

Home

An Argus Specialist Publication

EVERY WEEK:
the magazine
with most software
reviews

Computing WEEKLY

No. 39
Nov 29 - Dec 5, 1983

38p

FREE

£1,000
competition

40 chances
to win

QUICKSILVA
software

Software
reviews for:
Spectrum, BBC,
Oric, Texas,
ZX81 and
Commodore 64

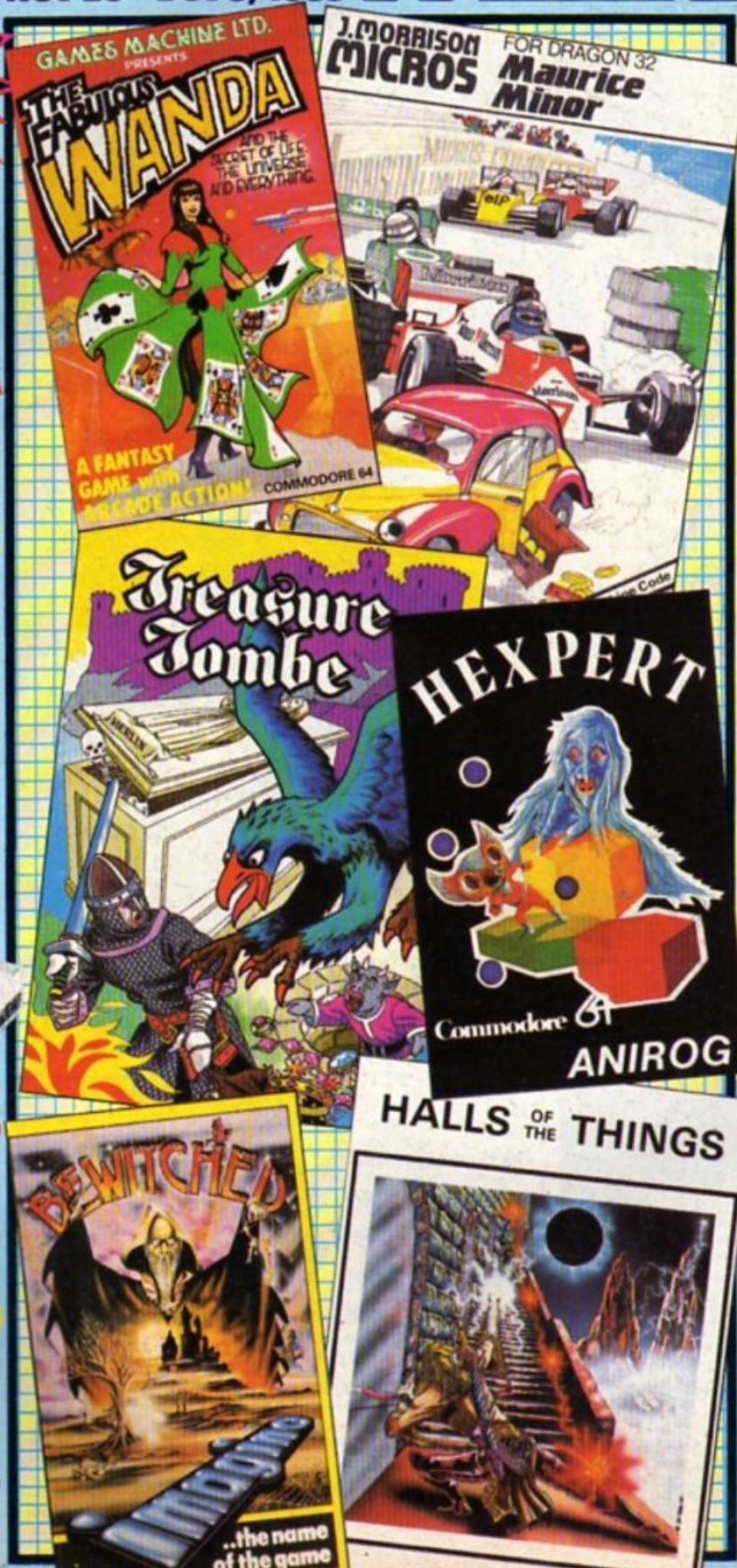
How to make
your
Commodore 64
make music



Disassembler to
type in for the
Oric

More
programs to
type in for:
Spectrum, Oric,
Texas, VIC-20

AND: U.S. scene,
your letters...



Santa's going to be busy

With less than 25 shopping days to Christmas, the major computer retailers are already celebrating the biggest boom in home computer sales yet.

Asked how sales were going at Boots, Anton Boyes, merchandise controller, said: "Pretty fantastic! Fortunately we predicted the boom and we're in a reasonable stock position, so the main problem is how to cope with all the customers."

"Our staff are fairly overwhelmed with the demand. We're bringing in extra people, but we only have one computer consultant per branch, and they have their work cut out answering people's technical queries."

"Despite careful planning we are short of certain lines — the Spectrum, BBC B, and ZX81
Continued on page 5

'Ban these mail order addresses'

The Computer Trade Association is calling for a ban on the use of accommodation addresses for mail order software.

Companies often used city-centre addresses because they attracted more mail, said CTA secretary Nigel Backhurst.

He said: "But it can be difficult when people have got a problem to try and trace who and where they are."

He spoke of a problem the CTA had solved involving a
Continued on page 5

NEW RELEASE



The Guardian

£5.95 You are at the gateway to the Anti-Matter world of Magon... Do you dare enter

SEND CHEQUE OR P.O. TO P.O. BOX 432 STONEY STRATFORD RD. COVENTRY CV6 5DG FOR INSTANT CREDIT CARD SALES TEL 0534647984



Another devastating new game from the fabulous Postern range.

Defeat the flock of marauding FIRE HAWKS.
Escape from the SNAKE PIT.
Ride the mighty SHADOWFAX.
Prepare to repel the enemy in SIEGE.

Defend our planet from destruction in 3 DEEP SPACE.



The colourful Postern range is available on a variety of micros. Write quantity of each game required in the boxes provided.

| Please send me: | | Spectrum | C64/Vic 20 | BBC 'B' |
|-----------------|-------|--------------------------|--------------------------|--------------------------|
| Fire Hawks | £6.95 | | | <input type="checkbox"/> |
| Snake Pit | £6.95 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Shadowfax | £6.95 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Siege | £6.95 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Deep Space | £7.95 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Total £ _____ or Access No. _____
Name _____
Address _____



POSTERN

POST TO: Postern Ltd., P.O. Box 2, Andoversford, Cheltenham, Glos GL54 5SW.
OR PHONE: Northleach (04516) 666 Telex 43269 Prestel 37745

Postern is always on the look out for any new games you might have developed.

24 PAGES OF SPECTRUM BEST

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

Milton Keynes now has its own specialist software shop, Soft-ly, which opened last month in the indoor shopping centre. It will be stocking software, peripherals and books, and aims to cater for both games players, programmers and owners of working micros.

Soft-ly, 5-7 Deer Walk, Specialist Arcade, Central Milton Keynes

New out from Wintersoft is Operation Gremlin for the 48K Oric. It's an arcade adventure, and costs £6.95.

Wintersoft, 30 Uplands Park Road, Enfield, Middlesex EN2 7PT

J. Morrison, best known for its Dragon games, is now branching out into software for the Commodore 64. First out will be the 64 version of its Dragon game Vultures, at £6.95, followed by Bonka and Space Panic.

J. Morrison, 2 Glensdale Street, Leeds LS9 9JJ

Specially for armchair sports fans, Abrasco's first two Spectrum games are simulations of golf and pool. They're priced at £6.95, and Abrasco says they're almost like the real thing.

Abrasco, The Grange Barn, Pikes End, Eastcote, Middlesex

Thorn EMI is launching five of its popular cartridge games on cassette for the Spectrum. They are River Rescue, Volcanic Planet, Gold Rush, Blockade Runner and Road Racer, and will cost around £6.95. All use both joystick and keyboard control, and all but River Rescue will run on 16K machines.

Thorn EMI, Upper Saint Martin's Lane, London WC2H 9ED

Mogul is hoping that its range of 13 arcade and adventure games, which have been storming the software charts in the USA, will have the same success over here. Machines covered include the Spectrum, Commodore 64, VIC-20, TRS-80, Oric and TI-99/4A, and there are four titles written in the UK specially for the Spectrum: Vipers, Potty Planter, Crash and Fruit Machine.

Mogul, 90 Regent Street, London W1R 5PA

Home Computing WEEKLY

| | |
|--|------------|
| News, U.S. Scene | 5-7 |
| BBC program | 10 |
| Why wait? Watch the Space Shuttle now | |
| £1,000 Quicksilver software competition | 15 |
| Software reviews | 17 |
| VIC-20 program | 19 |
| Your chance to be a space hero | |
| Spectrum program | 23 |
| Steer a steady course — and don't dawdle | |
| Software reviews | 24 |
| Space games for Spectrum, BBC, CBM 64, Oric | |
| Software reviews | 26 |
| Commodore 64 program | 29 |
| Make yours a musical micro | |
| TI-99/4A program | 32 |
| Defeat the underground alien | |
| Oric program | 34 |
| Can you catch the secrets | |
| Software reviews | 37 |
| Office programs for Spectrum, BBC, Dragon | |
| Free T-shirt coupon | 39 |
| Letters | 41 |
| Oric program | 42 |
| Move into machine code with our disassembler | |
| Software reviews | 47 |
| Games for VIC-20, Spectrum, CBM 64, BBC | |
| Profile: Microdeal | 48 |
| One Husband's View | 51 |
| Software reviews | 53 |
| Games for ZX81, Dragon, CBM 64, TI-99/4A | |
| Software charts | 55 |
| Classified ads start on | 59 |

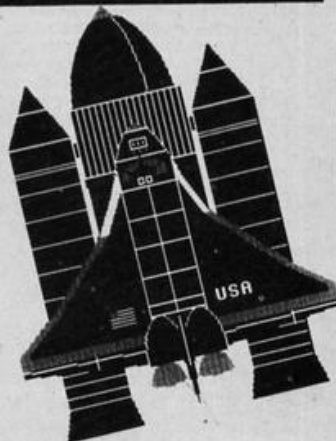
| | |
|--------------------------------------|---|
| Acting Editor: Paul Liptrot | Divisional Advertisement Manager: Coleen Pimm |
| Assistant Editor: Candice Goodwin | Assistant Advertisement Managers: Ricky Holloway Stuart Shield |
| Designer: Bryan Pitchford | Classified Advertising: Debra Stuppel |
| Managing Editor: Ron Harris | Chief Executive: 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

BUY THIS SPACE

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



Launch your own Space Shuttle with the BBC program which starts on page 10



There's six pages of software reviews in this issue — more than any other magazine



Get into Oric machine code with the disassembler on pages 42-45

CALPAC LEARNING SERIES

Colour graphics and sound are used extensively to make learning more enjoyable.

5. MULTIPLICATION TABLES. This program with correction sequences enables you to test individual multiplication tables, or all tables up to a maximum that you choose. Carriages are added to a train as the score increases - see the train glide through the countryside when the test is finished.

6. THE ROMANS. Answer questions on the Romans to win a horse, chariot, viaduct and temple. Answer enough correctly and the horse will gallop away with its chariot.

© J. J. Warren 1983

Published by Calpac Computer Software, 108 Hermitage Woods Crescent, St Johns, Woking, Surrey GU21 1UF

7. SPELLING TESTER. The words in the test are initially displayed on the screen. Then short sentences are used as prompts for the words, which must be typed correctly to add stages to a space-ship.

Replace the words and sentences in the program with weekly spelling lists, save them on cassette, and you will rapidly create a whole library of programs.

8. HOMOPHONES. Sale or sail; bare or bear? Choose the correct word to complete the sentence. Extra motivation is provided by a coloured pot-plant, which grows with each correct response. The plant flowers in an unusually tuneful fashion at the end of the program.

The programs on this cassette are subject to copyright, and may not be copied, transmitted, hired or lent without the written permission of Calpac Computer Software.

CALPAC
LEARNING SERIES

NX
SPECTRUM
VOL. 2

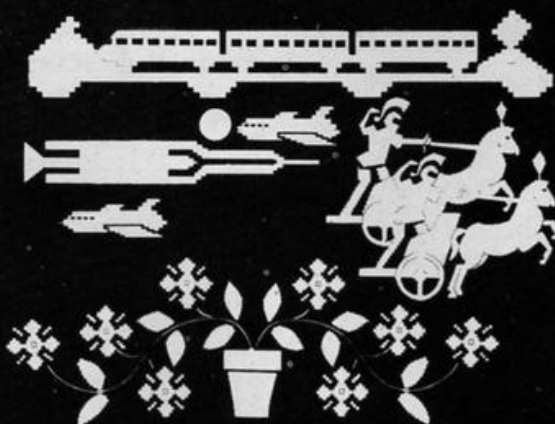
SEE US AT THE

9th
ZX MICROFAIR

Saturday / Sunday
December 3-4
Alexandra Palace

CALPAC LEARNING SERIES

PROGRAMS 5-8



5. MULTIPLICATION TABLES
6. THE ROMANS
7. SPELLING TESTER
8. HOMOPHONES

SPECTRUM 16K
FROM 7 YEARS 48K

CALPAC LEARNING SERIES

Colour graphics and sound are used extensively to make learning more enjoyable.

9. NOUNS, VERBS, ADJECTIVES AND ADVERBS. Sentences are displayed and you select the named parts of speech. Instant feedback and helpful comments ensure positive learning. Correct answers are rewarded by the creation of a coastal scene, which is animated at the end of the program.

10. VERB PRACTICE. You have to complete the sentences using the correct tenses of the verbs. The program concentrates on those irregular verbs that often cause difficulty. An underwater landscape is created as questions are correctly answered.

© J. J. Warren 1983

Published by Calpac Computer Software, 108 Hermitage Woods Crescent, St Johns, Woking, Surrey GU21 1UF

11. THE STRUCTURE OF THE FLOWER. This program explains how the parts of the flower are involved in the formation of seeds. This is a three part program which makes full use of high resolution colour graphics.

12. LONG DIVISION. This detailed program takes the learner through long division sums in easy stages. Correction sequences are automatically provided when they are needed. Sums with remainders can be chosen if required.

The programs on this cassette are subject to copyright, and may not be copied, transmitted, hired or lent without the written permission of Calpac Computer Software.

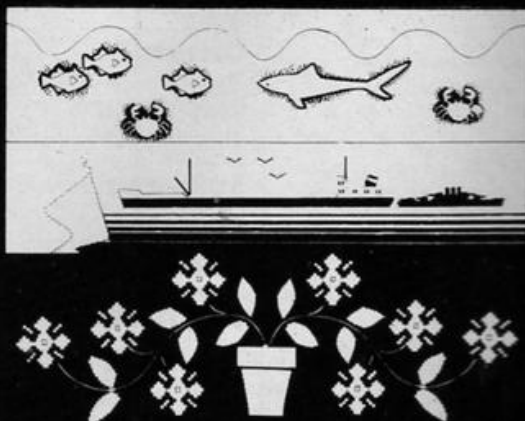
CALPAC
LEARNING SERIES

NX
SPECTRUM
VOL. 3

FROM
9
YEARS

CALPAC LEARNING SERIES

PROGRAMS 9-12



9. NOUNS, VERBS, ADJECTIVES
AND ADVERBS
10. VERB PRACTICE
11. THE STRUCTURE OF THE FLOWER
12. LONG DIVISION

SPECTRUM 16K
FROM 9 YEARS 48K

Our software is suitable for use in the home, school or college.

For further details or retail stockists please telephone:- 048 67 2584

We have a demonstration cassette available for retailers or schools.

We would like to hear from good programmers, graduates or teachers wishing to participate in the expansion of our Learning Series on the Spectrum, BBC Model B and other machines.

Our software is available by direct mail from:-

CALPAC COMPUTER SOFTWARE
108 Hermitage Woods Crescent
St Johns, WOKING, Surrey GU21 1UF

PRICE LIST

CALPAC LEARNING SERIES VOL 1
CALPAC LEARNING SERIES VOL 2
CALPAC LEARNING SERIES VOL 3
CALPAC CHEMISTRY SERIES VOL 1
CALPAC CHEMISTRY SERIES VOL 2
CALPAC PATTERNS

| | |
|---------------------|-------|
| 16K or 48K Spectrum | £9.50 |
| 16K or 48K Spectrum | £9.50 |
| 16K or 48K Spectrum | £9.50 |
| 48K Spectrum | £7.50 |
| 16K ZX81 | £6.95 |
| 16K ZX81 | £5.95 |

Additional features of the CALPAC LEARNING SERIES include:-

*Spelling checkers

*"Help" call up routine

*Easy insertion of subject material of your own choice into the programs

Mail order

From front page

Scottish company which was advertising a London address.

He said: "There was no answer and a court order could not be served. In that case I was able to sort it out. The difficulty was that the letter arrived when the company was closed for the holidays."

"They had used an accommodation address because they got more mail than if they had used the Scottish address."

Mr Backhurst said the CTA was pressing the Government to bar the practice of using accommodation addresses in this way.

Next month the CTA is starting a new scheme in a bid to bring to an end same-name software.

Mr Backhurst said the aim was to avoid disputes between software houses over who used the name first. He pointed out that, for example, there were 29 Munchman programs — 10 of them for the Spectrum.

He said: "It can get a bit confusing."

Under the new scheme new games — even development copies — would be lodged with the CTA, sealed and numbered. The association would not even look at the product, said Mr Backhurst.

If there was a dispute, the date of origination could be proved.

• The CTA has just come through a cash problem because subscription income did not meet

the bills, said Mr Backhurst. Members loaned the association £300, he said and added: "It was close, but we are now just about through it."

The main problem was that the cost of checking the credentials of applicants was nearly as much as their first subscription. So now there will be a £30 joining fee as well as the £50 annual subscription. And the monthly newsletter will now be a quarterly journal to save money. The CTA will use a trade magazine to keep members in touch monthly.

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

DLT's micro challenge

It's surprising who you'll find in front of a computer keyboard these days. Disc jockey Dave Lee Travis has joined forces with Twig Systems to promote a range of six micro games which, he says, "will have people beating their heads on the floor with frustration."

To score high on the games, says DLT, you'll need to use brains rather than brute force. But do well at all six, and you'll be in the running for DLT's Monster Challenge, and a prize of £10,000.

When 10 competitors have solved all the games, there'll be a



DLT throws down a Monster Challenge

televised final in London to pick the lucky — or skillful — winner.

The six games, which are available for the BBC, Dragon and Spectrum, are Air Sea Missile, Cambridge, Take the Strain, Othello, The Tower and Countdown Quiz.

They cost £9 per game or £45 for six, plus 50p postage and packing, and come with full instructions on how to take part in the Monster Challenge.

Twig Systems, 6 High Street,
Wendover, Bucks

Santa

From front page

Starter Packs are running low. But we should be able to meet the demand for Commodore 64s and Dragons. We've also sold quite a few of the Atari 600XL, which we've just brought in.

"Software is selling tremendously well, too, I'm embarrassed to say."

Did he think sales would plummet after Christmas? "I'd think the opposite. There's bound to be an unsatisfied demand for hardware and software, and people will be buying computers with money they were given for Christmas. It should be a tremendous opportunity."

Stewart Binnie, merchandise controller at W. H. Smith, said: "We're delighted with the performance of our new computer shops-within-shops, and we anticipate that sales will continue to be very strong for the next two months at least."

"In particular, we've seen the Spectrum going from strength to strength. The Commodore 64 is going well, but sales have been hit by a shortage of Commodore's cassette recorders."

Smiths has had a huge demand for the Electron — one branch had 15,000 telephone enquiries about it, and another sold out of a batch of 30 in an hour and a half. But Stewart Binnie commented, "though demand for the Electron is currently far exceeding supply, we hope that the situation will improve prior to Christmas."

And Phillip Halton, microcomputer buyer at Laskys, said: "Our general home computer trading pattern is building up very nicely — the Oric is doing extremely well, and the new Atari computers are too. In terms of units, we've probably sold more Ataris than anything else."

"By late December, demand may start to outstrip supply — we have already had supply problems with the Spectrum and with the Commodore cassette unit. But we'll get round them somehow."

"Our staff are obviously pushed, but I think they'll cope. We probably employ more staff and train them a bit better than anybody else in the High Street."

"I see the present interest in home computers continuing well into the first half of next year."

You could be on our pages

We welcome programs articles and tips from our readers.

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

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

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

Competitive rates are paid.

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

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

Turn your CBM64 into a sophisticated synthesiser, a piano, violin, organ, guitar or harpsichord. Woodwind, drums or cymbals and play along with your own or any of the preset rhythms.

You can compose pieces of music note by note, produce explosions, birdsong, trains, thunder, flying saucers and hundreds of other special sound effects for use in your own programs.

All this and an unbelievable range of special features:

4 Wave Forms: Triangle Wave, Saw Tooth Wave, Square Wave, White Noise. Glissando, Pitchbend, Modulation, Layering, Tempo Control, Pretab, Envelope Shaping, Synchronisation, Full Editing, Record, Playback Save, Transfer, 3 Voices, 6 Preset Rhythms and 2 User-Defined Rhythms. Full screen, easy to read, display of effects. Full, easy to follow instruction manual included.

ULTISYNTH
for the Commodore 64

£14.95

Supplied in box with extensive manual.

QUICKSILVA

All games marketed exclusively by Quicksilva Ltd.

Quicksilva Mail Order P.O. Box 6 Wimborne, Dorset BH21 7PY. Telephone (0202) 891744.

Other great games for the Commodore 64 include: **PURPLE TURTLES** – Go Turtle bobbing with the cutest Turtles ever seen! **£7.95** ● **AQUAPLANE** – Ski through Marine Maniacs and other Aquatic obstacles **£7.95** ● **RING OF POWER** – Search through the kingdom for the Mystical Ring **£9.95** ● **QUINTIC WARRIOR** – Stand alone against the sinister Crabman and other mangled mutants! **£7.95**.

WE HAVE SOUND ... COLOUR ... ACTION WE HAVE R&R SOFTWARE

Whether you have an Oric, Spectrum or ZX81 you can play golf in the comfort of your home.
ZX81 16K (Not illustrated) All the excitement of the professional circuit. For 1 or 2 players. You can select either 9 or 18 hole course. Try and overcome obstacles such as trees, bunkers, water – even the rough can be tricky! Full on screen instructions. **ONLY £3.75**

Spectrum Golf 16K Similar to ZX81 Golf but utilizing the Spectrum colour graphics and sound. **ONLY £3.75**

Oric Golf 48K A further development of Spectrum Golf utilizing 48K of memory and the Oric graphics. For 1 to 6 players. **ONLY £5.95**

If golf isn't your game try the other games in our range.

FOR SPECTRUM

Star Trek 48K See if you can rid the galaxy of the evil Klingons, save the Federation from the treacherous Romulans, race to protect your star-bases from attack. Are you star-ship commander material? **ONLY £4.95**

Spectipede 16K See how long you can keep the Spectipede at bay as they descend upon you. You'll have the help of poison mushrooms and your gun

which both kill the Spectipedes but look out for the spider – he will try to jump on you. For 1 or 2 players. Operates with most leading Joysticks or the Keyboard. **ONLY £5.50**

Gnasher 16K The ultimate maze game. Eat the dots but look out for the ghosts they could eat you! If you eat an energy pill you can eat the ghost. Full colour graphics and sound. Operates with most leading Joysticks or the Keyboard. **£4.95**

NEW FOR THE ORIC

Oric Quizzmaster 48K A menu driven quiz game utilizing sound and colour. Instructions are also given to substitute your own questions and answers. Great fun for all the family and ideal for education i.e. revision.

