

Home Computing WEEKLY

An Argus Specialist Publication

June 28-July 4, 1983 No. 17 38p



Make more of your ZX81 — see page 14

Software reviews for:
TI-99/4A,
Dragon, Oric-1,
Jupiter Ace,
Spectrum, ZX81,
Commodore 64,
VIC-20

Programs to type in for TI-99/4A, Dragon

Computer Fair: Special report

Pages of news

Your letters

Best sellers: Charts for VIC-20, ZX81, Spectrum, Dragon

Behind the scenes at Rabbit

PLUS: U.S. scene and One Man's View

WHICH MICROS WILL SURVIVE THE HIGH STREET?

NEW computers are flooding in to the country — eight were announced in the last few days. But how many will reach the shelves of the high street stores?

W.H. Smith has already decided to add two to its range — their names are being kept quiet for now — and Boots is due to make a decision in the next few weeks.

In fact merchandise controller Stewart Binnie, who has worked at Smiths for seven years, said he was watching the performance of two of the company's present range, but for different reasons.

He wanted to see the reaction to the £110 price cut for the Commodore 64, bringing it down to £229. It could go into more stores.

And he said: "We will have to see how the Oric performs over the next two-three months — it's been rather caught short by the recent round of price cuts."

Mr Binnie pointed out: "Computers are very extravagant in their use of store space. Anything that does not perform and soon will be replaced by one that will."

Smiths at present stock the ZX81, both Spectrum models, the Commodore 64 and the Oric. In the company's three test computer stores-within-stores there will be a range of eight or nine computers.

And he believed that the ZX81, now just under £40, was well placed for Christmas, despite its black and white display: "It's great strength is that it's a good way of getting started."



Mr Binnie said Smiths

bought in detailed market research before considering which machines to consider and then took account of all the price segments.

He said: "The problem is that June and July are fallow months and these are when you have to make up your mind for Christmas."

Continued on page 3

New computers — full details, plus pictures, inside



**QUEST**
MICROSOFTWARE

THE BLACK HOLE

A NEW DIMENSION IN SPECTRUM SOFTWARE

: VIOLENT UNIVERSE :

available NOW
the battle could be yours...
...but it won't be easy!
ASK FOR QUEST SPECTRUM SOFTWARE AT YOUR LOCAL SOFTWARE RETAILER

**For details please ring 0242-583661**

Best for software — every week

WINDOW ON ANOTHER WORLD

NEW RELEASES

STAR JAMMER — Wiping the sweat from my brow, I searched the inky blackness, ahead for signs of enemy fighters. 'Though Star Jammer was the best ship in the galaxy, my dwindling energy reserves made me doubt I could reach the next stargate... (a one player space arcade game requiring 1 joystick)

SUPER SKILL HANGMAN — Hangman as you've never played it before!

A vocabulary of over 1000 words, three levels of difficulty and an optional timer makes this classic word game a challenge for kids of all ages.

NIGHTFLIGHT — An accurate simulation of flying a single engine light aircraft, Nightflight allows for take-off, landing, and aerial manoeuvres including loops and rolls.

SALAMANDER GRAPHICS SYSTEM — A comprehensive picture drawing system for the home computer enthusiast. Pictures in any mode or colour set, text on the hi-res screens, and storage of pictures on tape. Requires 1 joystick.

ORIC TREK — A version of our classic Dragon Trek for the Oric-1! 10 levels of difficulty, 3 sizes of galaxy and more features than you can shake a Klingon at. A must for all Oric owners!

ORIC GAMES COMPENDIUM — Four exciting games for the whole family: Donkey Derby, Kingdom, Viper and Space Station.

DRAGON 32 and TANDY 32K (please specify):

Dragon Trek £9.95. Wizard War £7.95.
Golf £7.95. Grand Prix £7.95. Vulcan
Noughts & Crosses £7.95. Games Comp
D1 £7.95. Salamander Graphics System
£9.95. Super Skill Hangman £7.95. Star
Jammer £7.95. Nightlight £7.95.

BBC MODEL B

Dragon Rider £7.95. Tanks! £7.95. Games
Comp B1 £6.95. Games Comp B3 £6.95.
EDG Graphics (tape) £24.95. EDG Graphics
(disc) £29.95.
ORIC 1: Oric Trek £9.95. Games Comp 01
£7.95.

NOW AVAILABLE AT MAJOR BRANCHES OF:



AND



Mail Order (add 50p p&p) and Catalogues (send SAE) from:
Dept C, SALAMANDER SOFTWARE, 27 Ditchling Rise, Brighton,
East Sussex BN1 4QL. Tel: 0273 771942

Salamander Software

HCW17

SEE US AT
LONDON COMPUTER FAIR
16th-19th JUNE 1983

A Prophecy:-
MAD MARTHA II
will be coming to get you
SOON!!!
Call (0344) 27317 for info

Home Computing WEEKLY

**FREE ZX81
CATALOGUE**
12 pages of the best
programs for 16K ZX81
call 24 hours
leave name, address
clearly 01-789 8546
Software Supermarket

Continued from front page

"What makes us different from the independent retailer is that someone as large as W.H. Smith has to have a very clear view of the market.

"I see hardware being subject to further erosion of margins in the next few months and the market is so competitive that retailers are at each other's throats."

Mr Binnie is expecting a bumper Christmas in computer sales — perhaps as much as double over last Christmas.

He said: "I've seen estimates of one to one-and-a-half million units being sold in 1983 — half of them in the last four months, including January."

How does Boots decide which computers to stock? Merchandise controller Anton Boyes said: "The decision is not dissimilar to whether we take a new shaver.

"The first thing is whether it appears to be an innovation and offers good value for money.

"Then we look at in detail with a technical evaluation for performance and safety — that's terribly important — and whether it does what it says it will do.

"Sometimes you see things at a trade show and it turns out that they are prototypes.

"We look at how the manufacturers are going to promote the computer and then finally we set it out in the range of our existing products.

"It would be unlikely that we would take a microcomputer which did the same for the same price, although it may be we would have two at around the £170 mark.

"I must say the decision on which systems to stock this Christmas is one of the most difficult we have had to make. We are not committed to any at the moment, but we will be making a choice soon.

"I've never known anything like the market at present. Obviously it's critical that we pick the right product, especially as

Continued in column 4

News 5-7

One Man's View 7

Letters 8

U.S. Scene 9

Software reviews 12

Space games sampled

Software reviews 13

Face-lift for old faithfuls

ZX81 programming 14

How to add some new commands

TI-99/4A program 16

Race against time to save the miner

New micros: Special report 21

Something for everyone

Dragon program 25

Your aim could save your life

Spectrum software reviews 29

We rate the new games

Software reviews 31

Action games for Oric, ZX81, Commodore 64

VIC-20 software reviews 33

Are cartridges worth the cash?

Computer Fair: Special report . 35

TI-99/4A software reviews 38

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

Argus Specialist Publications Ltd.
145 Charing Cross Road, London WC2H 0EE. 01-437 1002

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 WC2H 0EE

Continued from column 1

there are going to be many more products and more people selling them this Christmas."

Boots stocks the Spectrum, ZX81, Dragon, VIC-20 and Commodore 64 in 170 stores and is soon adding the BBC micro. Before Christmas 250 branches of Boots will be stocking computers.

How do the independent-schoose? Andrew Margolis, of Lion Micro, which has stores in London and Brighton, said: "It's as difficult for us to decide what to sell so it is for the customer to decide what to buy.

"The home computer market is in demand driven — it's what people come in and want to buy. When someone comes in it's difficult to persuade them to buy something other than a Sinclair or a BBC if that is what they came in for.

"To take a particular line you have got to invest money in stock and training and we can only afford to invest if it warrants it.

"We can't hype something in the same way as the big retail chains.

At least one new computer — possibly two — may make an appearance on the shelves of John Menzies stores.

Nick Gregory, the company's product manager for computers, said the decision would be made in the next week or so from the machines the company had already evaluated. But there may also still be room for an outstanding newcomer, he said.

The company took these items into account: memory size, graphics and other major features, accessories and software, availability, support and promotion from the maker and publications — like books and magazines.

He said: "We take into account not only the box but what happens when the box is on the market."

John Menzies stocks computers in 109 stores and the top 20 have the whole range — ZX81, Spectrum, Dragon, Oric, Atari and VIC-20.



Hewson Consultants

We proudly announce our 1983 range of

SPECTRUM SOFTWARE



40 BEST MACHINE CODE ROUTINES FOR THE ZX SPECTRUM £5.95

By Andrew Hewson and John Hardman

Section A: Three chapters explaining what you need to know about Z80 machine code on the Spectrum.

- How to load and save machine code.
- How to use the system variables.
- How program lines are stored.
- How to use the stack, the display, the attribute files.

Section B: 40 routines including,

- Scroll – up, down, side to side by pixel or by character.
- Search and replace, token swap, string search.
- Rotate character, invert character – horizontally and vertically.
- Line renumber – including GOSUBs, GOTOs, RUN etc.

20 BEST PROGRAMS FOR THE ZX SPECTRUM £5.95

By Andrew Hewson

Program titles include:

Machine Code Editor – Write, modify, extend and load machine code using this all-basic program. No need to use an Assembler when you have this program.

Index File – Learn about fixed length records, save numeric and string information, add to, sort, modify, delete and print your records.

Ideal as a computer based filing system.

Duckshoot – Learn how to manipulate the attributes file and have fun at the same time.

Graphix – Construct up to 210 graphics characters with the full on-screen editing facilities, enhance and modify them and recall them later to build a detailed display to save on cassette.

Plus: FOOTBALL, DIGITISER, DIARY and many more.



BACKGAMMON 16K £5.95

8 Levels of play from novice to expert. Full colour display of tables and dice. Gamble on a single game or a series, double or quits. All the features of the ancient game.

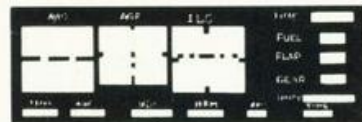


COUNTRIES OF THE WORLD £5.95

16 and 48K on one cassette. Countries of the World is an educational package designed to give an appreciation of the location of all the main countries and some information about them.

16K version displays a world map, shows the position of each country and names its capital.

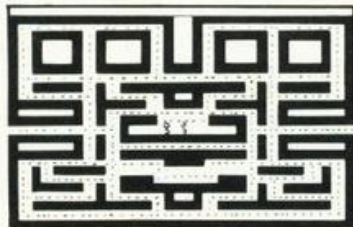
48K version; all the above plus prints the population, size, currency, and main languages of each country, and statistics on largest and smallest countries etc.



PILOT 16K (ZX81) £5.95

Fly your own aircraft.

Instruments and readouts: A/H, ALT, HDG, FL, GR, VOR, VSI, WIND, DME, ADF, and ILS see "NIGHTFLITE". Essentially the same as "NIGHTFLITE" but without the Hi Res Graphics.



PUCKMAN 16K (ZX81) £5.95

3 Mazes. Highest score to date. 4 independent guardians. Magic strawberries. Real time scoring.

NIGHTFLITE 16 and 48K £5.95

NIGHTFLITE puts you at the controls of a light aircraft flying at night. You can: Climb, descend, take off, Land, bank left or right, Navigate between beacons, Raise/lower the flaps, Raise/lower the undercarriage, Adjust engine rpm, Raise/lower the nose varying amounts.

Runway lights appear on approach.

5 modes including Autopilot.

Written by a qualified light aircraft pilot.

SPECVADERS £4.95 16K

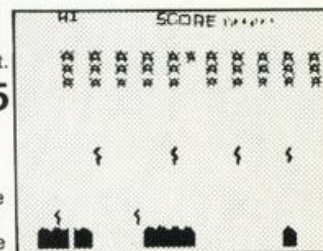
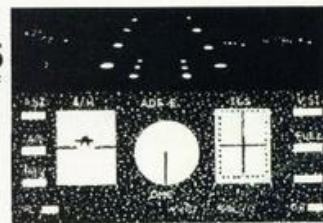
Defeat each squadron of Bleep Zaps and another appears only closer. Cyrian mothership with ejecting Zeetle Baps.

5 levels of play from Orions snails pace to close your eyes and hope.

Real time scoring. 3 lives. Pan galactic gargle blaster for highest score. Descending asteriods.

MAZE CHASE £ 4.95 16 and 48K

4 or 8 Mazes, Highest score to date, 4 independent guardians, 3 lives, Full colour, Fast machine code action, magic strawberries, eat lemons to score more, real time scoring.



ORDER FORM

Make cheques/PO's payable to Hewson Consultants

Quantity	Product	Cost

Name _____ Total _____
(Block Capitals Please)

Address _____ Signed _____

My Access/Barclaycard No. is _____ HCW17

Post to: HEWSON CONSULTANTS, 60A St Mary's Street, Wallingford, Oxon OX10 0EL.
Tel (0491) 36307.

Fair deal from fairs

The Computer Trades Association has hit out at badly-organised badly-publicised "rip-off" computer fairs.

According to the Association's general secretary Nigel Backhurst, "our members reckon that there are about a third too many exhibitions taking place at the moment."

"They get bombarded with invitations to show their products at exhibitions, and there's no way they have time to check them all out. My own business had mail shots for five different exhibitions only last week — and in an average week we get at least a couple."

To help its members decide which fair's fair, the association is in the process of compiling an Exhibitions Approval List. Exhibitions will have to meet certain basic standards to get on to the list.

Nigel Backhurst said, "The standards aren't rigid — we'll assess each exhibition as it comes. You can't compare local microfairs with big events like the Earl's Court fair."

"But the sort of thing we'll be looking for is whether there's adequate publicity, adequate security and safeguards for exhibitors, and whether there's an advisory committee set up to take exhibitor's views into account."

"It's also important that exhibitions should be aimed at the right market — there's a general feeling that too many exhibitors try to mix their markets. People don't know if they're home com-

More high street micros

W.H. Smith is opening pilot computer shops-within-shops on Friday at its Birmingham, Croydon and Northampton stores.

As revealed in Home Computing Weekly, they will be test centres for a proposed network of such shops country-wide.

Each will have console units where prospective customers can try computers such as Mattel's new Aquarius, the BBC micro, Oric-1, Commodore 64, VIC-20, and Spectrum.

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



Voltmace's new Delta 14 BBC handset

puter, business computer or general exhibitions."

Many of the culprits are small firms, although he said members were being advised not to exhibit at one show run by a large company.

The CTA now has 150 members. Dragon Data joined on June 20, and Boots is also to join.

Mr Backhurst stressed however that the CTA was not ordering its members to boycott non-approved events. The approved list would simply be a recommendation.

The list will be divided into four categories: trade only exhibitions, public (business), public (home/leisure), and public (general). The first edition will be published in September, with monthly updates appearing along with the Association's newsletter.

Members of the public will be able to get copies of the list by sending a stamped addressed envelope to Nigel Backhurst.

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

Computer comic

Britain's first computer comic has just been launched. Called Load Runner, it appears fortnightly with a mixture of comic strips, feature stories and computer facts for the nine-16 age group.

Editor Bill Scolding said his aim was to entertain as well as educate.

Load Runner, 30-31 Islington Green, London N1 8BJ

Push-button games

You won't have to wear out your BBC computer keyboard by using it for games playing, if Voltmace's Delta 14 handset catches on.

The handset combines a joystick and a heavy-duty keypad which, according to Voltmace's sales director Tony Pearmain, is "tolerant to heavy pressure, such as is experienced when it's used

by excited children playing games."

As well as saving your keyboard for programming, Voltmace says that the keypad will make it easier to control games which use several keys.

A single handset can be plugged directly into the A/D port at the back of the BBC micro, and used just like an ordinary joystick. Or two handsets can be plugged into an adaptor which allows the keypads to be used.

At the moment, of course, you won't be able to use the keypad with existing BBC software. Voltmace is busy trying to talk BBC programmers into writing optional keypad control into their future games — as well as routines that will transfer existing software to the handset.

The handsets alone cost £10.95 each, and the adaptor box costs £13.95.

Voltmace, Park Drive, Baldock, Herts SG7 6EW

Fantasia fiasco

Brian Howarth was worried when he read in Home Computing Weekly that tape swap company Computerhouse was to set up a software subsidiary called Fantasia.

Because Brian's own software company, which has been around for a year now, is called Digital Fantasia — but it has nothing to do with Computerhouse.

"The names really are pretty similar", Brian said. "I just hope people don't get the two companies confused. I'll be writing to Mr Martin pointing out that we already operate under the name Fantasia."

Digital Fantasia's forte is machine-code adventures for the BBC. Called the Mysterious Adventures series, the games were all written by Brian himself. But within six weeks Brian hopes to release the whole series for the 48K Spectrum.

Digital Fantasia, 24 Norbreck Road, Blackpool, Lancs

Power with stability

Disturbed by mains voltage disturbances? Browned off by brownout and screen drift? If it's important to you to ensure that your micro gets a stable power supply, then Cetronics has a range of mains transformers that may do the trick.

Called the Reguvolt P range, they start at £110.25 for a model designed to handle 120VA.

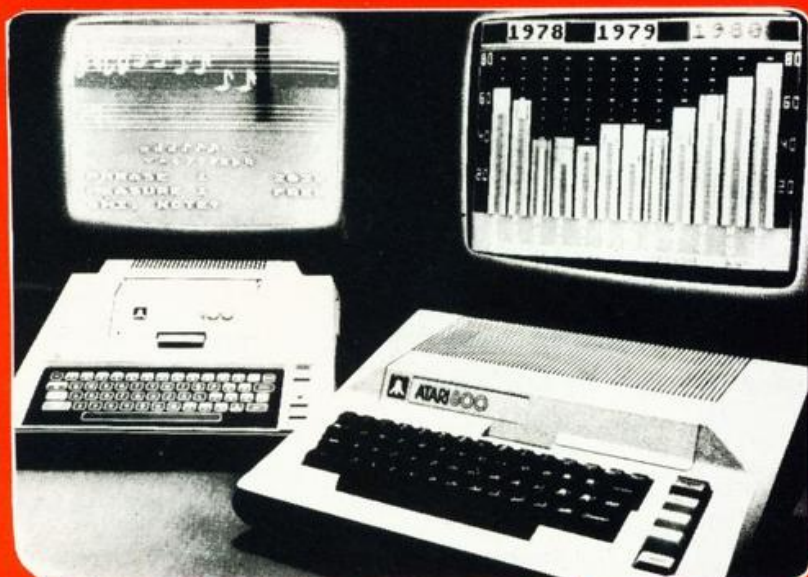
Cetronic, Hoddesdon Road, Stanstead Abbots, Ware, Herts SG12 8EJ

100 FREE PROGRAMS

FROM SILICA SHOP — WITH EVERY PURCHASE OF AN

ATARI 400 800

ATARI



ATARI PRICES REDUCED!

We at Silica Shop are pleased to announce some fantastic reductions in the prices of the Atari 400/800 personal computers. We believe that the Atari at its new price will become the U.K.'s most popular personal computer and have therefore set up the Silica Atari Users Club. This club already has a library of over 500 programs and with your purchase of a 400 or 800 computer we will give you the first 100 free of charge. There are also over 350 professionally written games and utility programs, some are listed below. Complete the reply coupon and we'll send you full details. Alternatively give us a ring on 01-301 1111 or 01-309 1111.

ATARI 400 £149
with 16K

ATARI 400 £198
with 48K

ATARI 800 £299
with 48K

400/800 SOFTWARE & PERIPHERALS

Don't buy a T.V. game! Buy an Atari 400 personal computer and a game cartridge and that's all you'll need. Later on you can buy the Basic Programming cartridge (£35) and try your hand at programming using the easy to learn BASIC language. Or if you are interested in business applications, you can buy the Atari 800 + Disk Drive + Printer together with a selection of business packages.

Silica Shop have put together a full catalogue and price list giving details of all the peripherals as well as the extensive range of software that is now available for the Atari 400/800. The Atari is now one of the best supported personal computers. Send NOW for Silica Shop's catalogue and price list as well as details on our users club.

THE FOLLOWING IS JUST A SMALL SELECTION FROM THE RANGE OF ITEMS AVAILABLE:

ACCESSORIES Cables Cassettes Diskettes Joysticks Le Stick Joystick Misc Supplies Paddies ADVENTURE INT Scott Adams Adv No 1 Adventureland No 2 Pirate Adv No 3 Mission Imp No 4 Voodoo Cast No 5 The Count No 6 Strange Ody No 7 Mystery Fun No 8 Pyramid of D No 9 Ghost Town No 10 Sav Island 1 No 11 Sav Island 2 No 12 Golden Voy Angle Worms Deflections Galactic Empire Galactic Trader Lunar Lander	MOUNTAIN SHOOT Rearguard Star Flite Sunday Golf AUTOMATED SIMULATIONS Crush Crumble Cmp Dastones of Ryn Dragons Eye Invasion Orion Rescue at Rigel Ricochet Star Warrior Temple of Apshai Upper Reaches Aps BOOKS Basic Ref Manual Compute Atari DOS Compute Bk Atari Compute Magazine De Re Atari DOS Utilities List DOS2 Manual Misc Atari Books Op System Listing Wiley Manual	BUSINESS Calculator Database Managemt Decision Maker Graph-It Invoicing Librarian Mort & Loan Anal Nominal Ledger Payroll Personal Finl Mgmt Purchase Ledger Sales Ledger Statistics 1 Stock Control Telelink 1 Vincal Weekly Planner Word Processor CRYSTALWARE Beneath The Pyram Fantasyland 2041 Galactic Quest House Of Usher Sands Of Mars Waterloo World War III	DYNACOMP Alpha Fighter Chompole Crystals Forest Fire Intruder Alert Monarch Moonprobe Nominos Jigsaw Rings of The Emp Space Tilt Space Trap Stud Poker Triple Blockade EDUCATION from APX Algebraic Atlas of Canada Cubbyholes Elementary Biology Frogmaster Hickory Dickory Inst Compgr Dem Lemonade Letterman Mapware	Maths-Tac Toe Metric & Prob Solv Mugwump Music Terms/Notatn Musical Computer My First Alphabet Number Blast Polycalc Presidents Of U.S. Quiz Master Starware Stereo 3D Graphics Three R Math Sys Video Math Flash Wordmaker EDUCATION from ATARI Conv French Conv German Conv Italian Conv Spanish Energy Car European C & Caps Hangman Invit To Prog 1/2/3 Kingdom Music Composer	Scream States & Capitals Touch Typing EMI SOFTWARE British Heritage Cribbage/Dominos Darts European Scene Jig Hickory Dickory Humpty Dumpty Jumbo Jet Lander Snooker & Billiards Submarine Commndr Super Cubes & Tilt Tournament Pool ENTERTAINMENT from APX Alien Egg Antikn Atlantk Avalanche Babel Blackjack Casino Block Buster Block Em Bumper Pool	Castle Centurion Checker King Chinese Puzzle Codecracker Comedy Diskette Dice Poker Dog Daze Domination Downhill Eastern Front Galahad & Holy Gri Graphics/Sound Jax-O Jukebox Lookahead Memory Match Midat Touch Minotaur Outlaw/Howitzer Preschool Games Pro Bowling Pushover Rabbitotz Reversi II Salmon Run 747 Landing Simul Seven Card Stud	Sleazy Adventure Solitaire Space Chase Space Trek Sultans Palace Tact Trek Terry Wizards Gold Wizards Revenge ENTERTAINMENT from ATARI Asteroids Basketball Blackjack Centipede Chess Entertainment Kit Missile Command Pac Man Space Invaders Star Raiders Super Breakout Video Easel ON LINE SYSTEMS Crossfire Frogger	Jawbreaker Mission Asteroid Mouskattack Threshold Ulysses/Golden Fi Wizard & Princess PERIPHERALS Centronics Printers Disk Drive Epson Printers Program Recorder RS232 Interface Thermal Printer 16K Memory RAM 32K Memory RAM Chess PERSONAL INT from APX Adv Music System Banner Generator Blackjack Tutor Going To The Dogs Keyboard Organ Morse Code Tutor Personal Fitness Prg Player Piano Sketchpad	PROGRAMMING AIDS from ATARI Assembler Editor Dembler (APX) Microsoft Basic Pascal (APX) Pilot (Consumer) Pilot (Educator) Programming Kit SANTA CRUZ Basics of Animation Bobs Business Display Lists Graphics Machine Kids 1 & 2 Horizontal Scrolling Master Memory Map Mini Word Processor Page Flipping Player Missile Gr Player Piano Sounds Vertical Scrolling SILICA CLUB Over 500 programs write for details
--	--	--	--	--	--	---	--	---	--

FOR FREE BROCHURES - TEL: 01-301 1111

For free literature and details on our range of electronic products, please telephone 01-301 1111. To order by telephone, full quote your name, address, credit card number, and order requirements and we'll send you a full and complete price list. FREE OF CHARGE, in the UK. Express 24 hour delivery available at an additional charge.

- **SALE DISCOUNTS:** 10% OFF ALL ORDERS over £100.00. 15% OFF ALL ORDERS over £200.00. 20% OFF ALL ORDERS over £500.00.
- **MAIL ORDER:** we are a specialist mail order company and are able to supply goods direct to your door.
- **MONEY BACK GUARANTEE:** If you are not satisfied with your purchase, you may return it to us within 15 days. On receipt of the goods in satisfactory condition we will give you a full refund.
- **PART EXCHANGE:** SILICA SHOP will purchase your old computer and offer a part exchange scheme to trade in many makes of T.V. games for personal computers.
- **COMPETITIVE PRICES:** our prices, offers and service always competitive. We have never known a customer and will never give a higher price quote than our competitors.
- **REPUTATION:** we are known for the quality of our products.
- **ATARI 400/800:** available on all computers out of warranty.
- **ATARI 400/800:** available on all computers out of warranty.
- **ATARI 400/800:** available on all computers out of warranty.

SILICA SHOP LIMITED
HCW1783, 1-4 The Mews, Hatherley Road, Sidcup,
Kent DA14 4DX Telephone 01-301 1111 or 01-309 1111

SILICA SHOP

FREE LITERATURE

I am interested in purchasing an Atari 400/800 computer and would like to receive copies of your brochure and test reports as well as your price list covering all of the available Hardware and Software.

Name

Address

.....

.....

