters who don't know their numbers yet.

However the games are good value as they stand and are recommended. **V.R.**

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



Supermind/ Diamond Code £4.99

Challenger Computer Software, 24 The Woodfields, Sanderstead, S. Croydon, Surrey

Most people are familiar with the popular board game of Master Mind where, by using combinations of different

coloured pegs a hidden code has to be deciphered.

Well Supermind is a computerised version and for regular players of the board game should prove to be an interesting diversion.

There are three levels of play involving four, six and eight colours respectively. As in the board game black and white markers are used to identify correct peg positioning.

Diamond Code is the second game on this cassette and is similar to Supermind but with a diamond shaped colour pattern to be found. The rules for this game are more complicated, with about twenty screens of information to run through, including a demo. There are four levels of play and good use is made of the graphical qualities of the C64.

The main drawback for both games is the lack of written

instructions for only brief details are given on the cassette insert. Other software houses produce copious notes in detail so why not for these quite complicated games. **V.R.**

instructions	10%
playability	50%
graphics	75%
value for money	60%



Space Pilot

**A 64K
BLOCK
BUSTER**

COMMODORE
64

ANIROG

ANIROG SOFTWARE LTD.,

Trade Enquiries:

29 WEST HILL DARTFORD KENT (0322) 92513/8

Mail Order:

8 HIGH STREET HORLEY SURREY

24 HOUR CREDIT CARD SALES HORLEY (02934) 6083

PAYMENT BY CHEQUE P.O. ACCESS/VISA

50p POST & PACKAGING

SPACE PILOT

Fight your way to become The Master of the Skies travel through time to overcome the enemies of the past and future. Engage in dog fights with the squadrons of world war one to the fighters of the year 2084. Five Screens of Breathtaking Scenic Graphics.

J.S. £7.95

SOFTWARE REVIEWS

Humpty Dumpty Mystery/Who Killed Cock Robin? 48K Spectrum £6.25

Widgit, 48 Durham Rd, London
N2 9DT

Widgit seems to have cornered the market for high quality, educational program that will actually do what they claim for pre-school and primary children.

The Humpty Dumpty Mystery follows Humpty's cracking fall by presenting a platoon of the King's Men with different coloured hats, badges, eyes, mouths and jackets. By cunning questioning, you eliminate

soldiers and have a guess at who pushed him. The score is based on the number of tries. Responses may be typed in, or there is a single key entry mode. Part two shows you who pushed him asks you to type back his description. Sounds easy? You ought to try it!

Who Killed Cock Robin? is back to deduction. Can you identify murderer, time and place? The game features several levels of difficulty.

Graphics are great, as is the sound. A really slick, professional package, which will teach and test you as well as your children. **D.M.**

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



Learning with a computer

Nice try or could do better? Our examiners have the answers

the tests a pencil and paper is a recommended extra — as the tests progressed they become more of a necessity.

Throughout the tests, sound tones indicate whether the answer is correct or not. At the end of the test, any incorrect problems are re-run for a second attempt. As this is not a teaching aid, no guidance is given as to how or why the answer was wrong.

The child doing the test should be able to run the program alone,

or, if preferred, the parents can sit with the child.

All in all, a very handy tool for any parent or teacher who wants to check on the arithmetic progress of a child. **M.W.**

instructions	90%
ease of use	90%
display	70%
value for money	85%



Test Your Child Series: Arithmetic VIC-20 £9.99

Commodore, 675 Ajax Ave,
Slough, Berks

The package, which needs 16K expansion, consists of two tapes

and an instruction book which also contains progress and rating charts. The tapes test all aspects of basic primary arithmetic; addition, subtraction; multiplication; division; fractions and finally give a series of problems dealing with them.

The first four programs are for the full age range (seven to 11). The fraction tests start at nine and the problems at eight. For all of

Graphs Maths Tutor 32K BBC/ Electron £7.95

Salamander, 17 Norfolk Rd,
Brighton BN1 3AA

Another in a series designed with 'O' and 'A' level students in mind. It comes in a large box with comprehensive manual and five programs. There are instructions to transfer to disc.

Each section enables the student to proceed individually with the first two programs allowing for group work. As with other programs in this series, the aims and objectives are clearly stated in the manual. Included here are demonstration examples as well as sample questions that aid learning.

The last three programs involve

answering multiple choice questions about "graphical representations of equations". Some of the ground covered includes variations on the sine, cosine and tangent curves, straight line graphs, quadratic and cubic curves.

It's a very straightforward set which can only benefit the student. All responses are kept as simple as this subject allows which is a good reason for having the multiple choice format were applicable. Graphics are well presented giving instant response. Good revision material at the end of the school year. **M.P.**

instructions	100%
ease of use	90%
display	60%
value for money	80%



Vectors Maths Tutor BBC/Electron £14.95

Salamander, 17 Norfolk Rd,
Brighton BN1 3AA

This tape comes in a large video-type package complete with 12-page manual. Loading was no problem and I was pleased to see all the contents were easily transferable to disc. There are 14 programs and, although it seems a daunting task, it's certainly worthwhile.

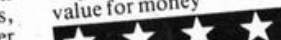
It must be appreciated that these programs of themselves will not cover the whole area. It is assumed that the student will "have access to other modes of learning". The aim is to cover some of the aspects as required in GCE Additional Mathematics, A-level Mathematics and other exams.

Each program is self contained unit, well documented, that allows the student to work individually or in a small group. It is important to work through the programs in order, however, as many reinforce previous work.

As a highly structured approach it is designed for the home, as a form of revision, or for school, the latter allowing group work. I was very impressed with the stated objectives written into the manual for each section which covered new ground.

It's very much in line with programmed learning and rather dry in its approach but, remembering my own 'O' level days, that's precisely what I needed, a no-frills run through of the essentials. **M.P.**

instructions	100%
ease of use	90%
display	70%
value for money	90%



Maths Race TI-99/4A £5

Firefly, 48 Dorset St, London
W1H 3FH

This is designed to test 7-12 year olds on their basic arithmetic skills, but adds incentive to their learning by taking the form of a simple car race.

The screen displays a race track with two cars. Questions are then asked on addition, subtraction,

multiplication, division or various combinations depending on which of seven options was chosen before the race began. If a question is answered correctly the player's car is advanced. An incorrect response results in the computer's car being moved twice as far. The race ends when either car passes the finishing line and one point is scored by the winner of that round.

In the seventh option, where all the arithmetic skills are tested, a

bug consistently upset the display. When some division question were answered a NUMERIC OVERFLOW IN 1240 caused the display to be partially scrolled off the screen.

The level of difficulty is selected from four which determines whether numbers the generates will be under 6, 11, 16 or 21. This is reasonable for most levels, but an upper limit of 20 for division seems too low to offer much variety or challenge in the

questions. Needs Extended BASIC. **J.W.**

instructions	90%
ease of use	80%
display	80%
value for money	75%



You've got ladders to climb, holes to jump and spiders to avoid in Jumpman, my arcade-style game for the 32K BBC micro and the Electron.

To make things more difficult your man, who starts at the bottom of the screen, continually moves forward unless you press the asterisk key for reverse. Key A makes him jump.

If you get to the top the screen clears and another more difficult set of ladders and holes is drawn.

If your man falls the game ends and you are given the option of a new game.

The program occupies 3K and was written on a model B BBC micro with 1.2 operating system

Tip 1: Do not enter line 40 until you are sure you have typed in the program accurately

Tip 2: If you wish, exclude the whole of PROCRULES until you have time to type it in

Hints on conversion

This program was written in BBC BASIC. Here is an explanation of some of the commands:

MODE 1 the program requires a four-colour screen — background and three foreground
POINT returns the colour of a specified point on the screen
TIME an easy way of timing a delay. Another method may be used if your computer has no clock

PROC all PROCedures can be replaced by GOSUBS and ENDPROC by RETURN
% represents an integer variable and it is not essential

DIV gives the whole number result of the division of two numbers. For example, 11 DIV 4 gives 2. Again, not essential

60 VDU 23:8202;0;0;0; simply turns off the cursor and prevents flashing at the screen edge

160 *FX11,1 speeds up auto-repeat on the keys and is not essential. It is re-set by *FX12,0

***FX21,0** flushes the keyboard buffer

Variables and arrays

X%, Y%, d% man's X, Y position and present direction
J% current "jump" condition — zero = normal, 1 = key A has been pressed, 2 = man is in the air

T% timing variable for J%
SX%, SY%, SD% position and reaction of spider

PC colour of character below spider

S% (4,1) stores spider co-ordinates

D%(4) stores spider directions

GAMES number of games played

NG new game? True/false

Can you climb ladders and avoid the spiders?

If you hate spiders, don't type in this game. They're after you as you climb the ladders — and avoid the holes — in G. A. Power's program for the 32K BBC or Electron computers

```

10 REM*****
20 REM** G. POWER 2/1/84 *****
30 REM*****
40 ON ERROR REPORT:GOTO1190
50 MODE1
60 VDU23:8202;0;0;0;
70 VDU23,225,255,255,255,255,0,0,0,0
80 VDU23,226,195,195,195,255,255,195,195,195
90 VDU23,227,24,24,16,254,16,24,36,102
100 VDU23,228,28,28,28,28,127,62,28,8
110 X%=3:Y%=28:d%=1:J%=0:T%=0:U%=0:D=0:B=0:SYX=8:SYZ=
1:SDX=1:DIM SX(4,1):PC=0
120 DIM DX(4):DX(0)=1:DX(1)=-1:DX(2)=1:DX(3)=-1:DX(4)
=1
130 GAME=1:NG=FALSE:B=1
140 TIME=0
150 PROCRULES
160 *FX11,1
170 PROCINITIAL
180 REPEAT
190 COLOUR3
200 PRINTTAB(34,1):(TIME/100)
210 PRINTTAB(15,1):"GAME";GAME
220 PROCINPUT
230 PROCMOVE
240 PROCSPIDER
250 PROCHECK
260 UNTILNG=TRUE
    
```

How it works PROCedures

280-420 PROCRULES prints instructions and control keys
430-570 PROCINITIAL is called at the beginning of each game. It resets variables X%, Y% and d% and arrays S% (4,1) and D%(4) and draws a new maze

580 PROCINPUT inputs a character from the keyboard and acts by changing man's direction of initiating a jump

620-630 flushes the keyboard buffer, as *FX11,1 will probably cause it to take in many repeats of the key pressed

650-780 PROCMOVE blanks out man, goes through his move logic and re-prints him at his new position. The rough structure is: 670 whether to start a jump, 680 if man is jumping is jump over? 690 gives colours of points below and above man, 700 colours on either side of man, 710 has he been bitten? 720 is he above hole/falling? 730 is he directly below a ladder? 470 is he on a "landing", 750-760 is he within playing area?

800-920 PROCSPIDER moves all spiders in turn, using a simple FOR...TO...NEXT loop. The values in the arrays are taken out, updated and re-inserted: 830 colour below spider, 840 move logic for hole, 850 move logic for landing, 860 within playing area? 870 blank out old spider, 880 update values, 890 print at new position, 900 if spider is at bottom left, move to original start position

950-1020 PROCBITE is called from PROCMOVE when a spider is beside the man. The game stop temporarily and a sound is made. Variable B is increased by 1

1030-1060 PROCHECK checks if man has been bitten three times (B=3), in which case game ends, 1050 checks if man has reached home, in which case GAME=GAME+1 and a harder maze is drawn



BBC/ELECTRON PROGRAM

```

270 NG=FALSE:GOTO170
280 DEF PROCRULES
290 *FX12,0
300 CLS:PRINT:PRINT:PRINT"DO YOU WANT INSTUCTIONS (Y/
N)?":A$=INKEY$(500)
310 IFA$="Y"THEN340
320 IFA$="N"THEN420
330 GOTO300
340 CLS:PRINT:PRINT" THE IDEA OF THE GAME IS TO
MOVE YOUR":PRINT:PRINT"MAN ";CHR$227;" TO THE TOP LEFT
HAND CORNER OF THE":PRINT;" MAZE WHERE 'HOME";CHR$228;
" ' IS PRINTED":PRINT
350 PRINT"TO DO THIS HE MUST JUMP UP-TO AND CLIMB ":P
RINT;"THE LADDERS ,WHILE AVOIDING ,OR JUMPING":PRINT"O
VER THE HOLES":PRINT
360 PRINT"          THE MAZE IS INHABITED BY":PRINT
:PRINT"FERCE SPIDERS ,THESE SPIDERS BITE .IF":PRINT:PR
INT"THE MAN IS BITTEN 3 TIMES HE WILL DIE."
370 PRINT:PRINT"SO HE MUST AVOID THEM OR JUMP OVER TH
EM."
380 PRINT"CONTROLES ARE ....."
390 PRINT" 'A' KEY TO JUMP""""*"" KEY TO CHANGE DIRE
CTION""""press anny key to start"
400 DEL=INKEY(18000)
410 CLS:DEL=INKEY(10):PRINT""""GOOD LUCK":DEL=INKEY
(100)
420 ENDPROC
430 DEF PROCINITIAL
440 CLS:CLG
450 COLOUR3
460 PRINTTAB(0,2);"HOME";CHR$228
470 X%=3:Y%=27:d%=1
480 FORY=1 TO 5
490 FORX=0TO39:PRINTTAB(X,30-Y*5);CHR$225:NEXT
500 FORX=1TOGAME:PRINTTAB((RND(16)+2)*2,30-Y*5);" ":N
EXT
510 FORL=1TO2:A=RND(18):COLOUR2:FORR=0TO2:PRINTTAB(A*
2,30-(Y*5-R))CHR$226:NEXT:COLOUR3
520 NEXT:NEXT
530 FORX=0TO39:PRINTTAB(X,30);CHR$225:NEXT
540 S%=0:GOSUB1210:S%=1:GOSUB1210:S%=2:GOSUB1210:S%=3
:GOSUB1210:S%=4:GOSUB1210
550 PRINTTAB(18,30);CHR$227;" ";CHR$227;" ";CHR$227
560 PRINTTAB(8,30);"MEN LEFT="
570 ENDPROC
580 DEF PROCINPUT
590 I$=INKEY$(1)
600 IFI$="A"ANDJ%=0THENJ%=1
610 IFI$="*":THEND%=0-d%
620 *FX21,0
630 ENDPROC
640 REM
650 DEF PROCMOVE:COLOUR3
660 PRINTTAB(X%,Y%);" "
670 IFJ%=1THEN J%=2:T%=TIME:Y%=Y%-1
680 IFJ%=2ANDTIME-T%>10THENY%=Y%+1:J%=0
690 D%=POINT(X%*32+16,1024-(Y%+1)*32-16):UX=POINT(X%*
32+16,1024-(Y%-1)*32-16)
700 F%=POINT((X%+1)*32+16,1024-(Y%)*32-16):B%=POINT((
X%-1)*32+16,1024-(Y%)*32-16)
710 IFF%=10RB%=1THENPROCBIITE
720 IFD%=0ANDJ%=0THEN Y%=Y%+1:GOTO750
730 IFU%=2THENY%=Y%-5:GOTO750
740 IF(Y%+1)MOD5>0THENX%=X%+d%
750 IFX%<2THENX%=2:d%=0-d%
760 IFX%>38THENX%=38:d%=0-d%
770 PRINTTAB(X%,Y%);CHR$227
780 ENDPROC
790 REM          SPIDER
800 DEF PROCSPIDER:COLOUR1
810 FORS%=0TO4
820 SX%=S%(S%,0):SY%=S%(S%,1)
830 PC=POINT(SX%*32+16,1024-(SY%+1)*32-16)
840 IFPC=0THENSY%=SY%+1
850 IFPC<>0THENSX%=SX%+D%(S%)
860 IFSX%>38ORSX%<2THEND%(S%)=0-D%(S%)
870 PRINTTAB(SX%(S%,0),SY%(S%,1));" "
880 SX%(S%,0)=SX%:SY%(S%,1)=SY%
890 COLOUR1:PRINTTAB(SX%,SY%);"*"
900 IFSY%=2BANDSX%=2THEN PRINTTAB(SX%,SY%);" ":GOSUB1
210
910 NEXT
920 ENDPROC
930 RETURN
940 DEF PROCBITE
950 VDU19,0,1;0;
960 DEL=INKEY(10)
970 VDU19,0,0;0;
980 FORR=1TOB:PRINTTAB(22-R,30);" ":NEXT
990 PRINTTAB(0,0);"
1000 SOUND0,-15,9,11
1010 B=B+1
1020 ENDPROC
1030 DEF PROCHECK
1040 IFB>3THEN :GOTO1070
1050 IFX%<6ANDY%<5THEN GAME=GAME+1:NG=TRUE:Q=Q-1

```

```

1060 ENDPROC
1070 *FX12,0
1080 DEL=INKEY(30)
1090 CLS
1100 DEL=INKEY(200)
1110 COLOUR3
1120 PRINT:PRINT:PRINT"THE GAME IS OVER""YOU R
EACHED LEVEL ";((30-(Y%+2))/5)""OF GAME ";GAME""DO YO
U WANT ANOTHER GAME Y/N ?"
1130 *FX21,0
1140 A$=INKEY$(200)
1150 IFA$="Y"THENGAME=1:GOTO130
1160 IFA$="N"THENGOTO1180
1170 GOTO1130
1180 CLS:END
1190 *FX12,0
1200 END
1210 S%(S%,0)=S%*7+2:S%(S%,1)=0:D%(S%)=SGN(RND(1)-.5)
1220 RETURN

```



POOLSWINNER

THE ULTIMATE POOLS PREDICTION PROGRAM

- PREDICTS** Not just SCOREDRAWS, but NOSCORES, ALWAYS and HOMES
- IT WORKS** We **guarantee** the program performs significantly better than chance
- ADAPTABLE** "Poolswinner" allows the precise prediction formula to be set by the user — you can develop and test your own unique method. Probabilities are given on **every** fixture — choose as many or as few selections as you wish
- EASY TO USE** Fully menu driven, with detailed instruction booklet
- DATABASE** The program comes complete with the largest database available — over 20,000 matches. The database automatically updates as results come in

APPLE, BBC (B), COMMODORE 64, DRAGON, SPECTRUM (48K), ZX81 (16K)
£15 (all inclusive)

We produce databases for those developing their own prediction program. Two years results £7.50. Five years results £12.50

Available from dealers, or direct (return of post) from . . .



