

Home Computing WEEKLY

An Argus Specialist Publication

NEW

April 26-May 2, 1983 No.8

35p

INSIDE
Programs to
type in for:
VIC-20, BBC,

**Show
reports:
London,
Hanover**

**Pages of
news**

**Software
reviews for:
Atari,
Dragon 32
VIC-20,
Spectrum,
BBC**

**Help us to
get out**

There are some reddish faces at Algray Software — an easy adventure game turned out to be not quite so simple.

The program in question is Portals of Evil, a £7.95 cassette for the Colour Genie, written by 22-year-old Paul Barsby.

The player starts in a castle sewer and has to work up through the castle to destroy the wizard on the top floor, freeing a country enslaved by fear for 300 years.

DRAGON GETS U.S. WARNING

Dragon Data, planning to launch its big-selling computer in America, has been warned by a Tandy boss: You'll be tangling with the big boys.

By the end of June 10,000 Dragon 32s should be with distributors in America, rising to possibly 200,000 a year.

Speaking at the Forth Worth, Texas, headquarters of Tandy Radio Shack, John Shirley, senior vice-president in charge of computer merchandising, said: "They will find it a very difficult and competitive market."

"I'm not saying it can't be done — I'm saying the cost is extremely high. You have to spend millions in TV advertising. Last year 500m dollars was spent in total on television by the major companies."

Tandy's Colour Computer costs 299 dollars for the 16K model, 399 dollars for 16K with extended BASIC and 549 dollars for 32K, also with extended BASIC. The Dragon is about £170 in the UK, without shipping costs this converts to about 249 dollars.

But Algray's Graham Heywood said: "People have been ringing us up and writing to us because they can't get out of the sewer."

"We have found that it may be a little too hard for them. We thought it was easy — but we've had three years' experience. It turns out that what we think is an introductory game is not necessarily."

Now a sealed envelope will be enclosed with the game giving some hints. Here are a couple of tips for the 200 people who have already bought Portals of Evil:

Continued on page 3

Asked where the export Dragons would be made, marketing director Richard Wadman said: "We would prefer to make it here and ship it to the States. Costings are being done down to the third decimal place."

But he said costs may dictate that the Dragons are made under licence in America with some parts

made in Port Talbot to begin with.

Mr Shirley said Dragon would face the might of four big companies: Atari, Radio Shack, Texas Instruments and Commodore. There was also the Spectravision and a new 32K computer from Panasonic to contend with.

He said: "EACA, a Hong Kong company, has a licence in America with some parts

Continued on page 5

★ **ARCADIA** ★
★ **SCHIZOIDS** ★
★ **WACKY** ★
★ **WAITERS** ★

**Three
mind benders
from**



For details please ring 051-236 6849

SOFTEK

SOFTWARE

Dragon's Lair and Joust MONSTERS IN HELL

JUST THREE OF THE AMAZING NEW MACHINE CODE GAMES FROM SOFTEK
FOR THE ZX SPECTRUM

MONSTERS IN HELL Joust

If it wasn't actually a nightmare, then it certainly seemed like one... trapped in Hell with the all-consuming flames below me being chased by vampire monsters through a mad maze of ladders and platforms. But I had Holy Power on my side, and a hammer which could magically create holes - the only way to kill these crazy monsters seemed to be to make them fall to a lower level! But just then, the Mad Monk sent his Ghouls after me... Any ZX Spectrum.

MILLIPEDE

Milli the Millipede seemed indestructable; as soon as I shot a part of her, the rest of her just kept on coming! But I was faster, she wouldn't get to me... just then Sid the Spider appeared causing me to swerve and lose my aim. And what's this??? Scorpi the Scorpion dive bombing me with her indestructable fleas which leave more of those blasted mushrooms to spoil my aim! Quite the most delectable version of the arcade favourite for any ZX Spectrum.

COSMIC SWARM

OK, I accept that I'm to blame. I was warned against entering the Proxima Centauri Sector without an escort. And now I'm in the midst of a swarm of alien egg-like forms, collision seeming imminent I fire, they break open revealing strange alien types which fly wildly around. I fire again as if my life depended upon it - then two of the forms fuse into a single mutant which chases me! One of the most original shoot-em-up space games to appear. Any ZX Spectrum.

ALL GAMES £5.95

SOFTEK
SOFTWARE

329 CROXTED ROAD LONDON

SE 24

Its taken America by storm - now its available for your ZX Spectrum! In this amazing new arcade game you ride an ostrich and Joust with the Dark Lords on their buzzards in a fantasy land where anything can happen - and it usually does. You control your mounts wing-flap and direction of flight in this fast and furious game of wits. Any ZX Spectrum - Available very soon!

Dragon's Lair

I thought it would be easy... explore the Dragon's Lair, find the legendary Crystal of power and be gone before he knew of what was happening. More fool I, for he was there all right waiting for me, and that imp which followed me everywhere with no other seeming purpose than to steal my compass without which I was well and truly lost! The ultimate Maze-Adventure game for the 48K Spectrum.

FIREBIRDS

They swoop, they dive, they turn figures of eight. The most amazing Hi-Res shoot-em-up arcade type game to come out in ages! Can you survive? Any ZX Spectrum.

SOFSYS

We're not only famous for our games... Write for Details of Sofsys, consisting of a User Definable Key program, our Sofcom Compiler, our Sofmon Disassembler, our Sofsem Assembler and our unique Sofkits 1 & 2 utility and graphics kits. You'll be amazed, they are inovative and easily the best available!

BUY THIS SPACE

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

Continued from front page

read the book of spells and use the sword on the mesh. But watch out for the giant rat.

Algray has also brought out a really simple adventure game for beginners, Labyrinth of Fear, costing £7.95.

Mr Heywood said: "The hardest part is thinking up names. We were originally going to call it The Deep because you keep falling down through different levels. But we found the name was already being used."

Algray, which also imports Tandy software, is planning to launch programs for the Dragon soon.

Algray Software, 33 Bradbury Street, Barsby, South Yorks S7 6AQ

Join Genie club, says Lowe

As part of a campaign to boost the Colour Genie, importers Lowe Computers started the National Colour Genie Users' Group on Saturday, along with a club magazine called Chewing GUM. The initials stand for Genie Users' Magazine.

Lowe Computers, Chesterfield Road, Bentley Bridge, Matlock Derby DE4 5LE

Glare-free TV screens

Glarego, a new anti-glare kit at £7.95, is claimed to provide a lasting non-reflective surface for TV screens.

Marketed by Vision Products, the kit is two aerosol sprays — one to clean the screen and another to apply the anti-glare surface — A screen mask to stop the sprays spreading and a special lint-free cloth.

Vision Products, Unit 10, Wessex Road, Bourne End, Bucks SL8 5DW

Home Computing WEEKLY

News	5-9
U.S. Scene	5
One Man's View	6
Letters	10
ZX81 programming	12
GOTO — your flexible friend	
Software reviews	14
More for the price of one	
Atari software reviews	16
Software from the States	
Spectrum program	19
Find a way out of the Amazing Maze	
Software reviews	22
Put on your thinking cap	
BBC program	25
Take a trip with Nightdrive	
Vic-20 program	29
Can you beat the computer at Pontoon?	
Software reviews	33
Clear the decks for some action games	
Profile:Hilderbay	37
A small company that means business	
BBC program	42
Get ready for the Tate	
Classified ads start on	44

Acting Editor: Paul Liptrot
Assistant Editor: Candice Goodwin
Managing Editor: Ron Harris
Advertisement Manager: Coleen Pimm
Assistant Advertisement Manager: Barry Bingham
Classified Advertising: Bridgette Sherliker
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

FREE CATALOGUE
of the best for Spectrum/
ZX81. Quote this advert-
isement and call 24 hours.
01-789 8546
SOFTWARE SUPERMARKET

World at your fingers

Several months of research went into writing World Info, a £5 program for the 48K Spectrum, says software house Wimsoft.

The result is a store of information on all the countries of the world, including facts on population, area, head of government and military alliances.

And two more files on the same tape give details on human rights, wars...and disturbances which may break out in the future, says Wimsoft.

Updated frequently, it is said to be useful for sixth-formers, teachers, journalists and others who need to have a background to the news.

As the facts change, the data files can be updated.

The program is a datafile which runs on Campbell Systems' £15 database program Masterfile.

Wimsoft has also brought out a program called Phones which it says will share out the costs of telephone calls among several users and keep track of a single user's calls. It costs £4.50 and runs on both models of the Spectrum. There is also a version for the 16K ZX81.

Wimsoft, 20 Brookside Road, Wimbourne Minster, Dorset BH21 2BL

Campbell Systems, 15 Rous Road, Buckhurst Hill, Essex IG9 6BL

Kit 'cures the wobbles'

Wobbly computer RAM packs can be cured, says Adapt Electronics, with a £7.50 kit called the RAMlock.

Adapt says the kit, costing £8 by post, is suitable for the ZX80 and ZX81 and all popular RAM packs and can be fitted with a soldering iron, but not cutting or drilling.

A Spectrum version would be available soon.

Adapt Electronics, 20 Starling Close, Buckhurst Hill, Essex IG9 5TN.

ATTENTION! - all ZX 81 (16K) and
Spectrum (48K) users - get this, the ...

Micro-Myte 60

It's the high speed computer phone link you have been waiting for:

Transmits/receives at 600 Baud: Twice the speed of most other acoustic modems (Including professionals).

Economic to use: Communicates data direct between compatible users. Typically 50K bits per two minutes of telephone time. (Cheaper than a first class letter.)

Simple to operate: Connects directly to your cassette input/output sockets.

Use your home computer like an on line terminal. Link up with your friends by telephone or cable.

The Micro-Myte 60, in its sturdy moulded plastic housing, complements your home computer equipment.

Stop press!

Micro-Myte 60 will operate with all makes of home computer - software available soon.

Only

£39.60

complete, inclusive of VAT, post and packaging in the UK only.

No fuss, no hidden extras no rental costs

Each kit comprises an acoustic modem, ZX81 and Spectrum software on cassette, connection cable and operating instructions, together with a twelve month guarantee.

Micro-Myte Communications Ltd
Polo House
27 Prince St.
Bristol 1

Telephone (0272) 299373

Callers welcome



I am a ZX81/Spectrum user (specify)
Please send me Micro-Myte 60 modem(s) at £39.60 each.
I enclose cheque/postal order, payable to
Micro-Myte Communications Ltd.
Name Telephone
Address

Continued from front page

Kong company, never achieved much success with its Model 1 which was similar."

He also pointed out the differences between the UK and US home computer markets. In America small home micros were sold in chain stores, discount houses and department stores and not in computer shops because "there's no money in it." The specialist computer shops sold machines like Apples and the IBM Personal Computer.

Both men said they knew nothing of rumours that Tandy was planning to go to law over the similarities between the Colour Computer and the Dragon 32. Both machines use Microsoft's extended colour BASIC and the same Motorola chips.

Mr Wadman said: "This is a rumour which has been floating around for a fair while. The company's view is that there is nothing on which to take action."

"We have unofficially spoken to Tandy and they don't know anything about it."

"Electronically they are similar because they have to be,

but the design and layout of the board bears no resemblance to the Colour Computer. Apart from the common chip set there is nothing to take action on."

And Mr Shirley said: "I've no knowledge of that."

Mr Gary Pack, of Tandy Radio Shacks's legal department, said: "I think you can appreciate that any time you are considering anything with legal action we cannot comment. These are not things to be discussed in the public domain."

*Dragon Data, Kenfig Industrial Estate, Margan, Port Talbot, West Glamorgan SA13 2PE
Tandy Corporation (UK),
Tameway Tower, Bridge Street,
Walsall, West Midlands*



Dragon 32 Computer

My pick of the crop in America

More new product announcements this week.

For the Commodore 64, Protecto Enterprises sells the following items (and more) direct from the factory. It offers a word processing package, a database package, and an electronic spreadsheet package for \$69 each.

Protecto offers a programmer's helper package for \$59, a personal and business accounting package for \$49, a programming reference guide for \$18.95, and a BASIC tutor and typing tutor for \$19.95 each. Additionally, the same firm markets an 80 column board.

It will sell the word processor, data base, and spreadsheet packages together with the 80 column board for \$275. They offer a 10-day free trial on their products, will send a free catalogue upon request, offer over 300 programs for the 64, and claim to love their customers.

You can get in contact with them by writing or calling: Protecto Enterprises, P.O. Box 550, Barrington Illinois 60010, (312) 382-5244.



If you own a VIC-20 and need some improvement on your typing skills, try Typing Package, three programs on a cassette — one for warm-up, one for drill, and a third for testing. Reasonably priced, it comes from MFJ Electro Enterprises, Kanata, Ontario, K2K 1X3 Canada. Contact them for costs.



Two new games for the ZX-81 have just been announced. Vault of the Centaurs lines you up against the Centaur Warriors whom you must overcome to obtain fuel for your spaceship.

You then fly your ship through space, reach the gamed Vault, all the while avoiding interstellar obstacles, compute the entrance position, avoid the guard, obtain the treasure, and steal your way home avoiding all the same obstacles. It costs \$19.95 on cassette for 16K machines.

Mega-Mind puts you against the computer. The object: six shapes are placed in four positions that must be decoded to form a pattern. You must decode the computer's pattern before it decodes your. Available from Orbyte Software, P.O. Box 2686, Waterbury CT 06720.



Tired of having your VIC-20 as a silent partner? Plug in a voice synthesizer based on Vortrax and go. This will allow you to program words and sentences, and enable you to adjust volume and timbre. Offering features normally found on devices costing more than \$400, this one costs only \$79.00. An optional voice editor (\$9.95) is available to make programming easier. This company offers a 15 day trial on this produce. Protecto Enterprises, P.O. Box 550, Barrington, Illinois 60010, (312) 382-5244.

That's all for this week. See you here next Tuesday.

Bud Izen
Fairfield, California.



CompUtopia LIMITED

At last — a printer for every Pocket!

**MICROMAX — SPECIAL
INTRODUCTORY OFFER
ONLY £69 + VAT**

**SPEED SELECTABLE
SERIAL OR PARALLEL
INTERFACES AND CABLES
AVAILABLE FOR:
SINCLAIR ZX 81
SPECTRUM
VIC . . . DRAGON ETC . . .**

**UP TO 24 STANDARD OR
ENHANCED CHARACTERS
PER LINE**

**s.a.e. please for details to 30 Lake Street
LEIGHTON BUZZARD Beds Tel 0525 376600**

HCW8

Invisible program

A Spectrum version of Invisible Man, designed to help children aged seven-13 to learn about co-ordinates and compass points, has been brought out by Chalksoft.

The £5.95 program, originally written for the BBC micro and the VIC-20, draws a cartoon man and hides it in a 10 by 15 grid. The child has to enter co-ordinates to find it.

Chalksoft says the next three programs for the Spectrum will be Inkosi, Metrics and Angle.

It has just also re-worked five VIC-20 tapes so that they can be used with any RAM pack fitted, from 3K to 16K, but not the Super Expander.

A sixth program for the VIC-20, called Decimals, is due out in June.

Chalksoft, Lowmoor Cottage, Tonedale, Wellington, Somerset TA21 0AL

Top Twenty programs for the Spectrum

1	Penetrator	Melbourne House (2)
2	Transylvanian Tower	Richard Shepherd (10)
3	Flight Simulation	Psion (12)
4	Hungry Horace	Psion/M. House (16)
5	Planetoids	Psion (9)
6	Galaxians	Artic (4)
7	Cruising	Sunshine (19)
8	Blind Alley	Sunshine (-)
9	Horace Goes Skiing	Psion/M. House (-)
10	Arcadia	Imagine (5)
11	Mined-Out	Quicksilver (-)
12	VU-3D	Psion (-)
13	Planet of Death	Artic (-)
14	Ground Attack	Silversoft (12)
15	Chess	Psion (11)
16	VU-Calc	Psion (-)
17	3D Tanx	dK'Tronics (-)
18	Space Raiders	Psion (17)
19	Spectral Invaders	Bug Byte (-)
20	Centipede	dK'Tronics (-)

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

Crude... in both senses of the word

After last week's exclusive disclosure by Home Computing Weekly that "adult" video games were being imported by Silverfox Communications, a storm of outrage and concern has swept through the computer games world.

Unfortunately, at the eye of the storm, there doesn't appear to be very much of substance.

At the time of going to press, a promotional tape made by Silverfox reached us. What follows is an impression of the games based on this detailed recording.

Knight on the Town. The basic idea is to build a bridge across a river to "rescue" and be rewarded by a damsel. This is achieved by steering your knight, naked save for a helmet, backwards and forwards with the bridge sections. In doing so, you have to avoid bird droppings, snapping alligators and other crawling bugs. The speed, variety and occurrence of the obstacles increases with each successful bridge crossing. The graphics are hardly above cartoon level and movements tend to be crude in the unsophisticated rather than the obscene sense.

To avoid accusations of sexism, another version of the same game is available in which the male/female roles are reversed. This is **Lady in Waiting**.

Burning Desire. The player controls a helicopter, from which dangles a naked rescuer, who then has to save another naked woman from the top of the building.

Other figures hurl missiles from the sidelines. A successful rescue brings up another display, showing a slightly more detailed view of the two figures. There appears to be no other reason for this screen other than titillation. If it works on you, then I would send for the optician.

The role-reversed game is called **Jungle Fever**.

Gigolo. The game play of this cartridge still eludes me even after several viewings of the tape. It appears to consist of steering a woman into different occupied houses for the (by now) usual reason.

The male version is **Cathouse Blues** and both seem to be slower versions of Pac-man.

Bachelor Party, and its doppelganger **Bachelorette Party**, are simpler forms of Breakout, where the object is to break through a wall of bricks. The wall in this case is made up of naked males or females according to the game.

Last, but not necessarily worst, are **Westward Ho** and **General Retreat**, modified versions of the infamous Custer's Last Stand which caused so much trouble in the States that shops had to remove it from their shelves. Rape is no longer the name of the game as the lady in question (or general for that matter) is not tied to a stake.

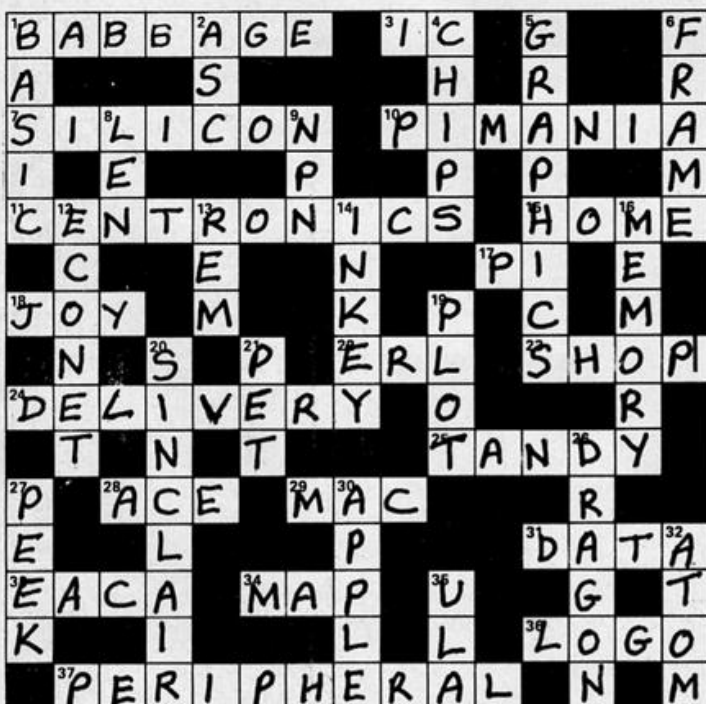
And so it went on... and on... and on. The graphics in all the cases were uniformly uninteresting, on the level of lavatory wall graffiti.

All in all, not an inspiring collection. Someone, somewhere thought at one time: "Hey, that's a good idea. I bet they'll sell."

For all the wrong reasons, they might. Silverfox's good marketing ploy of making two games available on each cartridge should be copied for other games. But the standard of graphics and the lavatorial sense of humour will pall very quickly.

Chris Sheldon Which Video? magazine

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



Crossword winner

The winner of the crossword competition in issue No.5 of Home Computing Weekly is Kenneth John Amos, of 112 Great Brays, Harlow, Essex. He will be receiving a £10 cheque. This is his entry

Catch up on what you missed at the fair

Shows held by London's computer clubs have managed to retain the flavour of enthusiasm. And the more they look like church hall jumble sales, the more hobbyists enjoy them.

It was the same at the fourth and latest annual show, now moved from its home at North London Poly to the more spacious Central Hall, Westminster.

At the same time, other halls in the building housed an exhibition on the treasures of imperial India and a meeting of women opposed to nuclear weapons.

Barry Goddard, organiser of the show for the Association of London Computer Clubs, said: "We were able to transfer the special club flavour from the poly and maintain the atmosphere."

Seven of the London clubs had stands and there was the ever-popular Computer Junk Shop — a sort of bring and buy for computer users.

Here is a selection of the new products at the show:

James Hutchby, 23, has written a new type of chess program for Oxford Computer Publishing. It is based around a character called The Turk, said to be a mysterious 18th century traveller who journeyed around Europe with a magical automaton which couldn't be beaten.

Mr Hutchby admitted: "I'm not a particularly good player — but machines don't play chess in the same way that humans do."

Chess — The Turk is for the 48K Spectrum and costs £8.95. Managing director Bill Richardson said 15,000 copies had been sold already.

Four new programs for the Commodore 64 — three games and one educational — were launched by ASN. Brain Strain, Squares and Light Bike cost £5.95 each and Necked, at £6.95, is a version of Hangman in French, German, Italian and Spanish with more languages to follow.

Managing director Chris Lee said: "By the end of the month we'll have four more programs for the 64 and we hope to bring out four a month after that."

There's little razamatazz at shows held by computer clubs. But they do offer enthusiasm and value. Paul Liptrot went to the latest London fair

ASN is also planning utility ROMs for the 64 which will add more features.

Novasoft launched three utilities for the VIC-20 at £5.95. Juggernaut moves the contents of memory from one location to another and allows access to an additional 8K block of memory usually reserved for ROM cartridges. Buccaneer is designed to make back-up copies of software. Novasoft sell both with a warning that copying commercial software is illegal.

Mirage reconfigures the VIC-20 to either a 3.5K or 6.5K machine to avoid the need to keep swapping RAM packs.

Colin Chatfield, head of Micro-Aid, said: "I don't see the computer as a toy only — I see it as a tool to be used."

So his company has produced a £9.15 version of Hangman for the BBC Micro model B in four languages, French, German, Italian and Spanish, plus English antonyms and synonyms and a spare. Each was written by Mr Chatfield, using dictionaries, and has 150 words.

Beebpen is a new word processor on EPROM for the BBC Micro from Braintech. Among its features is a display of 18 lines of 80 characters, single character commands and compatibility with 1.0 and 1.2 operating systems. Beebpen costs £39.10 until June 1 and £44.85 afterwards.

Kempston brought out a new game for the Spectrum called Android One and costing £5.95 and showed its newly-launched Centronics-type interface for the Spectrum, at £45.

Steve Maltz, of Shards Software, said his firm was launching a new range of Family Programs for the Dragon. Each cassette tape would have several programs for £3.95 plus a voucher for 50p off the next buy. The first two are Quiz Pack and Action Pack and the range will include educational programs and utilities.

Fly your own World War One bi-plane, says Opus Supplies, which showed its new Dogfight game, at £6.95, for the BBC model B micro with joysticks. Opus also has a new board for the BBC Micro to add 16K of RAM and 64K of ROM. It costs 34.44, plus the price of the chips — 16K-worth cost about £31.

Add-on company Fuller Micro Systems showed Printerface, a £30 RS232 interface for the Spectrum, and a voice synthesiser called Orator, costing £39.95, also for the Spectrum.

A new name in software, Rainbow, brought out its new Mini Language Aid. You type in English or foreign words and the computer displays them at random for translation. Rainbow says it is useful for exam revision. The program costs £4 for the VIC-20, BBC, ZX81 and Spectrum.

Personal Software Services gave a first public showing to Tai, a two-screen 3D adventure costing £4.95 for the 16K ZX81.

Abbex was showing a new release with a familiar-sounding name — ETX, which costs £5.95 and runs on the Spectrum.

Citadel Products' managing director Vic Cedar says its new 32K RAM pack kit for the Spectrum, at £24, was designed by an ex-Sinclair engineer, takes 10 minutes to build and is better value than the competition.

Haven Hardware showed a Spectrum Soundbooster costing £3.95 as a kit or £5.95 ready built. Speakers have to be added.

Two games for the NewBrain, Space Trader and Miner, were announced at £8.50 by Computasolve, along with a drawing program for the BBC Micro, called Draftmate and costing £9.99.

Where to find them

Oxford Computer Publishing, Brimrod, 4A High Street, Chalfont St Peter, Bucks SL9 9QB
ASN Computer Services, 17 Adelphi Crescent, Hayes Park, Hayes, Middx UB4 8LY
Novasoft, 46 Pheasant Drive, Downley, High Wycombe, Bucks HP13 5JL
Micro-Aid, 25 Forse Street, Praze, Camborne, Cornwall TR14 0JX
Braintech, 81 Rydal Crescent, Perivale, Middx UB8 8DZ
Kempston Micro Electronics, 180A Bedford Road, Kempston, Bedford MK42 8BL
Shards Software, 10 Park Vale Court, Vine Way, Brentwood, Essex CM14 4UR
Opus Supplies, Birchtrees, 10 Beckenham Grove, Shortlands, Kent BR2 0JU
Fuller Micro Systems, The ZX Computer Centre, Dale Street, Liverpool 2
Rainbow Research, 288 High Street, Ponders End, Enfield, Middx
Personal Software Services, 452 Stoney Stanton Road, Coventry CV6 5DG
Abbex, 20 Ashley Court, Great Northway, Hendon NW4
Citadel Products, 50 High Street, Edgware, Middx HA8 7EP
Haven Hardware, 4 Asby Road, Asby, Workington, Cumbria CA14 4RR
Computasolve, 8 Central Parade, St Marks Hill, Surbiton, Surrey KT6 4PJ

Push your Sinclair to the limit

ZX81/SPECTRUM ARCADE GAMES

NEW

INVASION FORCE (16/48K)
fires through the force field
to destroy the menacing
alien ship. Sounds easy? Two
levels of play — normal or
suicidal. Full colour.