Quizzmaster 1 – General knowledge, sports and pastimes.
Quizzmaster 2 – General knowledge, rock and pop.
Quizzmaster 3 – Out soon.

ONLY £7.95 each which includes a £2.00 discount voucher for your next Quizzmaster.

Further Quizzmasters to follow.



Dept. HCW 34 Bourton Road,
Tuffley, Gloucester, GL4 0LE
Tel: (0452) 502819

SPECTRUM GOLF
available from
WH SMITH

Two say: We're No.1

In the run-up to the peak sales season, both of the big two home computer makers say they are No. 1 in the UK.

First Commodore's UK marketing manager, John Baxter said: "We know we are way ahead of Sinclair, as we predicted."

In October, Commodore had shipped 20,000 Commodore 64s and 60,000 VIC-20s making a total of 130,000 with other computers.

And in the July-December period the company would exceed its forecast sales of 425,000 VICs and 64s.

However, Bill Nichols, for Sin-

clair Research, said its UK sales for September for the Spectrum and ZX81 were 150,000 and equal that for October.

And for July-December Sinclair would sell more than half a million.

Mr Nichols said: "We would certainly agree that Sinclair and Commodore are a long way ahead of the rest of the field and are the big two in the UK."

"While we have no wish to be drawn into the numbers game, we are very confident we remain No. 1."

*Commodore Business Machines, 675 Ajax Avenue, Slough, Berks SL1 4BG
Sinclair Research, Stanhope Road, Camberley, Surrey GU15 3PS*

Little Brother

Measuring the size of this page, the new Brother EP-22 is a travelling typewriter and a computer printer.

Powered by four 1.5 volt batteries, it works almost silently, using thermal printing with a dot matrix font.

The so-called Baby Brother has a built-in RS-232 interface and costs £169.95.

Jones & Brother, Shepley Street, Audenshaw, Manchester M34 5JD

**The Baby Brother —
small and quiet**



Briefly

Budget-priced games for the Atari — some at less than half price — are out from Allrian Data Services. The first five tapes, all at £7.50 by Artworx, of New York State, are Intruder Alert, Rings of the Empire, Space Trap, Giant Slalom and Crazy-tack. Some cost £17 when first on sale several months ago. Allrian says Atari software had been expensive because it was imported in small quantities from America. The company would continue with its full-priced games.

Allrian, 1000A Uxbridge Road, Hayes, Middlesex UB4 0RL

An acrylic stand to hold three data cards for the 48K Lynx key-

board is now out from Peripheral Products. The stand, at £14.95 with the cards, can also support magazines while you are typing in a program.

Peripheral Products, 209 Kenton Lane, Kenton, Middlesex

Newly-launched Intrigue Software has a seasonal release — Santa and the Goblins, a £5.95 adventure for the standard TI-99/4A. You play Santa trying to deliver gifts in a large stately home, but greedy goblins are trying to make off with the presents. Proprietor Dennis Webb says the characters "talk" in Hobbit style.

Intrigue Software, Cranbrook Road, Tenterden, Kent TN30 6UJ

Build your own plastic palace

Have you always wanted to live in an electronically-controlled house but couldn't figure out how to do it? Well, the answer is now available in book form.

Roy Mason is an architect who has worked on many visionary projects. Recently he completed the design of a modernistic home near Disney World in Orlando, Florida.

The home is called Xanadu, is made from polyurethane, and is completely computer controlled.

Mason has coined a term called archetronics to designate the interface between architecture and electronics.

The house, although it could be lived in, is used solely as a demonstration unit. The electronic and computer controls are completely off the shelf applications of existing products; nothing was customised.

Some of the special features in the house include: a kitchen that keeps track of what food is in stock, selects menus; generates shopping lists, and files recipes; a "Sensorium" using biofeedback to monitor your mood, pulse rate, and play appropriate music; computer terminals in every room and a 60-channel satellite TV.

Lights, draperies, heating and cooling systems are all automatically controlled; there is a complete art library on videodisc. All controls use existing house wiring; no special wiring was required.

The best point of all is that Mason has written and published a book that describes a "typical" day in the life of a Xanadu resident, but better still, tells how to install computer controls in existing houses and includes a list of distributors and manufacturers who make these devices.

The book is available from Acropolis Books, of Washington DC, and costs \$18.95.

Well worth reading, as many ideas can be adapted by those of us who have the inclination if not the cash to build our own electronically controlled plastic palace. Happy reading!

Perhaps not willing to be completely outdone by our British cousins, the United States' Public Television Network has begun a series on, as they put it, demystifying high technology.

The show will air weekly, and started late last month. Its official name is *The New Tech Times* and will explore home computers, home robots, satellite TV and videotext, computer games, and other aspects of new technology that has application in the average home.

Different shows will focus on various special applications, such as electronic mail, computer bulletin board systems, computer art, and computer control of various aspects of the home environment.

The show is mainly designed for those who still fear the computer and/or think it will blow up if the wrong button is pressed. Thirteen segments are being taped, with a second season of 13 more shows in the planning stage.

If you have an Epson printer, you might be interested in this product. It is called *Finger Print*, an add-in plug-in module which gives you access to such printer functions as compressed, italic and emphasized print.

You can also perform operations such as double-strike, perforation skipover, left margin indent, fine print, and clear buffer. These various functions can be combined and become available from the printer control panel.

The device lists for a mere \$59.95 and is available from Dresselhaus Computer Products, 837 East Alost Avenue, Glendora CA 91740, (213) 914-5831. Seems like good value for money.

Out of room again. See you next week.

**Bud Izen
Fairfield, California**

HAVE YOU BEEN INVOLVED IN A MYSTERIOUS ADVENTURE RECENTLY?

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

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

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

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

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

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

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

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

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

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

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

For BBC, 48K Spectrum
order from:-



**DIGITAL
FANTASIA**

24 NORBRECK ROAD, NORBRECK, BLACKPOOL, LANCASHIRE
ENGLAND FY5 1RP. TEL. (0293) 591402

For Atari, Commodore 64,
Dragon 32 order from:-



CHANNEL 8 SOFTWARE

51 FISHERGATE, PRESTON,
LANCASHIRE ENGLAND. TEL. (0772) 52057

Mysterious Adventures

WHAT ARE MYSTERIOUS ADVENTURES?

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

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

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

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

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

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

NEW DEVELOPMENTS ON MYSTERIOUS ADVENTURES

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

This situation is changing now however, and Brian Howarth, author of the **MYSTERIOUS ADVENTURES** series, has spent many hours incorporating Graphics into the Adventures. By working in close conjunction with Jon Blacow, a professional Artist, Brian has produced a series of extremely vivid and imaginative Adventures. Each **MYSTERIOUS ADVENTURE** now features, in addition to the Text description, pictorial "views" of your current location and surroundings. As you enter each new location, a high resolution, colour picture is rapidly drawn. The effect of this is to bring much more reality to the Scenario, you can actually see the situation you are faced with and act accordingly. It must be stressed that each picture has been designed so that it will enhance, rather than conflict with your mental imagery. At the single stroke of a key, you can erase the picture and carry on with your Adventure in text only if this is your preference. We are confident that no other Adventure programs can boast such breathtaking realism and imagination combined with the flexibility and ease of play that have made **MYSTERIOUS ADVENTURES** such a phenomenal worldwide success.

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



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

Be there as the Space Shuttle launches and lands

Sit back and watch as the U.S. Space Shuttle takes off in a cloud of smoke and launches a satellite into orbit.

Then you have a pilot's eye view of the spacecraft coming in to land on a runway etched into salt flats.

My simulation uses 6.5K and runs in MODE 1 on the BBC model B computer for 117 seconds.

The drawings of the shuttle and booster rockets are as accurate as I could make them. Certain things were deliberately left out for the sake of clarity.

Once you have typed in the program it would be a good idea to carefully check all the co-ordinates in the PROCedures before RUNNING.

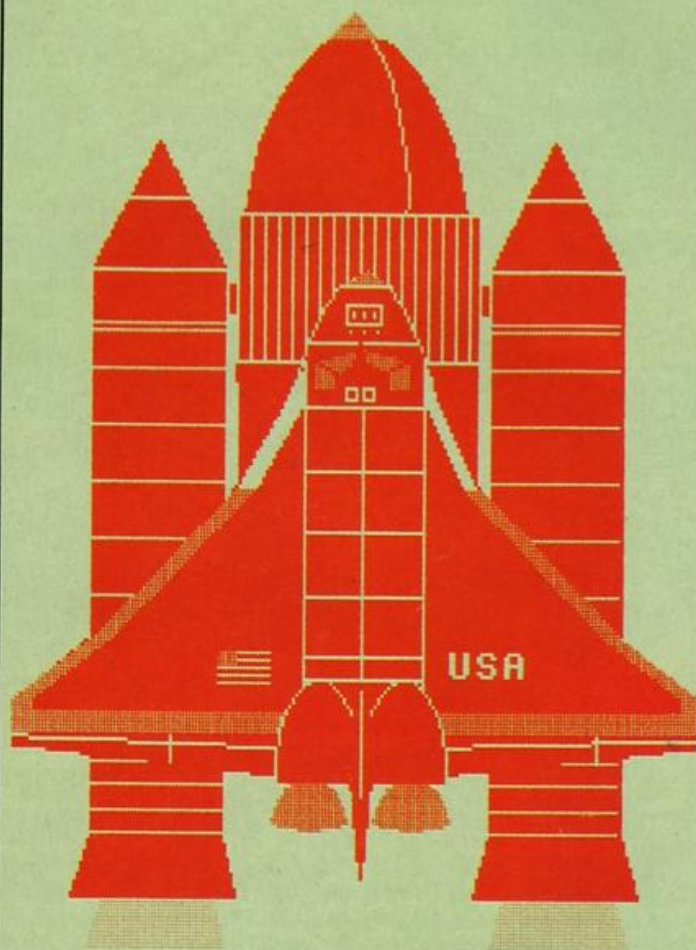
The program is split into five sections and each uses three main graphics routines which draw triangles (PROC_TRI 1090-1130), rectangles (PROC_RECT 1140-1190) and circles (PROC_CIRCLE 1200-1280).

These routines are used a lot, so here is a description of each of them:

PROC_TRI has seven parameters. The first six are three sets of two co-ordinates to define the

Why wait for TV pictures of the next Space Shuttle mission? Kevin Boyd's program for the BBC model B micro simulates it so realistically that you'll think it's the real thing

Screen dump of the Space Shuttle, mounted on the giant booster rockets, before launch



three points of the triangle and the seventh parameter is a flag. If set to 1 the triangle is filled in, if zero it is not.

PROC_RECT works in the same way to draw a rectangle, starting bottom left.

PROC_CIRCLE begins with two parameters for the centre of the circle. The next two are the radius and a flag, used as above. The routine uses two arrays, set up in lines 130-140. They hold the SIN and COS values to calculate the circle — much faster than calculating the values each time you call the routine.

Hints on conversion

You will have a hard task converting this program to another micro because it uses the BBC's graphics capabilities to the full.

Your computer should have a graphics resolution of 320 by 256 pixels, the ability to individually colour each and have up to four colours available (white, black, red and cyan).

I have made a lot of use of text windows in the satellite launch routine. This allows you to define a window anywhere on the 40 by 32 text screen and then scroll anything inside that window without affecting the rest of the screen.

The command which does this is VDU28, followed by four parameters (left X, bottom Y, right X and top Y).

Other VDU commands used in the program are:

VDU19 followed by five numbers. The first is the colour which is to be changed and the second is the colour into which it is to be changed. The last three digits are zeros.

VDU5 enables you to print a character anywhere on the graphics screen. Note that the MOVE command must be used (see 930).

VDU26 restores any text window to normal screen size.

VDU11 moves the cursor up one line.

VDU30 homes text cursor to top left.

VDU30 followed by **VDU11** scrolls the screen down.

VDU4 disables the effect of **VDU5**.

Colour numbers used in GCOL commands are: zero black, 1 red, 2 yellow (changed to cyan at 180) and 3 white.

How it works

110-140 produce title page while circle arrays are calculated

150 set graphics mode (resolution is 320 by 256 in hi-res with four colours, 40 by 32 text)

160-170 set up sound envelopes

180 change colour 2 (yellow) to colour 6 (cyan)

190 cursor off

200-240 call PROCedures

270-600 draw fuel tank, booster rockets

610-1080 draw shuttle

1090-1130 triangle

1140-1190 rectangle

1200-1280 circle

1290-1340 initial blast of smoke

1350-1430 ever-widening tower of smoke, move shuttle

1770-1730 open payload doors

1740-1820 draw satellite inside payload area, define text window from shuttle to top of screen then scroll satellite to top

1830-1970 launch satellite out of sight of shuttle, then out of your view

1990 invert: black to white, white to black

2000-2050 view of shuttle approaching runway

2060-2140 shuttle touches down

```

110 MODE7
120 CLS:PRINTTAB(5,10);CHR$(141);"SPACE SHUTTLE SIMULATION";PRINTTAB(5);CHR$(141);"SPACE SHUTTLE SIMULATION"
130 DIMS(90),C(90)
140 AZ=-1:RX=400:FORA=0TORAD360 STEPRA4:AZ=AZ+1:S(AZ)=SIN(A):C(AZ)=COS(A):NEXT
150 MODE1
160 ENVELOPE1,1,15,-2,20,8,40,5,10,-1,-1,-1,126,100
170 ENVELOPE2,7,113,0,0,3,1,1,30,-40,-1,-5,126,126
180 VDU19,2,6,0,0,0
190 VDU23;8202;0;0;0;
200 PROCGR_SHUTTLE
210 PROCCount_Down
220 PROCLAUNCH
230 PROCSP_SHUTTLE
240 PROCLAND_SHUTTLE
250 END

```


BBC PROGRAM

```

260 DEFPROCGR_SHUTTLE
270 REM***** FUEL TANK *****
280 PROC_CIRCLE(640,700,140,300,1)
290 GCOL0,0:PROC_CIRCLE(600,830,100,200,0)
300 GCOL0,3:PROC_RECT(505,250,275,550,1)
310 GCOL0,0
320 MOVE500,806:DRAW800,806:MOVE500,650:DRAW800,
650
330 FORL=500T0780STEP16:MOVE,806:DRAWL,650:NEXT
340 GCOL0,2
350 PROC_TRI(610,995,660,995,638,1020,1)
360 REM***** LEFT ROCKET BOOSTER *****
370 GCOL0,1
380 PROC_TRI(330,30,490,30,425,300,1)
390 GCOL0,3
400 PROC_TRI(310,80,502,80,425,400,1)
410 PROC_RECT(335,120,150,620,1)
420 GCOL0,1
430 FORL=640T0300STEP-60:MOVE335,L:DRAW485,L:NEX
T
440 FORL=300T0150STEP-25:MOVE335,L:DRAW485,L:NEX
T
450 MOVE335,680:DRAW485,680:MOVE335,688:DRAW485,
688
460 GCOL0,3
470 PROC_TRI(335,750,485,750,410,880,1)
480 GCOL0,0
490 MOVE335,820:DRAW485,820
500 GCOL0,3:PROC_RECT(492,700,6,30,1)
510 REM***** RIGHT ROCKET BOOSTER *****
520 GCOL0,1:PROC_TRI(800,30,960,30,880,300,1)
530 GCOL0,3:PROC_TRI(780,80,972,80,876,400,1)
540 PROC_RECT(800,100,155,640,1)
550 GCOL0,1
560 FORL=640T0300STEP-60:MOVE800,L:DRAW950,L:NEX
T
570 FORL=300T0150STEP-25:MOVE800,L:DRAW950,L:NEX
T
580 MOVE800,680:DRAW950,680:MOVE800,688:DRAW950,
688
590 GCOL0,3:PROC_TRI(800,750,950,750,875,880,1):
GCOL0,0:MOVE800,820:DRAW950,820
600 GCOL0,3:PROC_RECT(788,700,6,30,1)
610 REM***** SPACE SHUTTLE *****
620 GCOL0,3:PROC_CIRCLE(650,520,90,220,1):GCOL0,
0:PROC_CIRCLE(650,520,90,220,0)
630 REM***** WINGS *****
640 GCOL0,3:PROC_TRI(430,420,860,420,640,700,1)
650 PROC_TRI(240,290,640,590,640,240,1):GCOL0,0:
FORL=506T0526STEP4:MOVE,518:DRAWL+56,610:NEXT:GCO
L0,3
660 PROC_TRI(240,290,240,240,640,240,1)
670 PROC_TRI(240,240,640,240,640,200,1)
680 PROC_TRI(1040,290,640,590,640,240,1):GCOL0,0
:FORL=732T0718STEP-4:MOVE,610:DRAWL+48,516:NEXT:G
COL0,3
690 PROC_TRI(1040,290,1040,240,640,240,1)
700 PROC_TRI(1040,240,640,240,640,200,1)
710 GCOL0,0:MOVE580,650:DRAW580,300:MOVE720,650:
DRAW720,300
720 FORL=600T0330STEP-66:MOVE580,L:DRAW720,L:NEX
T:MOVE580,315:DRAW720,315:MOVE650,600:DRAW650,300
730 MOVE580,670:DRAW710,670
740 GCOL0,2:PROC_TRI(634,735,670,735,652,745,1):
GCOL0,0:MOVE630,730:DRAW680,730
750 PROC_RECT(630,690,40,20,0):PLOT69,639,700:PL
OT69,639,696
760 PLOT69,650,700:PLOT69,650,696:PLOT69,662,700
:PLOT69,662,696
770 PLOT69,635,680:PLOT69,650,680:PLOT69,665,680
780 GCOL0,2:PROC_RECT(595,620,20,30,1):PROC_TRI(
595,650,700,650,650,660,1):PROC_RECT(680,620,20,30
,1)
790 PROC_TRI(615,635,615,650,640,650,1):PROC_TRI
(680,635,680,650,655,650,1)
800 GCOL0,3:PROC_TRI(635,630,655,630,645,670,1)
810 MOVE630,630:DRAW590,650:MOVE670,635:DRAW720,
660
820 GCOL0,0:PROC_RECT(630,610,10,10,0):PROC_RECT
(650,610,10,10,0)
830 GCOL0,0:PROC_TRI(562,612,580,612,580,640,1)
840 PROC_TRI(720,612,732,612,725,640,1)
850 GCOL0,2
860 FORL=500T0520STEP4:MOVE,512:DRAWL-158,360:N
EXT
870 FORL=770T0790STEP4:MOVE,512:DRAWL+158,360:N
EXT
880 FORL=358T0338STEP-4:MOVE,358:DRAWL-94,292:N
EXT

```

```

890 FORL=932T0952STEP4:MOVE,358:DRAWL+94,292:NE
XT
900 FORL=242T0262STEP4:MOVE,288:DRAWL,256:NEXT
910 FORL=1026T01046STEP4:MOVE,288:DRAWL,256:NEX
T
920 PROC_RECT(262,256,780,22,1)
930 GCOL0,0:MOVE426,252:DRAW426,225:MOVE926,252:
DRAW926,225
940 MOVE200,255:DRAW550,240:MOVE1124,255:DRAW710
,240
950 VDU5:MOVE750,340:PRINT"USA":VDU4
960 GCOL0,1:PROC_RECT(480,310,60,30,1)
970 GCOL0,3:FORL=314T0340STEP8:MOVE480,1:DRAW540
,I:NEXT

```

```

980 GCOL0,2:PROC_RECT(480,330,20,10,1)
990 REM***** SHUTTLE ENGINES *****
1000 GCOL0,3:PROC_CIRCLE(600,213,50,100,1):GCOL0,
0:PROC_CIRCLE(600,213,50,100,0)
1010 GCOL0,3:PROC_CIRCLE(700,213,50,100,1):GCOL0,
0:PROC_CIRCLE(700,213,50,100,0)
1020 PROC_RECT(540,100,210,100,1)
1030 GCOL0,2:Y=50:FORC=164T0194STEP10:Y=Y-5:PROC_
CIRCLE(590,C,Y,10,1):NEXT
1040 Y=50:FORC=164T0194STEP10:Y=Y-5:PROC_CIRCLE(7
10,C,Y,10,1):NEXT
1050 REM***** TAIL FIN *****
1060 GCOL0,3:PROC_TRI(650,100,635,250,665,250,1):
PROC_TRI(635,250,665,250,650,310,1)
1070 GCOL0,0:MOVE650,190:DRAW650,300
1080 ENDPROC
1090 DEFPROC_TRI(X1,Y1,X2,Y2,X3,Y3,F)
1100 MOVEX1,Y1
1110 IFF=0 DRAWX2,Y2 ELSE MOVEX2,Y2
1120 IFF=0 DRAWX3,Y3:DRAWX1,Y1 ELSE PLOT85,X3,Y3:
MOVEX1,Y1
1130 ENDPROC
1140 DEFPROC_RECT(X,Y,L,W,F)
1150 MOVEX,Y:DRAWX+L,Y
1160 IFF=0 DRAWX+L,Y+W ELSE PLOT85,X,Y+W
1170 IFF=0 DRAWX,Y+W ELSE PLOT85,X+L,Y+W
1180 MOVEX,Y+W:IFF=0 DRAWX,Y ELSE MOVEX,Y
1190 ENDPROC
1200 DEFPROC_CIRCLE(X,Y,R1,R2,F)
1210 LOCALZ,XZ,YZ
1220 MOVEX+R1,Y:MOVEX+R1,Y
1230 AZ=0:FORZ=0T06STEP.2
1240 XZ=X+R1*C(AZ):YZ=Y+R2*S(AZ):AZ=AZ+3
1250 IFF<>1 DRAWXZ,Y+YZELSE PLOT85,XZ,Y+YZ:PLOT8
5,XZ,Y-YZ
1260 IFF=1 AND Z>3.2 Z=6
1270 NEXT
1280 ENDPROC
1290 DEFPROC_LAUNCH
1300 GCOL0,3
1310 SOUND0,-15,4,200
1320 PRINTTAB(0,31):PROC_RECT(330,5,155,53,1)
1330 PROC_RECT(800,5,160,53,1)
1340 PROC_TRI(550,190,630,190,590,100,1):PROC_TRI
(750,190,670,190,710,100,1)
1350 W=310:E=500
1360 FORS=0T045:PRINTTAB(0,31)
1370 W=W-20:E=E+20
1380 FORD=1TOW:NEXTD
1390 PROC_TRI(W,5,E,5,400,80,1)
1400 PROC_TRI(W+470,5,E+480,5,870,80,1)
1410 NEXT
1420 CLS
1430 ENDPROC
1440 DEFPROC_Count_Down
1450 FORC=10T00STEP-1
1460 SOUND1,1,C*10,20
1470 FORM=28T04STEP-1:PRINTTAB(2,M);C;" ":PRINT
TAB(2,M+1);":NEXT
1480 FORD=1T0100:NEXTD
1490 PRINTTAB(2,3);":
1500 NEXT
1510 ENDPROC
1520 DEFPROCSP_SHUTTLE
1530 FORI=1T03:VDU19,I,0,0,0,0:NEXT
1540 GCOL0,3
1550 PROC_CIRCLE(200,0,250,100,1)