Selec Software



37 COUNCILLOR LANE, CHEADLE, CHESHIRE 061-428 7425
DEALER ENQUIRIES WELCOME



TRACKS



**FAST
MAIL
ORDER
SERVICE**

HOME ENTERTAINMENT CENTRE

**POST
FREE!**

**HEAD OFFICE (MAIL ORDER DEPT.)
5 KING STREET, MELTON MOWBRAY,
LEICS LE13 1XA
TEL: (0664) 68223/62517**

SPECTRUM

AH DIDDUMS	£5.45
BLACK HOLE	£5.45
CORNRUOKS OF GENUN	£5.95
JET PAC	£5.45
LUNAR JET MAN	£5.45
COOKIE	£5.45
TRANSAM	£5.45
PSST	£5.45
ATIC-ATAC	£5.45
ESPIONAGE ISLAND	£6.95
CHEQUERED FLAG	£6.95
CAVE MAN	£4.95
FIRE BIRDS	£5.95
DIGGER DAN	£5.85
ARCADIA	£5.45
MOLAR MAUL	£5.45
ZOOM	£5.45
SCHIZOIDS	£5.45
ZIP ZAP	£5.45
GALAXIONS	£5.94
EVEREST ASCENT	£6.45
HOBBIT	£14.95
HARRIER ATTACK	£5.95
FLIGHT SIMULATION	£7.45
AQUAPLANE	£7.45
ASTRO BLASTER	£4.95
CHESSE PLAYER	£6.95
FRENZY	£4.95
GAMES DESIGNER	£6.95
GRID RUNNER	£6.95
MINED OUT	£4.94
VERNONS LAIR	£6.95
3D STRATEGY	£7.45
NIGHT FLITE	£5.95
RACING MANAGER	£5.95

DRAGON

AREA RADAR CONTROLLER	£6.95
BIG SIX	£5.95
CASTLE ADVENTURE	£6.95
DANGER ISLAND	£6.95
DEATH CRUISE	£6.95
GOLF	£7.95
HANDICAP GOLF	£6.95
HORACE AND THE SPIDERS	£5.95
HORACE GOES SKI-ING	£5.95
HUNGRY HORACE	£5.95
I CHING	£6.95
KEYS OF ROTH	£5.95
LEG IT	£5.45
MIMED OUT	£5.95
OTHELLO	£6.95
ST GEORGE	£6.95
UXB	£6.95
CUTHBERT IN THE JUNGLE	£6.95

EDUCATIONAL SOFTWARE

We stock a large selection for all ages. From Mr Men to 'O'-Level Maths! inc. Astro Maths/Jungle Maths, Mr T Tells the Time, Mr T Money Box.

SPECIAL OFFERS!

JOYSTICKS

QUICKSHOT JOYSTICK	£7.50
QUICKSHOT II	£8.95
ATARI	£6.45
JOY SENSOR	£28.45
VIDEO COMMAND	£12.45
PADDLES	£12.95

STACKLIGHT PENS

ATARI	£27.95
BBC	£27.95
CBM 64	£27.95
VIC-20	£27.95

VIC-20

ALIEN ATTACK	£5.95
CRAZY KONG	£6.95
FROGGER	£6.95
JET PAC (8K)	£5.45
SIREN CITY	£6.95
EVEREST ASCENT	£6.45
STAR TREK	£6.95

COMMODORE 64

ARCADIA	£5.45
CRAZY KONG	£6.95
FROGGER	£6.95
PURPLE TURTLES	£7.95
SIREN CITY	£6.95
EVEREST ASCENT	£6.45
SNOOKER	£8.95
STAR TREK	£6.95
GALAXIAN 64	£7.95
JUPITER LANDER (ROM)	£9.95
SEA WOLF (ROM)	£9.95
FALCON PATROL	£7.95

ATARI 600/800 XL

DONKEY KONG	£28.95
CENTPEDE	£28.95
DEMON ATTACK	£31.95
GALAXION	£28.95
JUMBO JET PILOT	£28.95
SUPER COBRA	£33.95
RIVER RAID	£28.95
SOCCER	£23.95
MOON SWEEPER	£31.95
E.T.	£28.95
FATHOM	£31.95
LORD OF THE RINGS	£33.95
Q-BERT	£33.95
TUTANKHAM	£33.95
FIRE	£14.95
MISSILE COMMAND	£28.85
NOVA BLAST	£31.95
DARTS	£14.95
FIGHTER PILOT	£6.95
POOL	£14.95
SCRAM	£19.95
SNOOKER	£14.95
VAULTS OF ZURICH	£19.45
WORD HANGER	£4.95
XENON RAID	£14.95
BLACK JACK	£14.95
DATA BASE	£19.95
DRAW PIC	£23.95
MAGIC WINDOW	£8.95
PILOT	£14.95
VENUS VOYAGER	£14.95

**JUST £48.95 FOR THE
ATARI PROGRAM RECORDER!
COMMODORE RECORDER £43.95**

**SOFTWARE FROM £4.95 FOR THE
SPECTRUM, BBC, ATARI 600XL/800XL,
VC2600, COMMODORE 64, VIC-20, ORIC,
DRAGON AND TEXAS COMPUTERS.**

MANY MORE AVAILABLE! SAE FOR LISTS.

Please find enclosed Cheque/PO or debit my Access/Visa Card

No. _____ for the following game for the
_____ computer.

- | | |
|----|----|
| 1. | 4. |
| 2. | 5. |
| 3. | 6. |

NAME _____

ADDRESS _____

Outer space and inner space . . .

Zap the aliens and save the Earth, sail the seven seas and dive beneath them.

Ometron 48K £5.95

Software Projects, Bear Brand Complex, Allerton Road, Woolton, Liverpool

Although it is yet another version of the 3D zap-the-aliens-before-they-get-too-close favourite, this version has very fast and effective graphics. After reading the

the game to find a well written demo routine which gave me some idea of what I was supposed to do.

For no apparent reason a multitude of line drawn shapes has decided to attack your lonely space station. Now I for one am not going to stand for this and let loose with my rapid fire laser limited instructions on the attractive cassette cover I loaded

cannon, only to find that one of the nasties had warped in behind me. Desperately I flipped the gun turret round, but too late . . .

If you are the budding space cadet who treats being assaulted by Pyramids, sugar cubes and coathangers as a challenge then this game should prove a valuable addition to your collection. But

since all the aliens adopt the same attack strategy the game becomes tedious much sooner than most of its type.

T.B.
instructions 50%
playability 50%
graphics 85%
value for money 65%



Astroplaner 48K £5.50

Romik, 272 Argyll Av, Slough, Berks

Guess what? Good Old Earth's in trouble again. Apparently Zardon's fleets has been detected fast approaching. Your mission is to transport mutants to the factory in your operating area, protecting them from the nasty invaders. Your combat patrols are vital, defending the Earth's industrial bases.

To achieve your intended aim of teleporting the mutants to the factory you have to hover just above one, then press the up and down keys together. Once the mutant is on board it can be

released by descending to ground level. You can either take them all the way, or drop them elsewhere to walk the rest!

Easy you might think? Not a bit of it! I omitted to mention that the Zardons do not take your actions lying down (assuming that Zardons can lie down.) By the time you have avoided nasty stars loosing horizontal bombs, and other assorted nasties. It makes the earlier versions of Orbiter seem rather like a bun-fight at the village fete.

C.B.

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



Tradewind 48K £5

WD, Hilltop, St. Mary, Jersey, C.I.

This game could have been taken from the TV series 'The Onedin Line'. It has all the same elements; buying a ship, sailing between ports, trading with the local inhabitants, and facing the rough elements of the seas.

The colour and the graphics are used to good effect to provide you with a map (different in each game) of your trading area. You start by buying a ship, provisions and cargo. In sailing between the four ports, you face a variety of hazzards. It helps if you know something about sailing before

you start; although I found the sea always got me in the end.

The program has a few rough edges which tend to spoil it. Some messages are untidy, and when you come to an untimely end, you are told the value of your estate, but the amount just flashes on and off the screen before you can read it.

As a business simulation and adventure game there would appear to be too much reliance on luck. A novel game, but the novelty of it soon wears off.

D.N.

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



Scuba Dive 48K £5.50

Durrell, Castle Lodge, Castle Green, Taunton, Somerset TA1 4AB

Your diver jumps into the ocean from his boat, swimming down to the sea-bed, collecting pearls from open oysters. Avoiding the sharks, jelly fish, electric eels and other denizens of the deep

requires skillful swimming, as one touch means death for one of your 3 lives. Sea-bed collision knocks you unconscious, too much can kill, oysters close or you and you have limited oxygen. Items collected show as 'held' and only add to your main score if you can get them back to the boat which keeps moving. The screen scrolls smoothly, with diver, in all directions.

Four skill levels, the insert

instructions fully explain and movement keys, covering rotation clock and anti-clockwise, forward with acceleration or brake, are user-definable. The score table may be SAVED and re-loaded. The graphics are among the best I have seen — turning sharks display a 'Jaw's-like' full face and the whole game is colourful, creating real excitement. Controls react fast and, even with joystick, the

slightest mistake is fatal. But too easy games are not much fun and I think this one will keep me happy for some considerable time.

D.C.

instructions 90%
playability 90%
graphics 99%
value for money 99%



ALL GAMES IN
100% M/C

Solar SOFTWARE

QUALITY ARCADE ACTION GAMES FOR THE

COMMODORE 64 at £7.95 each

GALAXIONS

The earth is being invaded by an alien force, the GALAXIONS have arrived from a dying planet, determined to destroy civilization as we know it.

They come in formation, swooping and diving towards the planet earth. You and you alone can save mankind from the terrifying destruction the aliens threaten us with.



munch man 64

A fantastic version of this popular arcade game.



Robin to the Rescue

In days of old when knights were bold and the sheriff was in power, to play this game guide Robin Hood, to Marian locked up in the tower.



New Alley Cat



Guide Thomas the cat along the 13 walls of SOLAR street to his lady friend, who awaits him on the end wall, but beware of the flying boots, bottles and mops, which are just a few of the hazards you will encounter.

New Bogy Men



Guide Boris up the ladders, to collect a coin from the top of the screen, but beware! the bogy men are out to get you. He must return to the bottom of the screen, avoiding the bogy men and insert the coin in the electric meter. The lights will come on enabling you to see the pitch fork, and after retrieving it, kill the bogy men.



UNEXPANDED VIC 20

munch man £5.00

GALAXIONS £5.00

GUN FIGHT £5.00

ASTEROIDS £5.00

Cavern Raider £6.00

SuperBreakout £5.00

Scrambler £5.00

8 & 16K EXPANDED VIC 20 COSMIC FIREBIRDS £7.95

51 Meadowcroft, Radcliffe, Manchester. M26 0JP England.

All our games are available mail order P&P included from the above address.

Orders sent by return post.

Also available from all good computer shops.

Distribution, P.C.S. Darwen, CENTRE SOFT West Midlands, ALPHA TAPES Merseyside, TIGER Cheshire, LIGHTNING London, LEISURESOFT Northampton, RY COMPUTER GAMES Barnsley, SOFTWARE DISTRIBUTION SERVICES South Devon, FIVE D SOFTWARE East Harling.

HOME COMPUTING WEEKLY 28 February 1984 Page 29

Page 30 HOME COMPUTING WEEKLY 28 February 1984

TOP SAVINGS

★ ★ PRINTERS ★ ★

	PRICE EX VAT
BROTHER	
HR1	
HR15	£449.00
HR25	£349.00
EP22	£549.00
EP44	£130.00
	£182.00
CANON	
PJ1080A 40cps	£369.00
PW1090A 160cps	£279.00
PW1156A 160cps	£339.00
DIABLO	
630 API	£1325.00
SHEET FEEDER	£490.00
EPSON	
RX 80T	£215.00
RX 80F/T	£242.00
FX 80	£329.00
MX 100F/T III	£375.00
FX 100F/T	£430.00
MANNESMANN TALLY	
MT80	£199.00
MT 160	£419.25
MT 180	£600.00
PIXY PLOTTER	£505.00
NEC	
2010 20cps	£645.00
3510 35cps	£1149.00
7710 55cps	£1499.00
OKI MICROLINE	
OKI 80A	£180.00
OKI 82A	£289.00
OKI 83A	£435.00
OKI 84A(P)	£655.00
OKI 84A(S)	£730.00
OKI 92P	£395.00
OKI 93P	£545.00
OKI 92S	£460.00
OKI 93S	£612.00
OKI 2410P	£2025.00

9-45 RO
9-55 RO
11-40 RO
11-55 RO
SHEET FEEDER

RP1300S
RP1600S
RP1600S SHEET FEEDER
RP1600S TRACTOR
FLOWRITER 1600

GP100A
GP250X
GP700A Colour

GEMINI 10X
GEMINI 15X
DELTA 10
DELTA 15

1550 P
STARWRITER F1040
STARWRITER F1055
SHEET FEEDER

ANADEx DP6500 500cps
DRE 8925 240cps
FUJITSU SP830
HERMES 612C 400cps
JUKI 6100
OLIVETTI LINK JET JP101
OLYMPIA ESW103
SHINWA CP80
SMITH CORONA TP1

★ ★ MONITORS & VDUs ★ ★

JVC 12in Hi-Res
KAGA 12in Hi-Res
NEC JB1201ME

QUME

£1595.00
£1945.00
£1195.00
£1375.00
£490.00

RICOH

£915.00
£1190.00
£459.00
£138.00
£1249.00

SEIKOSHA

£175.00
£219.00
£349.00

STAR

£199.00
£279.00
£305.00
£399.00

TEC

£475.00
£895.00
£1235.00
£459.00

PRINTERS - OTHER

£2019.00
£1495.00
£1545.00
£1695.00
£345.00
£189.00
£825.00
£175.00
£299.00

SANYO 14in Colour Hi-Res
SANYO 12in Hi-Res
HAZELTINE ESPRIT VDU
TELEVIDEO 910 VDU

£435.00
£84.50
£395.00
£489.00

★ ★ COMPUTERS ★ ★

APRICOT

256K 0.315MB
256K 0.315MB MONITOR
256K 315Kx2
256K 315Kx2 MONITOR

£1275.00
£1440.00
£1445.00
£1575.00

SIRIUS

128K 1.2MB
256K 2.4MB
256K 10MB
128K MEMORY EXPANSION
256K MEMORY EXPANSION
512K MEMORY EXPANSION
EXTERNAL 10MB HARD DISK

£1675.00
£2165.00
£2995.00
£222.00
£344.00
£589.00
£1375.00

COMMODORE

COMMODORE 64
COMMODORE DISK 1541
COMMODORE C2N 1530 CASSETTE
COMMODORE MPS801 PRINTER
IBEK 64 Parallel INTERFACE
COMMODORE 8096

£156.51
£165.21
£36.51
£175.00
£59.50
£675.00

EPSON

EXTERNAL 10MB HARD DISK
OX10

£1375.00
£1600.00

KAYPRO

KAYPRO II
KAYPRO 10MB

£1195.00
£2250.00

OLIVETTI

160KB 2x320KB DISK DRIVES

£1895.00

SANYO

MBC 555

£799.00

SPECTRUM

SPECTRUM 48K

£108.70

MAYFAIR MICROS

362a YORK ROAD LONDON SW18 1SP TEL: 01-870 3255

DITTO DATA LTD

ATTENTION ALL TOP PROGRAMMERS !!

YOUR BEST AND ONLY THE BEST MACHINE CODE GAME PROGRAMS FOR COMMODORE 64 — VIC 20 — B.B.C. AND SPECTRUM.

WE WILL ENSURE YOUR PROGRAM HAS MAXIMUM SALES SUPPORT, WITH OUR LARGE DEALER AND MARKETING NETWORK.

OUR OWN LARGE INHOUSE DUPLICATING OF TAPES AND DISCS.

Contact: **NEW PROJECTS DIRECTOR**
DITTO DATA LTD.
CORNER HOUSE
6-8 THE WASH
HERTFORD
SG1 41PX

Telephone: **HERTFORD 554474/554484**

LETTERS

Waiting for the Dragon

I wonder if any of your other readers have experienced the treatment I received from Dixon's mail order section.

Some days ago I contacted them regarding the supply of the Dragon 64 computer. They agreed to accept an advance order as they were expected in at any time.

A week later I phoned them and was told that my dragon 64 had been despatched the previous Monday in plenty of time for Christmas. I waited and, sure enough, on December 21 a parcel arrived from Dixons.

On opening I found not the anticipated Dragon 64 but a Commodore 64!

The following morning I rang Dixons' mail order section and explained. A lady told me that they would let me have a return-paid label for the Commodore and on receipt of it they would despatch my Dragon!

Apparently this is normal policy when they make a mistake.

No, they were not prepared to make an exception in the circumstances and, no, the manager was not in. I did, however, get the number for the customer services section.

There I was dealt with by a very pleasant and helpful young man who seemed genuinely concerned that I was now left with incompatible software and hardware.

I suggested the use of Securicor or similar, as they have their own plane and can guarantee 48-hour delivery. This was ruled out as the mail order section could not deal with that. Similarly, Datapost went by the wayside. It seemed that the firm's red tape was keeping me from my awaited — and paid for — Dragon 64.

I cancelled my order and insisted that the credit card firm be informed that the transaction was cancelled and to act accordingly.

Some time later the man phoned me back to say that there was a Dragon 64 at the depot and it could be held for me until they received the Commodore! This would entail waiting — at least a week for the label then an estimated 10 days for the Commodore to reach Dixons, then probably a day or two for the Dragon to be despatched followed by another 10 days in the post.

Perhaps this will serve as a warning to others that a mistake by Dixons will result in the customer having a very long wait while they sort it out.

On the plus side, I will

Send your letter to Letters, Home Computing Weekly, No.1 Golden Square, London W1R 3AB. Don't forget to name your computer — the best letter could win £5-worth of software. Got a problem with your micro? We'll soon be starting a queries page, so send your technical questions to Queries at the above address



admit that the customer services section are very patient and helpful, but are obviously up against brick walls unknown to me.

Needless to say, I cannot recommend the firm and I consider they should rethink their policy towards their mistakes.

Peter Leach, Antrim, Northern Ireland

Ian Cattermole, Dixons' assistant company secretary, said "We do not wish to make any comment, but we would like to thank Home Computing Weekly for giving us the opportunity."

Spectrum blues

Regular readers will no doubt be interested to hear of my "series of disasters", to add to those of Dorene Cox with her Issue 3 Spectrum. Mine concern the much-publicised Interface 2.

Firstly, delivery took ages! (But notice that Sinclair don't actually promise to deliver at all these days.)

Secondly, my credit card account was debited 28 days before the interface was despatched — a breach of the mail-order retailers' code of practice.

Thirdly, the interface arrived without the ROM cartridge ordered at the same time, and with no reference to it.

Fourthly, it doesn't work! One of three things happen when it's connected to my Spectrum.

Either the printer prints beautiful, expensive, black ribbons and the Spectrum never reaches command mode; blank paper is spooled out by the printer; or everything seems OK until I run a program that calls for printout. Instead of clear type, garbage issues forth.

So I have four questions for Clive Sinclair.

1 Does interface 2 really work?

- 2 Is it compatible with Issue 2 Spectrums?
- 3 Is Sinclair so short of cash that it needs mine a month in advance?
- 4 Is the long-suffering mail order customer being used to field-test yet another unreliable product?

David Martin, Ravenshead, Nottingham

Bill Nichols, for Sinclair Research, said: "Mr Wightman's problems are very regrettable and we would apologise for the difficulties he encountered. They have not been shared by the overwhelming majority of the nearly 650,000 UK Spectrum owners."

"Mr Martin raises two issues. As for Interface 2, we can assure him and all your readers that it is compatible with all Spectrums. His regrettable problem with the ZX Printer/Interface 2 operating together results simply from a dirty edge-connector."

"As for the delay in despatching his Interface 2, this must have resulted from an administrative error. The product is not in short supply. It is in fact already available through some retailers."

Glory seekers

I agree wholeheartedly with the comments made by J. Harris (HCW 43). If people don't like programs or manage to score more than I do, I for one certainly don't care. These letters only spoil what is otherwise a great magazine for people like me who want information, program reviews and listings — not conceited, egotistical glory seekers or self-acclaimed critics.