Postcode

Home Computing Weekly

HCW1783

When the playing has to stop

In these columns and in the letters page of *Home Computing Weekly*, there has been much soul-searching about the role of computer games. Are they just a waste of time? Should you feel guilty about playing them? Are they even (as one man suggested) a threat to the whole home computer market? Or, to go to the other extreme, are they the best thing since sliced bread?

Speaking as a professional programmer who works on mainframes during the day and uses a microcomputer in my spare time, I'd answer no to all these suggestions.

Games are a great way to introduce children and adults alike to computers — from micros right up to mainframes. They can give you an appreciation of what the machine can do. They can familiarise you with the keyboard. And they can help to take away the fear of computerisation — a fear which professional programmers, by shrouding the subject in jargon and mystique, must be at least partly responsible for engendering.

Even professionals sometimes play computer games — to relieve the strain of programming to the unrealistically tight schedules laid down by their non-computing clients!

But games have their limitations. To use the power of even a Spectrum just for playing games is a bit like using an atom bomb to crack a nut. And £150, which is about the price of the Spectrum plus a tape recorder, is not peanuts — it's some people's gross pay for a week. Would you pay a painter £150 to paint your house if all he did was stand around bouncing a ball?

In any case, if the reactions of my own children are anything to go by, games lose their appeal in a comparatively short time — in about six months on average.

At this point, sensible parents will leap in and encourage their children to start using their micro in a useful way. Once kids realise the possibilities the micro holds for lightening their homework burden, or helping with revision, they will soon begin to use it to the full. From then on, they'll just go back to playing games on it for odd moments.

Most schools now have at least one microcomputer. My youngest son's school bought eight micros in 1979 and hasn't looked back since. You can be sure that, whatever these micros are being used for all day, it isn't just for playing games.

A lot of my neighbours have gone past the games-playing stage and are now using their micros more fully. One uses the micro to control household functions. One lad uses the home computer to control his train set. Another — an accountant — says he keeps all his clients' records on his home micro.

I think the biggest barrier to using micros constructively is not games, but this beastly hybrid language Basic. Its limitations, and the need to play around with PEEKs and POKEs, make it well-nigh impossible to carry out the simplest programming task in less than a dozen lines. You get there in the end, but at a cost of time and effort which makes it uneconomic for commercial programs.

By all means learn Basic as a standby, but if you want to push your micro to its limits, machine code is the way to do it. Not only will your micro respond better to machine code — it's even easier to understand and learn it too.

R.H. Hill
Programmer
Woodford Green, Essex

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

Lynx has more memory

Making its first public appearance at the Earls Court Computer Fair was the 96K version of the Lynx, which should be available from retailers now at a price of £299.

You can't actually use all 96K for programs, though. The Lynx's high-resolution graphicstake up 32K, leaving around 61K for machine-code programs and around 37K for Basic programs. For comparison, the 48K Lynx allows the user 13.75K of RAM for Basic programs.

The bigger Lynx has more ROM, too — 4K of it. This extra ROM is needed for new features: drivers for both parallel and serial printers, pre-formatted sound effects, a CIRCLE command, and a command that lets you use the 24K of machine code accessible RAM to store data for Basic programs.

Owners of 48K Lynxes can upgrade their machines to 96K for £89.95.

Computers, 36a Hills Road, Cambridge CB2 1LA

Plug-in games for your VIC

Not to be outdone by Thorn-EMI, Commodore has also announced the release of five new cartridge games for the VIC.

The first and most expensive is Gorf, claimed by Commodore to be the first time this arcade game has been available for a home computer. It costs £24.95, but contains four different space adventures, and you have to complete one before moving on to the next.

Then there's Cosmic Jailbreak, in which you take the role of a cosmic prison warden, Cosmic Cruncher, which challenges you to destroy alien satellites, Menagerie, a version of frogger with fleas and animals instead of frogs and logs, and Money Wars, in which you take the money and run. They all cost £19.95.

Commodore, 675 Ajax Avenue, Slough, Berks SL1 4BG

MICROSPHERE

MICROSPHERE COMPUTER SERVICES LTD
72 ROSEBERY ROAD · LONDON N10 2LA
TELEPHONE 01-883 9411

EVOLUTION (48K Spectrum)

Can you trace the course of evolution from the primordial soup to man, keeping a balanced world and surviving the odd disaster as you go? Should be easy... after all it's been done before!

Only **£6.95**

OMNICALC (48k Spectrum)

The best Spectrum spreadsheet you can buy. Written in machine code to be faster, to give you more space for data, and to allow more features to be included, it is guaranteed uncrashable.

"If more programs shared the quality of OMNICALC, then we might see more Spectrums in offices."
Home Computing Weekly 3/5/83

"It is ideal for someone who has just found the spreadsheet concept, but it is also a very powerful tool for anyone who has used one previously."

Sinclair User June 1983
Complete with comprehensive manual **£9.95**

ZX-SIDEPRINT (Spectrum & ZX81 versions)

Use ZX-Sideprint to print sideways, giving you 80/132 etc. characters per line. (State version reqd) **£4.95**

CREVASSE & HOTFOOT (any Spectrum)

Can you make it across the ice-cap whilst chasms open and close all around? Or, help the rabbit get to fields full of carrots — but remember! the plumper the rabbit, the greater the danger.

2 original games for only **£4.95**

NEW! THE TRAIN GAME (any Spectrum) NEW!
First there were model railways, then there were computers. Now Microsphere gives you both in one.

Featuring passenger, goods & express trains, tunnels, viaducts; points; stations; turntable bonus games; collisions; derailments; irate passengers; and everything else you expect from a major railway!

Two track layouts on each cassette. Superb value for money.

Only **£5.95**

LETTERS

Cutting remarks

It may not be your magazine that is guilty, but I am sure that I read a letter from a consumer recently who was expressing displeasure at the current price cutting war in the microcomputer market.

What kind of fool is he? Doesn't he realise that a price cutting war benefits everyone, and prevents the market from getting stagnant?

A good example of a stagnant market is the one for Atari 400/800 software. A good program will cost you £30. A bad one will be about £15 cheaper. Yet does anyone seriously believe that the programming skills used to produce an £8 Spectrum program are any less than those used for Atari programs?

For some reason, people seem to think they can charge the earth for any Atari program. Presumably this is because Atari themselves have set a trend.

We've all heard the undenied rumours about the ZX81 only costing £10 build, or the Commodore 64 costing less than the VIC-20, so why are people so keen to line the pockets off faceless businessmen? I'm certainly not. Let battle commence!

Ian McLaughlin, Middlesbrough, Cleveland

★ Software winner

Munch Maze amendments

I am the owner of a VIC-20. I was very pleased to see the Munch Maze game in HCW 9 — it ran very well with great graphics.

But I didn't like the two-part business, so I loaded and ran the first part, then without NEWing it I loaded the second part, and the game still worked.

Next I decided to make it more comfortable for the user by getting the computer to load part two. If you use the following amendments when you load and run Munch Maze, the second part loads automatically:

93 Poke 36879,27: Print

“ C L R
LOAD” + CHR\$(34) + “Munch
Maze Part 2” + CHR\$(34) +

“ ”
94 Print “ 4 cursor
down RUN”

And add the following line:
95 Poke 198,3: Poke 632,19:
Poke 633,13: Poke 634,13

Amith Cabral, Sidcup, Kent

**Send your letter to Letters,
Home Computing Weekly, 145
Charing Cross Road, London
WC2H 0EE. Don't forget to name
your computer — the best
letter could win £5 worth of
software. Queries cannot be
answered on this page**



Hands off the dragon

Who does he think he is? I am of course talking about your reviewer N.W., who chose to walk the path of the Knight's Quest in HCW 15. As soon as he found the dragon, he killed it. What's more, he boasted that it was easy.

Well, of course it was easy to kill the dragon, as it was expecting to be fed, not killed. If N.W. had taken heed of the instructions at the start of his quest, he would have read that dragons are not much use when they are dead — silly boy.

Although it is commonly believed that the only good dragon is a dead one, it just isn't true in this case. N.W. would have found that he could not move the giant or board the ferry or even use his book of spells without the dragon as his friend.

Obviously N.W. is a novice adventurer, and can be forgiven his dragon slaying. But don't let it happen again.

One final word. This adventure must have each task completed before the next can be attempted, unlike some which let you progress to the next stage, only to tell you that you have not got the correct equipment.

T. Kemp, Norwich, Norfolk

Spectrum user club

I haven't seen any Spectrum User Clubs anywhere, so I've decided to start my own with the help of a friend of mine.

It will cost £4.60 a year, and in that year members will receive six issues of our magazine — one every two months.

Mark Burnett, 24 Inverness Drive, Hainault, Ilford, Essex

It isn't microfair

Why oh why is there never a microfair in Scotland? The fairs in England are too far away for us to get to. What's wrong with an Edinburgh Microfair or even a Glasgow microfair?

If anyone reading this has an answer to this mystery, perhaps they'd write in and let us all know...

M. Logan, Hawick, Scotland

U.S. SCENE

Microdrive shaped like a credit card

If you're fed up with the slowness of cassette players and you can't afford a disc drive then help is on the way. There is a new data storage format which will shortly be available for home computers.

It is called the "wafer" and is a relative of the data cassette. The wafer is an endless loop tape which is a sixteenth of an inch thick and is housed in a small cassette-like case about the size of a credit card. The tape itself is made up of high grade video tape cut very small.

The tape comes in various lengths from five to 50 feet in five foot increments. The tape zips past the record/playback head of a specially designed recorder/player at 10 inches per second, as opposed to conventional cassette speed of one and seven-eighths inches per second. A 50 ft tape can store up to 128K!

Retail list price for the required recorders will only be \$100, not so much more than certain home computer companies are now asking for their own data cassette machines.

The manufacturer of this new system is calling it the Microdrive, and calling the wafers Microwafers. The retail price of the wafers is expected to be in the three to five dollar range. A 32K program can be expected to load in about 15 seconds, as opposed to about seven seconds from a disc.

Texas Instruments and Coleco have already committed themselves to the new system.

TI is expected to market its Microdrive very shortly, although they may use another name. Coleco has already brought out its Super Game Expansion Module No. 3 with a built-in Microdrive and two games included, Super Donkey Kong and Super Gorf. The advertising claims that this module will provide "realistic arcade game play." Coleco has 32K built into their machine, which is quite a lot for a machine that can only play games.

Right now, the Microdrive is otherwise unavailable, but this situation will change in the next few months. Look for the upcoming ads. Otherwise I will keep you posted on price, availability, and vendors.



Marketed under the TI name comes the Expander. This interesting device makes possible voice recognition and speech synthesis for TI's model 99/4A. The unit includes a 64-position membrane keypad and has a slot for accepting game cartridges. It includes a three-axis joystick and a combination headset-microphone unit for quiet input and output. An accompanying joystick controller has three buttons which can be used for controlling special functions. No price yet.



Finally, the Winky Board II is a little cassette interface device for Timex Sinclair computers that automatically filters out stray electrical glitches that would otherwise cause a bad load, resulting in easier program loading. It has an LED volume indicator, is capable of saving a program to two cassette recorders at once, and comes with a program enabling the user to make backup copies of programs in memory. The unit requires no external power source or any hardware modifications. It costs \$24 and is available from G. Russell Electronics, RD 1, Box 539, Centre Hall PA, 16828.

That's all for this week.

Bud Izen
Fairfield, California

Top Twenty programs for the Spectrum

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

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

Top Ten programs for the Dragon-32

- | | | |
|----|--------------------|----------------|
| 1 | The King | Microdeal (1) |
| 2 | Space Wars | Microdeal (2) |
| 3 | Planet Invasion | Microdeal (4) |
| 4 | Katerpillar Attack | Microdeal (3) |
| 5 | Dragon Trek | Salamander (5) |
| 6 | Madness & Minotaur | Dragon (9) |
| 7 | Grand Prix | Salamander (-) |
| 8 | Alcatraz II | Microdeal (6) |
| 9 | Chess | Dragon (10) |
| 10 | Basic Tutorial | Ampalsoft (-) |

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

Top Ten programs for the VIC-20

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

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

Top Ten programs for the ZX81

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

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

*THE MOST EXCITING AND
INNOVATIVE SOFTWARE EVER
LAUNCHED FOR YOUR SPECTRUM*



YOU HAVE **NEVER** SEEN
ANYTHING LIKE IT – BECAUSE
THERE **IS** NOTHING LIKE IT

**YES, IT'S A MAGAZINE, BUT
WITH NO PAPER. IT IS ENTIRELY
'WRITTEN' ON MAGNETIC TAPE —
READY FOR YOU TO SIMPLY
LOAD AND RUN.**

UNBEATABLE VALUE
AT ONLY £2.99

ISSUE NO. 1 NOW
AVAILABLE AT
W.H. SMITHS AND
JOHN MENZIES.*

**OR AVAILABLE BY POST FOR £2.99 (POSTAGE FREE)*

BE SURE OF YOUR COPY
SUBSCRIBE NOW!

Cut out and SEND TO:
SPECTRUM COMPUTING
513 London Road
Thornton Heath
Surrey, CR4 6AR

Please commence
my subscription from
issue No. 1 (May/June)

Subscription Rates

£17.94 for 6 issues UK ☐

£20.00 for 6 issues by ☐ overseas surface mail

£24.00 for 6 issues by ☐ overseas mail

(tick ☐ as appropriate)

I am enclosing my (delete as necessary) cheque/
Postal Order/International Money Order for £.....
(made payable to ASP Ltd) OR
Debit my Access/Barclaycard (delete as necessary)

[illegible]

Please use BLOCK CAPITALS and include post codes

NAME (Mr/Ms)

ADDRESS.....

.....POSTCODE.....

Signature.....

Date.....

Lunar Lander TI-99/4A £8

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

A version of the arcade game in which you must safely land in a valley, avoiding the rocky mountainsides. You have the choice of five venues each becoming more formidable as the local gravity increases. When you finally come down to Earth, which is the most difficult, there is the additional hazard of a lake.

The keyboard is used to control your descent by the spin and variable thrust of your lander. These require careful and constant adjustment. Instrument

readings are displayed at the top of the screen.

The action is slow — a limitation of any program written in TI Basic — but this in no way detracts from the game. The more experienced player can turn the readings off thereby speeding everything up.

Two minor points are that the Y character has been mis-assigned to a blue block, and poor navigators might displace parts of readings.

J.W.

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



Starjammer Dragon + Joystick £7.95

Salamander, Dept C, 27 Ditchling Rise, Brighton BN1 4QL

Here we have a very colourful space dogfight by Franklin Frogstar (is this guy for real?). You are out to destroy an alien fleet intruding into your galaxy.

Your laser sight is in the centre of the screen and you steer the enemy into this with your joystick. A nice funnelling effect is produced with the stars although larger heavenly bodies remain curiously static.

A limited amount of energy,

indicated at the bottom of the screen, protects you from enemy fire at a distance. If you're slow this is soon used up, even though you do have three lives.

The explosions are terrific and the graphic representation of enemy fighter and backgrounds quite good. At the end of each game there's a Roll of Honour to enter up to 10 high scores — essential in my competitive family.

M.P.

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



Oric Trek Oric-1 48K £9.95

Salamander, Dept C, 27 Ditchling Rise, Brighton BN1 4QL

It just goes to show that an old idea can still inspire good games. The Klingons are stirring up trouble again and you with your faithful Enterprise crew are called in to sort them out.

The galaxy has supernovas and black-holes, some of the Klingons sport the latest in tractor-beams while Uhura keeps you informed of the news from Starfleet Command. The damage control is nicely done.

Another novel idea is the abandon ship option, a last resort

in which you are reprimanded for cowardice and placed in command of a suitably weaker ship. You can at least continue where you left off though.

The screen display is neat and pleasing to look at, but the sound is a bit weak, with too much reliance upon the Oric's pre-programmed repertoire.

Oric-Trek is a real time game so there's no agonising over what to do — it's kill or be killed.

G.P.

instructions	85%
playability	90%
graphics	85%
value for money	65%



Games that are out of this world

Or are they? Our reviewers
beam down their opinions
on a selection of space games

Invaders Jupiter Ace £6.50

Hi-Tech Microsoft, 42 Cranleigh Drive, Whitfield, Dover, Kent

Feeble version of the well-worn arcade game. No colour, of course, but on a machine with user-defined graphics the invaders ought not to be just white squares and oblongs or the defender's gun merely a small square.

The bombs fall so slowly and jerkily the program might as well be in BASIC and there is no synchronisation between the gunfire and the destruction of the invaders.

If it were not for the increasing but meaningless score in the bottom left hand corner you'd hardly known they'd been zapped. They present so little threat to the player that most people will end up feeling sorry for them!

The program was very difficult to load and came along with three others from the same supplier which totally resisted all attempts. The Ace would put up the dictionary notice but firmly refused to say "OK" — maybe the smart machine was trying to complain about the misuse of its potential.

G.M.

instructions	50%
playability	10%
graphics	10%
value for money	5%

STARJAMMER

ORIC
TREK

Salamander Software

Salamander Software

Let's face it — the sound from your Dragon 32 wouldn't win any prizes at an Eisteddfod. What you need is a:-

Dragon 32

SOUND EXTENSION MODULE

- Fully-cased module plugs into cartridge port
- Provides 3 channels of sound; 3-note chords and harmonies over 5 octaves
- Uses new BASIC command. No need to 'Peek' or 'Poke'
- Many built-in sound effects (e.g. bomb, laser)
- Music and graphics can occur together without loss of speed
- Based on popular, well-proven sound generator
- Two Input/Output ports included
- User manual provided, with examples

Cheque/P.O. to:-
J.C.B. (MICROSYSTEMS)
29, SOUTHBOURNE ROAD
BOURNEMOUTH BH6 5AE
Tel: (0202) 423973

**ONLY
£34.95
inclusive**

Speech Synthesizer available shortly
Write or phone for further details



**Nearly 400 Programmes
IN STOCK**
Ring for our Price List

CLWYD PERSONAL COMPUTERS

Unit 19, Daniel Owen Precinct, Mold, CH7 1AP.
Telephone: Mold 56842



400 inc BASIC £149.95p
810 DISC DRIVE £299.
800 £299.
410 CASSETTE REC £45
VIC STARTER PACK £139.99p
ORIC 1 48K £169.95p

Phone Orders Welcome on **0352-56842**
Postage & Packaging **£3.00**

Orders over £200 - Postage & Packaging **FREE**
NEXT DAY DELIVERY AVAILABLE Please ring for details:

I enclose cheque/P.O. for £ _____
or please debit my Access Card No. _____

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NAME _____

ADDRESS _____

HCW17



COMPUSENSE LTD

286D Green Lanes, PO Box 169
Palmer's Green, London N13 5TN

Tel: 01-882 0681 01-882 6936

SOFTWARE FOR DRAGON 32

Hi-RES High Resolution Display for DRAGON 32

Supplied on Cartridge, for DRAGON 32 price £25.30
Hi-RES gives you a 51 column by 24 line display instead of the 32 column by 16 line display on your DRAGON 32 computer. If that was all it would be quite something, but in addition Hi-RES has the following features:

- * Hi-RES does not eliminate BASIC
- * Upper and lower case as standard
- * Auto repeat, International character sets
- * Improved shift control to give more key values
- * Redefinable characters and Sprites
- * Extra BASIC commands for screen control
- * About 19,500 bytes available for BASIC programs
- * Load and save programs and use printer normally
- * Return to standard display mode at any time
- * Graphics and text can be mixed on the screen

We firmly believe that Hi-RES is the most useful and powerful software item you can obtain for your DRAGON 32 computer.

Hi-RES does not invalidate any programs you have written so far, although you will find that they can be enhanced to take advantage of your new BIG screen — over twice the capacity of the existing screen.

How easy is Hi-RES to use?

Just plug the cartridge in, switch on your computer and Hi-RES will be in action. You will wonder how you ever managed before Hi-RES was around.

What about Graphics?

Hi-RES allows Sprite graphics which are not available on a standard DRAGON 32. If the entire character set is used then over two hundred sprites can be defined in a single program! The BASIC graphics functions work directly on the Hi-RES screen allowing you to mix text and drawings. Hi-RES allows two colours, green and white, in both normal (black on colour) and inverted (colour on black) mode.

What extra commands do I get?

Hi-RES implements two extra PRINT statements to allow normal and sprite printing on its big screen. Extra functions (about twenty) have been added to the CLS command. These allow you to change character sets, switch the cursor on and off, underline text and more...

Is there anything else?

Yes. Hi-RES extends the keyboard so that an extra shift is possible on the top row of keys. We supply you with a free overlay which neatly positions over the top of your keyboard, you write in the values depending on the character set selected.

Sounds good? — It's even better in the flesh! Place your order by phone or post or send a LARGE SAE for details of all our products.

Order by ACCESS-VISA or cheque by telephone or post. 24-hour
answerphone service.

They're here...
the **Space Zombies**



*This is
the latest
Space Arcade Game
from MIKROGEN
for 16K/48K Spectrum*

* Full screen hi-res graphics

* 1 or 2 players * Joystick option *

* Full sound and colour * Three playing speeds *

The fastest and best Arcade Game made so far! ONLY £5.95

Please add 40p per order for post & packing

Name _____

Address _____

HCW17

Mikrogen, Dept A1, 24 Agar Crescent, Bracknell, Berkshire, RG12 2BK
Access or Visa Card holders telephone (0344) 27317 (9am-6pm)

Old favourites get a face-lift

These programs are all versions of traditional games, converted to play on your micro

Scrabble 48K Spectrum £15.95

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

Writing a home computer version of Scrabble might seem like an impossibility, but Psion has got 90 per cent of the way there. Up to four players can play, and all or none of them can be the computer. There are four skill levels (and hence four speeds), and the program beat me on level 2.

Besides all the permutations of players and skill levels, there are several other options, and

good display, and a booklet which explains both the game rules and the program's operation. Too easy for the real Scrabble fanatic, perhaps, but for most of us a unique and fascinating program.

instructions	95%
playability	96%
graphics	87%
value for money	95%



even a modified display if you have a monochrome TV.

Being able to see the players' letters makes it less of a gamble to change letters. You can opt to see the computer's letters or not — and you can also watch it trying out different moves if you want.

About 11,000 words are held in the program's dictionary — not a lot compared to the Oxford Dictionary, but pretty good for a word it's checked against the list, and if no match is found, the computer asks, "Are you sure about...?" Type Y for yes and it takes your word for it; a great temptation to cheat if you're losing.

Excellent error trapping, a



Super Skill Hangman Dragon £7.95

Salamander Software, 27 Ditchling Rise, Brighton BN1 4QL

An excellent version of the standard word game for one or two players.

The computer selects a word at random out of a vast selection. If you guess the word in time you score a point; if you fail you lose a life. When you have lost three lives the game is over. The computer adjusts your skill level depending on how many guesses are taken for each word.

There are three levels of help — one gives the first letter, two gives a random letter and three gives no help at all. No help means just that, and it is possible to hang the man by simply pressing the same wrong letter over and over.

There is an option to play with the timer on. With this you have a 30-second time limit to guess each word.

J.M.

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



Backgammon 16K ZX81 £5.95

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

I'm no great shakes at backgammon, so this program suited me fine — it played a serious game, didn't get impatient, and never made rude remarks about my skill.

The screen display is uncluttered and easy to use, with the dice simulated at the bottom of the screen.

To move you just type in the letter corresponding to the posi-

tion you want to go to — the computer does the rest. Illegal moves are refused, with reasons. There's also a "doubling cube" facility for those who like to gamble.

Four levels are offered, and on the simplest, the ZX81 occasionally made a move which even I thought a bit silly. The other levels take longer, but on each you have the choice of fast or slow modes.

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

C.C.R.



Othello 48K Oric 1 £6.50

Kenema, 1 Marlborough Drive, Worle, Avon

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

My copy suffered from loading difficulties (even though it was saved at 300 baud), and despite several attempts I

couldn't obtain the on-screen instructions without crashing it.

The display is well laid out, but I fear the sound effects are a little overdone for a "thinking" program. ZAPs when reversing pieces. PINGs at the end of a move, and a rising scale while the Oric is thinking.

The computer's thinking time is in fact painfully slow, and to have the computer play itself soon gets very boring. Luckily, a human can intervene at any stage.

instructions	20%
playability	70%
graphics	80%
value for money	70%

D.N.



How to add new commands to your ZX81

Soon after the launch of the ZX81, there was a rumour circulating that the BASIC commands READ, DATA, and RESTORE were included on the original design specification of the ZX81, but these had to be dropped through lack of space on the 8K ROM.

While the omission has not caused many problems to programmers, there are circumstances when their absence has meant that valuable RAM space cannot be used economically.

One example is in filling a large array with data stored in a program. Without READ/DATA, the usual method is to have one LET statement for each element of the array — and that can consume a lot of space!

Make up for some of the ZX81's omissions. David Nowotnik has done the work for you

To overcome this problem, I wrote two machine code routines to imitate READ and RESTORE.

The assembly language listing of these routines is shown in Table 1. The total length of these routines is 128 bytes; they are stored in one REM line. This REM statement MUST be the first line of the program. Table 2 contains a hex loader, which places the machine code into the dummy REM line (line 1), which

starts by containing 132 full stops.

The numbers to enter using this routine are shown in the hex dump (Table 3). The hex numbers also appear in Table 1, so you can check that you are entering them in the correct order. In using the hex loader, enter one pair of hex

digits for each INPUT prompt; enter S to stop. Line 6 prevents you accidentally placing numbers into bytes which are not full stops.