Sound and hi-res. graphics. **£4.95**

Also available for ZX81 at £3.95

NEW

SPEC INVADERS (16/48K)
SPEC GOBBLEMAN (16/48K)

These exciting high-
speed classic games
incorporate hi-resolution graphics and
sound to bring you the best-in arcade
action at only **£4.95** each

NEW

SPEC FROG 5/SHOWDOWN
(16/48K)

Hop across the dangerous
road avoiding the lethal cars,
then lorries. Go back to the
wild west for a gunfight! battle amongst
cacti and wagons. Features include
western music. **£4.95**

NEW

NAMTIR RAIDERS (ZX81)

High speed, quick action
arcade game with four
separate groups of attackers.
£3.95

Gobbleman also available for ZX81 at **£3.95**

UTILITIES



TOOLKIT

Nine powerful new functions for
your ZX81 (including re-number
lines (goto, gosub), program merge,
string finding and replacement. **£5.95**

SPEC BUG

A 30 in 1 machine code tool and disassembler
for your ZX Spectrum. **£6.95**

ZX BUG

A 30 in 1 machine code tool and disassembler
for your ZX81. **£6.95**

Improve your machine code programs with this new 48K Spectrum Assembler

Just released by Artic, this new professional
quality assembler is also available for 16K
ZX81 and features:—

- * Word-processor-like text editor. * High-
speed, versatile two-pass mnemonic
assembler with labels and detailed error-
trapping. Will assemble to any address.
- * Essential support facilities such as
memory-edit, register inspect/modify and
search for de-bugging. * Full output to
ZX-printer. * Memory-status
report and comprehensive
user-manual.

ONLY £9.95

ZX81 & SPECTRUM

NEW LOW PRICE



ADVENTURE GAMES



**ONLY £5.95 for ZX81
and £6.95 for SPECTRUM**

INCA CURSE (Adventure B)

In a jungle clearing you come across an
ancient Inca temple. Your mission to enter,
collect the treasure and escape alive. But
beware! Includes a cassette save routine.

SHIP OF DOOM (Adventure C)

You are unavoidably drawn to an alien cruiser.
Can you reach the control room and free
yourself? Or will they get you first? Includes
a cassette save routine.

ESPIONAGE ISLAND (Adventure D)

While on a reconnaissance mission your plane
loses control and you are forced to land.
Can you survive and escape with the island's
hidden secret?

PLANET OF DEATH (Adventure A) 16/48K

You find yourself stranded on an inhabited
alien planet. Can you reach your ship and
escape?

also available
for SPECTRUM

ZX FORTH

Supplied on cassette
with editor cassette,
user manuals and keyboard overlay. ZX Forth
combines the simplicity of basic with the
speed of machine code

now £14.95

THE ULTIMATE ADVENTURE FOR THE
SPECTRUM/ZX81 for only **£9.95**

**AND THE CHANCE
TO WIN
£10,000 or more
IF YOU KRAKIT™**

RULES
AVAILABLE
FROM ARTIC



Your eccentric father
has left you £10,000 in his will. In order to claim your
windfall you must solve twelve clues and gain
access to a bank account in which the money has
actually been deposited. Be the first to crack the
puzzle and the prize is yours! Plus you will win two
tickets to the city of the secret KRAKIT™ vault
location. The Prize money is increased weekly. A
telephone number will be supplied so you have the
opportunity to find out just how much you could win.

**DON'T MISS
YOUR CHANCE TO WIN
A FORTUNE!**

SPECTRUM MICRO CHESS

The only Chess program for a 16K or 48K Spectrum.
Allows all legal moves, castling; en-passant
and pawn promotion.
Options to play black/or white. Sets
board in any position. Full colour
and graphics display.

**ONLY
£6.95**

**new releases
for 16K & 48K
SPECTRUM**

SPECTRUM GALAXIANS

A version of the famous arcade game. You are
being attacked in deep space by formations of
Galaxians and it is your mission to prevent them
attacking earth. Full feature. Swooping attackers.
Full colour. Sound and hi-res graphics. 16/48K

NOW ONLY £4.95

**A
GREAT
CHESS
GAME FOR
YOUR ZX81
OR SPECTRUM**



*SPECTRUM
CHESS 48K

ZX CHESS I

Very popular machine code program, with six
levels of play and an analysis option. Available
for ZX81. **£6.50**

ZX CHESS II

A new improved version, with a faster response
time, seven levels of play, analysis option and in
addition a recommended move option. **£9.95**

ZX 1K CHESS

An incredible game
in 1K for only **£2.95**

As featured on ITV



SPECTRUM VOICE CHESS

This incredible program talks you
through your game.

It tells you its move, recommends a move, and
contains a range of facetious comments. The game
is based on the highly successful ZX Chess II and
is offered at the Christmas offer price of **£9.95**.

SPECTRUM CHESS now only £9.45

ALWAYS AHEAD WITH ZX81/SPECTRUM SOFTWARE

Cheques & P.O. made payable to: Artic Computing Limited. Dealer enquiries welcome.
Please state whether your order is for ZX81 or Spectrum. Send S.A.E. (6in x 9in) for catalogue.



ARTIC COMPUTING LTD.

**396 JAMES RECKITT AVENUE,
HULL, N. HUMBERSIDE,**

To: Artic Computing Ltd., 396 James Reckitt Avenue,
Hull, N. Humberside, HU8 0JA.

Please supply

Cheque for total amount enclosed.

Name

Address

HCW8

Judging by the new computers at the Hanover show, the future is going to be smaller, portable — and probably Japanese.

Among the companies with new micros in the four vast exhibition halls was Commodore and, leading the Japanese invasion, Panasonic, Sharp Casio and Fujitsu.

Few details were available, except that all are on their way to the UK soon.

Sharp's neat MZ-700 offers 64K of RAM, 6K of ROM and 2K video RAM for an expected UK price of around £300. And there is an optional on-board micro-cassette player and plug-in four-pin plotter.

Powered by the same Z80A processor as the Spectrum and other popular home micros, the MZ-700 has a typewriter-style QWERTY keyboard and five function keys and a screen display of 25 lines of 40 characters.

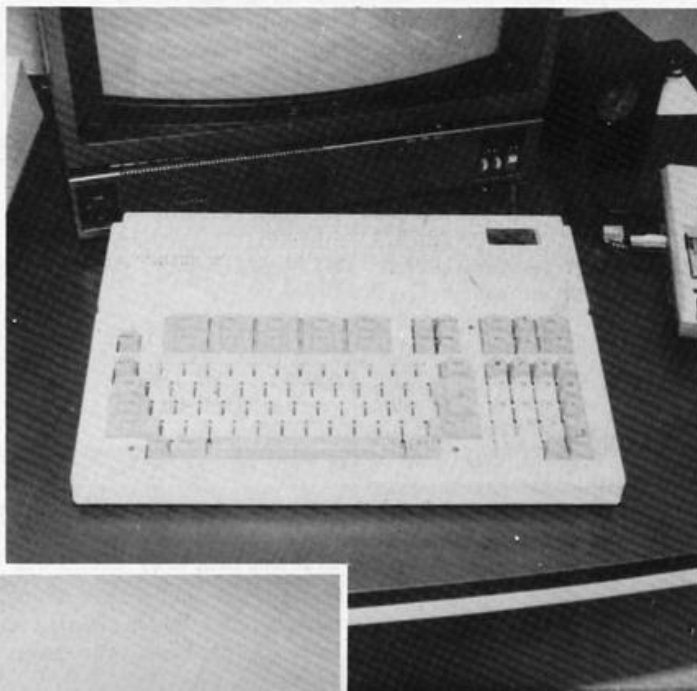
All this is packed into a stylish case measuring 13¼ in by 12 in by 1½ in.

Sharp also showed two new monitors — a 12 in model with green screen and a 14 in colour model.

With rubber-like keys and single-key entry of commands, there can be no mistaking that Panasonic's Alpha is aimed at the Oric and Spectrum market. It has its own graphics set and 32K of RAM. Its smaller brother, the JR100, has fewer keys but was shown with an expansion board fitted underneath.

The future is looking small for micro users

Several new micros were given their first public airing at the Hanover Messe (Show) '83. Henry Budgett trekked around the vast exhibition to bring you this report



Micro 7 from Fujitsu — a full set of keys

Casio, best known for its sophisticated calculators, was showing two new machines.

The FP-200 comes with 16K of RAM, full keyboard, liquid crystal display with peripherals available including a four-pin plotter and numeric keypad.

Casio describes its FX-702P, it has QWERTY keyboard, plus numeric keypad, and built-in printer, liquid crystal display and micro-cassette player.

From Fujitsu came the Fujitsu Micro 7 with a full typewriter-style keyboard — along with 10 function keys and numeric keypad, cursor and editing keys.

The new portable DX-64 is based on the big-selling Commodore 65 with added half-height 5¼ in disc drives and a 5 in colour or black and white monitor and a detachable full keyboard, plus four function keys, built into the lid.

It is expected to retail at around £800 and to be made at the company's plant now being constructed at Corby, Northants.

The keyboard of the DX-64 will be slightly different from the Commodore 64 to take account of the narrower width.

And there will be two models to choose from — the 8050 with 1 megabyte of disc storage and the 8250 with 2 megabytes.

It is expected also that the American standard NTSC monitors will be changed to the PAL system for UK sale.

If everything goes well, the DX-64 should make its UK debut at the PET show in June and become available here in the autumn.



SPECTRUM/ORIC SOUND BOOSTER

Telesound 84 outputs the computer sound direct through your unmodified TV set. Sound effects then can be controlled from a whisper to a roar. Three easy snap-on connections eliminate soldering.

Telesound 84 measures 2½x2x1½ cm and requires no separate power supply. This unique device (patent pending) uses some of the very latest ultra miniature components and costs only £9.95 inclusive of post, packing, etc.

Full instructions with connection diagrams are supplied so that the unit can be fitted in minutes without any previous experience.

Cheques/PO to

COMPUSOUND

32 Langley Close

Redditch, Worcs. B98 0ET

Please state your computer when ordering.

LETTERS

Oric program pointer...

I feel it my duty to write and inform you of a few necessary alterations in your program for the Oric-1 in issue 3. Lines 1345, 1360 and 2005 should be changed to:

```
1345 F1=1:GOSUB 2005
1360 NEXT
2005 V=(XY(2,1)=35)*16
      +(XY(1,1)=35)*32
```

I found that the program didn't actually assign your new character to the location in memory occupied by the character you wished to replace with your new one. To correct this, add the following line:

```
1355 POKE T+I-1,-V
```

Experienced programmers would have seen through this and added a similar line, but I think many newcomers would be bewildered!

Steve Casson, Norhampton

...And one for the ZX81

I'd like to let readers know that I've spotted a bug in my DOMAC program, published in Home Computing Weekly number 3, page 22.

Line 4075 should read LET A 16,16=A 19,12.

Fortunately, as this line is in the New Year routine, it shouldn't have caused any problems yet!

George Baldwin, Weybridge, Surrey

Not just fun from games

I read with some interest the One Man's View column by Aldo G. Rabaiotti in issue 5 of Home Computing Weekly. It quickly became apparent that the letter re-emphasised some basic misunderstandings about the games/micro market.

We are moving into an age when every home and every job will make substantial use of computers. It is important that people should become computer experienced, and in this role the micro as a games machine is playing a vital part. The

Send your letters 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

information which I get back from my members indicates that the games which are being played the most (not the most purchased games) are those which make specific use of the micro as a computer. The adventure type games and simulation games are a good illustration of this.

The strong and progressive games market is also producing a generation of programmers who are fully aware of 'human/computer' interaction and are writing programs for people to use, not experts. This is essential if we are to move into the high technology society where we make full use of the computer in our daily life. We need programs in industry, commerce and the domestic environment which can be used by anyone. Many of such programming techniques have arisen directly from games software, especially the error checking and data validation systems which are now so essential, since you cannot presume that the person using your program is trained.

Far from killing the micro market, games programming will produce the drive to push it into the 21st century. So long as we can maintain a leading games/hobby software development industry we can expand into a hi-tech society. Anything which endangers that and the training of young programmers endangers the future and prosperity of this country.

Nigel Backhurst, General Secretary, General Secretary, Computer Trade Association, 108 Margaret Street, Coalville, Leics LE6 2LX

Ship of Doom hits the rocks

We'd like to draw your readers' attention to a problem that has arisen with our Ship of Doom/Adventure C game, now being sold through Sinclair.

One of Sinclair's batches of tapes has been corrupted, and contains a bug which will cause the program to crash when certain commands are entered.

If you buy one of these tapes, it should be returned either to the shop you bought it from or to Sinclair Research at Stanhope Road, Camberley, Surrey — don't send it back to us!

Our apologies to anyone who's bought one of these tapes for the inconvenience caused.

Secondly, Artic customers should note that we now provide hint sheets for our adventure games. So if you're stuck, just send us a stamped addressed envelope, and we'll send one off to you.

Richard Turner, Artic Computing, 396 James Reckitt Avenue, Hull HU8 0JA

Joys of Extended Basic

Some interesting programming advice for TI-99/4A owners has been featured in your pages recently.

However I would strongly recommend that serious programmers should purchase the Extended Basic module. Extended Basic is a very powerful language and it is a pity that it is not built into the unexpanded machine as standard.

An example of its power is shown in the short routine below, which recreates the lengthy # program for displaying large versions of the letters A to Z published in your issue of April 5-11.

It is not necessary to define the characters of the large letters in data statements as line 120 does the same job. In fact, the whole routine could be fitted on to one program line!

The use of full name

variables should make the routine self-explanatory.

```
100 REM Routine to display
      large letters on the
      screen
110 CALL CLEAR
120 CALL MAGNIFY(2)
130 COLOUR=16
140 ROW=100
150 COLUMN=100
160 FOR LETTER=65 TO 90
170 CALL SPRITE (#1,
      LETTER, COLOUR,
      ROW, COLUMN)
180 FOR DELAY=1 TO 300
      :: NEXT DELAY
190 NEXT LETTER
```

In addition the letter can be set moving by adding two extra parameters to line 170.

Note the ease with which sprites may be created, compared with the pain of calling up the equivalent player-missile graphics on the Atari or the sprites of the CMD 64. Extended Basic has many other features that make it both user-friendly and very powerful.

Pat on the back for Atari

I have an Atari 400, and on reading Home Computing Weekly I've noticed that a lot of the letters are criticisms of other computers. Well, I haven't got a criticism — I am writing to tell you how helpful Atari have been.

About a month after receiving my computer the cassette recorder failed to work, so we took it back to the shop where we got it from. After two weeks my father decided to phone Atari to see what was going on, and they said that they would send us another one.

Sure enough, it came the next day by overnight express; but it still wouldn't work, so we sent my computer off with the cassette recorder and a few days later it came back perfect.

So what I'd like to say is that not all computer companies are to be criticised, because Atari have been so fast and helpful. Everyone who is thinking of buying a computer should remember that it is best to buy them from proper computer shops, not small electrical shops.

C.R.J. Fox, Loughor, West Glamorgan



Richard Shepherd Software

Rid the world of the Transylvanian Terror before he introduces you to the dark world of the living dead in...

Transylvanian Tower

A spectacular 3-D maze adventure
for the 48K Spectrum only £6.50

"Enthralling and addictive"...Popular Computing Weekly
"Addictive"...Sinclair user

Available from W. H. Smith & Son*
and John Menzies



Phone 0628 21107 for instant credit card orders

Richard Shepherd Software, Freepost, Maidenhead, Berks SL6 5BY.

Dealer enquiries welcome * Selected computer branches only

How to make up for the ZX81's drawbacks

Take the advice of Russell MacDonald and use the ZX81's GOTO command as a flexible friend

When Uncle Clive first produced the ZX81, many people said the way in which the GOTO facility was used was extravagant and unnecessary.

For example, GOTO 30 could also be expressed as GOTO CODE "2", GOTO VAL "30", GOTO X, GOTO 5 * 2 + 5 (5 * 2 + 5), GOTO 2 * X + (Y / 3), GOTO A(3,2) and an infinite number of other expressions. This is also true for GOSUB routines.

At first sight this seems slightly excessive. In fact, this is one of Sinclair's methods of supplying a flexible command to make up for limitations.

Most other micros provide the useful ON...GOTO... command which allows a destination to be chosen under a certain condition. Here is an example:

```
100 ON X GOTO
100,210,350,470,580
```

It means that if X equals one then go to 100, if X equals two then go to 210 and so on. If the value of X is greater than six then the instruction is ignored.

Unfortunately, the ZX81 does not have this command. But due to the flexibility of the GOTO command, ON...GOTO... can be simulated in just two lines:

```
10 LET AS = "100210350470580"
20 GOTO VAL AS((X * 3) - 2
TO X * 3)
```

If there is the possibility of X being greater than five, then the following line could be added:

```
15 IF X > 5 OR X < 1 THEN LET
X = 5
```

or:

```
15 IF X > 5 OR X < 1 OR
X < > INT(X) THEN LET X = 5
```



In the second example, if the value of X is greater than five, less than one or if it is not a whole number (e.g. 1.75) then the program will jump to line 580.

For those with only 1K of memory, it is also possible to use the CODE values of single characters as destinations, provided none of them is greater than 255. AS would only need to have as many characters as there are destinations. The instruction would then take the form:

```
20 GOTO CODE AS(X)
```

It is often possible to write a program so that an INPUT can be used to directly control a destination.

Take a program to calculate how many days have passed since the beginning of the year. The result is achieved by subtracting the number of days in the remaining months from 365 (ignore leap years):

```
10 PRINT AT *, "NUMBER OF
THIS MONTH?"
20 INPUT MONTH
```

```
30 LET YEAR = 365
40 GOTO 40 + 10 * MONTH
50 LET YEAR = YEAR - 28
60 LET YEAR = YEAR - 31
70 LET YEAR = YEAR - 30
etc
```

Where the number of lines permits, it is also possible to structure a whole program to allow an INPUT to determine the destination for a GOSUB or GOTO. Here is an example:

```
10 PRINT "INPUT CHOICE"
20 INPUT C
30 GOSUB C * 100
40 GOTO 10
100 SUBROUTINE 1
200 SUBROUTINE 2
300 SUBROUTINE 3
etc
```

It is sometimes possible to base the calculation of a GOTO destination on figures arising during the course of a program, though this will often mean using a very irregular set of line numbers.

In the following example, the aim is to calculate the month in which a particular day of the year

falls (the day having arisen from a previous program):

```
10 IF DAY = 10 THEN LET
DAY = 11
20 GOSUB DAY * 2
21 STOP
62 PRINT "JANUARY"
63 RETURN
118 PRINT "FEBRUARY"
119 RETURN
180 PRINT "MARCH"
181 RETURN
etc
```

The variable DAY must in this case be multiplied by two to ensure room for the RETURNS — so there can never be the case of YEAR = 31.5. If this had not been done we might have done:

```
31 PRINT "JANUARY"
32 RETURN
```

...with the result that nothing would be printed for day 32.

This can be applied whenever the action to be taken by the program varies predictably according to the value of a known variable.

THE NEW AND UNIQUE C.A.D.* PROGRAM FOR THE BBC MICRO (32K)

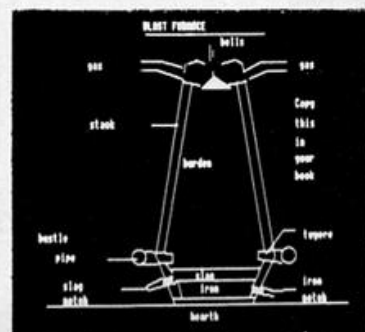
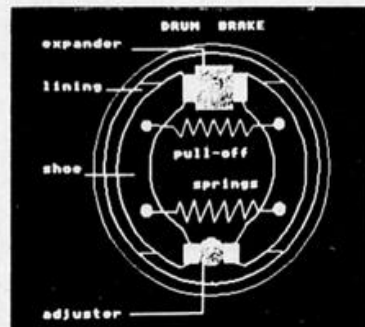
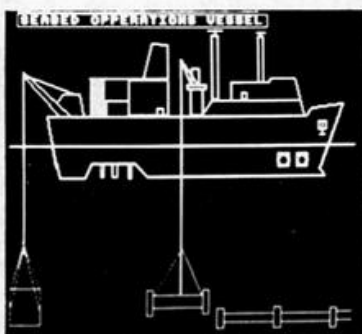
* COMPUTER AIDED DESIGN (Available on Cassette or Disc)

AT A VERY AFFORDABLE PRICE

Ideal for teachers, designers, artists, technical drawing and numerous other applications including your own form and stationery design etc.

This program must be seen to be appreciated – your imagination is the only factor to limit its individual applications.

- Modes 0,1,2,4,5 (can be changed when program is running).
 - Multiple display of arrays enables infinite complexity.
 - **FUNCTIONS:** Line, rectangle, triangle, circle, text (upper and lower case) and colour pallet (8 colours and flashing).
 - **DRAWING AIDS:** Alignment grid, circle copy, delete, free memory, purge memory, variable cursor speed, clear screen and redraw.
 - Shapes can be filled or outlined (no need for Fill Routines).
 - Save and load to tape in about 20 seconds, or to disc in 2 seconds.
 - **SPECIAL FACILITY** – Rubber band mode – A very flexible and variable line drawing facility – must be seen.
 - Free "redraw" routine to enable the pictures created to be displayed in your own programs.
 - The disc version allows screen saves, which take approx. 3 seconds.
 - **Recommended by BBC Micro User.**
 - Future developments will include processing packs which will provide additional features such as arcs, ellipses, air-brush, printer dump and many more. Cassette users may purchase an additional cassette containing these features, but disc users will be able to return their disc which will be upgraded to the latest specification, and the user will only be charged the difference between the two versions.
 - **GRAFSTIK** (joystick cassette version) **£7.95**
 - **GRAFKEY** (keyboard cassette version) **£7.95**
 - **GRAFDISC** (combines both on one disc) **£12.95**
- (the examples shown are all unretouched off-screen photographs of some of the program's capabilities).



SYNTHESISER PACKAGE FOR BBC (32K)


PART 1:-

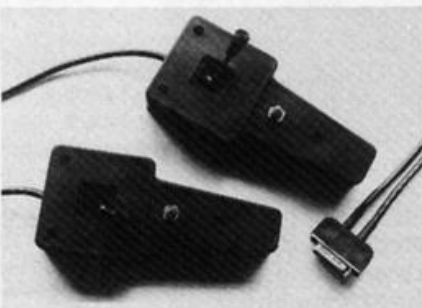
Allows up to 16 envelopes to be defined and saved using a very sophisticated, yet easy to use defining program. Alter the values and hear the effect instantly. Then use the envelopes in Part 2.

PART 2:-

Turns your keyboard into a musical instrument. Lets you play 3-note chords (not just single notes). Use cursor keys to change octaves etc, etc.

Become the Rick Wakeman of the Computer Age.

THIS SUPER PACKAGE COSTS
JUST  Cassette **£7.95**
Disc **£10.95**



BBC JOYSTICKS

Pair of fully proportional joysticks of compact and handy size
£17.95

BBC, ORIC, LYNX CASSETTE LEADS (with Motor Control)

7 pin DIN – 3 pin DIN £2.95
+ REMOTE £2.95
7 pin DIN – 2 x 3.5mm Jacks £2.95
+ 1 x 2.5mm JACK £2.95

TEXAS CASSETTE LEAD £4.95

MONITOR LEADS

6 pin DIN 6 pin DIN £2.95
BNC – PHONO £2.95

PRINTER LEADS (BBC)

SERIAL (5 pin DOMINO – 25 way "D") £7.50
PARALLEL (Centronics) £13.95

PROGRAMMERS

We are constantly seeking new and interesting programs. Why not send yours for appraisal? Do not worry if the presentation is not to professional standards – we are looking for new ideas and we will advise and assist in bringing your program to the required standard. You have got nothing to lose but much to gain – So why not send your program today? 40 Track disc if possible or two copies on cassette. In some cases we will even provide disc drives against future royalties.

CLARES MICRO SUPPLIES



Dept. HCW, Providence House,
222 Townfield Road, Winsford,
Cheshire CW7 4AX.
Tel: 06065 51374

All prices inclusive of
VAT + Carriage – No Extras.



HCW8

More for the price of one

Games Pack 4 Dragon £6.91

Gem Software, Unit D, The Maltings, Station Road, Sawbridgeworth, Herts.

This package takes a couple of minutes to load from cassette and actually contains two games: Sea Harrier and Sub Chase. The instructions for both games were adequate and both are played using the keyboard. Each had four levels of difficulty.

In Sea Harrier your objective is to land on an aircraft carrier without hitting too many clouds. The clouds can be dispersed using bombs but you run the risk of damaging your ship if you hit it.

I found that by flying at the top of the screen you can destroy the clouds at your leisure but it was still difficult to land successfully on the carrier.

In Sub Chase, your task is to sink the subs with your depth

Looking for variety? Our testers give their ratings on the latest multi-game packages and advise whether quality holds up against quantity

charges, avoiding the torpedoes being fired by the subs at your ship. Like Sea Harrier, this game used chunky graphics to form the shapes of the objects and neither game had any sound effects.

I thought the games lacked excitement and imagination, but they would keep the youngsters quiet for a few hours. **C.D.**

instructions	80%
playability	70%
graphics	65%
value for money	75%



Games Pack 1 Dragon £6.91

Gem Software, Unit D, The Maltings, Sawbridgeworth, Herts.

Space Attack, Sheepdog, Torpedo and Snake are the four BASIC games in this compendium.

As far as I am concerned, Snake is the only game that's challenging enough to have much long-term appeal. It's an excellent version of the old game where you have to eat randomly-placed blocks. Control is by joystick or keys, and the display uses low-resolution graphics.

As for the rest... in Space Attack you are in the top left hand

corner of the screen, and have to shoot at an enemy ship in the bottom right corner. To do this, you enter the direction and velocity of your shot.

Random planets half-heartedly block your way; and the enemy is meant to return your fire but doesn't. The path of your ship is not rubbed out, so if your next shot hits the path, a hit on the enemy is presumed. It just isn't worth playing.

From outer space to deepest countryside, you control a dog and have to round up three sheep in Sheepdog. Good graphics, but the game is rather slow, and the dog clearly needs obedience training; it doesn't respond well to the control keys.

And a thousand leagues under the sea in Torpedo, you are a submarine captain and have to launch a torpedo when a ship is in your sights. Good graphics give a realistic impression of looking through a periscope. **D.W.**

instructions	65%
playability	55%
graphics	70%
value for money	35%



Games Pack II Dragon £6.91

Gem Software, Unit D, The Maltings, Sawbridgeworth, Herts.

Four items on this cassette, providing good value for money.

First comes Landing, a flight simulation programme that surprised me with its tricky handling. It requires two joysticks — one for throttle control and the other for rate of descent and banking. There are three stages to this 'game', the approach, landing and stopping, all requiring a high level of coordination.

The first part is done by reading instruments which then, if successful, give way to some graphic sequences. It takes two to pilot and very rewarding when you succeed.

The second item is a good version of Hangman with a selection of about 150 words. Always a fun way to learn spelling.

Speedboat is a straightforward dash between two twisting banks, picking up points for hitting orange markers. Controlled by keys with space bar for speed change.

The game of Battleship is an old favourite assisted here by some appropriate graphic subroutines. Going from the grid reference, if you score a hit, you see what you've got as your shell homes in to its target.

I didn't expect much from a games pack but the quality of two games, the flight landing simulation and battleships, was very impressive and well worth having.

All the necessary instructions come on screen and loading is straightforward. An enjoyable selection for all the family. **M.P.**

instructions	100%
playability	90%
graphics	80%
value for money	90%



ROMIK SOFTWARE
PRESENT
MIND TWISTERS
FOR UNEXPANDED VIC 20
FOUR GAMES TO STRETCH YOUR BRAIN

Blackjack, Decipher, Four Thought and Teaser are our computerized versions of very popular home games and will test your mental agility and skill for many a long hour.