M. A. Tomic, Colchester, Essex

Protecting Bomber

In issue 47 of your magazine, Ian Goldsack's Bomber game for the VIC-20 carried a warning that "continuous depression of the space bar can lead to corruption of the graphics." The reason this happens is that though some RAM is protected for the graphics by lowering memory pointers, they have not been lowered enough. This may be remedied by changing line 590 to POKE 56,28: POKE 52,28

Brian Donnelly, Twinbrook, Belfast

The game is called Reversal and you are given a randomly generated two colour grid of 16 squares. Some are in colour, others in the alternative colour. The object is to move from square to square. As you move the square that you land on changes colour — you can't move backwards, you can only move one square at a time and the object is to convert all squares to the same colour in as few moves as possible. You use the cursor control keys to move your marker and the square which you just left is marked with an X.

Variables

DIM a (4,4) colour values of each square
x,y current position
ox,oy previous square
nx,ny new square
movs number of moves
on + tw values of both colours in play
col used to pick all three colours, finally for BORDER + PAPER
ks hold INKEY\$ value
i, n, j, m FOR...NEXT loops

Chequer-board fun as you complete the squares

Change all the squares to the same colour. The fewer the moves the better the play in Alec Wakely's game of skill and strategy

How it works

210-320 initialise program
 390-550 select colours
 690 random starting position (x,y)
 695 print instructions
 700 print squares
 800-1150 check if cursor keys pressed and if legal
 1205 BEEP on move
 1210 keep score
 1230-1250 change new square colour and print
 1260 update position
 1270-1350 check if all the squares are the same colour
 1410-1590 play music, scroll away and GOTO new game
Subroutines
 3000-3070 choose colours
 3100-3290 print starting squares
 3420-3550 change colour of new square and flashing centre, print inverse X in last square and blank out previous X
 3610-3800 print instructions
 4000-4050 music

```
50 REM Written by Alec Wakely
60 REM PLEASE COPY
70 REM
200 REM *****REVERSAL*****
210 INK 0: PAPER 7: BORDER 7: FLASH 0: BRIGHT 0: OVER 0: INVERSE 0
220 LET low=200
230 DIM a(4,4)
300 CLS
310 LET ox=0: LET oy=0: LET moves=0
390 PRINT AT 3,22:"REVERSAL"
400 PRINT AT 5,22:"CHOOSE" : AT 6,22:"FIRST" : AT 7,22:"COLOUR"
410 GO SUB 3010
420 LET on=col
450 PRINT AT 6,22:"SECOND"
460 GO SUB 3010
470 LET tw=col
480 IF tw=on THEN GO TO 450
500 PRINT AT 6,22:"BACKGROUND"
510 GO SUB 3010
520 IF col=on OR col=tw THEN GO TO 500
530 INK 7
540 IF col>3 THEN INK 0
550 BORDER col: PAPER col
560 CLS
570 IF low=200 THEN GO TO 590
580 PRINT AT 10,23:"LOWEST " : low
600 FOR i=1 TO 4
620 FOR n=1 TO 4
630 LET a(i,n)=on
640 IF RND>.5 THEN LET a(i,n)=tw
670 NEXT n
680 NEXT i
690 LET x=1+INT (RND*4): LET y=1+INT (RND*4)
695 GO SUB 3400
700 GO SUB 3100
800 REM INKEY$ MOVING
810 LET ks=INKEY$
820 IF ks="" THEN GO TO 810
830 IF ks<>"5" THEN GO TO 900
840 IF y=1 THEN GO TO 810
850 LET ny=y+1: LET nx=x
860 IF ny=oy AND nx=on THEN GO TO 810
870 GO TO 1200
900 IF ks<>"6" THEN GO TO 1000
910 IF x=4 THEN GO TO 810
920 LET nx=x+1: LET ny=y
950 IF nx=ox AND ny=oy THEN GO TO 810
980 GO TO 1200
1000 IF ks<>"7" THEN GO TO 1100
1020 IF x=1 THEN GO TO 810
1030 LET nx=x-1: LET ny=y
1050 GO TO 950
1100 IF ks<>"8" THEN GO TO 810
1120 IF y=4 THEN GO TO 810
1130 LET ny=y-1: LET nx=x
1150 GO TO 860
1200 REM CHECK
1205 BEEP .1,2*VAL ks
1210 LET moves=moves+1
1220 PRINT AT 17,23:"MOVES " : moves
1230 IF a(nx,ny)=on THEN LET a(nx,ny)=tw: GO TO 1250
1240 IF a(nx,ny)=tw THEN LET a(nx,ny)=on
1250 GO SUB 3400
1260 LET ox=nx: LET oy=ny: LET ny=ny
1270 FOR i=1 TO 4
1280 FOR n=1 TO 4
1290 IF a(i,n)<>a(1,1) THEN LET n=5: LET i=5
1300 IF n=4 AND i=4 THEN GO TO 1400
1310 NEXT n
1320 NEXT i
1350 GO TO 810
1400 REM FINISH
1410 IF moves<low THEN LET low=moves
1420 PRINT AT 10,23:"LOWEST " : low
1430 GO SUB 4000
1460 PRINT AT 20,5:"PRESS ANY KEY FOR NEW GAME"
1470 IF INKEY$="" THEN GO TO 1470
1540 FOR j=1 TO 22
1550 PRINT j" ": POKE 23692,255
1560 NEXT j
1590 GO TO 310
2999 STOP
```

```
3000 REM GO SUB AREA
3010 LET ks=INKEY$
3020 IF ks<>"0" AND ks<>"1" AND ks<>"2" AND ks<>"3" AND ks<>"4" AND ks<>"5" AND
ks<>"6" AND ks<>"7" THEN GO TO 3010
3030 LET col=VAL ks
3040 IF INKEY$="" THEN GO TO 3040
3070 RETURN
3100 REM GO SUB PRINT
3130 FOR i=1 TO 4
3140 FOR n=1 TO 4
3170 FOR j=-1 TO 1
3180 FOR m=-1 TO 1
3190 PRINT INK a(i,n): AT 4*i+j,4*n+m;" "
3200 NEXT m
3210 NEXT j
3220 NEXT n
3230 NEXT i
3250 PRINT INK a(x,y): FLASH 1: AT x*4,y*4;" "
3290 RETURN
3420 IF ox=0 THEN GO TO 3440
3430 PRINT INK a(ox,oy): AT ox*4,oy*4;" "
3440 PRINT INK a(x,y): INVERSE 1: AT x*4,y*4;"X"
3450 FOR j=-1 TO 1
3460 FOR m=-1 TO 1
3470 PRINT INK a(nx,ny): AT 4*n+j,4*m+m;" "
3480 NEXT m
3490 NEXT j
3500 PRINT INK a(nx,ny): FLASH 1: AT 4*n+j,4*m+m;" "
3550 RETURN
3610 PRINT AT 2,22:"REVERSAL"
3620 PRINT
3630 PRINT TAB 19:"Make all " : TAB 19:"squares the " : TAB 19:"same colour " : TAB 19:"a
a few moves " : TAB 19:"as possible"
3640 PRINT
3650 PRINT TAB 19:"You are here " : FLASH 1:" "
3660 PRINT
3670 PRINT TAB 19:"You can not " : TAB 19:"move back to " : TAB 19:"last square X"
3800 RETURN
4000 REM Music
4010 BEEP .25,0: BEEP .25,3: BEEP .25,5: BEEP 1.25,7
4020 BEEP .25,0: BEEP .25,3: BEEP .25,5: BEEP 1.25,7
4030 BEEP .25,0: BEEP .25,3: BEEP .25,5: BEEP .5,7
4040 BEEP .5,3: BEEP .5,0: BEEP .5,3: BEEP 1.25,2
4050 RETURN
8999 STOP
9000 SAVE "Reversal"
9010 PRINT "RE-WIND TO VERIFY"
9020 VERIFY "Reversal"
```



Now... the computers that listen to the radio

I'm not sure if this device, or one like it, will make it to your fair shores soon, but it sure seems like a novel technological application to me. Thanks to a well known communications company called Electra, owners of personal computers will be able to expand the communications capability of their device in a unique fashion.

Electra is very well known over here for its line of personal scanner radios. In case you may be unfamiliar with the term, a scanner radio is one capable of receiving many channels (usually tuned to public service communications radio frequencies such as police, fire departments, ambulance services, weather radio and so on) and automatically selecting and locking onto whichever one comes alive, until the user wants to hear something else. In the absence of any signal on any channel, the receiver scans all the available channels sequentially until an active signal causes it to lock on.

Anyway, what Electra has done is to design the new Bearcat CompuScan 2100 which combines computer and scanner technology. It is able to monitor live police, fire and other emergency bands, amateur radio and Coast Guard transmissions, and even aircraft communications frequencies, and turn your home computer into a real-time news terminal.

The device features a video display unit which shows the user detailed information about the service being monitored. Each channel (up to 200 can be monitored) can be programmed to display the source and location of the transmission, 10-codes (as in 10-4 good buddy), phone numbers and lots more. Because there are so many possible frequencies to listen to, the scanner can be programmed to prioritise up to three levels so the more important calls can be heard first. If the user is listening to one channel when a priority call comes in, the screen flashes appropriately. I really don't have enough space in this column to devote to all the features of this device.

It is reported to be compatible with most of the major home computers currently available. In addition to the unit itself, the price includes a mains adapter, an antenna and 20 foot cord, all connectors, interface cable and software (disc or cassette). The software and interface cables will be packaged separately for maximum versatility. The software will be user-modifiable to suit individual needs. The unit is expected to cost about \$500.



This year's craze apparently is going to be "integrated" software, whatever that may mean. At present, there is absolutely no definition of the term. With certain software packages, what is meant by integration by the makers does not often seem to be integrated by disappointed users who purchased the package based on some ignorant salesperson's recommendation.

The idea of integrated software is great. Wouldn't it be nice if we could all buy one package that would let us, for example, create a spreadsheet, put the data from it in tabular form, use it as part of a report generated on the package's word processor, and be able to recalculate the data without having to dump the word processor and reload the spreadsheet portion of the package? I am certain you can think of other integrated tasks for which you would love to use your computer. The only problem is that such packages are less than likely to be created in a month or two by a 15-year-old whiz kid working at night in the family garage.

Although the packages are unavailable for most "home" computers, the examples are relevant. Let's take a look at three revolutionary software designs: the 1-2-3 package by Lotus, Apple's Lisa, and VisiCorp's VisiOn operating system.

At the time Lotus introduced its package, it did something that at the time was unique to the industry — it spent more than \$1m on advertising and promotion. By doing so, it immediately established a market requirement. It is fairly common knowledge now that any software company that expects a decent market share from its new product had better be willing to spend at least \$3 million on it! Even then, there is no guarantee that it will be accepted or even that it will be very good. Look at Lisa. According to statistics released by Apple itself, the Lisa project consumed over 200 man-years to bring

to fruition, yet it is still far from perfect.

Finally, there is VisiOn. VisiCorp spent two years on its development before announcing the product, and then did not bring it out for another year after that! Imagine the time and expense that went into these packages, and all with no guarantee of success.

Think about what this may mean to the average consumer of such packages. The old phrase, let the buyer beware, takes on a new meaning in the software industry. When you go to buy an integrated software package, be careful. I mean be very careful. If the maker has not come up with an extremely well thought-out and well-designed product, if the maker does not have several million dollars in the bank for promotion and support, and if it is not able to keep several very talented programmers in-house for product improvement and quality control, the buyers of that product will ultimately (or in some cases very shortly) own a very expensive software paper-weight.

I mention this now because the time will not be very far off until someone tries producing low-cost "integrated" software packages for the home computer market. I have gone through four word processors and three spreadsheet programs from six different companies, and feel I have yet to find the ultimate in either category. Each product I have tried has been well supported, and very well known.

Sceptic that I am, I feel very wary that some manufacturer will be able to come up with a package that will not only meet my individual requirements for each individual application but will also allow the data and all other functions to interact on any kind of integrated basis. An even if someone did, it would be difficult for me to shell out hundreds of dollars in the hope that when or if (most likely when) I needed support that the firm would still be in business and be able to handle my problems. It takes a lot of time, talent, and money to produce a package that will smoothly handle four or more tasks, let alone be able to stay around long enough to have the product succeed in the marketplace. And the marketplace is exactly where this issue will be decided.

We journalists can only warn about the pitfalls, and explain the potential benefits. It is up to you, the consumers, to force responsibility and professionalism on the marketplace. How you spend your money, and what you spend it on, will in the last analysis decide what gets developed. Spend wisely.



A new expansion interface board has just been announced for the Commodore 64. The Micro-X64 provides a total of three expansion slots. Two of these are positioned vertically and are supposed to be used in conjunction with programs on cartridges. The third slot is horizontally positioned and allows larger or more bulky cards such as 80-column cards to be plugged in and used with compatible software.

The unit will also support the various Z-80, CP/M, and other utility plug-in devices. One useful feature the board offers is a pause switch. By pressing this push button you can bring a program, game, or other machine function to a halt. Pushing it again gets the machine going from the point it was stopped with no drawbacks.

Another feature is the presence of what the vendor calls a "non-destructive" reset switch. When this button is pressed, the machine will reset but will not lose any machine-language program that had previously been loaded into memory. The unit has gold connectors at critical points and high quality circuit components. Included is a fully comprehensive manual with full documentation. It is immediately available and costs all of \$49.95. Contact Compuscope, Tillamook, Oregon.

Alas, I am out of space again. See you next week.

Bud Izen
Fairfield, California

Top Ten programs for the Commodore 64

- | | | |
|----|--------------------------|-----------------------|
| 1 | Revenge of Mutant Camels | Llamasoft (—) |
| 2 | Mr Wimpey | Ocean (—) |
| 3 | Crazy Kong | Interceptor (3) |
| 4 | Manic Miner | Software Projects (—) |
| 5 | Hunchback | Ocean (—) |
| 6 | Space Shuttle | Microdeal (1) |
| 7 | Falcon Patrol | Virgin (2) |
| 8 | Grand Master | Audiogenic (—) |
| 9 | Motor Mania | Audiogenic (7) |
| 10 | Ship of the Line | Richard Shepherd (9) |

Top Ten programs for the Dragon 32

- | | | |
|----|------------------------|----------------------|
| 1 | The King | Microdeal (1) |
| 2 | Eight Ball | Microdeal (2) |
| 3 | Skrabble | Microdeal (3) |
| 4 | Leggit | Imagine (4) |
| 5 | Transylvanian Tower | Richard Shepherd (8) |
| 6 | Dragonchess | Oasis (7) |
| 7 | Grand Prix | Salamander (5) |
| 8 | Cuthbert in the Jungle | Microdeal (—) |
| 9 | Devil of Thought | Microdeal (—) |
| 10 | Ring of Darkness | Wintersoft (—) |

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

Top Ten programs for the Spectrum

- | | | |
|----|-------------------|----------------|
| 1 | Atic Atac | Ultimate (1) |
| 2 | Chequered Flag | Psion (5) |
| 3 | Manic Miner | Bug-Byte (4) |
| 4 | Lunar Jetman | Ultimate (2) |
| 5 | Flight Simulation | Psion (10) |
| 6 | Ant Attack | Quicksilva (9) |
| 7 | Stonkers | Imagine (3) |
| 8 | Kong | Ocean (—) |
| 9 | Jetpac | Ultimate (—) |
| 10 | Alchemist | Imagine (—) |

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

Top Ten programs for the ZX81

- | | | |
|----|-------------------|----------------|
| 1 | Football Manager | Addictive (1) |
| 2 | Flight Simulation | Sinclair (3) |
| 3 | Asteroids | Quicksilva (2) |
| 4 | Crazy Kong | PSS (9) |
| 5 | Invaders | Quicksilva (7) |
| 6 | Space Raiders | Sinclair (4) |
| 7 | Mother Ship | Sinclair (4) |
| 8 | Defenders | Quicksilva (8) |
| 9 | Hopper | PSS (—) |
| 10 | Espionage Island | Sinclair (—) |

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

BEST SELLERS

Top 30

- | | | | |
|----|------------------------|-------------------|---------------|
| 1 | Manic Miner | Software Projects | Spectrum (2) |
| 2 | Hunchback | Ocean | Spectrum (1) |
| 3 | The Hobbit | M.House | Spectrum (6) |
| 4 | Jetpac | Ultimate | Spectrum (5) |
| 5 | 3D Ant Attack | Quicksilva | Spectrum (7) |
| 6 | Lunar Jetman | Ultimate | Spectrum (4) |
| 7 | Harrier Attack | Durrell | Spectrum (3) |
| 8 | Valhalla | Legend | Spectrum (14) |
| 9 | Atic Atac | Ultimate | Spectrum (13) |
| 10 | Hunchback | Ocean | CBM 64 (—) |
| 11 | Falcon Patrol | Virgin | CBM 64 (10) |
| 12 | Hobbit | M.House | CBM 64 (12) |
| 13 | Chuckie Egg | A & F | Spectrum (20) |
| 14 | Kong | Ocean | Spectrum (8) |
| 15 | Penetrator | M.House | Spectrum (11) |
| 16 | Frogger | Microdeal | Dragon (—) |
| 17 | The King | Microdeal | Dragon (18) |
| 18 | Zzoom | Imagine | Spectrum (9) |
| 19 | Chequered Flag | Psion | Spectrum (17) |
| 20 | Cuthbert in the Jungle | Microdeal | Dragon (16) |
| 21 | Hunchback | Superior | BBC (23) |
| 22 | Arcadia | Imagine | VIC-20 (21) |
| 23 | Manic Miner | Software Projects | CBM 64 (—) |
| 24 | Skrambler | Solor | VIC-20 (26) |
| 25 | Mini Kong | Anirog | VIC-20 (22) |
| 26 | Hunchback | Ocean | Oric (—) |
| 27 | Crazy Kong | Interceptor | CBM 64 (28) |
| 28 | Jetpac | Ultimate | VIC-20 (25) |
| 29 | Bugaboo (The Flea) | Quicksilva | Spectrum (—) |
| 30 | The Hobbit | M.House | Oric (—) |

Compiled by PCS Distribution (0254 691211) and sanctioned by the Computer Trade Association. Chart is for retail sales in individual outlets in the UK and Northern Ireland for the fortnight ended March 3

Top Ten programs for the VIC-20

- | | | |
|----|---------------------|----------------|
| 1 | N.L.B.A.T.E.T. | Llamasoft (—) |
| 2 | Wizard and Princess | Mel House (2) |
| 3 | Wacky Waiters | Imagine (1) |
| 4 | Grid Runner | Llamasoft (4) |
| 5 | Snooker | Visions (3) |
| 6 | Bewitched | Imagine (6) |
| 7 | Catcha Snatcha | Imagine (7) |
| 8 | Arcadia | Imagine (9) |
| 9 | Skyhawk | Quicksilva (—) |
| 10 | Abductor | Llamasoft (8) |

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

SOFTWARE REVIEWS

Chuckie Egg Dragon 32 £7.90

A&F, Canal Side Industrial Estate, Woodbine St East, Rochdale

The object of this arcade-type game is to collect the eggs before the hens catch you or you run out of time.

At the start you can choose to see the instructions or reset the control keys. There are set already at the four cursor keys and the space bar for jumping. I was quite content with this arrangement, but it's nice to offered a choice.

Once it starts you are on the first level. You, as the farmer, have to collect 12 eggs dotted about on various levels. You need to climb ladders and jump over gaps, avoiding hens. Once this is

completed another more difficult level arrives. On level three and above the farmer has to travel via a conveyor belt.

Each level is progressively harder and the number of hens increase. Points are gained for each egg collected and a bonus for each level completed. There is a timer which allows a generous period for each screen. At the start you have five lives and extras are awarded, though there is no information given on this. There is a high score table and very good graphics.

A thoroughly enjoyable game. I will be playing many more times.