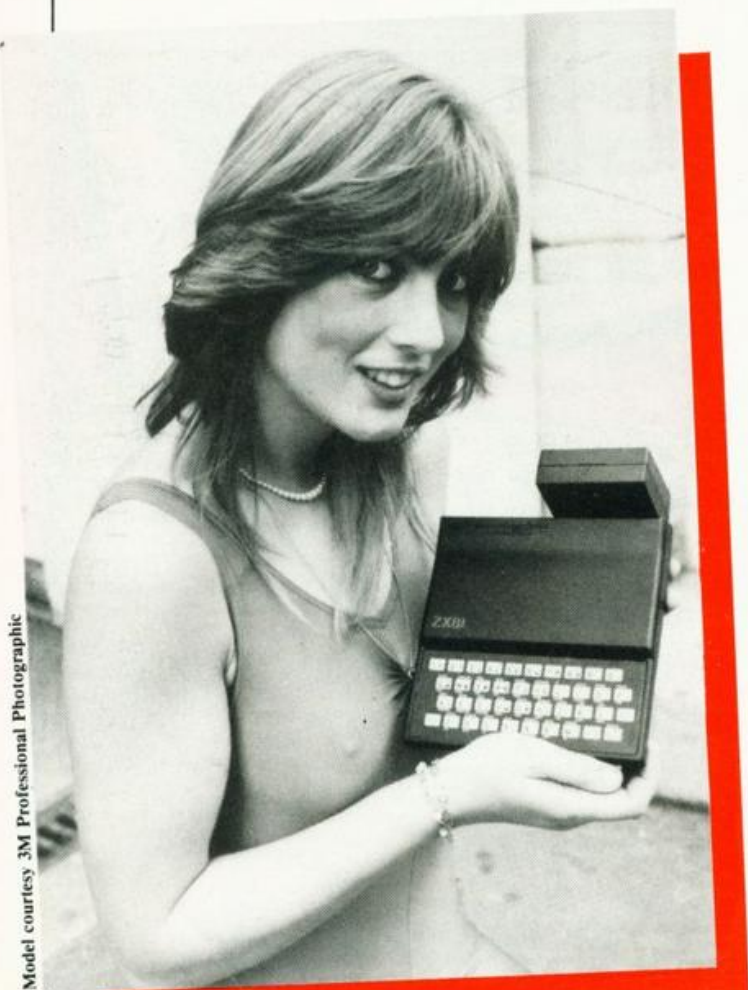
Once you have entered all the machine code, delete all lines except line 1, then enter the program lines in Table 4.

In most other computers, READ works by searching through a program from the beginning until a DATA line is found. The first number or word after DATA is read, and stored for future use as a variable. The next time READ is used, the next number or word is read, and so on.

Table 1 — assembly language listing

RE-STORE	LD HL,16516	218440	loads the address 16516 into 16516
	LD (HL),L	75	
	INC HL	23	(search start address)
	LD (HL),H	74	and zero into 16518
	INC HL	23	to indicate outside a data line
	LD (HL),0	3600	
	RET	C9	
READ	LD HL,(16516)	2A8440	Load the search address into HL, and the data line indicator into A. Do not search if in DATA line
	LD A,(16518)	3A8640	Search for a REM
	AND A	A7	
	JR NZ,to DATA FND	2018	
SEARCH REM?	LD A,(HL)	7E	
	CP 234	FEFA	
	JR Z, to REM FND	2803	
	INC HL	23	If not, look at the next byte
	JR to SEARCH	18F8	
REM FND	INC HL	23	REM found; is the next byte an inverse space?
	LD A,(HL)	7E	
	CP 128	FE80	
	JR Z, to ERROR	283C	yes, then out of data error.
	CP 8	FE08	if not CHR\$ 8, then carry on searching for a DATA line
	JR NZ, to REM?	20EF	The next DATA line has been found; set data indicator to one.
	INC HL	23	
	LD A,1	3E01	
	LD (16518),A	328640	
	EX DE,HL	EB	
DATA FOUND	LD HL,(16400)	2A1040	load HL with the address of A\$(1)
	LD BC,6	010600	
	ADD HL,BC	09	
	EX DE,HL	EB	Transfer to DE
	LD A,0	3E00	Load the character counter with zero
	LD (16519),A	328740	A has the next character
	LD A,(HL)	7E	Is it a comma?
	CP 26	FE1A	
	JR Z, to COMMA FND	2013	
	CP 118	FE76	or a NEWLINE character?
	JR Z, to N/L FND	280A	
	LDI	EDA0	If neither, transfer to A\$
	PUSH HL	E5	
	LD HL,16519	218740	
	INC (HL)	34	Increment the character counter
	POP HL	E1	
	JR to LOOP	18ED	Collect the next character
N/L FND	LD A,0	3E00	Set data line indicator to zero
COMMA FND	LD (16518),A	328640	
	INC HL	23	Place the next address in the address store
	LD (16516),HL	228440	Set BC equal to the number of characters for the return to BASIC
	LD B,0	0600	
	LD HL,16519	218740	
	LD C,(HL)	4E	
	RET	C9	
ERROR	NOP	00	
	LD HL,(16396)	2A0C40	Load HL with D-file
	LD BC,760	01F802	and add 760 to take HL to line 23 of the screen
	ADD HL,BC	09	place this address in DE
	EX DE,HL	EB	
	LD HL,16645	21FB40	Load HL with the address of the error message, BC with no. of bytes in message;
	LD BC,17	011100	print the message
	LDI	EDA0	error message; call RESTORE
	CALL 16520	CD8840	and jump back to READ
	JR to READ	1898	
	NOP	00	

The next 17 bytes carry the 'OUT OF DATA ERROR' message.



Karen Lewer, 22, persuades a ZX81 to do more

ZX81 PROGRAMMING

Table 2 — hex loader

```
1 REM.....
2 LET X=16514
3 INPUT A$
4 IF A$="S" THEN STOP
5 LET J=16*(CODE A$-28)+CODE A$(2)-28
6 IF PEEK X=27 THEN POKE X,J
7 LET X=X+1
8 GOTO 3
```

A DATA line can contain several words or numbers; each item is separated by a comma. Once you come to the end of a DATA line, READ will search for the next DATA statement in a program. If you try to READ more items of data than are present, you should get a system error message. RESTORE resets

C=VAL A\$(TO RAND USR READ)

Data is stored in a special REM line. To differentiate it from a normal REM, REM is followed by a graphic shift A (CHR\$ 8). The machine code routine recognises this combination as a DATA command.

Line 9999 (table 4) contains

combination of two together fools the LIST command into believing the end of the program has been reached.

You can list the rest of the program with LIST 2.

As a short example of how to use this routine, add the program lines in table 6 to those in table 5,

then RUN. After that, change the first data item in line 160 to 6. This will demonstrate how the 'out of data' trap works.

Note that you can mix numeric and string data in one data line. Unlike the Spectrum, quote marks are not required for string data.

Table 5 — an example of READ/DATA

```
100 LET C=VAL A$(TO RAND USR READ)
110 DIM Z$(C,10)
120 FOR I=1 TO C
130 LET Z$(I)=A$(TO RAND USR READ)
150 PRINT Z$(I)
160 NEXT I
170 REM 5, ONE, TWO, THREE, FOUR, FIVE
```

Table 3 — machine code hex listing

```
76 76 00 00 00 00 21 84 40 75 23 74 23 36 00 C9 2A 84 40 3A 86 40 A7 20
18 7E FE EA 28 03 23 18 F8 23 7E FE 80 28 3C FE 08 20 EF 23 3E 01 32 86
40 EB 2A 10 40 01 06 00 09 EB 3E 00 32 87 40 7E FE 1A 28 13 FE 76 28 0A
ED A0 E5 21 87 40 34 E1 18 ED 3E 00 32 86 40 23 22 84 40 06 00 21 87 40
4E C9 00 2A 0C 40 01 F8 02 09 EB 21 FB 40 01 11 00 ED B0 CD 88 40 18 98
00 34 3A 39 00 34 2B 00 29 26 39 26 00 2A 37 37 34 37
```

the data search 'pointer' to the beginning of the program.

My routine works in much the same way. Instead of commands READ and RESTORE, numeric variables with these names are declared (Table 4) which hold the addresses of the appropriate machine code routine. RESTORE is mimicked by the program line:

Table 4 — READ/RESTORE in-initialisation routine

```
1 REM
10 CLEAR
20 DIM A$(32)
30 LET READ=16530
40 LET RESTORE=16520
50 RAND USR RESTORE
9999 REM
```

RAND USR RESTORE

There are two versions of the READ command, one for numeric, and one for string data. Typical examples of these are: string: 100 LET C\$=A\$(TO RAND USR READ) numeric: 100 LET C=VAL A\$(TO RAND USR READ)

a REM command followed by an inverse space character (CHR\$ 128). This allows the routine to recognise the end of the program. Should you try to READ more data than is present, the machine code routine recognises the end of program marker, and prints the message 'OUT OF DATA ERROR' at the base of the screen.

An automatic RESTORE then occurs to prevent the program crashing.

The combination of CLEAR and DIM A\$(32) in table 4 ensures that A\$ is the first variable in the variables storage area of RAM.

The machine code depends on this; it uses A\$ as a temporary store. A\$ should be dimensioned to at least the length of the longest DATA item.

When you have entered the machine code, try LISTing the program. All you will get is: 1 REM.

The rest of the program is masked. The reason for this is the first two bytes after the REM; they have the hex value 76, which is the NEWLINE character. The

ICAPCON IGNITE OK NEARING TOUCHDOWN

MOONLANDER

1983 UPDATE OF MAN'S GREATEST EXPLOIT....

Push your nerve to its absolute limit!



Can you make a soft landing from a lunar orbit 120 miles high? Constant onscreen monitoring, AGS and pilot (MGS) systems based on realtime algorithms, close landing on IO/R scan, great graphics with touchdown status printout... don't run out of fuel or miss your safe land zone... full orbit schedule or touchdown practice from 200 feet Available only from ORION

inclusive £4.95

NEW

ZX81
16K

I am enclosing my (delete as necessary) cheque/ Postal Order/ International Money Order made payable to ORION SOFTWARE

LABEL POST

NAME

BLOCK CAPITALS Please

ADDRESS

HCW17

POSTCODE



orion pippbrook mill · london road · dorking · surrey ·



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

How it works

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

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

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

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

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

The figure leaves a trail behind him. For each door you

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

Hints on conversion

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

Here are the more unusual commands:

CALL KEY(M,K,S) Where K is the ASCII value of the key pressed, and S returns 1 if pressed. You can replace this with INKEY or GET.

CALL SOUND(D,N,V) Where D is duration, N is note in Hertz, V is the volume. Most machines have some sound capabilities — so it's easier to write your own.

CALL CHAR(A,N,S) Defines characters in Hexadecimal. N is the ASCII character to be redefined. Characters are defined left-to-right from the top. Each digit represents the pattern in a 1×4 horizontal block of pixels; so there are 2 Hex digits for each line of the 8×8 square.

CALL HCHAR(R,C,A,P) Positions ASCII character A, and repeats horizontally from coordinates C and R P times.

CALL VCHAR(R,C,A,P) As above except repeats vertically.

CALL COLOUR(S,F,B) Defines character foreground and background colour. Replace with GCOL or INK or other command.

CALL SCREEN(X) Sets screen colour. Replace with PAPER or VDU 19 or COLOUR statement.

CALL CLEAR Clears screen. Use CLS.

CALL GCHAR(R,C,V) Returns ASCII code of character at position R,C in variable V. Use a POINT or screen PEEK.

successfully pass through, your score increases by 100. If you try to pass through where there is no door you lose 35 points.

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

There are three levels of skill. An indicator at top left

shows you current level, you pass onto the next level automatically if your score is high enough. The game is fairly easy to play at the lowest level but it takes a good deal of skill to navigate your way around the harder mazes.

Variables

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

```
5 REM MINE MAZE D.H.SLINN.
10 CALL CLEAR
20 PRINT "      *****MINE MAZE*****"
30 PRINT
40 PRINT "YOU HAVE TO RACE AGAINST"
50 PRINT "TIME THROUGH DIFFERENT LAYERS"
60 PRINT "OF ROCK TO SAVE THE MINER."
70 PRINT
80 PRINT "THERE ARE 4 DIFFERENT"
90 PRINT "HARDNESS S OF ROCK RANDOMLY"
100 PRINT "PLACED. AS EACH SECTION IS"
110 PRINT "DRILLED IT S HARDNESS AND"
120 PRINT "THE POSITION OF ROCK OF THE"
130 PRINT "SAME HARDNESS IS SHOWN FOR A"
140 PRINT "SHORT TIME"
150 PRINT
160 PRINT "SOME OF THE ROCK IS TOO HARD"
170 PRINT "FOR YOUR DRILL "
180 PRINT
190 PRINT "      *****USE ARROW KEYS*****"
200 PRINT
210 PRINT
220 PRINT "PRESS ANY KEY TO START "
230 PRINT
240 CALL KEY(O,K,S)
250 IF S=0 THEN 240
260 CALL CLEAR
270 FOR I=9 TO 16
280 CALL COLOR(I,2,2)
290 NEXT I
295 REM DEFINE GRAPHICS
300 CALL CHAR(128,"3C18181818181818")
310 CALL CHAR(129,"1C18101F1C1C1476")
320 CALL CHAR(130,"03071F3F7F7FFFFF")
330 CALL CHAR(131,"FFFFFFFFFFFFFFFF")
340 CALL CHAR(132,"1818181818181818")
350 CALL CHAR(133,"FFA5A5A5A5A5A5FF")
360 CALL CHAR(134,"80C0C0E0F9F8FCFF")
370 CALL CHAR(135,"0")
380 CALL CHAR(136,"3F40FF4040585858")
390 CALL CHAR(137,"FC02FF02FAAFA02")
400 CALL CHAR(138,"3F40DF55555F4040")
410 CALL CHAR(139,"FC02FBAAAFD0202")
```


TI-99/4A PROGRAM

```

420 CALL CHAR(140,"FF81BDA5BD818181")
430 CALL CHAR(141,"3C42A59999A5423C")
440 CALL CHAR(142,"18242424243C5A5A")
450 CALL CHAR(143,"5A99999999999999")
460 CALL CHAR(144,"FFFFFFFFFFFFFF")
470 CALL CHAR(145,"030F1F3F3F7FFFFF")
480 CALL CHAR(146,"0000030F1F1F7FFF")
490 CALL CHAR(147,"000080C0C0E0F8FF")
500 CALL CHAR(148,"80C0C0E0F8F8CFF")
510 CALL CHAR(149,"00000000E0FFFF22")
520 CALL CHAR(150,"18183C5A5A18183C")
530 CALL CHAR(152,"FFC3A49999A542FF")
540 CALL CLEAR
550 CALL SCREEN(6)
560 CALL HCHAR(4,11,141)
570 CALL HCHAR(5,11,142)
580 CALL HCHAR(6,12,136)
590 CALL HCHAR(6,13,137)
600 CALL HCHAR(6,15,138)
610 CALL HCHAR(6,16,139)
620 CALL HCHAR(6,19,145)
630 CALL HCHAR(6,20,144)
640 CALL HCHAR(6,21,144)
650 CALL HCHAR(6,22,148)
660 CALL HCHAR(5,20,146)
670 CALL HCHAR(5,21,147)
680 CALL HCHAR(6,14,140)
690 CALL HCHAR(6,11,143)
700 CALL HCHAR(17,1,131)
710 CALL HCHAR(17,2,134)
720 CALL VCHAR(7,1,120,18)
730 FOR I=3 TO 10
740 CALL HCHAR(17,I,135)
750 NEXT I
760 CALL VCHAR(23,11,131,2)
770 CALL VCHAR(7,11,132,15)
780 CALL HCHAR(22,11,133)
790 CALL HCHAR(17,3,135,8)
800 FOR I=3 TO 9 STEP 2
810 CALL HCHAR(17,I,128)
820 NEXT I
830 CALL HCHAR(6,1,32,10)
840 CALL VCHAR(7,11,132,15)
850 CALL HCHAR(6,17,32,2)
860 CALL HCHAR(6,23,32,10)
870 CALL HCHAR(6,19,145)
880 CALL HCHAR(6,20,131,2)
890 CALL HCHAR(6,22,148)
900 FOR I=13 TO 27 STEP 2
910 CALL HCHAR(22,I,128)
920 NEXT I
930 FOR I=12 TO 26 STEP 2
940 CALL HCHAR(22,I,135)
950 NEXT I
960 CALL HCHAR(22,29,130)
970 CALL HCHAR(22,30,131,3)
980 FOR I=3 TO 9 STEP 2
990 CALL HCHAR(17,I,128)
1000 NEXT I
1005 REM POSITION DIFFERENT LAYERS OF ROCK
1010 RANDOMIZE
1020 C=12
1030 R=7
1040 A=INT(4*RND)+12
1050 CALL HCHAR(R,C,A*8,3)
1060 C=C+3
1070 IF C>32 THEN 1080 ELSE 1040
1080 C=12
1090 R=R+1
1100 IF R=22 THEN 1090 ELSE 1110
1110 IF R=25 THEN 1120 ELSE 1040

```

```

1120 C=2
1130 R=7
1140 A=INT(4*RND)+12
1150 CALL HCHAR(R,C,A*8,3)
1160 C=C+3
1170 IF C>10 THEN 1180 ELSE 1140
1180 C=2
1190 R=R+1
1200 IF R=17 THEN 1210 ELSE 1220
1210 R=R+1
1220 IF R=25 THEN 1230 ELSE 1140
1230 FOR I=1 TO 3

```

```

1240 C=INT(17*RND)+13
1250 CALL VCHAR(7,C,96,10)
1260 NEXT I
1270 FOR I=1 TO 3
1280 C=INT(9*RND)+2
1290 CALL VCHAR(8,C,96,7)
1300 NEXT I
1310 FOR I=1 TO 4
1320 R=INT(14*RND)+7
1330 C=INT(7*RND)+2
1340 CALL HCHAR(R,C,152,3)
1350 CALL VCHAR(R,C+2,152,2)
1360 NEXT I
1370 FOR I=1 TO 12
1380 R=INT(16*RND)+7
1390 C=INT(19*RND)+12
1400 CALL HCHAR(R,C,152,2)
1410 CALL VCHAR(R,C+1,152,3)
1420 NEXT I
1430 CALL HCHAR(22,28,129)
1440 CALL COLOR(13,2,15)
1450 CALL VCHAR(7,1,120,18)
1460 CALL HCHAR(17,2,134)
1470 CALL COLOR(14,15,6)
1480 CALL COLOR(15,2,6)
1485 REM EXPLOSION
1490 CALL SOUND(1000,-4,0)
1500 CALL SOUND(100,-7,0)

```

```

1510 CALL HCHAR(22,26,134)
1520 CALL SOUND(100,-6,0)
1530 CALL HCHAR(22,25,144)
1540 CALL SOUND(50,-7,2)
1550 CALL HCHAR(22,18,144,7)
1560 CALL SOUND(600,-6,2)
1570 CALL HCHAR(22,17,130)
1580 CALL SOUND(1000,-7,0)
1590 CALL HCHAR(22,15,134)
1600 CALL HCHAR(22,14,130)
1610 CALL HCHAR(22,11,134)
1620 FOR I=1 TO 3
1630 CALL HCHAR(6,2,150)
1640 FOR D=1 TO 200
1650 NEXT D
1660 CALL HCHAR(6,2,32)
1670 FOR D=1 TO 100
1680 NEXT D
1690 CALL SOUND(50,1000,5)
1700 NEXT I
1710 CALL HCHAR(6,2,150)
1715 REM SET UP START OF COUNT
1720 TIME=90
1730 R=6
1740 C=2
1750 TIME=TIME-1

```



```

1760 IF LEN(STR$(TIME))=1 THEN 1770 ELSE 1780
1770 CALL HCHAR(4,26,32)
1780 FOR I=1 TO LEN(STR$(TIME))
1790 CALL HCHAR(4,I+24,ASC(SEG$(STR$(TIME),I,1)))
1800 NEXT I
1810 CALL SOUND(100,-4,2)
1820 CALL KEY(0,K,S)
1825 REM TEST FOR 'OUT OF TIME'
1830 IF TIME=0 THEN 3380
1840 IF K=68 THEN 1900 ELSE 1850
1850 IF K=83 THEN 1920 ELSE 1860
1860 IF K=69 THEN 1940 ELSE 1870
1870 IF K<>88 THEN 1750 ELSE 1880

```


99/4A PROGRAM

```

1880 DR=+1
1890 GOTO 1950
1900 DC=+1
1910 GOTO 1990
1920 DC=-1
1930 GOTO 1990
1940 DR=-1
1950 RR=R
1960 CC=C
1970 R=R+DR
1980 GOTO 2020
1990 CC=C
2000 RR=R
2010 C=C+DC
2020 IF C>32 THEN 2030 ELSE 2050
2030 C=32
2040 GOTO 1750
2050 IF C<1 THEN 2060 ELSE 2080
2060 C=1
2070 GOTO 1750
2080 IF R<6 THEN 2090 ELSE 2110
2090 R=6
2100 GOTO 1750
2110 IF R>24 THEN 2120 ELSE 2140
2120 R=24
2130 GOTO 1750
2135 REM TEST FOR HARDNESS OF ROCK
2140 CALL HCHAR(R,C,X)
2150 IF X=96 THEN 2370
2160 IF X=104 THEN 2450
2170 IF X=112 THEN 2560
2180 IF X=120 THEN 2820
2190 IF X=32 THEN 2920
2200 IF X=121 THEN 2950
2210 IF X=128 THEN 2990
2220 IF X=134 THEN 3020
2230 IF X=144 THEN 3020
2240 IF X=130 THEN 3020
2250 IF X=148 THEN 3020

```

```

2260 IF X=145 THEN 3020
2270 IF X=135 THEN 2990
2280 IF X=129 THEN 3060
2290 IF X=143 THEN 3460
2300 IF X=132 THEN 3480
2310 IF X=136 THEN 3550
2320 IF X=137 THEN 3550
2330 IF X=138 THEN 3550
2340 IF X=139 THEN 3550
2350 IF X=152 THEN 2660
2360 GOTO 1750
2370 CALL COLOR(9,11,11)
2380 CALL SOUND(200,30000,30,30000,30,440,30,-4,0)
2390 CALL SOUND(400,30000,30)
2400 CALL COLOR(9,2,2)
2410 GOSUB 3220
2420 CALL HCHAR(RR,CC,135)
2430 CALL HCHAR(R,C,150)
2440 GOTO 1750
2450 REM
2460 FOR D=1 TO 2
2470 CALL COLOR(10,10,10)
2480 CALL SOUND(200,30000,30,440,12,440,30,-4,0)
2490 CALL SOUND(400,30000,30)
2500 CALL COLOR(10,2,2)
2510 GOSUB 3220
2520 NEXT D
2530 CALL HCHAR(RR,CC,135)
2540 CALL HCHAR(R,C,150)
2550 GOTO 1750
2560 FOR D=1 TO 3
2570 CALL COLOR(11,5,5)
2580 CALL SOUND(200,30000,30,880,12,440,30,-4,0)
2590 CALL SOUND(400,30000,30)
2600 CALL COLOR(11,2,2)
2610 GOSUB 3220
2620 NEXT D
2630 CALL HCHAR(RR,CC,135)
2640 CALL HCHAR(R,C,150)
2650 GOTO 1750
2660 FOR D=1 TO 3
2670 CALL COLOR(16,16,2)
2680 CALL SOUND(200,30000,30,1000,12,440,30,-4,0)
2690 CALL COLOR(16,2,2)
2700 NEXT D
2710 IF K=68 THEN 2760

```

```

2720 IF K=83 THEN 2780
2730 IF K=69 THEN 2800
2740 R=R-1
2750 GOTO 1750
2760 C=C-1
2770 GOTO 1750
2780 C=C+1
2790 GOTO 1750
2800 R=R+1
2810 GOTO 1750
2820 FOR D=1 TO 4
2830 CALL COLOR(12,4,4)
2840 CALL SOUND(150,30000,30,880,12,440,30,-4,0)
2850 CALL SOUND(400,30000,30)
2860 CALL COLOR(12,2,2)
2870 GOSUB 3220
2880 NEXT D
2890 CALL HCHAR(RR,CC,135)
2900 CALL HCHAR(R,C,150)
2910 GOTO 1750
2920 CALL HCHAR(RR,CC,32)
2930 CALL HCHAR(R,C,150)
2940 GOTO 1750
2950 CALL SOUND(100,200,4,210,4,-4,3)
2960 CALL HCHAR(RR,CC,135)
2970 CALL HCHAR(R,C,150)
2980 GOTO 1750
2990 CALL HCHAR(RR,CC,135)
3000 CALL HCHAR(R,C,150)
3010 GOTO 1750
3020 CALL SOUND(100,110,9,140,9,440,30,-4,0)
3030 CALL HCHAR(RR,CC,135)
3040 CALL HCHAR(R,C,150)
3050 GOTO 1750
3060 FOR I=1 TO 4
3070 CALL SOUND(100,1000,2)
3080 FOR D=1 TO 50
3090 NEXT D
3100 NEXT I
3105 REM WINNING ROUTINE
3110 M$="YOU DID IT!"
3120 R=18
3130 C=19
3140 GOSUB 3310
3150 M$="PRESS ANY KEY"
3160 R=20
3170 C=18
3180 GOSUB 3310
3190 CALL KEY(O,K,S)
3200 IF S=0 THEN 3190
3210 GOTO 780
3215 REM TIME COUNTDOWN ROUTINE
3220 TIME=TIME-1
3230 IF LEN(STR$(TIME))=1 THEN 3240 ELSE 3250
3240 CALL HCHAR(4,26,32)
3250 FOR I=1 TO LEN(STR$(TIME))
3260 CALL HCHAR(4,I+24,ASC(SEG$(STR$(TIME),I,1)))
3270 NEXT I
3280 CALL SOUND(100,-4,2)
3290 IF TIME=0 THEN 3380
3300 RETURN
3305 REM PRINT MESSAGE ROUTINE
3310 FOR I=1 TO LEN(M$)

```

```

3320 CD=ASC(SEG$(M$,I,1))
3330 CALL HCHAR(R,C,CD)
3340 C=C+1
3350 NEXT I
3360 RETURN
3370 STOP
3375 REM LOSE ROUTINE
3380 CALL SOUND(100,200,4)
3390 CALL SOUND(250,110,1)
3400 M$="***FAILED***"
3410 R=18
3420 C=17
3430 GOSUB 3310
3440 GOTO 3150
3450 END
3460 C=10
3470 GOTO 1750
3480 FOR D=1 TO 4
3490 CALL SOUND(200,400,4,200,4,-4,2)
3500 GOSUB 3220
3510 NEXT D
3520 CALL HCHAR(RR,CC,135)
3530 CALL HCHAR(R,C,150)
3540 GOTO 1750
3550 R=7
3560 GOTO 1750

```


STARTTECH

Absolutely
the lowest
prices!