BLACKJACK DECIPHER
FOUR THOUGHT TEASER

EXAMPLES OF THE GAMES

**THIS IS THE FIRST
OF MANY
MIND TWISTER
PACKS TO COME.**

Mind Twisters Vic-20 £9.99

Romik Software, 24 Church St, Slough, SL1 1PT.

This is a compendium of four games, three well known, one a little more original: Mastermind (alias Decipher), Connect 4 (alias Four Thought), Blackjack and Teaser.

The review tape could have

been substandard since loading was difficult and Mastermind was unloadable. However, the three games I did manage to run were well written with adequate graphics. Connect 4 played a particularly good game, even though it was a little slow.

Teaser was an odd one. You are presented with the numbers 1 to 9 and you take turns to take numbers. The winner is the first player to reach a total of 15 with three of his numbers. I found it easy to draw with the computer, but impossible to win.

Blackjack played British "ponton" rules. I did feel that the graphics were a little weak, but you can't expect much in an unexpanded VIC.

Assuming that Mastermind was up to the same standard, this is a reasonable collection of old favourites. VIC owners who are fed up with Space Invaders could do worse than consider this package which is good value for the price. **A.W.**

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



SOFTWARE REVIEWS

ET 48K Spectrum

Macronics, 26 Spiers Close, Knowle, Solihull, W. Midlands B93 9ES

How do they get away with it? Anyone else so much as uttering the initials E.T. gets jumped on from an extreme height by you-know-who...

Anyway, assuming Macronics remain suitably unjumped-upon, E.T. is a worthy little game, or collection of games. It is in five sections, the first of which is an instruction program, using rather an endearing little figure to "bubble-speak" each screenful. This is clever the first time you see it, cute the second time...and boring thereafter.

In the first stage of the game proper, you move the E.T. figure around a wooded maze collecting phone parts, while avoiding the inevitable mad scientist out to kill you. Once through that, stage two is similar, except that the maze is

not visible — but the scientist is, as he advances to the kill once again.

Stage three involves running around ghosts and pumpkins (well it is Halloween) to get home — pursued by the mad scientist once again.

Stage four is totally irrelevant and boring. You move a spaceship from side to side at the top of the screen to avoid meteors coming up towards you. They move so slowly and apathetically that unless you fall asleep it is well-nigh impossible to get hit!

Stages 1-3 are playable and good entertainment, if somewhat repetitive. The only tactic needed is to draw the scientist into a dead end, so that you can carry on collecting whatever bits you have to collect in peace.

You have the option of playing each stage individually, or combining all four into one long game. Good value.

	R.M.
instructions	60%
playability	70%
graphics	70%
value for money	70%



Games of Logic and Cunning BBC £9.70

Golem, 77 Qualitas, Bracknell, Berkshire RG12 4OG

Five different games of logic and cunning designed for use by young computer users. They are Auction, Flip, Reverse, Telepathy, and Hexal5 and they vary widely in quality, interest and playability.

I doubt whether Flip and Telepathy would hold the interest of children for more than a short time; Auction, Reverse and Hexal5 are better.

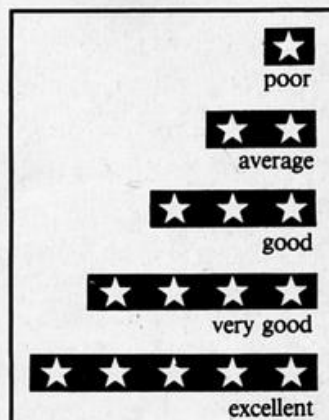
In Auction, you try to buy antiques at auction by outbidding fellow bidders. There are two options, either to bid against the computer, or bid against another player. It is a challenge to try and beat the computer, but the game is not wildly exciting to play.

The aim of Reverse is to rearrange a row of letters in the least number of moves. This game has good graphics and is compulsive to play.

Hexal5 can only be played on Model B, and is a graphics version of a classic game. Hexadecimal digits (0-9, A-E) have to be rearranged in order on a square grid containing one blank square. Taxing, even for adults!

This collection is varied in both quality and type of game, but is a little over-priced. **P.C.**

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



NO. 1 FOR THE DRAGON

DRAGONWARE

Whenever the Dungeon Master reads of competitors' amazement that the Dragon 32 is selling so well "despite the lack of software", he rolls around the Dungeon floor, overcome by hysterical laughter! Send for our 30-page Dragonsoft Catalogue and find out why.

The Dungeon vaults are fairly bulging with the rush of Dragon software and we now offer the widest selection available in the UK.

Latest Games: 'Donkey King' £8, 'Katerpillar Attack' £8, 'Colorpede' £8, 'Laser Cycles' £6.50, 'Talking Android Attack' £8, 'Cosmic Zap' £8, 'Galactic Ambush' £8.

Latest Books: 'Advanced BASIC for the Dragon' (starts where the manual finishes) £6.95, 'Making the most of your Dragon' £5.95, 'The Dragon Companion' (new printed edition) £4.95.

Latest Utilities: 51 x 24 Screen Cartridge (including graphics "sprites") £25.30, Assembler Cartridge £18.95, 'Telewriter' WP System £49.95, 'Dragon Doodles and Demos' £5.

Coming shortly — Soundbox for monitor users (connect up to your Hi-Fi!).

DRAGON STICKS!



Top quality double potentiometer joysticks for the Dragon owner who demands arcade action
Ultra-sensitive, but tough and reliable, Dragon Sticks will keep on zapping when others fail!
£19.95 per pair
inclusive VAT and postage.



DRAGON CLUB

The Dragon Owners Club at the Dungeon is now the largest in the UK (or, since our members range through Europe to the Gulf and Africa, should we say the world?). Members receive copies of the monthly Club Magazine 'Dragon's Teeth', which includes news, reviews and advice, plus monthly offers and competitions. Win a Year's Free Software or use the Advice Service or members' free advertising. Badges and Bomber Jackets for extrovert Dragon-bashers.

The April edition of 'Dragon's Teeth' is packed with information and, together with the new magazine 'Dragon User', makes essential reading for any serious Dragon owner!

Annual membership (including 'Dragon's Teeth') £6 (£8 overseas) or six-month trial subscription £3.25 (£4.25 overseas).

THE DRAGON DUNGEON

PO BOX 4, ASHBOURNE, DERBYSHIRE DE6 1AQ. TEL: ASHBOURNE 44626

HCW8

Galactic Chase 16K £16

Softcell Computers

A close copy of the arcade game Galaxians. The aliens swoop down in small groups, first bombing your ship, then attempting to ram it.

Bonus points are awarded for shooting down the command ships, and an extra base is received at 7,000 points. This copy even has the galaxians that 'loop the loop' at the bottom of the screen.

An option for two players is included, and an option to start at a higher level. The sound effects are sufficient for this type of zap-it-if-it-moves game, and the invaders themselves are very colourful.

Having seen the cartridge Galaxians now available, I would still choose this very cheap but very good copy.

instructions	75%
playability	80%
graphics	80%
value	75%



Software from the States for your Atari

Marc Freebury casts a critical eye over a selection of Atari software from across the Atlantic

It is a fact that though the Atari is an excellent machine, Atari do not back it up themselves with much software, particularly in the games field. They have left this to an ever-increasing number of software houses.

Most of these are American,

but a few British companies are slowly adding to the number. This means that most Atari software must be bought through mail order. For suppliers, contact Atari (UK) at Atari House, Railway Terrace, Slough SL2 5BZ. Tel: Slough 33344.

Preppie 16K £19.95

Adventure International

Next to Star Raiders, Preppie is without doubt the best game ever produced for the Atari. The game is based on Frogger, except that instead of a frog, there is a Preppie, or Prep School Student, to the non-American.

He is being forced to collect golf balls off the Nasty Nine course. Among the hazards to be dodged are lawnmowers, golf carts, logs, canoes and puddles.

As you progress up the ten screens, bulldozers, alligators and even a giant frog put in an appearance.

The action is smooth, with unbelievable background music, and the game uses 28 colours on screen at once. Reaching level ten is a real achievement. Altogether an excellent game.

instructions	90%
playability	95%
graphics	99%
value	95%



Galactic Empire 32K £16.50

Adventure International

From the same stable as Preppie, this game does not reach the same heights. It is a tactician's game, with the objective of conquering the twenty planets in the galaxy.

You begin with ownership of one. By building fleets and taxing your people, you must build fleets strong enough to overcome the opposition, who vary in technological ability.

The game has very limited graphics, which do little to enhance a very slow-moving game. Particularly annoying is that each time you move your fleet, the shipboard computer prepares a report which takes up to a minute to complete.

If you have a week to spare, and the patience to go with it, this game is for you.

instructions	75%
playability	30%
graphics	20%
value	35%



Ghost Hunter 16K £19.95

Arcade Plus

As the title suggests, this is a version of the now world-famous Pacman.

The Ghost Hunter of the title is supposedly meant to be ridding a mansion of said ghosts, but in my opinion it should be retitled Hunter Ghosts — since they do most of the chasing.

The game has 16 mazes, although you may only use one per game — definitely annoying. There are four brightly coloured ghosts, which seem to have the same tendencies as Pacman ghosts in using different tactics to catch you.

There are four power-pills, and when eaten the ghosts career across the screen back to the central cave.

This version also has a two-player option, with another option allowing two players to play simultaneously — although why you would want to do that is beyond me.

Reasonable copy of the arcade game although it misses



some features and adds a lot of superfluous ones.

instructions	75%
playability	60%
graphics	65%
value	65%



HCW8

HAVEN HARDWARE ZX PRODUCTS & JUPITER ACE

SAE for details. 4 Asby Road, Asby, Workington, Cumbria CA14 4RR.
Prices include VAT and P & P.

Some of the products are also available from the following agents:
THE BUFFER SHOP, 374A STREATHAM HIGH ROAD, LONDON SW16
MICROWARE, 5 ST PETER'S LANE, LEICESTER.
PHILLIP COPLEY HI-FI, 7 CLIFFARD COURT, OSSETT, WEST YORKSHIRE.

TRADE ENQUIRIES WELCOME

ZX80 & ZX81 HARDWARE

Repeating Key Module KIT £3.95 BUILT £5.95
(As reviewed by *Popular Computing Weekly*)

Inverse Video Module KIT £2.95 BUILT £4.50
(As reviewed by *Popular Computing Weekly*)

Keyboard Beeper Module KIT £6.95 BUILT £8.50

Keyboard Entry Module KIT £2.95 BUILT £4.95

Input/Output Port KIT £10.95 BUILT £14.95

(Can be used with 16K RAM and printer without motherboard)

Programmable Character Generator KIT £17.95 BUILT £24.95

3K Memory Expansion BUILT for only £12.00

The most reliable memory expansion available.

Full-Size Keyboard with Repeat Key—The first of its kind
Built version plugs in. KIT £19.95 BUILT £24.95

ZX Edge Connector 23-Way Long gold plated pins £2.95

ZX Spectrum version £3.50

ZX SPECTRUM SOFTWARE CASSETTES

Fruit Machine Colour graphic representations of fruits. Including HOLD and GAMBLE. £4.95

Solitaire Alpha-Numeric move entry. £4.95

Patience The popular card game (cheat proof). £5.95

Mancala The Chinese Logic Game. £5.95

REPULSER Repel the alien invasion. £4.95

WE ALSO STOCK A LARGE RANGE OF RESISTORS, CAPACITORS, ETC



Access Card Orders Accepted
Ring 094 686 627
(24 hr. ANSAPHONE)



STOP PRESS!!

JUPITER ACE £89.95

ZX SPECTRUM input/output port. The kit £11.95. Built £15.95. Plugs onto the back of the spectrum doesn't require motherboard. (uses BASIC in and out commands). HCW 4

STOP PRESS
OPENING SOON!
RETAIL SALES AT
85 SCOTCH ST
WHITEHAVEN

TRS80 LV.2 — ZX SPECTRUM — ZX81 SOFTWARE LIBRARY TAPE



25 great programmes on one pack:— Star Wars, Gambling Machine, Breakout, Trap It, Population Simulation, Corridors of Doom, Housebreak, Towers of Hanoi, Butterfly Chase, The Vault, Yahtzee, Maths, Calendar, Amazing 3D Mazes, 3D Noughts & Crosses, Jackpot Bandit, Hangman — musical, bible, history & sport, Mastermind, spelling, Diary, Records File and Time Warrior.

We only have room here to fully describe one programme, please don't hesitate however, to phone or write for full details of all the programmes.

HOUSEBREAK:— You have entered a house at night in an attempt to rob it of Money and any Gold and Silver items you can find. It is very dark and your must avoid bumping into the furniture. After a period of time an alarm will sound and soon after this the lights will be turned on. A vicious dog is then released. You have to use all your skill and cunning to avoid getting bitten as the dog chases you around the house; any injury caused by the dog will slow down your escape. The game is played in 'real time' and has excellent graphics. A different house is generated each time the game is played.

The full cassette of 25 programmes is sent to you for only £8.95!

Trade enquiries welcomed.

Telephone John Wilson on 0608-3059.

SPARTAN SOFTWARE
(DEPT)

9 Cotswold Terrace,
Chipping Norton, Oxon.

25
SUPERB
GAMES
ONLY £8.95!



Unit 'D', The Maltings, Station Road,
Sawbridgeworth, Herts.

PROGRAMS FOR THE DRAGON 32

SULTAN'S MAZE by Christopher Hunt

Enter the 3D Maze in search of the Sultan's jewels, but beware, your strength may run out, or, you may come face to face with the Mad Guardian. A multi-difficulty game with fantastic graphics and sound. £7.95

EDUQUIZ I by Peter Chase

Three great educational quiz games. Bet on the answer of your choice and be a winner! Eduquiz makes learning fun! On this tape, improve your knowledge of... Geography, Inventors and their inventions and the Kings and Queens of Great Britain. £9.95

EDUQUIZ II by Peter Chase

Three more subjects in the Eduquiz series. This tape helps you learn about... Writers, Painters and Musicians. £9.95

FUNMATHS I by Peter Chase

Improve your maths while you play these five great games! In Number Race you must beat the computer, or a friend, to exactly 100 by eating the numbers. Maths Maze asks questions as you work your way around the maze. Chemist is a game of ratios, where you mix two chemicals, trying not to get blown up! Dragon exercises your skill at expressing coordinates — you have to find the Dragon, hidden in a grid. Last, but no means least, Simon tests your memory for tunes/colours/numbers. £9.95

GEMPACK IV by W. E. MacGowan

Two great machine code games, with full colour graphics. In Sea Harrier you must land your plane on the aircraft carrier, after dispersing the clouds with chemical bombs, but don't hit the ship! In Sub Chase you must depth charge the wolf pack without being sunk. Both with 4 levels of play from easy to kamikaze! £7.95

ALIEN BLITZ by Peter Chase

Your craft is running low on fuel and you must land! You have to use your bombs to clear a space amongst the skyscrapers, but beware of craters! A superb multi-level action game for the Dragon, with superb sound and graphics. £7.95

LYNX PROGRAMS

Please write or phone for details. All available by mail order from:

GEM SOFTWARE

UNIT D, THE MALTINGS, SAWBRIDGEWORTH, HERTS.

Telephone: (0279) 723567 HCW3

TRADE ENQUIRIES WELCOME — PLEASE RING FOR DEALER PACK.

ISCA SOFTWARE

PROGRAMS FOR THE VIC 20 (UNEXPANDED)

WARRIOR our latest arcade type game. Guide your light cycle, trailing an impenetrable wall of light in your wake to out-manoeuvre the robot warrior. Extended screen technique with superb 3D graphics for maximum effect. £5.00

BOMBER Pilot your aircraft & bomb the cities flat in order to land. Difficulty increases after each successful landing. Super high res. Graphics & explosive sound! One of our most popular games. £4.50

INVASION Shoot the aliens as they descend from the mothership to invade your city. Different skill levels, high score display, key or joystick control for fast action. £4.50

OTHELLO Can you beat VIC at this fascinating board game? Features 1 or 2 players, illegal moves rejected, full board display with excellent colour graphics & sound. Beware: VIC plays a mean game! £4.50

TANK BATTLE Watch out for the minefields as you try to outgun the enemy in this exciting tank battle, 5 levels of play. Extended screen display with high res. graphics & sound. Very addictive! £5.00

MASTERMIND & CONNECT 4 Two more popular games for the family. Can you break the mastermind 5 colour code? Connect 4. Has 1 or 2 player option. Both games include full size graphic display & sound. £4.50

GRAPHIX Design your own high res. characters. Draw up to 4 different characters simultaneously. Enables full use of the powerful VIC graphics. Modes include: DRAW; ERASE; SET & UNSET. £4.00

All the above prices include post & packing.
Trade enquiries welcome.

ISCA SOFTWARE

56 Whitchurch Ave.
Exeter EX2 5NT

Get lost, easily, in the Amazing Maze

It's very easy to get lost — especially on the harder options — in my Amazing Maze program, for the 16K Spectrum.

The program generates a random maze and throws you into a random position right in the middle. A three-dimensional picture is then drawn of what you can see, lost there in the middle of the maze. You can move forward, turn left or right, ask for help or quit. Your task is to find the exit (which is always in the top left hand corner) and escape...

First the program prints a list of options and asks you to choose one. You are then asked if you want to know in which direction you are facing (shown by an arrow underneath the word DIRECTION in the main maze display).

This seemingly futile indicator can be very useful.

After the maze has been generated, which takes about 30 seconds, the three dimensional view is drawn, and the message, "F,L,R,Q or M?" is printed at the bottom of the screen. You must type in your command and then press ENTER. The commands are:

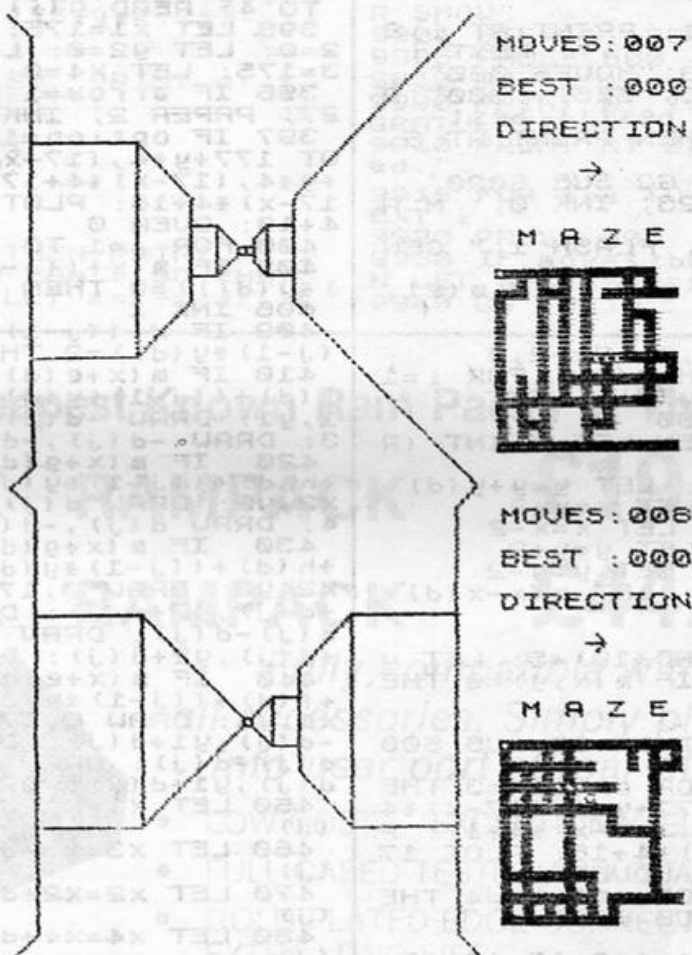
F moves you one step forward
L turns you to the left
R turns you to the right
Q quit. Hard luck, your score won't count for the high score!
H help: prints the map, which clears itself after 10 seconds and 10 moves are added to your score.

The number of moves you have taken so far is displayed in the top right hand corner of the screen and the best number of moves below it. These are the number of actual steps you take, so this is a game of strategy not a real time game.

When you have escaped or quit — shameful person — the list of options is printed again. Now you can have another go with the same or a different option or input "q" to quit.

The program fits into 16K, but only just, which explains the absence of REM statements and the long multi-statement lines. There should be no problems

Suddenly you're landed in the middle of a maze... but there's a three-dimensional view to help you find your way out.
Matthew Taylor wrote his game for the 16K Spectrum



encountered when typing in the program as long as you do not add anything if you are using a 16K Spectrum: just type in the program and SAVE it with SAVE "MAZE" LINE5. Just in case, here is an explanation of some of the lines:

20 There are 10 spaces inside the quotes
6000 There are 9 spaces inside the quotes
6030 There are 22 spaces inside the quotes

If you have a 48K Spectrum you might like to add some features which I would have liked to add, but didn't have the memory, like monsters, treasure, an oaken door and an axe to break it down, different levels, stairs...

How it works

5 sets high score to zero
10-70 options
100-116 set up screen

120-196 set up variables for maze generation
200-230 realises options
240-280 generate "arrow"
285-390 set up variable for play
395 re-initialises variables for graphics each turn
396 prints direction arrow if required
397 traces route if required
400-500 draw graphic display
505-506 update moves
510-560 INPUT, process and act on commands, error checking
570 clears graphic display
5000-5100 print map of maze, see hints on conversion
6000-6010 clear map area
6020-6050 clear graphic display
7000-7020 check forward move is valid and check for escape
9000-9110 opening display, INPUT options
9800-9940 finishing messages, update high score

Main variables

option	option
moves	number of moves taken so far
best	high score
arrow	1 if direction arrow is required
X,Y	position in the maze, both during random generation and play
m(21,21)	direction: 1 up, 2 right, 3 down, 4 left
d	table of distances used in drawing graphic view
x(4),y(4)	table of displacements using above
d(7)	table of distances used in drawing graphic view
3e(4),f(4)	table of displacements to find square in m(21,21) to right
g(4),h(4)	as above but for left positions of four corners when drawing graphic display
xl-4,yl-4	character number (CODE=c+128) of
c	

16K SPECTRUM PROGRAM

graphic to be printed when printing map, see figure 1 and Hints on conversion

Hints on conversion

PLOT OVER 1; means "invert point", but is used as "unplot" in my program.

The graphic resolution on a Spectrum is 256 x 176. The square area for the three dimensional display uses 0-175 in both X and Y directions.

DRAW X,Y means draw from current position to a position X,Y away i.e. X,Y are relative displacements rather than absolute co-ordinates.

INPUT always uses the bottom line. You will have to be careful where you put your INPUTS on the screen.

INPUT "..."; LINE a\$ is no different to INPUT "..."; a\$ on other computers. The LINE just prevents the Spectrum printing annoying quotes around your INPUT.

a\$(1) means the first character in a\$ i.e. LEFT\$(a\$,1)

PRINT' means print down a line as in ATOM Basic.


Lines 5010 to 5060 print the maze in double resolution — four maze locations to a character square. Therefore, the character

to be printed has to be calculated. This is quite easy on a Spectrum because Uncle Clive has conveniently ordered the graphic characters in the Spectrum character set.

2	1
8	4

Figure 1

Consider each character square divided into four smaller squares, each smaller square numbered as in figure 1. To find the code of the character required, all that is needed is to add up the numbers in the small squares which are to be printed and add 128 (code for a space).

(For example, to find the code of  : CODE = (1+2+8)+128 = 139 (check this on figure 1).