J.E.M.

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



Games for fast fingers

A batch of arcade-style games are given the once-over by our review team

Jet Boot Jack 32K Atari £9.95

English Software, P.O. Box 43, Manchester M60 3AD

Want to enhance your music collection? Simple. Put on a pair of jet boots, soar along to the local record pressing plant and

catch all the spare notes hanging about. What? Well that's what Jet Boot Jack does.

With the aid of your joystick, Jack will spurt through the plant machinery picking up notes as he goes. Obstacles increase in number according to the level of difficulty. They take the form of bug-like creatures overhanging the route our Jack is to take.

Should Jack collide with one he loses a life. The bugs contract and expand in a disquieting manner. Collisions though, are obligatory for the orange pods scattered throughout; they refuel Jack's boots.

Movement between floors is accomplished by an exasperating interlocking network of lifts and slides. Points are for bugs destroyed (by Jack bouncing on them), and notes collected. Bonus

points are available.

This colourful game is of arcade standard. Sound is used well and graphics noteworthy. Jet Boot Jack should please most addicts. Needs joystick. T.A.

instructions	65%
playability	80%
graphics	90%
value for money	95%



Kamakazi 32K Acorn Electron £7.90

A&F, Unit 8, Canal Side Industrial Estate, Woodbine St, Rochdale, Lancs

Once in a while a game sweeps the market and has game addicts hooked. Alas Kamakazi is not one of these. In fact, it is a poor example. A word of advice — always try a game out in the shop before buying.

Kamakazi is another version of galaxians space invaders. You defend your base with the help of a laser cannon against the invading enemy. There are no shields for protection so the only way to stay alive is by dodging the bombs.

There are five waves of attacking squadrons. The graphics are so poor that it is very difficult to

identify them. Somewhere in the cluster is the Mother Ship supplying new ships as soon as you destroy the old ones. There is no pleasure even in being blown up by the falling bombs, because when one of the bombs hits the base there is no sound, just a few spots. The only sound comes from the cannon fire but it is unbelievably crude.

It fails to take advantage of the superior graphics and sound of the Electron. The only good feature of this game is the choice of keys to suit right or left handed players. With so many good games in this price range, I see no future for Kamakazi.

M.B.

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



Batty Builders Atari £9.95

English Software, P.O. Box 43, Manchester M60 3AD

Batty Builders is a one-player game with excellent graphics but very little else going for it.

The object is to complete an unfinished wall out of patterned blocks falling from an overhead conveyor. The squares have to be caught by a joystick-controlled brickie at the base and thrown up by him to, hopefully, land on the desired section of wall. If your brickie fumbles his catch or is hit by a falling block, he loses one of his five lives. If you run out of blocks the game ends.

When the wall is complete your score is updated and you move to the next level (there are eight). Ensuring the finished wall has

rows of blocks built in a uniform pattern brings bonus points. Later screens have your brickie frenziedly dancing to catch blocks and avoid horizontally scrolling crates of TNT at the same time.

Unfortunately the game soon becomes tedious; which is a pity as obviously a lot of effort and programming skill has been expended, although the basic idea surely wasn't worth it. Batty Builders goes to show that technical expertise is no substitute for imagination.

T.A.

instructions	60%
playability	40%
graphics	90%
value for money	50%



Meter Mania VIC-20 £7.50

Abrasco, The Grange Barn, Pikes End, Eastcote, Middlesex HA5 2EX

My first reaction was: "Not another P** M** clone". But after playing for a time I realised the game had much more. The plot isn't completely novel. You control Mr Trick who looks like a Japanese Mickey Mouse. He has

to collect coins, in a maze of streets, until he has enough for the parking meter. At intervals meter maids appear (they look like martians) and scuttle about trying to catch him. When all four maids have appeared you are given a short period to reach the meter and pay up. In all, not quite Pac Man and certainly a lot more difficult.

Technically the game is excellent. Cunning use of pseudo sprites give very slick and smooth

movement. The use of exclusive ORing of screen contents allows objects to pass behind others and it's all rather tasty. In fact, I've only seen these sorts of effects once before. It's a pity other writers couldn't take as much effort. The sound effects aren't marvellous but in 3.5K what more can you expect? You can choose background colours, useful if you use a black and white TV and you want to maximise clarity.

A very good game which is only

marred by price. Knock a pound off and it would be just right. In this time of a shrinking number of releases for the VIC, this stands out from the rest.

A.W.

instructions	70%
playability	80%
graphics	95%
value for money	75%



C&R

COMPUTER SALES

33 BURTON RD, LINCOLN LN1 3JY
(0522) 26699

Atari A600XL	£151.99	VIC 20	£94.99
Atari A800XL	£237.49	CBM 64	£217.55
Atari A800 (including programming kit)	£284.99	Oric 48K	£132.95
Atari 2600 (with free Pacman game)	£69.95	Sord M5 16K	£142.45
		Atari VCS 2600 (Basic Keyboard enhancer)	£33.95

Please send large SAE for list of software and peripherals stating type of hardware you use.

FREE Postage & Packing (UK only)

Please send cheque payable to C&R computers with order. Please allow 21 days for delivery.

Software available for Spectrum, BBC, Dragon.



Texas TI99/4A



ARENA III (EXT. BASIC) £4.95
Space war. Defend your ship from attacking aliens. Battle your way to Arga. To land, you *must* blast out a landing strip. Descend from ship through treacherous meteor storms. Laser cannon, neutron bombs, space walks. This game has the lot.

AZTEC GOLD (EXT. BASIC) £6.95
All text adventure for player who enjoys solving cryptic clues. Learn about genuine Aztec gods as you go around the island of Tencoatl in search of the Temple. Includes on-screen map. Full separate instructions.

POSTMANS KNOCK (BASIC) £4.95
"ON YOUR BIKE" says the Boss. Wobble through dense countryside. Post letters; empty postboxes; pick up parcels. Have you time to do it, before the post office does the sorting? Ride the regulation bike (with bell). It is not easy! Extra screen for High Scores, unless you are sacked first! DEALER ENQUIRIES WELCOME

Send cheque or P.O. to Lizard Games, Orders post free.

14 Bridgwood, Brookside, TELFORD, Shropshire TF3 1LX.

Send cheque or P.O. to Lizard Games, Orders post free.

14 Bridgwood, Brookside, TELFORD, Shropshire TF3 1LX.

TI-99/4A **LANTERN** TI-99/4A

DADDIE'S HOT ROD (BASIC) £5.95
Drive through sheep fields, woods, over rivers and avoid all obstacles, then pick up hitch-hikers down perilously twisting roads. HCW gave five stars.

HUNCHBACK HAVOCK (BASIC) £5.95
Arcade action in TI-BASIC! Race with Egor through 24 different sheets. Superb graphics and great fun.

THE BLACK TOWER (BASIC) £5.95
Unlock the mysteries of the black tower and rescue the Lady Gwen in our latest full 16K adventure. Addictive and entertaining.

BATTLESTAR ATTACK (EXT-BASIC) £6.95
Stop the battlestar before it blows up your home planet. A fast game with excellent graphics. HCW gave five stars and said: 'even at level one a very addictive game'.

Send cheque or P.O. to

LANTERN SOFTWARE,

4 Haffenden Road, Tenterden, Kent TN30 6QD

or SAE for full list. Look out for our products at your TI retailer.

Scientific Software BBC Model B

Predict the future with
Computerised Nostradamus
Crystal £3.45

Improve your spelling powers
Word game £5.45

TREK with Graphics & I.A. Cosmic War £5.45

Hot Line 01-488 0144

SCIENTIFIC SOFTWARE

Old Loom House, Back Church Lane,
London E1 1LS

AQUARIUS

GAMES PACKS FOR UNEXPANDED COMPUTER BUNCH OF 5 / GAMES PACK 1

Snake, Masterguess, Symon, Bomber, Hi-Lo..... £4.95

GAMES PACK 2

Collector, Blocked!, Rocket Run, Minefield, Air Defence £4.95

SPECIAL OFFER

ORDER BOTH TAPES FOR ONLY £8.95

CASSETTE RECORDER LEAD £1.95

PROCESSOR LTD
A.O.S. House
1 Willow Parade
CRANHAM
Essex RM14 1DZ

BOOK NOW IN STOCK £5.95

AQUARIUS AND HOW TO GET THE MOST

MAIL ORDER ONLY

We also supply all Aquarius products

Make Passing 'O'-level Biology easier

Help with your Biology revision with the latest development in educational software. Thornhill bring you 'O'-level Biology for the Texas TI-99/4A.

A complete set of eight assessment programs covering the whole syllabus for only £10.00 + p&p.

Thornhill Educational Software
5 Highburgh Drive, Rutherglen,
Glasgow G73 3RR.

Tel: 041 647 7547

THORNHILL

Commodore 64 £189.99

VIC-20 £89.00

Commodore Disk Drive £195.00

Commodore Dot Matrix Printer
(30 characters per second) £199.99

Commodore Dot Matrix Printer
(60 characters per second) £299.99

Commodore cartridges all £8.99 for VIC & 64

More bargains available for all makes of home computers. Peripherals and software 10% off.

Details and Remittance to:

STAMFORD COMPUTERS LTD,
Unit 4, Ryhall Road Industrial Estate,
Stamford, Lincs.

Delivery within 24 days.

THE Ω MEGA RUN.... is here

Make your micro do some work

Our reviewers star-rate five new programs to make your computer more useful

My Secret File CBM 64 £9.95

Mosaic, John Wiley & Sons, Baffins La, Chichester, Sussex

Packaging a program and book can enhance enjoyment and sales of both. Many book and magazine publishers are venturing into software, with or without the book/program link. In this case I fear the link

duplicates rather than complements.

The idea, first published as a book in 1982, is one I'm a little uneasy about anyway. It was sold for a children to record their secret thoughts about, for example, mum, dad, brothers and sisters, friends and even themselves. There's the obvious: height, weight, hair colour, eye colour, and so on. And it checks for silly answers. Then there's favourite TV programmes, pop

records, foods, etc, and most hated of same. But what about: Mum as I see her, the boring nag count? There is also a section for: diary dates, what I'd like for Christmas and so on. All good database stuff, and the secrecy of storage on tape, with password and security code, is far better than hiding the book. So who needs the book?

A warning — if the new Data

Protection Bill becomes law you will have to register if you record data on anyone outside your immediate family! **B.J.**

instructions	70%
ease of use	80%
display	80%
value for money	70%



Filmast Dragon 32 £19.95

Microdeal, 41 Truro Rd, St. Austell, Cornwall PL25 5JE

Having pretty well saturated the market for Dragon games, Microdeal is now extending its range of more serious programs with oddly-named filing system.

Filmast is available on cassette or disc; I tested the cassette version. It comes with an A4 loose-leaf file of instructions containing 16 pages, so there is plenty of space for the details of your files.

You can design your own screen "form" on which to enter data, with up to 20 data fields. This has to be saved on cassette then re-loaded before you can go on with the program, a procedure

which caused me considerable problems. Then you can enter your records, 200-300 of them, depending on size. The keyboard response during this stage seemed to be even slower than usual for the Dragon. You have to type very slowly to avoid letters being missed.

Records can be sorted and selected on any field or combination of fields, you can sum the contents of any numerical field, and the records can be printed out in any format.

Quite a powerful program for its price, despite being less easy to use than one might wish. **M.N.**

instructions	75%
ease of use	60%
display	80%
value for money	80%



Editext Dragon 32 £12.95

Nectarine, W. Foulsham & Co, Yeovil Rd, Slough, Berks SL1 4JH

A cheap but useable word processor, which doesn't have all the facilities of much more expensive programs but is perfectly adequate if you just

want to type an occasional letter. It is supplied in a video-type box, with a comprehensive leaflet. The cassette also has a version which can be saved on disc.

The standard Dragon display of capitals and inverse capitals is used. This is legible enough, but means that what you see on the screen looks nothing like the printed version.

Written in BASIC, it could easily be modified — to change type-face options to suit different

printers, for instance. The original options are for the Epson FX80.

Entering text is straightforward, but editing less so. The main Edit function is similar to the Dragon's editor. There is also a line editor which enables you to insert, delete or move single lines or blocks of text.

Other facilities include automatic wordwrap, justified printing, find and replace words on phrases, and of course saving

and loading text files on disc or cassette.

Overall, it's as good a program as you could expect for the price. **M.N.**

instructions	75%
ease of use	50%
display	50%
value for money	85%



Oric Calc 48K Oric £14.50

Tansoft, Units 1 & 2, Cambridge Techno Park, Newmarket Rd, Cambridge CB5 8PB

Designed for the small business user, this enables a spreadsheet to be built up and maintained in conjunction with a cassette recorder. Spreadsheet programs are currently fashionable for home micros and this version will presumably allow the Oric to penetrate the business sector.

A comprehensive booklet explains the operation and the numerous options available for moving the entries around. To those unfamiliar with a spreadsheet, the basic idea is to enter values and descriptive text on to a sheet divided up into columns and rows. Formulae can be entered into boxes on the sheet

to enable entries to be totalled, averaged or have more complex operations performed. A worked example of an account sheet with VAT entries etc is provided.

Certain parts were a little slow, but in general I found the program worked well as long as you kept a clear head. Once you have decided the layout required, operating the system is quite straightforward.

Only a limited amount of protection against invalid entries is provided and I found I could get errors if very large numbers (above a million) were being handled. **P.S.W.**

instructions	75%
ease of use	75%
display	70%
value for money	80%



Sort Animator 32K BBC £6.50

OIC, 15 Burghead Cl, College Town, Camberley GU15 4XL

Perhaps the most mysterious and unexplained area of computing is the topic of sorting. Computer buffs will argue heatedly the relative merits of Shell-Metzner V exchange sort, while the rest look on rather bemused.

This is sad as selecting the correct sorting process can dramatically speed a program's performance. The problem remained, therefore, how to understand the working process of each sort without having to take a Ph.D. in computer science.

That was until OIC produced this package. Sort Animator is really a combination of programs

that provide a full graphics tutorial outlining the processes and differences in speed and usage of 1 bubble sort, 2 shell sort, 3 exchange sort, 4 shuttle sort and 5 quick sort. Further options are available for inserting the animation routines in your own sorting subroutines. It has been said that a picture paints a thousand words, well a graphical demonstration certainly beats a dozen books.

An absolute must for any seriously learning programmer. Well done, OIC. **P.D.**

instructions	90%
ease of use	75%
display	95%
value for money	90%



48K SPECTRUM OWNERS *Read This From*

...LET'S GET DOWN TO BUSINESS...

★ ★ ★ FINANCE MANAGER ★ ★ ★

Voted "the best value financial program available" by SINCLAIR USER

FINANCE MANAGER is a powerful, flexible and very fast MENU DRIVEN general purpose ledger package which includes both standing order and special forward planning features. The program will handle up to **255** separate accounts and 1800 transactions. The power of MACHINE CODE has enabled us to produce the very latest "on the page" presentation which lets you enter and edit data naturally, as if you were filling in a form.

These screens are just a sample to show the style of the program:

But that's not all, not by a long way. This program **automatically** raises a corresponding debit or credit for every entry, and will even open a new account if an entry features an unrecorded account name.



Information can be manipulated in various ways — you can call up your bank or credit card account, or analyse expenditure according to a variety of categories which you assign to the transactions. Instant Account balances can be listed at any time. A great time saving feature of this program is that account names and transaction descriptions need only be recorded **once**, as all the input fields will scroll existing files. There are many, many more features which make this the most powerful finance package around, we even include a test file for you to experiment with before getting started.

★ ★ ★ ADDRESS MANAGER ★ ★ ★

ADDRESS MANAGER utilises the same "on the page" presentation as **FINANCE MANAGER** and offers Spectrum owners a professional standard address filing, indexing and retrieval system. Below are examples of the screen presentations.

ADDRESS MANAGER has been carefully constructed to provide the user with a tool that is extremely friendly and easy to use, the speed and presentation of this program are second to none.



ADDRESS MANAGER features **MULTIPLE INDEXING** via our 3 way 3 character index, an ability to store over 400 full names and addresses or 1500 individual names/titles.

USES include storing and updating names, addresses and phone numbers, printing out Xmas card lists etc, mail order work, customer classification by type size, (doctors have used this program to catalogue patients by treatment).

★ ★ ★ 80 COLUMN-PLUS 80' VERSIONS ★ ★ ★

VERSIONS OF BOTH THESE PROGRAMS ARE NOW AVAILABLE FOR USE WITH AN 80 COL PRINTER. WORKING IN CONJUNCTION WITH THE KEMPSTON CENTRONICS INTERFACE THESE "PLUS 80" PROGRAMS CONTAIN ALL THE NECESSARY SOFTWARE AND CONTROL CODE FACILITIES TO OPERATE ANY KEMPSTON COMPATIBLE CENTRONICS PRINTER.

VISIT YOUR LOCAL SOFTWARE STORE NOW AND ASK FOR FINANCE MANAGER AND ADDRESS MANAGER BY NAME —

also available from selected branches of W. H. SMITH, BOOTS AND J. MENZIES



SOFTWARE ★ ★ ★ SIMPLY THE BEST ★ ★ ★

If you experience difficulty obtaining your copies of these programs send a cheque or postal order for £8.95 (£19.95 for **PLUS 80** versions) or telephone your details to (0753 888866):

Oxford Computer Publishing Ltd.
4A HIGH STREET, CHALFONT-ST-PETER, BUCKS, ENGLAND



WE GLUG

SHARDS

software

Vacancy

for a full-time junior programmer to join our staff. Applicant must be 18-25, and living in London/Essex area. Thorough knowledge of Basic essential, as is familiarity with at least two popular home micros. Machine code experience (particularly 6502) preferable.

Write now with full personal details to:

**Personnel Department
SHARDS SOFTWARE**

189 Eton Road, Ilford, Essex IG1 2UG

pro clone.

Pro Clone Ltd. Whitehill House,
Union Street, Luton, Beds. LU1 3AN
Tel: (0582) 418727.

No fuss, High Quality
Prompt and Efficient

data duplication

service

Cassettes — diskettes
Printing — Packaging

Data Duplication

fast.J



GLUG

LETTERS

Step forward, sord users

I find HCW very enjoyable to read, but I do get a little despondent that, like other magazines, you highlight the more popular computers, like Spectrum, Commodore, Texas and so on.

I own a Sord M5 which I found to be a very good computer. But, like a lot of other people who don't own a popular model, I feel a little bit left out.

How about publishing a program or two for owners of other computers to copy and enjoy?

L. Topple, Havant, Hants

In general, *Home Computing Weekly* reflects the popularity of computers — the more there are of a particular model, the more it is featured. After all, it's a commercial world for us, too. And, even though the magazine has grown, we have to ensure that the editorial pages have the widest possible appeal.

However, we do try to feature less popular computers and those which are growing in popularity.

If you, our readers, have written program/s worthy of publication — for any home micro — send them in. Make sure you enclose a cassette and all the documentation, using our program pages as a guide. Articles are welcome as well. And our fees are competitive.

Our BASIC at speed

Thanks for the Extended BASIC program for the Commodore 64 — now I won't have to buy Simon's BASIC.

The trouble is that it takes so long to read the data and, as it has to be loaded each time you want to use a program written with its commands, this can be somewhat annoying, to say the least.

Inserting the following at the beginning speeds up the processor slightly by bypassing the keyboard scanning/screen display routines.

Also, once the program has been found to be error-free (i.e. when the checksum equals what it's supposed to), a relatively large amount of time is saved by removing the checksum routine altogether.