```


BBC PROGRAM

```

1560 PROC_CIRCLE(300,60,200,80,1)
1570 PROC_RECT(300,0,800,140,1)
1580 GCOL0,2
1590 PROC_RECT(170,110,40,10,1)
1600 GCOL0,0
1610 MOVE300,70: DRAW990,70
1620 FORI=300TO990STEP172: MOVEI,70: DRAWI,140: NEXT
1630 GCOL0,3: PROC_TRI(1000,140,1100,140,1190,350,
1): PROC_TRI(1140,140,1190,350,1250,350,1)
1640 PROC_TRI(1100,140,1150,140,1180,330,1)
1650 PROC_CIRCLE(1150,100,150,50,1): GCOL0,0: PROC_
CIRCLE(1150,100,150,50,0)
1660 PROC_RECT(1110,50,200,100,1)
1670 VDU19,1,1,0,0,0: VDU19,2,6,0,0,0: VDU19,3,7,0,
0,0
1680 GCOL0,2: Y=50: FORC=100TO103: Y=Y-10: PROC_CIRCL
E(1140+Y,C,10,Y,1): NEXT
1690 GCOL0,3: PROC_RECT(1110,80,50,60,1): GCOL0,0: P
ROC_RECT(1110,80,50,60,0)
1700 GCOL0,2: Y=50: FORC=20TO23: Y=Y-10: PROC_CIRCLE(
1115+Y,C,20,Y,1): NEXT
1710 GCOL0,3: PROC_TRI(1100,5,1100,50,1120,20,1)
1720 GCOL0,0
1730 FORI=170TO68STEP-1: MOVE300,I: DRAW990,I: NEXT
1740 REM***** SATELITE *****
1750 VDU28,10,28,28,1
1760 GCOL0,1: PROC_CIRCLE(550,250,100,20,1): PROC_C
IRCLE(550,120,100,20,1)
1770 GCOL0,3
1780 PROC_RECT(440,125,220,118,1)
1790 GCOL0,1: PROC_RECT(460,190,60,30,1)
1800 GCOL0,3: FORI=194TO220STEP8: MOVE460,I: DRAW520
,I: NEXT
1810 GCOL0,2: PROC_RECT(460,210,20,10,1)
1820 GCOL0,0: PROC_RECT(450,130,200,30,0)
1830 REM*** LAUNCH SATELITES *****

```

```

1840 SOUND0,-8,4,40
1850 FORI=0TO48: PRINT
1860 IFI>25THENFORD=1TO80: NEXTD
1870 NEXTI
1880 GCOL0,1: PROC_RECT(75,850,360,60,1): PROC_RECT
(670,850,360,60,1)
1890 GCOL0,3: FORI=80TO440STEP10: MOVEI,850: DRAWI,9
10: MOVEI+595,850: DRAWI+595,910: NEXT
1900 SOUND1,2,100,100: SOUND1,2,110,100: SOUND1,2,1
00,100
1910 VDU28,0,31,39,20
1920 VDU30: FORI=1TO12: VDU11
1930 FORD=1TO1000: NEXTD
1940 NEXTI
1950 VDU26: FORI=0TO10: PRINTTAB(0,31); " "
1960 FORD=1TO1000: NEXTD, I
1970 ENDPROC
1980 DEFPROC LAND_SHUTTLE
1990 VDU19,0,7,0,0,0,19,3,0,0,0,0
2000 GCOL0,3
2010 MOVE600,600: DRAW640,600
2020 FORI=0TO340STEP10
2030 MOVE340-I,580-I: DRAW600,600: MOVE640,600:
DRAW940+I,580-I: DRAW340-I,580-I
2040 FORD=1TO200: NEXTD: GCOL0,0: MOVE340-I,580-
I: DRAW600,600: MOVE640,600: DRAW940+I,580-I: DRAW340-
I,580-I: GCOL0,3
2050 NEXT
2060 CLS
2070 A=I
2080 FORI=0TO150STEP5: MOVE0,A: DRAW600-I,640-I: M
OVE1279,A: DRAW640+I,640-I: DRAW600-I,640-I
2090 FORD=1TO100: NEXT
2100 GCOL0,0: MOVE0,A: DRAW600-I,640-I: MOVE1279
,A: DRAW640+I,640-I: DRAW600-I,640-I: GCOL0,3
2110 NEXT
2120 MOVE0,A: DRAW600-I,640-I: MOVE1279,A: DRAW640
+I,640-I: DRAW600-I,640-I
2130 PRINTTAB(10,5) "SHUTTLE LANDED SAFELY"
2140 ENDPROC

```

Home Computing WEEKLY

COME AND JOIN US

We are looking for an enthusiastic journalist to join Britain's brightest computer magazine. An interest in, and a knowledge of, home computers would be a decided advantage, but is not essential. However, an ability to work accurately and under pressure most definitely is!

We would imagine that the successful applicant has already had magazine experience and is presently looking to advance his/her career. If you know otherwise, we are open to persuasion! A competitive salary, which is negotiable, will be paid.

Apply with full C.V. to: Paul Liptrot, Home Computing Weekly,
145 Charing Cross Rd, London WC2H 0EE.
All applications treated in strictest confidence.

HOME COMPUTING WEEKLY 29 November 1983 Page 13

LUNAR JETMAN – For the 48K Sinclair ZX Spectrum
LUNAR JETMAN – The Ultimate Intergalactic G.A.S. (Graphic Arcade Simulation) Adventure Space Battle.

LUNAR JETMAN – Arcade standard, 100% machine code, incredible sound effects, amazing smooth high resolution graphics, the totally new addictive concept and all those extra features you expect from the **ULTIMATE** games people.

Design – The **ULTIMATE PLAY THE GAME** design team.

PSSST – 19/48K ZX Spectrum

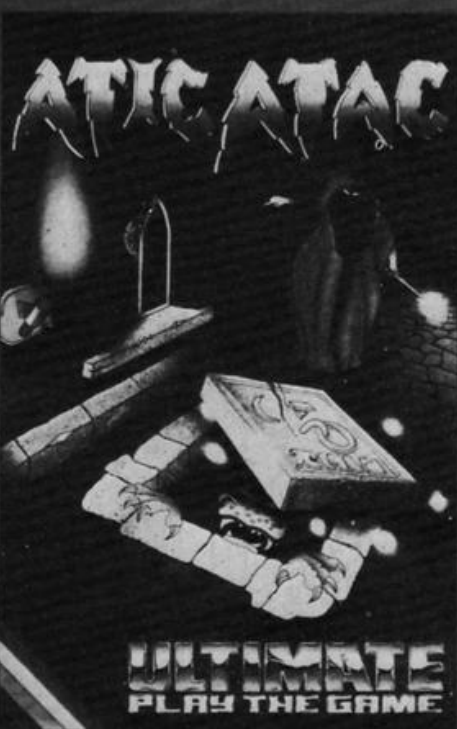


JET PAC – 16/48K ZX Spectrum or 8K Expanded VIC 20

These games should be available from **W.H. SMITHS, BOOTS, JOHN MENZIES, LASKYS, SPECTRUM CENTRES**, other large department stores and all good major software retailers. Alternatively, send the coupon to **ULTIMATE PLAY THE GAME** for immediate dispatch by return, subject to availability.

£5.50 each including VAT, first class postage and packing within UK.

LUNAR JETMAN – 48K ZX Spectrum



ATIC ATAC – 48K ZX Spectrum

COOKIE – 16/48K ZX Spectrum



TRANZ AM – 16/48K ZX Spectrum

ATIC ATAC – For the 48K Sinclair ZX Spectrum

ATIC ATAC – The super spooky 3D Horror G.A.S. (Graphic Arcade Simulation) Adventure Game.

ATIC ATAC – Arcade standard, 100% machine code, incredible sound effects, amazing smooth high resolution graphics, the totally new addictive concept and all those extra features you expect from the **ULTIMATE** games people.

Design – The **ULTIMATE PLAY THE GAME** design team.

Dealer enquiries welcome. Phone (0530) 411485

Post this coupon to:
ULTIMATE PLAY THE GAME, The Green, Ashby de la Zouch, Leicestershire, LE6 5JU

Please rush me the following:

☐ **LUNAR JETMAN**

☐ **ATIC ATAC**

☐ **JET PAC**

☐ **COOKIE**

☐ **TRANZ AM**

☐ **PSSST**

☐ **JET PAC (8K Expanded VIC 20)**

I enclose cheque/PO for £.....

Name

Address

.....

.....

.....

Post Code

ULTIMATE PLAY THE GAME is a Trade name of Ashby Computers & Graphics Ltd., The Green, Ashby de la Zouch, Leics. LE6 5JU

COMPETITION

£1,000-worth of QUICKSILVA tapes must be won

There's 40 chances to win big-name games from leading software house Quicksilva in this fun spot the difference competition. And even if you're not lucky enough this time, you can enrol in the Game Lords Club free of charge

EVERYONE stands to gain in this week's free competition.

You could win a share of £1,000-worth of great Quicksilva software for the Spectrum, BBC, Commodore 64 or ZX81.

And, even if you're not among the 40 winners, you qualify for free membership of the QS Game Lords Club.

Members, who would usually pay £1 to join, get a £1 discount voucher, a club card, special offers and a quarterly magazine packed with articles, comic strips and stories.

The How to Enter section tells you how to get your free membership.

The competition prizes will be in the form of 40 vouchers worth £25 each for software ordered by post from Quicksilva.

You will receive a complete list of all the company's top-selling titles from which to make your choice.

The winners will be the senders of the first 40 correct entries we open at noon on Friday December 16, regardless of computer, provided the instructions below are followed.

How to enter

Study the two cartoons and circle in ballpoint pen all the differences you find.

Complete the coupon fully, including a tick in the box if you would

like free membership of the Game Lords Club.

Then cut around the broken lines, seal the drawing with coupon attached in an envelope — and write clearly on the back the number of differences you found. Add the letter G to the back of the envelope for free membership of the Game Lords Club.

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

Entries close at first post on Friday December 16.

Copies of the coupon will not be accepted. The solution and the names of the winners will be published in the news columns of Home Computing Weekly.

The £25 vouchers and membership particulars will arrive from Quicksilva within 28 days of the publication date of that issue.

The rules

The first 40 correct entries drawn at noon on Friday December 16, 1983, will win the prizes. Coupons which are not fully completed and envelopes without the number of differences found on the back will not be considered.

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

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

Quicksilva Competition

Entry Coupon

Name _____

Address _____

_____ post code _____

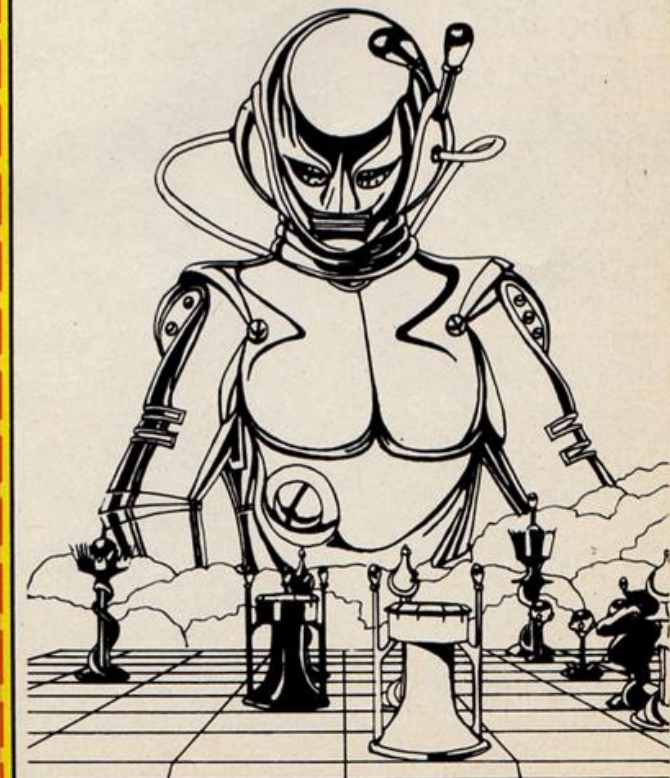
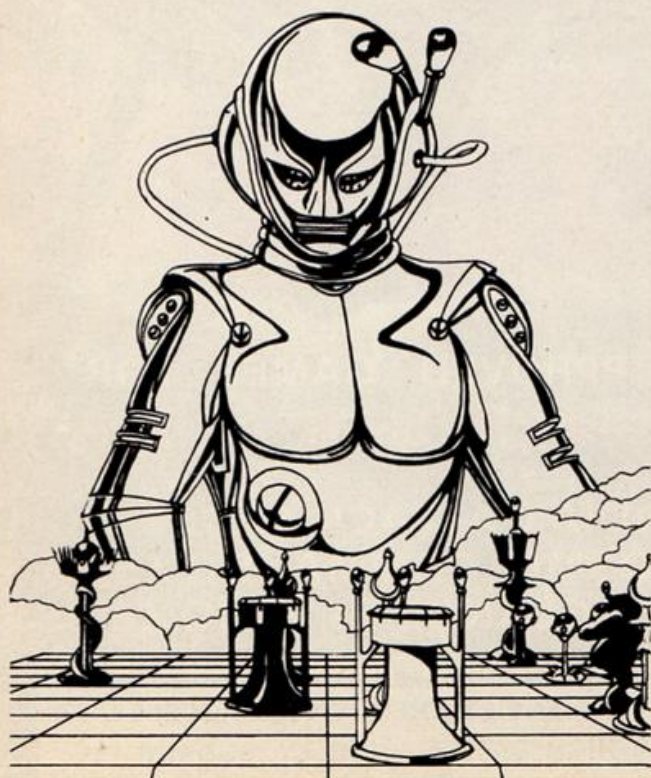
Computer _____

Number of differences found _____

Please enrol me for free membership of the Game Lords Club (tick box)

☐

Post to Quicksilva Competition, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Closing date: first post Friday December 16. Don't forget to write the number of differences you found on the back of the envelope and, if you would like free membership of the Game Lords Club, a large letter G



ANIROG SOFTWARE

COMPUTER GAMES
OF TOMORROW
AVAILABLE
NOW!

**AS SEEN ON
T.V.!!**



HEXPERT



MOON BUGGY



SKRAMBLE



3D TIME TREK

COMMODORE 64

NEW

GALAXY

AVOID CAPTURE BY THE ALIEN MOTHER SHIPS TRACTOR BEAM AS THE FIGHTERS DIVE BOMB YOU. 100 SCREENS WITH A TWO PLAYER OPTION. K.B./J.S. £7.95

**NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE**

INDIAN ATTACK £5.95
COSMIC COMMANDO £5.95
VENGEANCE OF ZENO £5.95

KONG K.B./J.S. £7.95

4 SCREENS WITH BRILLIANT ANIMATED GRAPHICS

SKRAMBLE J.S. £7.95

6 SECTORS TO TEST YOUR SKILL

HEXPERT J.S. £7.95

TRAIN BERT TO BE HEXPERT ON THIS 3D HEXAGONAL PYRAMID

MOON BUGGY J.S. £7.95

MANOEUVRE YOUR PATROL CRAFT OVER GIANT POT HOLES AS YOU DEFEND THE MOON BUGGY FROM ALIEN ATTACK

FROG RUN K.B./J.S. £5.95

A POPULAR ARCADE GAME. FUN FOR THE WHOLE FAMILY

3D TIME TREK K.B./J.S. £5.95

SPECTACULAR 3D GRAPHICS. STAR TREK GAME

DUNGEONS K.B. £6.95

ENTER THE REALMS OF FANTASY IN THIS ROLE PLAYING GAME

DARK DUNGEONS K.B. £6.95

2ND IN THE SERIES OF FOUR. DEFINITELY NOT FOR THE FAINT HEARTED

24 HR. CREDIT CARD SALES HORLEY (02934) 6083
PAYMENT BY CHEQUE, P.O., ACCESS/VISA
8 HIGH STREET HORLEY, SURREY.
Overseas 50p post & packaging

TRADE ENQUIRIES WELCOME
29, West Hill, Dartford, Kent. (0322) 92513/8

Special collections

Tapes containing several programs for the price of one can mean good value for money — if the programming's up to standard. Our reviewers look at some recent collections

Syphax 48K Spectrum £3.50

Rosetta Software, 2 Rosetta Close, Wivenhoe, Essex CO79RX

Rosetta is the trade name of Mark Alston, aged 13, who has produced an extremely praiseworthy package in Syphax. It's dial-a-page Teletext style magazine of puzzles, facts, quizzes, demon-

stration programs and so on.

Loading takes two or three minutes but is very reliable. To start, you simply enter your chosen three-digit page number from the displayed index and the selected subject is screened very quickly.

Enter an alternative reference and your Spectrum quickly "thumbs through" the magazine to produce your next selection.

Mark has done a splendid job in compiling Syphax, and I enjoyed

browsing through the magazine.

But the main bonus is that the program is designed so that you can alter any page to suit your needs, so that it would form a good base for a family, club or class magazine or for computer pen-pal correspondence.

It may also prove of value to a business user, with each page holding customer names and addresses and other information.

At the price, Syphax is a bargain, and I look forward to Rosetta's next offering with great interest.

D.J.

| | |
|-----------------|-----|
| instructions | 90% |
| playability | 90% |
| display | 90% |
| value for money | 95% |



Octal-1/Keys of the Castle TI-99/4A (Extended BASIC) £11

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

The aliens appear as invading Spiders in Octal-1, which has optional keyboard or joystick control.

From your base in the centre of the screen, you must ward off three waves of attack for which different points are scored.

Your Octal base may be rotated through eight positions, either left or right. You fire with twin Octazer bolts. The game ends when your base is destroyed and the three highest scores shown.

In Keys of the Castle you have

three castles to explore. Each has six floors with a maze layout and increasing hazards at each level including darkened hallways and electrified walls.

Your objective is to explore all the castles. To gain access to the next level, keys have to be collected from rooms, some of which are guarded, and taken to their correspondingly coloured chests.

All your explorations are made in a race against the clock. The game ends either when you succeed in your mission, sustain ten wounds, or run out of time. A final score is given.

J.W.

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



Task Force/ Demolish/ Cosmos 32K BBC £7.50

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

RH's three-in-one cassette gives three fairly standard games.

Task Force is a tactical air/sea battle played on a coloured map.

Two players take turns to move a fleet of six ships round the coastline of an island.

Ships, guns and aircraft may be used to destroy enemy vessels, with all controls prompted for on-screen.

Full instructions are given in a well-written program which nonetheless suffers from slowness and average graphics, and might prove slightly boring after a few hours playing.

The second game, Demolish, is

a cross-breed of Invaders and Breakout, where you must destroy crumbling walls with your laser base. This game uses 'block' graphics.

The last game, Cosmos, is a rather weird version of Space Invaders, with huge jerky aliens and a slow-firing base.

All the games in this package suffer from the lack of originality inherent in many software releases, but do offer three games for the price of one. Perhaps new

BBC owners might enjoy them.

D.A.

| | |
|-----------------|-----|
| instructions | 70% |
| playability | 55% |
| graphics | 45% |
| value for money | 65% |



Fun-Pac TI-99/4A £6.95

Virgin Games, 61-63 Portobello Road, London W11

Fun-Pac contains two programs: Supermouse and Let's Go to the Races.

Supermouse features those two cartoon cat and mouse favourites, Tom and Gerry.

Gerry has the task of eating pieces of cheese, which are randomly distributed in a simple maze, while pursued by Tom. If all the pieces are eaten then Gerry becomes Supermouse and chases Tom.

At various locations in the maze are mouseholes through which only Gerry may pass. The number of these decrease through the six skill levels as the cheeses to eat increase.

Failing to eat sufficient cheese, however, causes Gerry to slow

down, making capture by Tom more likely.

Let's Go to the Races is a game for up to six players. Each player in turn controls a horse along a set racecourse, obtaining the least number of penalties in the shortest possible time.

There are a possible nine courses to choose from, each of which has six laps to complete by moving across and down the screen, but having a different layout of hurdles and water-jumps.

As each horse finishes the course the time taken and total score, including penalty points, are displayed, but when all horses have run no overall winner is declared.

J.W.

| | |
|-----------------|-----|
| instructions | 90% |
| playability | 70% |
| graphics | 70% |
| value for money | 75% |



Games Tape One TI-99/4A £3.50

Firefly, 48 Dorset Street, London W1H 3FH

Games Tape One contains three programs: Trapt, Star-Storm and Astro-Run. As each is fairly short, all are loaded together then selected from a menu.

Trapt I found by far the best of the three. The object is to move a man round a courtyard while the computer attempts to block your path with his men. You score for each move until completely surrounded.

The computer may not be the most witty of opponents, yet is challenging enough to make this a simple but amusing game to play.

Star-Storm is somewhat slow-moving, and could be made more difficult than it is. You must avoid

oncoming stars as they scroll up the screen towards your spaceship.

Although clusters of stars make a difficult path in the middle of the screen, by staying towards the edges they become so sparse as to hardly offer any challenge at all.

In Astro-Run you manoeuvre from side to side avoiding asteroid showers which gradually fill the screen. Each complete traverse constitutes an astro-run. Should you attempt to move off the screen the program crashes with a BAD VALUE IN 8440.

Overall, worth buying for Trapt alone but neither of the other two games has that same addictive flavour.

J.W.

| | |
|-----------------|-----|
| instructions | 80% |
| playability | 60% |
| graphics | 60% |
| value for money | 70% |



Home
Computer
Centre

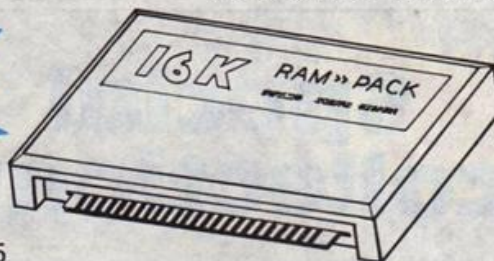


29 Millcroft, Crosby, Liverpool L23 9XJ

Tel: 051-727 8050

Special
Offer

VIC 20 and CBM 64 are reg'd trade marks
Commodore Business Machines



16K STANDARD
£27.95

- VIC 20 16K STANDARD RAM PACK — £27.95
- VIC 20 16K SWITCHABLE RAM PACK — £35.95
- VIC 20 32K SWITCHABLE RAM PACK — £49.95

ALL RAM PACKS CARRY 12 MONTHS GUARANTEE

- VIC 20 4 SLOT SWITCHABLE MOTHERBOARD — £28.95
- CBM 64 4 SLOT SWITCHABLE MOTHERBOARD — £29.95

ASTERFRET TRADING LTD. INCORPORATES HOME COMPUTER CENTRE.

Please allow up to 21 days for delivery.
All prices include V.A.T., postage and packing.

If you wish to be added to our mailing list,
please tick the appropriate box

PLEASE SEND ME

Name

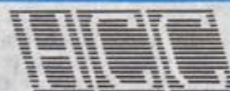
Address

Qty

- | | | |
|---------------------------------|---------------------------------------|--|
| <input type="checkbox"/> VIC 20 | <input type="checkbox"/> Dragon 32 | <input type="checkbox"/> 16K Std. Ram Pack |
| <input type="checkbox"/> CMB 64 | <input type="checkbox"/> TI99/4 | <input type="checkbox"/> 16K Switchable Ram Pack |
| <input type="checkbox"/> BBC | <input type="checkbox"/> ZX Spectrum | <input type="checkbox"/> 32K Switchable Ram Pack |
| <input type="checkbox"/> Lynx | <input type="checkbox"/> Electron | <input type="checkbox"/> VIC 20 4 Slot Motherboard |
| <input type="checkbox"/> Oric | <input type="checkbox"/> Colour Genie | <input type="checkbox"/> CBM 64 4 Slot Motherboard |

I enclose Cheque/PO for £

Home
Computer
Centre



HCW39

NEW!
For ZX Spectrum 48K



Computertutor can give your child a head start with games that really make fun out of learning

Children of today are fascinated by computers. With micros already used in schools throughout the country their involvement in education and in our daily lives is increasing all the time.