If these characters are not so conveniently ordered on your computer then you will probably need to set up a string array of these 16 characters.

```

5 LET best=0
10 RANDOMIZE : RESTORE : PAPER
7: INK 1: BORDER 2: CLS
15 GO SUB 9000
20 FOR i=0 TO 21: PRINT AT i,2
2: PAPER 2: " " : NEXT i
30 PRINT AT 1,23: "MOVES:000"
40 PRINT AT 3,23: "BEST :000":A
T 3, (32-LEN (STR$ best)):best
45 IF arrow=1 THEN PRINT AT 5,
23: "DIRECTION"
50 GO SUB 6000: GO SUB 6020
60 PRINT AT 10,23: INK 0: " M A
Z E "
70 PRINT AT 1,2: FLASH 1: " GEN
ERATING MAZE "
100 LET x=2: LET y=2: DIM m(21,
21)
110 LET d=1
115 DATA 0,2,2,0,0,-2,-2,0
116 DIM x(4): DIM y(4): FOR i=1
TO 4: READ x(i),y(i): NEXT i
120 FOR j=1 TO 200
125 IF RND<.5 THEN LET d=INT (R
ND*4)+1
130 LET x=x+x(d): LET y=y+y(d)
140 IF x<2 THEN LET x=x+2
150 IF x>19 THEN LET x=x-2
160 IF y<2 THEN LET y=y+2
170 IF y>19 THEN LET y=y-2
180 LET m(x,y)=1: LET m(x-x(d)/
2,y-y(d)/2)=1
190 NEXT j
195 LET x=INT (RND*10)+5: LET y
=INT (RND*10)+5: IF m(x,y)=0 THE
N GO TO 195
196 LET m(2,2)=1
200 IF option<5 THEN GO SUB 500
0
210 IF option=1 OR option=3 THE
N OVER 1: PLOT 177+y*4,(17-x)*4
+17: PLOT 178+y*4,(17-x)*4+17: P
LOT 177+y*4,(17-x)*4+18: PLOT 17
8+y*4,(17-x)*4+18: OVER 0
220 IF option=3 OR option=4 THE
N PAUSE 500: GO SUB 6000
230 GO SUB 6020
240 DATA 16,56,64,146,16,16,16,
16
250 DATA 8,4,2,255,2,4,8,0
260 DATA 8,8,8,8,73,42,28,8
270 DATA 0,16,32,64,255,64,32,1
6
280 FOR i=0 TO 31: READ a: POKE
USR "a"+i,a: NEXT i
285 DATA -1,0,0,1,1,0,0,-1
286 FOR i=1 TO 4: READ x(i),y(i)
: NEXT i
310 LET moves=0: LET d=INT (RND
*4)+1
330 GO SUB 6020
340 DATA 8,40,20,10,5,3,2
350 DIM d(7): FOR i=1 TO 7: REA
D d(i): NEXT i
360 DATA 0,1,1,0,0,-1,-1,0
370 DATA 0,-1,-1,0,0,1,1,0

```

```

380 DIM e(4): DIM f(4): FOR i=1
TO 4: READ e(i),f(i): NEXT i
390 DIM g(4): DIM h(4): FOR i=1
TO 4: READ g(i),h(i): NEXT i
395 LET x1=175: LET y1=0: LET x
2=0: LET y2=0: LET x3=175: LET y
3=175: LET x4=0: LET y4=175
396 IF arrow=1 THEN PRINT AT 7,
27: PAPER 2: INK 7: CHR$ (143+d)
397 IF option=1 THEN OVER 1: PL
OT 177+y*4,(17-x)*4+17: PLOT 178
+y*4,(17-x)*4+17: PLOT 177+y*4,(
17-x)*4+18: PLOT 178+y*4,(17-x)*
4+18: OVER 0
400 FOR j=1 TO 7
405 IF m(x+((j-1)*x(d)),y+((j-1)
*y(d)))=0 THEN GO TO 500
406 INK 1
409 IF x+((j-1)*x(d))=2 AND y+((
j-1)*y(d))=2 THEN INK 7
410 IF m(x+e(d)+((j-1)*x(d)),y+
f(d)+((j-1)*y(d)))=0 THEN PLOT x
1,y1: DRAW -d(j),d(j): PLOT x3,y
3: DRAW -d(j),-d(j)
420 IF m(x+g(d)+((j-1)*x(d)),y
+h(d)+((j-1)*y(d)))=0 THEN PLOT
x2,y2: DRAW d(j),d(j): PLOT x4,y
4: DRAW d(j),-d(j)
430 IF m(x+g(d)+((j-1)*x(d)),y
+h(d)+((j-1)*y(d)))=1 THEN PLOT
x2,y2: DRAW 0,175-y2-y2: PLOT x2
+d(j),y2+d(j): DRAW 0,175-y2-y2-
d(j)-d(j): DRAW -d(j),0: PLOT x2
+d(j),y2+d(j): DRAW -d(j),0
440 IF m(x+e(d)+((j-1)*x(d)),y
+f(d)+((j-1)*y(d)))=1 THEN PLOT
x1,y1: DRAW 0,175-y1-y1: PLOT x1
-d(j),y1+d(j): DRAW 0,175-y1-y1-
d(j)-d(j): DRAW d(j),0: PLOT x1-
d(j),y1+d(j): DRAW d(j),0
450 LET x1=x1-d(j): LET y1=y1+d
(j)
460 LET x3=x3-d(j): LET y3=y3-d
(j)
470 LET x2=x2+d(j): LET y2=y2+d
(j)
480 LET x4=x4+d(j): LET y4=y4-d
(j)
490 NEXT j
500 PLOT x2,y2: DRAW 175-x2-x2,
0: DRAW 0,175-x2-x2,0: DRAW -(17
5-x2-x2),0: DRAW 0,-(175-x2-x2)
502 INK 1
505 LET moves=moves+1
506 PRINT AT 1,(32-LEN (STR$ mo
ves)):moves
510 INPUT "M,Z,R or ? "; LI
NE a$
515 IF a$="" THEN GO TO 510
520 IF a$(1)="f" OR a$(1)="F" T
HEN LET x=x+x(d): LET y=y+y(d):
GO SUB 7000: GO SUB 6020: GO TO
395
530 IF a$(1)="l" OR a$(1)="L" T
HEN LET d=d-1
540 IF a$(1)="r" OR a$(1)="R" T
HEN LET d=d+1

```


16K SPECTRUM PROGRAM

```

545 IF a$(1)="q" OR a$(1)="Q" T
HEN GO TO 9800
546 IF a$(1)="h" AND option>2 T
HEN GO SUB 5000: PAUSE 500: GO S
UB 6000: LET moves=moves+10
550 IF d=0 THEN LET d=4
560 IF d=5 THEN LET d=1
570 GO SUB 6020
580 GO TO 395
5000 FOR a=2 TO 18 STEP 2: FOR b
=2 TO 18 STEP 2
5010 LET c=0
5020 IF m(a,b+1)=1 THEN LET c=1
5030 IF m(a,b)=1 THEN LET c=c+2
5040 IF m(a+1,b+1)=1 THEN LET c=
c+4
5050 IF m(a+1,b)=1 THEN LET c=c+
8
5060 PRINT AT 11+a/2,22+b/2;CHR$(
(c+128))
5070 NEXT b: NEXT a
5080 OVER 1: PLOT 185,78: PLOT 1
85,77: PLOT 186,78: PLOT 186,77:
OVER 0
5090 IF option=1 THEN OVER 1: PL
OT 177+y*4,(17-x)*4+17: PLOT 178
+y*4,(17-x)*4+17: PLOT 177+y*4,(
17-x)*4+18: PLOT 178+y*4,(17-x)*
4+18: OVER 0
5100 RETURN
6000 FOR i=12 TO 20: PRINT AT i,
23;"": NEXT i
6010 RETURN
6020 FOR i=0 TO 21
6030 PRINT AT i,0;"
6040 NEXT i
6050 RETURN
7000 IF m(x,y)=0 THEN PRINT AT 2
0,0; FLASH 1;"YOU CAN'T GO THAT
WAY!": BEEP 1,0: LET x=x-x(d): L
ET y=y-y(d)
7010 IF x=2 AND y=2 THEN GO TO 9
800
7020 RETURN

9030 PRINT "INK 2;" OPTIONS:"
9040 PRINT "1...Display maze an
d trace route throughout game
"
9050 PRINT "2...Display maze on
ly throughout game."
9060 PRINT "3...Display maze an
d location at beginning of
game."
9070 PRINT "4...Display maze on
ly at beginning of ga
me."
9080 PRINT "5...No help at all."

9100 INPUT "OPTION ? ";option
9105 IF option<0 OR option>5 THE
N GO TO 9100
9110 INPUT "ARROW (y/n) ?";a$: L
ET arrow=(a$="y" OR a$="Y"): RET
URN
9800 PRINT AT 20,5; FLASH 1;"POO
R SHOW"
9801 BEEP 1,-20
9805 PAUSE 500
9810 GO TO 10
9900 PRINT AT 18,2; FLASH 1;"CON
GRATULATIONS"
9910 PRINT AT 20,2;"You've escap
ed."
9915 FOR i=1 TO 4: BEEP .1,30: N
EXT i
9920 PAUSE 500
9930 IF moves<best OR best=0 THE
N LET best=moves
9940 GO TO 10

```

The Cheapest Known Ram Packs In The World

- 16K RAMPACK £19.75 ●
- 64K RAMPACK £44.75 ●



Fully compatible with ZX81 and all accessories. Simply plug straight into user port at rear of computer.

- LOW COST — EXCEPTIONAL ELECTRONICS
- FULL CASED TESTED AND GUARANTEED
- GOLD PLATED EDGE CONNECTOR COATED FOR EXTRA LONG LIFE
- SECURE NO WOBBLE DESIGN
- SAME SLEEK CASE SIZE FOR BOTH VERSIONS

PRICE INCLUDES VAT and P&P. Delivery normally 14 days. Send Cheque/P.O. Payable to:—

CHEETAH Marketing Ltd.

359 The Strand, London WC2

Telephone: 01-240 7030

Telex: 8954958

16K Z x 81 RAM Packs now available at larger branches of John Menzies.

John Menzies

HCW8

It's time to put on your thinking cap

The Chess Player 48K Spectrum £6.95

Quicksilver, 92, Northam Road, Southampton, SO2 0PB.

One of many Spectrum chess programs on the market, Quicksilver's version adds a new twist to the game with an impressive piece of synthesised speech and a personality, in the form of the Chess Player. This evil being has decided that the Earth's fate is to be decided by a game of chess between him and a human challenger.

The game opens with the Chess Player announcing himself very clearly through the Spectrum's beeper. You are then asked whether you are using a black and white or colour television, so that the most suitable colours for each can be set.

There are six levels of play, each with varying reply times. The Chess Player plays quite a respectable game on the lowest level, although perhaps not as strong as some other chess games on the market.

Throughout the game the Chess Player displays his personality with such tactful remarks as "That was a pathetic move" or "Do you know what you're doing?", and occasionally admits that "This is harder than I thought", "This is a good game" or "That was a good move". Sometimes, though, his comments do not tie up with your actions.

Quicksilver has built itself a good reputation for high-quality software and The Chess Player does not let them down. The synthesised speech is impressive and the graphics pleasant, making this a very nice game indeed. **I.O.**

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



If you're the reflective rather than the active type, then games of strategy are for you. But which to choose? Our reviewers judge the latest offerings

THE CHESS PLAYER SPECTRUM GAMES FROM QUICKSILVER



MINED-OUT SPECTRUM GAMES FROM QUICKSILVER



Dictator 48K Spectrum £4.95

dk'tronics, 23 Sussex Road, Gorleston, Great Yarmouth.

One for the would-be world rulers. Run a fictitious country entirely as you wish, but watch out for assassination attempts, army coups and revolting peasants (in both senses!).

A text-only format allows a mass of information to be thrown on to the screen and provides you with plenty of decisions to make — and to get wrong.

Your popularity rating with each sector of the population is displayed and if it falls too low in one year, the farms will yield you just so much food — but if you get to feel bogged down you can always raise an army and go beat up your neighbours!

Great fun in its own way and will probably teach you a thing or two about yourself that you didn't really want to know! About the only sure way to win is to kill off any opposition and run your spending close to the limits. Build up the secret police, but watch out for the army if it gets too strong!

The instructions need to be better explained, and longer. Supplying an unlabelled cassette may be cheaper, but it is a recipe for disgruntled customers, should tapes get mixed up at home. **R.H.**

instructions	50%
playability	65%
graphics	n/a
value for money	60%



Mined Out 48K Spectrum £5.95

Quicksilver, 92 Northam Road, Southampton SO2 0PB.

Mined Out is a thinking game. Your aim is to cross various minefields safely, gaining extra points along the way by rescuing the odd damsel in distress.

Should you remain intact through eight progressively more difficult minefields, the final test is to rescue Bill the Worm from a fate worse than death!

Although there is no time limit, you do get bonus points for a faster completion of each course.

You are told if one, two or three mines are adjacent to your present position, and it is up to you to interpret this information and stay alive. At higher levels a mobile bomb, slow but determined is set on your track!

This is a very easy game to understand but surprisingly difficult to get beyond level five. It is excellent fun to play and it really does bring home the point that in a minefield you **must not** lose concentration for a moment.

Instructions are easily understood and provided with the cassette is a keyboard overlay, clearly indicating which keys control direction.

After each level (win or lose) there is the option of an action replay of your moves through the minefield.

Highest scores are recorded together with the player's initials. Graphics are simple, colourful and perfectly adequate for this highly recommended game.

P.F.

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



SOFTWARE REVIEWS

Fortress of Evil 16K Colour Genie £7.95

Algray, Algray House, 33
Bradbury Street, Barnsley, S
Yorks S70 6AQ.

One of several adventure games now available from Algray, Fortress of Evil follows a format that is becoming standard for this kind of game. You wander through square rooms, shown in 3D with the odd object lying about on the floor, and carry out actions using time-honoured phrases like "GET SWORD" and "STAB DEMON".

It's worth experimenting with commands, because the program will accept quite a wide vocabulary. Movement is controlled by the cursory keys for the four pole directions, and function keys for actions like climbing up or down stairs.

It is fairly difficult to do well at Fortress of Evil, mainly because you can suddenly be bumped off at critical stages in the game. Though this might at first appear to make the game more challenging, since there is no way of being reincarnated you have to reload the whole game all over again to find out where you went wrong. Very irritating.

To make the game more annoying still, Algray obviously decided that sparse, incomprehensible instructions should be the order of the day.

As adventure games go, Fortress of Evil is really rather tedious and, at £7.95, rather over-priced to boot. The graphics are nothing special, and don't make the most of the Colour Genie's facilities.

instructions	30%
playability	75%
graphics	65%
value for money	65%



Rescue 48K Spectrum £5.95

CRL, 140 Whitechapel Road,
London E1.

About the worst way to design a game is to make it complex for no

good reason, other than it looks good at first.

Rescue is a classic example of this. The player is expected to remember so much information that it rapidly becomes impossible to actually do anything. Drop the gun here, get the radio there, find the boat now, move into that square — and all at once!

It is not that this is a difficult game to beat. Complexity and difficulty are not necessarily linked. If you can stay calm long enough Rescue is simple to win.

The main enemy is the mass of detail which you are expected to handle on the way. Rescue's design is too full of "chrome" — bits and pieces added for appearance — to be classed as anything close to good.

R.H.

instructions	50%
playability	10%
graphics	60%
value for money	40%



Othello Spectrum £5.95

CDS Micro Systems, 10 Westfield
Close, Tickhill, Doncaster, S
Yorks DN11 9LA.

There are many versions of the boardgame Othello or Reversi around and this is a fairly standard one. The aim is to capture as many squares as possible by placing pieces and turning over your opponent's.

You have three options: playing against the computer, playing

another person or watching the computer play itself, and you can choose either the black or white pieces.

There's not much fun in watching the computer play (except to learn tactics), with about 20 seconds delay between moves, and there's not much point in buying the game if you are mainly going to play against another person, so the value of this game lies in the ability of the computer opponent.

I found the algorithm used very difficult to beat. I suspect that it has been adapted from another machine, as at one point it tells you to press Return — but of course the Spectrum hasn't got a return key.

The instructions are clear but could have been laid out in a more readable fashion. Play is easy: you simply enter a two-digit grid reference and the computer will place your piece there if it is a legal move. If you think you cannot move, entering 00 causes the computer to check and to suggest a move if one is available.

instruction	84%
playability	95%
graphics	85%
value for money	80%



Ultimate Adventure Dragon £8

Microdeal, 41 Turko Road, St
Austell, Cornwall.

This adventure takes a couple of minutes to load from cassette and is written entirely in BASIC. The instructions, spanning several screens, should be adequate for all new adventures. They also described how to save an uncompleted game on cassette for resumption later on.

The aim of the game is to venture out from a market place, equipped with 250 dollars and 250

'strength' points, and search for seven hidden treasures. Finding a treasure adds to your capital; you must accumulate 1,000 dollars and return to the market in one piece to complete the adventure successfully. There are items which you can use to aid you in your task but you have to buy them in the market.

Once you venture outside the market place your travels may take you from the desert to the Arctic, and you can get teleported to any location if you fall foul of one of the numerous portholes.

Pythons, rhinos, sharks and other dangerous animals imperil your journey. Fending them off will cost you some strength points, but you can regain your strength if you find the infirmary.

Although the game does make some use of sound and hi-res graphics when looking for treasure, I felt that it lacked excitement and could have done with a touch of humour. Adventure game addicts may find enough to keep them occupied, but for me this was not the ultimate adventure.

C.D.

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



SPECTRUM 48K : ZX81 16K SIX PART ADVENTURE



BLACK CRYSTAL THE QUEST IS ABOUT TO BEGIN

The ultimate role-playing adventure for the SPECTRUM/ZX81. You can become a warrior, elf or wizard on a quest to find and use the rings of creation: to destroy the Black Crystal and defeat the Lords of Chaos. Held within six programs lies a land of fabulous treasures and mythical monsters. Journey through the land of Beroth, explore the castle of shadows, descend into the Shaggoths lair, search for diamonds in the sea of sand but beware of sand sharks! Confront the fire demon in his temple, battle against the Lords of Chaos and win your way to the Black Crystal.

By splitting Black Crystal into six programs we can provide more variety and detail than any other adventure for the Sinclair computers.

Real time monster battles. Superb graphics. Save game feature. All six parts are supplied together on cassette, boxed with instruction booklet.

**SPECTRUM 48K: 180K OF PROGRAM
IN SIX PARTS — ONLY £7.50**

**ZX81 16K: OVER 100K OF PROGRAM
IN SEVEN PARTS — ONLY £7.50**

**WHY PAY MORE FOR LESS OF AN
ADVENTURE**



To: CARNELL SOFTWARE, BOX 2, 4 STAUNTON RD, SLOUGH, SL2 1NT.
Please send me: Black Crystal for my,

- ☐ Spectrum 48K..... £7.50
☐ ZX81 16K..... £7.50

I enclose a cheque/postal order (payable to Carnell Software) for £

NAME.....

ADDRESS.....

TRADE ENQUIRIES WELCOME

HCW8

HANG GLIDER ZX81 16K

PILOT your hand glider along the path of the river to avoid the city buildings.

FLY round the mountain to land on the target.

CATCH the updrafts to fly over the plateau.

Cassette £5.45 from

S. Electronics,
1, Orchard Road,
Hayling Island, Hants.
PO11 9JA.

HCW8

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



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

FOR YOUR MICRO

GALACTIC ATTACK
SPACE MISSION
LUNAR LANDER
PLASMA BOLT
STAR TREK
RADAR LANDING
ATTACKER
GALACTIC DOGFIGHT
ZIGZAG ATTACK
INVASIVE ACTION
OKO
BOGGLES
PONTON
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 FIGHT
PHASER
INTRUDER
INFERNO
GHOSTS

SUBMARINE
ROCKET LAUNCH
PLANETS
BLACK HOLE
DYNAMITE
DO YOUR SUMS
DERBY DASH
SPACE SEARCH
UNIVERSE
RATS
TANKER
PARACHUTE
JETMOBILE
HIGH RISE
THE FORCE
EXCHANGE



**CASCADE
SOFTWARE**
CASCADE'S HOUSE
BARGAIN LANE
LLANDOGO
GWENT
S. WALES
NP54PA

**SINCLAIR
SPECTRUM
ZX81 LYNX
DRAGON**

ATARI VIC-20

APPLE (ON DISC & CASSETTE)

ACORN-ATOM

BBC A/B

SHARP

ORIC-1

NEW BRAIN

SUPPLY CASSETTE 50 FOR

I enclose cheque/P.O.

COMPUTER

Name.....

Address.....

HCW8

**ORDER
NOW!**

Can you and your Metro make it through the night?

Take a trip without leaving your computer. Nightdrive, a game for the BBC micro by Philip Tudor, puts you in the driving seat



BL's Metro — can you handle it at speed... and in the dark?

Imagine you are driving through the Yorkshire Moors in your Metro on a crisp Sunday morning.

That's your driver's eye view in my program for the BBC micro, model B.

You must make your journey within 60 seconds, controlling your speed and direction.

The road stretches out on either side of the bonnet and there are two dials facing you — the one on the left showing elapsed time and the dial on the right giving your speed.

At the top of the screen is a white strip bearing the Nightdrive logo, score and high score.

The controls, explained fully in the instructions, are:

A — turn left
D — turn right
semi-colon — accelerate
colon — maintain speed
left square bracket — decelerate

The square bracket is shown as a right arrow in the instructions because mode 7, which is needed for the large characters, doesn't have a left square bracket symbol.

A maintain speed button is required because the accelerate and decelerate buttons continue to have effect until they are countermanded.

The game seems very difficult

to play at first, so here is a piece of advice: Don't go fast because this increases the road's tendency to curve to a point where the road's drift is greater than your control.

How it works

10-60	REMARKS
20	tests for escape key press
80-120	title, optional instructions, set up screen, start sound, DIMension arrays
130-290	main loop, calls up PROCedures
310-460	draw car, road, logo, score, high score, define characters
480-540	erase old road and draw new
560-650	set up starting road position, define envelopes, initialize variables
670-680	test for crash
700-720	"You Crashed!" Go to score, high score, play again? PROCEDURE
740-840	sound siren for about five seconds. Give score, high score, play again?
860-920	draw dials
940-970	road right
990-1010	road left
1030	accelerate
1050	decelerate
1070-1130	erase old and put on new clock hand
1150-1190	erase old and draw new speed needle
1210-1230	"You ran out of time!" Go to score, high score PROCEDURE
1250-1270	title
1290-1390	instructions
1410-1420	flash colours when crashed
1440-1450	put XL(n) etc... into SXL(n) etc...

The highest score I have reached — with the crash detector turned off — is 68. With the detector left on, I have only managed to reach a feeble 26.

Variables

K constant block movement of road
JP speed
S score
P play. If 1, quit; if 2, play again
B beat. If 1, beaten high score; otherwise not
R(1-6) and **XL(1-6)** X co-ordinates of right and left sides of road
DL(1-6) and **YR(1-6)** Y co-ordinates of left and right sides of road
C crash. If 1, crash; otherwise you were OK
SXR(1-6) and **SYR(1-6)** previous X and Y right co-ordinates
SXL(1-6) and **SYL(1-6)** previous X and Y left co-ordinates
CX and **CY** centre of dials
INC interval at which dial was marked
m movement of road (curving)
p amount m is divided by to form curve
AS contains CHR\$s to flash big red letters

Conversion hints

In BBC BASIC, a PROCEDURE is equivalent to a GOSUB except that a PROCEDURE is called by name rather than line number.

The ENVELOPES define noises — ENVELOPE 1 is the crash, 2 the motor and 3 the siren. If the SOUND command has a zero after it, the note will be played through a noise channel. The motor noise auto-repeats in the BBC micro. Other computers will need the motor noise included in every loop.

GCOLOR and COLOR are colour commands. RAD(x) converts x to radians. On machines without this function a bit of maths will be needed.

The VDUs and CHR\$s call up different commands, such as colour, defining characters and turning blocks of colour on and off. VDU defines a character and VDU 19 changes a colour.

ON ERROR detects when the escape key has been pressed. On the PETs, this could be done by POKE 144,88 and in the main loop testing the PEEK 166 until it equalled 4, ie RUN/STOP has been pressed.

BBC PROGRAM

```

10 REM*****
20 REM**NIGHTDRIVE**
30 REM**BY P.TUDOR**
40 REM**20 FEB '83**
50 REM**BBC-MICRO**
60 REM*****
70 ON ERROR GOTO1470
80 MODE7: CLEAR: DIM XL(6), YL(6), XR(6), YR(6), SYL
(6), SYL(6)
90 DIM SXR(6), SYR(6): PROCTITLE
100 PRINT "CHR$135" "Do you want instructions? (
Y/N)"
110 A$=GET$: IFA$="Y" THEN PROCINSTRUCTIONS
120 MODE1: PROCINITIALISE: PROCSCREENSET: SOUND0,
2,1,10
130 PROCDELAY: S=S+INT(SP/10)
140 IF INKEY$(0)="A" THEN PROCCOPY: FOR I=1 TO 6: XR
(I)=XR(I)+80+(SP/4): XL(I)=XL(I)+80+(SP/4): NEXT: P
ROCPDATE
150 IF INKEY$(0)="D" THEN PROCCOPY: FOR I=1 TO 6: XR
(I)=XR(I)-80-(SP/4): XL(I)=XL(I)-80-(SP/4): NEXT: P
ROCPDATE
160 PROCTEST: IF C=1 THEN PROCFLASH: MODE7: PROCCR
ASH
170 IF PL=1 THEN RUN ELSE IF PL=2 THEN END
180 IF INKEY$(0)="J" THEN F=1
190 IF INKEY$(0)=";" THEN F=2
200 IF INKEY$(0)=":" THEN F=3
210 IF F=1 THEN PROCDECELERATE
220 IF F=2 THEN PROCACCELERATE
230 IF SP<10 THEN 270
240 IFRND(2)=1 THEN PROCLEFT(64,16) ELSE PROCRIGH
T(64,16)
250 PROCTEST: IF C=1 THEN PROCFLASH: MODE7: PROCCR
ASH
260 IF PL=1 THEN RUN ELSE IF PL=2 THEN END
270 *FX15,0
280 IF TIME>7000 THEN MODE7: PROCNOTIME: PROCEND
290 PROCSPEEDO: PROCTIME: GOTO130
300 REM**SET UP THE SCREEN**
310 DEFPROCSCREENSET
320 VDU23,240,25,59,27,29,15,15,7,3,23,241,152
,220,216,184
330 VDU240,240,224,192,19,0,0,0,0,19,1,0,0,0
,0,19,2,0,0
340 VDU0,0,19,3,0,0,0,0: GCOL0,1: MOVE200,0: MOVE
300,200
350 PLOT85,300,0: MOVE300,200: PLOT85,400,200: GC
OL0,2
360 MOVE300,0: MOVE420,260: PLOT85,980,0: MOVE420
,260
370 PLOT85,860,260: GCOL0,3: MOVE420,260: PLOT85,
440,300
380 MOVE840,300: PLOT85,860,260: GCOL0,0: MOVE420
,260: DRAW860,260
390 GCOL0,1: MOVE893,200: MOVE980,200: PLOT85,980
,0: MOVE980,200
400 PLOT85,1080,0: COLOUR131: FOR I=0 TO 1: PRINTAB
(0,I);
410 PRINTSTRING$(40," "): NEXT: COLOUR0: PRINTAB
(0,1); "SCORE: ";
420 COLOUR1: PRINT "NIGHTDRIVE";: COLOUR0: PRINT "
HIGH: "; HX
430 VDU5: MOVE619,312: VDU240,241: VDU4: COLOUR130
: COLOUR0
440 TIME=1000: PRINTTAB(21,24); "SPEED"; TAB(14,2
4); "TIME"
450 VDU20: PROCDIAL(520,120,30): PROCDIAL(760,12
0,18)
460 PROCUPDATE: PROCTIME: PROCSPEEDO: ENDPROC
470 REM**UPDATE**
480 DEFPROCUPDATE
490 GCOL0,0: MOVESXL(1), SYL(1): FOR I=1 TO 6
500 DRAWSXL(I), SYL(I): NEXT: MOVESXR(1), SYR(1)
: FOR I=1 TO 6
510 DRAWSXR(I), SYR(I): NEXT: GCOL0,3: MOVEXL(1)
, YL(1)
520 FOR I=1 TO 6: DRAWXL(I), YL(I): NEXT: MOVEXR(1),
YR(1)
530 FOR I=1 TO 6: DRAWXR(I), YR(I): NEXT: COLOUR0: CO
LOUR131
540 PRINTTAB(6,1); S: ENDPROC
550 REM**INITIALISE**
560 DEFPROCINITIALISE
570 ENVELOPE1,1,0,0,0,0,0,-1,-1,-1,-1,126,25
580 ENVELOPE2,3,2,-4,4,50,50,50,127,0,0,0,126,
0
590 ENVELOPE3,1,4,-4,4,10,20,10,127,0,0,-5,126
,126
600 DATA20,40,100,200,200,400,300,600,400,800,
480,958,1280
610 DATA40,1200,200,1100,400,1000,600,900,800,
820,958
620 RESTORE: FOR I=1 TO 6: READXL(I), YL(I): SYL(I)=X
L(I)
630 SYL(I)=YL(I): NEXT: FOR I=1 TO 6: READXR(I), YR
(I)
640 SXR(I)=XR(I): SYR(I)=YR(I): NEXT: A$=CHR$14
1+CHR$136+CHR$129
650 S=0: SP=0: PL=0: SP1=0: F=3: ENDPROC
660 REM**CRASH DETECTOR**
670 DEFPROCTEST: C=0: IF XL(2)>300 OR XR(2)<992 O
R SYL(2)>300 OR SXR(2)<992 THEN C=1
680 ENDPROC
690 REM**YOU CRASHED**
700 DEFPROCCRASH: C=0
710 PRINT: FOR I=1 TO 2: PRINTA$; " You CRA
SHED!"; NEXT
720 PROCEND: ENDPROC
730 REM**END SEQUENCE**
740 DEFPROCEND
750 IFS>HX THEN HX=S: B=1: ELSE B=0
760 PRINT: PRINT: PRINTCHR$(134); "You scored: "; C
HR$(131); S
770 PRINT: PRINT: PRINTCHR$(130);: IF B=1 THEN PRINT
"You beat the HIGH!" ELSE PRINT "You didn't beat
the HIGH!"
780 B=0: PRINT: PRINT: PRINTCHR$(133); "The HIGH i
s: "; CHR$(129); HX
790 *FX15,0
800 SOUND1,3,101,60: SOUND2,3,117,60: SOUND3,3,1
29,60
810 PRINT: PRINT: PRINT " Press"; CHR$136; CHR$134;
"SPACE"; CHR$137; CHR$135; "for another"; CHR$133; "N
IGHTDRIVE." "CHR$135" ( 'N' to"; CHR$131; "QUIT"; C
HR$135)"
820 A$=GET$: IFA$=" " THEN PL=1 ELSE IFA$="N" THE
N PL=2 ELSE 820
830 SOUND&11,0,0,0: SOUND&12,0,0,0: SOUND&13,0,0
,0
840 ENDPROC
850 REM**DIALS**
860 DEFPROC DIAL(CX,CY,INC)
870 GCOL0,0: D=-1: MOVECX,CY: REPEAT: D=D+INC: XADD
=115*SIN(RAD(D))
880 YADD=115*COS(RAD(D)): MOVECX,CY: DRAWCX+XA
DD,CY+YADD
890 UNTIL D>360: GCOL0,1: D=-1: MOVECX,CY+100: RE
PEAT: D=D+15
900 XADD=100*SIN(RAD(D)): YADD=100*COS(RAD(D))
: MOVECX,CY
910 PLOT85,CX+XADD,CY+YADD: UNTIL D>360: ENDPRO
C
920 REM**DELAY**
930 DEFPROCDELAY: FOR W=1 TO 4000-(10*SP): NEXT: END
PROC
940 REM**MOVE ROAD RIGHT**
950 DEFPROCRIGHT(M,P): K=RND(64)+0.2*SP
960 PROCCOPY: FOR I=1 TO 6: XL(I)=XL(I)+(M/P)+K: XR(
I)=XR(I)+(M/P)+K
970 P=P/2: NEXT: PROCUPDATE: ENDPROC
980 REM**MOVE ROAD LEFT**
990 DEFPROCLEFT(M,P): K=RND(64)+0.2*SP
1000 PROCCOPY: FOR I=1 TO 6: XL(I)=XL(I)-(M/P)-K: XR(
I)=XR(I)-(M/P)-K
1010 P=P/2: NEXT: PROCUPDATE: ENDPROC
1020 REM**ACCELERATE**
1030 DEFPROCACCELERATE: IF SP<351 THEN SP=SP+50: END
PROC