10 POKE 788,52:POKE 792, 193 (disable R/S and RES)

20 POKE56334, (PEEK 56334) OR 1: POKE

Send your letter to Letters, Home Computing Weekly, No.1 Golden Square, London W1R 3AB. Don't forget to name your computer — the best letter could win £5-worth of software. Got a problem with your micro? We'll soon be starting a queries page, so send your technical questions to Queries at the above address



53265 (PEEK 53265) AND 239
30 REM TURN OFF KEYBOARD AND SCREEN
40 REM READ DATA ETC

50 POKE 788,49:POKE 792,71 (enable R/S and Res)
60 POKE 1, (PEEK 1) AND 251: POKE 53265, (PEEK 53265) OR 1
70 REM TURN SCREEN/KEYBOARD BACK ON

Paul Baylis, Durham

My Oric calendar

Way back in May 1983 I purchased an Oric-1. By September I was suffering from the following problems

Erratic saving and loading in slow mode
An impossibility to save or load in fast mode
Several keys sticking
Several keys ceasing to function
"Watery" colours fluctuating badly

Not to mention the bugs in the BASIC translator, causing many problems when writing programs, such as any number variables being printed in green and erratic tabulation method to mention but two.

Because of these problems I took the computer back to the shop from where it was purchased only to find it had gone bankrupt. So on September 20 I wrote to Oric.

October 21 No reply, wrote again to Oric

November 14 No reply, wrote again to Oric

December 1 Guess what? No reply, wrote again to Oric

January 5 Telephoned Oric. They suggested I return the computer to them

January 6 Sent off to Oric, together with a letter listing all the problems

January 20 Telephoned Oric. They said it was about to be repaired

January 27 Oric returned. Only the loading fault was repaired

January 28 Returned computer to Oric, together with letter suggesting they repair all the faults or refund my money

February 11 still waiting...

I am disgusted by Oric's after-sales service. I spent £180 on what has turned out to be a thoroughly useless artifact. I am now £180 out of pocket. I could have bought a Spectrum or some other machine. But, from its specifications, I thought the Oric would be a good machine — and so it would if it was not for all the problems associated with it. Bill Bailey, Hatfield, Herts

An Oric spokesman said: "We are most concerned to hear of this case and our customer service representatives will be contacting Mr Bailey straight away in order to resolve the situation."

Will we speak BASIC?

After many thousands of years humans have reached a point at which large numbers of them can talk to each other.

This has become so as the result of the reduction in the amount of "international" languages being accepted and taught as such.

For all the arguments in favour of one language or another, it is clear that one only is highly desirable. Nobody now suggests the creation of new ones, rather that those that exist be developed to accommodate each new requirement.

Having seen, and still suffering from, the difficulties of this multiplicity, it seems that there are still many who cannot accept that one computer language — however more ill-constructed or hard to learn than this next one or that next one — must be a prime target if computing is not to become as uncommunicative and intolerant, one system with another, as the human race.

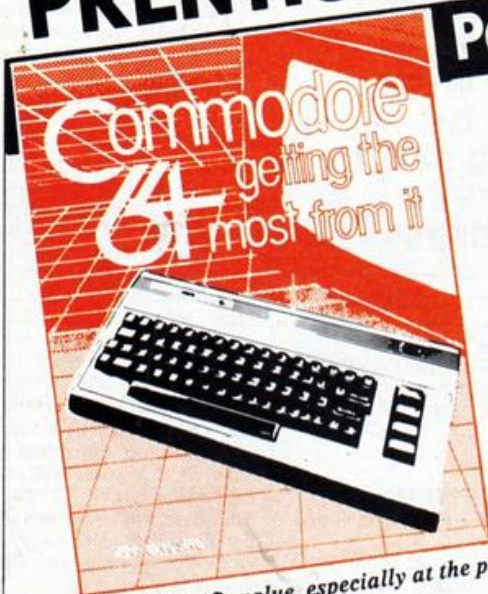
Now is the time to name the one (why not vote on it?) to which all the world's talent and ingenuity can be applied.

Who knows but that one such truly international language for computing might develop into a human language — or do I hear someone suggest English BASIC?

Geoff Mathews, Hanwell, London N7

★ software winner

PRENTICE-HALL INTERNATIONAL
Personal Computer Books and Software



What the reviewers

"Terrific value, especially at the price . . . a 'from the ground up' all-purpose manual/tutorial/reference for the 64 (genuinely the best we have found to date). Junk the Commodore-supplied user manual and get stuck into this: concise and sensible, clear presentation, well-written . . . If you want to use only one book for your 64 buy this one."

Commodore User
Fill in all the gaps in

"Although one of many (books designed to fill in all the gaps in the manual) it also looks one of the best with extensive sections on the particularly difficult areas of graphics and especially sprites."



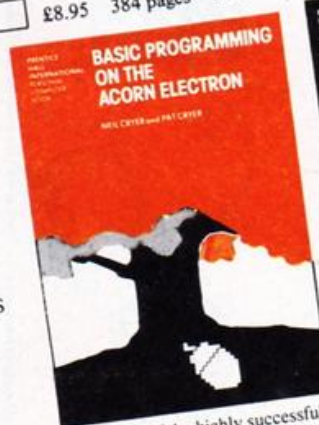
Ideal for beginners with no previous computing experience, this book gives you the documentation lacking when you buy the Commodore 64 to allow you to make full use of the computer's dazzling graphics capabilities. Twenty-five programs as well as a four-page colour insert showing screen effects are included.

☐ £15.35 244 pages 13-838136-4
January '84



Clear, step-by-step instructions for making the best use of the old and new ROM versions of the ORIC—both the V1.0/ORIC-1 and V1.1/ORIC ATMOS—are given. No previous knowledge of computers is needed to understand the explanations of how to use the keyboard, handle words and numbers, display information on the screen, use sound and graphics features, use a cassette recorder to store programs, etc. Once you have mastered these topics, **Understanding ORIC** takes you on to machine code and assembly language, file handling and using the printer.

☐ £8.95 300 pages 13-477332-2
February '84



By the authors of the highly successful **BASIC Programming on the BBC Microcomputer**, this new title provides a complete introduction to the Electron and to programming in BASIC. While they use the same structure as in their previous book, the Cryers present many new features in **BASIC Programming on the Acorn Electron**: more than 120 screen displays, cartoons, flowcharts and diagrams illustrate the text, which is over 100 pages longer than the BBC micro book; greater emphasis is given to structured programming and good programming techniques; information on graphics has been expanded to show how to get 64 colours on your 8-colour machine, create pie charts and draw in perspective; introductions to flowcharts and to database programs are included.

A cassette, which contains all the programs listed in the book that are over 5 lines long, is available for this title. It will save you time, and avoids keying errors.

228 pages

☐ £7.95 Paperback 328 pages
13-066259-3 January '84

☐ £12.50 Cassette including VAT
13-066200-3 Non-returnable
February '84



John Gordon, author of **100 Programs for the BBC Microcomputer**, provides programs on a wide range of topics for the Electron in this book, which contains 14 new programs. Games, business, home applications, maths, painting on the screen, data handling, science, and graphics routines are among the many subjects covered. The programs are also available on a cassette as an optional extra.

☐ £7.95 Paperback 224 pages
13-634858-0 March '84

☐ £12.50 Cassette including VAT
13-634866-1 Non-returnable
March '84.

Prices, which include postage and packing, are correct at the time of going to press but may be subject to change.

Prentice / Hall
International

ORDERS

ORDERS

These books and cassettes can be ordered from your usual bookseller, or in case of difficulty from:
Department 30, Prentice-Hall International, 66 Wood Lane End, Hemel Hempstead,
Hertfordshire HP2 4RG, England.

At the number of books you wish to order in the box beside each title and return the
Prices include postage and packing. Please allow

Please mark the number of books you wish to order in the box beside each title and return this advertisement to the address above. **Prices include postage and packing.** Please allow 28 days for delivery.

I authorise you to debit my credit card account with the amount £
My Access/American Express/Barclaycard No. is

My Access/American Express/Barclaycard No. is

I enclose a cheque/P.O. for £ _____ Expiry Date: _____
 to be made out to **INTERNATIONAL BOOK DISTRIBUTORS.**

Name _____

Address

Expiry Date:

Expiry Date: _____
INTERNATIONAL BOOK DISTRIBUTORS.

Signature _____

Date _____

DRAGON 32 PROGRAM

You are the king with all the power. You must choose how many men to work in the fields, on the dyke and to protect your village. If you're not careful the dyke may flood, or bandits might come from the mountains and wipe you out. You might even be invaded by your neighbouring country.

On the other hand, get it right, and you will prosper with plenty of money in the bank. The game runs on the Dragon 32.

Variables

Y year
R population
F grain
PO dyke up-keep
PC number of farmers
PB number of guards
PA number of soldiers
OY,VI,VA check for invasion,
etc

The king is in his castle — but will he last?

Feed the peasants and keep the kingdom happy in this new version for the Dragon 32 of an old favourite from Marc Cawthorne

How it works

10-80 set variables
110-300 input data for jobs in fields, dyke and defence
390-1540 graphics and main game routine

```
E
10 CLS:PRINT@224,"THE KINGDOM OF GHELLINGE.....":SCR
EEN 0,1:FOR T=1 TO 1000:NEXT T
20 CLS
30 GOSUB 1200
40 H=1274
50 R=(250+(RND(117))) : F=101
60 Y=1134
70 OY=0:OB=0
71 OF=0
80 REM
90 Y=Y+1:IFY=1170 THEN 1390
100 GOSUB 350
110 FOR T=1 TO 170:SOUND T,1:NEXT T
120 CLS:PRINT@10,"":PRINT@10,"KINGDOM"
130 PRINT"YEAR IS ";Y:PRINT
140 PRINT"DEATHS FROM FAMINE ";OF
150 PRINT"DEATH FROM FLOOD ";OY
160 PRINT"DEATH FROM BANDITS ";OB
170 PRINT"PRINT"POPULATION " = ";R
180 PRINT"BAGS OF GRAIN " = ";F
190 PRINT"*****"
200 PRINT" DISTRIBUTION OF LABOUR"
210 PRINT"( YOU MUST USE AT LEAST ONE":PRINT"PERSON FOR
EACH JOB). "
220 PRINT" POPULATION= ";R
230 INPUT"DYKE UPKEEP":PO:SOUND 2,1
240 INPUT"FARMERS":PC:SOUND 25,1
250 INPUT"GUARDS":PB:SOUND 50,3
260 IF PO=0 OR PC=0 OR PB=0 THEN CLS:PRINT@74,"YOU MADE
A MISTAKE. ":PRINT"(YOU MUST USE AT LEAST ONE":PRINT"P
ERSON FOR EACH JOB). ":GOTO 190
270 PA=R-(PO+PB+PC)
280 IF PA<0 THEN PO=0 AND PC=0 AND PB=0:CLS:PRINT:PRINT"
YOU MADE A MISTAKE":PRINT:GOTO 190
290 PRINT"SOLDIERS=" :PA
300 FORA=1 TO 1000:NEXTA:CLS
310 GOSUB 600
320 GOSUB 970
330 GOTO 80
340 OY=(DR/100)*R
350 VI=(R/F)*100:IFPA=0 THEN PA=1
360 VA=(PA/R)*100
370 IFVI>12 ANDVI<15 THEN 390
380 RETURN
390 PRINT@170,"":PRINT@170,"INVASION":FOR T=1 T
O 100 STEP 25:SOUND T,4:NEXT T:FORA=1 TO 1500:NEXTA
400 CLS:POKE 1226,128:POKE 1357,128:POKE 1290,128:POKE 135
0,128:FORP=1025 TO (1567-31) STEP 32:POKEP,175:NEXTP:FORP=
1026 TO (1567-30) STEP 32:POKEP,175:NEXTP
410 FORP=1025 TO 1536 STEP 32:POKEP,171:POKEP,175:POKEP+3
2,171:POKEP+32,175:NEXTP
420 FORP=(1024+25) TO (1535-7) STEP 64:POKEP,111:NEXTP:FORP
=(1024+26) TO (1535-6) STEP 64:POKEP,92:NEXTP:FORP=(1024+28
) TO (1535-4) STEP 64:POKEP,111:NEXTP:FORP=(1024+29) TO (1535
-3) STEP 64:POKEP,92:NEXTP
430 FORP= 1034 TO 1357 STEP 32
431 POKEP-1,249:POKEP,249:POKEP+1,249:POKEP+32,249:POKE
P+31,249:POKEP+33,249
432 POKEP-1,207:POKEP,207:POKEP+1,207:POKEP+32,207:POKE
P+31,207:POKEP+33,207
433 NEXTP
434 POKEP-1,249:POKEP,249:POKEP+1,249:POKEP+31,249:POKE
P+32,249:POKEP+33,249
```

```
440 IA1=RND(4)
460 PA1=RND(4)
470 IF PA1>=IA1 THEN 550
480 FORP=(1024+10) TO (1267) STEP 32:POKEP,255:POKEP,207:NE
XTP:POKEP,255
490 P=1322:POKEP,255:POKEP-32,255:POKEP+32,255:POKEP-1,
255:POKEP+1,255
500 FOR T=100 TO 200 STEP 25:SOUND T,2:NEXT T
510 PRINT@128,"YOU WERE DEFEATED "
530 PLAY"CDEF6"
540 FORA=1 TO 1000:NEXTA:CLS:GOTO 1331
550 PRINT@138," YOUR ARMY WON!! "
555 Q=INT(PA)+RND(75)
560 PRINT@170,"SOLDIERS LOST=" :Q
570 PLAY"04CDEF6"
580 R=R-Q:PA=0
585 IF R<0 THEN R=0
590 FORA=1 TO 2000:NEXTA:RETURN
600 REM
610 CLS
620 POKE 1226,128
630 POKE 1357,128:POKE 1290,128:POKE 1350,128
640 FORP=1025 TO (1567-31) STEP 32:POKEP,175:NEXTP:FORP=1
026 TO (1567-30) STEP 32:POKEP,175:NEXTP
650 FORP=1025 TO 1536 STEP 32 :POKEP,171:POKEP,175:POKEP+32
,171:POKEP+32,175
660 NEXTP
670 FORP=(1024+25) TO (1535-7) STEP 64:POKEP,111:NEXTP
680 FORP=(1024+26) TO (1535-6) STEP 64:POKEP,92:NEXTP:FORP=
(1024+28) TO (1535-4) STEP 64:POKEP,111:NEXTP:FORP=(1024+29
) TO (1535-3) STEP 64:POKEP,92:NEXTP
690 PRINT@10,"":PRINT@10,"KINGDOM*";
700 FOR T=150 TO 250 STEP 25:SOUND T,3:NEXT T
710 REM
720 DA=(0+RND(2))-1
730 DB=(0+RND(2))-1
740 IF DA=1 THEN PRINT@74,"":PRINT@74,"BANDITS!
!";
750 IF DA=0 AND DB=0 THEN GOTO 1520
760 IF DA=0 AND DB=1 THEN GOTO 1420
770 IF DA=1 AND DB=1 THEN 780
780 FORH=1274 TO (1253+RND(11)) STEP-1
790 POKE H,191:POKE H,207:POKE H-1,191:POKEH-1,207:POKE
H-2,191:POKEH-2,207
800 NEXTH
810 POKEH,191
820 SOUND 30,1
830 FORH=1341 TO (1317+RND(11)) STEP-1
840 POKEH,191:POKEH,207:POKEH-1,191:POKEH-1,207:POKEH-2
,191:POKEH-2,207:NEXTH:POKEH,191
850 SOUND 35,1
860 FORH=1404 TO (1383+RND(9)) STEP-1:POKEH,191:POKEH,207:
POKEH-1,191:POKEH-1,207:POKEH-2,191:POKEH-2,207:NEXTH:P
OKEH,191
870 SOUND 40,1
880 DC=(0+RND(3))-1
890 IF DC=0 THEN 950
900 FORN=1217 TO (1219+RND(11)) STEP 1
910 POKE N,175:NEXTN
920 FOR T=1313 TO (1310+RND(9)) STEP 1:POKET,175:NEXT T
930 FOR T=1281 TO (1282+RND(8)) STEP 1:POKET,175:NEXT T
940 FOR T=1345 TO (1355+RND(7)) STEP 1:POKET,175:NEXT T
950 FOR T=1 TO 2500:NEXT T
```


DRAGON 32 PROGRAM

```

960 RETURN
970 WF=RND(1)*3
980 EA=RND(1)*4+B
990 U=EA*PC*WF
1000 AS=((R*21)/PB^2)+(RND(1)*20)
1010 IFF<0 THEN 1300
1020 F=U-(AS*U)/100
1030 OF=((R*3.142*2)/F)/100)*R
1040 IFDF<0 THEN OF=0
1050 IFDC=0 THEN OY=0
1060 IFDB=0 THEN 1090
1070 IFDB=1 THEN 1080
1080 OY=INT(2+RND(112))
1090 BR=INT(RND(1)*10)+1
1100 IF DA=0 THEN OB=0
1110 IFDA=0 THEN 1130
1120 OB=(BR/100)*R
1130 OF=INT(OF):OY=INT(OY):OB=INT(OB):F=INT(F)
1140 R=R-(OF+OB+OY)
1150 IFF<0 THEN 1300
1160 IFR<2 THEN 1300
1170 IF OY>0 THEN F=F*(RND(1.5))
1180 R=R+(INT(R/(RND(9))))
1190 RETURN
1200 IFD=0 THEN 1220
1210 GOTO 1200
1220 CLS
1230 PRINT"*****"
1240 PRINT" THE KINGDOM OF GHELLINGE":PRINT" *****"
*****:PRINT:
1250 PRINT"YOU ARE THE RULER OF A SMALL. ":PRINT"KINGD
OM.YOU CONTROL THE LOCAL":PRINT"WORKFORCE AND THE ARMY.
":PRINT:PRINT"DISTRIBUTE THE POPULATION":PRINT"BETWEEN
THE DYKE,FARMERS,GUARDS":PRINT" AND THE ARMY.":D=1
1260 PRINT"*****"
1270 FOR T=1 TO 200:STEP 20: SOUND T,3:NEXT T
1280 FOR A=1 TO 3000:NEXT A
1290 RETURN
1300 CLS:PRINT@74,"YOUR PEOPLE HAVE "
1310 PRINT@106,"BEEN WIPED OUT."
1320 FOR T=1 TO 250:STEP 25: SOUND T,3:NEXT T
1330 FOR A=1 TO 1500:NEXT A:CLS
1331 W=Y
1332 PRINT:PRINT" YOU REIGNED FROM":PRINT"

```

1134 UN

```

TIL ":W
1340 PRINT:PRINT:PRINT"ANOTHER GO?(Y/N)"
1350 A$=INKEY$:IF A$="" THEN 1350:IFA$="N" THEN END
1360 IF A$="Y" THEN 40
1370 IF A$<>"Y" AND A$<>"N" THEN 1350
1380 END
1390 CLS:PRINT@74,"YOU DIED OF OLD AGE"
1400 FOR T=1 TO 250:STEP 25: SOUND T,4:NEXT T
1410 GOTO 1340
1420 CLS:POKE 1226,128:POKE 1357,128:POKE 1290,128:POKE 13
50,128:FOR P=1025 TO 1536 STEP 32:POKE P,175:NEXT P:FOR P=102
6 TO 1537 STEP 32:POKE P,175:NEXT P
1430 FOR P=1025 TO 1536 STEP 32:POKE P,171:POKE P,175:POKE P+
32,171:POKE P+32,175:NEXT P
1440 FOR P=1049 TO 1528:STEP 64:POKE P,111:NEXT P:FOR P=1050 TO
1529:STEP 64:POKE P,92:NEXT P:FOR P=1052 TO 1531 STEP 64:POKE P,
111:NEXT P:FOR P=1053 TO 1532:STEP 64:POKE P,92:NEXT P
1450 FOR N=1217 TO (1219+RND(11)):STEP 1:POKE N,175:NEXT N:FOR
T=1313 TO (1318+RND(9)):STEP 1:POKE T,175:FOR T=1201 TO (1282+
RND(8)):POKE T,175:NEXT T:FOR T=1345 TO (1348+RND(8)):POKE T,
175:NEXT T
1460 OY=(5+RND(89))
1470 OB=0
1480 F=F*(RND(3))
1490 R=R-(OF+OY+OB)
1500 IFR<2 THEN 1300
1510 GOTO 080
1520 F=F*(RND(5))
1530 R=R+(INT(R/(RND(4))))
1540 GOTO 070

```



THE FABULOUS CASSETTE 50

FROM **Cascade**

VALUE that's out of this world

50 GAMES ON ONE CASSETTE

DRAGON A/B Spectrum ATARI ORIC-1 ZX81 VIC-20

ONLY £9.95
(INC. P&P and VAT)

It is impossible to tell you everything about the 50 games on CASSETTE - 50 but they include many types such as maze, arcade, missile, tactical and logic games, to suit most tastes in computer game playing. CASSETTE - 50 will appeal to people of all ages and the games will provide many hours of entertainment for all the family at a fraction of the cost of other computer games.