To give young children a head start we've created, with parents, teachers and, of course, children, the Clever Clogs series, designed to appeal to children in the 3-7+ year old age group. Help them develop basic skills, stimulate imagination and increase their self-confidence. Unlike similar products, each Clever Clogs program offers a wider choice of games to play. And each game can be made more 'difficult' by simple editing of the tape and resetting new questions. In this way you can keep up with your child's progress - even link the questions into work they're doing at school.

The Clever Clogs series can be used by your whizzkid on their own with initial help from you.

Price of each program £6.50
(incl Vat, P & P). Overseas orders
£1 extra per tape for airmail delivery.
Money back guarantee.

Trade enquiries invited.

SPECIAL
LAUNCH OFFER
Buy 3 games - get
one C20 blank
tape FREE!



PARTY TIME for Age 3 yrs +

With parent's help even tiny tots will love to play these party games. They can 'blow out' the candles on a cake, sing along with nursery rhymes, even draw on the screen. If you have a printer you can record your Clever Clogs artistic efforts and watch their progress as they develop new skills. Because each Clever Clogs program offers a choice of games to play and has the facility to increase the 'difficulty' factor your children won't grow out of them so quickly.

JUNGLE JUMBLE for Age 5 yrs +

At this age less parental help and guidance are necessary. Your child will continually be seeking new experiences and will enjoy his/her mind being challenged. Clever Clogs satisfies both criteria.

Correct answers to questions build up a picture of an animal - is it a real one? That's up to the player. Take your choice and create your own unique zoo. Then enter the great Safari Park chase... the possibilities are endless!

WHIZZ QUIZ for Age 7 yrs +

A game of skill and chance for 1-4 players that will get your whizzkids thinking hard. But Clever Clogs of this age like a challenge. You can proceed from the general knowledge questions already programmed and you can enter up to 100 questions of your own - there's tremendous scope here for the really clever, Clever Clogs! Watch them develop their three 'R's' and in a way that will fascinate you as much as them.

*Also for ZX 81 (16K)

Please send me: I enclose cheque/PO payable to Computertutor, or please debit my credit card, for the total £

copies of PARTY TIME (3 yrs +) at £6.50 per tape
copies of JUNGLE JUMBLE (5 yrs +) at £6.50 per tape
copies of WHIZZ QUIZ (7 yrs +) at £6.50 per tape
*Also for ZX 81 (16K)

Name

Address

Card no.

Postcode

Please allow 7 days for delivery

HCW/11/83

Computertutor, P.O. Box 3, St. Neots, Huntingdon.
Cambs. PE19 3NW Telephone: (0480) 213969

Will you be the hero of the galaxy?

We're all depending on you and your starship. David Wilkinson's game for the VIC-20, plus 3K of RAM, will decide our fate

How it works

1-16 set up variables
17-55 menu
100-135 move
150-202 short range scan
250-298 long range scan
300-350 laser
400-445 missile
450-470 log record
500-530 current status
700-810 messages
1000-1230 sound effects
1500-1600 messages
9100-9200 title pages

Main variables

LS display of quadrant
KL quadrant No. of Klingon
SH quadrant No. of starship
K1, K2, S1, S2 co-ordinates
FU energy
MI missiles
KD Klingons
SD starships
X,Y co-ordinates of spaceship
Q quadrant

Hints on conversion

VIC graphics used are: Commodore key plus Q, W, E, R, A, S, Z, X and shift key plus Q, A, X, +, *, -.

POKES: 36879,25 white screen, 36878 volume, 36874 sound channel, 198,0 clears keyboard buffer, 7680-8185 screen locations.

The VIC clock is used to time the player.

You are alone, 10,000 miles from Earth, and somewhere out there are 20 Klingon ships. If you don't find and destroy them they'll wreak mayhem on the whole of your galaxy.

Although you don't know their positions, your ship is equipped with short and long range scans... plus lasers and missiles.

Your short range scan gives you a visual display of the quadrant you are in and the long range scan gives you the number of Klingons and starships in your quadrant and the eight adjoining quadrants.

In each quadrant there are two numbers. The one on the left tells you the number of Klingon ships and the number on the right is the total of starships.

You can choose a time limit,

one to eight minutes, by which you must shoot a ship. This also increases your energy level.

You can also choose a difficulty level, from one (hard) to easy (eight).

The galaxy is a five by 12 grid of quadrants and each quadrant is an eight by eight grid of co-ordinates.

How to move:

Right add the required number of co-ordinates to X

Left subtract required number from X

Down add required number to Y

Up subtract required number from Y

Note: after shooting a ship enter it into the log record by a long range scan of the quadrant.

```

0 00T09100
1 DIML$(60),KL(20),SH(4),K1(4),K2(4),S1(4),S2(4):FU=2000:MI=4
2 FORI=1T020:LS(I)="":NEXT I:KD=20:SD=4:TI$="000000"
3 FORI=1T020:KL(I)=INT(RND(1)*60)+1:NEXT I
4 FORI=1T020:SH(I)=INT(RND(1)*60)+1:NEXT I
5 X=INT(RND(1)*40)+1:Y=INT(RND(1)*96)+1
6 POKE36878,15
7 SO=36874
15 Q=INT((X-1)/8)+1+INT((Y-1)/8)*5
16 FORI=1T020:IFKL(I)=0THENNEXT I:00T0700
17 PRINT"Q":POKE198,8
18 PRINT
19 PRINT
20 PRINT" 0=MOVE"
22 PRINT" 1=SHORT RANGE"
24 PRINT" 2=LONG RANGE"
26 PRINT" 3=LASER"
28 PRINT" 4=MISSILE"
30 PRINT" 5=SHIP'S LOO"
32 PRINT" 6=CURRENT STATUS"
34 PRINT"X0000=Y,X,Y=V:V:PRINT"QUADRANT":Q
35 FORI=1T020:IFKL(I)=0THEN37
36 NEXTI:00T040
  
```


Canal 64 are red's waste water.

```

350 GOSUB1000:GOTO15
400 PRINT"J" KW=0
410 IF#1=0THENPRINT"YOU HAVE NO MISSILES LEFT!!!"FOR I=1TO3000:NEXT GOTO1500
412 IFAND(1<15)THENPRINT"SELF DESTRUCTED!!!"GOTO1500
415 MI=MI-1
420 FOR I=1TO20 IFKL(I)=0THENKL(I)=0 KD=KD-1
425 NEXTI
430 FOR I=1TO4 IFSH(I)=0THENSH(I)=0 FU=FU+500 SD=SD-1:TI$="000000"
435 NEXTI
440 PRINT"EVERYTHING IN SIGHT ELIMINATED!!!"
442 GOSUB1210:GOTO15
445 FOR I=1TO3000:NEXT GOTO15
450 PRINT"J"
455 FOR I=1TO60:PRINT "L$(I):";
460 IF I/5=INT(I/5)AND I<60THENPRINT"
";
470 NEXTI PRINT"POKE198,0:WAIT199,1:POKE198,0:GOTO15
500 PRINT"CURRENT STATUS"
505 PRINT"
510 PRINT"XG FUEL="FU
512 PRINT" MISSILES="MI
515 PRINT" KLINGONS="KD
520 PRINT" STAR SHIPS="SD
525 PRINT" TIME EXPIRED="LEFTS(RIGHTS(TI$,4),2)-RIGHTS(TI$,2)
530 POKE198,0:WAIT199,1:POKE198,0:GOTO15
700 PRINT"WELL DONE"
705 PRINT"YOU HAVE KILLED ALL THE KLINGONS."
710 PRINT"END
800 PRINT"YOU HAVE BEEN IN SPACETO LONG INBETWEEN RESTS00000"
810 END
1000 POKES0,228:FOR I=1TO700:NEXT
1010 FOR I=15TO8STEP-1:POKE36978,I:FOR L=1TO100:NEXTL,I:POKES0,0:POKE36978,15:RETU
RN
1200 POKES0,228:FOR I=1TO700:NEXT:POKES0,0
1210 POKES0+3,178:FOR I=1TO2000:NEXT:
1220 FOR I=15TO8STEP-1:POKES0+4,I:FOR L=1TO100:NEXTL,I:POKES0+3,0:POKES0+4,15
1230 RETURN
1500 GOSUB1210
1505 MI=MI-1:IFAND(1<15)THEN1550
1510 PRINT"YOUR SHIP IS UNHARMED AND YOU CAN PROCEED WITH YOUR MISSION!!!"
1520 FOR I=1TO2000:NEXT GOTO15
1550 IFAND(1<15)THEN1600
1560 PRINT"YOUR SHIP WAS DAMAGED BY THE BLAST AND YOU HAVE LOST ENERGY!!!"
1570 FU=FU-INT(RND(1)*400)+200:FOR I=1TO3000:NEXT GOTO15
1600 PRINT"YOUR SHIP HAS BEEN DESTROYED BY THE BLAST"END
9100 POKE36979,25
9101 PRINT"WELCOME ABOARD THE STARSHIP EXITPRISE!!"
9102 PRINT"YOU ARE STRANDED 1000LIGHT-YEARS FROM EARTH!YOUR MISSION!"
9103 PRINT"DESTROY THE KLINGONS IN YOUR GALAXY"
9104 PRINT" HIT A KEY"POKE198,0:WAIT199,1:POKE198,0
9110 PRINT"TIME LIMIT IN MINS 1-0"
9115 PRINT"1=HARD 8=EASY"
9120 GET$=IN$:"$="THEN9120
9130 A=VAL(R$):TM=A
9140 IF TM<10THEN8THEN9120
9145 PRINT"KLINGON--"PRINT"STARSHIP--"PRINT"YOUR SHIP--"
9150 PRINT" HIT A KEY"POKE198,0:WAIT199,1:POKE198,0
9200 GOTO1

```

TI-99/4A

One of the problems in writing programs for the TI-99/4A in TI BASIC is you never know how much memory you have used, or have left in which to continue or run your program. This problem does not arise with the Extended BASIC module, since the SIZE command tells you exactly how many bytes are free. But there is a way that it can be done in ordinary BASIC.

This simple addition to the program will give a fairly accurate guide.

Add this line at the very start of your program:

```
10 DIM (0,124)
```

Using a dummy two-dimensional array, this sets aside 1,000 bytes of memory. This memory cannot be used by the program.

Incrementing the first dimension of the array, ie DIM (1,124), means that a further 1,000 bytes of memory are

Keep incrementing the first dimension and run the program until the "memory full" message appears. You are then able to calculate how much

Don't forget to remove the dummy array after completing your program.

Andromeda Software



THERE'S NO PRESENT LIKE THE FUTURE.

THE WORLD'S FINEST PROGRAMMING TUTORIAL FOR ONLY £12.95.

Thousands who own, or would like to own home computers have yet to experience the feeling of discovery that comes when you write your own programs. Yet learning programming can be easy.

'Learn Basic' from Logic 3 is the ultimate development of the method first devised at Strathclyde University – a straightforward, easily understood tutorial written by Professor Andrew Colin and Veronica Colin, authors of Britain's best-selling tutorial package.

Using the method tested by university students and used successfully by over 200,000 home computer users, 'Learn Basic' runs on your own computer and explains everything in clear non-American English without jargon or computertalk. In a matter of hours, you will be writing programs that work.

Essentially, 'Learn Basic' and the rest of the 'Learn Computing' Series that will follow soon are designed for people who want to keep abreast of the computer age. For people who realise that understanding computers is the key to future success, at school, at work and as a parent.

Make your future, and your family's future, richer this Christmas

Get 'Learn Basic' by Logic 3 – two tapes and a full-size manual for Spectrum or Dragon (others soon) at just £12.95.

At that price, it's a gift.

Buy the Logic 3 'Learn Computing' Series at computer shops and major retail stores all over Britain. In case of difficulty, write to Logic 3 in Windsor.

TO: Logic 3 Ltd, Mountbatten House, Victoria Street, Windsor SL4 1HE.

If you would like to know more about using and programming a computer in your home, send this coupon for your free copy of our 16-page explanatory booklet "100 things you wanted to know about computers."

It will help you cut through the jungle of computer jargon, and give you news about software developments – even games. ☐

Or send for our software catalogue (tick either or both). ☐

Name _____

Address _____

LOGIC 3

I have already/intend to get a _____ microcomputer
(delete as inapplicable)

– THE KEY TO THE WORLD OF TOMORROW.

AGF

JOYSTICK INTERFACE II

for
Spectrum
or **ZX81**

NEW PRICE

ONLY
~~19.95~~
+£100PP
15.95

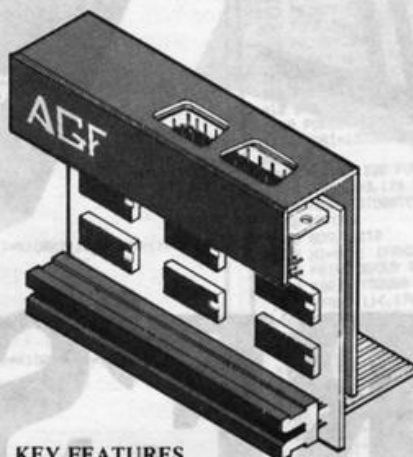
JOYSTICK INTERFACE

The Interface Module II has been specially designed to plug on to the rear connector of your ZX Spectrum or ZX81 and allow you to connect any standard Atari type digital Joysticks. All of the computer's connections are duplicated on an extension connector so that you can still use any other devices intended for use with your computer. The Interface Module II resides in the same memory space as the keyboard, which remains fully functional at all times, therefore it will not interfere with anything else connected.

When a suitable joystick is plugged into 'Player 1' socket its action will mimic pressing the cursor keys, up "7", left "5" and so on. The firing button will simulate key ϕ . This unique feature guarantees the best software support.

Take a look at the selection of compatible games we have listed. More are being added all the time as a result of our contact with the various software companies.

A second Joystick may be connected in the 'Player 2' position which simulates in a parallel fashion keys T-Y-U-I-P. This will allow you to play a whole new generation of two player games.



KEY FEATURES

- * Proven cursor key simulation for maximum software support
- * Accepts Atari, Competition Pro, Wico, Starfighter, Le Stick, etc Joysticks
- * Second Joystick facility
- * Rear extension connector for all other add-ons

AGF COMPATIBLE SOFTWARE – AVAILABLE NATIONWIDE

The following titles are available from us:

| | | |
|---------------------------|---------------------------|-------|
| Galactic Jailbreak/ Snake | : Apocolypse Software | £4.95 |
| 3D Tanx | : DK Tronics | £4.95 |
| Splat! | : Incentive Software Ltd | £5.50 |
| Phoenix | : Megadodo Software | £5.50 |
| Escape | : New Generation Software | £4.95 |
| 3D Tunnel | : " " | £5.95 |
| Knot in 3D | : " " | £5.95 |
| Cyber Rats | : Silversoft | £5.95 |

COMPATIBILITY CASSETTES £4.95

These cassettes have short programs to load before the chosen game which will convert it to use the cursor keys and therefore become compatible with the Interface Module II.

| Cassette 1 converts | Cassette 2 converts |
|---------------------|---------------------|
| Arcadia | Centipede |
| Schizoids | Planetoids |
| Hungry Horace | Jet-Pac |
| Horace Goes Skiing | † Pssst |
| Spectres | † 3D Combat Zone |
| Penetrator | † Invaders |

† Will require 48K Memory.

FROM: MR/MRS/MISS

ADDRESS

HCW39

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

FREEPOST, BOGNOR REGIS, WEST SUSSEX, PO22 9BR

| QTY | ITEM | ITEM PRICE | TOTAL |
|-------------------------------|--------------------------------------|--------------------|-------|
| | INTERFACE MODULE II | 16.95 | |
| | JOYSTICK(S) | 7.54 | |
| | SOFTWARE: | | |
| | SOFTWARE: | | |
| ZX81 <input type="checkbox"/> | ZX SPECTRUM <input type="checkbox"/> | Please tick | |
| | | FINAL TOTAL | |

DEALER ENQUIRIES WELCOME

EXPORT PRICES ON APPLICATION

WHERE TO BUY AGF PRODUCTS OVER THE COUNTER

Ashby Computer Centre
186 Ashby High Street, Scunthorpe,
S. Humberside DN16 2JR
Brainwave Microcomputers
24 Crown Street, Ipswich, Suffolk IP1 3LD
Buffer Micro Ltd
310 Streatham High Road, London SW16
Chelsea Micros Ltd
14 Jerdan Place, London SW6 1BH
Computers of Wigmores Street
87 Wigmores Street, London W1H 9FA
Everybodys Hobbies
1 Great Colman Street, Ipswich,
Suffolk IP4 2AA

4Mat Computing
67 Friargate, Preston, Lancashire PR1 2AT
Gamer
24 Gloucester Road, Brighton BN1 4AQ
GB Microland
7 Queens Parade, London Road,
Waterlooville, Hants
Melgray Hi-Tech Ltd
49 Broad Street, Hereford HR4 9AR
Micro Fare
296 Gloucester Road, Horfield, Bristol
Raven Video
74 Green Lane, Tettenhall, Wolverhampton
Screen Scene
144 St George's Road, Cheltenham
Gloucestershire GL50 3EL

Screens
6 Main Avenue, Moor Park, Northwood
Middlesex.
Syntax Computers
76 Cornwall Street, Plymouth PL1 1NS
Teleco Video
53 Maple Road, Penge, London SE20
Telford Electronics & Computing
26a Bradford Street, Shipal,
Shropshire TF11 8AU
The Computer Shop
Unit 25, Handyside Arcade, Percy Street,
Newcastle-upon-Tyne NE1 4PZ
The Computer Centre (Humberside) Ltd
26 Anlaby Road, Hull HU1 2PA

Don't dawdle... there's cargo to be shipped

This is a fast moving game in which you have to move 12 pieces of cargo from three different ports to a city dock.

The 12 ships in the fleet start their voyage from the city dock and are steered to berth at any of the three ports with narrow entrances.

When the cargo has been loaded the ship is steered back to the city dock with an equally narrow entrance.

Collision with the quay results in either the loss of a ship or a ship and cargo depending on whether you are sailing north or south.

A fair level of skill is required and the game is addictive.

Graphic notes: 70 caps shift 5; 120 caps shift 3,8, caps shift 6,6,8, caps shift 3; 135 caps shift 6.

Can you steer a steady course?
Type in Ron Ridge's program for either model of the Spectrum and see if you are a suitable candidate for life aboard ship

Hints on conversion

Because no user defined graphics are required (they can be added if desired) the programme is easily adapted to other computers and can be used as it stands on the ZX81 with some substitutions for quay and cargo graphics.

Variables

SH ships
K cargo
N movement north
S movement south
AS,BS,CS cargo at three ports (graphics)
A,B,C number of cargo at each port

How it works

10 GOSUB for instructions
30-90 set up variables
110-150 set up screen
160-210 move ships south
220-260 calculate final position of southbound ship and if successful, load cargo
280 missed dock — ship lost
300-355 move ships north to city dock
360-395 successful landing at city dock
490 reduce ships if landings successful
500-510 confirm safe delivery of cargo
520 end of game
530 return for next voyage if any ships remaining
540 option to replay or end
570-630 print full instructions

```

5 REM FAST CARGO RON RIDGE
10 CLS : GO SUB 570
20 PAPER 5: BORDER 7: INK 0
30 LET SH=1: LET K=0:
40 LET N=120
50 LET S=120
60 LET A=4: LET B=A: LET C=B
70 LET AS="■■■■"
80 LET BS=AS
90 LET CS=BS
100 CLS
110 PRINT TAB 0: PAPER 7: INVER
120 PRINT TAB 0: SHIP NO. : SH; TAB 23: "CAR
130 PRINT INK 1; AT 1,13: "■■■■
140 PRINT INK 2; AT 20,3; AS TO
150 PRINT INK 2; AT 20,13; BS ( TO B); AT 20,23; C
160 PRINT INK 2; AT 20,33; CS ( TO C)
170 FOR Q=0 TO 31: PRINT AT 21,
180 Q: "■■■■": NEXT Q
190 PLOT 24,21: DRAW 0,-4: PLOT
200 27,21: DRAW 0,-4: PLOT 104,21:
210 DRAW 0,-4: PLOT 107,21: DRAW 0,-
220 4: PLOT 184,21: DRAW 0,-4: PLOT
230 187,21: DRAW 0,-4
240 PLOT 124,160: PLOT 125,160:
250 PLOT 130,160: PLOT 131,160
260 LET S=120
270 FOR F=158 TO 11 STEP -1
280 IF INKEY$="X" THEN LET S=S-
290 1
300 IF INKEY$="N" THEN LET S=S+
310 1
320 PLOT S,F
330 NEXT F
340 IF S=25 OR S=26 THEN LET A=
350 A-1
360 IF S=105 OR S=106 THEN LET
370 B=B-1
380 IF S=185 OR S=186 THEN LET
390 C=C-1
400 IF A=-1 OR B=-1 OR C=-1 THE
410 N GO TO 430
420 IF S=25 OR S=26 OR S=105 OR
430 S=106 OR S=185 OR S=186 THEN BE
440 EP .5,5: GO TO 300
450 PAUSE 50
460 PRINT PAPER 7: INK 1: FLASH
470 1; AT 10,7: "LOADING BAY MISSED";
480 AT 12,11: "SHIP LOST": PAUSE 100
490 GO TO 490
500 LET N=S+3
510 FOR P=3 TO 160
520 IF INKEY$="X" THEN LET N=N-
530 1
540 IF INKEY$="N" THEN LET N=N+
550 1

```

```

340 PLOT N,P
350 NEXT P
355 FOR U=1 TO 20 STEP 1
360 IF N=126 OR N=127 OR N=128
370 THEN BEEP .05,U: BEEP .1,-U: NEX
380 T U: GO TO 380
390 GO TO 460
395 PAUSE 50
400 PRINT PAPER 6: INK 1: FLASH
410 1; AT 4,7: "CARGO DELIVERED"
420 PRINT INK 2: FLASH 1; AT 0,1
430 5: "■■■■"
440 PAUSE 200
450 LET K=K+1
460 GO TO 100
470 IF A=-1 THEN LET A=0
480 IF B=-1 THEN LET B=0
490 IF C=-1 THEN LET C=0
500 PRINT INK 2: PAPER 7: FLASH
510 1; AT 10,1: "LANDING BAY MISSED C
520 ARGO LOST": PAUSE 100
530 PAUSE 100
540 LET SH=SH+1
550 IF SH=13 THEN CLS
560 IF SH=13 THEN PRINT PAPER 5
570 INK 1; AT 10,8: "VOYAGE OVER,"
580 AT 12,4: "CARGO DELIVERED = ";K
590 1
600 IF SH=13 THEN GO TO 540
610 GO TO 100
620 PRINT AT 20,5: "ANOTHER GAME
630 ? (Y/N) ": PAUSE 0
640 IF INKEY$="Y" OR INKEY$="y"
650 THEN GO TO 20
660 IF INKEY$="N" OR INKEY$="n"
670 THEN CLS : PRINT PAPER 1, INK 6
680 AT 10,3: "HAVE A SAFE VOYAGE HO
690 ME ": STOP
700 PRINT PAPER 6: INK 1; AT 1,9
710 1: "FAST CARGO"
720 PRINT AT 3,1: "You have 12 p
730 iece of cargo to move from 3 d
740 ifferent ports to the city dock
750 at the top of the screen." AT 8
760 1: "Each ship must be steered to
770 a loading bay and then returne
780 to the city to be unloaded."
790 PRINT AT 12,1: "Docking must
800 be made between the black li
810 nes at every port."
820 PRINT AT 15,1: "You have 12
830 ships and gain an extra ship f
840 or each piece of cargo delive
850 red safely to the city dock."
860 PRINT AT 20,3: "Use keys X a
870 nd M to steer."
880 PRINT #0: "PRESS ANY KEY
890 TO BEGIN."
900 PAUSE 0
910 RETURN

```


Fun and games in space

Our reviewers give down-to-earth opinions of some games set in space

Missile Defence Spectrum £5.95

Anirog Software, 8 High Street, Horley, Surrey

Missile Defence is a conventional Space Invaders-type game in which you attempt to shoot down marauding aircraft, their smart bombs and showers of missiles before all your assets are wiped

out by them.