VIC 20 16K RAM PACK £28.95

Including VAT and Postage and Packing.

Tick for further information

- ☐ VIC 20 PRODUCTS
☐ COMMODORE 64

All prices subject to
availability or change without notice.

PLEASE SEND ME

VIC 20 16K RAM PACK

Qty

Price

£28.95

TOTAL

(24hr. ANSAPHONE SERVICE)

Name _____

Address _____

I enclose Cheque, P/O for _____

CREDIT CARD ☐ ACCESS ☐ BARCLAY CARD ☐

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

HCW17

STARTTECH

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

Games of the unexpected for the unafraid...

THE WHITE BARROWS

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

A real brain twister, White Barrows requires both brains and brawn from its players. It's no good just hacking your way through the Barrows and hoping to fall over the Sorcerer. Eventually you'll meet a Dragon, and they don't hack easily! You'll need all your strength and cunning to survive this one for long.

THE WHITE BARROWS Only £6.50 all inclusive!

CELLS AND SERPENTS

More monsters than you ever thought could live behind your keyboard. Wander the hills in search of gold and glory but be very, very careful where you tread! There are things here that will make your wildest nightmares look like Julie Andrews. Fancy meeting a Mind Flyer, for example? Or how about shaking hands with an Asmodeus? (You'll only do that once!) Treasure is here to be found though... the hard way.

See just how good you really are at adventuring with this practically unsurvivable fantasy. Not for the faint of heart or the slow of sword.

CELLS AND SERPENTS Only £6.50 all inclusive!

** SPECIAL DEAL **

Both programs for only £11.45 all inclusive!

Our Adventure Series programs are available on tape for the following systems:

Commodore VIC-20 (not available for White Barrows), Commodore PET, Sharp MZ-80A and MZ-80K, Tandy TRS-80 Model 1, BBC Model B or 32K Model A, Atari 400 and 800, Sinclair 48K ZX Spectrum.

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

Please send me . . . tape(s) of the following programs:
The White Barrows @ £6.50 each
Cells and Serpents @ £6.50 each
Both tapes at special price only £11.45
My system is a computer

TRADE ENQUIRIES WELCOME

I am enclosing my Cheque/Postal Order/Money Order
(delete as necessary) for £ . . . (payable to ASP Ltd)
OR Debit my Access/Barclaycard (delete as necessary)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please use BLOCK CAPITALS and include your postcode
NAME (Mr/Ms)
ADDRESS
POSTCODE
Signature Date

Something for everyone in the micros of '83

The all-purpose micro?

Memotech's MTX500, from a company best known for ZX81 add-ons, is one of the heavyweights of the new bunch — in price as well as size and weight.

Due on sale in two months at about £275, it is being promoted as the all-purpose computer.

Starting from the outside, it is clad in black aluminium with a 79-key QWERTY typewriter-style keyboard with, to the right, 12 keys for numbers, cursor control and editing plus a further eight user-definable function keys.

Inside is 32K of RAM — expandable to 512K — plus 16K of video RAM. It can display 16 colours, text on a 40-column screen, and graphics at 256 by 192 with moving user-definable graphics, or sprites.

Standard outputs are Centronics-type printer port, two ports for joysticks, an uncommitted input-output port, 2400 baud cassette port, separate ports for TV and monitor, three-voice sound with hi-fi output and a dedicated port for cartridges.

Optional expansions — with more promised — include 80-column colour video board, twin RS-232 interfaces and 5¼in and 8in floppy disc interfaces to run CP/M, the operating system for much business software.

In the 16K ROM are Memotech's BASIC, the LOGO language used in education for sprites and NODDY, a language which makes question-and-answer programming simpler, according to Memotech.

There is also an assembler/disassembler with a special screen display — controlled by the keyboard — of the storage locations of the computer's Z80 processor, the memory and the program.

Machine code can be stepped through one instruction at a time and called from BASIC.

Pascal comes as an add-on ROM pack.

Memotech is promising at



Gloria Douse, 20, with the Laser 200

least 12 arcade-style games at launch, four business programs, including a spreadsheet and word processor, the first two of a series of educational programs and four board games — chess, backgammon, Othello and draughts.

Financial manager Robin Tupper said the MTX500 production would be split, with a third each going to America and Europe.

Memotech, Station Lane Industrial Estate, Witney, Oxon OX8 6BX

Atari's large-scale launch

Atari is soon launching no less than four computers here, together with about 11 peripherals and accessories.

No prices have yet been decided. All the new micros will be compatible with existing software, they will have full typewriter-style keyboards and four extra graphics modes to add to the present 12 which can be called from BASIC.

These are the details so far:

- The 600XL has 16K of RAM — expandable to 64K — built-in BASIC in the 16K ROM, four voices, 16 colours in a choice of 16 shades, help key, self-test feature and cassette port.

- The 800XL is similar, but with 64K of RAM as standard.

- The 1400XL has all the features of the first two, plus four function keys, a modem interface — replacing the modem in the U.S. model — and a built-in voice synthesiser controlled by English-like commands.

- The 1450 XLD is the top of the new range — the D stands for disc. It has a built-in double-sided dual density drive for a 5¼in floppy disc. Alongside is a storage compartment which can be easily replaced with a second drive.

The first two are due for possible release in the late autumn.

Among the new peripherals and accessories:

A four-colour printer-plotter — using small ballpoint pens on 4½in plain paper — similar to the models marketed by Tandy, Oric and others.

A restyled and updated program recorder.

An 80-column dot matrix printer, needing no interface for Atari computers, running at a claimed 40 characters per second.

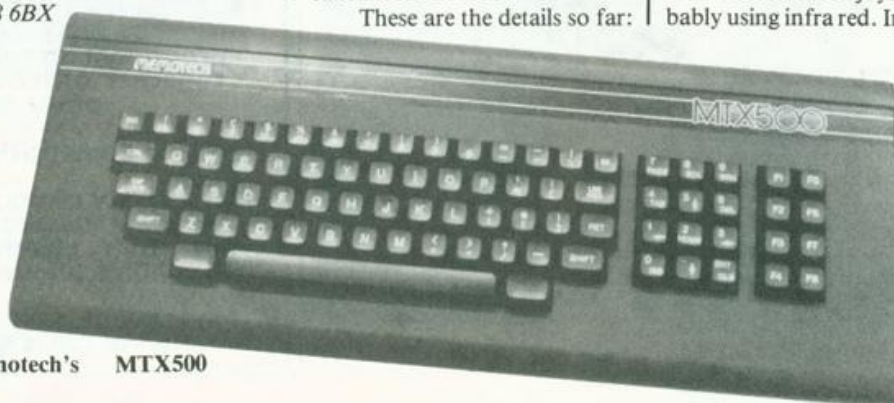
A letter-quality printer.

A CP/M 2.2 module — the operating system used for much business software — which also adds 64K of RAM and 80-column monitor output.

A 5¼in floppy disc drive.

A touch tablet with built in pen for easier drawing on screen.

A remote control joystick, probably using infra red. In America



Memotech's MTX500

SPECIAL REPORT

radio is used, but regulations forbid this in the UK.

A "trak-ball" controller with two fire buttons — similar to arcade machines.

A pistol-type joystick with fire button.

An external processor bus for memory expansion and future peripherals.

Atari (UK), Atari House, Railway Terrace, Slough, Berks SL2 5BZ

Adler's identity crisis

In the upper price bracket is the £400 Alphatronic PC from Triumph Adler, the giant West German company well-known for its typewriters.

It is the company's first venture into personal computers, although it has been supplying business micros for some years.

The Alphatronic PC, using a Z80 microprocessor, has 64K of RAM, 32K of ROM — including a 24K BASIC — a typewriter-style keyboard with six function keys and a slot for cartridges, including an extra 16K of RAM.

It can display eight foreground and eight background colours on screen.

Outputs include RS-232 and Centronics-type for printers, black and white TV, RGB and monitor and floppy discs — a drive for discs is available.

It uses the CP/M operating system, so the existing range of about 300-plus programs, mainly for business, would be available, said marketing manager John Kendall.

He said: "We are confused because everyone seems to want it. People who have got Sinclair machines want to get to something which is more powerful and a lot of companies want it too. There is a big demand for a standard 64K CP/M computer."

"I would imagine that the Commodore 64 will come under a major threat."

The Alphatronic, due to go on sale in October, would have a target of 40 programs — half educational and half games — available from day one.

Triumph Adler, 27 Goswell Road, London EC1M 7AJ

Made in Hong Kong

Two low-cost computers will soon be reaching the dealers from

Hong Kong — the Laser 200 and the COMX 35.

The Laser is aimed at the newcomer to computing and, at £69.95, is claimed to be the world's lowest priced colour computer.

It has 45 rubber-like keys, 4K of RAM — expandable to 68K — and Microsoft BASIC in the 16K ROM. In text mode it has 32 columns by 16 rows with maximum graphics resolution of 128 by 64. Eight colours are available and there is a single channel sound generator.

And, like the Spectrum, it has single keyword entry.

Computers for All, the UK distributors, says a range of software will be available starting in July, along with a printer-plotter at £149.95 using 4½ in rolls of plain paper and ballpoint pens, similar to the model marketed by other companies.

Also due: a 16K RAM pack at £29.95; joysticks, £19.95 a pair; Centronics printer interface, £19.95; light pen, £19.95; 64K RAM pack, £59.95.

FORTH and another

BASIC are promised for August at £5.95 on cassette.

The COMX 35 includes a built-in joystick to the left of the keyboard in its price of £119.95. The 55 keys are similar to those on the Tandy Colour Computer.

Unlike the Laser, which uses the popular Z80A processor, the COMX has the less well-known 1802.

Although it offers 35K of RAM — hence the name — 3K is used to handle the screen, leaving 32K of user RAM, and 16K of ROM.

The COMX comes with 10 programs on a free cassette tape and the manufacturers are working on a plug-in printer interface.

● The Laser 200 has a sister, the Zeta, which has 8K of RAM and an estimated price of £89. It is being distributed by a different company, although it is made by the same Hong Kong firm, Video Technology. Both are developments of an earlier computer called the VZ200.

Computers for All, 72 North Street, Romford, Essex

You could be on our pages

We welcome programs articles and tips from our readers.

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

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

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

Competitive rates are paid.

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

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



The COMX 35 shown off by Joanna Cox, 27

"IT LOOKS NICE BUT WHAT THE HELL CAN I DO WITH IT?"

Every ZX SPECTRUM Print'n'Plotter Jotter has 100 pages of finely printed screen grids.

50 for the high resolution screen. 50 for the normal character screen.

With these at your disposal you can plan practically any graphics print-out to program into your computer.

The high-resolution PLOT grid shows every one of the 45,060 pixels! Every one printed. Every one with its co-ordinate numbers. This gives you enormous graphics power to DRAW, PLOT, CIRCLE, PLOT OVER and so on in any position or screen building up graphic drawings, charts, maps... in fact anything without the complications of guesswork, Integer out of range, or wrongly positioned pixel colours which change PRINTED INK characters!

The normal character PRINT grids on the other hand will allow you to be specific about PRINT AT, TAB, PRINT OVER, SCREENS and INK / PAPER in direct co-ordination with PLOT... you see every page is printed on high quality tracing paper... ideal to overlay on to illustrations and 'copy' or co-ordinate.

And there's another bonus, because each page contains 24 User-definable grids — 2400 per pad!

With 50 pages of PLOT grids, 50 pages of PRINT grids 2400 user-definable grids, a set of colour pens, a printed PIXEL RULER and our Special Offer of demo programs, IT'S THE BEST VALUE IN ZX GRAPHICS PROGRAMMING.



"PRINTER PAPER THAT WORKS? I DON'T BELIEVE IT!"

Five rolls of our PRINTER PAPER will only cost you £12.50 including postage, packing and VAT! And you'll gain a great deal more! It prints beautifully. It's not too thick. It's not too shiny. Print is black — not grey. It actually feeds through the machine! See for yourself only £12.50 including everything. It's a bargain!



"NOW WHICH KEY DO I PRESS TO SHOOT DOWN THE THING FROM MARS?"

Ever forgotten which key to press when playing a game? Do you suffer from a mind-boggling mass of programmed keys? Do you write programs that use different keys to perform various functions? If so, we have just the thing for your ZX SPECTRUM.

A pack of Print'n'Plotter Keyboard Overlays.

Just write the function or functions under each key you program and keep the overlay for the next time you play the game. Of course there's lots of more uses you will find for our OVERLAYS, user defined characters, keyboard scanners, mathematical programs, business uses — to name just a few.

There's TEN OVERLAYS to a pack — so you can program with impunity! And they fit perfectly onto your standard ZX SPECTRUM KEYBOARD. Each OVERLAY is printed with the cursor movement key directions and there's room for program name etc.



A SPECTRUM CONSOLE THAT EVERYONE CAN AFFORD!

For the cost of a 'games' cassette you can have a truly professional console for your SPECTRUM!

We've cut costs (not cut quality) by designing a self-assembly method using relatively inexpensive materials like strong corrugated board.

The result is a console that's tough, light, highly finished and capable of giving years of useful service.

Facilities include ergonomic keyboard angle, access to rear of machine, choice of P.S.U. internal or external, and alternative of Printer on-board or cassette storage area. Fully illustrated instructions are included.



Post today to Print'n'Plotter Products, 19 Borough High Street, London SE1 9SE or phone: 01-403 6644 (General) or 660 7231 (Credit Card Sales).

Name:

Address:

.....

.....

- ZX SPECTRUM JOTTER @ £9.95 each
- ZX SPECTRUM KEYBOARD OVERLAYS @ £2.95 per pack
- ZX SPECTRUM CONSOLE @ £8.25 each
- ZX PRINTER PAPER @ £12.50 per five rolls
- ZX SPECTRUM DEMO CASSETTES @ 95p each
- ZX81 JOTTER PADS @ £3.50 each
- ZX81 FILMS @ £2.25 each
- ZX81 GRAPHICS PROGRAMMING GUIDE @ £1.50 each

Remittance enclosed. Please bill my Access / Barclaycard / Visa / Mastercard No:

All prices include VAT, P&P. Overseas orders please add 25% for additional surface mail.

**Print'n'plotter
Products**

"WHERE CAN I GET THEM?"

You can see and buy most of our products at:
W. H. Smith (Computer Stores)
Boots (selected branches)
Buffer Micro (Streatham 01-769 2887)
Microware (Leicester 0533 29023)
Dennys Bookshops (London EC1 01-253 5421)
Personal Computer Services (Darwen Lancs 0254 776677)
Telford Electronics & Computing (Shifnal 0952 460008)
Georges Bookshop (Bristol 0272 276602)
Microtech Systems (Glillingham Kent 0634 571321)
Northampton Home Computer Centre (0604 22539)
Phillip Copley Hi Fi (Ossett W. Yorks 0924 272545)
Darlington Computer Shop (Darlington 0325 487478)
Lancashire Micros (Morecambe Lancs 0524 411435)
North East Computers (Peterhead 0779 79900)
Photo-Video (Hereford 0432 267997)
Computers for All (Romford 0708 752862)
March Software (Sawbridgeworth Herts 0279 724341)
Evesham Micro Centre (Worcs 0386 48635)
Computer City (Widnes, Cheshire 051 420 3333)
Landau Electronics (Sutton 01-643 5494)
D.J. Computers (Stevenage 0438 65501)
Software Machine (London SE3 01-305 0521)
Educational Supplies through Griffin & George Ltd.
Australian agents: Centrium Systems. Tel. (Perth) 4441031.

SELL, EXCHANGE or BUY SOFTWARE

the COMPUTERHOUSE WAY

By becoming a member of COMPUTERHOUSE and entering your unwanted software on the COMPUTERHOUSE lists (which are circulated to all members) you get the opportunity to sell or buy software at 80% of its original cost. Alternatively as a member you can simply exchange at no extra cost to yourself other than postage.

MEMBERSHIP ONLY £12.95 per annum

For further details of membership and other benefits send large SAE to:

COMPUTERHOUSE (HCW 17)

Freepost

ILFORD, ESSEX IG1 2BR

NAME _____

ADDRESS _____

How's your aim? It could save your life

This game gives the word bomber the meaning it had during World War Two. You must use your bomb aiming skills to destroy the city below before your aircraft loses power and crashes into the high-rise buildings.

The program is devised to increase the difficulty as each raid is successfully completed.

The score moves from one game to the next until the inevitable crash occurs as the aircraft runs out of fuel before it has cleared enough space to land.

Hints on conversion

This program should run as it stands on the Tandy Colour Computer, but when converting for other micros, the following points must be taken into account:

- The Dragon has the ability to have two graphics screens and a text screen, all set up at the same time

- The text screen has a resolution of 32 by 16 and the high resolution is 256 by 192

- The GET and PUT commands form a powerful alternative to user defined graphics

- P SET is the same as PLOT, and PRESET is the same as UNPLOT

- On most micros you can print on the high-resolution screen — this means you can forget about most of the score routines.

A version of the classic arcade game, Bomber, written for the Dragon by Ian Sellman

The only operation required is the bomb aim and release mechanism, controlled by the space bar.

You could play it with friends as Bomber is ideal for competitive play.

How it runs

10 speeds up the Dragon. If you press Break, peculiar things will happen to your next program.

20-140 title page
150-200 instructions

210-290 dimension arrays and set variables

300-430 draw plane and bomb and GET them into an array

440-650 draw city

660-780 plane's movement loop

790-870 bomb movement sub-routine

880-1050 crash routine

1060-1130 end routine

1140-1270 land routine

1280-1360 score sub-routine

1370-1450 city score sub-routine

1460-1550 routine for drawing numbers

Dragon Basic — a version of Microsoft — is extremely powerful and the 6809E processor, which is in the class of the BBC for speed, makes this program very hard to convert.

I suggest you completely rewrite the program for your own micro.

Main variables

P(20,10), PI(20,10) arrays containing plane, space which erases plane

B(10,10), BI(10,10) array containing bomb, space which erases bomb

Y,X height, horizontal position of plane

Z amount by which plane loses height on each pass

S, SS score

C, CS city being bombed

T building being drawn

H height of building

F set to 1 if bomb is on screen

B (lines 600 on) number of selections of building to be destroyed, each section having one row of windows

```
10 POKE&HFFD7,0
20 CLS
30 PRINT@33,"*****"
***
40 PRINT@55,"*****"
***
50 PRINT@449,"*****"
****
60 PRINT@417,"*****"
****
70 FORX=33 TO449STEP32
80 PRINT@X,"**";
90 PRINT@X+28,"**";
100 NEXTX
110 PRINT@172,"bomber";
120 PRINT@230,"";
130 PRINT@299,"MARCH '83";
140 PLAY"CDEFGABBAGFEDC"
1.C SELLMAN";
```

```
150 CLS
160 PRINT@12,"BOMBER";
170 PRINT@44,"*****";
180 PRINT@128," THE AIM OF BOMBER IS FOR
YOU BY PRESSING THE SPACEBAR TO DROP
OMBS FROM YOUR PLANE TO DESTROYTHE CITY
SO YOU CAN LAND. WHEN YOU HAVE LANDED Y
OU ARE GIVEN ANOTHER CITY TO DESTROY.
THE GAME ENDS WHEN YOU CRASH INTO A B
UILDING.
190 PRINT@448,"PRESS A KEY TO PLAY";
200 IF INKEY$="" THEN 200
210 PCLEAR8
220 DIM P(20,10)
230 DIM PI(20,10)
240 DIM B(10,10)
250 DIM BI(10,10)
260 Y=20
270 Z=5
280 S=0
290 C=1
300 PMODE4,1:PCLS
310 DRAW"BM10,10D4RL5DRD4RL3RJ1U3RL6RD4R
7U2D5U3L14DR5D2LR6LU2R2L10"
320 CIRCLE(100,100),5
330 PAINT(100,100)
340 GET(8,8)-(28,18),P,G
350 GET(95,95)-(105,105),B,G
360 GET(10,100)-(30,110),PI,G
370 GET(10,100)-(20,110),BI,G
380 PMODE4,5:SCREEN1,1
390 PMODE4,5:PCLS
400 FORX=10TO20
410 DRAW"BM"+STR$(X)+",150S32BM+0,-606E2
F2U6BM+4,+6U5ER2FD5U3L4BM+9,+3R2LU6LR2BM
+6,+6U6L2R4BM+4,+6S4"
420 SCREEN1,1
430 NEXTX
```



```

440 REM**draw*buildings*****
450 PMODE4,1:PCLS
460 LINE(5,190)-(243,190),PSET
470 FOR T=0TO19
480 FOR B=0TORND(7)+2
490 PMODE4,5
500 PUT(X,50)-(X+20,60),P1,PSET
510 X1=X+10
520 IF X1>230 THEN X1=1
530 PUT(X1,50)-(X1+20,60),P,PSET
540 PMODE4,1
550 LINE(5+T*12,190-B*5)-(15+T*12,185-B*
55),PSET,BF
560 FOR J=2TO8STEP2
570 PRESET(5+T*12+J,187-B*5)
580 NEXTJ,B,T
590 REM**status*line*****
600 LINE(0,10)-(256,10),PSET
610 DRAW"BM11,8HU4ER2FHL2GD4FR2EBM+5,+1R
2LU6LR2BM+6,+6U6L2R4BM+6,+6U4H2F2E2BM+4,
+1DBM+0,+2D":REM*"cities:"*
620 DRAW"BM100,7FR2EH4ER2FBM+5,+5HU4ER2F
HL2GD4FR2EBM+5,+1R2EU4HL2GD4FBM+7,+0U6R3
FDGL3RF3BM+4,+0R4L4U3R4L4U3R4BM+4,+1DBM+
0,+2D":REM*"score"*
630 GOSUB 1280
640 GOSUB1370
650 SCREEN1,1
660 REM**movement*loop*****
670 FOR X=0TO235 STEP10
680 PUT(X,Y)-(X+20,Y+10),P,PSET
690 IF INKEY$=CHR$(32) THEN IF F=1 THEN
700 ELSE F=1:Y=Y+10:X=X+5:B=RND(3)+2:S
OUND200,1
700 IF F=1 THEN GOSUB 790 ELSE FOR D=1TO
100:NEXTD
710 IF Y>175 AND X>200 THEN GOTO1140
720 FORA=0TO20
730 IF PPOINT(X+A,Y+11)<>0 THEN 880
740 NEXTA
750 PUT(X,Y)-(X+20,Y+10),P1,PSET
760 NEXTX
770 Y=Y+2
780 GOTO670
790 REM**bomb*****
800 PUT(X1,Y1)-(X1+10,Y1+10),B,PSET
810 FORA=0TO10
820 IF PPOINT(X1+A,Y1+11)<>0 AND Y1<181T
HEN S=S+10:B=B-1:GOSUB1280:GOTO840
830 NEXTA
840 PUT(X1,Y1)-(X1+10,Y1+10),B1,PSET
850 IF B<1 OR Y1>180 THEN F=0
860 Y1=Y1+10
870 RETURN
880 REM**crash*****
890 PMODE3,1:SCREEN1,RND(2)-1

```

```

900 COLORRND(4)
910 FORQ=1TO50
920 COLORRND(4)
930 LINE(X+20,Y+5)-(RND(256),RND(182)+10
),PSET
940 SOUNDNRND(55)+200,1
950 NEXTQ
960 FOR X=0TO10
970 DRAW"BM"+STR$(X)+",100S28C8BM+1,+0HU
4ER2FHL2GD4FREBM+4,+1U6R3FDGL3RF3BM+4,+0
U5ER2FD5U3L4BM+8,+2FR2EH4ER2FBM+4,+5U6D3
R4U3D5BM+4,+0"
980 NEXTX
990 FORT=1TO25
1000 FORU=0TO1
1010 SCREEN1,U
1020 FORD=1TO100:NEXTD
1030 NEXTU,T
1040 A$=INKEY$
1050 CLS
1060 SCREEN0
1070 PRINT@12,"BOMBER"
1080 PRINT@44,"*****"
1090 PRINT@128," YOU HAVE CRASHED. BEFOR
E YOU CRASHED YOU SCORED";S;"POINTS ",
"AND DESTROYED";C;" CITIES";
1100 PRINT@448,"DO YOU WISH ANOTHER GO (
Y/N)?";
1110 A$=INKEY$:IF A$="" THEN 1110
1120 IF A$="Y" THEN RUN
1130 POKE&HFFD6,0:CLS:END
1140 REM**landed*****
1150 FOR X=3TO13
1160 DRAW"BM"+STR$(X)+",100S20R4L4U6BM+8
,+6U5ER2FD5U3L3BM+8,+3U6DF4DU6BM+4,+6U6R
3FD4GL3BM+8,+0R4L4U3R4L4U3R4BM+4,+6U6R3F
D4GL3S4"
1170 NEXTX
1180 PCOPY 1TO5
1190 PCOPY 2TO6
1200 PCOPY 3TO7
1210 PCOPY 4TO8
1220 S=S+100
1230 C=C+1
1240 Y=20
1250 Z=Z+3
1260 PMODE4,5:SCREEN1,1
1270 GOTO440
1280 REM**score*****
1290 LINE(145,0)-(240,9),PRESET,BF
1300 S$=STR$(S)
1310 DRAW"BM150,8"
1320 FOR A=2TOLEN(S$)
1330 A$=MID$(S$,A,1)
1340 ON VAL(A$)+1 GOSUB 1460,1470,1480,
1490,1500,1510,1520,1530,1540,1550

```


DRAGON PROGRAM

```

1350 NEXT A
1360 RETURN
1370 REM**city*****
1380 LINE(45,0)-(90,9),PRESET,BF
1390 C$=STR$(C)
1400 DRAW"BM50,8"
1410 FOR A=2TOLEN(C$)
1420 A$=MID$(C$,A,1)
1430 ON VAL(A$)+1 GOSUB 1460,1470,1480,1
490,1500,1510,1520,1530,1540,1550
1440 NEXT A
1450 RETURN
1460 DRAW"BM+0,-1FR2EU4HL2GD4BM+8,+1":RE
TURN
1470 DRAW"BM+1,+0U6GBM+6,+5":RETURN
1480 DRAW"BM+4,+0L4UER2EU2HL2GBM+8,+5":R
ETURN
1490 DRAW"BM+0,-1FR2EUHL2R2EUHL2GBM+8,+5
":RETURN
1500 DRAW"BM+3,+0U6G3R4BM+4,+3":RETURN
1510 DRAW"BM+0,-1FR2EU2HL3U2R4BM+4,+6":R
ETURN
1520 DRAW"BM+0,-2ER2FDGL2HU4ER2FBM+4,+5"
:RETURN

```

```

1530 DRAW"BM+2,+0U2E2U2L4BM+8,+6":RETURN
1540 DRAW"BM+1,+0R2EUHL2HUER2FDGL2GDFBM+
7,+0":RETURN
1550 DRAW"BM+0,-1FR2EU4HL2GD4FR3BM+4,+3":
RETURN

```



Bamby SOFTWARE



ZX81 16K BIO-RHYTHMS:

Plot your rhythms on a month by month basis, if you have a printer you can have a hard copy. Complete with explanations£5.95

SPELLING TUTOR:

An educational game for those that need help with their spelling. Over ninety per cent successful. Fully programmable dictionary£5.95

LYNX 48K TREASURE ISLAND:

Find the hidden treasure before the monkeys steal it. On the way mind the giant birds, man-eating reptiles and dangerous swamps. All on graphics with just enough text to keep you sane£5.95

All available immediately from Bamby Software, Leverburgh, Isle of Harris PA83 3TX. Includes our no quibble guarantee. Access orders welcome by mail or telephone: 085982 313. Dealer Enquires Welcome and 48 hour delivery.