EXPRESS DELIVERY-ORDER NOW

Name

Address

Post Code

Country

Dealers & Stockists enquiries welcome.

Please send me by return of post, Cassette 50 at £9.95 per tape. I enclose a cheque/postal order for

£ made payable to Cascade Games Ltd.

Please debit my ☐ No.

SPECTRUM ☐ ORIC-1 ☐ ZX 81 ☐ VIC 20 ☐
BBC A/B ☐ DRAGON ☐ ATARI ☐ APPLE ☒

Cascade Games Ltd.,
Suite 4, 1-3 Haywra Crescent, Harrogate,
North Yorkshire, HG1 5BG, England.
Telephone: (0423) 504526. HCW51

HAVE YOU BEEN INVOLVED IN A MYSTERIOUS ADVENTURE RECENTLY?

If so, it is quite probable that you are presently suffering from TIS, more commonly known as Total Involvement Syndrome.

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

Experts believe that TIS is usually contracted as a result of prolonged exposure to Mysterious Adventures, this is commonly caused by owning any of the following Home Computers:-

48K SPECTRUM, BBC MODEL A OR B, TRS80, COLOUR GENIE, ATARI 400/800, COMMODORE 64, DRAGON 32, 16K ZX81, LYNX etc.

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

If you have a BBC Computer or a 48K SPECTRUM, you can obtain Mysterious Adventures direct from DIGITAL FANTASIA in any of the following dosages:-

- 1) THE GOLDEN BATON
- 2) THE TIME MACHINE
- 3) ARROW OF DEATH (PART 1)
- 4) ARROW OF DEATH (PART 2)

- 5) ESCAPE FROM PULSAR 7
- 6) CIRCUS
- 7) FEASIBILITY EXPERIMENT

- 8) THE WIZARD AKYRZ
- 9) PERSEUS AND ANDROMEDA
- 10) TEN LITTLE INDIANS

Each Dose costs £9.95 including V.A.T. and Postage. Excellent quantity Discounts are available for Pushers.

D.F. MENTAL HEALTH WARNINGS. MYSTERIOUS ADVENTURES CAN SERIOUSLY DAMAGE YOUR SENSE OF REALITY.



SEND CHEQUE OR P.O. TO:

**DIGITAL
FANTASIA**

HECK ROAD, NORBRECK,
L. LANCS. FY5 1RP.
591402

Variables

PLS plane
BBS scrolling title
DL display list pointer
PX, PY plane positions
SCRN holds ASCII character that has been located
WAIT delay loop
W number of time bomb hits a building block
SP speed
F flag if bomb is on screen
ST joystick button
BX, BY position of bomb
DI height of buildings
DE destructive level
BA scroll

How it works

16-40 DIMension strings and set up screen for title and set colours for main game
60-165 main routine
170-190 win routine and automatic level increase
200-430 game instruction and joystick commands to alter level
460-600 set up plane and buildings
620-630 initialise bombing
650-690 crash routine and option to replay
700-710 title scroll routine
5000-5060 redefine characters

Bombs away! It's the only way to save yourself

There's a few extra features in Blitz, Joel Goodwin's version of the arcade classic, written for any Atari. Type it in and you'll see

Blitz speaks for itself — you must bomb the city flat to land safely. You have an unlimited supply of bombs and can choose their destructive level. The speed of the

plane and the height of the buildings can also be selected.

Hints on conversion

STICK(0) reads joystick port specified
STRIG(0) reads joystick button
GRAPHICS 0 sets screen format to 40×24
LOCATE positions cursor and readers contents under it
POSITION puts cursor at specified point on screen
SETCOLOR 1,0,0 sets character colour to black
SETCOLOR 2,3,8 sets background to pink
SETCOLOR 0,1,10 sets scrolling characters to yellow
SETCOLOR 4,3,0 sets border to dark red
Line 651 flashes screen and characters. The scroll routine in lines 700-710 can be left out

Full instructions are included in the program. When typing it in, pay particular attention to the REMs.

Good luck!

● The idea for my game came from Shingo Sugiura's Bomber for the Oric in HCW 9.

```
0 GRAPHICS 17:POKE 708,70:POKE 712,49:POSITION 4,10: ? #
6: "PLEASE WAIT":GOSUB 5000
1 REM "ANY TEXT IN ITALICS SHOULD BE ENTERED AS REVERSE
  FIELD"
2 REM *****
3 REM * CONVERTED FROM A PROGRAM *
4 REM * BY SHINGO SUGIURA *
5 REM *****
6 REM * 19 SPACES BEFORE AND *
7 REM * AFTER TITLE IN NEXT LINE *
8 REM *****
16 DIM PL$(10),BB$(60):BB$=""
17 ? CHR$(125):SETCOLOR 4,3,0:SETCOLOR 2,3,8:SETCOLOR 1
  ,0,0:SETCOLOR 0,1,10:POKE 752,1:POKE 756,224
18 REM * MODIFY DISPLAY LIST FOR TITLE *
19 DL=PEEK(560)+PEEK(561)*256:POKE DL+3,70:POKE DL+6,6
20 GOSUB 210
29 GRAPHICS 0
30 ? CHR$(125):SETCOLOR 4,3,0:SETCOLOR 2,3,8:SETCOLOR 1
  ,0,0:POKE 756,PEEK(1536)
40 POKE 752,1:GOSUB 460
60 POSITION PX-1,PY: ? PL$:PX=PX+1:SOUND 0,200,12,2:IF C
  L=1 THEN CL=0:SOUND 1,0,0,0
70 LOCATE PX+1,PY,SCRN:IF SCRND<>32 THEN 650
80 IF PX>=35 THEN POSITION PX-1,PY: ? " ":PX=1:PY=PY+1
90 FOR WAIT=1 TO SP:NEXT WAIT
100 ST=STRIG(0):IF ST=0 AND F=0 AND PY<>21 THEN GOSUB 6
  20
110 IF F=0 THEN SOUND 1,0,0,0:GOTO 160
120 POSITION BX,BY: ? " ":BY=BY+1
130 IF W=DE OR BY=22 THEN W=0:F=0:CL=1:SOUND 1,0,8,4:GO
  TO 160
140 LOCATE BX,BY,SCRN:IF SCRND<>32 THEN W=W+1:SOUND 1,10
  0,8,4
150 POSITION BX,BY: ? "-"
160 IF PY=21 AND PX=25 THEN 170
165 GOTO 60
170 POSITION PX-1,PY: ? PL$
180 ? ? "WELL DONE. YOU'VE LANDED SAFELY.":POKE 77,0
185 POKE 752,1:IF SP>1 THEN SP=SP-1
187 IF DI>1 THEN DI=DI-1
190 SOUND 0,0,0,0:FOR WAIT=0 TO 800:NEXT WAIT:GOTO 30
200 REM * INSTRUCTIONS *
210 ? ?
250 ? "USE THE TRIGGER TO DROP BOMBS ON ": ? ? "THE CIT
  Y SO YOU MAY LAND SAFELY ": ?
260 ? "THEN THE SPEED INCREASES": ? ? "AND THE BUILDING
  S GET HIGHER"
270 POSITION 2,12: ? "ENTER PLANE SPEED BY PUSHING JOYST
  ICK": ? ? "UP OR DOWN THEN PRESS TRIGGER"
271 ? ? "SPEED 1 TO 9 (SLOW TO FAST)":SP=1
280 IF STRIG(0)=0 THEN SP=10-SP:GOTO 320
290 GOSUB 700
300 JS=STICK(0):IF JS=14 THEN SP=SP+1:IF SP>9 THEN SP=1
```

```
305 IF JS=13 THEN SP=SP-1:IF SP<1 THEN SP=9
310 POSITION 2,18: ? " ? ":SP:GOTO 280
320 ? CHR$(125):POSITION 2,4: ? "ENTER CITY HEIGHT BY PU
  SHING JOYSTICK": ? ? "UP OR DOWN THEN PRESS TRIGGER":DI
  =1
330 ? ? "1 TO 9 (LOW TO HIGH)"
345 FOR WAIT=0 TO 100:NEXT WAIT
350 IF STRIG(0)=0 THEN DI=10-DI:GOTO 380
360 JS=STICK(0):IF JS=14 THEN DI=DI+1:IF DI>9 THEN DI=1
365 IF JS=13 THEN DI=DI-1:IF DI<1 THEN DI=9
370 GOSUB 700:POSITION 2,10: ? " ? ":DI:GOTO 350
380 FOR WAIT=0 TO 100:NEXT WAIT
390 ? CHR$(125):POSITION 2,4: ? "ENTER BOMB DESTRUCTIVE
  LEVEL": ? ? "BY PUSHING JOYSTICK UP OR DOWN"
395 ? ? "AND THEN PRESS TRIGGER":DE=1
397 ? ? "1 TO 7 (EASY TO HARD)"
399 FOR A=0 TO 100:NEXT A
400 IF STRIG(0)=0 THEN DE=DE+2:DE=12-DE:RETURN
410 POSITION 2,12: ? " ? ":DE:GOSUB 700
420 JS=STICK(0):IF JS=14 THEN DE=DE+1:IF DE>7 THEN DE=1
425 IF JS=13 THEN DE=DE-1:IF DE<1 THEN DE=7
430 GOTO 400
460 PX=2:PY=3:PL$="" <>:F=0
465 REM * BLITZ IN NEXT LINE INVERSE *
470 ? ? " B L I T Z "
570 FOR BUX=5 TO 32
573 BUL=ASC("+"):TOP=0
575 IF RND(0)>0.5 THEN BUL=ASC("="):TOP=1
580 FOR H=22 TO INT(RND(1)*(14-DI)+DI+8) STEP -1
590 POSITION BUX,H: ? CHR$(BUL):NEXT H:IF TOP=1 THEN POS
  ITION BUX,H+1: ? "*"
600 NEXT BUX:RETURN
610 REM * INITIALISE BOMBING *
620 BX=PX:BY=PY+1:F=1
630 RETURN
640 REM * CRASH INTO BUILDING *
650 SOUND 0,0,0,0:SOUND 1,0,0,0
651 FOR MM=0 TO 74:POKE 710,6:SETCOLOR 1,1,MM:POKE 710,
  48:NEXT MM:POKE 77,0
670 POSITION 1,5: ? "PRESS TRIGGER TO REPLAY BLITZ"
680 IF STRIG(0)<>0 THEN 680
690 FOR WAIT=0 TO 100:NEXT WAIT:CLR :GOTO 16
699 REM * SCROLLING TITLE *
700 FOR WAIT=0 TO 25:NEXT WAIT
705 BA=BA+1:IF BA=40 THEN BA=1
710 POSITION 0,0: ? BB$(BA,BA+19):RETURN
4999 REM * REDEFINE CHARACTERS *
5000 SET=(PEEK(106)-8)*256:RESTORE 5010:POKE 106,SET/25
  6
5010 DATA 224,192,224,243,255,255,63,0,0,240,0,1,249,25
  5,255,249,65,0
5020 DATA 232,255,153,153,255,255,153,153,255,88,255,12
  9,129,255,255,129,129,255
5030 DATA 80,24,24,24,36,126,153,153,255,104,28,8,28,62
  ,28,28,28,8
5040 FOR I=0 TO 1023:POKE SET+I,PEEK(57344+I):NEXT I
5050 FOR CHAR=1 TO 6:READ CH:FOR J=0 TO 7:READ DT:POKE
  SET+CH+J,DT:NEXT J:NEXT CH
5060 POKE 1536,SET/256:RETURN
```


VIC-20 PROGRAMS

Rhino

You have to get through a jungle to get home — without being eaten by the rhinos.

Every time you manage this another rhino is added to the herd. The rhinos are hidden and only appear when they can see you.

When they do appear they pursue you with unerring accuracy.

The only advantage you have is that you can go through diagonal gaps in the trees while they can't.

To move with the potentiometer joystick, point the stick in the appropriate direction and press the fire button.

To move with the keyboard, use the function keys as follows:

F8	F1	F2
F7		F3
F6	F5	F4

Remember that you can save time and memory by using abbreviated keywords, ? for PRINT, for example. A full list is in appendix D of the manual. REMs should be omitted.

Note: In line 7030 there are nine spaces and nine cursor lefts.

How it works

10-30 initialise program
1000-1030 choose joystick or keyboard
2000-2110 initialise game
3000-3090 move you
4000-4060 check whether new rhino should appear
5000-5130 move rhinos
6000-6030 crushed!
7000-7010 safe at home!
7020-7070 another game?
8000-8050 put new rhino on screen
9000-9010 make beep

Avoid the rhinos... shrink your programs

A fun game and a useful utility for the unexpanded VIC-20, by Ian Creasey. Both are from his book, VIC-20 Mindstretchers, just out from Sigma Technical Press



Variables

NR number of rhinos
T top-left corner of screen — 7680 or 4096
SB screen and border colour register — 36879
OF different between colour screen and character screen — 30720 or 33792
JKS joystick/keyboard — "J" or "K"
NA number of rhinos that have appeared
XX,YY your co-ordinates
MS your move
RA rhino appeared just now?
RP rhino's position
RX,RY rhino's co-ordinates
AGS another game — "Y" or "N"
RX%,RY%() rhino's co-ordinates array
V%() has rhino appeared? array
FNX(A),FNY(A) functions to calculate your movement on the screen
FNP(T) function to calculate your position on the screen from co-ordinates

Shrink

This program will shrink your BASIC program by removing all spaces and all REM statements. It takes up 256 bytes at the top of memory. To destroy the program and reclaim the 256 bytes, type SYS7424. Shrink will work on an unexpanded or a 3K expanded VIC.

Note: It is advisable to SAVE the program before RUNNING it, as one error in the machine-code data will probably cause the VIC to crash.

● VIC-20 Mindstretchers, £5.95. Sigma Technical Press, 5 Alton Road, Wilmslow, Cheshire SK9 5DY

```

3 REM
4 REM*****
5 REM***RHINO***BY IAN CREASEY***
6 REM*****
7 REM
8 REM*FUNCTION KEYS OR 'STACK' JOYSTICK
10 NR=3: DIMRX%(20),RY%(20),V%(20): T=PEEK(648)*256: SB=36879: OF=(37888+4*(PEEK(36866)AND128))-T
20 DEFFNX(A)=(A=70RA=40RA=8)-(A=50RA=20RA=6): DEFFNY(A)=(A=80RA=10RA=5)-(A=60RA=30RA=7)
30 DEFFNP(T)=T+X+Y*22
1000 REM*GET JOYSTICK/KEYBOARD
1010 PRINT"STACK" JOYSTICK OR KEYBOARD?": POKE198,0: POKE204,0
1020 GETJK$: IFJK$<"J"ANDJK$<"K"THEN1020
1030 PRINTJK$
2000 REM*INITIALISE
2010 POKE204,1: POKESB,238: PRINT" THERE ARE" NR" RHINOS": NA=0
2020 FORI=T+22TOT+505: IFRND(1)<.33THENPOKEI+OF,5: POKEI,88
2030 NEXT: FORI=T+53TOT+141STEP22: FORJ=0T04
2040 POKEI+J,32: POKE330+I+J,32: NEXTJ, I
2050 POKET+99,136: POKEOF+T+99,0
2060 FORI=1TONR: V%(I)=0

```

```

2070 X=INT(22*NRND(1)): Y=INT(11*NRND(1)+1)
2080 IFPEEK(FNP(T))<>32THEN2070
2090 POKEFNP(T),96: RX%(I)=X: RY%(I)=Y: NEXT: V%="11: YY=18
2100 FORI=TTOT+505: IFPEEK(I)=96THENPOKEI,32
2110 NEXT
3000 REM*YOUR MOVE
3010 PRINT"YOUR MOVE.": POKE198,0
3020 X=YX: Y=YY: POKEFNP(T),42: POKEFNP(T)+OF,2
3025 IFJK$="K"THEN3039
3029 IFPEEK(37137)=126THEN3029
3030 IFPEEK(37137)=118THEN3030
3031 IFPEEK(36872)=2ANDPEEK(36873)=2THENM$="": GOT03040
3032 IFPEEK(36872)=2ANDPEEK(36873)<255THENM$="": GOT03040
3033 IFPEEK(36872)=2THENM$="": GOT03040
3034 IFPEEK(36873)=2ANDPEEK(36872)<255THENM$="": GOT03040
3035 IFPEEK(36873)=255ANDPEEK(36872)<255THENM$="": GOT03040
3036 IFPEEK(36873)=2THENM$="": GOT03040
3037 IFPEEK(36873)<255ANDPEEK(36872)=255THENM$="": GOT03040
3038 M$="": GOT03040
3039 GETM$: IFM$=""THEN3039
3040 A=ASC(M$): IFA<133ORA>140THEN3025
3050 A=A-132: X=FNX(A)+YX: Y=FNY(A)+YY: IFPEEK(