All are accurately targeted on your installations, and to attack them you move a sight around the screen with the cursor keys.

Pressing the fire key then launches a missile from one of the three silos, and a convincing nuclear cloud appears in the target area, destroying anything nearby, and earning you some points for whatever you hit.

Very satisfying, but the enemy is still coming. If you survive, you

start another round with fresh missiles and a higher level of difficulty.

The game can be played from the keyboard or a Kempston joystick. It loads easily and then offers a colourful but silent demonstration and a set of instructions to supplement those on the insert.

These repeat until you stop them to go into the main game,

which has good sound effects and displays the present score and best score so far.

| | |
|-----------------|-----|
| instructions | 90% |
| playability | 80% |
| graphics | 70% |
| value for money | 60% |



Vultures Commodore 64 plus joystick £6.95

J. Morrison Micros, 2 Glensdale Street, Leeds LS9 9JJ

This Space-Invader type game starts off with two rows of vultures along the top of the screen.

While you are moving back and forth along the bottom of the screen shooting them down, individual vultures suddenly start swooping down on you, dropping eggs.

If the eggs land on you, you lose one of your three lives. On the other hand, if you don't manage to shoot down a swooping vulture or avoid it, it will pick you up and carry you to eternity, with a corresponding loss of one life.

During the game, the top of the

screen displays your current score and highest score to date. At the end of the game a list of players' names with their highest score is displayed in a Hall of Fame record.

The screen graphics were quite good, without being exceptional. More importantly, the colours chosen were sensible so that the action was clear and the displays easily readable.

The joystick action was fast and smooth.

The cassette was nicely packaged but there were no instructions, the rules becoming apparent as you played the game. The game was quite enjoyable but not particularly compulsive.

| | |
|-----------------|-----|
| instructions | 10% |
| playability | 70% |
| graphics | 80% |
| value for money | 70% |



Stellar Triumph Commodore 64 £6.99

Romik, 272 Argyll Avenue, Slough, Berks

Rather a novel one: an arcade game for two.

The scenario is pretty standard. Take a couple of space ships and put them in an Asteroids-type arrangement.

Chuck in a few aliens, rocks, black holes and monoliths and make the game easy to customise and you've got it.

The aim is to simply slice up your opponent and anything else you find.

The nice touch is that you can set up the game to suit your own preferences. All parameters are adjustable: speed of ship, fire rate, inertia, how many aliens and

gravity effects are just a few. While the overall game instructions are minimal, the instructions for parameter changes are excellent.

An action freeze option is available if you want a rest during your game.

Graphically, the game is adequate but not mind-bending. Explosion effects were particularly banal.

There are options for both joysticks and keyboard or any combination thereof.

Not my idea of a great game, but arcade freaks should give it a look over.

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



Starfighter 48K Oric £6.95

Durell Software, Castle Lodge, Castle Green, Taunton TA1 4AB

An impressive display shows your spaceship in the centre of the screen and an area of space immediately around you.

On the edge of the screen, among many flashing lights, are several gauges showing energy,

shields, armaments and so on, as well as a small square showing where you and the bad guys are in the sector.

The object of the game is to zip around the galaxy chasing the nasties until you either kill them all or get killed trying.

As soon as you have killed all the aliens, you can move to the next sector simply by moving on to a stargate as soon as you find one.

The aliens can be killed in two

ways: by the usual photon torpedoes or by the more interesting method of pressing the space bar when one of the alien craft is very close.

The screen changes to show a 3D display of you chasing the alien through space. You can then shoot him using your phasers whenever he strays into your sights.

The main problem with this game is that it soon becomes apparent that there is not very

much to do. The 3D is quite fun, but even that becomes boring after a few games.

The game would benefit greatly if you could use joysticks or if there was more variety, but as it stands it's nicely done but rather dull.

| | |
|-----------------|-----|
| instructions | 85% |
| playability | 65% |
| graphics | 80% |
| value for money | 50% |



Attack on Alpha Centauri 32K BBC £7.95

Software Invasion, 50 Elborough Street, Southfields, London SW18 5DN

Is there no end to the number of variations possible on the arcade game Galaxians? This latest version from Software Invasion shows that the possibilities are by no means exhausted.

Throughout Attack on Alpha Centauri, the quality of the graphics is superb.

A very realistic moonscape is drawn from which a stream of very hostile-looking space wasps pour, and it is your task to shoot down as many as possible before your inevitable destruction.

The creatures attack by suddenly rushing forward and dropping bombs all round you. This is achieved by using per-

spective to create a pseudo-3D effect on the screen.

Each screen of creatures gets progressively more difficult, with more wasps attacking in a single formation.

Sound is also used with good effect, making the explosions very impressive. Even the title sequence has a stunning display.

The only criticism I have is that this game is basically centred on the Space Invaders/Galaxians theme, and possibly a little dated these days.

But I would thoroughly recommend it for anyone looking for a fast and challenging game. The graphics alone make it a worthwhile addition to anyone's games collection.

| | |
|-----------------|-----|
| instructions | 70% |
| playability | 75% |
| graphics | 98% |
| value for money | 80% |



Just Revealed! Our New Model The Micro-Myte 60 Modem



A professional modem, now with universal couplings, at only an eighth of the price - designed specifically for use with home computers.

Now you can communicate information between compatible micro-computers with your phone, at three times the speed of most other acoustic modems.

The Micro-Myte 60 connects directly to your computer or your cassette recorder via the input/output sockets and transmits or receives up to 60,000 bits per minute of data - twelve times faster than telex and cheaper than first class letter post!

Use the Micro-Myte 60 to send or receive pre-recorded programmes selected data or high resolution screen contents - in black and white or colour - throughout the international telephone network. The universal rubber couplings enable the modem to be used with most types of British and Continental telephones.

Initially designed for use with identical computers, i.e. ZX81 to ZX81 or Spectrum to Spectrum the new Micro-Myte 60 CAN NOW be used to interface the ZX81 to the Spectrum and vice versa, by using the appropriate interface software which is available as

an optional extra. (Limited to resolution of 64 x 32 for screen contents in black and white only and selected data.)

The Micro-Myte 60 is simple to operate and utilises the computing power of the host machine to the full, eliminating costly hardware and the need for a separate power supply.

As a result it is available at the extremely competitive price of £48.00, including VAT, post and packaging (UK only).

The price includes the modem, ZX81 and Spectrum software on cassette, connection cable and operating instructions, with a 12 month guarantee.

There are no hidden extras, making the Micro-Myte 60 an ideal gift for the enthusiast.

Optional Extra
Interface software (ZX81 to Spectrum and vice versa) - £9.50 (inc. VAT).

Micro-Myte Communications Ltd
Polo House, 27 Prince St
Bristol 1
telephone (0272) 299373

Callers welcome

To obtain yours now . . . clip the coupon.

I am a ZX81/Spectrum user (specify)

☐ Please send me Micro-Myte 60 modem(s) at £48.00 each.

☐ Please send me Interface software(s) at £9.50 each.

I enclose cheque/postal order, payable to
Micro-Myte Communications Limited.

Name Telephone

Address

HCW39

PARAMOUNT SOFTWARE

A Registered Trading Name
of Workstations Ltd.



VIC 20 8K or 16K Expansion

CHOCABLOC - A fast moving, pure Machine Code action game, with Chocabloc our hero trying to sort out some Real Cool Choc Bars - until everything goes crazy and the action is on! Arcade standard. Fully featured. Excellent sound and graphics. Keyboard or Joystick.

£6.50

OUTBACK - Can you use the very sophisticated defence set-up to beat off the cunning Swagmen? How long will you survive? Pure Machine Code action. Fully featured. Superb colour and graphics. A game with a difference. Joystick.

£5.50



Any VIC 20



VIC 20 8K or 16K Expansion.

COUNTDOWN - Time is important. Accuracy essential. Courage mandatory. But above all, Nerve is the prime attribute needed for your mission as an agent in the crack S.M.U. A Superb Arcade/Graphical Adventure. Keyboard or Joystick.

£5.50

MEGAWARZ - Where does your fantasy go when your mind leaves your body? Megawarz will take you there you can be sure. High resolution, multi-colour graphics. Sprite graphics. Synthesised. Pure Machine Code action. Arcade standard. A magical planetary trip. Keyboard or Joystick.

£7.50



Commodore 64



Dragon 32

CASTLE OF DOOM
Fully implemented graphical adventure. A compelling and devious plot which retains excitement and interest to the end - if you ever reach the end! An experience in adventuring not to be missed. It's user friendly too!

£6.50

JOGGER - Truly a jogger amongst joggers. If you have trotted with the rest, now run with the best. Machine Code action. Superlative sound. Creative colour. A quality programme from Paramount.

Joystick. £5.50

Any VIC 20.

TRADE
ENQUIRIES

Tel: (0642) 604470

**WRITING
MARKETABLE
PROGRAMMES?**

Hitch your wagon to
PARAMOUNT. Send
for evaluation and
terms.

Paramount Software, 67 Bishopton Lane, Stockton,
Cleveland, TS18 1PU. (England)

| | | | |
|----------------|-------|--------------------------|--------------|
| Chocabloc | £6.50 | <input type="checkbox"/> | Name..... |
| Outback | £5.50 | <input type="checkbox"/> | Address..... |
| Countdown | £5.50 | <input type="checkbox"/> | |
| Jogger | £5.50 | <input type="checkbox"/> | |
| Castle of Doom | £6.50 | <input type="checkbox"/> | |
| Megawarz | £7.50 | <input type="checkbox"/> | |

HCW39

I enclose cash/cheque/P.O. for £.....

Overseas orders add £1.00 for airmail.

Monsters in your micro

More fearful dangers to battle with, more foes to outwit in this selection of adventure games, rated for you by our review panel

Fools Gold Commodore 64 £6.99

Romik Software, 272 Argyll Avenue, Slough SL1 4HE

The game takes place in an old mine, which, while not the most original idea, does offer wide scope.

The inlay claims that there are over 150 rooms to explore. I

didn't check the number, but there certainly are a lot of them. The description of each room was normally quite detailed but occasionally repetitive.

The idea of the game is to explore the caves and recover all the items of treasure hidden in the mine. You do this by giving the usual two-word commands.

There are various problems, such as locked doors and dangerous animals, to foil your efforts.

The game is purely textual and

functions well without obvious bugs. The game is well protected and presented unbelievable difficulties when loading.

There was only one copy of the game on the tape. Software houses should give at least two copies of the game on the tape to allow for loading problems.

My other complaint was the use of LOAD when you want to load a saved game. In the mine are a

gun and a bullet. Any attempt to load the gun gave the wrong result. Tut-tut, Mr Programmer, deduct 10 points.

A.W.

| | |
|-----------------|-----|
| instructions | 65% |
| playability | 75% |
| graphics | n/a |
| value for money | 90% |



Treasure Tombe Dragon 32 £7.95

Dungeon Software, Milton House, St Johns Street, Ashbourne, Derbyshire DE6 1GH

A departure from usual adventure games, Treasure Tombe is a real-time adventure using low resolution graphics and text screen.

You must explore the 90 caves displayed on the screen. There are 32 pieces of treasure to be found and taken back to Room 1, your starting point and the only room free of monsters.

These unsavoury creatures move stealthily towards you and should be avoided as much as possible, as they sap your strength with every attack.

I could discuss the relative

merits of using a full stop to represent wine, or indeed any of the other symbols used to denote objects, but still the game is interesting and enjoyable.

I have played similar games on earlier, more primitive computers and this game is not a great advance on the originals.

However, it is very playable, and a change from all the usual type of adventures.

Dungeon Software call Treasure Tombe a beginners' game, which I suppose is a fair classification, but believe me, the game is far from easy to complete. Being real time, you have little chance of making carefully thought out decisions.

C.G.

| | |
|-----------------|-----|
| instructions | 80% |
| playability | 70% |
| graphics | 55% |
| value for money | 60% |



The Fabulous Wanda Commodore 64 £7.95

Games Machine, Business and Technology Centre, Bessemer Drive, Stevenage, Herts

When I first saw the grandiose name I was filled with visions of great things. Unfortunately I was out of luck.

You play the part of some kind of pangalectic playboy who is dumped on a planet.

You have to accumulate cash to pay the customs man and to gain access to Wanda who is supposed to know the 'secret'.

By playing a sort of arcade game, you can get rid of the customs man. The other sum of cash must be found in the four bizarre establishments in the High street.

The game is supposed to be a

sort of fantasy adventure, but your choice of action is severely limited, and the results depend more on luck than skill.

The idea of the game is good, but the programmer couldn't deliver the goods. A quick peep at the listing showed that the game was written inefficiently in BASIC.

The cassette inlay mentioned arcade action. Well, it might have been five years ago, but it certainly isn't now.

Graphically, the game was adequate but not exciting. In all, a great idea spoilt by weak programming and insufficient imagination.

A.W.

| | |
|-----------------|-----|
| instructions | 70% |
| playability | 55% |
| graphics | 60% |
| value for money | 40% |



The Pit TI-99/4A £6

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

The Pit is a text adventure in which you must explore a maze and recover various items which enable you to make your escape.

To enter The Pit you must give a password, which seems rather pointless.

When the program starts, the following is displayed on the screen: "The west gate behind you the water of a lake is bubbling speak friend and enter". Very strange!

This would lead you to think that "friend" (if anything) is the password. Indeed, when H (for help) is pressed, the computer displays "You missed the message. It was 'say Friend and enter'". But when "friend" is

entered, the computer displays "Wrong"!

Only after examining the listing, I managed to find the correct password.

There are only a few simple commands that can be used in The Pit. These are N,E,S,W (for the directions of the compass), T for picking an item up, and RUN and FIGHT which are used when you come across a nasty beast.

A good idea which is used in this program is a time limit. The time starts at 2,000 and decreases by one every second or so.

This is not a bad adventure, but it is far inferior to others that I have seen in the same price range.

J.J.

| | |
|-----------------|-----|
| instructions | 80% |
| playability | 60% |
| graphics | n/a |
| value for money | 65% |



Alice in Wunderlab Commodore 64 £7.50

Arthur Loosely, 18 Longlands Road, Sidcup, Kent

This is a text-based adventure game set in an experimental reactor laboratory. It rather cleverly combines the usual maze-type adventure with some extra features.

You are issued with a personal code and a reactor start-up code. Once you have started, the reactor problems develop, and it's a race against the meltdown time to prevent the inevitable big bang.

To do this you have to find your way through the maze of rooms, overcoming problems on the way, to locate a Time Machine.

This machine allows you to go back in time, if you know how, to

a point where you can prevent the catastrophe.

There are three levels of difficulty for the game and I reckon even the first will take many hours to solve. Still, depending on how well you do you may get a medal.

Once you start moving through time, however, it's a different story. Some of the building work may be different. There can't be many games where you need separate maps for different years.

The scale of the game means that it takes a long time to load, four to five minutes, but if you like adventures it's worth it. I enjoyed this game as an interesting variation on the Dungeon and Dragons theme.

L.C.

| | |
|-----------------|-----|
| instructions | 70% |
| playability | 70% |
| graphics | 50% |
| value for money | 70% |



VIC20

32K SWITCHABLE TO
3K, 16K, 24K, BLOCK 5

£49.95 inc. VAT

16K SWITCHABLE TO 3K

£34.95 inc. VAT

16K STANDARD

£27.95 inc. VAT

All units guaranteed 2 years. Add £1 P&P
Overseas orders add £3 P&P

Telephone your Access or Visa card number for despatch by
return post, or send your cheque/POs to:

RAM ELECTRONICS (FLEET) LTD

(DEPT. WM)

106 FLEET ROAD, FLEET, HANTS GU13 8PA

Telephone (02514) 5858

Callers welcome Monday to Saturday

Half-day Wednesday. Trade enquiries welcome

Silverlind

SILVERLIND LTD. 156 Newton Road, Burton-on-Trent
Staffs. DE15 0TR. Tel (0283) 63987

NEW



MASTER DIET PLANNER 48K Spectrum £11.95

The ultimate in diet programs, the MASTER DIET PLANNER contains details of calories, protein, vitamins and other nutrients for 681 foods! The MASTER DIET PLANNER will help you plan a well-balanced diet, including options to restrict fats, cholesterol and salt, or to increase fibre intake - at the same time offering maximum choice of foods. Instructions and Recipe Book included.

ENJOY MATHS 48K Spectrum £8.00

A suite of 4 highly motivating programs for the 8 - 14 age range: tables, simple equations, polygons and areas. The programs combine explanation with tests and make good use of colour and sound.

TOWNTEST BBC/B £6.50

A very useful aid for teaching Geography in primary schools, this program tests pupils' knowledge of the locations of major towns and cities in England, Scotland and Wales. Well presented, with a high-resolution map.

BIOLOGY BBC/B £12.50

A suite of programs using text, animated diagrams, examples, and questions to assist in the understanding of Biology to CSE, 'O' and 'A' Level standards. Most suited to individual use by students, these programs also contain material teachers can extract for classroom demonstration. Topics covered include the Eye, Ear, Heart, Blood and Circulation, Skeleton, Female reproduction, Genetics, Biochemistry and the Central Nervous System.

ALL PRICES INCLUDE POST & PACKING & VAT

CHRISTINE COMPUTING

| | |
|--------------------------------|--------|
| Compatible cassette recorder | £24.98 |
| Single cassette interface lead | £4.35 |
| Dual cassette interface lead | £5.45 |
| Recorder + single lead | £28.75 |
| Recorder + dual lead | £29.75 |
| 32K Stand alone Ram | £125 |

| | |
|-------------------------------------|--------|
| Software Cartridge — Extended Basic | £51.50 |
| Minimemory £51.50 Parsec | £23.50 |
| Chess £29.50 Invades | £17.00 |

Software Tape — Core!, Blast It,
Spudz, Code Break/3D Maze, U.F.O.
all @ £4.95 each.

P&P 55p per order, send 50p (refundable on
1st order) for full list, Cheques or PO's to:

SEE US AT THE YOUR COMPUTER XMAS FAIR
DEC 15th - 18th

ARE YOU GETTING ENOUGH

FROM YOUR DRAGON?

ONE OF THE MOST VERSATILE DATA
HANDLING PROGRAMS EVER PRODUCED IS
NOW AVAILABLE FOR THE DRAGON.

THE NEWLINE DATAFILE

Features:

- VARIABLE NUMBER OF FIELDS AND FIELD LENGTH
- DIFFERENTIAL MULTI COLUMN RANGE SEARCHING & TOTALLING
- INTEGRATED ALPHA/NUMERIC SORT
- MULTIPLE FIELD SEARCHING
- SEARCHING & TOTALLING
- FULL EDIT FACILITIES

This flexible all-purpose program allows even beginners
to create systems to suit their own applications -
FOR ONLY £24.95 (TAPE VERSION)

Available on cassette & disc. Also available for other computers.
S.A.E. for full spec. & details of other products available or complete below.

| | |
|---|--|
| Please send me DATAFILE p&p FREE (UK ONLY) | PHONE (0626) 63432 ACCESS OR (0803) 22699 BARCLAY |
| CASSETTE £24.95 inc. VAT | Send to: |
| DRAGON DISC £99.95 inc. VAT | FORMOSA COMPUTERS & SOFTWARE |
| DELTA DISC £99.95 inc. VAT | 3 Union Street, Newton Abbott TQ12 2JX |

Name

Address

HCW39

Make your micro make music

Compose a masterpiece and listen as your Commodore 64 plays it back to you. Type in and use David Rees' program for fun and for more serious uses



This program allows you to turn your Commodore 64 into an impressive synthesizer, as well as to experiment with sound effects easily and quickly.

The program is both fast and versatile, as you will appreciate from the following description.

Speed comes from a machine code routine. As sound routines are virtually untranslatable from one machine to another, I decided that using code would not remove any major insight into the program.

The machine code gets a key and, if it is a note; collects note, octave, sound, waveform and envelope data from pre-POKed files, and stores them in the sound registers. This means that playing can be smooth, quick and professional.

This playing can be interrupted to define a function. As the 64 has three sound channels, the first three rows (1 to -, Q to *, and A to =) represent a different sound and contain a full octave: A to G sharp. The keys found immediately after these cut the sound of that row.

Each row can have octave, envelope and waveform independently defined. Also, for ease and versatility, envelopes can be stored and recalled quickly.

The most interesting facet of the program is that tunes can be remembered and replayed.

To remember a tune press F4, and F6 when you have finished. F8 is pressed to recall the tune. For experimentation, envelopes, octaves and waveforms can be revised before you play back the tune.

An extra feature is that you can play back the tune at any speed (maximum speed increase usually 10 times) and so make yourself sound like a real professional! (N.B. sound cutoff is not remembered).

Note keys have auto repeat and predefined envelopes are smooth (long duration) so that notes are played at constant volume until the key is released, when the sound fades as per the envelope.

Thus, it is best to use a smooth envelope as a sharp envelope will repeat endlessly, sounding like a musical machine gun!

Extensive alterations can be made.

For instance, if you disagree with my note per key choice, DATA in lines 2310 to 2340 can be changed. Another idea is that keys on the bottom row could be defined to give instant changes during the tune. Many additions can be made, and the program can be used as a tool as well as a plaything.

Note: above each line using a graphic symbol is a REM to tell you what it does. These REMs can be deleted.

How it works

10-60 POKE DATA to memory
100-170 store initial values in variables and memory
190-290 PRINT out display
300-500 main routine, test for key press
1000-1090 octave definition
1100-1190 envelope choice per voice
1200-1290 waveform definition
1300-1390 reset chosen sound channel
1400-1550 define an envelope
1900-1950 GET key subroutines
1960-1970 messages
2000-2160 machine code DATA
2200-2300 which key gives which note
2310-2340 Base note DATA (two bytes per note)
9000-9030 remember a note
10000-11010 play back note



Variables

F final note number
NO remembered note number
S sound register start
TT playback speed factor
V voice times 7
E(2) envelope per voice
G(3) waveform numbers for POKEing
O(2) octave per voice
R(400) recall notes
T(400) delay time per note
S1(100), S2(100) defined envelope store
W(2) waveform per voice

Hints on conversion

Unfortunately, as sound parameters vary so much between computers, conversion will need extensive alterations, depending on the complexity of your commands.