```


BBC PROGRAM

```

1040 REM**DECELERATE**
1050 DEFPROCDECELERATE: IF SP>49 THEN SP=SP-50: ENDPROC
1060 REM**CLOCK**
1070 DEFPROCTIME
1080 GCOL0,1: MOVE520,120: XADD=100*SIN(RAD(D))
1090 YADD=100*COS(RAD(D)): DRAW520+XADD,120+YADD

1100 GCOL0,0: FIX$=RIGHT$(STR$(TIME),4)
1110 D=(6*VAL(LEFT$(FIX$,2)))-60: MOVE520,120
1120 XADD=100*SIN(RAD(D)): YADD=100*COS(RAD(D))
1130 DRAW520+XADD,120+YADD: ENDPROC
1140 REM**SPEEDO**
1150 DEFPROCSPEEDO
1160 GCOL0,1: MOVE760,120: XADD1=100*SIN(RAD(SP1))
1170 YADD1=100*COS(RAD(SP1)): DRAW760+XADD1,120+YADD1
1180 GCOL0,0: SP1=SP*0.9: MOVE760,120: XADD1=100*SIN(RAD(SP1))
1190 YADD1=100*COS(RAD(SP1)): DRAW760+XADD1,120+YADD1: ENDPROC
1200 REM**NO TIME**
1210 DEFPROCNOTIME: SOUND0,0,0,0
1220 VDU20: *FX9,6
1230 CLS: PRINT: PRINT: FOR I=1 TO 2: PRINT A$; "You ran out of TIME!": NEXT: ENDPROC
1240 REM**TITLE**
1250 DEFPROCTITLE
1260 CLS: FOR I=1 TO 2: VDU129,141: PRINT "Nightdrive": NEXT
1270 ENDPROC
1280 REM**INSTRUCTIONS**
1290 DEFPROCINSTRUCTIONS
1300 PRINT "CHR$134" "You are driving down a country lane." "CHR$131" "So what?", you say....": A$=INKEY$(200): PRINT "CHR$134" "...you can't see where you're going!"
1310 PRINTCHR$133;"In fact, that's not entirely true...." "CHR$133;"...you"; CHR$129;"CAN"; CHR$133;"see the faint edge." "CHR$131;" To make things easy, the road is curved" "CHR$131"and if you go over the edge....": CHR$136; CHR$129;"SPLAT!"
1320 PRINT "CHR$130" "Press"; CHR$136; CHR$132"SPACE"; CHR$130; CHR$137;"to continue."
1330 A$=GET$: IFA$<>" " THEN 1330
1340 CLS: PRINT "CHR$134;" "The controls are as follows: " "CHR$131; TAB(6); "A".....": CHR$135;"Turn left." "CHR$131; TAB(6); "D".....": CHR$135;"Turn right." "CHR$131; TAB(6); "S".....": CHR$135;"Accelerate."
1350 PRINT "CHR$131; TAB(6); "I".....": CHR$135;"Maintain speed." "CHR$131; TAB(6); "J".....": CHR$135;"Decelerate."
1360 PRINT "CHR$131; TAB(6); "F".....": CHR$135;"Good luck!": NEXT
1370 PRINT "CHR$130" "Press"; CHR$136; CHR$132"SPACE"; CHR$130; CHR$137;"to start."
1380 A$=GET$: IFA$<>" " THEN 1380
1390 ENDPROC
1400 REM**CRASH FLASH**
1410 DEFPROCFLASH: SOUND&10,1,4,5: FOR I=1 TO 60: VDU19,1,RND(15);0;
1420 VDU19,2,RND(15);0;19,3,RND(15);0;: NEXT: ENDPROC
1430 REM**COPY LOCATIONS**
1440 DEFPROCPCOPY: FOR I=1 TO 6: SXR(I)=XR(I): SXL(I)=XL(I): NEXT: ENDPROC
1450 PROCUPDATE: IF TIME>7000 THEN MODE7: PROCNOTIME: PROCEND
1460 REM**ESCAPE**
1470 MODE7: PRINTTAB(1,4); "Do you want another NIGHTDRIVE (Y/N) ?"
1480 A$=GET$: IF A$="Y" THEN RUN ELSE END

```

HIRE

VIC 20 SOFTWARE CASSETTES

£1.40 INC. P + P PER FORTNIGHT CARTRIDGES

£2.50 INC. P + P PER FORTNIGHT £10

FOR TWO YEARS MEMBERSHIP

ALL SOFTWARE HIRED WITH MANUFACTURERS PERMISSION.

Send £10.00 membership fee on full money-back approval (cheque or P.O. made payable to C.E. Bird). In return we will send you a folder containing your membership card, information sheet, supply of order forms and catalogue of programs (including descriptions of all software).

Or send £1.00 for catalogue and further details, refundable against your membership fee upon joining.

VIC 20 USERS SOFTWARE LIBRARY
11, NEWARK ROAD,
BREADSALL ESTATE,
DERBY. DE2 4DJ

HCW8

ASTROLOGY

truly AVAILABLE AT YOUR FINGERTIPS

USER PROMPTING PROGRAMS: merely key in birth information as requested by the computer — READ OUT (and/or PRINT OUT) what is normally the result of many hours of painstakingly tedious and complex mathematical calculations using tables, ephemeris, etc.

THE SIDEREAL TIME OF BIRTH.
THE ASCENDANT AND MIDHEAVEN in Sign, Degrees, Minutes, and Seconds for EQUAL HOUSE SYSTEM.
THE SIGNS AND POSITIONS OF THE HOUSE CUSPS in Sign, Degrees, and Minutes for the PLACIDEAN SYSTEM.
THE SUN AND MOON POSITIONS in Sign, Degrees, Minutes and Seconds.
ALL THE PLANETS POSITIONS in Sign, Degrees and Minutes.
THE LUNAR NODE — THE PART OF FORTUNE — THE VERTEX, AND A HOST OF OTHER BIRTHCHART INFORMATION AT THE TOUCH OF A KEY.

ZX81 16K
ZODIAC I ONLY £10.00
ZODIAC II ONLY £8.00
GIVES YOU THE ASPECTS AND MIDPOINTS
FOR 48K SPECTRUM AND DRAGON 32
ZODIAC F
Full combined program on one cassette
FOR ONLY £15.00

Other programs in course of preparation include: PROGRESSING THE HOROSCOPE; RECTIFICATION OF THE BIRTH TIME, etc.

Send orders with cheque payable to

STELLAR SERVICES

8 FIR TREE VALE, LEEDS LS17 7EY
Tel: (0532) 692770

HCW8

Home Computer Show

Birmingham

THE
METROPOLE HOTEL
AT THE
NATIONAL
EXHIBITION CENTRE

VISIT THE COMPLETE SHOW FOR THE HOME USER AND SEE:

A COMPLETE cross section of all hardware and software available to the home user.

A FULL RANGE of home computers priced from £50 upwards.

A COMPUTER ADVICE CENTRE run by independent experts for the answers to all our questions.

WIN WIN WIN TWO COMPUTERS—one for you, one for a school of your choice—to be won at each show: FREE entry form with advance tickets

JUNE SATURDAY 4th (10am-6pm)
SUNDAY 5th (10am-4pm)

ADULTS: £2.00 UNDER 8s & OAPs: FREE
25% DISCOUNT for parties of 20 or more.

SPONSORED JOINTLY BY:

A&B Computing
Computer Today Personal Software
Personal Computing Today
Home Computing Weekly
ZX Computing

Please enclose SAE
One person per coupon only

BIRMINGHAM
Home Computer Show
Send £1.00 Save £1.00
Mr. Mrs. Miss
Address _____

ASP Exhibitions
145 Charing Cross Road
London WC2H 0EE
01-437 1002

HCW8

Play your cards right... or end up £100 poorer

You may be good at Pontoon against humans. But will your wallet survive the VIC-20? Try Alan Blackham's program and find out



You are in a casino ready to battle it out at pontoon. You have £100 to gamble... can you come out with more or will you lose it all?

My Pontoon game occupies about 6K and runs in a VIC-20 with 3K RAM expansion.

At the start the screen shows two sets of cards face down, yours on the top half of the screen and the computer's below.

You start with £100 and you are asked how much you want to gamble. When you have entered the amount your cards are turned face up and you select whether to twist or stick by pressing T or S.

If you twist another card appears and the total value is displayed in the middle of the screen. If your total is more than 21 you "bust" and the computer wins the bet.

If you stick the computer turns its cards and tries to score more than you. It wins if it scores the same or more. You win if it "busts".

For the computer to win outright it must win all your money and for you to win you must walk away with £1,000 or more.

The amount you need to win can be changed at line 664 and the starting amount can be changed at line 27.

How it works

- 10-99 initialise variables, create user-defined graphics
- 100-180 set up screen for play
- 200-267 place your bet

- 300-399 your play — turns cards and inputs T or S
- 400-490 control computer's play
- 500-540 print text for computer's win
- 600-680 print text for your win
- 700-795 sub-routine to turn cards
- 1100-1190 computer's outright win
- 1200-1290 your outright win
- 2000-2090 print titles

Variables

- Y your card starting position
- C computer's starting position
- S Money you have got
- X counter and random numbers
- A data
- R sound
- I and J counters
- AS inputs
- B your bet
- C(1-10) computer's cards
- Y(1-10) your cards
- YT sum of your cards
- CT sum of computer's cards
- P position of card
- N number of card to be printed
- NM a flag

Hints on conversion

Conversion should be fairly easy if you have a Commodore 64 or PET. But for other computers it would be quite difficult because the program uses the VIC's built-in graphics characters.

Control characters

The control characters used in this program are as follows —

Line 140: clear screen. 160 cursor down x 3. 210 reversed text. 215 black, reversed text. 220 reversed text, set red. 230 reversed text. 235 reversed text, green. 310 home cursor, cursor down x 11, reversed text, black, cyan, black, cyan. 315 reversed text, red. 407 reversed text, purple. 450 reversed text, black, home cursor, cursor down x 11. 452 set reversed text, set green. 514 set

reversed text, set black. 515 red, reversed text. 614 black, reversed text. 615 reversed text, cyan. 660 set reversed text, green. 1130 clear screen, purple. 1135 yellow. 1140 cursor down x 2, green. 1150 cursor down x 2, cyan. 1215 clear screen, purple. 1220 yellow. 1225 cursor down x 2, green. 1230 cursor down. 1255 black, cursor down x 2. 2005 home cursor, cursor down x 10, reversed text, set black. 2010 reversed text, red. 2020 purple, reversed text. 2085 home cursor, cursor down x 10.

The POKes in the program are: 36879 screen colour, 36878 sound volume, 36877 white noise, 36876, 36875 and 36874 are the sound channels, 36869,240 is for normal text and 36869,255 for user-defined text.

The memory-mapped

screen locations are from 7680 to 8185, colour locations are from 38400 to 38884, the user characters are stored from 7168 onwards and the characters replaced are @ABCDEFGHI JKLMNOPQ. Their data is in lines 74-91.

```

2 REM *****
3 REM * ALAN BLACKHAM'S *
4 REM * VIC PONTON *
5 REM * (11/83/83) *
6 REM *****
7 REM
10 POKE 36878,15
12 POKE 36879,8
27 Y=7680:C=7966:S=100
30 REM ** USER CHARS **
40 X=7168
50 READ A:IFA=-1 THEN 100
60 POKE X,A
70 X=X+1:GOTO 50
    
```


VIC-20 PROGRAM

```

72 REM ** DATA FOR CHARS **
74 DATA 255,0,0,85,170,0,0,0
75 DATA 63,64,128,149,138,128,128,128
76 DATA 252,2,1,81,169,1,1,1
77 DATA 128,128,128,149,138,128,128,128
78 DATA 1,1,1,81,169,1,1,1
79 DATA 128,128,128,149,138,128,64,63
80 DATA 1,1,1,81,169,1,2,252
81 DATA 128,148,190,190,156,136,128,128
82 DATA 128,136,156,190,190,136,136,128
83 DATA 128,136,156,190,156,136,128,128
84 DATA 136,156,170,255,170,136,136,128
85 DATA 63,64,128,128,128,128,128,128
86 DATA 252,2,1,1,1,1,1,1
87 DATA 128,128,128,128,128,128,64,63
88 DATA 1,1,1,1,1,1,2,252
89 DATA 0,0,0,85,170,0,0,0
90 DATA 0,0,0,85,170,0,0,255
91 DATA 0,0,0,0,0,0,0,0
99 DATA -1
100 REM
102 REM **** SCREEN ****
105 REM
107 POKE 52,20:POKE 52,20
120 POKE 36879,25
130 POKE 36869,255
135 R=128
140 PRINT"*****BQQQQQQQQQQQQQ"
145 FOR I=1 TO 8
147 R=R+5:POKE 36875,R
150 PRINT"COC000DQQQQQQQQQQQQQ":NEXT I
155 PRINT"EPEPPPFQQQQQQQQQQQQQ"
160 PRINT"*****BQQQQQQQQQQQQQ"
165 FOR I=1 TO 8
166 R=R+7:POKE 36875,R
167 PRINT"COC000DQQQQQQQQQQQQQ":NEXT I
170 PRINT"EPEPPPFQQQQQQQQQQQQQ"
175 POKE 36875,0
180 IF NG=0 THEN NG=1:GOSUB 2000
200 REM
202 REM ** BET **
205 REM
210 GOSUB2050:PRINT"YOU HAVE £";S
215 PRINT"YOUR BET ( 1 -";S;" )"
220 POKE198,0:INPUT"£";A$:B=VAL(A$)
225 IF B<S AND B=INT(B) AND B>0 THEN 235
230 GOSUB 2050:PRINT"INVALID QUANTITY":GOTO 220
235 GOSUB2050:PRINT"YOUR BET = £";B;
240 REM ** RND CARDS **
242 C(1)=INT(RND(1)*10)+1:IF C(1)=1 THEN CT=CT+10
243 C(2)=INT(RND(1)*10)+1:IF C(2)=1 THEN CT=CT+10
250 C(3)=0:Y(3)=0
252 Y(1)=INT(RND(1)*10)+1:IF Y(1)=1 THEN YT=YT+10
253 Y(2)=INT(RND(1)*10)+1:IF Y(2)=1 THEN YT=YT+10
255 YT=YT+Y(1)+Y(2)
257 CT=CT+C(1)+C(2)
260 REM ** TURN CARDS **
265 P=Y:N=Y(1):GOSUB 700
267 Y=Y+2:P=Y:N=Y(2):GOSUB 700
300 REM
302 REM **** PLAYER ****
305 REM
307 IF YT>21 THEN 500
310 PRINT"*****TWIST OR STICK ?"
315 PRINT"SCORE =";YT
320 POKE 198,0
325 GETA$:IFA$=""THEN325
330 IF A$<"T"AND A$<"S"THEN 325
340 IF A$="T" THEN 350
342 FOR I=254 TO 128 STEP -3
345 POKE 36876,I:NEXT
347 POKE 36876,0:GOTO 400
350 X=INT(RND(1)*10)+1
351 J=0
352 J=J+1:IF Y(J)<0THEN 352
353 Y(J)=X:Y(J+1)=0
354 IF X=1 THEN YT=YT+10

```

```

355 YT=YT+X:Y=Y+2
360 P=Y:N=X:GOSUB 700
370 IF YT>21 THEN 500
399 GOTO300
400 REM
402 REM **** VICS GO ****
405 REM
407 GOSUB2050:PRINT"YOU STUCK ON";YT
420 P=C:N=C(1):GOSUB 700
430 C=C+2:P=C:N=C(2):GOSUB 700
440 IF CT>21 THEN 600
445 IF CT=YT THEN MN=1:GOTO 500
450 PRINT"***** I WILL TWIST !"
452 PRINT"MY SCORE IS"CT
460 POKE36876,253
465 FORR=1TO900:NEXT
467 POKE 36876,0
470 X=INT(RND(1)*10)+1
471 J=0
472 J=J+1:IF C(J)<0THEN 472
473 C(J)=X:C(J+1)=0
475 IF C(J)=1 THEN CT=CT+10
477 CT=CT+X
480 C=C+2:P=C:N=X:GOSUB 700
490 GOTO 440
500 REM
502 REM **** YOU LOST ****
503 REM
505 IF MN=1 THEN MN=0:GOTO 514
506 FOR J=1 TO 10
507 IF Y(J)=1 THEN Y(J)=2:GOTO 510
508 NEXT J:GOTO 514
510 YT=YT-10:GOTO300
514 GOSUB2050:PRINT"BAD LUCK!"
515 PRINT"YOU HAVE LOST £";B
517 S=S-B
520 FOR L=1 TO 15
525 FOR M=250 TO 240 STEP -1
530 POKE 36876,M:NEXTM,L
535 POKE 36876,0
540 GOTO650
600 REM
602 REM **** VICS LOST ****
603 REM
605 REM
606 FOR J=1 TO 10
607 IF C(J)=1 THEN C(J)=5:GOTO 609
608 NEXT J:GOTO 614
609 CT=CT-10:GOTO 440
614 GOSUB2050:PRINT"WELL DONE!"
615 PRINT"YOU WIN £";B
617 S=S+B
620 FOR L=1TO6
625 FOR M=200TO220+L*2
630 POKE 36876,M
632 NEXTM,L
635 POKE 36876,0
650 REM **** PRESS KEY ****
660 PRINT"PRESS ANY KEY"
662 IF S<=0 THEN 1100
664 IF S>=1000 THEN 1200
665 YT=0:CT=0:MN=0
670 POKE 198,0
675 GETA$:IFA$=""THEN675
677 Y=7680:C=7966:PRINT"J"
680 GOTO 100
700 REM
702 REM **** SHOW CARDS ****
705 REM
710 POKE P,11:POKE P+4,12
720 FOR I=P+1 TO P+3
725 POKE I,227:NEXT
730 FOR I=P+22 TO P+176 STEP 22
735 POKE I,229:POKE I+4,231
740 FOR J=I+1 TO I+3
745 POKE J,17:NEXT J,I
750 POKE I,13

```


VIC-20 PROGRAM

```

755 FOR J=I+1 TO I+4
757 POKE J,228:NEXT
760 POKE I+4,14
800 REM ** PRINT CHARS ON CARD **
805 POKE 36874,220
806 FORR=17050:NEXT:POKE 36874,0
810 X=INT(RND(1)*4)+1
812 POKE P+22,6+X
815 IF X=1 THEN CH=211:CO=2
816 IF X=2 THEN CH=193:CO=0
817 IF X=3 THEN CH=218:CO=2
818 IF X=4 THEN CH=216:CO=0
819 FOR I=P+30720 TO P+30720+198 STEP 22
820 FOR J=I TO I+4
821 POKE J,CO:NEXT J,I
824 IF N<10 THEN 840
825 X=INT(RND(1)*3)+1
830 IF X=1 THEN N=10
832 IF X=2 THEN N=17
834 IF X=3 THEN N=11
836 POKE P,N+128:N=10:GOTO 850
840 POKE P,48+N+128
850 ON N GOTO 860,865,870,880,890,900,910,920,930,940
860 POKE P,129
862 POKE P+112,CH:GOTO 990
865 POKE P+46,CH
867 POKE P+178,CH:GOTO 990
870 POKE P+46,CH
872 POKE P+178,CH
874 POKE P+112,CH:GOTO 990
880 POKE P+45,CH:POKE P+47,CH
885 POKE P+177,CH:POKE P+179,CH:GOTO 990
890 POKE P+45,CH:POKE P+47,CH
892 POKE P+177,CH:POKE P+179,CH
895 POKE P+112,CH:GOTO 990
900 POKE P+45,CH
902 POKE P+177,CH
904 POKE P+111,CH
905 POKE P+47,CH
906 POKE P+179,CH
907 POKE P+113,CH:GOTO 990
910 POKE P+45,CH:POKE P+47,CH
912 POKE P+177,CH:POKE P+179,CH
914 POKE P+111,CH:POKE P+113,CH
915 POKE P+68,CH:GOTO 990
920 POKE P+45,CH:POKE P+47,CH
922 POKE P+177,CH:POKE P+179,CH
924 POKE P+111,CH:POKE P+113,CH
925 POKE P+68,CH:POKE P+134,CH:GOTO 990
930 POKE P+45,CH:POKE P+47,CH
932 POKE P+89,CH:POKE P+91,CH
934 POKE P+133,CH:POKE P+135,CH
936 POKE P+177,CH:POKE P+179,CH
938 POKE P+112,CH:GOTO 990
940 POKE P+45,CH:POKE P+47,CH
942 POKE P+89,CH:POKE P+91,CH
944 POKE P+133,CH:POKE P+135,CH
946 POKE P+177,CH:POKE P+179,CH
948 POKE P+68,CH:POKE P+156,CH
990 POKE 36874,128
992 FORR=170100:NEXT:POKE 36874,0
995 RETURN
1100 REM
1102 REM **** YOU LOST ****
1110 REM
1120 POKE 36869,240
1130 PRINT"VICPONTON"
1135 PRINT"
1140 PRINT"YOU HAVE RUN OUT OF MONEY"
1150 PRINT"
1155 FOR I=1 TO 7
1156 RESTORE
1160 FOR J=1 TO 80
1165 READA:POKE 36876,A:NEXTJ,I
1170 POKE 36876,0
1190 GOTO 1250

```

```

1200 REM
1202 REM **** COMPUTER LOST ****
1205 REM
1210 POKE 36869,240
1215 PRINT"VICPONTON"
1220 PRINT"
1225 PRINT"YOU HAVE RUN OUT OF MONEY"
1230 PRINT"COME BACK NEXT WEEK!"
1240 FOR I=1 TO 7
1242 FOR J=150 TO 220
1243 POKE 36875,J:NEXTJ,I
1245 POKE 36875,0
1250 REM ** ANOTHER GO **
1255 PRINT"ANOTHER GAME (Y OR N)"
1260 POKE 198,0
1270 GETA$:IFA$=""THEN1270
1280 IF A$="Y"THEN RUN
1290 POKE 36879,27:PRINT"END"
2000 REM
2002 REM **** TITLES ****
2003 REM
2005 PRINT"VIC-20 PONTON"
2010 PRINT"BY A. BLACKHAM(C)"
2020 PRINT"PRESS ANY KEY TO PLAY"
2030 GETA$:IFA$=""THEN2030
2050 REM
2052 REM **** CLR SCREEN ****
2055 REM
2060 FOR I=7900TO7965
2080 POKE I,160:NEXT I
2085 PRINT"
2090 RETURN

```

RABBIT SOFTWARE

SPECIAL OFFER

For the unexpanded VIC 20

ANNIHILATOR Patrol the rocky terrain of a distant planetoid defending the humanoids.

NIGHT-CRAWLER Dare you venture into The Green Forest?

HOPPER (Frogger) Bring this famous pub game home.

SCRAMBLE Guide your craft through many perils to get to your Home Base.

SPACE PHREES Voyage across the Universe and face many alien creatures known only as Space Phrees.

Other titles available.

Recommended Price £9.99 each.

Our Price £7.99 each, buy two or more at £7.50 each.

MR CHIP

DATABASE Create your own custom files£7.50

M/C SOFT Machine code monitor and disassembler, and memory size£7.50

CHARACTER EDITOR With our own window facility£4.50

BANK MANAGER Computerise your bank account, for the unexpanded VIC£5.00

SUPER BANK MANAGER A full feature version, needs 3K expansion, but will run on any memory size£7.50

COMMODORE 64 MONITOR AND DISASSEMBLER£7.50
Full Documentation with the above tapes.

Free Brochure Available.

CHEQUES/P.O.s. TO

MR. CHIP, Dept HCW, 1 Neville Place, Llandudno,
Gwynedd LL30 3BL Tel. 0492 49747.

HCW8

FEELING ADVENTUROUS?

ASP Software Adventure Series 1

THE WHITE BARROWS Program approximately 8K

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!

CONQUERING EVEREST Program approximately 11K

You are in charge of an expedition comprising 18 climbers, 34 Sherpas and 40 Porters. There is food, tents and equipment for all, even the oxygen you'll need as you near the summit. One slight problem, it's all at the **BOTTOM** of the mountain and you have to get it all up to the **TOP**!

The monsters of this game are avalanches, starvation, storms and, worst of all, bad planning! A real, thinking man's adventure, Everest will test your skills of forward planning to the limit.

CONQUERING EVEREST Only £6.50 all inclusive!

**** SPECIAL DEAL **** Both programs on one tape for only £11.45 all inclusive!

ASP Software Adventure Series 2

CELLS AND SERPENTS Program approximately 11K

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!

STOCKMARKET Program approximately 11K

There are other ways of making money than bashing Trolls on the head. Try this one for a change. Contend with a fluctuating economy, tax investigations, bullish opponents, impatient bank managers and consortium takeovers as you struggle to make your first million.