NUMBER ONE FOR THE DRAGON!

DRAGON OWNERS CLUB

The Dungeon is also the home of the largest Dragon Owners Club and publishes the monthly Club Magazine "Dragon's Teeth." News, reviews, advice and information exchange for dedicated Dragon-bashers. Monthly money-saving offers, monthly competitions, Clubware from badges to bomber jackets. Free members' adverts.

Annual Membership £6.00 (£8.00 overseas) or six-month Trial Sub. £3.25 (£4.25 overseas.)



DRAGONWARE

The vaults of the Dragon Dungeon are packed with the widest range of Dragon 32 software and peripherals available in the U.K. Send for our 30-page Dragonware Catalogue and kill the myth that the beast lacks programs! (Catalogue 50p., refundable order — free to Club Members.)

THE DRAGON DUNGEON
PO BOX 4, ASHBOURNE, DERBYSHIRE DE6 1AQ
Tel: ASHBOURNE 44626

NOW for the
JUPITER ACE
Superchess II £11.95

Superchess II THE BEST AT £7.95

- 7 levels of play • Plays a variety of openings e.g. French Defense, Sicilian Defense, Ruy Lopez, Queen's Gambit etc. • Self play mode • Analyse mode • Recommended move
- For Sinclair 48K SPECTRUM

ORIGINAL SUPERCHES
10 levels of play, plus many features
16k ZX81 £4.95
48k Spectrum £4.95

BACKGAMMON
Very popular
48k Spectrum £5.95

ZX DRAUGHTS
10 levels of play, very fast
48k Spectrum £5.95

COLOSSAL CAVES (Adventure 1 by Abersoft)

Enter the Colossal Cave, discover the treasure left by the wizard. On your travels you will meet dragons, snakes, trolls and other denizens of the underworld. Be warned, this adventure can be addictive. Includes a save facility so that the adventure can be continued from the point reached when saved.
48K Spectrum £6.95

SPECTRUM FORTH
FORTH - 10 times faster than Basic, much easier than machine code. If you want to discover the advantages of FORTH or are already converted, Spectrum FORTH is the ideal package. It is cassette based and includes Spectrum FORTH, a sample FORTH program and comprehensive user documentation. It has all FORTH structures and allows full use of the Spectrum's colour, hi-res graphics. Specify 16k or 48k when ordering.
16k version, about 114 new words can be defined
48k version, about 1000 new words can be defined
16k Spectrum £9.95
48k Spectrum £9.95

Speech from the Spectrum 48k
SOFTALK I 'Multiwords' 70 plus words £5.95
SOFTALK II 'Spacegames' 80 plus words £5.95

BEEPER AMPLIFIER

Plugs directly to the Spectrum's EAR or MIC socket. Battery powered (not supplied) £5.95
or **SAVE £1** when ordered with any program
Please add 35p for p&p.

software
Spectrum software
Specialists in high quality, intelligent games

SNAIL LOGO

An implementation of turtle style graphics. Regardless of age, SNAIL LOGO is an ideal way to explore the concepts of form and design and to learn the concepts of form and programming procedures, or just to have fun creating interesting patterns. SNAIL LOGO supports standard Logo commands, e.g. Procedures, Repeat, checking and an editor plus other detail features.
48k Spectrum £9.95

SPECTRUM BRIDGE TUTOR

Improve your Bridge with Spectrum Bridge Tutor. Uses the Acol bidding system including Blackwood and Stayman conventions. Each of the 40 hands illustrates a particular aspect of the bidding and play. Following the card play is an explanation of those aspects highlighted in the hand. The correct bid and play must be made in order to progress but a help feature is included.

For 16k and 48k Spectrum -
Beginners (40 hands) £5.95 Advanced (40 hands) £5.95

UK Prices include post & packing. Despatch within 48 hours of receipt of order. Send SAE for catalogue (For orders outside UK add 80p for postage).
Send cheque or postal order to:

CP SOFTWARE, Dept. H5, 17 Orchard Lane, Prestwood, Bucks. HP16 0NN

Also available from: WH Smith - Computer Branches

**TOP RATES PAID FOR HIGH QUALITY PROGRAMS -
SEND YOUR MATERIAL FOR EVALUATION AND PROMPT REPLY.**

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.

ORIC GAMES ARE HERE!

1. THE PITS - the deepest fantasy game you've ever played. Over 50 rooms and many, many hazards. An adventure game with graphics.
2. S.A.S. - A multi-part action game
3. ACTION 6 - Starshoot, Amaze, Tron, Bomber, Starchaser, Headbang
4. MIND 6 - Swappers, Squares, Hexpaw, 4 in a Row, Bite, Slide
5. GRAPHICS - Includes the most flexible character generator on the market and a great 3-D program, and more...
6. CONTRACT BRIDGE - beautifully written by a computer and bridge expert (he says!) £5 each

T
All our games are recorded fast and slow
by
Touchstone
Touchstone (HCW),
61 Highfield Road,
Saxilby, Lincoln.
ORIC-1

CASSETTE DUPLICATION SERVICE

No order too large or too small. Fast efficient service using only the latest studio equipment
need cassette copies in a hurry?
We can provide a *super-fast* service at a slight extra cost try us! We aim to please.

Delivery at cost
Blank C12 Cassette Tapes 34p plus VAT, also Cassette Labels at £2.75 + VAT per 100.

JLC
49 Castle St.,
Barnsley, South Yorkshire, S70 1NT
Phone: 0226 87707

As we try to maintain a fast service we cannot accommodate visitors and telephone enquiries preferred after 6pm.

games to put across the Spectrum

**There are games for all tastes
in this selection of new
Spectrum releases. Read our
reviewers' ratings**

Starfire 48K £7.95

Virgin Games, 61/63 Portobello
Road, London W11

This is a very good implementa-
tion of the standard Startrek
game.

Some of the features you
might expect are missing — for
example no warp factors or im-
pulse engines. Some features that
left something to be desired in the
original are kept on, such as the
coded long-range scan. Surely the
Spectrum's graphics could give a
more interesting display?

But the game's good points
outweigh any quibbles. The
graphics interludes for docking,
asteroids storms and time portals
(all quite reasonable games in
themselves), the combat mode
and, in particular, the program-
mer's slightly sadistic sense of
humour made this a very en-
joyable game.

N.W.

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



Spawn of Evil £4.95

dk'tronics, Unit 2, Shire Hill In-
dustrial Estate, Saffron Walden,
Essex

One whole side of the tape is
devoted to detailed instructions
on how to play and setting out the
complex breeding cycle of your
enemy. Your mission is to boldly
go where no Spectrum owner has
been before to destroy "EGG"
and its progeny.

The lengthy instructions
may be copied to your printer and
on the ZX printer exceed 1 metre
long. Careful study of the tutor
section is advisable before you go
EGG hunting.

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



Your screen shows either a
wide range scanner view or a
more detailed close up of the bat-
tle. There are several realistic
features: having to stop for
repairs, guns overheating and a
good simulation of a space dog-
fight.

The game has obviously
been well thought out and is col-
ourful and exciting to play. But
the version I had tended to crash
on occasions for no apparent
reason.

D.J.

Sheepwalk 48K £7.95

Virgin Games, 61/63 Portobello
Road, London W11

A simple idea but a novel, fun
and difficult game. You control a
sheepdog called Rex (who looks
like a black trestle table), whose
task it is to herd a number of er-
rant sheep back into their pen.
Sheep may be lost in a river, or
may wander into crops and eat
them. Points are lost for both of
these. Rex will also damage crops
if he passes through them.

I found the control keys too
close together for comfort but the
more nimble-fingered may have

no problem. There's an option
for joystick control, but as the
game is mainly in Basic it does not
have the speed which makes
joysticks a must.

Handling Rex is a matter of
very precise judgement, quite
hard to achieve. But with practice
the game might pall — there are
no higher skill levels as you get
better.

N.W.

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



Golf £7.95

Virgin Games, 61/63 Portobello
Road, London W11

There are golf games and golf
games and this is one of the best
I've seen. You can select the
number of holes (up to eighteen),
up to four players and the han-
dicap for each player.

Each hold demands choos-
ing one of five clubs, a correct
estimate of the direction of the
shot, and strength of the swing on
a scale of 0 to 10.
Better use could have been
made of the graphics and the
layout of current score and posi-
tion could be more attractive. A

nice touch, however, is the
graphic of the player swinging at
his ball, and the line drawn across
the course to show the route you
have taken so far.

As an indication of the com-
plexity of the game (or perhaps
my golfing ineptitude), on my
first hole, a par 3, I took 27
strokes!

B.B.

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



Yomp £7.95

Virgin Games, 61/63 Portobello
Road, London W11

The first stage of Yomp is really a
Frogger variant. Your five
paratroopers have to cross four
lanes of fast-moving traffic, and
when three men are across the se-
cond stage begins.

Unlike Frogger, there is only
traffic to contend with, but the
gaps are small, and the four lanes
travel at different speeds.

The second stage involves
using a radar scanner to cross an
enemy minefield, in the manner
of Mined-Out. Movement sen-

sors mean sudden death if you
make too many mistakes.

Your task is not helped by
having a flashing paratrooper —
most distracting! The graphics
are good, but confusing — you
can sometimes escape when you
appear to have collided and vice
versa.

Not too bad, but overpriced.
You do get two games, but
neither is as good as similar games
taken separately.

N.W.

instructions	90%
playability	75%
graphics	85%
value for money	70%



LOOK
MORE CHOICE!
LOWEST PRICES!
SPECIAL OFFERS!
INSTANT CREDIT!

"THE" MIDDLESEX MICROCOMPUTER CENTRE

CHECK OUR STOCK RANGE AND PRICES AND BUY WITH CONFIDENCE

	£		£
SINCLAIR ZX 81	44.00	TEXAS TI/199 4A 16K PACK	146.00
SINCLAIR ZX PRINTER	38.00	COLOUR GENIE 16K	183.00
ZX 16K RAM PACK	28.00	GENIE 148K	355.00
SPECTRUM 16K	98.00	GENIE II 48K	331.00
SPECTRUM 48K	128.00	EPSON PRINTERS FROM	330.00
ORIC-1 48K + SOFTWARE	168.00	SEIKOSHA GP100X PRINTER	220.00
DRAGON 32K	168.00	SEIKOSHA GP250X PRINTER	285.00
BBC 'B' 32K	398.00	14" RGB COLOUR MONITORS FROM	
VIC 20 STARTER PACK	138.00	ALL PRICES INCLUSIVE OF VAT	230.00
VIC 20 16K RAM	36.00	PLUS CASSETTE RECORDERS, DISC DRIVES, LEADS, PAPER, JOYSTICKS, CONSOLES, ACCESSORIES etc.	
VIC 20 32K RAM	48.00		
COMMODORE 64K	295.00		
ATARI VCS CONSOLE	85.00		
ATARI 400 (INCL. BASIC)	148.00		
ATARI 800 48K	298.00		
EPSON HX.20 16K	399.00		

AGENTS FOR
SILICON OFFICE, MICROFACTS, PEGASUS AND
MICROSIMPLEX BUSINESS SOFTWARE
BUSINESS HARDWARE SYSTEMS SUPPLIED

SOFTWARE STOCKED FROM RABBIT, ROMIK, IMAGINE, COMMODORE, SINCLAIR, SOFTWARE FOR ALL, GEMINI, DRAGON, MICRODEAL, ELEPHANT, NEW GENERATION, LLAMASOFT, MICROTAX, TITAN, ACORN, ATARI, PLUS MANY OTHERS

MAIL ORDER: PHONE NORTHWOOD 20664 FOR FREE LISTS + P.P. CHARGES TODAY
PERSONAL SHOPPERS: OPEN 6 DAYS A WEEK. EASY PARKING OUTSIDE.
TRADE: ENQUIRIES WELCOME. ABSOLUTELY NO MINIMUM ORDER.

ACCESS - BARCLAYCARD - AMERICAN EXPRESS - INSTANT CREDIT

SCREENS

MICROCOMPUTERS

6 MAIN AVENUE, MOOR PARK, NORTHWOOD, MIDDLESEX, TEL: NORTHWOOD 20664
(FACING MOOR PARK MET LINE STATION)

SOFTWARE CASSETTE FOR THE ZX SPECTRUM (16K./48K.).

"AMAZE."

GET LOST
in a labyrinth of passages.

Excitingly visual;-
Perspective line drawings
exhibit an almost three-
dimensional imagery.
Penetrate the corridors to
locate the elusive exit.

CAN YOU ESCAPE ?

Completely original: Not
another arcade imitation!!
Hours of addictive and
amusing entertainment.
Suitable for all ages!

ALL INCLUSIVE
PRICE;
£ 4.50

Please make P.O./Cheque
payable to:-

..... Bytesize

Bytesize

software development,
26 hicks close,
woodloes park,
warwick,
warwickshire. cv34 5nd.



AGF

PROGRAMMABLE JOYSTICK INTERFACE

for
Sinclair ZX Spectrum 81

ONLY
32.95
+£10.00 P&P

ABOUT OUR PROGRAMMABLE INTERFACE

Surpassing the outstanding specification of
our Interface Module II which still offers
the best software support at its price, a
Joystick Interface that is compatible with
ALL SOFTWARE through its unique hard-
ware programmable design.

The Interface plugs on to the rear connector
of your ZX81 or ZX Spectrum.

Quick clip-on connections, which are con-
figured from a reference card supplied, allow
you to define which of the four keys are
simulated by which action of the joystick.
A pack of ten Quick Reference Programming
Cards makes setting for your favourite games
even easier. These can be filled in to show at
a glance the configuration required and
stored in the cassette case of the particular
game. When you change to a game using
different keys the module is re-programmed
in a few seconds.

As with our Interface Module II the Pro-
grammable Interface accepts all standard
joystick joysticks that are Atari-compatible.
Two sockets are available which are con-
nected together for two player games which
use the same keys for both players.

The Interface resides in the keyboard
address space and does not affect its opera-
tion or interfere with any other add-ons. A
rear extension edge connector will accom-
modate expansion of your system.

The unique AGF key simulation principle
makes it extremely easy to incorporate
joystick action in your own programs. All
eight directions and fire are read by simple
BASIC.

With every order comes a free demonstration
program called "Video Graffiti" plus a full
set of instructions.



KEY FEATURES

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

PACKAGE CONTENTS SUPPLIED

- Programmable Interface Module as illus-
trated, complete with clip-on program-
ming leads.
- Self adhesive programming chart detailing
how to define which key is simulated by
UP, DOWN, LEFT, RIGHT, and FIRE.
This can be fixed on to the case of your
computer or if preferred the protective
backing can be left on. The chart is made
of a very durable reverse printed plastic
and is extremely easy to read.
- One pack of ten Quick Reference Pro-
gramming Cards for at-a-glance setting
to your game requirements. The card
allows you to mark the configuration in
an easy to read fashion with space to
record the software title and company
name.
- Video Graffiti demonstration program
which is written totally in BASIC, to illus-
trate how all eight directions and fire
can be read. This is also a useful high
resolution drawing program.
- 12 months guarantee and full written
instructions.

JOYSTICKS

ATARI
CONTROLLERS

FOR USE WITH OUR INTERFACE
Module - VIC 20, Commodore 64,
Atari VCS, Atari 400, Atari 800

If you require extra Joysticks for our
original interface module mark today
"OLD" Joysticks

ONLY £7.54 inc VAT + P&P

FROM: MR/MRS/MISS			
ADDRESS			
SEND C.W.O. (NO STAMP NEEDED) TO: A.G.F. HARDWARE, DEPT HCW17			
FREEPOST, BOGNOR REGIS, WEST SUSSEX, PO22 9BR			
QTY	ITEM	ITEM PRICE	TOTAL
	PROGRAMMABLE INTERFACE	33.95	
	JOYSTICK(S)	7.54	
	PACK(S) QUICK REFERENCE CARDS	1.00	
ONE	VIDEO GRAFFITI	FREE	
ZX81 <input type="checkbox"/> ZX SPECTRUM <input type="checkbox"/> Please tick		FINAL TOTAL	
DEALER ENQUIRIES WELCOME. EXPORT PRICES ON APPLICATION			

STARTTECH

Absolutely
the lowest
prices!



BLANK DATA CASSETTES £5.95 Inc VAT Postage and Packing 45p

Computer Grade Data Cassettes suitable for use in all of today's home computers.
Each comes with its own case.

Tick for further information		Name	
<input type="checkbox"/> VIC 20 PRODUCTS	<input type="checkbox"/> COMMODORE 64	Address	
All prices subject to availability or change without notice.		I enclose Cheques, P/O for	
PLEASE SEND ME		CREDIT CARD <input type="checkbox"/> ACCESS <input type="checkbox"/> BARCLAY CARD <input type="checkbox"/> (24hr. ANSWERPHONE SERVICE)	
Pack of 10 Data Cassettes		HCW17	
Qty	Price	TOTAL	
	£6.40 inc VAT		
STARTTECH 208 Aigburth Rd, Aigburth, Liverpool L17 051 727-7267			

All systems go . . . for a look at some action games

Discover who came out best when or reviewers tried to out-zap these versions of arcade favourites

Frogrun Commodore 64 £6

Anirot, 26 Balcombe gardens, Horley, Surrey

Anirot's version of the now famous frog splatting game makes splendid use of the Commodore's graphics features. The screen display is really state of the art. You can even see the alligator's teeth!

Due to the length of the program, it takes a long time to load so it's best to make a cup of coffee while you're waiting. Once

the program is running you'll get so hooked that you'll never get round to the coffee.

The instructions are basic and don't tell you that you need to press the space bar to start each game. They say that you get 10 points for moving forward, but I never did. My score remained obstinately at zero during my first 15 or so games until I eventually got a frog home, then I suddenly got the accredited 200 points.

instructions
playability
graphics
value for money

L.C.

20%
80%
90%
70%



Mushroom Mania 48K Oric £4.50

Arcadia, 4 Sunningdale Avenue, Swansea SA3 5HP

Arcadia's version of Centipede, with a fierce spider and Pac Man style character thrown in, is absorbing entertainment for one or two players.

Use of the Oric's sound and colour capabilities was excellent, and a record of high scores (60,879 was the best achieved) can be kept.

Points are scored for shooting down the spider and the

mushrooms, which are constantly being replaced to try and hinder manoeuvrability of your fire power. There are nine skill levels, from fairly easy to almost impossible.

Basically simple, Mushroom Mania is addictive enough to prevent eventual boredom, and is good value for money too.

S.I.

50%
90%
90%
90%



Super Glooper/ Frogs 16K ZX81 £4.95

Psion, 2 Huntsworth Mews, Gloucester Place, London NW1

Super Glooper moves around a maze, 'painting' it as he goes, and avoiding the aliens — unless he has picked up a shield which allows him to destroy them. When one maze has been completely painted a more difficult one appears.

The controls for each direction are provided by any key in several 'blocks' which means that

you may position your fingers in any manner you find comfortable.

Frogs is of course Frogger. In this version the poor amphibian has to cross not a road but a river, by jumping from boat to boat — if he falls in, he's had it (although why this would be fatal to a frog I don't see) — and then on to one of the jetties on the far side.

Each jetty can only be used once per game, so take care; as the final column of boats moves from left to right, the jetty on the extreme left is very difficult to reach.

The boats move in alternate columns which travel left and right; once your frog has left the

safety of the riverbank great concentration is required to land him safely on the other side.

I enjoyed 'Frogs' much more than 'Super Glooper', but they are both very adequately-produced games, and fun to play if you are not already over-familiar with them. Having two games on one cassette makes for better value, too.

C.C.R

instructions
playability
graphics
value for money

75%
70%
70%
60%



Millipede/ Road Runner 16K ZX81 £4.95

Axis, 71 Brookfield Avenue, Loughborough, Leics LE11 3LN

Two arcade games of the shooting variety — but with quite different targets.

Of the two, I liked Road Runner best. It comes in two parts. In the first, you have to shoot down moving fairground-type targets which move from side to side across the screen. If you succeed at this, you have to aim at Road Runner himself. If you hit him he is only stunned,

and will pick himself up and move in the other direction. But beware — his speed will increase.

Millipede is of course a version of Centipede, in which you have to blast away all the segments of a long worm-like beastie zig-zagging its way towards the bottom of the screen. Slower than Road Runner, and needing less skill in timing.

The graphics are not ornate in these games, but movement is fast and smooth, and the controls respond well.

instructions
playability
graphics
value for money

C.C.R
80%
75%
60%
70%



THE CHEAPEST RAMPACKS IN THE WORLD

Available Now

ZX Spectrum 32K Rampack

Simply plugs into user port at rear of computer and increases your 16K Computer instantly to 48K **£39.95**

- Fully Compatible with all accessories.
- No need to open computer and invalidate guarantee.
- Why send your computer away and wait weeks for upgrade.
- Fully cased, tested and guaranteed.

ZX81 16K RAMPACK _____ **£19.75**
ZX81 64K RAMPACK _____ **£44.75**

NOW MAKE YOUR SPECTRUM TALK!

The Cheetah "Sweet Talker" just plugs into the back of the computer using the existing power supply. Fully cased. Easy to program any word, sentence or phrase.

Simply Incredible at **£34.95**

All Units: Fully Cased and Guaranteed. Secure No Wobble Design. Fully Compatible with all accessories.

Prices include VAT and P&P. Delivery normally 14 days. Export orders at no extra cost. Send

cheque/PO payable
to: Dept ZXC

CHEETAH

MARKETING LTD
359 THE STRAND
LONDON WC2R 0HS
Tel: 01-240 7939
Telex: 8954958

16K ZX81 Rampacks and 32K ZX Spectrum Rampacks now available at larger branches of

John Menzies

A NEW SERIES FOR FIRST TIME USERS

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

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

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

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

£5.95

(incl. postage)



ORDER FORM

READ-OUT BOOKS AND SOFTWARE
8 Forge Court, Reading Road,
Yateley, Camberley, Surrey GU17 7RX

24 hour answering service Tel (0252) 873373

Name _____

Address _____

NOW AVAILABLE

Please send me.....copy/ies all at £5.95 each
incl. postage & packing. (Allow 14 days for delivery.)

- | | |
|--|--|
| <input type="checkbox"/> Learning to Use the PET Computer | <input type="checkbox"/> Learning to Use the ZX81 Computer |
| <input type="checkbox"/> Learning to Use the BBC Microcomputer | <input type="checkbox"/> Learning to Use the Dragon 32 |
| <input type="checkbox"/> Learning to Use the ZX Spectrum | <input type="checkbox"/> Learning to Use the T199/4a |
| <input type="checkbox"/> Learning to Use the Apple II/IIe | <input type="checkbox"/> Learning to Use the Oric 1 |
| <input type="checkbox"/> Learning to Use the Commodore 64 | <input type="checkbox"/> Learning to Use the Lynx |
| <input type="checkbox"/> Learning to Use the VIC-20 Computer | |

Make cheques payable to **Newtech Publishing Ltd** HCW17

I enclose my cheque for £ _____

Please debit my Access ☐ _____

Signed _____ Date _____

READ-OUT



Sargon 2 Chess Commodore £25

Of course this program is capable of playing chess and playing it to a very high standard, but what else can it do?

Well, to start off with, you can select the display colours, an important consideration if you are going to be playing for a long period. You can play a full game, or set up a particular problem for the computer to work through, or reset a half finished game.

You can make moves with a joystick or the keyboard, and the program will give a hint as to a good move, if requested.

There are seven levels of play, with response times from immediate up to several hours. The graphics are good, easily recognisable, and little bleeps keep sleepy players from missing Sargon's moves.

The instruction booklet is comprehensive and well written, and includes a basic introduction to chess for complete beginners.

If you think that chess is a lot of fun, buy this cartridge because it's certainly got a lot of chess.

instructions	90%
playability	90%
graphics	80%
value for money	75%



Gorf Commodore £25

The cartridges that squeeze into the back of the VIC are actually quite small. It is strange however that some are packed full of crazy mutants and hideous aliens, while some have barely enough horrible denizens of outer space to invade a reasonably sized chocolate biscuit. Gorf is in the former category.

In four stages they come, first as space invaders, then armed with lasers, then swooping and spiraling out of what we are told is a black hole (who can doubt it?) and finally shuttling around in a large rocket while bombarding us hapless earthlings with chunks of asteroid.

This is a very good game,

well thought out and carefully presented. As you struggle through the stages, you are promoted from cadet upwards, and as the Russians discovered at Stalingrad, promotion and the honours of elevated rank motivate fighters to battle with will.

Herein lies a problem... A person of my acquaintance fractured his joystick while playing this game. What a fate! Let this be a warning to you all. Waggle it around but don't grip it too tightly or you might break it off...

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



Mutant Herd Thorn-EMI £25

This is a two stage game, and an odd one. Using crossed laser beams, the player shunts great packs of mutant beasts around the screen. There are little mutie-killers on the loose as well, and our task is to herd them down burrows where their talent for mayhem may be most effectively expressed.