The machine code routine GETs one of the octave keys pressed and plays a note, using DATA POKed in by the BASIC part of the program. This should be replaced by a GET key statement, an array for key to note conversion, and your sound commands.

POKE commands are either used to pass data to the machine code, or (if the variable S is in the statement) to set volume or clear the sound registers. Thus, they can mainly be ignored if you have sound commands, as variables will replace them.

Otherwise, BASIC commands are fairly standard, and the only other main conversion should be to change the limits of figures used.

```
8 REM# SYNTHESIZER #
9 REM# BY DAVID REES #
10 FORN=0T02
20 FORM=0T0255
30 READA: IFA=-1 THEN 60
40 POKE12032+N#256+M, A
50 NEXTM
60 NEXTN
70 DIMS1(100): DIMS2(100)
80 DIMR(400): DIMT(400)
100 POKE12800, 1: POKE12801, 2: POKE12802, 3
105 O(0)=6: O(1)=5: O(2)=4
110 POKE13056, 60: POKE13057, 1: POKE13058, 60
115 E(0)=0: E(1)=1: E(2)=2: S1(0)=60
120 POKE13059, 1: POKE13060, 10: POKE13061, 15
125 S2(0)=1: S1(1)=60: S2(1)=1: S1(2)=10
130 POKE13312, 0: POKE13313, 7: POKE13314, 14
135 S2(2)=15
140 POKE13568, 33: POKE13569, 33: POKE13570, 33
145 W(0)=1: W(1)=1: W(2)=1
150 S=54272: POKES+24, 15
160 FORN=0T023: POKES+N, 0: NEXT
169 REM#HI BIT SUS/REL LASTS FOR EVER#
170 G(0)=17: G(1)=33: G(2)=65: G(3)=129
189 REM#ICLR#
190 PRINT":SYNTHESIZER"
```


COMMODORE 64 PROGRAM

```

199 REM*[DWN]
200 PRINT"VOICE OCTAVE ENVELOPE";
210 PRINT" WAVEFORM"
220 FORV=0TO2
229 REM*[DWN]
230 PRINT"O(V),E(V),W(V)
240 NEXTV
249 REM*[DWN]
250 PRINT"KEYS:"
260 PRINT"F1 = OCTAVE","F3 = ENVELOPE"
270 PRINT"F5 = WAVEFORM","F7 = RESET"
280 PRINT"F2 = ENVELOPE","F4 = REMEMBER"
290 PRINT"F6 = END ","F8 = PLAYBACK"
299 REM*MAIN ROUTINE*
300 SYS12032:GETA$:POKE866,PEEK(865)
310 IFPEEK(780)<>99THEN9000
320 IFA$="↑"THENV=7:GOTO1300
330 IFA$=CHR$(13)THENV=14:GOTO1300
340 IFA$="£"THENV=0:GOTO1300
350 IFA$="■"THEN1000
360 IFA$="□"THEN1100
370 IFA$="▣"THEN1200
380 IFA$="▤"THEN100
390 IFA$="▥"THEN1400
400 IFA$="▦"THENK=1:NO=0:GOTO1960
410 IFA$="▧"THENK=0:F=NO:GOTO1970
420 IFA$="▨"THEN10000
500 GOTO300
999 REM*[CLR]
1000 PRINT"OCTAVE DEFINITION"
1010 GOSUB1900
1020 PRINT
1030 INPUT"WHICH OCTAVE";O
1040 IF<0OR>7THEN1030
1050 O(V)=O:POKE1200+V,7-O
1090 GOTO190
1099 REM*[CLR]
1100 PRINT"ENVELOPE CHOICE"
1110 GOSUB1900
1120 FORN=0TO63
1130 IFS1(N)=0ANDS2(N)=0THEN1150
1140 PRINTN,S1(N),S2(N)
1150 NEXT
1160 INPUT"WHICH ENVELOPE";E
1170 IFE<0OR>63THEN1160
1180 E(V)=E:POKE13056+V*2,S1(E)
1185 POKE13057+V*2,S2(E)
1190 GOTO190
1199 REM*[CLR]
1200 PRINT" WAVEFORM DEFINITION"
1210 GOSUB1900
1220 INPUT" WAVEFORM";W
1230 IFW<0OR>3THEN1220
1240 W(V)=W:POKE13568+V,G(W)
1290 GOTO190
1300 FORN=0TO6
1310 POKES+V+N,O
1320 NEXTN
1390 GOTO300
1399 REM*[CLR]
1400 PRINT"ENVELOPE DEFINITION"
1440 INPUT"ENVELOPE NUMBER";N
1450 IFN<0OR>63THEN1440
1460 PRINT"INPUT:"
1470 PRINT"ATTACK":GOSUB1930
1475 S1(N)=A*16
1480 PRINT"DECAY":GOSUB1930
1485 S1(N)=S1(N)+A
1490 PRINT"SUSTAIN":GOSUB1930

```

```

1495 S2(N)=A*16
1500 PRINT"RELEASE":GOSUB1930
1505 S2(N)=S2(N)+A
1510 FORV=0TO2
1520 X=E(V):POKE13056+V*2,S1(X)
1530 POKE13057+V*2,S2(X)
1540 NEXTV
1550 GOTO190
1900 INPUT"WHICH VOICE";V
1910 IFV<0OR>2THEN1900
1920 RETURN
1930 INPUTA
1940 IFA<0OR>15THEN1930
1950 RETURN
1959 REM*[HOME][DWN]
1960 PRINT"REMEMBERING":GOTO300
1969 REM*[HOME][DWN]
1970 PRINT" ":GOTO300
2000 DATA165,197,141,97,3,201,64,208,1
2005 DATA96,205,98,3,208,1,96,24,10
2010 DATA24,168,185,,48,201,99,208,1,96
2020 DATA133,251,185,1,48,133,252
2030 DATA164,251,185,,49
2040 DATA133,253,185,1,49,133,254
2050 DATA164,252,185,,50,133,2,201,
2060 DATA240,21,170,24,70,253,24,70,254
2070 DATA144,9,24,165,253,24,105,128,24
2080 DATA133,253,202,208,236,165,252
2090 DATA168,185,,52,133,2,185,,53
2100 DATA141,99,3,152,24,10,24,168
2110 DATA185,,51,133,251,185,1,51
2120 DATA133,252,164,2,169,,153,4,212
2130 DATA165,251,153,5,212,165,252
2140 DATA153,6,212,165,254,153,1,212
2150 DATA165,253,153,,212,173,99,3
2160 DATA153,4,212,169,,96,-1
2199 REM* KEY TO NOTE DATA*
2200 DATA99,,99,,99,,99,,99,,99,
2210 DATA99,,99,,4,,2,1,,2,6,
2220 DATA99,,2,2,4,1,99,,8,,6,1
2230 DATA4,2,10,,99,,6,2,8,1,99,
2240 DATA12,,10,1,8,2,14,,99,,10,2
2250 DATA12,1,99,,16,,14,1,12,2,18,
2260 DATA99,,14,2,16,1,99,,20,,18,1
2270 DATA16,2,22,,99,,18,2,20,1,99,
2280 DATA99,,22,1,20,2,99,,99,,22,2
2290 DATA99,,99,,99,,99,,2,
2300 DATA99,,99,,1,99,,-1
2309 REM*NOTE VALUE TABLE*
2310 DATA199,112,124,119,151,126
2320 DATA30,134,24,142,139,150
2330 DATA126,159,250,168,6,179
2340 DATA172,189,243,200,230,212,-1
9000 IFK=0ORPEEK(780)=64THEN300
9010 R(NO)=PEEK(865):T(NO)=TI:TI$="000000"
9014 REM*[HOME][DWN*9]...[LEFT]
9015 PRINT"NO"
9020 NO=NO+1
9030 GOTO300
10000 GOTO11000
10002 FORN=0TOF
10005 TI$="000000"
10010 POKE780,R(N):SYS12034:POKE866,64
10020 IFN=0THEN10050
10040 IFT(N)/TT>TITHEN10040
10050 NEXT
10060 GOTO190
11000 INPUT"TIME REDUCTION";TT
11010 GOTO10002

```




More WINNING GAMES from LIVERSOFT

LUNAR RESCUE (48K SPECTRUM)

A team of research scientists are trapped on the moon and you have to pilot the rescue pod from the mother ship and ferry them back safely. But you have only space for one scientist at a time. 100% M/C action with super smooth HI-RES GRAPHICS AND JOYSTICK OPTION.

LIBERATOR (16K/48K SPECTRUM)

This game tests your aim and reactions as you command a gunsight on a homeward bound space freighter. Your cargo is the royal treasures of the empire and many people want them. A machine code presentation that should have you hooked.

THUNDERHAWK (48K SPECTRUM)

Based on the popular arcade game Phoenix. This 100% full colour epic pitches you against the evil Albertrons who are set to destroy your race, five levels of fast action bring you to the command centre of battle fleet, can you finish the job. WITH JOYSTICK OPTION.

GOLF (48K SPECTRUM)

Using M/C graphic routines, a game to absorb the keen novice and the scratch player. Play on a 9 or 18 hole course, with full selection of clubs. Along the greens and fairways hours of addictive sport can be had.

PICTURE PUZZLE (DRAGON 32)

With HI RES graphics and 100% M/C. You are set the problem of putting the picture back together. Test your skill against the dragon 32 computer. A game guaranteed to hold you spell bound for hours.

ANDROID INVADERS (DRAGON 32)

In a change of tactics the beings beyond the stars have developed an android of human form to do their dirty work. And with the aid of sensor jamming they may prove formidable. Using full colour, M/C, hi-re graphics this game can offer up to 21 levels of combat.

VOYAGER (VIC 20 8 OR 16K)

The mission is simple, but its completion is far from being so. As captain of starship you have all the best facilities at your disposal. Unfortunately the klingons oppose you. A great M/C version of this classic computer game.

SPHINX (VIC 20 8 OR 16K)

A riveting, full colour graphic adventure. That pits you against the spells and guardians of the tomb. In your quest to uncover the treasure of the pharaohs. This game will have you enthralled.

BIRD OF PREY (BASIC VIC 20)

Evil baron von fritz is out to kill his cousin, the much loved Prince Rupert. The Baron intends to throw the prince from his plane into the sacred fire pit. But you the eagle of the north will make every endeavour to save your friend Prince Rupert. With colour, sound, this M/C game is a must.

ALSO AVAILABLE:

Demon Driver Basic VIC20 — £5.95
Lunar Rescue Basic VIC20 — £5.95
Space Assault 3 or 8 VIC20 — £5.95
Apple Bug/Crazy Climber Basic VIC 20 — £5.95

Nuclear Attack/Grand Prix Basic VIC20 — £5.95
Hearts & Diamonds/Hi-Lo Basic VIC20 — £5.95
Machine Code Monitor VIC20—£14.95

Hangman/Super Docker ZX81-16K £4.95
Bouncing Gorillas ZX81-16K—£4.95

*all
games
£5.95*

LUNAR RESCUE (48K Spectrum) @ £5.95 each
GOLF (48K Spectrum) @ £5.95 each
VOYAGER (VIC20 8 or 16K) @ £5.95 each
LIBERATOR (16K/48K Spectrum) @ £5.95 each
PICTURE PUZZLE (Dragon 32) @ £5.95 each
SPHINX (VIC20 8 or 16K) @ £5.95 each
THUNDERHAWK (48K Spectrum) @ £5.95 each
ANDROID INVADERS (Dragon 32) @ £5.95 each
BIRD OF PREY (BASIC VIC20) @ £5.95 each

For any
VIC-20

Please debit my Access/Barclaycard (delete as necessary)

Card

Number

I enclose Cheque/PO for £

Name

Address

66 LIME STREET, LIVERPOOL L1 1JN

HCW39

There's something evil deep in the cavern...

Cavern Attacker needs skill, concentration, judgement... and a little luck.

A sinister race of aliens is attacking your planet and your mission is to destroy the enemy nerve centre sited in the heart of the alien planet.

But the nerve centre can move and tries to trace every move you make. To outpace it you must either hover or accelerate. But beware — this uses a lot of fuel.

With the best fighters engaged in conflict with your planet the nerve centre is guarded by just the cavern and one inexperienced alien.

You have to score a direct hit to destroy the nerve centre. There's a big bonus for hitting the nerve and another for your remaining fuel.

You lose one unit of fuel every time you enter the cavern and two units each time you hover or accelerate.

Each time you leave the cavern you move down a level. Your laser will destroy sections of the cavern and the alien.

When you hit the alien — which can only move up or down — another one appears. This alien can sometimes destroy layers of the cavern and aid your attack.

How it works

20-50 skill levels
60-170 set variables
180-270 define characters, colour
280-570 set up screen
580-690 display, move nerve centre
700-830 display, move bombs
840-990 read keyboard
1000-1040 if keys pressed GOTO
1050-1260 movement of astro-fighter
1270-1500 alien ship, laser
1510-1800 acceleration
1810-1960 astro-fighter's laser
1970-2010 astro-fighter's fuel limit
2020-2370 endings
2380-2420 check to see if alien is hit
2430-2930 instructions

Variables

skill, fuel, score, bonus explain themselves
time number of moves
lza, a, g, c FOR...NEXT loops
b, laz, rrr random numbers
ship, dec, hold, z, zb, zs decision variables
xs x co-ordinate of alien
ye y co-ordinate of nerve centre
x,y; xb, yb co-ordinates of astro-fighter; nerve centre
sec length of laser
k read keyboard

Our planet is under threat again. You can save us by destroying the alien nerve centre, sunk deep under the surface of the enemy planet.

Gary Jowett and David Trillwood wrote Cavern Attacker for the standard TI-99/4A

```
10 GOSUB 2430
20 PRINT "INPUT SKILL LEVEL(1-6)1-EASY"
30 INPUT SKILL
40 IF SKILL>6 THEN 20
50 IF SKILL<1 THEN 20
60 MSG$="YOU HAVE CRASHED YOUR SHIP MISSION FAILED"
70 FUEL=32
80 SCORE=0
90 REM G, J & D, T
100 REM SET UP SCREEN
110 RANDOMIZE
120 CALL CLEAR
130 TIME=0
140 XS=11
150 BONUS=1500
160 CALL SCREEN(0)
170 SHIP=0
180 CALL COLOR(2,1,1)
190 CALL CHAR(45,"000000AA55000000")
200 CALL CHAR(120,"FFFFFFFFFFFFFFFF")
210 CALL COLOR(11,14,1)
220 CALL CHAR(115,"FFFFFFFFFFFFFFFF")
230 CALL CHAR(121,"FFFFFFFFF7E3C18")
240 CALL CHAR(122,"183C7EFFFFFFFF")
250 CALL COLOR(12,15,1)
260 CALL COLOR(5,7,1)
270 CALL CHAR(64,"0000E213FF13E200")
280 FOR A=3 TO 31
290 B=INT(RND*8)+12-SKILL
300 FOR C=24 TO B STEP -1
310 CALL HCHAR(C,A,120)
320 NEXT C
330 CALL HCHAR(B,A,122)
340 NEXT A
350 FOR A=3 TO 31
360 B=INT(RND*8)+2
370 FOR C=1 TO B
380 CALL HCHAR(C,A,120)
390 NEXT C
400 CALL HCHAR(B,A,121)
410 NEXT A
420 CALL HCHAR(1,3,70)
430 CALL HCHAR(1,4,85)
440 CALL HCHAR(1,5,69)
450 CALL HCHAR(1,6,76)
460 CALL CHAR(35,"0000187EFFF00000")
470 FOR A=7 TO 32
480 CALL HCHAR(1,A,115)
490 NEXT A
500 CALL COLOR(1,9,1)
510 CALL COLOR(9,3,1)
520 CALL CHAR(97,"00C0FEFF00000000")
530 CALL COLOR(10,2,1)
540 CALL CHAR(104,"0000543838381000")
550 YE=1
560 X=11
570 Y=1
580 REM MAIN PROGRAM
590 REM
600 REM
610 TIME=TIME+1
620 CALL HCHAR(23,YE,32)
630 SCORE=SCORE+1
640 RANDOMIZE
650 BONUS=BONUS-1
660 IF YE<32 THEN 600
670 YE=1
680 YE=YE+1
690 CALL HCHAR(23,YE,35)
700 IF DEC=0 THEN 830
710 CALL HCHAR(XB,YB,32)
720 XB=XB+1
730 IF XB<24 THEN 760
740 DEC=0
750 GOTO 790
760 CALL GCHAR(XB,YB,ZB)
770 IF ZB=32 THEN 820
780 IF ZB=35 THEN 2160
790 CALL HCHAR(XB,YB,32)
800 DEC=0
810 GOTO 830
820 CALL HCHAR(XB,YB,184)
830 CALL HCHAR(X,Y,32)
840 CALL KEY(0,K,S)
850 IF K=81 THEN 1000
860 IF K=76 THEN 880
870 GOTO 890
880 GOSUB 1010
890 IF K=90 THEN 1020
900 IF DEC=1 THEN 950
910 IF K=32 THEN 1040
920 IF K=61 THEN 940
930 GOTO 950
940 GOSUB 1610
950 IF K=80 THEN 970
960 GOTO 980
970 HOLD=1
980 GOTO 1090
990 GOTO 1100
1000 X=X-1
1010 GOTO 1100
1020 X=X+1
1030 GOTO 1100
1040 CALL GCHAR(X,Y,Z)
1050 XB=X
1060 YB=Y
1070 IF Z=35 THEN 2160
1080 DEC=1
1090 IF HOLD=1 THEN 1110
1100 Y=Y+1
1110 CALL GCHAR(X,Y,Z)
1120 IF Z<32 THEN 1520
1130 IF HOLD<1 THEN 1150
1140 FUEL=FUEL-1
1150 HOLD=0
1160 IF X>21 THEN 1200
1170 IF X>3 THEN 1210
1180 X=3
```

Hints on conversion

If you are going to try to convert this program to another machine, remember that the Texas has a 24 by 32 screen and it uses user-defined characters. Here are the more unusual commands:

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

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

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

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

CALL CLEAR clears the screen. Equivalent to **CLS**

CALL SCREEN (colour code). Specifies screen colour, using colour code

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

CALL SOUND (duration, frequency, volume). Produces sound and duration, frequency, and volume specified. Duration is in milliseconds, frequency in Hertz and volume in scale from 0 (loudest) to 30 (quietest)

CALL KEY (key unit, k,s). Equivalent to **INKEYS** or **GET**. Returns code if key pressed in variable K.

TI-99/4A PROGRAM

```

1190 GOTO 1210
1200 X=X+1
1210 IF Y<32 THEN 1260
1220 FUEL=FUEL-1
1230 Y=Y+1
1240 GOTO 1970
1250 X=X+1
1260 CALL HCHAR(X,Y,97)
1270 CALL HCHAR(XS,32,64)
1280 RRR=INT(RND*100)+1
1290 IF RRR<90 THEN 580
1300 LAZ=INT(RND*20)+12
1310 IF LAZ>20 THEN 1480
1320 FOR LZA=31 TO 32-LAZ STEP -1
1330 CALL HCHAR(XS,LZA,45)
1340 CALL GCHAR(XS,LZA-1,ZS)
1350 IF ZS=97 THEN 2100
1360 NEXT LZA
1370 FOR LZA=32 TO 32-LAZ STEP -1
1380 CALL HCHAR(XS,LZA,32)
1390 NEXT LZA
1400 CALL HCHAR(XS,32,32)
1410 IF LAZ>25 THEN 1430
1420 GOTO 1470
1430 XS=XS-1
1440 IF XS>2 THEN 1480
1450 XS=3
1460 GOTO 1500
1470 XS=XS+1
1480 IF XS<23 THEN 1500
1490 XS=22
1500 CALL HCHAR(XS,32,64)
1510 GOTO 580
1520 FOR A=1 TO 14
1530 CALL SOUND(110+A,1000+A,A)
1540 CALL SCREEN(A)
1550 B=A+2
1560 CALL COLOR(12,B,1)
1570 NEXT A
1580 CALL CLEAR
1590 PRINT SEG$(MSG$(12,55))
1600 GOTO 2230
1610 Y=Y+1
1620 FUEL=FUEL-2
1630 IF Y<32 THEN 1710
1640 CALL GCHAR(X,Y,Z)
1650 IF Z<32 THEN 1520
1660 Y=Y+1
1670 X=X+1
1680 CALL GCHAR(X,Y,Z)
1690 IF Z<32 THEN 1520
1700 FUEL=FUEL-1
1710 Y=Y+1
1720 IF Y<32 THEN 1800
1730 CALL GCHAR(X,Y,Z)
1740 IF Z<32 THEN 1520
1750 FUEL=FUEL-1
1760 Y=Y+1
1770 X=X+1
1780 CALL GCHAR(X,Y,Z)
1790 IF Z<32 THEN 1520
1800 RETURN
1810 CALL HCHAR(X,Y,97)
1820 IF Y>25 THEN 1850
1830 SEC=Y+5
1840 GOTO 1860
1850 SEC=31
1860 FOR LA=Y+1 TO SEC
1870 CALL SOUND(110,110,0)
1880 CALL HCHAR(X,LA,45)
1890 CALL GCHAR(X,LA+1,ZA)
1900 IF ZA=64 THEN 2380
1910 NEXT LA
1920 FOR LA=Y+1 TO SEC
1930 CALL HCHAR(X,LA,32)
1940 NEXT LA
1950 CALL HCHAR(X,Y,32)
1960 RETURN
1970 IF FUEL<=7 THEN 2020
1980 FOR F=32 TO FUEL STEP -1
1990 CALL HCHAR(1,F,32)
2000 NEXT F
2010 GOTO 1250
2020 FOR G=1 TO 14
2030 CALL SCREEN(G)
2040 CALL COLOR(12,G,1)

```

```

2050 CALL SOUND(110,110+G,G*2)
2060 NEXT G
2070 PRINT "YOU RAN OUT OF FUEL"
2080 PRINT
2090 GOTO 2230
2100 FOR A=14 TO 1 STEP -1
2110 CALL SOUND(A+10,1000,A)
2120 CALL COLOR(12,A,1)
2130 NEXT A
2140 PRINT "ALIEN DEFENCE DESTROYED YOUR"
2150 GOTO 2230
2160 FOR A=1 TO 14
2170 CALL COLOR(12,A,1)
2180 CALL SCREEN(A+2)
2190 CALL SOUND(100+A,3000+A,A)
2200 NEXT A
2210 SCORE=SCORE+BONUS
2220 PRINT "CONGRATULATIONS! YOU DID YOUR TASK WELL"
2230 PRINT "SCORE=";SCORE+FUEL*10
2240 PRINT
2250 IF SCORE+FUEL*10<=HS THEN 2270
2260 HS=SCORE+FUEL*10
2270 PRINT "HI-SCORE=";HS
2280 PRINT
2290 RA=TIME/SCORE-(FUEL/10)
2300 PRINT "TIME/SCORE=(FUEL BONUS)"
2310 PRINT
2320 PRINT "DO YOU WANT ANOTHER GOT?"
2330 INPUT Z$
2340 CALL CLEAR
2350 IF Z$="Y" THEN 20
2360 IF Z$="N" THEN 2370 ELSE 2320
2370 END
2380 SCORE=SCORE+50
2390 CALL HCHAR(XS,32,32)
2400 XS=11
2410 CALL SOUND(5,1000,0)
2420 GOTO 1910
2430 HS=0
2440 CALL CLEAR
2450 PRINT "INPUT YOUR NAME"
2460 INPUT N$
2470 CALL CLEAR
2480 PRINT "*****CAVERN ATTACKER *****"
2490 PRINT
2500 PRINT
2510 PRINT "*****"
2520 PRINT "*****"
2530 PRINT
2540 PRINT "HERE IS YOUR MISSION"
2550 PRINT
2560 PRINT "USING YOUR ASTRO FIGHTER AND YOUR OWN SKILL, YOU MUST"
2570 PRINT "ENEMY'S NERVE CENTRE"
2580 PRINT "BUT DOING THIS IS NOT AS EASY AS IT SOUNDS. THE NERVE CENTRE (A SHA"
2590 PRINT "LL RED SHIP)"
2600 PRINT "HAS LOCATED ITSELF DEEP INTO THE HEART OF THE PLANET"
2610 PRINT "PRESS SPACE BAR TO CONTINUE"
2620 CALL KEY(0,K,S)
2630 IF K=32 THEN 2650
2640 GOTO 2620
2650 CALL CLEAR
2660 PRINT "YOU DESTROY IT BY BOMBARDING THE CAVERN WITH YOUR DEADLY BOMBS AND EL"
2670 PRINT "ECTRIFYING LASER"
2680 PRINT "ONCE YOU HAVE MADE A CLEAR PATH BETWEEN YOU AND THE NERVE CENTRE"
2690 PRINT "BOMB IT TO COMPLETE YOUR MISSION"
2700 PRINT
2710 PRINT "BUT BEWARE. WHILE YOU ARE BOMBING YOU MAY ENCOUNTER A STALAGMITE"
2720 PRINT "OR A STALAGMITE"
2730 PRINT "OR A DEFENDING ALIEN WITH A LONG RANGE LASER. THIS ALIEN IS A B"
2740 PRINT "IT SIMPLE AND MAY HELP YOU"
2750 PRINT "PRESS SPACE BAR TO CONTINUE"
2760 CALL KEY(0,K,S)
2770 IF K=32 THEN 2780
2780 GOTO 2750
2790 CALL CLEAR
2790 PRINT "*****HERE ARE YOUR KEYS*****"
2800 PRINT
2810 PRINT "Q-UP"
2820 PRINT "Z-DOWN"
2830 PRINT "SPACE BAR-BOMB"
2840 PRINT "L-LASER"
2850 PRINT "P-HOVER"
2860 PRINT "=-ACCELERATE"
2870 PRINT
2880 PRINT "PRESS SPACE BAR TO CONTINUE"
2890 CALL KEY(0,K,S)
2900 IF K=32 THEN 2920
2910 GOTO 2890
2920 CALL CLEAR
2930 RETURN

```


Catch the secrets and earn a bonus

You are agent 008 and here is your briefing for your next hazardous mission.