It is decidedly difficult and definitely compulsive. A must for all those aspiring financial wizards, both young and old, the game has real family appeal as up to six people can play. It's easy to learn but very, very hard to win!

STOCKMARKET Only £6.50 all inclusive!

**** SPECIAL DEAL **** Both programs on one tape 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/Everest), 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.

Please indicate your selection in the coupon and give the relevant system.

Fill in the coupon, cut it out and send it to:

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

Please send me tape(s) of the following programs:

ASP Software Adventure Series 1

The White Barrows@ £6.50 each

Conquering Everest @ £6.50 each

Combined tape @ £11.45

ASP Software Adventure Series 2

Cells and Serpents @ £6.50 each

Stockmarket. @ £6.50 each

Combined tape @ £11.45

My system is a computer

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)

[illegible]

Please use BLOCK CAPITALS and include your postcode

NAME (Mr/Mrs/Miss).....

ADDRESS.....

POSTCODE.....

Signature _____ Date _____

Clear the decks — it's action all the way

Moons of Jupiter Vic-20 plus 3K £9.99

Romik, 24 Church St., Slough, SL1 1PT.

From time to time a real gem of a program emerges from the mass of software on sale, and this is one. In spite of its name, Moons of Jupiter is an excellent version of the old favourite Asteroids.

To the uninitiated, the idea of the game is to pilot a small space ship in the middle of a swarm of asteroids. Using the ship's cannon, you must destroy the asteroids and survive.

As you shoot the asteroids, they break up into smaller, faster moving, rocks. When you have cleared the screen of all debris, you get a new screen full to shoot at.

The ship's controls enable you to rotate the ship to the left and right and to move forwards. Your score simply depends on how many asteroids you destroy.

In Moons of Jupiter, the asteroids are beautifully drawn "moons" which move smoothly across a screen which is larger than that on the normal Vic. All animation is superb, without the faintest trace of jerkiness.

The ship moves very realistically with just a touch of inertia to make life difficult, and can be controlled from the keyboard or by a joystick, an option which more software authors should use.

The game offers three levels of difficulty and is very challenging. Occasionally nasty little objects called Gologs appear on the screen. You can destroy them, but I won't tell you how.

Overall, a superb game which any "Asteroids addict should obtain without delay.

A.W.

instructions	80%
playability	90%
graphics	100%
value for money	95%



**The latest action games:
firecrackers or damp squibs?
This is what our reviewers
think**



Rox 64 Commodore 64 £4.95

Llamasoft, 49 Mount Pleasant, Tadley, Hants RG26 6BN.

Retro Thrusters Activated! Planetfall successful. A bleak landscape upon which your multicoloured lunar module slowly descends is the scenario for Rox 64, a cross between Asteroids and Lunar Lander.

Underneath the lunar surface your craft's status is displayed, along with an unusual Damage Percentage display which increases as coloured boulders drift down and crash mightily into the surface.

Once your percentage has reached a certain level, your craft is destroyed by an impressive earthquake.

Your only defence is to fire rockets diagonally or straight



up to intercept the boulders, and you gain points for each hit plus an accuracy bonus. A Smart Bomb is available for desperate situations. Should you destroy all the rox, a large mother ship bleeps down and rescues your craft for a large points bonus.

The instructions at the beginning of the game weren't too clear, but I found them easy to pick up as I went along. Loading presented no problems whatsoever.

The boulders and missiles are slow to move, but there is an addictive quality to the game, and the colour displays between waves are excellent. All in all, good value for money.

D.A.

instructions	60%
playability	65%
graphics	65%
value for money	70%



Horace goes skiing Spectrum £5.95

Psion (with Melbourne House), 131 Trafalgar Road, Greenwich, London SE10

This is a sequel to Hungry Horace, from the same stable of writers, but not, I hope, the end of Horace. In this adventure, he has the princely sum of \$40 and wants to go skiing, but first of all, he has to cross over a very busy motorway.

The traffic on the motorway is a first-class example of the use of animated graphics, but this does not stop it knocking poor old Horace down. Every time he is knocked down he has to pay an ambulance fee of \$10, which makes the National Health Service seem a good proposition.

However, if Horace spends all his money on ambulance fees, he can earn some more by bravely dashing backwards and forwards across the motorway collecting points (hopefully). 1000 points will earn him the price of a pair of skis, or an ambulance ride.

If you can successfully get him to the ski slopes, there is more money to be earned by skiing down to the finishing line... but watch those trees!

I would have liked to have seen instructions on the screen as well as on the inlay, but I found that by using keys 1, 2, 3, and 4 I was able to keep a tight control — well, tightish — over the game.

Fun to play. You need a fair bit of patience to cross the road, but it is worth the effort.

B.B.

instructions	60%
playability	90%
graphics	100%
value	80%



SOFTWARE REVIEWS



Katerpillar Attack Dragon plus joystick £7.95

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

A fast machine code version of Centipede, entertaining, colourful and making a refreshing change from Space Invaders and the like.

The on-screen Katerpillar is a docile-looking creature that breaks up into segments when zapped, and proved to be a great

hit with my younger children (from eight downwards).

I couldn't help wondering who the game is actually aimed at, though; because of the lurid cassette box design, showing a hideous space monster being attacked by a space man, I would not have picked Katerpillar off the shelf as a children's game.

No spaceman, but you have a laser base at the bottom of the screen and fire to your heart's content. The screen soon becomes littered with mushrooms and spiders — all of which could be potentially dangerous...

You lose a life when a spider touches you, making a raspberry

sound that would have had Miss Muffet in stitches — my kids were rolling about.

Highest score is kept, but I wish you could input your name. They cheat in my house, and everyone claims top score.

Katerpillar provides excellent optional instructions, looks good on screen, plays well and allows the Dragon to appear in its rightful place as second to none. **M.P.**

instructions	90%
playability	100%
graphics	100%
value	90%



Power Blaster Vic-20 £9.99

Romik Software, 24 Church Street, Slough, Berks SL1 1PT.

Two classic arcade games, Space Invaders and Pacman, combined into one.

Your spaceship sits in a Pacman-like matrix surrounded by dots (mines) and pursued by Martians.

Instead of devouring the mines you have a highly effective laser which allows you to destroy whole rows of them for initially impressive scores.

I say initially impressive because as you progress through the levels (1-9), the machine code speed of the program makes the higher stages extremely difficult, with frantic Martians chasing you for all they are worth.

I have shown Power Blaster to several people, whose reactions have confirmed my opinion that this is one of the best non-cartridge games I have yet seen for the unexpanded Vic.

Highly addictive, although very simple in concept and easy to play. Either keyboard or joystick can be used.

If I had to make a criticism of this game then it would have to be that, at £9.99, it is quite expensive. No more so, though, than many other Vic-20 games, which tend to cost more than programs for rival machines. **M.B.**

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



Kong Colour Genie 16K £8.95

Algray, Algray House, 33 Bradbury Street, Barnsley, S Yorks S70 6AQ.

Based on the arcade game Donkey Kong, already very popular in the USA but not quite as well known here, Kong is a faithful reproduction of the original.

The idea of the game is to manoeuvre your little man through different situations to try and rescue a young lady held captive by the infamous King Kong at the top of the screen. The action takes place on four different screens, each one supposedly harder than the last.

There are five controls to move the man left and right, up and down and to jump over or on to obstacles. The movement can be controlled either by the keyboard, or with joysticks (if you happen to be rich enough to own a set), and is easy to master.

The first screen consists of a

series of girders joined together by ladders which must be climbed. To hinder you, Kong throws barrels which roll down the girders and ladders. These must be jumped over or crushed, using a hammer which you must retrieve from a hook above one of the girders. But this hammer is unreliable and can disappear from your hand at any time; usually at just the wrong moment.

As soon as you reach the damsel in distress at the top of the screen the display immediately changes to the next setting: a series of conveyor belts carrying hot pies. You must travel along the belts, and jump off, without hitting a pie or ending up in the oven in the middle of the screen.

The next screen is probably the most difficult and consists of a lift system which is constantly moving and a series of levels which must be jumped. The lift must be in exactly the right position before you can safely jump on to or off it, and it takes a while to find exactly the right point. After the lift, you must jump from level to level across open shafts while avoiding

springs which Kong throws down them.

The next level is a mere formality. It consists of eight plugs which must be removed from the girders, causing them to collapse and so kill Kong, rescuing the young lady into the bargain.

The game then repeats, unfortunately with no apparent increase of difficulty.

Minimal instructions are provided, the author clearly assuming you know how to play already, but it is fun to experiment with the game and find out what you can and can't do. The program is entirely machine code, making for beautifully animated and smooth graphics plus good use of colour and sound.

An excellent game, making full use of the Genie's facilities and well worth buying. **I.O.**

instructions	50%
playability	90%
graphics	90%
value	85%



Sea Invasion Vic-20 £9.99

Romik Software, 24 Church Street, Slough, Berks SL1 1PT.

Based on the Space Invaders theme, but instead of aliens an assortment of octopi, crabs and starfish. These give 30, 20 and 10 points respectively if you destroy them — but they are out to destroy you too.

With the aid of a speargun and temporary shelter behind sea plants, you must attempt to rid the ocean of these creatures before they overrun you. But if you do succeed in clearing one horde,

another takes its place moving at a faster pace until your three lives are used up.

There are five skill levels and a choice of joystick or keyboard control, both equally effective.

High scoring is possible for the skilled player, with the added attraction of a mystery bonus when you spear the stray shark speeding across the top of the screen. On the whole, an entertaining game. **K.W.**

instructions	70%
playability	60%
graphics	75%
value for money	40%



SOFTWARE REVIEWS

Skrumble Colour Genie 16K £8.95

Algray, Algray House, 33 Bradbury Street, Barnsley, S. Yorkshire S70 6AQ

No prizes for guessing which famous arcade game this is a version of. Like many of Algray's games, Skramble follows the original's format as closely as possible within machine limitations.

For any of you who don't already know, the object of Scramble-type games is to guide your little spaceship through tunnels and caves while avoiding and bombing the usual alien welcoming committee.

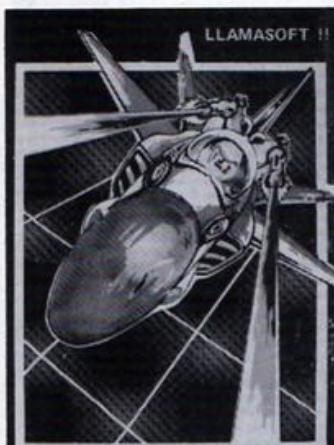
To earn points and survive, alien warships, rockets and meteors must be zapped, along with enemy ground bases. There is

a fuel limit and the only way to complete each section is to bomb fuel dumps which mysteriously refuel your craft.

The ultimate aim of the game is to reach and land on a 'homing slot' at the end of the tunnel. Needless to say, to get that far is very difficult indeed and I haven't got anywhere near it — yet. Apparently, should you be clever enough to make it, there is a chance of winning £100 from Algray.

The game is entirely in machine code, making it fast and reasonably smooth. The controls take a while to master and the game a lot longer, but all this adds to the interest. Good graphics, sound and colour, making this an excellent game. **I.O.**

instructions	50%
playability	90%
graphics	90%
value	85%



Gridrunner

Gridrunner Commodore 64 plus Joystick £8.50

Llamasoft Software, 49 Mount Pleasant, Tadley, Hants RG26 6BN.

Gridrunner's action takes place on a yellow grid, representing Earth's latest solar power generator, now overrun by aliens. Your mission is to clear the grid with the aid of a super-blast.

A klaxon-like warning

sounds as the screen alerts you: "Battle Stations. Enter grid sector 01." There are in fact 31 sectors you can choose to enter. Your small green blaster appears on the grid and moves freely with the aid of a joystick around the lower portion of the playfield.

Gridsearch squads which resemble wriggly worms come down very quickly and break into smaller worms when hit. They leave behind pods, which change shape and eventually explode, sending bombs hurtling down.

The XY Zapper also plants pods, and sends a lethal beam vertically up to catch you unawares. All these creatures can be killed by blasting away with your high speed cannon.

Gridrunner is rather like an abstract version of Centipede, with 'spacey' sound effects. Detailed instructions make comprehension and playing fairly easy, but the game moves so fast that it takes a little getting used to.

Not all that original but for dedicated arcade players a fast and enjoyable game with good sound and graphics. **D.A.**

instructions	70%
playability	60%
graphics	60%
value for money	65%



BIG IN LITTLE COMPUTERS

SOFTWARE NOW IN STOCK
AT THE VIDEO PALACE

COME AND SEE
OUR FULL SELECTION

SEND A LARGE
S.A.E. + 25p FOR
THE LATEST VIDEO
PALACE CATALOGUE

***** NOW IN STOCK *****
COMPUTER COMPATIBLE CASSETTE DECK
for use with T199/4A, BBC, Spectrum, ZX81
and most other computers £37.45

COMMODORE 64	
*CENTROPODS (Rabbit)	£ 9.99
Centipede-type game with impressive sound and graphics.	
*CYCLONS (Rabbit)	£ 9.99
Very good shoot-the-aliens game. Great graphics.	
*PARACUDA (Rabbit)	£ 9.99
Good Invaders-type game.	
ATTACK OF THE MUTANT CAMELS (Llamasoft)	£ 8.50
Zap the camels to survive. Superb graphics.	
GRIDRUNNER (Llamasoft)	£ 8.50
Popular arcade type game. Nice graphics.	
HITCH-HIKERS GUIDE TO THE GALAXY	£13.80
Word adventure game based on the radio/TV series.	
BBC (Model B)	
WORDSWORTH	£13.50
Excellent word-processor for use on its own or with the Epson MX80 printer. Menu driven, it offers all the functions of more expensive programmes.	
THE FROG (Software for All)	£ 8.95
Leap across the road and river, home to your lily pad.	
MODEL B INVADERS Superior	£ 6.50
The best invader game we've seen yet.	
T199/4A	
EXTENDED BASIC (TI)	£80.95
Adds many commands to TI's BASIC. Recommended for any serious application.	
PARSEC (TI)	£29.95
Superb Defender-type game. Speech option.	
ALPINE (TI)	£29.95
Climb the mountain avoiding obstructions on the way.	
CHISHOLM TRAIL (TI)	£29.95

**LARGE SELECTION OF PROGRAMMES
ALWAYS IN STOCK
FOR ALL THE ABOVE COMPUTERS,
PLUS VIC20 AND ATARI**

* indicates title available from May '82.

HCW8

**ALL THE ABOVE
PROGRAMMES CAN BE
ORDERED BY POST**

Add 50p p&p for the first and
15p for each subsequent item.
Allow up to 28 days for delivery.
Payment by cheque or postal order.



**ORDER BY
TELEPHONE**

Access and Barclaycard
holders may order by
phone: 01-937 6258

THE VIDEO PALACE

62 KENSINGTON HIGH ST. LONDON W8.

PALACE



GAMES PROGRAMMERS

Palace Software, part of a leading film and video company, is looking for games for Atari 400/800, BBC Model B, Spectrum, VIC 20 and CBM 64 for distribution in the UK, Europe and USA. High royalties will be paid for top quality and highly original machine code games. Send cassette samples to:
Pete Stone, Palace Software,
62-64 Kensington High Street, London W8
(Tel: 01-937 6258)

Book your subscription to Home Computing Weekly on or before 29th April 1983 and send £3 less than the full subscription rate as listed below. Don't delay, a saving of £3 and all the latest news on the home computing scene delivered weekly to your door is too good an opportunity to miss!

Cut out and SEND TO:

Home Computing Weekly
513, LONDON ROAD,
THORNTON HEATH,
SURREY,
ENGLAND.

Please commence my personal subscription to Home Computing Weekly with the first possible issue.

SUBSCRIPTION RATES

(tick ☐ as appropriate)

U.K. 26 issues £14.30	<input type="checkbox"/>
52 issues £28.30	<input type="checkbox"/>
Overseas Surface	
26 issues £15.60	<input type="checkbox"/>
52 issues £31.20	<input type="checkbox"/>
Airmail	
26 issues £30.00	<input type="checkbox"/>
52 issues £60.00	<input type="checkbox"/>

*I am enclosing my (delete as necessary)
Cheque/Postal Order/International Money*

Order for £.....
(made payable to A S P Ltd)

OR
Debit my Access/Barclaycard*
(*delete as necessary)

[illegible]

Please use BLOCK CAPITALS and include post codes.

Name (Mr/Mrs/Miss).....
delete accordingly

Address.....

.....

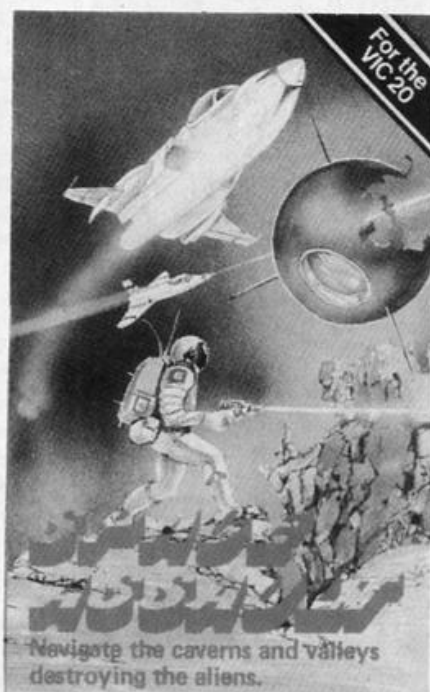
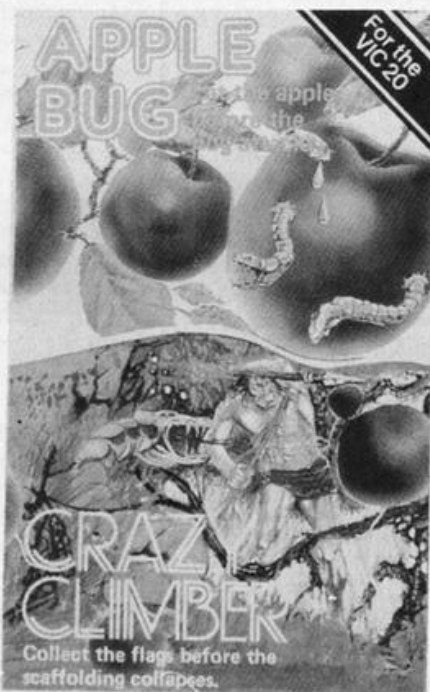
Signature

Date

Attention
Vic 20 Owners
Introducing
LYVERS  FT
High Quality WINNING
GAMES

Simply complete the coupon below, indicating the number of copies required in the boxes provided, and post now to: **LYVERSOFT, 66 Lime Street, Liverpool L1 1JN** or ring our Hot Shot Credit Card Sales Line on **051-708 7100**.

**GOOD DEALER DISCOUNTS
AVAILABLE**



<input type="checkbox"/>	Demon Driver @ £5.95 each
<input type="checkbox"/>	Lunar Rescue @ £5.95 each
<input type="checkbox"/>	Hearts & Diamonds/Hi-Lo (2 pack) @ £5.95 each
<input type="checkbox"/>	Nuclear Attack/Grand Prix (2 pack) @ £5.95 each
<input type="checkbox"/>	Applebug/Crazy Climber (2 pack) @ £5.95 each
<input type="checkbox"/>	Space Assault @ £5.95 each-For 3K & 8K VIC-20
<input type="checkbox"/>	VIC-20 Machine Code Monitor @ £14.95 each

For any
VIC-20

Please debit my Access/Barclaycard (delete as necessary)

[illegible]

Number

I enclose Cheque/PO for £

Name _____

Address _____

HCW8

The small company that means business

Professional applications on small computers? It can be done, says Mike Salem of Hilderbay. Candice Goodwin finds out how

From astronomy to writing programs for the ZX81 and Spectrum may seem like a quantum leap. But as far as Mike Salem of Hilderbay is concerned, it's just a natural progression.

"I only once looked through a telescope in the whole of my career in astronomy", he said. "My work mainly involved constructing mathematical models. So in fact I've been using computers for ages".

Before setting up Hilderbay, Mike Salem was an astrophysicist at a certain well-known university — which shall remain nameless because, Salem feels, his ex-colleagues would look askance at his foray into the commercial world.

The computers he used there certainly weren't the kind of machine you'd find in the home, either — they'd have filled the average living room many times over. But far from making him dismissive of home computers, his academic career has led Mr Salem to appreciate how powerful they really are.

"In the early days we were using machines vastly larger but less powerful than the ZX81 — and very useful they were too", he recalls. "The ZX81 would have costs hundreds of thousands of pounds some time ago. It's only the way we look at things that's turned it into a useless toy."

The best proof of his point is the software range that Hilderbay now sells, which enables quite complex, professional tasks to be carried out on very small computers.

Mike Salem originally set up Hilderbay in late 1979 as a one-man consultancy firm, specialising in ship stability. Because "it made sense to become a limited company", he bought a ready-made company — including the name. "I'd probably choose a different one now", he says.

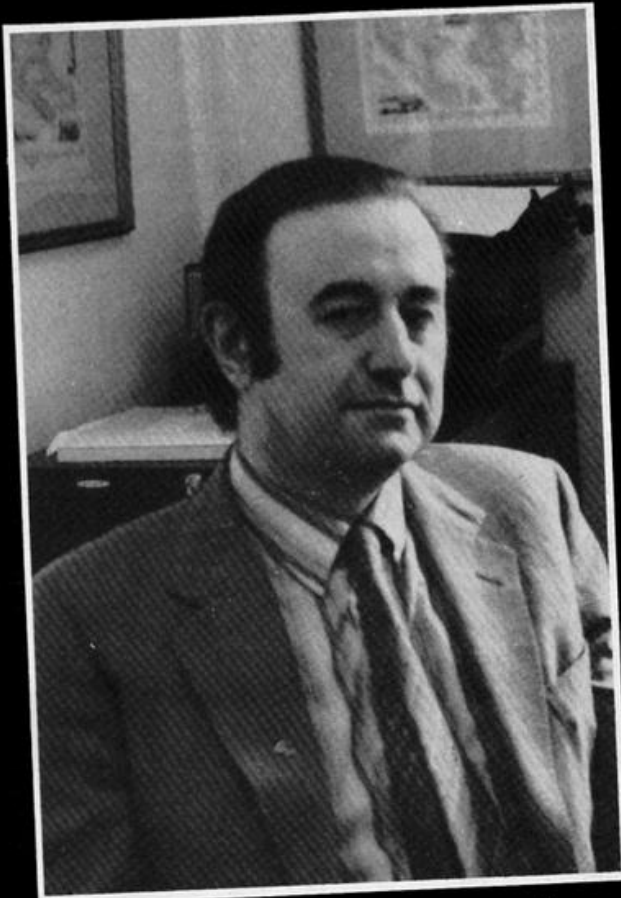
As a self-employed consultant, it was the tedium of working out pay-as-you earn calculations from the PAYE tables that gave him the incentive to write his first marketable program on a small computer. And it really was small. The machine was a Casio programmable calculator, and the program took up 256 steps.

When the ZX81 came out, Salem converted the program into a payroll package for the new computer, and decided to try and sell it commercially. He said: "The program meant that a payroll that would take two hours manually could be done in 15 minutes on the computer".

"I realised that it had an enormous technical and market potential, and assumed that people would rush to buy it".

At first, they didn't. But Salem continued to have faith in his product and, after he took over the marketing of it himself in October 1981, it started "going like wildfire".

Now, he reckons, there are a substantial number of companies doing their payroll on ZX81 and Spectrum computers: "certainly well beyond the hundreds, I would say". And his payroll



Mike Salem: "the ZX81's not a useless toy"



Bookkeeper Sheila Finn — covering the folk scene by computer

PROFILE

program has been on the market continuously ever since.

Who buys business packages for the ZX81 and Spectrum? Mike Salem estimates that around 75 percent are small business — “but that’s purely a guess” — and his small business clients include funeral directors, garages, nursing homes, accountants, motorcycle dealers, bakeries, laundries and hairdressers.

But not all of them are small. “A fair number of people in really big businesses have bought our products — including a major chemical corporation and a large supplier to the oil industry. I suppose people buy them because they can take them home and work on them in the evenings”.

Like many of the software companies that sprang up around the ZX81, Hilderbay was hit by the arrival of the Spectrum.

“No-one was buying ZX81 stuff because the Spectrum was coming, and no-one was buying the Spectrum because there were no Spectrums.”

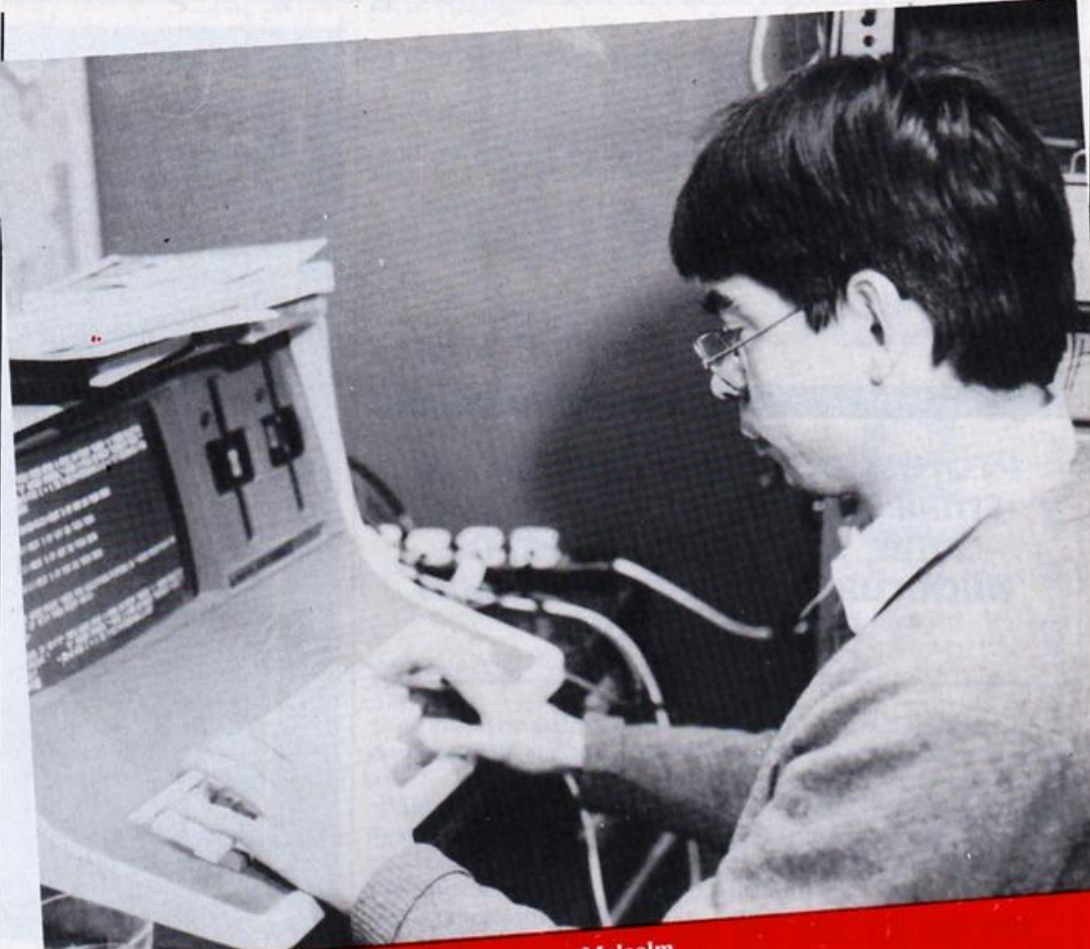
Since then, Mr Salem has extended his range to cover the more up-market Apple as well as the Spectrum. But he remains a firm fan of the ZX81. “It’s just a problem of input — loading takes longer on the ZX81 than on the Apple, but the running’s not too different. The BASIC is very good; the string handling on the ZX81 is better than on almost any machine”.