```


VIC-20 PROGRAMS

```

FNP(T)>>32ANDPEEK(FNP(T))>136THEN3020
3060 IFX<00RX>21THEN3030
3070 IFY<10RY>22THEN3030
3080 SX=X:XY=XY:SY=Y:YY=YY:SY=POKEFNP(T),32
3090 GOSUB9010:X=XY:Y=YY:POKEFNP(T),42:POKEOF
+FNP(T),2:IFFNP(T)=T+99THEN7010
4000 REM*CHECK- NEW RHINO APPEAR?
4010 PRINT"RHINO MOVE." :FORI=1TONR:RX=RX(I)
:RY=RY(I):RP=FNP(T):IFVZ(I)=0THEN5130
4020 FORI=1TONR:X=RX(I):Y=RY(I):RP=FNP(T):
IFVZ(I)=1THEN4060
4030 LD=22*(Y>YY)-(Y<YY)+(X>YX)-(X<YX)
4040 RP=RP+LD:IFPEEK(RP)=32THEN4040
4050 IFPEEK(RP)=42THENVZ(I)=1:NA=NA+1:RA=1:G
OSUB8010
4060 NEXT:IFRA=10RNA=0THEN3010
5000 REM*MOVE RHINO
5010 PRINT"RHINO MOVE." :FORI=1TONR:RX=RX(I)
:RY=RY(I):RP=FNP(T):IFVZ(I)=0THEN5130
5020 FORA=1TO8:X=RX+FNX(A):Y=RY+FNY(A):PA(A)
=PEEK(FNP(T)):NEXT:GOTO5050
5030 IFPA(C1)=88ANDPA(C2)=88THENPA(C3)=88
5040 RETURN
5050 C1=1:C2=2:C3=5:GOSUB 5030:C1=3:C3=6:GOS
UB5030
5060 C2=4:C3=7:GOSUB5030:C1=1:C3=8:GOSUB5030
5070 BN=999:FORA=1TO8:IFPA(A)>32ANDPA(A)>4
2THEN5100
5080 X=RX+FNX(A):Y=RY+FNY(A):N=ABS(YY-Y)+ABS(
YX-X)
5090 IFN<BNTHENBN=N:BM=A
5100 NEXT:X=RX:Y=RY:POKE FNP(T),32:X=X+FNX(BM)
:Y=Y+FNY(BM)
5110 POKEOF+FNP(T),6:POKEFNP(T),94:RX(I)=X:R
Y(I)=Y
5120 IFFNP(T)=T+YX+YY*22THENI=22

```

```

5130 NEXT:IFI<22THEN3010
6000 REM*CRUSHED!
6010 RP=FNP(T):POKERP-1,26:POKERP,1:POKERP+1,
16:C=1
6020 FORI=1TO49:FORJ=-1TO1:POKERP+J+OF,C-1:NE
XTJ:FORJ=1TO20:C=3-C:NEXT:NEXT
6030 PRINT"CRUSHED!!":GOTO7020
7000 REM*SAFE!- ANOTHER GAME?
7010 PRINT"SAFE!!":IFNR<20THENNR=NR
+1
7020 FORI=0TO1999:NEXT
7030 PRINT"ANOTHER GO?" :P
OKE198,0:POKE204,0:IFJK$="K"THEN7040
7033 IFPEEK(37137)=126THEN7033
7035 IFPEEK(37137)=118THEN7035
7037 GOTO2010
7040 GETAG$:IFAG$="N"THENPOKE204,1:PRINT"J":E
ND
7050 IFAG$="Y"THEN2010
7060 IFAG$=" "THEN7040
7070 POKE204,1:PRINT"SPRESS 'Y' OR 'N'." :FORI
=0TO999:NEXT:GOTO7030
8000 REM*FLASH NEW RHINO AND MAKE NOISE
8010 POKE36878,8:FORI=1TO3:FORJ=1TO5
8020 POKE36877,150:FORK=1TO20:NEXT:POKE36877,
0
8030 NEXTJ,I:FORI=1TO5:POKEFNP(T)+OF,6:POKEFN
P(T),222
8040 FORJ=0TO99:NEXT:POKEFNP(T),94:FORJ=0TO99
:NEXTJ,I
8050 POKEFNP(T)+OF,6:POKEFNP(T),94:RETURN
9000 REM*BEEP
9010 POKE36878,8:POKE36876,150:FORI=1TO300:NE
XT:POKE36876,0:RETURN

```

TI99/4A SOFTWARE

Three great games for the unexpanded TI-99/4A

PILOT

£5.95

Flight simulation game for one player. Graphics display of landing strip and terrain map, plus updated instrument panel. Options for take-off, landing or in flight. Full instructions included. Graphics and sound.

TI TREK

£5.95

Defeat the Klingon invasion fleet. Features include 5 skill levels, graphics quadrant display, galaxy map, phasors, photon torpedoes, long range scans, damage reports, shield control, impulse and warp drive. Eight by eight galaxy. Full instructions included. Graphics and sound.

HAUNTED HOUSE

£4.95

Dare you enter and explore the gloomy Victorian mansion? Treasures await the brave, but stay after midnight and you will be joined by assorted perils including a moving skull and a spooky ice cold mist. Text.

TEXAS PROGRAM BOOK

£5.95

35 programs for the unexpanded TI-99/4A, including 3-D Maze, Lunar Lander, Caterpillar, Horse Race, Invader, Morse Code and much more.

Send cheque or P.O. or telephone with Access/Visa for immediate despatch. Please add 50p p&p to orders under £7. Orders over £7 post free.

APEX SOFTWARE

Swiss Cottage, Hastings Road,
St. Leonards-on-Sea,
E. Sussex TN38 8EA

TEL: Hastings (0424) 53283



CHRISTINE COMPUTING Ltd

6 Florence Close, Watford, Herts.
(0923) 672941

TI-99/4A HARDWARE

32K Stand alone ram	£125
Arcade quality joystick	£22
Cassette interface leads - single	£5.40
- dual	£6.90

UFO, Cass File, Sir Slurp A Lot, Fruit Machine. As reviewed in Home Computing Weekly. All £4.95 each.

Atari/Commodore to TI joystick interfaces	£6
single	£8.50
dual	

SOFTWARE

We are able to offer our own range as well as selected items from Stainless Software, Tomputer, Fantasia 99 and many more.

For full list send 50p (refund 1st order) or cheque/PO with order to above address. Please add 50p p&p to any order under £10.

THANK YOU.

Take the screen test and be a STAR!

in the *LiveWire* high score competition*

Use your skill and dexterity to win one of our fabulous prizes.

Free entry form in every game purchased

*only on Gridtrap 64 and Jumpin' Jack 64.

- PRIZES**
- 1ST Commodore 1541 SINGLE DISK DRIVE
 - 2ND Commodore 1520 PRINTER PLOTTER
 - 3RD Commodore SIMONS BASIC CARTRIDGE
- Seven runners up will receive the latest Pro-Ace Joystick as prizes.

WATCH OUT FOR TRIAD 64 COMPETITION COMING SOON

more fabulous prizes to be won

GRIDTRAP 64

We promise you won't be able to turn it off! It's a real skill tester and loads of fun to play!

Play with the Keyboard or Joystick. Choose your own operating keys with our **User Definable System**. Compete with an opponent by selecting **Two Player Mode...** Great graphics, super sound effects in the *LiveWire* tradition including a selectable Melody Mode where the tune is available at the touch of a key and Melody On is indicated by a quaver graphic.

Program No. LW04 £8.95

JUMPIN JACK 64

Not just a game... an Experience!

IT HAS IT ALL!... EXCITEMENT... HUMOUR... STRATEGY

Jumpin' Jack leaps into a totally new look for the 64 created by **Three Dimensional Graphics** giving **Full Perspective** to the game... PLUS... hosts of features never seen before!

Submerging Turtles — Snakes — Crocodiles — Otters — Lady Frog — Dragonfly!!!

It's Fun ***

IT'S FROGRIFFIC ***

Program No. LW02 £8.95

TRIAD 64



NEVER BEFORE HAS A COMPUTER GAME LOOKED SO EXCITING...

FELT AND PLAYED SO EXCITING...

Watch astonished as the Triad hurt themselves towards your craft in a remorseless battle against your intrusion.

Feel the heat blast of their anti-matter fields.

Your pulse laser will have to turn white hot before this encounter is over...

Featuring:-

A new **DIMENSION...**

Into the realm of **TOTAL PERSPECTIVE GRAPHICS...**

Program No. LW03 £8.95

LiveWire Software

198 Deansgate, Manchester M3 3NE.

Telephone: 061-834 4233

TRADE ENQUIRIES WELCOME

Clip the coupon and return to Sumlock Microware Dept. HCW.
198 Deansgate, Manchester M3 3NE.
or Telephone: 061-834 4233

Please send me the following Software

I enclose Cheque/P.O. for £ _____ inc. P + P U.K. only.

To: Name _____

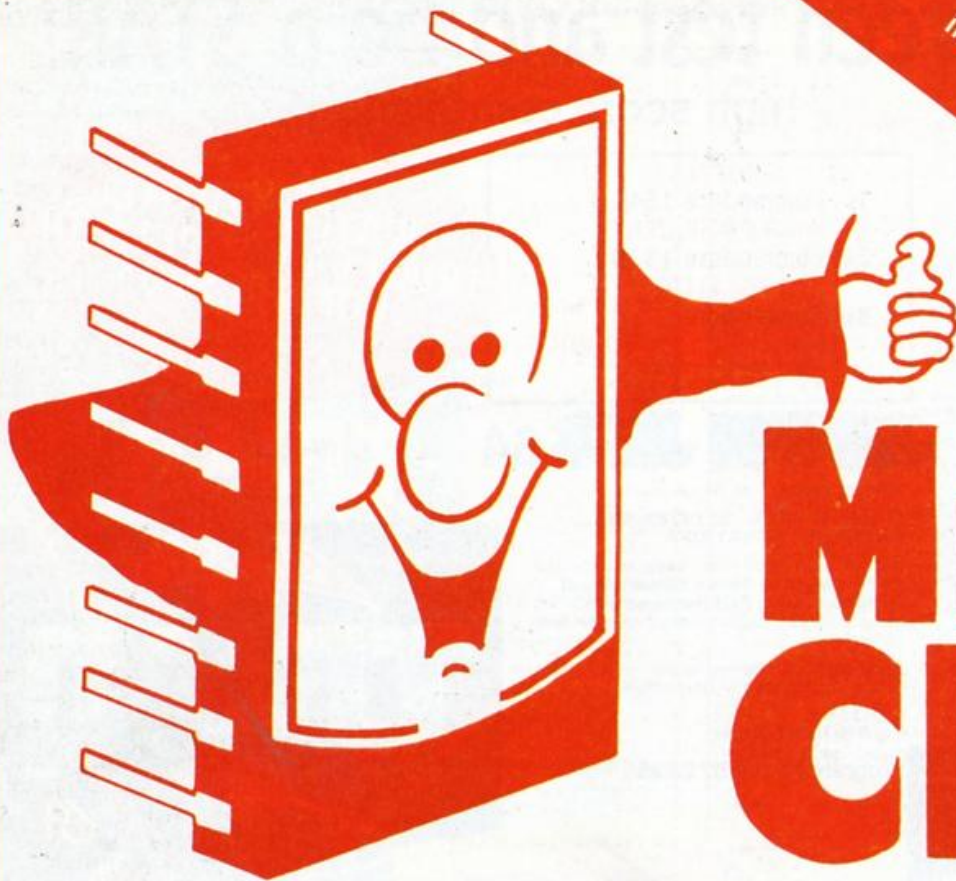
Address _____

Post Code _____



Also available from good computer dealers and bookshops nationwide.

Send SAE for colour brochure
inc CBM 64 Business and Utility
Software



Mr. Chip SOFTWARE



DEPT 9 CAROLINE ROAD, LLANDUDNO, GWYNEDD LL30 3BL TEL: 0492 79026

NATIONWIDE SHOPS & DEALERS

BEDFORDSHIRE

SOFTWARE CENTRE

Computer Software and accessories.
Large S.A.E for lists.
52A Bromham Road, Bedford
Tel: Bedford 44733

CORNWALL

FAL-SOFT Computers

8 St. George's Arcade,
Falmouth, Cornwall.
Tel: 0326 314663
We are stockists of BBC,
SINCLAIR, COMMODORE, DRAGON,
ORIC, COLOUR GENIE, MEMOTECH &
ELECTRON.

ESSEX

SOFTWARE 10% OFF RRP

Over 800 titles. Commodore, Spectrum,
BBC, Oric, Dragon computers.
BARGAIN:
VIC-20 cartridges £6 each or 4 for £18.
RADIO 88, 88 Longbridge Rd,
Barking, Essex.
Tel: 01-594 9979 for price list.

BBC ★ COMMODORE 64 SPECTRUM ★ DRAGON 32

Extensive range of software/
hardware/books always in stock.
ESTUARY SOFTWARE PRODUCTS
261 Victoria Avenue, Southend,
Essex. Tel: 0702 43568.

NORTH HUMBERSIDE

SOFTWARE ONLY £1.00

CONTACT VIC ON (0482) 706767
MAIL ORDER WELCOME
★ WANTED - CLEAN COMPUTERS

M. MICRO'S

14 DORNOCH DRIVE
JAMES RECKITT AVENUE, HULL

LONDON

DAVID SHACK SOFTWARE

Over 150 games for the Spectrum and
100 for the VIC-20. Also BBC, CBM
64, Dragon, Atari, software sold at
discount prices. SAE for lists to:
294 Romford Road,
Forest Gate E7. Tel: 01-555 9303

**DO YOU WANT MAXIMUM
BENEFIT FOR YOUR MONEY?
— THEN USE OUR SHOPS AND
DEALERS GUIDE TO ADVERTISE
YOUR RETAIL/MAIL ORDER
BUSINESS.**

ENFIELD COMMUNICATIONS

Full range of software,
computers, accessories,
books, service & repairs.
135 High Street,
Ponders End,
Enfield, Middx.
Tel: 01-805 7434/7772

**READ OUR
DEALER
DIRECTORY AND
FIND OUT THE
LOCATION OF
YOUR NEAREST
COMPUTER
SPECIALIST.**

LANCASHIRE

PENNINE COMPUTER CENTRE

We have now moved to
30 Burnley Road, Accrington,
Lancs. Tel 0254 390424
Come and see our large selection of
software. Special introductory offer
10% discount. SAE for free catalogue
stating micro.

LANCASHIRE MICROS

BBC, Sinclair, Commodore, Dragon and
Lynx personal computers.
Also the widest range of software, books
and accessories in the area.
89 Euston Road, Morecambe,
Lancs. Tel: (0524-411435)
ALSO OPEN SUNDAYS

STAFFS

The Micro Store HOME COMPUTER CENTRE

We carry a large selection
of hardware/software/
accessories for all popular
home computers.

SPECIAL OFFER
10% off software on
production of this ad.

13B West Street,
Horsham, W. Sussex
Tel: 0403 52297

Computerama- The Midlands Home Computer Specialists

FOR BBC, SPECTRUM & ALL LEADING MICRO'S

STAFFORD: 59 FOREGATE ST
TEL: 0785 41899
STOKE-ON-TRENT:
MARKET SQUARE ARCADE
TEL: 0782 268620

24 The Parade
Silverdale, Newcastle
Tel: 0782 636911

Official dealers for Commodore, Sinclair & Acorn. BBC service and information centre

Huge range of hardware and software
backed up by sophisticated service
department.
New Memotech Computers now in Stock.

SOMERSET

PHOENIX SOFTWARE CENTRE

A large range of software in stock for
ATARI, BBC, DRAGON, ORIC-1,
SPECTRUM, COM 64 & VIC-20.
Also stockists of BBC &
SPECTRUM COMPUTERS.
Open Mon - Sat 9am - 6pm.
Access & Barclaycard accepted.
88 Huish, Yeovil, Somerset
Tel: (0935) 21724

SURREY

COMPUTASOLVE LTD.

8 Central Parade, St. Marks
Hill, Surbiton, Surrey KT6 4PJ.
Tel: 01-390 5135.
Open 9.30-18.30 Mon-Sat
Over 600 different software
titles in stock. We are pleased to
demonstrate any program
before you buy.
We stock all leading home micro's

SCOTLAND

THE GAMES SHOP AND COMPUTER SOFTWARE CENTRE TEL. NO. 0224-643740

3 Waverley Place, Aberdeen AB1 1XH.
Stockists of Spectrum, Dragon, VIC-20
and Commodore 64 software. Extensive
selection of books and magazines.

**CLASSIFIED - RING
01-437 0699**

Please include my business details in the next available issue of Home Computing Weekly

Business Name:

Address:

Tel. No.:

Open Hrs:

Contact (Office Use Only):

Post To: H.C.W. (Shops & Dealers), 1 Golden Square, London W1R 3AB

**£6 per
single column
cm or phone us
for series
discount.**

HOME COMPUTING WEEKLY CLASSIFIED

Lineage:
35p per word



01-437 0699
EXT 341.

Send your requirements to:
Debra Stuppel
ASP LTD.
1 Golden Square,
London W1R 3AB

Semi display: £6.00 per single column centimetre
Ring for information on series bookings/discounts.

All advertisements in this section must be prepaid.
Advertisements are accepted subject to the terms and conditions printed on the advertisement rate card (available on request).

ACCESSORIES

BROWN'S CASSETTES

10 TDK hi-resolution blank data cassettes C15 — £5.95.
Suitable for the use of today's computers — each comes complete with labels, inlay cards and library casing. 75p p&p. Cheques/POs to:
Brown's Cassettes (Dept HCW)
15 Royston Road, Thornbury, Bradford BD3
Tel: 0274 661545

ALARMS

Burglar Alarm equipment. Please visit our 2,000 sq.ft. Showrooms or write or phone for your free catalogue. C.W.A.S. Ltd, 100 Rooley Avenue, Bradford BD6 1DB. Telephone 0274 731532.

BOOKS & PUBLICATIONS

Popping, Break dancing. Teach yourself. Loose stamp for details. Dance Publications, 136 Monkhill Lane, Pontefract WF8 1RT.

CLUBS

Part exchange your old software for brand new cassettes. S.A.E. for details. State machine type. NCC, 12 York Close, Barton, Beds MK45 4QB.

COURSES

NEW TO COMPUTING?

We are here to help you gain skills in computing. Ring:
COMPUTER WORKSHOP
on 01-318 5488
4 Lee High Road, Lewisham, London SE13 5LQ

GIFTS

Gentlemen. Does your lady enjoy attractive software? Then send for free lists of inexpensive lingerie. SAE to BCM/Elegance, London WC1N 3XX.

HCW YOUR SOFTWARE SUPERMARKET.

HARDWARE

SINCLAIR SPECTRUM 48K

★ **IN STOCK** ★

£129.95

STAR GAMES LTD.

Tel: 01-681 8785

KENILWORTH SOFTWARE

TI-99/4A

Extended BASIC £44.95
Cassette Interface leads — single £5.40
Cassette Interface leads — dual £6.90

M. A. FAULKNER,
9 Dencer Drive,
Knights Meadow,
Kenilworth, Warks.

FOR HIRE

Hire a computer from ZX81 upwards for a week or a year. We also buy and sell second-hand computers, magazines and books. Business & Computer Services, 294a, Caledonian Road, London N1 1BA. Tel: 01-607 0157.

Computer Hire from £1 per week. Try before you choose before you buy. Contact Computer World, 208 Kent House Road, Beckenham, Kent. Tel: 01-778 0479.

Oric Software Library. Two weeks hire £1. Annual Membership £5. Stamp for list. Les Wilson, 100 Blenheim Walk, Corby, Northants.

LIBRARIES

ECLIPSE SOFTWARE SPECTRUM LIBRARY

Hire for 2 or 4 weeks at very competitive rates from our extensive range. Send name, address and 70p (refundable on first tape hire) for details to:

ECLIPSE SOFTWARE (HCW),
24 Cliffe Park Drive,
Leeds, Yorkshire LS12 4XG

PROBLEMS WITH YOUR MACHINE? SCAN OUR SERVICE/REPAIR SECTIONS.

COMMODORE 64 GAMES LIBRARY

Over 230 titles, all originals. Hire of first two games absolutely free. Life membership only £6. Join now on money back approval.

Send for details to:
Commodore 64 Games Library
c/o Yorkshire Software Library,
13 Park Top, Pudsey, West Yorks.
Cheques/PO's to
"Yorkshire Software Library".