No bunnies inhabit these burrows, rather hideous mutant-mothers laying the eggs of a new generation of creeping things. The second part of the game involves the destruction of these eggs and finally the extinction of the egg layer herself.

The game is original and very well presented. If you are yourself a mutant monster with

an unresolved Oedipal complex then playing this game could precipitate a psychiatric crisis; otherwise you will probably have a reasonable amount of fun....

instructions	90%
playability	70%
graphics	90%
value for money	65%



Are cartridges really worth the cash?

Tom Donald takes a look at some of the offerings you might pick up at your local VIC dealer

River Rescue Thorn-EMI £25

In general the cartridges produced so far by Thorn for the VIC have shown a high standard of attention to detail: none more than this, in which a simple idea, that of controlling a boat up a randomly generated river, has been developed into an interesting and enjoyable game for one or two players.

The speed and position of the boat are controlled from joystick or keyboard. Obstacles appear in the river and have to be shot out of the way, there are explorers to be picked up from passing jetties.

The range of speeds available means that this program is fun for beginners and skilled joystick manipulators alike.

While programs in cartridge remain as expensive as at present, the daft situation arises that you can buy a computer for the price of two of these programs, or one hundred and forty two issues of this magazine.

But for those who can afford it this game will be a lasting source of enjoyment.

instructions	95%
playability	90%
graphics	90%
value for money	50%



Omega Race Commodore £25

I have played this game more often and with more pleasure than any other game for my Vic.

If I tell you that Omega Race is a cross between Asteroids and

snooper, then perhaps it will be clear that this is not an ordinary space invaders clone. Around an enclosed track our little spaceships shuttles, bouncing elastically from the sides, its task, to shoot various enemy blobs that pursue it, first shuffling, then at the trot, then bouncing and spinning at full tilt.

Playing colours are selectable (and the sound effects are only a teeny weeny bit tiresome). To describe the graphics would be to risk accusation of understatement.

What more can I say?

instructions	75%
playability	95%
graphics	105%
value for money	90%



AT LAST!!
SINCLAIR
SPECTRUM
JOYSTICK
CONTROLLER
£14.95!!

SPECTRUM
SOUND
AMPLIFIER
WITH SPEAKER
MAINS POWERED
WITH SAVE/LOAD
SWITCHING
ONLY £8.95

I²L

INTERACTIVE
INSTRUMENTS LTD
INTERACTIVE HOUSE
GREAT CENTRAL ST
LEICESTER
LEIC. 532167

SPECTRUM
MEMORY
UPGRADES
AN EXTRA 32K FOR
ONLY
£24.95 FOR TYPE 2
MACHINES

DISK DRIVES
THE LATEST
SHUGART SA200
40 TRACK DRIVES
COMPLETE WITH
POWER SUPPLY
AND STEEL CASE
FOR ONLY
£199
FOR BBC

ALL PRICES INCLUDE V.A.T. & P. & P.

LARGE RANGE OF
 COMPONENTS, HARDWARE
 AND SOFTWARE

DON'T MISS THIS
INCREDIBLE OFFER!
50 GAMES
£9.95

YES, 50 GAMES! on cassette for all
 the following:

GALACTIC ATTACK
SPACE MISSION
LUNAR LANDER
PLASMA BOLT
STARTREK
RADAR LANDING
ATTACKER
GALACTIC DOG FIGHT
ZION ATTACK
INVASIVE ACTION
Q&A
BOOGLES
PONTOON
SKI JUMP
HANGMAN
OLD BONES
THIN ICE

MAZE EATER
ORBITER
MOTORWAY
FORCE FIELD
NIM
TUNNEL ESCAPE
BARREL JUMP
CANNONBALL BATTLE
OVERTAKE
SITTING TARGET
SMASH THE WINDOWS
SPACE SHIP
JET FLIGHT
PHASER
INTRUDER
INFERNO
GHOSTS

SUBMARINES
ROCKET LAUNCH
PLANETS
BLACK HOLE
DYNAMITE
DO YOUR GUNS
DERBY DASH
SPACE SEARCH
UNIVERSE
RATS
TANKER
PARACHUTE
JETMOBILE
HEAVY HIDE
THE FORCE
EXCHANGE

sinclair
SPECTRUM
ZX81 LYNX
DRAGON
ATARI VIC-20
apple (ON DISC & CASSETTE)
BBC A/B
ORIC-1

CASCADE
SOFTWARE
CASCADES HOUSE
BARGAIN'S LANE
LLANDOGO
GWENT
S.WALES
NPS4PA

SUPPLY CASSETTE 50 FOR **COMPUTER**
 I enclose cheque/P.O.

Name _____
 Address _____

HCW17

ORDER NOW!

We'll help you do better.
TEXAS INSTRUMENTS
SOFTWARE
AT DISCOUNT PRICES

Examples:

Extended Basic	69.95	Adventure/Pirate	26.50
Hen House	27.95	Meteor Multiplication	24.95
Rabbit Trail	27.95	Dragon Mix	24.95
Chess	35.50	Alpiner	25.95
Parsec	26.50	Editor Assembler	69.95



NEW BOOK
Kids and the TI-99/4A

Monthly Magazine

A must for all TI-99/4A owners, supplied individually or by subscription, May issue now in stock (dealer enquires invited)

LANTERN cassette games in stock.

TEXAS 35 Programme Book £5.95

All prices include VAT and postage. Send SAE for full list. Send cheque with order or phone or use Barclaycard or Access.

Remember! There are no extra charges at Galaxy.

VISA **GALAXY** **Access**
60 High St, Maidstone, Kent
Tel: (0622) 679265 or 682575

It's all new. What we found at the Computer Fair

Shirley Fenton and Richard Cheetham, two 21-year-olds who set up C-Tech after university, launched *Rocket Raider*, a Spectrum space game selling at £5.95. It was written over four months by student Nigel Alderton, 17, and Miss Fenton said: "It should overtake *Arcadia* and *Penetrator* — the graphics are far better than *Arcadia*."

In about a fortnight C-Tech is bringing out another new game, *Knocker Blocker*, priced at £4.95 and also for the Spectrum, in which a character has to knock is nails before monsters catch up with him. The author is another student, David Bryant, 19, who is studying computer science.

Kansas had two new £9.50 adventures for the BBC micro. They are *The Ring of Time* and *Revenge of Zur* — with help given on the phone for players who are stumped.

NewBrain owners who write their own software can now get a debugger at £24.50 and a printer screen dump program, costing £14.50, from Kuma.

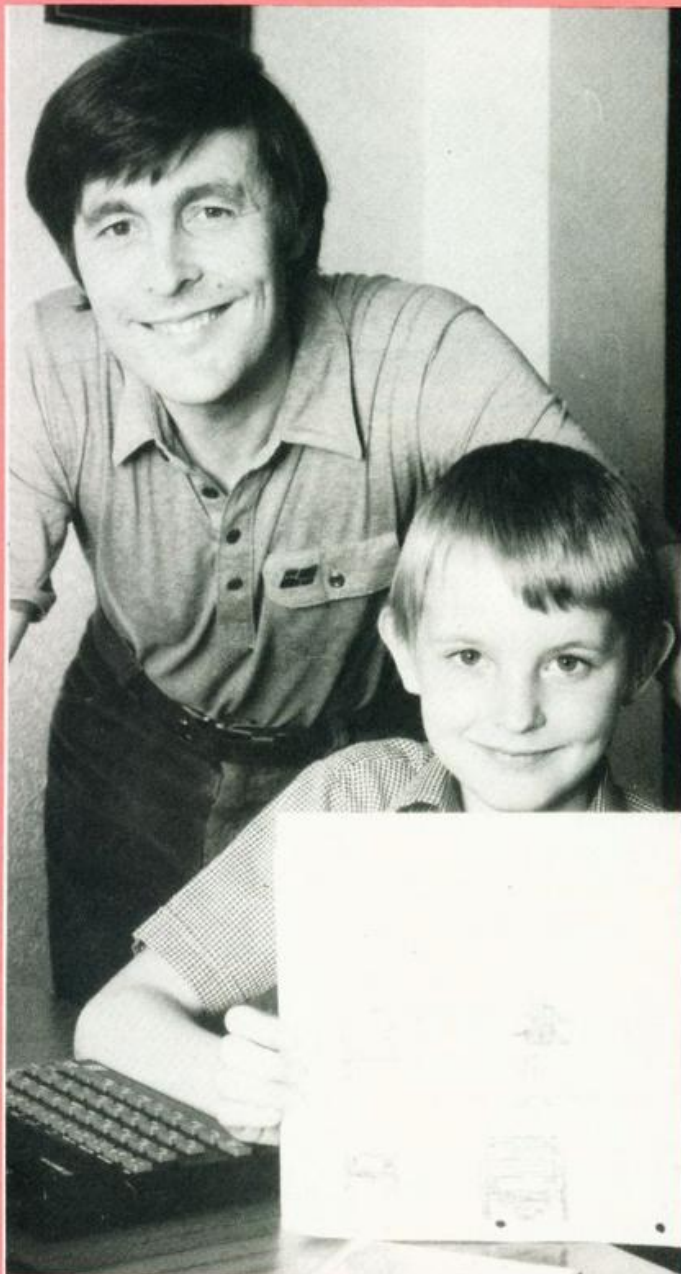
Primary school headmaster Gordon Askew, 33, has written six educational game programs for the 16K ZX81, for children of five-seven and seven-11. JRS is marketing them as *EduTapes 1, 2 and 3* at £4.95 with two programs on each tape. Each of the cassettes — two for the older age group — use the JRS technique to load in less than a minute.

JRS also brought out three cassettes, each with two games, at £4.95 also for the 16K ZX81 and three at £6.50 each for the Jupiter Ace with 16K expansion.

Sunshine showed the new Dragon version of its *Cruising on Broadway* game.

Imagine gave a first public showing to *Jumping Jack*, a £5.50 game for the Spectrum from Albert Ball, a 36-year-old electrical engineer. Jack tries to climb a multi-storey building, facing

In another show report, Paul Liptrot tells you what you may have missed at the Earls Court Computer Fair



Jumping Jack author Albert Ball with son and helper Stuart, 10 — their game is now out from Imagine

hazards like an octopus, train and an axe. Mr Ball's son Stuart, 10, drew the hazards — and gets a mention on every cassette.

Romik is planning to release two games each for the Lynx, ZX81, Dragon and Spectrum in about a month. And later on there will be tapes for the Commodore 64 and VIC-20.

Space Shuttle, written by a genuine NASA employee, is among a batch of Dragon programs due out from Microdeal on Friday. They are all U.S. imports except one, the company's first from a British author. Steve Bak has written a maze game called *Cuthbert Goes Walkabout*.

The others are *Frogger*, *Golf* and *Morocco Grand Prix*, all at £8, a four-voice sound synthesiser called *The Composer*, £15, and *Tele Tutor*, £25, an educational database to store maths questions. More are due at September's PCW show.

As promised at the Commodore show, Rabbit brought out Spectrum conversions of six of its Commodore 64 and VIC-20 games — *Escape MCP*, *Quackers*, *Phantasia*, *Centropods*, *Race Fun* and *Frogger*. Sales boss John Willan said the firm was aiming for a range of 20 for each of the three computers.

Join a World War One aerial battle with *Dogfight*, at £8.65 for the BBC micro. It is the first of a dozen games from add-on suppliers Opus, said partner Rowland Hoar. *Dogfight* was written by Andrew Hillbig — or "Slogger", as he calls himself on the cassette.

Five games for the Spectrum, VIC-20 and BBC micros are due from Quicksilver in about a fortnight. And in September there will be at least 10 more, said sales boss Rod Cousens. Mysteriously, he added: "There are some brand new ideas which we can't discuss at present."

SPECIAL REPORT

Kobra sales director Peter Raybaud said his company was deciding on which Commodore 64 games cartridges to import from Sweden. A database for the 64 on disc, and possibly cartridge, was being brought in from Canada.

Dragon specialists Premier showed its disc system plus four new utilities: HiPrint, at £7.95 or £9.95 for the disc version, which dumps a hi-res screen to the printer; Encoder 09, an assembler/disassembler/editor at £29.95, or £39.95 for cartridge, or £36.95 for disc; Scribe, a £14.95 cassette to give lower case and other features; and Graphics Toolkit, £9.95 or £11.95 for disc, which adds features like 11 new BASIC words and 10 other routines.

New Oric, Spectrum, 32K BBC and TI-99/4A tapes were released by PASE, all costing £4.99. They are, for the Oric, Worm and Machine Code Monitor; for the BBC micro, a version of the Oregon trail game Westquest; Freddy and Munchman, two classics for the Spectrum; and, for the TI, City Blitz/Persac.

Coming soon: three games for the Oric, two for the BBC and a range for the TI-99/4A with Extended BASIC.

Salamander has licensed Gridrunner — written for the VIC-20 by Jeff Minter of Llamasoft — and converted it for the Dragon. It costs £7.95, needs a joystick and features Earth, AD 2190, as a wasteland with the human race's only hope resting with an orbiting power station. Gridrunner is a spaceship with a mission to protect the station from evil droids.

Salamander's two other releases are Franklin's Tomb, a single-player adventure at £9.95, and Everest, costing £7.95, both for the Dragon.

A new low-cost printer is due out in September from dk'tronics — at about £50 cheaper than similar models. Managing director David Heelas and sales boss Peter Brownley are just back from Taiwan, Japan and Hong Kong and examined two printers.

And the one they are most likely to put on sale will be a version of the four-colour printer/plotter — which uses tiny ballpoint pens on 4½-in paper rolls — at present being marketed



Rabbit partner Heather Lamont, 22 — with cuddly mascot

by Tandy, Oric, Micro Peripherals and, most recently, Commodore. Mr Heelas reckons he can sell it for £99.95, including an interface for the Spectrum, because of his lower costs.

dk'tronics showed two new Spectrum games, Invaders at £4.95 and Maziacs at £6.95 for the 48K model, bringing its total to 15. And in the next couple of months, said Mr Heelas, the firm would be adding tapes for the Atari, Dragon, Commodore 64, VIC-20 and BBC to its Spectrum and ZX81 ranges.

A new add-on board for the VIC-20, costing £20.70 from Stack, gives an additional 3K of RAM plus sockets for two 4K EPROMS. The company also had a light pen for the BBC micro, costing £28.75 with a cassette game.

New add-on memory packs were shown by Downsway, best known for its ZX81 RAM packs. They are: 16K for the VIC-20 — switchable for 3K, 8K or 16K operation — 48K and 16K RAM packs for the Jupiter ACe and re-designed RAM packs for the

ZX81 in 64K, now switchable, and 16K versions.

Commuting will never be the same after Trax, a new game at £5.50 for the Spectrum and Commodore 64, by Soft Joe's. Complete with sound, a train chugs around the screen collecting passengers — and trying to avoid the killer train. A VIC-20 version is due out in about a fortnight.

A&F's batch of new games were Oric Painter at £6.90 — a version of its BBC and Spectrum cassette — Swashbucklers, a four-player action game for the Dragon, also costing £6.90, and four for the BBC model B at £8: Bouncer, in which you catch "Beeboids" with an anti-matter scoop; Howzat, a graphic cricket game; and two text adventures, The Shrinking Professor and Horror Castle.

Six games for just £7.50 are being offered by Carnell, which has repackaged them into a compendium for the 16K ZX81. More games, mainly for the Spectrum, are to be launched by Carnell in September or October. At the

show Carnell held the final of its Volcanic Dungeon competition, to win a holiday for two in Florida, based on its £5 adventure for the 16K ZX81, 48K Spectrum and Dragon.

Turn your 16K ZX81 into a professional class word processor, said Data-Assette, which launched Interact's X-Word in a 16K ROM package. Costing £39.95, it plugs in to offer many of the usual word processing features, including the option of upper and lower case output through an RS-232C interface or the ZX Printer.

Anirot showed 3D Time Trek, at £5.95 for the Commodore 64, along with Mini Kong, a costing £5.95, a new version of its Crazy Kong, re-written to run on the unexpanded VIC-20.

A new deal for 48K Spectrum owners will be offered soon by Spectrum Games, said chairman David Ward. He believes they have been disappointed at games written for both models, so his firm's range is being re-written to make use of the 48K memory — but with the 16K version on the other side.

Spectrum brought out five new titles, all at £5.90, at the show: Kong, Armageddon and Manic for the Spectrum and Rocket Command and Cosmic Intruders for the VIC-20. Due soon are three games each for the Oric, Dragon and Commodore 64.

Mike Meek, managing director of Mikroten, said his company has holding back its new releases until late August, to catch the Christmas sales. It would then have six new games, mainly for the Spectrum.

A bumper bundle of nine new tapes — five for the Spectrum and four for the 32K BBC micro — was launched by Bug-Byte. One of them is General Election, for the Spectrum at £6.95. Sales boss John Phillips explained: "It wasn't that we couldn't get it out in time... the election was called early. She let us down. If you are disappointed with the result — which 56 per cent of the population will be — here's your chance to do something about it."

Bug-Byte's other four new Spectrum games all cost £5.95. They are an undersea game called Aquarius; Styx, described as a combination of a maze game and

SPECIAL REPORT

Frogger, Pool and Manic Miner. Mr Phillips described the last one like this: "It's in 16 levels and I think it's going to be the best Spectrum game. It's almost insanely complex."

The BBC tapes are Oblivion and Sea Lord, two arcade games at £7.50, and Old Father Time and Graphics Pack, both at £9.50.

Arcade brought out a game with a familiar-sounding name — Raider of the Lost Mine — along with Grid Run/ Pontoon, both priced at £5.50 for the 48K Spectrum.

Empire is a one-player strategy game for the Dragon at £6.95. Your task is to destroy the evil Dragon empire. Shards, which is marketing it, says the automatic playing feature allows you to "sit back and watch the world being overwhelmed."

Bamby, all the way from the Isle of Harris, brought out new games for four computers. For the Dragon: Scanner 13, costing £8.45, is an arcade-adventure set in a city of the future; Bopswizzle is a "fun game" for £5.95; and

Alien Odyssey (the spelling is correct) is a six-part adventure, with the first two parts on a £9.95 cassette.

For the TI-99/4A: Underground Adventure at £8.45 and two at £6.50 — K-64, a chess-type game, and Alone at Sea, in which you escape from a sinking ship. For the 48K Spectrum: Master Code and Mystery Manor, both costing £6.50. And three for the ZX81, all priced at £5.95: Bio-Rhythms, Spelling Tutor and Treasure Island.

Homelink is a new service from the Nottingham Building Society which uses a computer to offer "teleshopping", a magazine, all of Prestel's pages and building society transactions — as long as you have an NBS account.

New generation brought out an action game called Knot in 30 for the 48K Spectrum.

GP Software brought out a version of the LOGO language, priced at £9.95 for the 48K Spectrum, which has easy-to-use graphics and is popular in education because of its simple structure.

Where to find them

C-Tech Software, 184 Market Street, Hyde, Cheshire
Kansas City Systems, Unit 3, Sutton Springs Wood, Chesterfield S44 5XF

Kuma Computers, 11 York Road, Maidenhead, Berks SL6 1SQ

JRS Software, Cheshunt Building, Bateman Street, Cambridge CB3 1LZ

Sunshine, Hobhouse Court, 19 Whitcomb Street, London WC2 7HF

Imagine Software, Masons Building, Exchange Street, Liverpool L2 3PN

Romik Software, 272 Argyll Avenue, Slough, Berks

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

Rabbit Software, 380 Station Road, Harrow, Middx HA1 2DE

Opus Supplies, 158 Camberwell Road, London SE5 0EE

Quicksilver, 92 Northam Road, Southampton SO2 0PB

Kobra, Unit 8, 1-7 Broomfield Road, London W13

Premier Publications, 208 Croydon Road, Anerley, London SE20 7YX

PASE, 213/215 Market Street, Hyde, Cheshire SK14 1HF

Salamander Software, 17 Norfolk Road, Brighton

dk'tronics, 23 Sussex Road, Gorleston, Gt Yarmouth, Norfolk

● In order of appearance

Stack Computer Services, 290-298 Derby Road, Bootle, Liverpool L20 8LN

Downsway Electronics, Downsway House, Epsom Road, Ashted, Surrey

Soft Joe's Software, Business Centre, Cloughton Road, Birkenhead, Merseyside

A&F Software, 830 Hyde Road, Gorton, Manchester M18 7JD

Carnell Software, 4 Staunton Road, Slough, Berks SL2 1NT

Data-Assette, 44 Shroton Street, London NW1

Anirog Software, 26 Balcombe Garden, Horley, Surrey

Spectrum Games, Ground Floor, Ralli Buildings, Stanley Street, Manchester 3

Mitrogen, 24 Agar Crescent, Bracknell, Berks

Bug-Byte, Mulberry House, Canning Place, Liverpool L1 8JB

Arcade, Technology House, 32 Chiselhurst Road, Orpington, Kent BR6 0DG

Shards Software, 10 Park Vale Court, Vine Way, Brentwood, Essex CM14 4UR

Bamby Software, Leverburgh, Isle of Harris PA83 3TX

New Generation Software, The Broomlands, Lyncombe Vale, Bath, Avon

CP Software, 17 Orchard Lane, Prestwood, Gt Missenden, Bucks

IT'S HERE! CAMOUFLAGE

THE EXCITING NEW
'COMPUTER' GAME POP SINGLE

by

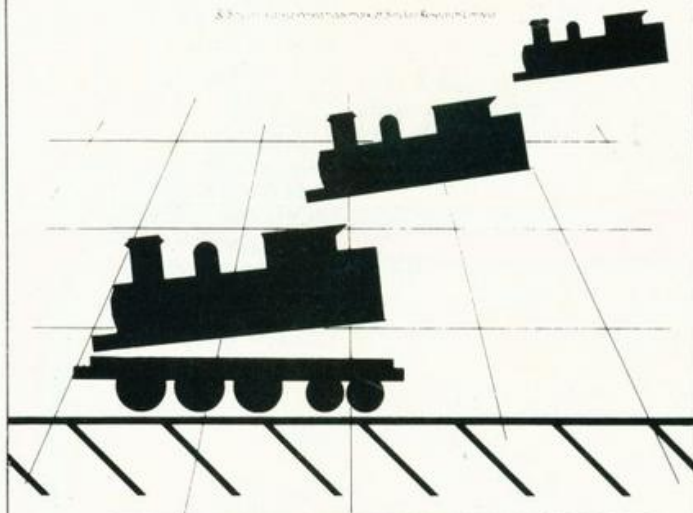
CHRIS SIEVEY

EMI 5398

LOAD THE 'B' SIDE INTO A
SINCLAIR ZX81 (16K)®
AND SEE THE LYRICS AND
COMPUTER GRAPHICS
ON YOUR TV SCREEN

THEN PLAY 'FLYING TRAIN'
A NEW COMPUTER GAME ALSO
ON THE 'B' SIDE

1K VERSION ALSO INCLUDED



ALL FOR THE PRICE OF A SINGLE!

AVAILABLE AS A 7" DISC (EMI 5398) OR AS A CASSETTE TAPE SINGLE (TC EMI 5398)

AVAILABLE FROM YOUR
LOCAL RECORD STORE

EMI

Man & Monsters £6.00

Stainless Software, 10 Alstone Road, Stockport, Cheshire

Perhaps the inflated price includes a bottle of aspirin! The sound at the beginning of the game and when the monsters move is enough to give anyone a headache.

You are in a multi-storey building and your task is to paint the floors, while monsters track you down. If you complete the painting without being caught then you can dig holes and lure your pursuers to their death. But be careful not to fall into your

own traps or tumble off ladders or edges of levels.

You have a long supply of oxygen but don't let this fool you — it can run out. A fresh supply of oxygen is given to each of your three men. Arrowed keys control movement and K and L wields your pick-axe to left or right.

There is a long delay between the game segments, and the colour contrast on the replay instruction screen and the score could be better. This is quite an amusing game, if a little slow.

instructions	90%
playability	70%
graphics	90%
value for money	65%



Dodger Extended Basic £4.50

Firefly, 48 Dorset Street, London W1H 3FH

You'd better check up on the Green Cross code before attempting Dodger — an adaptation of Frogger. Your objective is to reach home, but you only have three lives with which to do it.

To get there you must cross five lanes of traffic, dodge the giant spiders, then swim the river taking care to avoid the crocodiles, speedboats and, finally, the octopus. You have four homes to occupy, and each home may only be entered once.

If you do manage to safely find your way to all four homes, there's no sitting back feeling pleased with yourself, for the game starts all over again. This time the pace is even faster!

Movements are controlled from the keyboard — a pity joystick control isn't provided as an optional extra.

All the graphics are superb. Even the opening title and instructions are, literally, flashy! Full use has been made of the sprite capability of Extended Basic to provide action every bit as exciting and addictive as the arcade original.

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



North Sea £3.50

Christine Computing, 6 Florence Close, Watford, Herts

An arcade game in which your task is to sink supply ships moving from left to right across the top of the screen.

To do this, you must first manoeuvre your gun under the ship before firing. The computer keeps count of how many ships you sink and how many escape.

Because the game is written in TI Basic, play is very uneven — for example, all movement stops while your bullet moves up the screen.

The limitations of the programming language mean

that the game inevitably lacks excitement, though it is well written and well error-trapped.

instructions	85%
playability	40%
graphics	40%
value for money	40%



D.G.

Where to find arcade action on the TI-99/4A

This week our reviewers look at some arcade favourites adapted for the TI-99/4A.

Wonkapillar £6.00

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

You are the Wonkapillar, trying to escape from a series of mazes. But a few new twists make this slightly different from the other maze games on the market.

You start out inside a square maze, and the only means of escape is to blow yourself out with a time bomb. But don't set the fuse too short, or you'll blow yourself up as well.

As you travel about the mazes, you leave segments of your body behind. Collide with one of these or the wall of the maze, and you're a dead Wonkapillar. At least there are

no ghosts or other nasties to look out for.

You get a score for getting through each part of the maze, and also for passing over pieces of fruit lying around at various locations. Reach the end of one maze and you find yourself in the centre of a second one, up to a total of eight. Reach the end of that, and you might find your name in the high-score table.

You can use the direction keys to move around or change them to the keys of your choice at the beginning of the game.

instructions	
playability	
graphics	
value for money	



D.B.