As for catering for other machines: “We will diversify...when we can. The facility for a lot of RAM is interesting in the Oric and Newbrain — we write software that will take advantage of more memory if you’ve got it. The only reason we’re not looking at more machines today is that we haven’t got the resources”.

The original payroll package has now been joined by a range of others, mainly aimed at the “serious”, though not necessarily just the business user.

Some of them are purely business: stock control, and statutory sick pay, for example. Others would be equally useful in the home, such as budgeting and critical path analysis, a way of working out the most efficient way of carrying out a project, whether it is doing a piece of research, cooking a meal or building a house.

Hilderbay also sells



Programmer Malcolm

hardware for the three machines, including an interface that will link the Spectrum to most makes of printer, and the printers themselves.

Included on request with every printer and interface is Hilderbay’s Spectrum work-processing program. “We wrote it because we needed it, and there was nothing on the market at the time”, Mr Salem explained. “It’s very good, but it runs rather slowly”. But it’s clearly not too slow to be useful, for Sheila Finn, who does Hilderbay’s bookkeeping and accounting, uses the program to produce the diary section of Folk London magazine.

No-one who deals extensively with the ZX81 can afford to ignore loading problems, and Hilderbay also sells a selection of hardware and software aids aimed at making loading a little easier.

Among these are meters to find the optimum signal level for loading, a tape head adjustment program, and a booklet which tells you, among other things,

why you should never use a stereo tape deck to record your programs.

Though “professional software” is Hilderbay’s public image, it isn’t all work and no play. Its catalogue also includes a handful of games, including Evolution, which in the words of the game itself allows you to “retrace the course of evolution, and see if you are really here”.

The first few programs were written by Mr Salem himself: “That was when it was I instead of we.” He acquired his first freelance programmer towards the end of 1981, and now employs around seven programmers, all working on a freelance basis, and three people to help run the office at 8-10 Parkway, in Camden Town, North London.

He finds, though, that however quickly he takes people on, the work expands faster. “Things are still not properly organised. Things are expanding far faster than we can cope with. If you say you’re expanding at 15 percent a month, the average financial person won’t believe

you. Keeping control is the basic problem.

“Expanding quickly sounds good, but it also means you can go broke. But having survived last summer when the Spectrum came out, we’ll survive anything.”

Among his plans, to be carried out when time permits, are a new range of accounting software, and a demonstrator tape which, for £3.95, will show prospective clients how the payroll, statutory sick pay and stock control programs work. He is also thinking of selling his software through retailers. “The trouble is, there’s so much mail order to cope with that we don’t have time to talk to the shops, and hence reduce our mail order. But we’ve been talking to three large organizations.”

The future, he says, is “extremely difficult to predict in this market. Everybody uniformly decided I was going the wrong way, but I don’t think so. Software companies need to have the spirit of the Victorian entrepreneurs — because if you don’t come up with a new idea every month, you’re broke”.



HEWSON CONSULTANTS

HEATHROW

bring you

For the
16 or 48K
ZX spectrum

Air Traffic Control

AIRCRAFT.....
BANK LEFT AND
TAKE UP HEADING
270°

WE HAVE
AN EMERGENCY....
REQUEST IMMEDIATE
CLEARANCE TO LAND



£7.95

YOUR TASK: to direct incoming aircraft from holding stacks to runway — smoothly, safely and expeditiously.

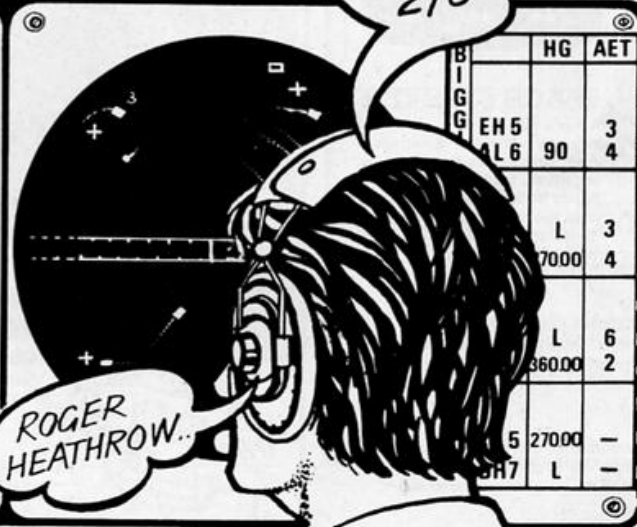
YOUR INSTRUMENTS: Radar screen showing aircraft call signs, blips and trails. Four stack displays giving altitude, heading, speed and size.

SEVEN levels of play including a demonstration mode.

Choose an **EASY** mode to begin with — landing light aircraft any way you can.

Progress to more **TRICKY** situations — mixed aircraft, restricted airspace, minimum separation, outbound traffic.

The **ULTIMATE CHALLENGE** — emergencies, unknown aircraft, radio failure, loss of a runway, instrument failure...



Please rush me copy/copies of HEATHROW A.T.C.

I enclose remittance of (cheques/PO's payable to Hewson Consultants).

Please debit my Access/Barclay account number

Signed.....

Name (block capitals).....

Address.....

Postcode.....

Send today to: Hewson Consultants, 60a, St. Mary's Street, Wallingford, Oxon. OX10 0EL. HCW8



HEWSON CONSULTANTS

HEWSON'S GAVE
MY PROGRAM
THE
PROFESSIONAL
TOUCH



If you are writing programs for the ZX Spectrum, Dragon or Oric, we want to hear from you.

TOP ROYALTIES
for the right cassettes.
LET US GIVE YOUR PROGRAM THE PROFESSIONAL TOUCH.

write to;
HEWSON CONSULTANTS
60A St. Mary's Street
Wallingford Oxon. OX10 0EL



ASTEROIDS, INVADERS, ASTRO SLED & SPACE FIGHTER



ASTEROIDS

A classic version of the classic game. Feature packed with thrust, hyperspace, rotate, multiple bolts, etc. This exciting program is written in m/c and employs hi-res graphics and double size screen techniques for maximum effect.



INVADERS

No machine is complete without this, the original cosmic shootout. In machine code with three invader types (plus mother ship), bonus bases, hi-res, double size screen, etc.



ASTRO SLED

Pilot your high powered sled down the jagged space canyon, but be warned - the further you travel, the harder it gets! With over 50 skill levels -

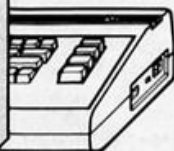


SPACE FIGHTER

A space dog-fight simulator which, like Asteroids, is written in machine code and uses hi res. Guide your fighter through tight loops and turns to centre the elusive alien craft in your sights. With 10 skill levels.

ZX81 SOFTWARE SPACE FIGHTER, ASTRO SLED.

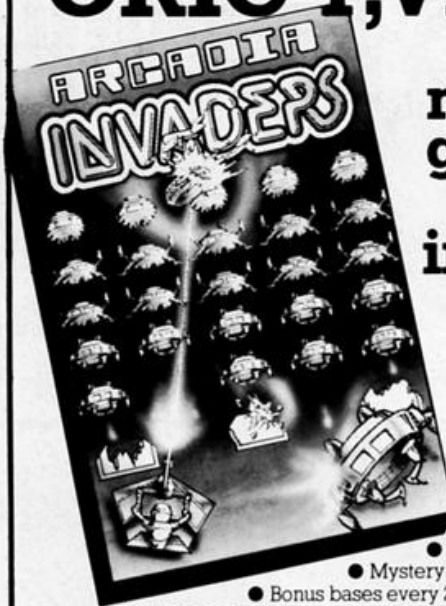
Feature packed versions of these great games, with machine code performance for the 16K ZX81. On cassette at £3.50



All the programs are available on cassette for the unexpanded Commodore VIC-20 at only £4.00 each (post free), and make full use of the VICs colour, sound and joystick facilities.

ORIC-1, VIC-20

The meanest game of space invaders you'll ever play!



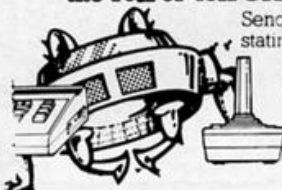
FEATURES

- Three invader types
- Written in machine code
- Mystery scoring mother ships
- Bonus bases every 2000 points
- High score register
- Full sound effects and colour

You must defend earth from the hordes of bomb dropping space invaders, using your earth bound laser base. The more invaders you hit, the faster they come - leading to a gun-blazing shoot-out as finale.

A great shoot-'em-up, all action arcade game, for the 16K or 48K ORIC-1 or unexpanded VIC-20.

Send cheque or P.O. for £4.00 (postage paid), stating computer type and memory size to:-



ARCADEIA SOFTWARE

FREEPOST, SWANSEA, SA3 4ZZ

HCW8

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

HCW8

BBC

SPECTRUM

VIC 20

Real educational programs written BY teachers WITH programmers FOR children.

MAN - co-ordinates/compass points super graphics! £5.95

PUNC-MAN - he gobbles the punctuation marks. You put them back! £7.95

And lots more! Send SAE to:

WANTED Freelance programmers to convert existing BBC software to Spectrum. Good rates of pay.

WANTED High quality educational software. We publish. You get royalties. Cassettes/info to:

chalksoft

Lowmoor Cottage, Tonedale, WELLINGTON Somerset TA21 0AL
Tel: 082 347 7117

TEXAS TI99/4A SOFTWARE

Quality software on cassette. All programs run on the standard unexpanded machine. Unconditional replacement guarantee on all tapes.

Order code	Title	Price
GM1	CATERPILLAR (GRAPHICS)	£1.95
GM4	SNAKE (GRAPHICS)	£2.95
GM5	HAUNTED HOUSE	£3.95
GM6	SORCERER'S CASTLE	£3.95
GM7	3-D MAZE (GRAPHICS)	£3.95
GM8	NIM	£2.95
GM9	FRUIT MACHINE (GRAPHICS)	£2.95
GM16	ISLAND ADVENTURE	£3.95
GM17	FORBIDDEN CITY	£4.95
GM18	PHARAOH'S CURSE	£4.95
GM19	DEVIL'S ISLAND	£4.95
GM21	CHALICE (GRAPHICS)	£3.95
GM22	BOMBER (GRAPHICS)	£3.95
ED1	ARITHMETIC	£3.95
ED2	SPELLING + ANAGRAM	£3.95
	THE TEXAS PROGRAM BOOK (35 programs for the TI99/4A)	£5.95

NEW

All prices include VAT. Please add 50p p&p to orders under £6. Orders over £6 post free. Send cheque or P.O. or telephone with Access, Barclaycard for immediate despatch. Send s.a.e. for list.



Apex Software (HCW)
115 Crescent Drive South
Brighton BN2 6SB
Tel: (0273) 36894



HCW8

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

HCW8

Name _____ Address _____

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



Diskwise Ltd. Computer Centres

SOUTH WEST & NORTH WEST

Computer enthusiasts look no further

WE STOCK THE FOLLOWING PRODUCTS:

Dragon 32K	£174
ORIC 48K	£148
Commodore 64	£299
Newbrain 'A'	£234
Newbrain 'AD'	£260
MPFII 64K (Apple soft compatible)	£234
BBC model B	£347
Microline 80 Dot Matrix Printer	£199
Epson MX80 Dot Matrix Printer	£389
Smith Corona Daisy Wheel Printer	£485

... AND LOTS MORE ...

Above prices plus VAT

A large selection of Games for the most popular
computers plus Paper, Discs, Books etc.
We are business systems specialists and
can provide software for most applications.

STOCKPORT
68-70 Lower Hillgate
Stockport, Cheshire
Tel: 061 477 5931

PLYMOUTH
Deptford Place
North Hill, Plymouth
Tel: 0752 267000

HCW8

ORIC - 1 SOFTWARE
3
GAMES
FOR CHILDREN

EDUCATIONAL GAMES FOR THE YOUNG
CHILDREN BETWEEN THE AGES OF
FOUR TO EIGHT YEARS, PACKAGE
(CASSETTE AND BOOKLET
PRICE.....£7.95

(incs P&P)

CHEQUES/MONEY ORDERS ETC
PAYABLE TO

BURSLEM COMPUTER CENTRE
74 WATERLOO ROAD
BURSLEM
STOKE ON TRENT
STAFFORDSHIRE ST6 3EX

HCW8

commodore 64

ARCADE QUALITY SOFTWARE FOR THE COMMODORE 64

Star Trek 24K of Galactic adventure for only £7.00
With amazing Sprite Graphics.

Panic 64 (Machine Code) Panic will never be the same
again. Blow the monsters up, but run from the shrapnel.
Only £7.00
With amazing Sprite Graphics.

Frogger 64 (Machine Code) Hop across the road and
river to safety.
With amazing Sprite Graphics. Only £7.00

COMING SOON — CRAZY KONG!

Also VIC 20 games available including: Crazy Kong
£6.00; Galaxzions £5.00; Pennyslot £4.50; Frog
£4.00; VIC Rescue £5.00; Alien Attack £6.00; and
also Fantasia £6.00.

Coming soon Defender, Muncha-Cruncher (Pac-
Man).

Dealers fantastic discount
Trade enquiries welcome Tel: (07356) 71145
Available only from:—

**INTERCEPTOR
MICRO'S**

LINDON HOUSE, THE GREEN, TADLEY, HANTS.
DEALER ENQUIRIES WELCOME

HCW8

Get ready for the Tate



Art made easy for you by Geoff Turner's program for the BBC micro

Develop your artistic skills on a BBC micro. Computer Art runs in 1.2K of RAM on a model B, but it can be adapted to run on model A in mode 5 with fewer colours.

The screen is divided into four sections and the cursor keys are used to draw intricate patterns in the top right-hand quadrant.

The program then shows the pattern reflected in the other three quarters.

Select any colour simply by pressing the initial letter of the col-

How it works

- 30 *TV 255. This line is only necessary if top of the display is off the screen
- 70 VDU5 links text and graphic cursors
- 80 VDU29 moves graphics origin to the centre of the screen
- 130-160 examine cursor keys
- 170-230 examine colour select keys
- 240 examine flash select key
- 250 examine tab key
- 280-380 PROCEDURE to plot the pattern in four quadrants
- 390-610 PROCEDURE to display instructions

our — G for green, R for red and so on.

Type F and the colour will flash.

Some very intricate patterns can be produced by placing four fingers over the cursor keys and randomly pressing them.

To clear the screen and start again, press the tab key.

Users with joysticks may like to convert the program using the ADVAL function in lines 130-160.

```

10 REM COMPUTER ART
20 REM By Geoff Turner
30 *TV255
40 MODE 7
50 PROCINTRO
60 MODE 2
70 VDU 5
80 VDU 29,639;511;
90 X=0;Y=0
100 COL=7
110 PROCPLT
120 REPEAT

130 IF INKEY(-58) Y=Y+4:PROCPLT
140 IF INKEY(-42) Y=Y-4:PROCPLT
150 IF INKEY(-26) X=X-4:PROCPLT
160 IF INKEY(-122) X=X+4:PROCPLT
170 IF INKEY(-52) COL=1
180 IF INKEY(-84) COL=2
190 IF INKEY(-69) COL=3
200 IF INKEY(-101) COL=4
210 IF INKEY(-102) COL=5
220 IF INKEY(-83) COL=6
230 IF INKEY(-34) COL=7
240 IF INKEY(-68) AND COL<8 COL=COL+8

250 UNTIL INKEY(-97)
260 CLS
270 GOTO 90
280 DEFPROCPLT
290 GCOL 0,COL
300 IF X>500 X=500
310 IF X<0 X=0

```

```

320 IF Y>500 Y=500
330 IF Y<0 Y=0
340 PLOT 69,X,Y
350 PLOT 69,-X,Y
360 PLOT 69,X,-Y
370 PLOT 69,-X,-Y
380 ENDPROC
390 DEFPROCINTRO
400 CLS
410 PRINT SPC(10);CHRS(141);CHRS(129);"COMPUTER ART"
420 PRINT SPC(10);CHRS(141);CHRS(129);"COMPUTER ART"
430 PRINT SPC(11);"By Geoff Turner"
440 PRINT
450 PRINT SPC(4);"SELECT A COLOUR BY PRESSING THE "
460 PRINT SPC(4);"INITIAL LETTER OF THE COLOUR."
470 PRINT
480 PRINT CHRS(130);"G for GREEN, ";CHRS(131);"Y for YELLOW ";
   CHRS(135);".etc.etc."
490 PRINT
500 PRINT CHRS(136);"PRESS 'F' AND THE COLOUR WILL FLASH."
510 PRINT
520 PRINT CHRS(134);"Use the cursor keys to draw a pattern"
530 PRINT CHRS(134);"in the top right quadrant of the screen."
540 PRINT CHRS(134);"The pattern will be reflected in the"
550 PRINT CHRS(134);"other three quadrants."
560 PRINT
570 PRINT CHRS(134);"Press TAB to clear the screen."
580 PRINT""
590 PRINT SPC(10);"PRESS SPACE BAR."
600 IF NOT INKEY(-99) THEN 600
610 ENDPROC

```


AT LAST!!

**A ZX81 RAM
PACK WITH
A MOTHER-
BOARD
AND
A FLEXIBLE
CONNECTION
WITH
16K RAM FOR
ONLY.
£24.95**

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

LARGE RANGE OF
COMPONENTS, HARDWARE
AND SOFTWARE

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

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

I²L

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

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

THE I²L PLEDGE - IF WE CAN'T DESPATCH WITHIN 5 WORKING DAYS
OF RECEIVING YOUR ORDER - WE WILL RETURN YOUR MONEY - AND
THAT'S A PROMISE.

SHARP * BBC * SHARP * BBC * SHARP * BBC * SHARP * ASP SOFTWARE — SPACE ADVENTURE FOR SHARP & BBC

STARTRADERS — approximately 20K

There are more ways of conquering a galaxy than blowing it to bits. You can always try and buy it! Even the most magnificent of Empires has to have its traders to feed and service the outlying planets.

Startraders is a true science-fiction game in which you are placed in control of a fleet of starfreighters and the mission is to get rich! While doing so you are developing the outer reaches and civilisation spreads.

Hazards include Pirate raids, (not everyone is civilised!), tight-fisted aliens, navigational errors and a fluctuating market. Multi-player games are even harder, with the competition likely to get to a prime planet first — and deflate the value of your cargo! (Up to 12 can play!)

Startraders need skill and cunning to succeed and although the game is easy to learn, is not dependent upon chance and so will thus offer a continuing challenge to your abilities. You can save the current situation on tape at any time if it all gets too much, and finish off when you've recovered your nerve!

A massive 20K plus Adventure for only £11.45 all inclusive!

Fill in the coupon and return it to:
ASP Software
145 Charing Cross Road
London WC2H 0EE.

**ONLY
£11.45
ALL INC!**

Available for:
Sharp MZ-80K
and BBC-B



TRADE ENQUIRIES
WELCOME

ASP

Please send me . . . tape(s) — (delete as necessary)
of . . . for . . . (state which version required).
I enclose my cheque/Postal Order/International Money Order
(delete as necessary) for: . . . (made payable to ASP Ltd)
OR Debit my Access/Barclaycard (delete as necessary)



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



Please use BLOCK CAPITALS

Name (Mr/ Mrs/ Miss)

Address

Signature Date

Please allow 28 days for delivery

SHARP * BBC * SHARP * BBC * SHARP * BBC * SHARP *

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

COMPUTER ADDICTS. At last, a purpose built trolley for the home computer and accessories. So convenient to keep your equipment tidily on a mobile unit. How have you managed without one. Solid wood frame recessed upper & lower shelves. Prices from £14.95 + p.p. Send now for further information to Setcraft Sussex Ltd., 32 Walpole Ave., Worthing, Sussex BN12 4PL.

DUST COVERS available for any computer, printer, etc. BBC, TI, Epson, £3.95; Dragon, Atari, Vic20, £2.95; Sharp MZ-80A-K, £4.95. For others please phone or write to Sherborne Designs, Victory House, 8A The Rank, North Bradley, Trowbridge, Wilts. Tel: 02214 4425. Also made-to-measure service. Dealer enquiries welcome. Access and Barclaycard.

COULD YOU SELL THIS SPACE?

If you are young. Enthusiastic, ambitious and hardworking then read on.

We need someone of your calibre to join ASP classified. The atmosphere's exciting and the career prospects excellent.

Call Sally Collins on 01-437-1002 and find out more about this exciting opportunity.

BROKEN JOYSTICK?

STRONGER joystick insert replacements supplied with full fitting instructions 3 YEAR GUARANTEE £2.50/pair inc p.p. SOFTWARE FOR ATARI (TM) 400/800 All cassettes under £5 send s.a.e. for lists Computer Supplies (HCW) 146 Church Road Boston Lines PE21 0JX



TRS80 — VIDEO GENIE ATARI 400/800

Space, arcade & adventure games + utilities in our brand new catalogue. 1st class stamp to: T. SMITH SOFTWARE 26 Wesley Grove, Portsmouth, Hants. PO3 5ER Mail Order Only Dealers Welcome

GENUINE ARCADE JOYSTICKS

Taken directly from an arcade machine, these are the sturdiest and ugliest joysticks money can buy. Available for: TI99/4A, Atari 400/800, Vic/Commodore 64. Send cheque/P.O. for £19.50 (inc P&P) to: Arcade Hardware, 211 Horton Rd, Fallowfield, Manchester M14 7QE all orders dispatched immediately. No mail order delays.

ADD-ONS

ZX OWNERS! Cure your Sinclair 16K Ram Pack Wobble. Secure method of holding pack firmly. Easily added. £4.50 (incl. p.p.) Apply F. Jones, 24 Highlands Drive, Burgess Hill, Sussex RH15 8JJ.

BOOKS

DRAGON 32 or TANDY TRS-80 Colour?

Lots of programs — lots of useful hints and information EVERY single month in "RAINBOW" an exciting new 200-page magazine from U.S.A. Send £2.25 (plus large 56p s.a.e.) for sample issue to ELKAN ELECTRONICS (Dept HCW), FREE-POST, 11 Bury New Road, Prestwich, Manchester M25 6LZ or telephone 061-798 7613 (24 hour service).

BOOK SALE? IT COULD BE YOUR BOOKS FOR SALE. RING 01-437 1002 EXT 213 NOW.

COURSES

Computing for beginners. A one day course introducing the world of micro computing and BASIC programming. Ladbroke Mercury Hotel (near Reading). Saturday May 14th. Only £15. Phone (0344) 84423 for details.

FOR HIRE

ATARI 400/800 OWNERS

A comprehensive library of cassettes, cartridges, discs. Scores of games and adventures etc., for you to hire for your Atari Home Computer. All original games with full documentation. No copies. Send SAE for details to: MIDLAND GAMES LIBRARY 48 Red Way, Bishops Cleeve, Cheltenham, Glos. Tel. 0242-674960 6pm — 9pm only.

COMCLUB THE VIC20 HIRE CLUB

Cart £3 Cass £1 Membership £12 Send for catalogue containing over 85 top titles. Write now to comclub: 24 Alton Rd, Ayleston Leicester

Spectrum software library, no membership fees. Send S.A.E. for details to 49, Bramcote Drive, Solihull, West Midlands

SHARP MZ80 K/A SOFTWARE

Ready for immediate hire from 50p. Send SAE for details and free catalogue. K-Soft, Software Collection, 56 Bolham Lane, Retford, Nottinghamshire

VIC SOFTWARE LIBRARY

Are you a VIC 20 owner? Why not find out more about our VIC 20 software hire? Hire fees start at just £2.50 per week, and we offer a large selection of the best programs available.

Full details write or phone, Peek and Poke Software Supplies, 110 Drummond Street, London NW1. Telephone 01-380 1213/651-2861. We also stock Atari 400/800 Software etc.

MONSTER SOFTWARE CLUB

Software library for the DRAGON 32 Over 70 Top Quality Cassettes FOR HIRE

All tapes used with the Manufacturers Permission SAE for details Monster Software Club, 32, Lennox Drive, Lupset Park, Wakefield, West Yorks.

ATARI 400/800 OWNERS

Hire from a comprehensive range of cassette, cartridge and disc games. From £1.00 per week. Sae for details: Castle Games Library, 44 Augusta Close, Rochdale. Tel. (0706) 59602.

REACH THE RIGHT
AUDIENCE AT THE
RIGHT PRICE
RING 01-437 1002
EXT 213.

HARDWARE

Second hand home and business computers bought and sold. Apple equipment always in stock and wanted. Bracknell (0344) 84423.

COLOUR MONITORS

Not modified TV sets, specifically designed for use with micros. Best quality, full guarantee, £289. Micro-Tech Leeds Ltd, Derwent Breary Lane, East Bramhope, Leeds. Tel: 0532 679964.

Atari 400 48K recorder, basic + 3 games £250. Texas TI/49A speech synthesizer £130 o.n.o. Scisus Chess computer mark V £120 o.n.o. Phone 01-381-5312.

Tandy P.C.1 with cassette interface plus Sharp printer and cassette interface manuals and four books. Four months guarantee left £100. 394, Bath Rd., Saltford, Bristol BS18 3DQ.

NEWBRAIN

The professional micro computer for the price of the hobby machine. Delivery free. Models A and AD in stock. Call us for prices.

Mail Order/Access accepted. Ring us on Stevenage (0438) 812439 anytime, for the latest details of NEWBRAIN hardware, software, user groups etc.

Angela Enterprises, 4 Ninnings Lane, Rabley Heath, Welwyn, Herts AL6 9TD.

16K ZX81, Keyboard, QS character, sound, mother boards. Joystick. Over £60 Software, books. Cost £110. Phone Bedford 45909.

Atom 16K ROM, 12K RAM, colour board, PSU, loads of software £200 ono. Tel: 061773 7306.

HOLIDAYS

HOME COMPUTING COURSES WITH BBC MICROS

Adult or family computing weekends from £65 inclusive. Comfortable seaside hotel, 25 miles from Edinburgh. Contact MICE, 14 Ware Road, North Berwick, East Lothian EH39 4BN, Scotland.

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.

Unemployed then why not get into property restoration. No skill or experience everything explained to the last detail. SAE BM, Velvet, London WE1N 3XX

Programmers A great new idea. We are a professional marketing and distribution company. If you want to make real money contact G.M. Smith, Dept. 10., Smith Harrowden Associates Ltd., 39 Darnford Close, Walsgrave, Coventry, Tel. (0203) 611477.