Free Software for Spectrums. No hire charges. £7.50 membership. S.A.E. for details: G. Turney, 47 Cleavers Avenue, Conniburrow, Milton Keynes, Bucks.

REPAIRS

ZX81 — Spectrum. We can now offer out-of-guarantee repairs by our Computer Dept. Our engineers have had over three years experience servicing Sinclair Computer products. Price including p&p. ZX81 — £11.50; 16K Ram — £9.95; Spectrum — £18.75. Send with cheque or PO. T.V. Service of Cambridge, French's Road, Cambridge CB4 3NP. Phone (0223) 311371.

COMMODORE REPAIRS

By C.B.M. approved service engineers: for all out-of-guarantee units (all types). For more details telephone or SAE to:

G. C. BUNCE & SON
36 Burlington Road, Burnham, Bucks SL1 7BQ. Tel: (06286) 61696

SERVICES

Stockport Cassette Copying — speedy quality service. Best prices for small runs. Mail Order service available. Tel: 061 442 6910. Duplitape Recording Services.

NEW IN THE NORTH WEST

ZX81 & Spectrum Repair & Add-on Specialist

★ Fast micro and power supply repairs
★ Electronic Components
Open 9am-8pm Monday-Saturday

MANCOMP LTD.
Printworks Lane, Levenshulme, Manchester M19 3JP
061 224 1888

SOFTWARE APPLICATIONS

SPECTRUM KOPYKAT IMPROVED PERFORMANCE

Simply the best. Copying any program is now as easy as LOADING and SAVEing your own programs. Any ZX Spectrum program can be backed-up onto a fresh tape. Even programs that cannot be stopped can now be copied. 100 per cent machine code. Prints file names. Copies headerless files. SPECTRUM KOPYKAT uses no program area so full size programs over 41.7K (9K for 16K machines) can be copied. PLUS FREE Header Reader program.
Despatched by first class return of post.

Send cheque/PO for £4.95 to:

MEDSOFT
61 Ardeen Road, Doncaster, South Yorks DN2 5ER.
IT CAN EVEN COPY ITSELF

VIC-20 COPYTAPE

Produce security back-up copies of your programs. Efficient and easy to use program copies BASIC, Machine Code, Multipart and Auto-run programs onto a new cassette. Works on any size VIC.

For cassette with instructions send Cheque/PO for £5 to:

ROGER WOLFENDALE,
Dept HC, Laurel House,
Spinks Lane, Witham,
Essex CM8 1EP

The contents of this publication, including all articles, plans, drawings and programs and all copyright and all other intellectual property rights therein belong to Argus Specialist Publications Ltd. All rights conferred by the Law of Copyright and other intellectual property rights and by virtue of international copyright conventions are specifically reserved to Argus Specialist Publications Ltd and any reproduction requires the prior written consent of the company.

© 1984 Argus Specialist Publications Ltd

SSN0264-4991

HCW — COMPATIBLE WITH ALL POPULAR HOME COMPUTERS.

Spectrum Speedyload — Halve your waiting time! This short program lets you save/load at 3000 baud. Cassette (48K), £3.95. Ness Micro Systems, 100 Drakies Avenue, Inverness.

BACK-UP TAPE COPIERS

new and unique machine code programs that can provide security back-up copies of most software currently available. Supplied on cassette with simple instructions for the following machines.

COMMODORE 64 £5.95
VIC 20 £5.95
BBC MODEL A/B £5.95
ORIC 1 £5.95
SPECTRUM 16/48K £4.95

Price includes VRT, post, and packing.
Send cheques and P.O.s to:

WALLTONE LTD.

Crown Courtyard, Bridge Street,
Evesham, Worcestershire

BREAKER BREAKER

For the Commodore 64, this revised 1984 version will make back-up copies of most popular cassette programs. Why pay more? For a fast turn round on orders rush cheques/POs for £3.95 to:

C. KENT,
26 Northcape Walk, Corby,
Northants NN18 9DQ

Can you afford to be without one?

VIC-20 TAPE COPIER

Copies almost all games. Guaranteed.
Cassette and instructions.
Cheque/PO for £3.95 to:

GRIFFITHS
8 Moss Close, Rugby,
Warks. CV22 6SD

● COPYMATE 64 ●

A back-up utility for COMMODORE 64. Will make security copies of most cassette based software. Supplied on a quality cassette with full instructions. Send £4.75 to:

HORIZON SOFTWARE,
15 Bamburg Close, Corby,
Northants NN18 9PA

TAPE COPIER 5 (new version)

Makes BACK-UP COPIES ALL types of SPECTRUM programs (incl. headerless, m/c unstoppable) easily with MANY unique features. **FULL MONEY BACK GUARANTEE** if you are not satisfied.

★ M/DRIVE copies Basic/mc/arrays on the microdrive STOPS programs to help the run.
★ LOADS in all program parts CONTINUOUSLY — even without pressing a key. Other copiers require many loadings — MASSIVELY saving you time and trouble!
★ MAXBYTES copies programs occupying the FULL 16K or 48K! Verifies. Repeat copies. Auto. Abort. HEAD data.

★ Full instructions, very user friendly. BREAK at any time (just save a header!), then carry on LOAD. Copies all programs that we are aware of.

Cost only £4.49 or £5.50 with M/DRIVE.

(Overseas: + £1 Europe, £2 others).

**5 STARS FROM THE
HCW REVIEW, WITH THREE
100% RATINGS!**

IERM (DHC),
16 Stonepit Drive, Cottingham,
Mkt Harborough, Leics

SOFTWARE EDUCATIONAL



the Educational Consultants

Biology Mini Lab for ZX81 16K and Spectrum. Moving diagrams and working experiments of photosynthesis of osmosis and diffusion. Plus crunching glucose molecule £3.95 p&p inc.

Also super memory cassette. Above processes described with super memory music to aid recall £3.95 p&p inc. £6.90 the pair. Save £1.

Available from

**APA, 2 Dodds Crescent,
West Byfleet, Surrey KT14 6RT.**

ISIS VIDEO

Specialists in Educational software. Software and text books. Software packages from ABC to A level. Many major publishing houses included in our comprehensive catalogue covering most popular home/school computers. Ring Fiona Brooks now on 01-541 0403 or write stating model to:

ISIS VIDEO (HCW),
Crown Works, Church Road,
Norbiton, Kingston, Surrey

SOFTWARE CENTRE

**THE EDUCATIONAL
SOFTWARE specialists.**
Large S.A.E for lists.

**52A Bromham Road,
Bedford**

Tel: Bedford 44733

**ADVERTISE
IN OUR
NATIONWIDE
GUIDE AND SEE
YOUR BUSINESS
GROW. PHONE
NOW FOR
DETAILS ON
01-437 0699**

SOFTWARE GAMES

Computer games, discount prices.
Free catalogue. Send S.A.E. to:
A. D. Software, 17 West Street,
Wath on Dearne, Rotherham S63
7QU.

TI-99/4A

FOR GUARANTEED,
QUALITY SOFTWARE
SEND S.A.E. FOR OUR
LIST AND SAMPLE
INSERTS.
**HARLEQUIN
Computing Limited,
PO Box 44,
Ilford IG1 3DV**

TOP 100

SPECTRUM GAMES

2 FOR THE PRICE OF ONE
SAE FOR LIST

BEEDUS SOFTWARE
102 Beatty Road, Stanmore,
Middlesex HA7 4EU

Texas TI-99/4A cassettes: 1. "Atlantis Invaded" — underwater adventure: 2. "Depth Charge Attack" — battleship hunts submarine: 3. "Caterpillar Crunch" — eat or be eaten: 4. "Fighter Pilot" — aim your gunsight. Prices — £4.95 any two programs: £5.95 any three: £6.95 all four. Send cheque or P.O. to P. M. Williams, 1 New Road, Melbourne, Royston, Herts.

Spectrum 16/48K "Raquel" presents her games collection for age 16 up only. (State age when ordering). Only £3.99. I. Brooks, 17 Malvern Flats, Coleman Street, Southend, Essex.

INTRIGUE SOFTWARE

TI-99/4A 16K BASIC

Hi-Res Graphics and Text Adventures. ADVENTURE MANIA — can you complete the ultimate quest. £5.95 (HCW reviewed Vol. 45). MANIA — superb graphics, can you escape to the corridors of time. £5.95. Sent by return. Cheque/PO to:

INTRIGUE SOFTWARE
Cranbrook Road, Tenterden,
Kent TN30 6UJ. Tel: 0580 64726
SAE for details. Dealer enquiries welcome.

UNEX-TI-99/4A GRAPHICS CREATOR & SCREEN EDITOR

CREATE up to 52 'on-board' graphics. DESIGN large screen layouts for your own programs. SAVE ALL of your work onto cassette tape. Commands incl. ROTATE, MIRROR, INVERT, IN-HEX, OUT-HEX, ACCIDENT REPAIR, and many more. Extremely USER-FRIENDLY throughout. Whether you're a BEGINNER or EXPERT this program enables you to produce many sets of good graphics — QUICKLY! Price includes full instructions, and 3 sets of Demo-graphics. Send £5.95 to:

PikaDee Software
35 Parker St, Preston, Lancs
Now wanted: Good original programs for the unex-TI. Good Royalties offered.

AQUARIUS

SOFTWARE (16K Games)

THE MAZE 5.95

Exciting new challenging 3D game

ROCKY RUN 3.95

(By the Author of The Maze)

BRICK A BRICK 4.95

Traditional breakout style game

Make Cheques & POs payable to:

ARGON ENTERPRISES
21 Camden Close, Chadwell St. Mary,
Essex RM16 4HT
Trade enquiries on Basildon 27542

Aquarius 4K? 6 tempters. Sketch — Paintbox — Electric Organ — Keyboard — Mastercode — Alpha-mix. Listings only. £1.99 each, £9.99 the set. Oasis Software, Freepost, Northampton.

LLAMASOFT!!

awesome games
software



VIC 20

CBM 64

ATARI

SPECTRUM

**NOW IN BOOTS, LASKEYS &
MANY RETAILERS, OR FROM
49 MT. PLEASANT,
TADLEY, HANTS.
TEL: 07356 4478**

TI-99/4A

STAINLESS SOFTWARE has a large catalogue of good quality programs for the TI-99/4A, with over 80 programs! For a copy, please send a large SAE to:

**Dept. HCW, 10 Alstone Road,
Stockport, Cheshire SK4 5AH
(MAIL ORDER ONLY)**

Oric-1 Space Trader £5.95, state 16/48K. Gamespack-1 (four games) £5.95. Magnum Software, 77 Hampton Road, Scarborough, N. Yorkshire.

747 Pilot for VIC-20 with Super Expander Cartridge or new 8K expansion memory. versions, state which. £6.99 from Victay (HCW). 12 Leahill Close, Malvern WR14 2UE.

TI-99/4A SOFTWARE

Any three fantastic games for only £5.33 titles to choose from.

For full list S.A.E. to:

BINBROOK SOFTWARE,
88 Cotterdale, Sutton Park,
Hull HU7 4AE

DISCOUNT SOFTWARE

HUGE DISCOUNTS off most computers

SPECTRUM	RRP	ORP
Atic Atac (Ultimate)	5.50	4.25
Omega Run (CRL)	4.95	4.50
Death Chase (Micromega)	6.95	4.95

COMMODORE 64

Scramble (Interceptor)	7.00	5.00
------------------------	------	------

BBC

Chuckie Egg (A&F)	7.90	5.90
-------------------	------	------

ORIC

Harrier Attack (Durell)	6.95	4.50
-------------------------	------	------

DRAGON

Hungry Horace (Psion)	5.95	4.50
-----------------------	------	------

C.W.O. p&p 55p 1 tape, 2 or more, post free. SAE for 12 page catalogue of software for most computers to:

DISCOUNT SOFTWARE
45 Brunswick, Bracknell, Berks.

TI-99/4A HIGH QUALITY GAMES

Look at these low prices

Ri-Ski BASIC	£2.95
--------------	-------

Nuclear Pods BASIC	£3.25
--------------------	-------

Hop It Ex. BASIC	£4.95
------------------	-------

Mini-Kong Ex. BASIC	£3.95
---------------------	-------

To order any of these cassettes just send a cheque or postal order to the address below. Remember, all prices include post and packaging and VAT.

We now have a catalogue of other good quality software available for the TI-99/4A. To obtain your copy send us an S.A.E.

MICROBYTE SOFTWARE
11 SAINT MARY'S AVENUE,
PURLEY, READING,
BERKSHIRE RG8 8BJ

HCW YOUR SOFTWARE SUPERMARKET.

TI-99/4A

NEW 'Moonshuttle 5' action flight simulation £2.50 + 25p p&p
also **'Moonbase 5'** and
'CATCH RATS' action graphics
games £1.75 + 25p p&p each.
2 or more games p&p free

G & K Fawcett & Associates
61 Howdale Road, Hull

TEXAS

MINER 2049er: Guide Bounty Bob out of the mine, through 8 screens of arcade action.
ROM £27.10

DRIVING DEMON: Arcade style auto racing, race against the clock and opposition.
Mile a minute thrills. ROM £26.95

Your favourite arcade games from Atari
for your Texas.

DEFENDER ROM: £19.99
CENTPEDE ROM £19.99
STARGATE ROM £19.99

BOOKS
How to use the TI-99/4A £2.85
Get Personal with your TI-99/4A £7.15
Joystick Adaptor for TI-99/4A to use
Quickshot £9.95

SPECIAL PRICE: QUICKSHOT £7.95
Dust Cover £3.95. Send S.A.E. for lists to

LOADE ENTERPRISES,
c/o Ensemble (HCW) 35 Upper Bar,
Newport, Shropshire TF10 7EH
Tel: (0952) 813667 or 814292

Dromeda Software. Quality games
for TI-99/4A. S.A.E. for details.
56 Wells Street, Haslingden, Lancashire BB4 5LS.

**PROBLEMS WITH
YOUR MACHINE?
SCAN OUR
SERVICE/REPAIR
SECTIONS.**

NOVA SOFTWARE

£4.95 PRESENTS £4.95

THE LAST SHIP OF ZENDOK (48K ZX Spectrum)

The first part of a 3 part adventure:

THE EMPIRE OF THAILAX

Are you brave enough to challenge the evil Thailaxians? In this first text adventure, you must re-activate the last ship of the once great fleet of Zendok by finding 6 controlling crystals. *Please make cheques/POs payable to A. B. Saxton; and send to:*

NOVA SOFTWARE (Dept HCW)
2 Gertrude Road, Dracott,
Derbyshire DE7 3NW
(PART 2 OUT SOON)

FOR SALE

Atari 400 with typewriter keyboard,
410 cassette, 10 cartridges/games.
Ideal beginners kit. Offers —
Campbell 01-637 2400 (day), 01-385
3621 (evenings).

USER GROUPS

TI-99/4A Yahtzee free. Details only
when you join nationwide group.
S.A.E. TI-Users, 40 Barrhill,
Brighton BN1 8UF.

WANTED

PERSONAL COMPUTERS

All models bought for cash.
Morgan Camera Company
160 Tottenham Court Road
London W1. Tel: 01-388 2562

Atari 400 cartridges urgently re-
quired. Top prices. Write only.
L. Sutherland, 14 Middlefield
Crescent, Aberdeen.

It's easy to complain about advertisements.

The Advertising Standards Authority. ✓
If an advertisement is wrong, we're here to put it right.
ASA Ltd, Brook House, Torrington Place, London WC1E 7HN

CLASSIFIED ADVERTISEMENT — ORDER FORM

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.
13.	14.	15.

PREFERRED CLASSIFICATION

Please place my advert in Home Computing Weekly for _____ weeks.
Please indicate number of insertions required.

Advertise nationally for only 35p per word
(minimum charge 15 words).

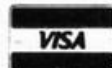
Simply print your message in the coupon and
send with your cheque or postal order made
payable to Argus Specialist Publications Ltd to:

CLASSIFIED DEPT., HOME COMPUTING WEEKLY,
1 Golden Square, London W1R 3AB
Tel: 01-437 0699.

Name

Address

Tel. No. (Day)



--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

STARCADE

presents

UP, UP AND AWAY

A 16k MACHINE CODE GAME FOR THE ATARI FAMILY

£14.95

(DISK OR CASSETTE)

"Incorporating just the right blend of humour, skill, graphics and sound—quite likely to start a trend towards less violent, high quality graphic games."

PERSONAL COMPUTER NEWS

"When you are tired of Star Raiders, Space Invaders and Pacmen, why not get quietly frustrated with Up, Up and Away?"

PERSONAL COMPUTER GAMES

"Graphically superb—this game shows that there are in Britain at last programmers capable of producing the goods for the Atari."

PAGE 6 INTERNATIONAL

"Among the best graphics seen. The five skill levels should provide a long lasting challenge."

HOME COMPUTING WEEKLY

Also . . .

The world you are about to enter bears no resemblance to any arena you ever encountered before. Weapons are of no avail in this small habitat.

The only sources of protection at your disposal are quick wits and fast reflexes. The only reward is to survive against monsters of unbelievable ferocity and cunning; and to avoid hazards more perilous and deadly than any you might find on a trip through the outer universe.

This is the real world, populated by the creatures of our own, inner universe, where nature is red in tooth and claw.

Brace yourself now, and come with Starcade into the still water and deceptive calm of the

SAVAGE POND

A 16K machine language programme for the Atari family, available on disc or cassette.

Post Coupon now to
Starcade Software, 2 Elworthy Avenue, L26 7AA.
Please rush me _____ copies of
Suitable for Atari 400/800 16K cassette or 32K disc.
Please debit my Access/Barclaycard
(Delete as necessary)
Card Number
I enclose cheque/P.O. for £ _____
Name _____
Address _____
HCW

SUPERFAST CREDIT CARD SALES LINE:

051-487 0808 24hrs

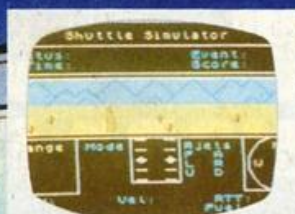
VISA

ALSO AVAILABLE FOR THE COMMODORE 64

LIFT OFF with



SPACE SHUTTLE



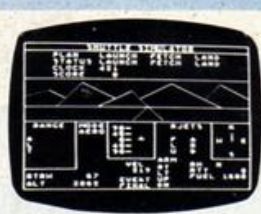
SPECTRUM LAUNCH STAGE



DRAGON 32 ARM STAGE



BBC FINAL STAGE



ATARI FINAL STAGE

MISSION BRIEF

Successfully pilot the Shuttle through Launch, Fetch & Finals. Take off and position Shuttle in orbit. Manoeuvre alongside malfunctioning Satellite. Retrieve - then re-enter to glide without fuel to White Sands Desert.

PREVIOUS SUCCESSFUL MISSIONS

EXCELLENT - "Personal Computer News"
A WELL THOUGHT OUT GAME - "Dragon User"
ALMOST WORTH BUYING A DRAGON FOR -
"Which Micro"

MISSION STATUS Available for
48K ORIC 1, ATARI 16K, DRAGON 32, BBC
MODEL B, SPECTRUM 48K, COMMODORE 64,
ACORN ELECTRON, TANDY COLOUR 32K
CASSETTE £8 DISK £10



Postal Orders to
41 Truro Road, St. Austell, Cornwall PL25 5JE
Telephone/Credit Card Order
Tel: 0726 3456



MICRODEAL



Available from computer dealers
nationwide or from larger branches of

John Menzies