60%
60%
50%
50%

Best for software — every week



Mr. Chip SOFTWARE

VIC 20 GAMES AND UTILITIES

BUGSY (Joystick Only)

£5.50

You are in a minefield; collect all the yellow bombs before the time runs out by moving on the blue stepping stones. Gain extra time and score by collecting the purple boxes but watch out for the mines marked with red cross bones. Sounds easy? Every stone you step on disappears, as you move around the screen you leave an empty trail but not to worry, a loveable little green creature called BUGSY moves around randomly filling in the empty spaces but run into him and he turns nasty and your dead. Clear the screen and another appears with more mines. How long can you stay alive? A very original, compulsive and challenging game.

JACKPOT — Own your own fruit machine, just like the real thing, with nudge, hold and re-spin, can you win the jackpot? You will be amazed by the graphics, colour's and many sound effects, with nine different tunes, a full machine code program, a very compulsive game.....£5.50

SWAG-MAN — (3K expansion)

Chase the bullion van around the streets of New York, picking up the swag, but beware you must defuse the time bombs to gain extra time and fuel, full colour and sound effects, a very original game.....£5.50

MINI-ROULETTE — PONTOON — HI-LOW

Three great games of chance for the VIC, try to beat the computer, hours of fun, full colour, sound effects and tunes.....£5.50

DATABASE — create your own files and records on tape.....£7.50

BANK MANAGER — Computerise your bank account.....£5.00

SUPER BANK MANAGER — A full feature version any memory size, but needs 3K expansion.....£7.50

M/C SOFT — Machine code Monitor and Disassembler, any memory size.....£7.50

COMMODORE 64 GAMES AND UTILITIES

LUNAR RESCUE — Our own version of that popular arcade game....£7.50

PONTOON — ROULETTE — ACE'S HIGH

More powerful versions, that make three great games of chance for the 64.....£7.50

M/C SOFT 64 — Assembler and Disassembler, with decimal to hex converter, everything our program for the VIC will do and more.....£7.50

BANK MANAGER 64 — As our Super Bank Manager, but for the 64.....£7.50

Full documentation with all utility programs.

Other software available for the VIC and Commodore 64, send for free brochure, including **RABBIT SOFTWARE** for the VIC, at our Special Offer of £7.50 each or buy two or more at £7.00.

Send Cheques/PO's to: **MR. CHIP
SOFTWARE**

**Dept HCW, 1 NEVILLE PLACE, LLANDUDNO,
GWYNEDD, LL30 3BL. Tel: 0492 49747**

**WANTED: HOT SHOT SOFTWARE WRITER'S, PHONE AND ASK US,
ABOUT OUR FAIR DEAL POLICY AND TOP ROYALTIES.**

DEALER ENQUIRES WELCOME

HCW17



51 MEADOWCROFT, RADCLIFFE, MANCHESTER. M26 0JP TEL: 061 724 8622

VIC-20 SOFTWARE

QUALITY ARCADE ACTION GAMES FOR THE UNEXPANDED VIC-20

Munch Man. Must be one of the best versions of this popular arcade game 3 lives, bonus fruit, power pills and 4 very intelligent ghosts. Price only £5:00

Scrambler. Race along the alien planets surface, bombing the fuel dumps and launching rockets, avoiding the asteroid clouds and mountain peaks. Price only £5:00

Galaxions. Shoots down the alien invaders, but beware of the swooping attackers. Price only £5:00

Asteroyds. Your ship is lost in an asteroid field, your only hope is to blast the oncoming asteroids. Price £5:00

Gun Fight. Be quick on the draw, shoot your partner before he shoots you. a game of skill for 2 players. Only £5:00

Super Breakout. The old favourite arcade game brought back to life. Knock out a full wall to gain another. Only £5.00

Cosmic Fire Birds. (8K or 16K) This must be the most spectacular arcade action game, ever to be produced on cassette for the 8 or 16K expanded VIC-20. As captain of a star ship lost in space you encounter a miraculous force of winged creatures, known to the galaxy as the Cosmic Fire Birds. They loop the loop, the figure of eight, they swoop, they dive, can you survive. Full screen display, 99 progressive levels of play, 5 lives, bonus ship at 5,000 points, swarms, bombers, leaders, hawks. Price only £9:95

All our games are written entirely in 100% machine code, superb colour graphics and sound.

Available mail order from the above address.

Also available from Micro C Manchester, B&B Computers Bolton, Micro North, Bury and soon all good computer shops.

All orders sent by return post. Trade enquiries welcome.

HCW17

Bamby

SOFTWARE



For

DRAGON TI-99/4A SPECTRUM 48

DRAGON

ALIEN ODDESSY (PARTS 1 & 2) £9.95

The first two parts of a gigantic six part adventure game set on an alien world.

SCANNER 13 £8.45

Destroy the drones and their master, but you'll need to think. No ordinary invader this!

BOPSWIZZLE £5.95

A Splendiferous Fun Game. Find the treasure but avoid the Smoochers, Yerkles and Wiggles.

For the TI-99/4A

ALONE AT SEA £6.50

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

K-64 £6.50

A Mind-Bender. Cover the squares once only using the knight and its' valid moves. Easy?!

For the Spectrum 48

MYSTERY MANOR £6.50

Find the murderer before he (or she) finds you and your career as Detective Solvitt.

MASTER CODE £6.50

Based on the famous game. Try your skill against the computer. You **can** beat it.....

All available immediately from Bamby Software, Leverburgh, Isle of Harris PA83 3TX. Includes our no quibble guarantee. Access orders welcome by mail or telephone: 085982 313. Dealer Enquires Welcome and 48 hour delivery.

JUPITER ACE USERS CLUB

"probably your best independent reference point for getting more out of your machine".

(Personal Computer News)

THE best range of software. Add-on memory. ACE USER newsletter four times a year. Software to link the Ace to the cheaper printers (ZX, Tandy, Amber). How to add a full-travel keyboard. Utility software includes Dissassembler, Toolkit, Character Designer, Strings. Games in both 3K and 19K.

Subscription: £7 pa. S.A.E. for details.

REMSOFT
18 GEORGE STREET, BRIGHTON BN2 1RH

ORIC GAMES PACK

includes

- 1 **LANDER** safely land your lunar spacecraft
- 2 **BREAKOUT** knock out the bricks to gain points
- 3 **NIM** Play the traditional game against Oric

All three games for only £4.95 (inc. P&P)

Send Cheque/P.O. to **SHARDS SOFTWARE 189**
ETON ROAD, ILFORD, ESSEX IG1 2UQ

SPECTRUM TRS 80

LOTS OF INTERESTING SOFTWARE FOR
THE ABOVE, E.G.:-

SPECTRUM EDUCATIONAL GAMES

CASSETTE 1. ARITHMETIC GAMES

CASSETTE 2. LOGIC GAMES

PRICE £4.95 EACH

**LEVEL 1 IS EASY. HIGHEST LEVEL IS
FORBIDDEN TO MERE MORTALS.**

**CAMEL MICROS. 33A COMMERCIAL RD.,
WEYMOUTH, DORSET (03057) 70092**

VIC-20 OWNERS: READ THIS FOR YOUR OWN GOOD!

Plus 80 (32K) Ram packs £46.95 & (16K) £34.95.

DISCOUNT SOFTWARE 8-16K, VC-16

All machine £4.99 each: Grid Runner, Track, Abductor, Lazer Zone, Matrix all £5.49 each: Soft Toys inc. The Lair £5.50, Star Wars II £6.50 + complete ranges of Chalksoft Educational, Impact, Comsoft, Panther Educational, Database, Romik, all at the best prices around!

COMCLUB Join Comclub Today (£9) and receive our catalogue containing nearly 100 top programs for you to hire (case £1 & carts £3) + Quarterly Mag & Technical Advice Service.

Make all Cheques /PO payable to Comclub.

Send Club enq, Discount Price List, enq & Software & RAM pack orders to: Comclub, 24 Alton Road, Aylestone, Leic. Or drop in at our shop at, 38 Cavendish Road, Leicester. Please Add 25p p&p per item ordered.

Will Rabbit run and run?

Rabbit is a veteran company by the standards of the home computer software market. How did it first spot the potential in programs, and where does it go from here? Candice Goodwin reports

Rabbit is one of the better-known names in software for the VIC-20, and the company has been around since the VIC's arrival in the UK. But it started as just a sideline for Cream Computers, a computer shop specialising in business microcomputers.

One of the Cream's employees wrote software, so the company thought it might be a good idea to try and sell a few games by mail order, under the Rabbit label. Ads were placed in the computer press in the summer of 1981.

The orders started to come in and then, just before Christmas that year, Rabbit really started to take off, along with a surge of interest in the VIC. That Christmas Eve, Cream Computers had a consignment of

got stuck at some stage of the game and wanted us to get them out. It started to get a bit out of hand." The adventure games are still around, but the company tries to keep their existence very quiet.

Rabbit's games aren't usually written in-house. Its programmer Stuart Barnes spends most of his time putting the finishing touches to submitted programs: adding in title pages and joystick control.

Rabbit used to do all its own duplicating, with 40 tape decks connected up to one VIC. Now it uses a duplicating company. But plans are in progress to set up its own data duplication facility in Speke, Liverpool. The company has already bought a winding machine, a mastering and a duplicating machine, which are sitting in the offices at 380 Station Road, Harrow, waiting for the move up north.

With the aid of its new duplication facility, Rabbit will presumably be able to run even faster. Which reminds me — where did it get that name?

Apparently, it came from Rabbit director Heather Lamont's toy rabbit Roland, but there's some dispute between the two directors over whose idea it was to use it. Said Terry: "Heather says it was her idea. Alan Savage says it was his idea. They both say it was their best idea ever."

Whoever the idea came from, it's certainly a name that sticks in your mind. So it's only fair that by way of recognition, Roland should now be the company's mascot.



Some of the faces of Rabbit. From left to right, top row: Lorraine Hague, Terry Grant, Tania Laufer, Tracy Braxton. Bottom row: Lisa Fitzpatrick and Stuart Barnes

VICs and, according to Terry Grant, "we had people queuing up outside the door. We did £10,000 worth of business in two hours."

From being a sideline, Rabbit has now overtaken Cream. The success of the mail-order business resulted in a decision to go into retail outlets, and it was then that the programs were dressed up in the distinctive red packs that many VIC owners will know and love. But Rabbit still wasn't sure what direction its software would take.

If you look closely at a Rabbit retail display you'll see that there are actually two different rabbits — a "semi-serious" rabbit on the cassette boxes and a cartoon rabbit on the stand. The

serious rabbit was designed in the days when the company was hedging its bets between business and games software, and wanted a logo that would do for either. But the cartoon bunny reflects its decision to go for games.

Rabbit now has a large range of action games for the VIC-20 and some for the Commodore 64. It has just brought out 14 new games, at a new lower price of £5.99. And by the time you read this, it will probably have launched some Spectrum programs too.

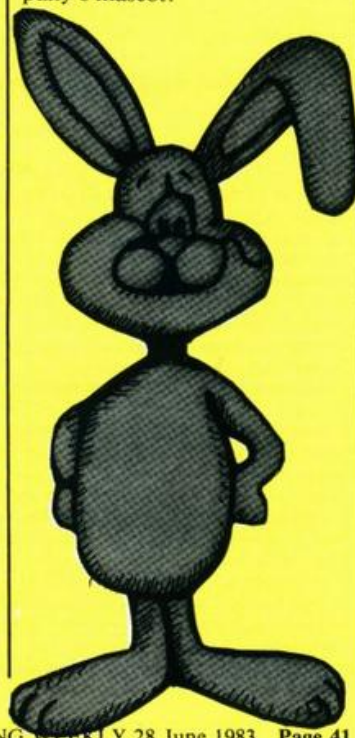
The programs are sold mainly through retail outlets: Currys, Laskys "and all good dealers — a good dealer in our opinion being one that stocks Rabbit software."

It also has distributors in

Norway, Sweden, Denmark, Canada, Australia, Iceland, USA and Greece.

The company is sticking to arcade-type games "because they sell." But it doesn't believe in sticking to the old favourites. "You have to bring out different ones all the time — all our games are completely different."

Rabbit did once try its hand at adventure games, but the experiment was not a success. Not because the games didn't sell. Terry recalled: "we kept getting phone calls from people who'd



HAVE YOU EVER HAD THAT DREAM OR EVER WISHED THAT YOU HAD "WON ON THE POOLS" – AT LAST YOU CAN TURN IT INTO REALITY

THERE IS A SECRET OF "HOW TO WIN ON THE FOOTBALL POOLS" – IT CAN BE DONE. I DISCOVERED THE SECRET A LONG TIME AGO – NOW, FOR THE FIRST TIME I'M PREPARED TO SHARE IT WITH YOU.

HOW DOES THIS INTEREST YOU – I HAVE DOCUMENTARY EVIDENCE BY WAY OF POOLS WINNINGS DIVIDEND SLIPS/CANCELLED CHEQUES, etc, SHOWING MY PRESENT WINS ON THE POOLS AS FOLLOWS:

FIRST DIVIDENDS	SECOND DIVIDENDS	THIRD DIVIDENDS	FOURTH DIVIDENDS	FIFTH DIVIDENDS	SIXTH DIVIS.
765	1,818	2,942	1,952	631	93

A GRAND TOTAL OF 8,201 (EIGHT THOUSAND, TWO HUNDRED AND ONE DIVIDENDS – so far).

I HOLD THE UNCHALLENGED WORLD'S RECORD FOR POOLS WINS.

I AM MAKING THIS VERY SPECIAL. REDUCED OFFER TO READERS OF HOME COMPUTING WEEKLY FOR A LIMITED PERIOD ONLY

Do not let anyone tell you that it is impossible to "WIN ON THE POOLS" – since I perfected my method, I HAVE won REGULARLY for over TWENTY-FIVE YEARS – proof that it is no 'flash-in-the-pan'.

I have CHALLENGED THE WORLD with my record of wins and with all the evidence that I possess – NO ONE has ever been able to accept the Challenge – I KNOW NO ONE EVER WILL. MY SYSTEM IS THE GREATEST TREBLE CHANCE WINNER IN THE HISTORY OF FOOTBALL POOLS – IT WILL LAST FOREVER – BOTH FOR ENGLISH AND AUSTRALIAN FOOTBALL POOLS, WITH EQUAL SUCCESS.

I now intend to give a limited number of people the opportunity of making use of my method – perfected over 25 years and proving itself on EVERY ONE OF THOSE TWENTY-FIVE YEARS. You will have noted details of my Personal achievements so far, as given to you above. A GRAND TOTAL OF 8,201, yes 8,201 POOLS DIVIDENDS, including 765 FIRST DIVIDENDS. My Pools Winnings Dividend slips now number so many, that they fill a very large suitcase and will stand as my evidence of all claims in ANY COURT OF LAW IN THE WHOLE WORLD.

Taking just the past 25 years into consideration, I have won ON AVERAGE over 328, (THREE HUNDRED AND TWENTY-EIGHT) Pools Dividends EVERY YEAR – or – AN AVERAGE of over SIX DIVIDENDS EVERY WEEK for TWENTY-FIVE YEARS.

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

I do have losing weeks, but ON AVERAGE my

winnings show over SIX DIVIDENDS EVERY WEEK for the past 25 years.

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

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

For as long as I continue to enter the Football Pools my wins will continue, as I've said, with equal success during both Australian and English Football.

I intend to release a STRICTLY LIMITED NUMBER of copies of my method – DO NOT DELAY AND FIND YOU ARE TOO LATE, in which case I would have to refund your money.

I am so confident of YOUR success that if you do NOT win at least THREE FIRST TREBLE CHANCE DIVIDENDS, in the first 20 weeks of entering, I will completely cancel the balance of the purchase price and you do not have to pay me another penny, at any time, no matter how vast your winnings.

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

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

My initial charge for a copy was £75, but for this

SPECIAL REDUCED PRICE OFFER I will send you a copy for £20 (twenty pounds) ONLY, plus your Promise to pay me the balance of £55 – ONLY IF YOU WIN AT LEAST THREE FIRST TREBLE CHANCE DIVIDENDS IN YOUR FIRST 20 WEEKS OF ENTERING – otherwise you owe me NOTHING FURTHER. This is surely proof absolute of my supreme and utter confidence in my own abilities and in the capabilities of my discovery. My method is WORLD COPYRIGHT, any infringement and immediate proceedings will be taken, without prior warning. It is truly ingenious and has stood the test of time.

It is simplicity itself to calculate weekly. Your entry need not involve you in any large weekly stakes, you can enter for as little as just 25p. if you wish.

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

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

I am unable to vary my offer to anyone, so please do not request it, as I shall very easily dispose of the limited number of copies I am making available.

IMMEDIATELY I perfected my method I commenced winning right away, (first win just a little £163 the first week I used it), I HAVE NEVER LOOKED BACK SINCE, amongst all these dividends was one for over EIGHT THOUSAND POUNDS for just one eighth of a penny stake. I will release a copy of my method to you, on receipt of the completed order form and your Signature thereon, confirming you will treat it in the STRICTEST CONFIDENCE between us and retain it for your OWN USE ONLY.

Don't take MY word for it, read what people write about me and my method:

I won on Zettors last weekend. It was not a big sum, but all the same it was a very nice surprise for me. J.C., Lancs.

I appreciate the straightforward method you adopt, which is such a contrast to the rubbish of misrepresentation which is so common in the Betting World, by unscrupulous and self opinionated charlatans. C.H., Devon.

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

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

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

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

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

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

I am very interested indeed and enclose £20 herewith. I agree to pay you the balance of £55, ONLY if I win at least THREE FIRST TREBLE CHANCE DIVIDENDS in my first 20 weeks of entering – otherwise I owe you NOTHING FURTHER at any time – no matter how much money I win. My signature below is my Undertaking to retain complete and absolute confidence about the method.

Name
Address
.....
Signature HCW1

The Managing Director,
Football Enterprises, 'Anvon',
9 New Road, Haverfordwest,
Pemb. SA61 1TU

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

I sent in my FIRST entry last week and won 2nd. and 3rd dividends, as you will see from the enclosed certificate. One more and I would have collected over £400 for FIRST dividend. Once

I've won a fair amount I shall be staking from winnings and 2p per line, a FIRST dividend last week at this would have been over £3,000. C.A., Yorks.

STOP PRESS

**LATEST TREBLE CHANCE WINS-
FOUR DIVIDEND FOR THE
11th JUNE 1983**

HOME COMPUTING WEEKLY CLASSIFIED

Lineage:

35p per word — Trade
25p per word — Private
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).



**01-437 1002
EXT 213.**

Send your requirements to:
**Bridgette Sherliker
ASP LTD.
145 Charing Cross Road,
London WC2H 0EE**

ACCESSORIES

ZX81 High Res Graphics Unit
£30 (excl. VAT)
Tel: William Haynes 01-969 0819
Tool for Living
Notting Dale Technology Centre
191 Freston Road, London W10
6TH
cheque/PO (add 15% VAT)
plus 75p p&p

ATARI 400/800 'Supaklone'. don't risk losing your favourite programs! Supaklone copies most M/C-Basic cassettes (including bootable) £15.95 (postfree). Supaklone, 21, Trent Ave., Hutton, York YO3 9SE.

BOOKS

ORIC USER

Programs news views £10 for a years sub to: 20 Wynford House, Wynford Road, London N1.

ATARI OWNERS YOUR OWN MAGAZINE

PAGE 6 is published bi-monthly and features nothing but ATARI. Lots of programs, reviews, tutorials, hints and tips. Programs from America and elsewhere. Current issue has a special offer of 25% off Atari software. Can you afford to miss it?

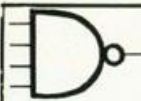
Subscription £6.00 for six issues or send £1.00 for a sample copy.

Page 6, Magazine Dept. H, 18, Underwood Close, Parkside, Stafford.
Tel: 0785 41153.

CLUBS

Programmes: keep your software copyright: very high returns possible; join our marketing and advertising club. Send tapes and enquires to: Loophole Software, Arkright House, Alexandra Road, Llandrindod Wells, Powys.

CONSUMABLES



**SPECIAL
OFFER
until end of
June**

STAR DP 510, 80 column,
100cps printer **£257**
OUTSTANDING VALUE
Add 15% VAT, P&P £8
Guaranteed Lowest Price in UK
**ROSCO LTD, Freeport,
Birmingham B20 1BR**
Tel: 021-356 7402

**REACH THE RIGHT
AUDIENCE AT THE
RIGHT PRICE
RING 01-437 1002
EXT 213.**

COURSES

MICRO COMPUTER COURSES

at Durham University for young people and/or parents. Full Board accommodation, first class instruction.

Courses from 6th to 27th August at £80-£100 per week including half day excursions.

S.A.E. for details. Assistant Bursar, College of St. Hild and St. Bede, Durham, DH1 1SZ. 0385 63741.

WEEK-END COURSES IN SINCLAIR BASIC AVAILABLE NOW.

15 hours of instruction from a qualified lecturer. Friday evening to Sunday evening. Luxurious 3 star Worcestershire hotel, all rooms with bath and other facilities. £55.00 inclusive.

Gainsborough House Hotel, Bewdley Hill, Kidderminster (0562) 754041

BASIC PROGRAMMING. Easy to understand beginners correspondence course. Tel: 09285-68948 or SAE to: M.C. Computer Services, 52 Shepherds Row, Runcorn, Cheshire WA7 2LG.

HARDWARE

Pet 32K new ROM small keyboard, built-in cassette deck and video screen, toolkit, many programs, £275. Tel: Wokingham (0734) 790184.

Second hand home and business computers bought and sold. Apple equipment always in stock and wanted. Bracknell (0344) 84423.

16K Oric-1 computer for sale, ring: 01-422 8480 at weekends, from 7 till 10.

Spectrum 48K word processor, available from Stephen Braye, 14 Norwood Road, Stretford, Manchester, price £6.50.

Acorn Atom 12K RAM 16K ROM with utilise lots of software and mags, 4K FL P7 ROM, £150 o.n.o. phone: Rugby 812940, (after 6pm).

IN/OUT for SPECTRUM

8 bits in, 8 bits out, via d.i.l. skts. Fibreglass P.C.B., with edge connector plug. Easy to use, full instructions supplied. £14.90, total cost inc. p&p SAE for details.

ALDECO
77 Cants Lane, Burgess Hill, Sussex
RH15 0LX

**BUY OR SELL
HARDWARE
THROUGH H.C.W.
H.WARE SECTION. IF
YOU'VE ALREADY
BOUGHT WHY NOT
ADD-ON? MAKE SURE
YOU APPEAR IN THE
RIGHT SECTION.
RING 01-437 1002
EXT 213.**

FOR HIRE

To Hire a Computer from ZX81 upwards, ring or write to: Business and Computer Services, 292 Caledonian Rd., N1 1AB. Tel: 01-607 0157.

Spectrum Software library. Many tapes for hire, £5 membership, £1.40 per fortnight. Send SAE for details. R. R. Aldridge, 45 Maiden Erlegh Avenue, Bexley, Kent.

RECRUITMENT

Caledonian Computer Consultants provide programming consultancy and training courses in Basic held regularly for beginners upwards. 292 Caledonian Road, London N1 1BA. Tel. 01-607-0157

**THIS SPACE IS
VACANT.
REACH THE RIGHT
AUDIENCE AT THE
RIGHT PRICE BY
PLACING YOUR
VACANCY IN THIS
SECTION.
RING 01-437 1002
EXT 213.**

SOFTWARE APPLICATIONS

VIC-20 to Tandy colour graphic printer, interface program also, 26 x 32 screen editor tape, £8. S.A.E. for information: D. Riley, 97 Longley Road, Harrow, Middx.

COMPUTER TAPES

Quality at realistic prices. 10xC10's at £5 p+p 50p. Full range in stock, send SAE for list.

We also offer a copying service to customers wishing to duplicate a cassette at £2.50 inc. tape p+p 50p. good discount on quantity offered to programmers.

Heath Microware, 4, Gateacre Ave, Oswestry, Shropshire. (0691) 652626

ALL YOUR CASSETTE NEEDS

Blank cassettes C15 with case, 40p each.
Labels in Blue, White or Yellow, 20 for 36p. Inlay cards in Blue, Red or Yellow 20 for 60p. Library cases, 9p each.

Postage on each complete order 55p. Stonehorn Ltd, (HCW), 59 Mayfield Way, Barwell, Leicester LE9 8BL.

Blank C15 Cassettes, Ampex Studio Quality Tapes, including Library case, insert and even postage. Ten for £5.95. Send Cheque/PO to.

FAIRMORN

4 Rectory Lane,
Castle Bromwich, Birmingham B36 9DH,
or SAE for complete price list. Tel:
021-747 3837.

ATARI CHARACTER GENERATOR 400/800 16K

Design your own character set (all 128 characters) on screen. Edit characters in groups of 4 at a time, for larger designs.

Redefined set can then be saved to cassette and incorporated in your own programs.

Features: Full editing and data display.

Supplied on cassette £3.50 inc p&p. P. F. Software, 15 Melrose Ave, Littleborough, Lancs OL15 9JD.

SPECTRUM OWNERS

First of all you had to back-up programs by making tape-to-tape copies. Now KEYSOFT present.



100% machine code! Copies any type of program. Order THE KEY for any ZX Spectrum. Only £5.95.

KEYSOFT, Dept PCWk
6 Bruce Grove, London N17 6RA
NB KEYSOFT advise users not to infringe the Copyright Acts.

COMPUTER ADDICTS. At last, a purpose built trolley for the home computer and accessories. So convenient to keep your equipment safe, tidy and ready for use on a mobile unit. How have you managed without one. Prices from £18.25 + p&p. Send now for further information to Setcraft Sussex Ltd., 32 Walpole Ave., Worthing, Sussex BN12 4PL. S.A.E. appreciated.

MZ-80A MZ-80K PROGRAMS. Business, utility, games, educational. List SAE: DCS, 38 South Parade, Bramhall, Stockport.