Our agent inside the enemy's secret service complex is going to throw a set of secret documents over the outside wall and you are to wait and collect them.

Unfortunately, our agent is the clumsy type.

As you wait he accidentally sets off the alarm which wakens the sleeping guard. In his haste to get the documents to you, the agent hurls them so they separate and float down on your side.

Meanwhile, the guard has started to climb a ladder and, if he sees you, he will open fire and you lose one of your three lives.

Armed only with the cursor keys on your 48K Oric, you must run up and down catching the papers in your briefcase.

Each document is worth 20 dollars on the black market, so you get bonus money as your score increases.

The rate at which the guard climbs the ladder is determined by the skill level you choose.

A high score system is incorporated — my personal best so far is 2,900 at level 1.

It was a run-of-the-mill mission — until our undercover agent slipped up. Now it's up to you and your 48K Oric to pick up the pieces. But first let Graham Bailey brief you



How it works
 0-20 set user-defined graphics, screen, instructions, etc
 99-199 main loop
 200-299 guard shoots routine
 300-315 bonus 200
 400-415 bonus 400
 500-515 bonus 600
 600-999 end of game
 1000-1090 set variables and screen
 1999-8999 instructions
 9000-9180 user-defined graphics

Variables
 HI high score
 LL lives left
 X position of spy
 SC score
 ST skill level
 PVS pavement
 LDS ladder
 WIS wall (graphics)
 SIS, S2S spy (graphics)
 GIS, G2S guard (graphics)
 LG position of guard

Hints on conversion
 POKE 48035,0 and POKE (#) 26A,10 can be omitted, PRINT AT can replace PLOT, INKEYS can be used instead of KEYS, PAUSE can replace WAIT, PING and EXPLODE should be replaced by whatever your computer offers.

```
0 POKE48035,0
2 REM ***** TOP SECRET *****
3 REM *** BY G.BAILEY 1983 ***
5 PAPER0:INK3
10 GOSUB 9000:HI=0:LL=3
15 GOSUB 2000:INSTRUCTIONS
20 GOSUB 1000:SCREEN
99 REM ***** PLAY *****
100 A=INT(RND(1)*20)
102 PLAY 1,0,0,0
105 FOR D=7TO14:MUSIC1,2,D-2,2
110 K$=KEY$
115 IF K$=CHR$(8) THENX=X-1:IFX<8 THENX=7
120 IF K$=CHR$(9) THENX=X+1:IFX>31 THENX=32
125 PLOT X,15,CHR$(9)+B1$:PLOTX,16,CHR$(9)+B2$
130 PLOT 10+A,D+1,"/":PLOT10+A,D," "
140 IF SCRN(10+A,D+2)=46 THENSC=SC+20:MUSIC1,3,6,5:WAIT1
0:PLAY0,0,0,
0
145 IF SCRN(10+A,D+2)=46 THENPLOT20,1,"Score $"+BTR$(SC)
(6)+B2$
160 PLOT3,16+1,CHR$(3)+CHR$(9)+LD$
165 IF SC>600 AND SC<800 THEN GOSUB300
170 IF SC>1000 AND SC<1400 THEN GOSUB400
175 IF SC>2000 AND SC<2600 THEN GOSUB500
180 IF SCRN(5,15)=38 THEN 200
190 GOTO 100
199 END
200 PLOT6,15,48:PLOT7,15,49
210 FOR T=1TO3:SHOOT:WAIT 100:NEXT
220 PLOTX,15," " :PLOTX+1,16," " :EXPLODE
225 LL=LL-1:WAIT300
230 IF LL=0 THEN GOTO 600
235 GOTO 20
299 END
```

```
300 PLOT15,10,CHR$(8)+"BONUS $200":PLAY0,0,0,0
310 FORT=SC+200:PLOT27,1,BTR$(T):NEXT
315 SC=SC+200:PLOT15,10," " :RETURN
400 PLOT15,10,CHR$(8)+"BONUS $400":PLAY0,0,0,0
410 FORT=SC+400:PLOT27,1,BTR$(T):NEXT
415 SC=SC+400:PLOT15,10," " :RETURN
500 PLOT15,10,CHR$(8)+"BONUS $600":PLAY0,0,0,0
510 FORT=SC+600:PLOT27,1,BTR$(T):NEXT
515 SC=SC+600:PLOT15,10," " :RETURN
600 REM ***** END *****
610 FORT=11TO12:PLOT14,T,CHR$(8)+CHR$(5)+CHR$(10)+"GAME
OVER":NEXT
620 WAIT 300:PRINTCHR$(12)
630 IF SC>HI THEN PRINT,,"NEW HIGH !"
640 IF SC>HI THEN HI=SC:PRINT,,"SCORE",SC
645 PRINT:PRINT:PRINT,,"YOU" SCORE," :SC
650 PRINT:PRINT:PRINT,,"AGAIN (Y/N) ?"
660 REPEAT:K$=KEY$:UNTILK$="Y"OR K$="N"
670 IF K$="Y" THENSC=0:LL=3:GOTO2100
680 END
999 END
1000 REM ***** SCREEN *****
1005 PRINTCHR$(12):POKE26A,10:LG=25:X=23
1010 PVS$="! " :LD$=CHR$(
(34)+""
1015 W1$="%%%%%%%%%%%%%%":B1$="&." :
B2$="()"
1018 W2$="%%%%%%%%%%%%%%":B1$="++
":B2$=","
```


ORIC PROGRAM

```

1020 PLOT0,17,CHR$(9)+CHR$(2)+PV$:FORT=14TO26:PLOT4,T,C
HR$(9)+LD$:N
EXT
1025 PLOT4,17,3:PLOT7,17,2:FORT=3TO5STEP2:PLOT0,T,CHR$(
9)+CHR$(1)+W
1#:NEXT
1030 FORT=4TO6STEP2:PLOT0,T,CHR$(9)+CHR$(1)+W2#:NEXT
1035 PLOTX,15,CHR$(9)+B1#:PLOTX,16,CHR$(9)+B2#
1038 FORT=15TO16:PLOT1,T,9:NEXT
1040 PLOT 3,LB-1,CHR$(9)+CHR$(6)+G1#:PLOT 3,LB,CHR$(9)+
CHR$(6)+G2#
1045 PLOT10,4,CHR$(8)+CHR$(7)+"SECRET SERVICE":PLOT26,4
,CHR$(9)+CHR
$(1)
1050 PLOT20,1,"Score $"+STR$(SC):PLOT2,1,"Hi-score $"+B
TR$(HI)+CHR#
(3)
1055 IF LL=1 THEN 1065
1058 A=0:FORT=1TOLL-1
1060 A=A+6:PLOT15+A,24,CHR$(9)+B1#:PLUT15+A,25,CHR$(9)+
B2#:NEXT
1065 POKE48035,0
1070 FORT=11TO12:PLOT15,T,CHR$(8)+CHR$(10)+CHR$(5)+"Rea
dy":NEXT
1075 WAIT300:FORT=11TO12:PLOT15,T," " :NEXT
1080 FORT=7TO14:PLOT0,T,9:NEXT "
1085 PLOT8,0,"
1090 RETURN
1999 REM ***** INSTRUCTIONS *****
2000 PRINTCHR$(12):FORT=1TO2:PLOT12,T,CHR$(10)+"TOP SEC
RET":NEXT
2001 PING
2005 PRINT:PRINT:PLOT0,4,7:PLOT0,1,6:PLOT0,2,4
2010 M$="Welcome Agent 00B."
2015 FORT=1TOLEN(M$):A$=MID$(M$,T,1)
2020 PRINTA$;WAIT 30:PLAY0,1,1,20:NEXT:PLAY0,0,0,0:PRI
NT
2022 POKE#26A,10:WAIT100
2025 PRINT:PRINT:PRINT" Your mission is to catch the fa
lling"
2030 PRINT:PRINT"documents in your briefcase."
2035~PRINT:PRINT" Each document is worth $20 on the "

```

```

2040 PRINT:PRINT"black market."
2045 PRINT:PRINT" As the amount of documents you have"
2050 PRINT:PRINT"increases,you will be rewarded with "
2055 PRINT:PRINT"bonus money."
2060 PRINT:PRINT:PRINT,"Press <SPACE> for more details"
2065 PLOT1,22,CHR$(12)+CHR$(2)
2070 REPEAT:UNTILKEY$=" ":CLB
2075 PRINT:PRINT:PRINT" Unfortunately setting off the a
larm"
2080 PRINT:PRINT"awakens the guard who sets off up"
2085 PRINT:PRINT"the ladder after you."
2090 PRINT:PRINT" When he sees you he shoots and kills"
:PRINT:PRINT
"you."
2100 PRINT:PRINT:PRINT:INPUT" Skill level (1-10) ":ST
2105 IF ST>10THENST=10
2108 IF ST<1THENST=1
2110 ST=ST/10
2120 PRINT:PRINT:PRINT,"Press <SPACE> to play "
2130 PLOT1,17,CHR$(12)+CHR$(6):REPEAT:UNTILKEY$=" "
2135 GOTO 20
8999 END
9000 FORT=#B800+(8*33)TOT+135:READD:POKET,D:NEXT
9010 DATA 0,63,63,63,63,63,63,63
9020 DATA 32,32,63,32,32,32,63,32
9030 DATA 1,1,63,1,1,1,63,1
9040 DATA 63,63,63,63,63,63,0,0
9050 DATA 62,62,62,62,62,62,0,0
9060 DATA 3,47,35,49,55,55,63,31
9070 DATA 48,61,49,35,59,59,63,62
9080 DATA 7,7,15,14,14,14,62,62
9090 DATA 56,56,60,28,28,28,31,31
9100 DATA 0,0,28,18,17,63,33,32
9110 DATA 0,0,0,0,0,0,63,63
9120 DATA 32,32,32,32,63,12,12,15
9130 DATA 16,8,8,12,60,0,0,0
9140 DATA 63,51,51,63,30,0,0,0
9150 DATA 63,33,41,33,41,37,33,63
9160 DATA 48,60,48,32,48,48,63,63
9170 DATA 0,0,0,0,0,0,63,60
9180 RETURN

```

SO YOU THINK YOU'RE ROMMEL?

ONLY £6.50 (plus 25p p&p)

INVASION places you in command of the land forces of the Western Alliance, just prior to an invasion by the Red's tank armies.

You will have to exercise skill and judgement as you move, supply and build up your limited defences to stand any hope of victory. Invasion is a true wargame and you could play all night just to find that the computer's grasp of strategy was superior to yours!

Using excellent graphics and with detailed instructions Strategy 1 is light years beyond the arcade. Isn't it time you stopped being the cannon fodder and took command? This is your chance to see if you're good enough to fight it out at the top!

available for: ZX Spectrum (48K) and BBC Model B

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

Please send me . . . tape(s) - (delete as necessary)
of Invasion . . . 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)



| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|



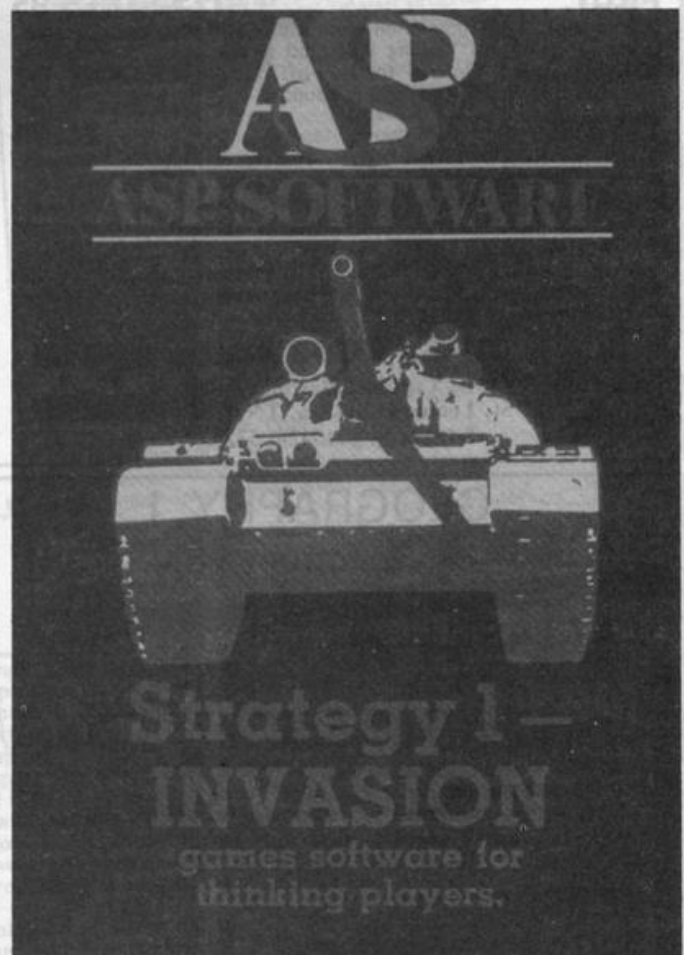
Please use BLOCK CAPITALS

Name (Mr/ Mrs/ Miss)

Address

Signature Date

Please allow 28 days for delivery





**KARMA
SOFTWARE
PRESENTS....**

PONTOON – YHATZI

FOR VIC 20 PLUS MIN OF 3K EXP
INCLUDING VAT & P & P ONLY **£4.50**
FREE GAMES TAPE WITH EACH ORDER
UNTIL CHRISTMAS

CHEQUES & PO'S TO –
TM COMPONENTS, 119a HIGH STREET,
SOUTHEND-ON-SEA, ESSEX SS1 1LH

THE Ω MEGA RUNis coming

T199/4A SOFTWARE

PILOT **£5.95**

A great new flight simulation game for the unexpanded T199/4A. Graphics display of landing strip and terrain map, plus updated instrument panel. Options for take-off, landing or in flight. Full instructions included. Graphics in sound.

TI TREK **£5.95**

Defeat the Klingon invasion fleet. Features include 5 skill levels, graphics, quadrant display, galaxy map, phasers, photon torpedoes, long range scans, damage reports, shield control, impulse and warp drive. Eight by eight galaxy. Full instructions included. Graphics and sound.

Send cheque or P.O. or telephone with Access, Barclaycard for immediate despatch. Please add 50p p&p to orders under £7. Orders over £7 post free.



APEX SOFTWARE

Swiss Cottage, Hastings Road,
St. Leonards-on-Sea, TN38 8EA
Tel: Hastings (0424) 53283



GEOGRAPHY 1

ZX Spectrum 48K

AT LAST! FUN FOR ALL THE FAMILY

An addictive way to become more familiar with the world around you. Travel around the world on a cursor! trying to locate a country, Sea or British county.

Attempt to remember locations and capitals during tests. 100's of Countries/Countries/Seas to learn. GREAT FUN! GREAT GRAPHICS! send £6.50 inc. to:

KEMSOFT THE WOODLANDS
Software KEMPSEY, WORC'S. WR5 3NB

SOLWAY SOFTWARE

FOR THE TEXAS TI99/4A (UNEXPANDED)

SYSTEM TRADER

Can you land safely on each planet AND make a profit? Instrument display for launching and landing text for trading. Uses full 16K. Side 2 is a typing text. **£5.95**

CRUISER

Take a holiday on the "Texas" canals. But don't expect to relax! Graphics. Side 2 is a character generator. **£4.95**

Prices include P & P.

Solway Software

6 CURZON STREET, MARYPORT

Telephone: (0900) 812579

COMING SOON!

Tumbledown Tower. A "classic" adventure with a difference!
Please send S.A.E. for details of these and others.



SEASONS GREETINGS

TO ALL TI/99 – TI99/4A OWNERS

Short of Christmas software? Large catalogue (over 80 UK & imported programs). Please send large SAE to:

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

Note: Mail order to UK only

POOLS PREDICTION

"POOLSWINNER"

The most sophisticated Pools Prediction Aid available. Gives probabilities of score draws, draws, homes and aways, based on two database holding over 20,000 matches (included). This season's results are provided with the package.

The database are automatically updated as results are entered.
Can be used in simple mode, or with parameter adjustments to develop your own unique forecast method.

Fully documented, available now for Apple, Spectrum, BBC (B), Commodore 64, Dragon, ZX81 (16K) (others – please enquire).

£15.00 (discs/tapes)

"POOLSDATA"

Complete record of all English Football League matches 1978-83. Teams, scores and dates of 10,000 matches held in simple format, ready for your analysis. Starter analysis programs and full documentation included. Available for Apple, Spectrum, ZX81, BBC, Dragon, Commodore series.

Discs (5 year) **£15.00**. Tapes (5 year) **£12.50**. Tapes (2 year) **£7.70**.
all prices (p&p included)

SELEC SOFTWARE (PW)



37 Councillor Lane
Cheadle, Cheshire
061-428 7425



TOP NAME SOFTWARE AT ROCK BOTTOM PRICES

MANIC MINER **£4.94**
ALL IMAGINE TAPES (inc ZIP ZAP, ZZOOM,
BEWITCHED, etc) **£4.75**

Send Cheque/PO with order or SAE for full list to:

SHEENSOFT (DEPT HCW)

1 THE PARADE, LOWER RICHMOND ROAD
RICHMOND, SURREY

Tel Enquiries: 01-878 0530

Sales Ledger 48K Spectrum £14.95

Kemp, 43 Muswell Hill, London N10 3PN

The cassette and booklet arrive in a smart, rigid plastic wallet with space for a second cassette. Unfortunately, all that glitters is not gold.

The demonstration program loaded easily, but is followed by the user program. This would make the latter difficult to locate. The reverse side of the cassette, however, is left blank!

Some instructions are given on-screen, others being found in the booklet. To gain access to the program a code is entered. This provides little security as an incorrect input does not make the program crash.

An account can be displayed, page by page, with data, reference, and gross and net amounts shown. The file can be updated and entries can be corrected or deleted.

Whole accounts can be deleted, but alterations to ledger sales and VAT accounts would have to be made manually.

The program will also list debtors, indicating those whose credit limit has been reached, give a sales summary, and can be used for monthly ledger accounting. There is a hard copy option on all displays.

The menu is therefore quite extensive, but so is the size of the program — over 16K! Although up to 253 entries per account and

Let your micro take office

Our reviewers try out programs to turn your micro into an office worker

283 accounts are offered, my machine would only accept four accounts of the maximum number of entries, or 283 accounts of only two entries each. The booklet hints at this — "... maintain more than one file."

All communication with the program is by INPUT statements. This becomes a little

tiresome after a while, especially with single character entries.

The program allows the user to run a sales ledger accounting system, but users are advised to consult their accountant to ensure sufficient controls exist.

As both program and data are SAVED — a pity with the Spectrum's data SAVE facility — the

time to save one file and load in the next (including verify) is in excess of 14 minutes!

These last two factors, coupled with the need to define the size of the file at the beginning, makes this package not particularly attractive — especially at £14.95.

C.B.

| | |
|-----------------|-----|
| instructions | 60% |
| ease of use | 45% |
| display | 80% |
| value for money | 30% |



Home Accounts 32K BBC £9.95

Diamondsoft, Bridge Buildings, 11a Ladybridge Road, Cheadle Hulme

Home Accounts loaded easily, but I had to come back four times and spend 3½ hours before I began to understand it.

A program of this type needs a very comprehensive instruction sheet and, if possible, a demonstration program. Home Accounts has neither.

It was difficult to obtain feedback about the information I was feeding into the program, and this did not give me any confidence that it would be processed correctly.

It would be a long time before I would trust this program, or myself, enough to rely upon it to look after my accounts.

The whole essence of computer utilities is to increase speed and accuracy, but with a four minute loading time and difficulty in checking entries, one would only use this program as an intellectual exercise.

However, it is clever in that it can manipulate any type of entry you could want, including paid and unpaid bills, regular payments, and payment of unpaid bills.

It will also display updated reports on balance, transactions, bills waiting payment, etc. All data can be saved, loaded and updated.

But the instructions and program could do to be much more user friendly.

J.D.

| | |
|-----------------|-----|
| instructions | 20% |
| ease of use | 30% |
| display | 90% |
| value for money | 50% |



Flexifile 32K BBC £9.95

Diamondsoft, Bridge Buildings, 11a Ladybridge Road, Cheadle Hulme, Cheadle SK8 5LL

The storage and manipulation of vast quantities of data has got to be one of the most vital and useful tasks that a computer can undertake on behalf of us mere mortals. This program is meant to make

such things easy and enjoyable and it is certainly very simple to use.

This is ensured by the use of menus from which you select the function you require. If this is illogical — eg, you select print when no file is present — then the program simply returns you to the master menu.