COMPUTER STAFF REQUIRED

Due to the expansion of our computer shops we require additional staff. *Computer shop sales assistants for our Slough branch. The position includes the selling of home and personal computers. Written applications should be addressed to Mrs. A. Dhesi, Twillstar, 17 Regina Rd., Southall, Middlesex.

PRORGRAMS WANTED

New and original programs are wanted for the ZX81 and ZX Spectrum. Generous royalty paid. Please send cassette (plus S.A.E. for return) to: **HARTLAND SOFTWARE** Dept. H2, 8 Penzance Place, London W11 4PA

NATIONWIDE SHOPS & DEALERS

WEST DEVON ELECTRONICS

15, Station Road, Horrabridge, Devon
Tel: Yelverton (0822) 853434
Dragon sales and service.
All repairs carried out in our own workshop

SQUARE DEAL

375 Footscray Road, New Eltham, SE9
Tel: 01-859 1516.
Sharp, Atan, Dragon, Commodore 65, Vic 20, Oric, Lynx, Sinclair, Texas (Software also stocked)

STEVE'S COMPUTER COMPANY LTD

45 CASTLE ARCADE, CARDIFF.
Tel: 0222 — 41905
OPEN: Mon — Sat. 9 — 5.30
FOR COMPONENTS TO COMPUTERS

We are currently looking for original preferably debugged game and utility programs. Anything from 1/2K to 24K is acceptable. If you have any programs that fit those criteria call us on 085 982 239 to discuss remuneration. Bamby Software, Leverburgh, Isle of Harris, PA83 3TX.

DRAGON/TANDY COLOR COMPUTER NEWS

The 6809 journal from the USA is packed with progs, hints reviews exclusively for Tandy and Dragon Single copies £2.45 inc. from
Gravesend Home Computers Ltd
39 The Terrace, Gravesend, Kent
0474-50677-Dragons and Dragon Support.

Visit the Computer Junk Shop at 10, Waterloo Road, Widnes Halton, Cheshire. Tel. 051-420-4590.

Computer and Chips Ltd, Feddinch Mains, Andrews, Fife. Tel. (0334) 76206. Stockists of the Iotec 'Iona'. Colour Genie etc.

IMO Computer Centre 39-43 Standish St. Burnley. Tel. 54299. Open 6 days. Specialists in home and business computers. ACT Sirius/Canon/Transtec/BBC/Acorn/-Atom/Oric and others and peripherals for most micros.

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.

DO YOU HAVE ENOUGH STAFF TO COPE WITH LISTING YOUR SHOP IN THIS SECTION? FOR MORE CUSTOM LIST YOUR SHOP AND LOCATION. RING 01-437 1002 EXT 213.

SOFTWARE APPLICATIONS

MZ80K/A Horserace analysis. Winners galore. Cassette £5.95. Other Sharp programs from £3. Details: H. Paragon "Moorside" Woodlands, Wimborne, Dorset.

SPECTRUM COMPILER

Speeds up your Basic programs by a few 100 times. Works in both 16K and 48K. Handles most basic commands and also features a sound generator for games plus mini-sprite graphics plus selected screen scrolling and many both 16K and 48K versions for £7.99 (all inc.)

Wye Valley Software,
Parton House,
Kinnorsley, Hereford
HR3 6NX.

ATARI 400/800 'Supaklone' Don't risk losing your favorite programs! Supaklone copies most M/C-Basic cassettes (including bootable) £15.95 (postfree). Supaklone, 5, Newlands Park Drive, York YO1 3HN

SPECTRUM OWNERS

First of all you had to back-up programs by making tape to tape copies. Now KEYSOFT present:



Programs up to 40K (8K for 16K Spectrums) can be copied. Order THE KEY for £5.95 (mail order only) from: **KEYSOFT**, Dept. HCWK, 6 Bruce Grove, London N17 6RA. N.B. KEYSOFT advise users not to infringe the Copyright Acts.

Atari 400/800 aback-up most boot disks including bad sectors. Also copies most boot cassettes. Requires 32K. £15.95 inc. p&p. **TRAPIE**, 16 Hambledon Crescent, Cottesmore, Oakham, Leicestershire.

Software Exchange Atari VCS/400, Intellivision and TRS-80 SAE details Videcomp (HCW) 57 Woodlands Road, Ilford, Essex.

BBC-B Micro full screen editor — 10K, 50 functions — doubles as word processor. Full documentation. Tape £18 Disk £23. **Stable Software**, Compton Street, Compton Winchester.

All your cassette needs. Blank cassettes C15 with case 40p each. Cassette labels in blue, white or yellow 20 for 60p. Library cases 9p each. Postage on each complete order 45p. **Stonehorn Ltd.** (H.C.W.) 59, Mayfield Way, Barwell, Leicester LE9 8BL.

MZ-80A MZ-80K PROGRAMS. Business, utility, games, educational. List SAE: DCS, 38 South Parade, Bramhall, Stockport.

SERVICES

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, ENGLEFIELD GREEN, SURREY. TW20 0QR.

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

DO YOU OFFER A SERVICE PEOPLE IN COMPUTING REQUIRE? IF SO WHY NOT TELL THEM ABOUT IT? RING 01-437 1002 EXT 213. TO APPEAR IN THE SERVICES SECTION.

SOFTWARE GAMES

Superb 3-D intelligent strategy game (16K/48K Spectrum) challenging, machine coded bargain £4.95 F. Vachha, 91 Manor Rd. London E17 5RY

Ramopoly, 48K Spectrum, variation of monopoly, superb graphics/sound, easy to learn impossible to master. Also pontoon. Send £3.50 cheque/PO J. Fletcher, 29 Samuel Street, Warrington, Cheshire.

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
	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 could take you hours		
2003 TURNOVER	16K	6.00
Similar to OTHELLO		
2004 OWNERSHIP	32K	10.00
Similar to MONOPOLY		
2005 DRIVER	4K	5.00
Test your driving skills		
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

DRAGON & SHARP SOFTWARE

NEW FOR DRAGON — TEXT ON HIGH-RES. GRAPHICS!

A 2.5K sub-routine that produces text of all sizes and colours in any mode of high-res. graphics. Easy to use, allowing full use of inkeys, print at and numeric variables. £7.95
Games Packs — 1, 2 & 3. £6.50 each.
Adventure Games from £3.00
Educational Software from £4.00
Business Payroll £25.00, Stock Control £15.00, Mailing List £15.00 Home Finance £7.00 Tax Calculator £4.00.
Many more programmes available — SAE for details.
Wanted: Oric, Dragon and Lynx programme. Cash or royalties paid.
Abacus Software, 20, Rhosleigh Ave, Sharples Park, Bolton BL1 6PP. Tel: 0204-52726

Unexpanded VIC20 Alien — A fast game to test your reflexes. Colour and sound. Cassette £4.95 (P&P free) Cheriton Computing, 15 West Rise, Cardiff, CF4 5RE.

AQUARIUS SOFTWARE

PET, BBC, TEXAS (TI99/4A)
Martian Lander (actual simulation);
Noughts and Crosses special; Code Breaker; Viking; User Defined Jigsaw; Morse Test suitable for R.A.E.; PET — Sound Only. All others colour/sound.
All the above £5.
Basic Tutorial 5x10K £10.00.
Discs £2.50 extra.
extra. See us on Micronet 800.
10 Kenneth Rd., Basildon, SS13 2AT.
Mail Box A/C No. 268 55956

TEXAS TI99/4A

The software with the reputation. All programs feature full graphics and sound.

WARGAME Play the computer or another player. Features random terrain, tanks and artillery. Strategy, tactics and real-time skill. Highly recommended £6.00

ALL PRICES ARE FULLY INCLUSIVE

**TX SOFTWARE, 109
ABBOTSWOLD, HARLOW CM18 6TQ**

Commodore 64 sprite creator utility program. Generates own Data statements £3. G. Starling, 1 Tomkins Close, Stamford-Le-Hope, Essex.

CHRISTINE COMPUTING 100% TEXAS TI99/4 and 4A

C.C.S.01 North Sea - Astro Fighter - Code Break.

All the above £3.50 each £6.50 for 2. £9.00 for all 3.

Now available U.S. Software, s.a.e. for details. 6 Florence Close, Watford, Herts.

VIC20 Owners are you good enough for these games? Special introductory offer. Quintex game pack 15 games on cassette £3.95. inc. p&p. The Trading Post, 19 West Terrace, Redcar, Cleveland.

Four Super 16K Spectrum games including Froggy, Golf £4.50 inclusive. Liam Data, 65 Fullerton Place, Deckham, Gateshead, Tyne & Wear

Bermuda Triangle, 48K Spectrum adventure every location in 3D graphics. Includes sound and save game. Only £5.50 SAE for software list M.W. Holman 60 Camperdown Street, Bexhill, Sussex TN39 5BE

SOFTWARE

Dragon 32 4 games tape. Lazer Cycles, Mission Dru, Hangman and Breakout (super graphics).....£6.95
Spectrum 16K. 5 games tape. Lawn, Ascot, Deathman, Bomber, Death Trap Mine.....£6.95
Vic 20 unexpanded Grand Prix, race on Europe's classic circuit.....£4.95
6 games pak inc. M/C and Breakout.....£4.95
Send cheques or P.O.'s to Valuesoft, 5 Bushymead, Widdley, Hants. Tel (0705) 375567

Commodore 64's at £299

VIC-20 software for sale. Wide range of arcade quality games, tel. 444-4103

Colour Genie Software, Camoids £3.50, Horse Racing £3.50. Contain colour and sound. Silicon City Software, Glyn Uchaf, Conwy Old Road, Penmaenmawr, Gwynedd, LL34 6YS

TI-99/4A Arcade - Action Grand Prix for unexpanded machine £3.95. Cheques/P.O. to Microsonic, 85 Malmesbury Road, Cheshire Hulme, Cheshire SK8 7QL. Mail order only.

VIC20 and Sinclair

Chess (Vic 16K) £7

Blitz (Vic Unexp.) £4.99

Golf (Spectrum/ZX81 16K) £3.75

Database (ZX81 16K) £4.95

p&p free. Write/phone for a complete list

**M. Foreman 79 Mitcham Road
London E6 01-471 7040**

Ace Software - Skydiver (3K) £3 - Hopper (19K) Help the frogs across the road £5 - Squash (19K) £5 - A Day at the Races (19K) £5 - Two programs £8 - three for £10 - compare our prices! - Discount Software (Dept. 1), 25 Plymouth Road, Chelmsford, Essex CM1 5JG.

Sway your unwanted software via our club, free membership. Send SAE for details. A&P (Software) Services, 142 Broadstone Way, Bradford, Yorkshire

STUARY OFFSHORE SOFTWARE
NEW NAME IN THE SOFTWARE
HITCH-HIKERS
GUIDE TO THE
GALAXY
For 48K SPECTRUM £3.95
Also for APPLE II £3.95
Please allow 14 days
for delivery
VISA
CREDIT CARD ORDER BY PHONE
CALL 01-437 1002

Cuba the revolutionary word game for two players. 16K ZX81 cassette £4 from R.P. Wilson, 3 Homecroft Road, London SE26 5QN.

Oric Owners play 'Battle of the Bytes' a shooting gallery game with a difference £4. Boydeshaw, 7 Riverway, Nausea Avon.

**PROGRAMS MAKE
MONEY
SELL YOUR
PROGRAMS QUICKLY
AND EASILY
THROUGH H.C.W.
SOFTWARE SECTION.
RING 01-437 1002
EXT 213.**

SOFTWARE EDUCATIONAL

**CHEMISTRY EXAMS? NO
PROBLEM WITH ALCHEMY
SOFTWARE.** 6 programs covering FORMULAE and CALCULATIONS for O/CSE each with extensive notes for ZX81 and SPECTRUM. Send SAE for details to ALCHEMY, 78 TWEENDYKES ROAD, HULL.

TEACH YOUR CHILD



to Tell the Time
and Count Money
on your Spectrum (16K)

Two Fun Graphics Programs on
Cassette for £5.50 inc. P.&P.
Poppy V.W. Sampson Ingleton
Programs Carnforth, LA6 3AN

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.

USER GROUPS

**DRAGON INDEPENDENT OWNERS
ASSOCIATION. IF YOU OWN A
DRAGON JOIN D.I.O.A. NOW FOR
THE MANY SERVICES WE OFFER.
DURING APRIL JOIN AND
RECEIVE A FREE GAME AND
DEMONSTRATION TAPE.
D.I.O.A. School House, Nevein Rd.,
Dayleigh, Essex.**

TI99/4A independant club exchange/sell TI Modules, TI accessories, TI software, sae "TI Users" 40, Barrhill, Patcham, Brighton BN1 8UF.

**North London BBC Micro Users
Group.** Contact Dr. Leo M. McLaughlin. Dept. of Chemistry, Westfield College, Kidderpore Ave., London NW3 7ST. Tel. 01-435-0109.

**TIRED OF YOUR
COMPUTER?
WHY NOT SELL IT
AND BUY A NEW ONE
WITH A MINIMAL
AMOUNT OF EFFORT
USING ONE INDEX
FINGER.
RING 01-437 1002
EXT 213.
AND SELL THE WEEK
AFTER.**

SOFTWARE EXCHANGE Swap your used software. FREE club membership. £1 per swap. Most computers included. SAE for details. UK SEC (HCW), 15 Tunwell Greave, Sheffield S5 9GB

WANTED

Plans for football pools. Could anyone assist with software to enable printout permutations on small computer/Sinclair Spectrum? 01-435-5053.

Wanted second hand Apple II computer system 48K 2D.O.S.3.3. Disk Drive and Printer will collect London area Tel: 532 3261.

A word of advise to BASIC/Machine code programmers. Are you wasting carefully thought out programs on companies who fail to realize their market potential? we at **Dial Grove Ltd.**, are seeking good quality, original, debugged games, utility, educational and business programs for the ZX81 (1K/16K) and Spectrum (16K/48K). We are offering an attractive remuneration package for the right programs.

Write to us at **Dial Grove Ltd**, 10A St. James St., Covent Garden, London WC2.

You will be pleasantly surprised by our approach.

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

SAVE
YOURSELF £40
ON ORIGINAL PRICE
BY SENDING NOW!!!

Do you own a computer? — Thinking of getting one? — or are you just interested in computers?
WHICHEVER CATEGORY YOU COME UNDER — THIS OFFER IS FOR YOU

DO YOU SINCERELY WANT TO BE RICH? WOULD YOU LIKE TO MAKE SOME REAL MONEY JUST WORKING WHEN YOU FEEL LIKE IT

It is a very TRUE saying—"More than half of the People in the World are Asleep"—it is the rest who make the **REAL MONEY**

Let me first of all tell you a little about myself. I am 52 years of age and I am placing this advertisement at a time that is near to my contemplated retirement. I wish retirement in order that I can find time to commence writing my second book, more of this later.

Are you unemployed?—maybe recently made redundant?—or are you just fed up with your work and need a change?—then why not **BECOME YOUR OWN BOSS** and start making some **REAL MONEY** for YOURSELF.

CHANGE YOUR WHOLE LIFESTYLE.
THIS WILL BE THE SUCCESS STORY, of not only 1983—**BUT OF ALL TIME.**

Let me tell you—it is not so very long ago that I was **BROKE**, yes completely and utterly **BROKE**. The Bank Manager would not even see me for a loan, let alone grant me one, and I was paying off my debts by small instalments to avoid Court Action for Recovery or even Bankruptcy.

We were renting a very small, very old house (since demolished) paying at that time 10/- weekly rent—this sum we had to literally 'scrape' together each week.

We did have (I say **did** have) an old 'banger' of a car, for which I had originally paid £140 on Hire Purchase.

One day along came the Hire Purchase Company Representative to repossess the car—as I then owed them two monthly rentals of £9 each (that was the amount of the monthly rental)—so that was the end of the car and the money paid on it—all lost.

I knew then that I had to do something about this terrible state of affairs—I **KNEW I COULD DO IT**. I had been 'working on' an idea that I had held **SECRET** for many, many years.

Remember—I **WAS BROKE**—in fact, somehow I managed to save the sum of TWO POUNDS (£2) assisted by my wife who had such great faith in me, however just this two pounds to commence—I have never looked back since and I have come a very, very long way, believe me.

I **NOW HAVE THREE CARS**.
I **HAVE A LUXURY HOME** and builders have recently completed an extension for me, quite costly of course, it is worth a SIX FIGURE SUM (£100,000) to me now, or if you prefer American Dollars, about \$189,000.

My wife, our daughter and myself live very, very comfortably—TO SAY THE LEAST, surely this you now realise.

To give you just two recent examples of my **weekly** payments into my bank account, **WORKING PART TIME ONLY** REMEMBER—

They were £3,649—THREE THOUSAND, SIX HUNDRED AND FORTY-NINE POUNDS, or if you prefer it in American Dollars, about \$6,896.

The second one for £1,836—ONE THOUSAND, EIGHT HUNDRED AND THIRTY-SIX POUNDS, again if you prefer it in American Dollars, about \$3,470.

Proofed this paper.

Remember, **THESE ARE JUST TWO RECENT WEEKS** AS EXAMPLES FOR YOU, working only **PART TIME**, now are you interested?

This advertisement has been written for YOU—YOU can decide which is best for you—to be broke or to **HAVE MONEY—YOU DECIDE**, you

have my **MONEY REFUND** INCLUDED of course. There are **ONLY TWO KINDS OF PEOPLE IN THIS WORLD**—Those who say it can't be done—**AND THOSE WHO DO IT**—like Myself and now, very shortly YOU.

The book I sell is **NOT** a book of ideas, whereby you have to 'sort out' and secure your own eventual business ideas—it is **NOTHING LIKE THAT**—it details **ONE BUSINESS ONLY** at which I've succeeded and at which you will now succeed—it trains you for this **ONE BUSINESS ONLY**, there is **NOTHING ELSE**.

I knew what I wanted, when I was down and out—at that time **NO ONE WAS INTERESTED IN MY PROBLEMS**, this is natural of course—do you know what you want? If it is the **ROAD TO RICHES** and you **SINCERELY** wish it, this is for you.

Protect your future and your self respect, whilst at the same time protecting your Family in the future—**START MAKING SOME REAL MONEY FOR YOURSELF** and **STOP DREAMING** about it. I've known absolute poverty, been right down, on the floor, it is not very nice—but I **DID NOT INTEND TO REMAIN THERE**—compare that position with what I have today—apart from my income—

THREE CARS—LUXURY HOME—and, Oh Dear so much more than words can ever tell you. I made all the mistakes, discovered all the pitfalls along the way—and I **paid for them**—none of these will befall you, as you have **MY BOOK** to guide you and to train you.

Operate entirely from your own Home. No telephone is necessary. No car is necessary. No knocking on doors to sell. Operate solely by post. Every man and woman is a potential customer for you.

Within **THREE WEEKS** of my commencing on my own, in this business, I can tell you—I **HAD PAID OFF ALMOST ALL OF MY DEBTS** AND **BOUGHT A CAR**, yes within the first **THREE WEEKS**.

YOU can decide how big you wish to become, it was my intention never to get too large, so I simply 'cut down' and worked only part time, enjoying life to the full and the rest of the time doing whatever I **WISHED TO DO**, no matter what it was—**Fantastic—yes, BUT TRUE.**

I make my offer at this time, to enable me to secure more time to write my second book, it will take me at least 12-18 months, but when it is published it will prove to be a sensation, believe me.

It is my intention to pass on the **SECRET OF MAKING MONEY** to YOU, I **KNOW** you are already very anxious to learn about it. Even if you are at present employed, you will commence part time, you will soon be presenting your notice to your present employer—**TO WORK FOR YOURSELF**—remember my own first three weeks

—I **EVEN BOUGHT A CAR.**

Why 'line the pockets' of your employer any longer, start 'lining your own' before you leave it too late. I am not making this offer to **MAKE YOU RICH**, in order to make myself rich, it is not necessary, you already know why. Working part time, my last financial year shows income well in excess of £70,000 with profits at over £11,000—yes **JUST PART TIME**, this can be multiplied many times if necessary. For those who wish it, in American Dollars again, this amounts to about \$132,300 and profits about \$20,790.

I mentioned already that "More than half of the people in the World are Asleep", this is what allows the rest of us (Me and You) to **MAKE THE REAL MONEY**—because you are about to become one of the **AWAKE** people—if you **WISH TO GROW RICH**.

The pessimists say—"It is not possible to succeed on your own any more"—what utter rubbish and absolute nonsense—these people belong to the category that are **ASLEEP**—believe me, it is easier now than ever it was, but only those who **WANT TO MAKE MONEY** do so, I **KNOW**.

I was talking to a Rolls-Royce Owner recently, who said, 'the roads are paved with gold'—people just will not help themselves—it is **TRUE** you know, it is there for you to help yourself. Just taking, as a small example for you my most recent four years of part time working—on each of those years my income has increased each year over the preceding one—whilst others around me have closed down and gone into Bankruptcy.

Just examine again some of the cash figures I have given you herein, this is only a part, I'm not disclosing everything to you of course, just sufficient to give you an idea of what YOU can now do in my line of business. I started with a capital of just **TWO POUNDS**.

This offer is made under my **MONEY REFUND**, it is your **GOLDEN OPPORTUNITY OF A LIFETIME TO MAKE MONEY**, it is **YOUR SUCCESS** that matters to me, hence this **REFUND OFFER**.

Are you prepared to send me just ten pounds (£10) to receive My Book with details of this new business for yourself, you can commence right away. The **ROAD TO RICHES** awaits you, despatched to you within 48 hours of your order reaching me. Money Refunded if you do not agree and you return to me within 7 days—can I be any fairer than this?

Are you prepared to send me just ten pounds (£10) to receive My Book with details of this new business for yourself, you can commence right away. The **ROAD TO RICHES** awaits you, despatched to you within 48 hours of your order reaching me. Money Refunded if you do not agree and you return to me within 7 days—can I be any fairer than this?

A. W. E. SUMMONS
P.O. Box 30, 8 Dew Street,
Haverfordwest,
Dyfed, Wales.

What have I got to lose. Here is my ten pounds and at the end of the first three months of my new business venture operation, **IF**, I repeat **IF** I've made a clear profit of at least £3,000 I will send you a further £40 completing payment for my book, if I have **NOT** made this profit, I **OWE YOU NOTHING FURTHER**, the balance is cancelled—on this understanding and **MONEY REFUND** here's my tenner.

Name

Address

HCW8

STOP PRESS LETTERS PROOFED TO THIS PAPER

Mr. K. P. of Lancs writes: My account for the first two months of operations.

Expenses (all detailed)	£615.15
Income	£3,196.00

CLEAR PROFIT	£2,580.15
---------------------	-----------

He adds—"may I take this opportunity to thank you for introducing me to this most successful business venture. I am confident that it will provide me with financial security for the years ahead."

Mr. R. O. of London writes: How grateful I am in sending you a cheque for £40, for I have made a **CLEAR PROFIT** of £3,256.86 at the end of my 3 months period of operations, I'm now more confident that my business will provide me with financial security for the years ahead.

'I would like to add that I am very pleased you have introduced me to this profitable venture'. **J. B., Devon.**

'I have been absolutely amazed by the **PROFIT** I have made from it... thanks to YOU'. **P. J., London.**

'I am having good success'. **E. H., Yorks.**

100 FREE PROGRAMS

FROM SILICA SHOP — WITH EVERY PURCHASE OF AN

ATARI 400

800




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
with 16K **£159**

ATARI 400
with 48K **£228**

ATARI 800
with 48K **£349**

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 Paddles ADVENTURE INT Scott Adams Adv No 1 Adventure Int 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 Int 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 Datesones of Ryn Dragons Eye Invasion Orion Rescue at Rigel Ricochet Star Warrior Temple of Apshei Upper Reaches Aps BOOKS Basic Ref Manual No 9 Ghost Town 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 Visicalc 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 Chompelo Crystals Forest Fire Intruder Alert Monarch Moonprobe Moving Maze Nominoes Jigsaw Rings Of The Emp Space Tilt Space Trap Stud Poker Triple Blockade EDUCATION from APX Algebra Atlas of Canada Cubbyholes Elementary Biology Frogmaster Hickory Dickory Inst Comptg Dem Lemonade Letterman Magware	Maths-Tac-Tor Metric & Prob Solv Mugwump Music Terms/Notatn My First Alphabet Number Blast Polycalc Presidents Of U.S. Quiz Master Stereo 3D Graphics Three R Math Sys Video Math Flash Wordmaker EDUCATION from ATARI Conv French Conv German Conv Italian Conv Spanish Energy Czar European C & Caps Hangman Invit To Prog 1/2/3 Kingdom Music Composer	Scram States & Capitals Touch Typing EMI SOFTWARE British Heritage Cribbage/Dominoes Darts European Scene Jig Hickory Dickory Humpty Dumpty Jumbo Jet Lander Snooker & Billiards Submarine Commdr Super Cubes & Tilt Tournament Pool ENTERTAINMENT from APX Alien Egg Anthrill Attank Avalanche Babel Blackjack Casino Block Buster Block Em Bumper Pool	Castle Centurion Checker King Chinese Puzzle Codecracker Comedy Diskette Dice Poker Dog Date Domination Downhill Eastern Front Galahad & Holy Gr Graphics/Sound Jax-O Jukebox Lookahead Memory Match Midas Touch Minotaur Outlaw/Howitzer Preschool Games Pro Bowling Pushover Rabbitot Reversi II Salmon Run 747 Landing Simul Seven Card Stud	Slazy 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 Fl Wizard & Princess PERIPHERALS Centronics Printers Disk Drive Epson Printers Program Recorder RS232 Interface Thermal Printer 16K Memory RAM 32K Memory RAM PERSONAL INT from APX Adv Music System Barner Generator Blackjack Tutor Going To The Dogs Keyboard Organ Morse Code Tutor Personal Fitness Prg Player Piano Sketchpad	PROGRAMMING AIDS from Atari Assembler Editor Dsembler (APX) Microsoft Basic Pascal (APX) 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

or from Silica Shop and we will send you a full range of electronic products. Please telephone 01-301 1111 or write to Silica Shop, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX. Please include your name, address, phone number and order requirements, and return the form to us. Post and packing is FREE in the UK. Express 24 hour delivery available at an additional charge.
 • Special ON LINE SYSTEMS (Crossfire, Frogger) are available for hire from our shop in Sidcup. Monday to Saturday 10am to 7pm. Delivery is by Thursday 10am. Friday 10am.
 • 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 totally 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: We will accept your old computer in exchange for a new one. We will make a full refund, minus 10% of the price of the new computer.
 • CREDIT: If you wish to pay for your goods on credit, please contact us. We will be happy to arrange this for you, and we will accept your old computer in exchange for a new one.
 • RETURNS: We will accept your old computer in exchange for a new one.
 • ATARI 400/800: We will accept your old computer in exchange for a new one.
 • VAT: If you are a VAT registered business, please quote your VAT number.
 • LSH (01-301 1111) is a service mark of Silica Shop Ltd.

SILICA SHOP LIMITED
HCW0583, 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
HCW0583