SERVICES

MICRO-USER T-SHIRTS EPSON SPECTRUM SIRIUS I SHARP SORD ZX81 ORIC I MICRO-FUN T-SHIRTS

- 1 - I'm User Friendly
 - 2 - Have You Seen My Peripherals?
 - 3 - Bit-Power
 - 4 - Fancy a Quick Byte?
- Available in white, pale blue or red
100% cotton in small, medium, large & Xlarge
- £3.25 each inclusive Mail Order only from
One Per Cent Screens Unit 12 Star Lane
Estate Great Wakering Essex.
- CLUB T-SHIRTS ALSO PRINTED**

ZX81 REPAIR SERVICE AT LAST NO NEED TO WAIT FOR WEEKS

Send your faulty ZX81 for fast reliable repair. We will repair any ZX81 KIT or READY BUILT UNIT Only £15.95 fully guaranteed + p+p £1.75

Please state the nature of problem. Send cheque or postal order to **NEXT COMPUTER SYSTEMS**, 89 HARVEST RD., (H.C.W) ENGLEFIELD GREEN, SURREY. TW20 0QR.

RING 01-437 1002 EXT 213. TO APPEAR IN THE SERVICES SECTION.

SOFTWARE BUSINESS

SUMMER SPECIAL DIY BOOKKEEPING

A complete bookkeeping system — up to 300 invoices per month. EASY TO USE purchase ledger, sales ledger, sales journals (14.95). The manual with each tape is written for people who have never used a computer and know little or nothing about bookkeeping.

ALL 3 at £39.95. NEW. Exciting business game **Wheeler-Dealer** — for 2 to 20 players, £7.95. For further details:

RAMTOP SOFTWARE, 12 Burtonwood, Warrington, Cheshire.

SOFTWARE GAMES

ORIC 1 PROGRAMMERS

Highest royalty % paid for original programmes. To join our **SPECIALIST** team, send tape or general details of your programmes for our offer.

CIRO SOFT
184 Hiltingbury Rd., Chancellors Ford, Hants. S.O.5.1.N.S.



Superb new game for
Spectrum/CBM 64

TRAX!

100% machine code action
available now
£5.50

Cheap at the price!

Soft Joe's Business Centre
Cloughton Road, Birkenhead,
Merseyside L41 6EF.
Tel: 051-647 8616

COMMODORE 64 GAMES

Pakacuda £9.99
Ape Craze £9.99
Escape MCP £9.99
Centropod £9.99
Sketch and Paint £9.99
p&p 50p Cheques/PO's or sae for details to:

Regency Software, PO Box 28,
Ascot Berkshire SL5 7RR.
Tel: 0990-22707.
Trade Enquiries Welcome

BAMBY SOFTWARE

Leverburgh, Isle of Harris. PA83 3TX
Tel. 085 982 313

INTRODUCE ORIGINAL GAMES FOR DRAGON 32

Golden Apples: Steal the apples, then defeat the warlock £5.95
Planetary Trader: Choose your cargo (that's the easy bit) then deliver it £5.95
Surprise: Spells, giants, a magic ring, but not another 'Lord of the Rings' £8.45
Mini-games: 4 games per tape, simple but compelling! 5.95
All tapes include Postage & Packing and a no-quibble guarantee.
Write to us at the above address, or ring anytime between 9a.m. and 9p.m. (Alternative phone no: 085 982-239)

DRAGON 32 & TANDY COLOR

FREE

Over 850 people at recent exhibitions have tried but unable to complete this new challenging board game. We are giving away Free to the first 10 people to complete correctly our Knights program.

4 different Adventure Games all £10
Send £5 for a copy of:

ROVING KNIGHT 16K EXT BASIC

State if Tandy or Dragon

Flatbell Ltd (HCW), 9 Franklin Road, Haddenham, Bucks. HP17 8LE.

Send SAE if Catalogue required.

CHRISTINE COMPUTING

TI99/4A Specialists software games. North-Sea, Astro Fighter, Blast-It! Code-Break, Core!

All the above £3.50 each, £6.50 for 2, £9.00 for 3. Handy Sub Programs (tape and booklet) £4.50.

Help and advice service. For full details send S.A.E. to: 6 Florence Close, Watford, Herts.

Paul Gillett software games for the ZX81. (16K). Blockade Runner — addictive fast action M/C game. Complete four — a game of strategy as reviewed in ZXC June/July, £3.95 each to: 38 Cromwell Way, Kidlington, Oxford OX5 2LL.

Dragon 32 Rally Racer the new and best game from Video Software, price £4.50 (inc p&p) send cheques to: Video Software, 22 Fairlawn, Swindon, Wilts. SN3 6ET, England.

LANTERN SOFTWARE TI99/4A

High quality arcade games and utilities inc., Operation Moon and Superb Battlestar Attack. S.A.E. for details to: 4 Haffenden Road, Tenterden TN30 6QD.

5D SOFTWARE

Z80A machine code programming for ZX81 16K. Two cassettes and instruction booklet. Many examples and sub-routines for your own programme, £17.50. Enquires and cheques to

Hampland Cottage, Lopham, Diss, Norfolk. Tel: 0379 88640.

OSARIS COMPUTERS

The New Name in Software

Many games available, all machines. We want your programs. All micros catered for, games, education, business, especially for Lynx, Spectrum, VIC-20. Top payments with up to 50% royalties contact:

Osaris, 77, The Mall, Southgate N14. Tel: 01-886 1797 (business hours).

SOFTWARE FOR TANDY COLOR & DRAGON

REF	ADVENTURES	PRICE
1001	LOST IN SPACE	16K 5.00
1002	DRACULA'S CASTLE	16K 5.00
1003	DEATH PLANET	16K 5.00
1004	FLOATING BOMB	16K 5.00
GAMES		
2001	STAR TREK	16K 7.00
	Find the enemy and destroy him	
2002	A-MAZE-IN	16K 10.00
	Seek and destroy the monsters in the maze as quickly as you can take you hours	
2004	OWNERSHIP	32K 10.00
	Similar to MONOPOLY	
2006	GAMES PACK 1	4K 5.00
	5 Different games	
2007	GAMES PACK 2	16K 5.00
	5 Different games	

Send SAE for catalogue. State if TANDY or DRAGON. All prices include P&P and VAT
Cheques or Postal Orders to:-
FLATBELL LTD (DEPT HPW)
9 Franklin Road
HADDENHAM
BUCKS. HP17 8LE

TEXAS TI99/4A SOFTWARE

GM4	SNAKE (graphics)	£4.95
GM5	HAUNTED HOUSE	£4.95
GM6	SORCERER'S CASTLE	£4.95
GM7	3-D MAZE (graphics)	£3.95
GM17	FORBIDDEN CITY	£4.95
GM21	CHALICE (graphics)	£4.95
GM22	BOMBER (graphics)	£4.95
THE TEXAS PROGRAM BOOK		
(35 programs for the TI99/4A)		£5.95
Send s.a.e. for full list. Orders under £6 please add 50p p&p. Orders over £6 post free. Send cheque or PO to:		
APEX SOFTWARE (HCW)		
115, Crescent Drive South, Brighton, BN2 658		
Tel: Brighton (0273) 36894		
Access/Barclaycard welcome.		

TI-99/4A Grand Prix for unexpanded machine, £3.95. TI-99/4A programs wanted for royalties. Microsonic(5), 85 Malmesbury Road, Cheadle Hulme, Cheshire.

Martian Daisies an original lighthearted 'space' game for the 16K Spectrum colour and sound £2.20. A. Crooks, Church House, Shotley St. Ipswich, Suffolk.

Good discounts on software for most popular micros, SAE details: Software Cellar, 42 St. Michael's Close, Billingham, Lincoln.

SOFTWARE EDUCATIONAL

Spectrum French Tutor 16K Teach yourself French in no time with this new program. Simple to use with full instructions. Excellent educational value for adults/school children alike at only £5 (all inc.) send cheques/P.O.'s to E.R.C. Computer Services, 53 Thurso Crescent, Dundee.

Oric Childrens maths program with double height feature, plus colour for 16K & 48K. Send £4 plus 55p postage to: S. Pearson, 55 Line Walk, Acton, Sudbury, Suffolk CO10 0XO.

TI-99/4A O-level biology. Respiration/photosynthesis assessment program, £3.50. F. Thornhill, 5 Highburgh Drive, Rutherglen, Glasgow G73 3RR.

USER GROUPS

NEWBRAIN the Independent Newbrain User Group 15 St Johns Court, WAKEFIELD WF1 2RY. £8.50 Monthly NEWSLETTER.

ORIC-1 OWNERS

Tangerine created Oric-1, now T.U.G. creates the rest. An independent users group with a solid reputation for progressive system support. Monthly news letters, meetings, software, hardware reviews. Advise and lots more. We have a proven record of performance on our system. Join T.U.G. you'll like us, We Do! Send £1 plus S.A.E. (A4) for sample newsletter and details.

Tangerine Users Group,
1 Marlborough Drive,
Worle, Avon BS22 0DQ.

LYNX OWNERS

Join **NILUG** The National Independent Lynx User Group. Subscriptions £9 per year. Send Cheque, payable to: Nilug, 53 Kingswood Ave, Sanderstead, South Croydon, Surrey CR2 9QO. Newsletter now available.

WANTED

We are currently looking for original debugged games for any machines. Programs preferably, over 8K. If you have any programs that fit those criteria call us on 085 982 313, to discuss remuneration. Bamby Software, Leverburgh, Isle of Harris PA83 3TX.

WANTED GAMES/SOFTWARE

Well established International Marketing Company now branching into Computer Software for Entertainment - Education.

We are looking for original games/programmes for:
VIC 20 • SPECTRUM • ORIC 1 • BBC

We pay Top Royalties for good original material. Contact:

International Marketing Services
(Software Division)

143/145 Uxbridge Road, London W13
Tel: 01-567 6288

Oric-1 48K. Original educational programmes wanted. In particular, age group 4-10. Good royalties paid. Send programmes to Bouch, Windyridge, Asby, Workington, Cumbria.

Programmers Wanted

We require quality programs for most micro's and experienced programmers to undertake contract work. We pay cash fees, royalties and distribute in the UK and USA.

Tel: (0256) 25107 or write to:
Dream Software, P.O. Box 64,
Basingstoke, Hants. RG21 2LB.

RECRUITING? SELLING A PRODUCT? OR A SERVICE?

GET MAXIMUM BENEFIT FOR YOUR MONEY
FIND OUT ABOUT OUR WHOLE RANGE OF PUBLICATIONS IN:

COMPUTING ELECTRONICS VIDEO RADIO

Simply telephone

ASP CLASSIFIED

01-437 1002

(We take Access and Barclaycard)

NATIONWIDE SHOPS & DEALERS

LYVERSOF

66, LIMESTREET,
LIVERPOOL,
L1 1JN.

051-708-7100

Open 6 days a week 9 till 5.30

We specialise in our own VIC 20 software.
The Largest stockists of Home Computer
Software in the North West.

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.

4 MAT COMPUTING

67 Friargate, Preston PR1 2AT.
Open 9 till 6 Monday to Saturday. We are
stockists of VIC-20, Commodore 64, Oric
1, Texas Instruments, TI-99/4, Spectrum
ZX81 and Dragon, BBC software and a
wide range of software and peripherals not
available anywhere else in Lancashire.

GEORGE'S

89 Park St. Bristol BS1 5PN.
Tel: (0272) 276602.

Stockists of approx 600 computer book
titles, Spectrum ZX81, and Jupiter Ace
Computers, computer magazines and
software for Spectrum ZX81, BBC,
Dragon, Jupiter Ace, VIC and TRS80.
Open Mon-Sat 9.5.30.
Access/Barclaycard facilities.

TO BE INCLUDED
IN THIS SECTION
RING 01-437 1002 OR FILL
IN THE COUPON BELOW

D.A. COMPUTERS LTD

Official BBC dealer and service centre,
everything you require for the BBC
computer inc. Epsom printers, Shugart
disc drives, PI digitiser, Micro Vitec
monitors, full range of games, software
and books.
104 London Road, Leicester.
Tel: (0533) 549407.

THE COMPUTER CENTRE

68 Chestergate, Macclesfield, Cheshire.
Tel: 0625 618827.
Stockists of leading home computers,
software and accessories. For 50p off any
software over £5 bring this ad.

IMO Computer Centre 39-43 Stan-
dish St. Burnley. Tel. 54299. Open 6
days. Specialists in home and
business computers. ACT Sirius/
Canon/Transtec/BBC/Acorn/
Atom/Oric and others and peri-
pherals for most micros.

LANCASHIRE MICROS

51 Queen Street, Morecambe.
Tel: 411435. Also open Sundays.
Sinclair, Commodore, Acorn/BBC
+ Dragon.
Authorised dealer for Bug-Byte,
Imagine, Quicksilver, Artic,
Melbourne House, Silversoft etc.



LERWICK, SHETLAND

Tel: 0595 2145

Software, Books Accessories
Service

Acorn Computer, Dragon-32, ZX81,
Spectrum, VIC-20, CBM-64
Open Mon-Sat 4.30-5.30

Sussex Computer Centre
39 High Street

LITTLEHAMPTON
West Sussex Tel: 5674

We are stockists of Sinclair, VIC, Atari,
Dragon, Oric, Lynx, Sharp, Colour Genie
and Texas Instruments.
Members of Spectrum Discount Group.

CASTLEHURST LTD

1291 High Road, London N20. Tel: 01-446
2280. 152 Rye Lane, Peckham, London
NU15. Tel: 01-639 2205. Stockists of
Sinclair, Lynx, Atari, Commodore, BBC.

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

CRYSTAL COMPUTERS AND COMPONENTS LTD.

209, Union Street, Torquay, Devon
TQ1 4BY. Tel: 0803 22699.
We are open 6 days a week 9.30 to 5.30.
1/2 day Wednesday, stockists of: Sinclair,
Dragon, Oric, Sharp, Apple etc.

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), 145 Charing Cross Rd., London WC2H 0EE.





your finances driving you mad?

Do you find that working out your finances makes your head buzz? Do you see red?

Don't worry, now you can have Hilton's **Personal Banking System** on your side, giving you a clear head start and (horribly) putting you back into the black!

Maintain permanent records and fully detailed statements of your finances including:

★ All cheque book transactions and bank receipts

★ All standing order payments **Automatically Processed**

(monthly, quarterly, six-monthly or annually and for set number of payments)

In addition the ability to search, locate, delete or correct previous entries. List by category facility is included. Additional **Bank Reconciliation** module available to automatically match your Bank Statement to your **Personal Banking System** account. Full instructions included and **guaranteed** after sales maintenance provided.

★ **PBS ZX81 £8.95 (16K)**

★ **ZX SPECTRUM £9.95 (48K)**

★ **DRAGON £9.95 (32K)**

Bank reconciliation (for use with above) £5.

Ask for the PBS at your local computerstore
ORDER by POST (specifying machine)
OR at the POST OFFICE using
TRANSCASH ACCOUNT 302 9557

Hilton Computer Services Ltd
14 Avalon Road,
Orpington, Kent BR6 9AX

★ YOUR PBS IS NEVER OUT OF DATE ★



NEW

BOSS

(UK)

Turbo Driver

ZX SPECTRUM 16/48K

Specifications

- 81 UDG's
- Giant graphics (the two shown are full size on a 14" vdu)
- Fast machine code
- Sound effects
- Full colour
- 6 Race cars
- 7 Hazards
- Fuel gauge
- Full-width track

To give you an arcade-style game with some of the most advanced graphics ever seen on a ZX Spectrum!

£5-95 inc P&P

TURBO

BOSS (UK)
Flockton House
Audby Lane
Wetherby
W Yorks LS22 4FD

Name _____

Address _____

HCW17

CLASSIFIED ADVERTISEMENT — ORDER FORM

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.
13.	14.	15.

Please place my advert in Home Computing Weekly for _____ weeks.
Please indicate number of insertions required.

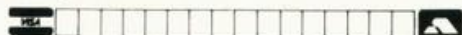
Private sales — 25p a word Trade — 35p a word

CLASSIFIED DEPT., HOME COMPUTING WEEKLY,
145 Charing Cross Rd., London WC2H 0EE. Tel: 01-437 1002.

Name _____

Address _____

Tel. No. (Day) _____



The contents of this publication, including all articles, designs, plans, drawings and programs and all copyright and other intellectual 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.

© 1983 Argus Specialist Publications Ltd

ISSN 0264-4991

MAIL ORDER PROTECTION SCHEME

If you order goods from Mail Order Advertisers in this magazine and pay by post in advance of delivery, this publication will consider you for compensation if the advertiser should become insolvent or bankrupt, provided:

1. You have not received the goods or had your money returned; and
2. You write to the publisher of this publication explaining the position not earlier than 28 days from the day you sent your order and not later than 2 months from that day.

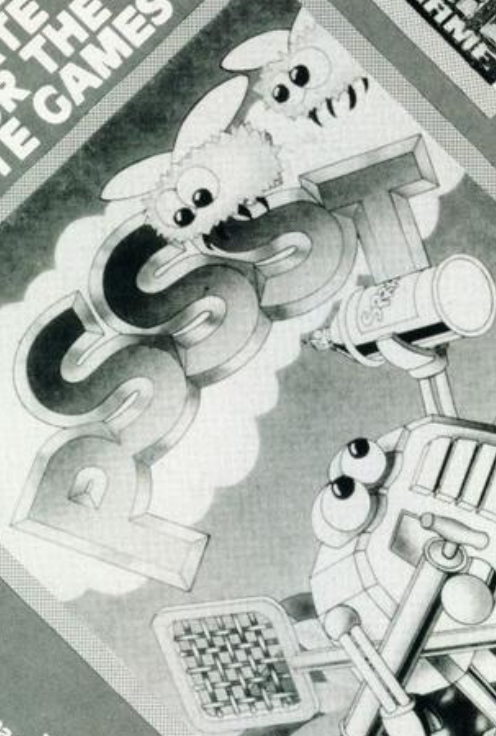
Please do not wait until the last moment to inform us. When you write, we will tell you how to make your claim and what evidence of payment is required.

We guarantee to meet claims from readers made in accordance with the above procedure as soon as possible after the advertiser has been declared bankrupt or insolvent to a limit of £1,800 per annum for any one advertiser, so affected, and up to £5,400 p.a. in respect of all insolvent advertisers. Claims may be paid for higher amounts, or when the above procedures have not been complied with, at the discretion of this publication, but we do not guarantee to do so in view of the need to set some limit to this commitment and to learn quickly of reader's difficulties.

This guarantee covers only advance payment sent in direct response to an advertisement in this magazine (not, for example, payments made in response to catalogues, etc, received as a result of answering such advertisements):

CLASSIFIED ADVERTISEMENTS ARE EXCLUDED.

LOOK FOR THE
SIGN FOR THE
ULTIMATE GAMES



PSSST for 16 or 48K SPECTRUM

Little vermin, leave my plant alone Oyl My plant's dying. No! No! My plant's sucking the life from my Thugoidan Megga Chreatnodill. soon put a stop to their little game. Take that and that. Hal Hal. Mustn't die. Mustn't die. Its got to flower. It must do. It won't be long now. Why! you little. Quick! Quick! They breed so fast, can't hold them back for long. Hurry!... Arrggg!

PSSST... The ULTIMATE Challenge. code incredible sound effects amazing smooth high resolution visual graphics and all those features you come to expect from the ULTIMATE GAME. Now you know why 'ULTIMATE PLAY THE GAME' design: 'ULTIMATE PLAY THE GAME'

JET PAC FOR 16 or 48K SPECTRUM

The 'Acme Interstellar Transport Company' is delivering spaceship kits to various planets throughout the Galaxy and as chief test pilot, all you have to do is assemble the rockets and thrust onto your next destination. But as you don't often get the chance of a free trip across the Galaxy and space travel is on, so expensive, now's your chance to get rich! You might just as well stop off on several planets on your journey, collect the odd sack of precious gems, elements or gold, plus yourself equipped with you. Upon landing you will find any mega powerful, quad very latest JET PAC, plus yourself equipped with you. Phoron laser phasers, to blast any nasty, mean, little aliens who might object to your visit. And my! do those aliens get upset, when you collect all of their valuables, and sneak off, without so much as a by-your leave.

code. Incredible sound effects amazing smooth high resolution visual graphics, the totally new addictive concept and all those extra features you expect from the ULTIMATE GAME. Now you know why 'ULTIMATE PLAY THE GAME' design: 'ULTIMATE PLAY THE GAME'

Dealership enquires welcome.
phone (0530) 411485



These games should be available from W. H. SMITH, JOHN MENZIES, BOOTS, other larger department stores and all major software retailers, alternatively send the coupon to ULTIMATE PLAY THE GAME for immediate dispatch, subject to availability, you should receive your order within 3 days of posting.

£5.50 each

Including VAT first class postage and packing.
ULTIMATE PLAY THE GAME is a trade name of Amey Computers & Graphics Ltd.

Post this coupon now to **ULTIMATE PLAY THE GAME**, The Green, Ashby de la Zouch, Leicestershire, LE6 5JU.

Please send me the following:

☐ JET PAC

☐ KEMPSTON joystick information

☐ PSSST

I enclose PO/cheque for £.....

Name.....

Address.....

SPECTRUM SOFTWARE

TIME-GATE

4D Space/time adventure in fast moving graphics 48K

Author: **John Hollis**

THE CHESS PLAYER

With Speech and personality 48K

Author: **Martin Wren-Hilton**

METEOR STORM

With speech and Hi Res Graphics 16K or 48K

Author: **John Hollis**

SPACE INTRUDERS

With mutants and Hi Res Graphics 16K or 48K

Author: **John Hollis**

EASYSPEAK

Add speech or music to your programs 48K

Author: **John Hollis**

MINED-OUT

With 9 levels of minefield 48K

Author: **Ian Andrew**

SOFTWARE FOR THE ZX81 WITH 16K RAM

QS ASTEROIDS

"...very good...
...addictive game!"
(C & VG)

Author: **John Hollis**

QS DEFENDA

"...better than any other
arcade game I've seen"
(Sync)

Author: **Nick Lambert**

QS SCRAMBLE

"...amazing, fantastic!"
(PC W)

Author: **Dave Edwards**

QS INVADERS

"...just like the real
thing!" (C & VG)

Author: **Dave Edwards**

MUNCHEES

Features 1 to 4 Ghosts,
3 Munchees, Power pills

Author: **A. Laird**

GALAXIANS & GLOOPS

Features two types of
swooping Galaxian

Author: **T. Beckwith**

CROAKA-CRAWLA

With Frogs, Lornes, Logs,
Crocodiles, Turtles,
Flies,

Author:
John Field

SPECTRUM & ZX81 GAMES FROM QUICKSILVA

A WHOLE GALAXY OF ACTION AT YOUR FINGERTIPS

NEW RELEASES FOR THE ZX81 & SPECTRUM

SPECTRUM FRENZY

Arcade action

Features: Full colour hi-res graphics, sound, high score table, hold feature, 5 levels of robots, Evil Orville the minelayer, exploding pods, progressive difficulty, attract mode

Author: **David Shea**

ASTRO BLASTER

Arcade action

Features: Full attract mode, 5 attack waves, 15 levels of difficulty, rapid fire, meteor storms, changing aliens, plasma bolts, killer bombs, full colour hi-res graphics, full sound

Author: **John Edwards**
16K or 48K Spectrum

A WORD PROCESSOR

Features:

Menu driven prompts given at all times

Drastic commands — e.g. Clear Text —

are automatically questioned

Load/save commands all text justified, on screen as well as printer

Author: **P. Baker**
48K Spectrum

PIXEL GAMES FOR THE ZX81 WITH 16K RAM TRADER

A trilogy of 16K programs that combine to give an epic 48K graphic adventure. As a galactic trader you deal with some very bizarre customers indeed

STOP PRESS

Trader now available for the Spectrum £9.95

SUBSPACE STRIKER/ZOR

With your deadly animat torpedoes, you unleash havoc in the Federation's Spacelanes

STARQUEST/ENCOUNTER

With the help of your onboard computer you seek a habitable planet amidst the perils of deep space

ZX81 GAMES OCEAN TRADER

An adventure set in the 19th Century

You own and captain a vessel, sail between 5 ports and deal in coal and whisky, with storms, pirates, sea mist and vessels adrift

Author: **A. Morgan**
ZX81 with 16K RAM

COSMIC GUERRILLA

Arcade action

Fast m/c action, will drive QS sound and character boards, responsive controls, high score tables

Author: **C. K. Tame**
ZX81 with 16K RAM

3D BLACK STAR

Arcade action

Features: Fast 3D graphics, fast scoring, four types of target, Eight instrument displays, warp drive, resurging aliens, time limit, 17 levels of progressive difficulty, high score table

Author: **M. Sudworth**
ZX81 with 16K RAM

DAMPER & GLOOPER

Arcade action

Features: Fast action, 5 dampers increase to 6 on later phases, 3 lives plus bonus lives, ever increasing speed, high score, stall frame features, spiral clear at end of games, bonus phase worth 5000 pts., high score save and display

Author: **P. Crane**

ZX81 with 16K RAM

PIONEER TRAIL

A western adventure

Features: 20 levels of play "Mind Game" plus shooting rifle speed uses all keys and is measured against the players personal average response. This game is based on historical data

Author: **Marion Stubbs**
ZX81 with 16K RAM

Quicksilva Limited,
Palmerston Park House,
13, Palmerston Road,
Southampton SO1 1LL
Telephone (0703) 20169



SPECTRUM GAMES

Time Gate £6.95
Frenzy £4.95
Mined-Out £4.95
Easyspeak £4.95
Astro Blaster £4.95
Meteor Storm £6.95
The Chess Player £4.95
Space Intruders £4.95
A Word Processor £9.95
Trader 48K

PIXEL GAMES FOR ZX81

Trader £9.95
Subspace Striker £3.95
Zor £3.95
Starquest & Encounter £3.95

ZX81 GAMES

QS Asteroids £3.95
QS Defenda £3.95
QS Scramble £3.95
QS Invaders £3.95
Croaka-Crawla £3.95
Galaxians & Gloops £3.95
Munchees £3.95

Black Star £4.95
Cosmic Guerilla £3.95
Damper & Glooper £4.95
Ocean Trader £3.95
Pioneer Trail £3.95

Cheque payable to Quicksilva

Name _____

Address _____

Please send me the games as
ticked. Supplied on
Cassette

Send order to:
Quicksilva Limited, Palmerston Park House, 13, Palmerston Road, Southampton.

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