The cassette inlay cards provide the instructions and they are fairly informative for new users. There is precious little in terms of

examples, however, and there is no specimen database.

There is no date checking algorithm — you can type in any string of characters and it is accepted as a date (what use the date is to the program I haven't yet worked out!)

You expect a compromise between power of program and spare memory in all databases: in this example there is a second manipulation program which means extra loading time.

The publishers do offer an advice service, upon payment of a £5 fee.

Final point to note is that the BBC doesn't have the memory for vast databases, so expect to have to keep more than one file. D.C.

| | |
|-----------------|-----|
| instructions | 80% |
| ease of use | 85% |
| display | 80% |
| value for money | 70% |



Timescript/ Speedwriter Dragon 32 £7.95

Dragon Data, Kenfig Industrial Estate, Margam, Port Talbot SA13 2PE

Timescript is a program designed to make it easy to type and print text such as business letters. It has facilities for formatting and editing and is similar to a simple word processor.

However, the program uses a series of predefined or user defined mnemonics to aid entry speed — for example, typing ab produces the word "about" and zc produces "they can". About 636 double letter abbreviations can be used.

The program is supplied with a very detailed, but easily understood booklet. It loaded in two

sections, the first being a BASIC master program which then loads the vocabulary data — either the one supplied or one you have defined yourself.

A menu is displayed with options to define or list mnemonics, set printer/tape, print address, input text or print a stored file.

Without a printer this program is useless but, if you are prepared to learn a complete language of two-letter abbreviations and frequently need to print standardised text, this could be a very useful and valuable program. As it is a specialist utility program it will appeal to a limited market, but may be worth looking at. R.E.

| | |
|-----------------|-----|
| instructions | 90% |
| ease of use | 52% |
| display | 51% |
| value for money | 63% |



TEXAS INSTRUMENTS

TI 99/4A Solid State Software

Some of our Crazy Prices for  Software

| | |
|-----------------|--------|
| EXTENDED BASIC | £52.25 |
| MINI MEMORY | £52.25 |
| BLASTO | £10.50 |
| PARSEC | £24.50 |
| TUNNELS OF DOOM | £20.80 |
| SOCCER | £12.50 |
| MUNCHMAN | £24.50 |

| | |
|--|-------|
| PARCO SOFTWARE THE CASTLE (GRAPHICS CASSETTE IN EX BASIC) | £5.00 |
|--|-------|

POST & PACKING FREE — VAT INCLUDED
SEND S.A.E. FOR FULL PRICE LIST
PLEASE MAKE CHEQUES PAYABLE TO

PARCO ELECTRICS

4 DORSET PLACE, NEW STREET
HONITON, DEVON, EX14 8QS
TEL: HONITON (0404) 44425

DUCKWORTH HOME COMPUTING

a new series

All books written by Peter Gerrard, former editor of *Commodore Computing International*, author of two top-selling adventure games for the Commodore 64, or by Kevin Bergin. Both are regular contributors to *Personal Computer News*, *Which Micro?* and *Software Review*.

USING THE COMMODORE 64 Peter Gerrard

A complete look at the latest home computer from Commodore Business machines. Starting with a refresher course in Basic Programming, it moves on through machine code, before considering in great detail sprites, graphics and sound. A section on peripherals, and then the heart of the book: an in-depth look at the chips that make it work, including the 6581 Sound Interface Device and the 6566 Video Controller Chip, as well as the heart of the computer, the 6510. The comprehensive appendices cover the full Basic and Machine Code Instruction sets, as well as several useful reference tables, and a complete machine code assembler/disassembler listing.

Personal Computer News said: "In this case, we are dealing with a gem of a book. It deserves a place on the bookshelves of every 64 user whether beginner or expert."

Available now £9.95

THE BEGINNER'S GUIDE TO COMPUTERS AND COMPUTING Peter Gerrard

Written for the person who knows absolutely nothing about computers, this book introduces you gently to this exciting and fast-moving world. It guides you through the history of computers into the 1980s and introduces you to many of the personalities who dictate how computers will develop in the future. It comes complete with a glossary of computing terms, including all the often used 'buzz words', and even an 'alternative' computer glossary.
January £6.95

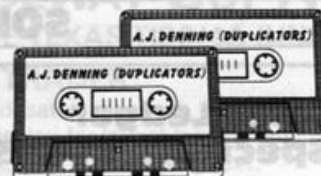
Other titles in the series include *Sprites & Sound on the 64*, *12 Simple Electronic Projects for the VIC*, *Will You Still Love Me When I'm 64*, *Advanced Basic & Machine Code Programming on the VIC*, *Advanced Basic & Machine Code Programming on the 64*, as well as *Pocket Handbooks for the VIC, 64, Dragon, Spectrum and BBC Model B*.

Write in for a descriptive leaflet (with details of cassettes).



DUCKWORTH

The Old Piano Factory, 43 Gloucester Crescent, London NW1 7DY
Tel: 01-485 3484



A.J. DENNING (DUPLICATORS)

QUALITY CONTROLLED CASSETTE DUPLICATING
QUALITY & SERVICE AT COMPETITIVE RATES

QUALITY

Constant Stringent checks Made Throughout
Production.

SERVICE

Despatched Normally Within 10 Days From Receipt
Of Master.

PRICE

C10 From 28p Including Case.

C15 From 31p Including Case.

CONTACT US NOW FOR YOUR PERSONAL QUOTATION.

A.J. DENNING (DUPLICATORS)

19 The Crescent,
Henleaze,
Bristol.

BS9 4RW Tel (0272) 623267

CAMEL MICROS

33a COMMERCIAL ROAD, WEYMOUTH, DORSET, U.K.

NEW ROAD EDUCATIONAL

PROGRAMS



SPECTRUM 48K

| | |
|--------------------------------|-------|
| CHEMISTRY (13-18 years) | £8.50 |
| ARITHMETIC (6-10 years) | £4.95 |
| LOGIC GAMES (6-10 years) | £4.95 |
| GEOMETRY (12-18 years) | £7.50 |
| PHYSICS (Optics) (12-18 years) | £7.50 |

It's easy to complain about advertisements.

The Advertising Standards Authority. ✓
If an advertisement is wrong, we're here to put it right.
ASA Ltd, Brook House, Torrington Place, London WC1E 7HN

T-SHIRT OFFER

Send off for your

BUG-BYTE SOFTWARE

T-shirt now

Did you keep those vouchers in the last two issues of Home Computing Weekly? You'll be glad you did because now you can apply for a free Bug-Byte T-shirt



Model Suzy Griffiths shows how the T-shirt looks front and back

NOW you can claim your free Bug-Byte T-shirt.

Worth £3.99 each, they are made of good quality white cotton with a distinctive design in black, red and green.

All you have to do is fill in this coupon and send it to us with the vouchers in the last two issues of Home Computing Weekly.

You must remember to write your first and second choices of size prominently on the back of the envelope. There are three sizes: small, medium and large.

Senders of the first 750 we open at random will each receive a T-shirt from Bug-Byte, depending on size selected. They should arrive within 28 days, but this cannot be guaranteed.

The T-shirts, advertised elsewhere at £3.99 each, have been produced in a limited quantity for Bug-Byte, the Liverpool-based software house.

On the front is a red and green bug below the words "Byte-me." And on the back is the phrase: "I've been bitten!"

Please read carefully: Envelopes must contain the vouchers from issues 37 and 38

along with today's coupon (not copies). And you must write your first and second choices on the back of the envelope.

Post to Free Bug-Byte T-shirt Offer, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE.

Any which do not meet these conditions will be discarded.

Only one T-shirt per household.

Envelopes which arrive before November 30, the day after this issue's official publication day, will also be discarded.

After the 750 lucky entries have been drawn we will keep the remainder for a short time in case of returns. Then they will also be discarded and there will be no correspondence with unlucky claimants.

Employees of Argus Specialist Publications, Bug-Byte and Alabaster Passmore & Sons are excluded from this offer. This restriction also applies to employees' families and agents of the companies.

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

Free Bug-Byte T-shirt offer

Coupon

Name

Address

post code

Size (small, medium or large)

Second choice of size

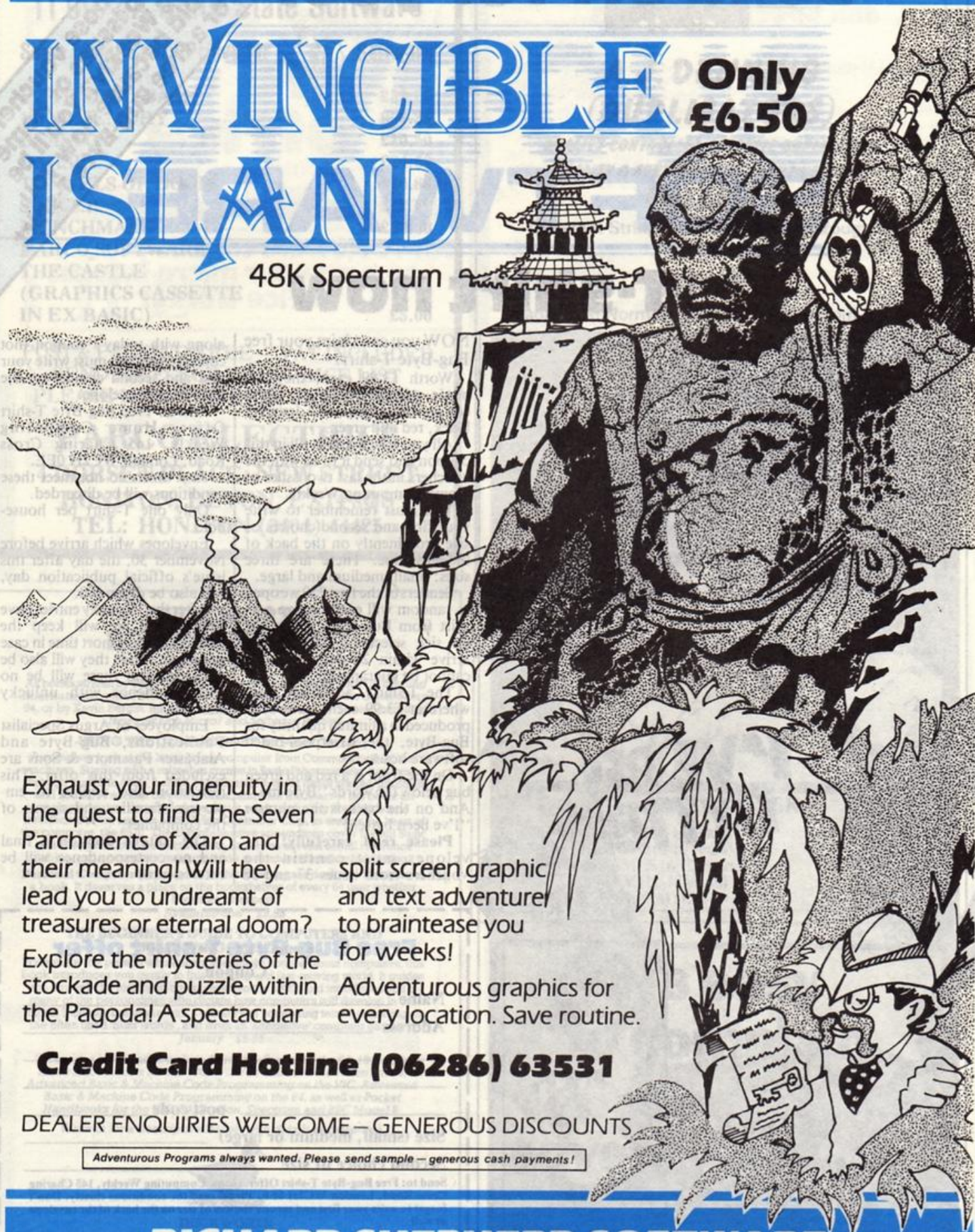
Send to: Free Bug-Byte T-shirt Offer, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Please read the conditions closely. Don't forget to write your first and second choices of size on the back of the envelope as well

RICHARD SHEPHERD SOFTWARE

INVINCIBLE ISLAND

Only
£6.50

48K Spectrum



Exhaust your ingenuity in the quest to find The Seven Parchments of Xaro and their meaning! Will they lead you to undreamt of treasures or eternal doom?

Explore the mysteries of the stockade and puzzle within the Pagoda! A spectacular

split screen graphic and text adventure to braintease you for weeks!

Adventurous graphics for every location. Save routine.

Credit Card Hotline (06286) 63531

DEALER ENQUIRIES WELCOME – GENEROUS DISCOUNTS

Adventurous Programs always wanted. Please send sample – generous cash payments!

RICHARD SHEPHERD SOFTWARE

ELM HOUSE, 23-25 ELMSHOTT LANE, CIPPENHAM, SLOUGH, BERKS. TEL. (06286) 63531

LETTERS

Spectadraw update

Many thanks for taking the trouble to review Spectadraw 2 in issue 37 of HCW.

There are always problems involved with pre-production copies, and the copy of Spectadraw 2 which we supplied before the beginning of the current football season was no exception.

The bug, correctly identified by your reviewer, was eliminated at the start of the season. Sales of Spectadraw in the UK and 10 other countries (we are still trying to establish what they do with the program in Iceland!) are such that we are convinced the program is bug free.

The other unfortunate spin off from your reviewer examining a pre-season copy of the program was that he had to spend three hours inputting the results of matches played up to date.

We dispatch copies of Spectadraw 2 on Monday and Thursday each week and each copy has the database updated to include the matches played up to and including the night before dispatch.

The program is therefore ready to use upon receipt.

We are sure that you will want to redress the balance by publishing our comments in your letters page!

B. S. McAlley, Spectadraw, Chinnor, Oxford

Double trouble

How my heart goes out to B. E. Smith who, by owning a ZX81, is made to feel like a freak. This is something that has always bugged me and it's good to learn that Home Computing Weekly has sympathy.

I notice that VIC-20 owners are having to go through the same thing now that the 64 is taking over.

I am not afraid to admit, even if it does make me a social outcast, that I own a ZX81 and a VIC (double trouble).

To me, those who look down on the little black box just do not have the imagination to use it to its full potential.

We few will still be computing when the others have bored themselves to death shooting down space ships and fleeing from monsters... it's enough to make a computer turn in its chips... what a waste.

Well, after a moan and groan, thank you HCW for giving both the 81 and the VIC a good write up.

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



To close, do you, or any of your readers know of a POKE for the ZX81 that will give repeat keys?

Ian Boulton, Kingswood, Bristol

Beating those joystick problems

I was interested in R. C. Sanderson's CALL JOYST subroutine for the TI-99/4A (HCW 35) as I too had initial problems.

I would advise purchase of the Extended BASIC module, not only for the sprite graphics, but for the ease of joystick and movement programming this module affords.

In the same issue, Paul Hopkins asked if his score on Parsec was a record. Well, I have had new for him, as I have beaten this score on two separate occasions, the latter being 1,569,800, in a marathon game lasting over five hours. I still have the blister marks.

Parsec is a marvellous game, but I was a little disappointed with the non-appearance of the seventh digit upon reaching the magic million.

I take your magazine every week and have nothing but praise for the way you cater for us 99ers.

P.S. Has anybody out there cracked the coloured button code on Scott Adams

Mission Impossible? If you have, please write in with a clue before my TV screen gets a size seven Doc Marten.

Dennis Kemp, Mile Cross, Norwich

Cleverproof solution?

Many thanks to all who have pointed out that my keep-your-secret program (HCW 31) is not foolproof (or rather is not 'clever-

proof'!) I was aware (honest!) of the CAPS 6 trick but I wondered if there was a solution.

Sure enough, Alan Gee (HCW 37) found one, for which I am very grateful. It is spectacular when you try it out!

Andrew Turek, London NW11

Chess Victory

I thought you may be interested in a chess game which several friends and I recently organised. Not as you might expect between two people, or even a person versus a computer, but in fact one computer against another.

The actual opponent was the Sargon II cartridge on the VIC-20 and Psion Chess on the ZX81.

The procedure was as follows. In the first game the ZX81 played white, and the VIC-20 black. Therefore when the ZX81 played a move, the VIC would expect one from an opponent.

The move played by the ZX81 was then typed into the VIC. Then the VIC played its move, which was typed into the ZX81. The game was played in this manner until one computer claimed check mate.

We played two games, each computer taking its turn at playing white. The outcome was the VIC-20 won both games.

We hope in the future to play a game between the VIC-20 and the Spectrum, but the date has not yet been arranged.

Paul Brown, Buckley, Clwyd

Am I the Champion?

Last weekend I finally made it. After hours and hours, nearly an over-heated computer and very sore fingers, I completed the last screen of the super-fast, highly addictive Laser Snaker game by Poppy Soft for the 48K Spectrum.

Am I the only one yet to do this, which means I'll win the £100 prize? I'm a girl, so I challenge all male computer addicts to see if they're good enough to get to the last maze on Laser Snaker (I'm not saying a word about what happens!) and beat my high score of 29,650.

Must be off now — Laser Snaker has just finished loading on my computer. I'm now attempting it on speed 2 and difficulty level 1 — impossible, or is it?

Jackie Thomas, Leicester

Moving into machine code? Here's help

Whether you're already writing some machine code or just learning, David Nowotnik's disassembler will make life easier. It's for the 6502 processor in the 48K Oric-1

Many programmers of home computers move onto machine code once they have acquired a good understanding of BASIC.

This trend seems to be motivated by speed; machine code programs can be more than a hundred times faster than their BASIC equivalents. But while programs are faster, programming can take very much longer.

In machine code you are supplying the CPU with a succession of simple commands in the form of numbers.

Often quite a few machine code commands are required to do the equivalent of one or two lines of BASIC. And while the list of numbers means a lot to the CPU, they usually mean little to the human operator.

To help machine language programmers, an intermediate language was devised called assembly language. This is a translation of those numbers into a code more readily understood by man.

The process of converting machine code to assembly language is called disassembly, and this article presents a program for carrying out this process on the Oric-1.

If you know little about 6502 machine language programming, then I suggest you read one of the many good text books on the subject. If you already know a little, and want to learn more, disassembling other people's machine code routines can be an excellent way of helping your learn, and my disassembler program should help.

The menu-driven program (see figures 1 and 2) has several features.

It presents a disassembled listing of machine code on your TV screen or on the printer. If you are writing machine code, then the program includes a hex loader to enter machine code through the keyboard, edited as required, and finally SAVED on tape.

When you RUN the program, a title page is presented, followed by a short pause while various arrays are filled. The main menu, shown in figure 1, will appear. Two of the three main options will each give secondary menus, as shown in figure 2.

The SAVE/LOAD machine code option in the main menu gives further selections.

Unfortunately, the first of these (load machine code from

tape) will not work. A ROM error (one of many in the Oric) prevents CLOAD from working within a program. I've retained the option in the menu to present an apologetic message on the screen to serve as a reminder of Oric's failing.

If you wish to load machine code from tape, stop the program (option 4 in the main menu), and use CLOAD as a direct command to load the machine code, followed by RUN.

You can, however, SAVE machine code from within a program, and option 2 allows you to do this. After selection of this option, you will be asked for a file name, and the start and end addresses. Once the block of bytes have been saved, the SAVE/LOAD menu will reappear.

Option 3 of the SAVE/LOAD menu allows you to enter your own machine code routine with a hex loader. First, you have to set the start address for your routine.

If you have a short routine, it can be stored in the safe area starting at address hex 400, otherwise it should go above HIMEM, which was set to hex 8000 by the program.

Enter your machine code as hexadecimal numbers. You should enter 'S' to stop; if you make a mistake, erase the error by pressing the delete key, and continue entering the numbers.

As you enter the numbers they will automatically be arranged on the screen in a hex dump array. Don't worry if you make a mistake and fail to spot it; you can use the edit routine to make any corrections.

Selection 2 from the main menu allows you to disassemble any routine you have placed in RAM, or any in-built routine in ROM. You start by specifying the start address, and whether you wish the output to be directed to the screen or printer.

Your machine code routine is disassembled one screenful at a time. On the screen (or printer) will be given the opcode address,

the opcode mnemonic, the mode, the value of any operand, and the byte values of the entire machine code instruction.

While the opcode mnemonics are standard, the symbols for the mode are not. The system for display of modes is shown in figure 3. The abbreviations shown are directly attached to the three letter mnemonic of the opcode.

I find this system easier to understand than the standard method, hence my reason for using it in this program.

- 1 Save/Load machine code
- 2 Disassemble machine code
- 3 Edit machine code
- 4 Stop

Figure 1 - main menu

SAVE/LOAD MACHINE CODE

- 1 Load machine code from tape
- 2 Save machine code on tape
- 3 Use hex loader
- 4 Return to main menu

EDIT MACHINE CODE

- 1 Alter a byte value
- 2 Move a block of bytes
- 3 Return to main menu

Figure 2 - secondary menus

Once the screen is filled with a disassembled listing, pressing any key will give you the next 'page'. To stop the process, press 'S' at any time.

Editing of machine code in RAM is possible using the third option in the main menu. You may alter the value of a single byte, or move a block of bytes. Some caution has to be used with this option not to accidentally alter the BASIC program, variables, or values in the first three pages of RAM.

If you want a short machine code routine to try out with this program, enter the listing in figure 4 using the hex loader. Use 400 hex as the start address, and use CALL #400 as a direct command to find out what it does. The first 12 bytes are machine code, the rest is DATA.

| Mode | Abbreviation |
|--------------|--------------|
| Implied | none |
| Accumulator | A |
| Absolute | none |
| Zero page | Z |
| Immediate | IM |
| Absolute,X | X |
| Absolute,Y | Y |
| Zero page,X | ZX |
| Zero page,Y | ZY |
| (Indirect,X) | IX |
| (Indirect),Y | IY |
| Relative | none |

Figure 3 - abbreviations for modes

```
A2 20 BDOB 04 9D 84 BBCADO F7 60 11 52 65 6D
65 6D 62 65 72 20 74 6F 20 67 65 74 20 48 43 57
20 6E 65 78 74 20 77 65 65 6B 20 10
```

Figure 4 - an example machine code routine to try

```
10 REM 6502 DISASSEMBLER
20 REM David Nowotnik
30 REM
40 REM
50 REM
60 REM 48K version
70 HIMEM#7FFF:TEXT:PAPER0:INK7:PRINTCHR$
(17)
```



```

820 READOC$(I):IFOC$(I)="X"THEN840
830 READOP(I)
840 NEXTI
850 GOSUB200
860 PRINTHM$D$D$D$D$RT$"MENU"
870 PRINTD$D$D$RT$"1. Save/load machine
  code"
880 PRINTD$D$RT$"2. Disassemble /Machine
  code"
885 PRINTD$D$RT$"3. Edit machine code"
890 PRINTD$D$RT$"4. Stop"
895 PRINTD$D$RT$" *** Select 1 to 4 ***"
900 GETZ$:Z=VAL(Z$):IFZ<1ORZ>4THEN900
910 PRINTU$RT$"          ";Z;" Selected
  "
920 WAIT200
940 IFZ=4THENCLS:STOP
960 ONZGOSUB1000,2000,3000
970 GOT0850
1000 REM Load machine code routine
1010 GOSUB200:PRINTHM$D$D$D$RT$" SAVE /
LOAD MACHINE CODE"
1020 PRINTD$RT$"          Options"
1030 PRINTD$D$D$RT$"1. Load machine code
  from tape"
1032 PRINTD$RT$"2. Save machine code on
  tape"
1036 PRINTD$RT$"3. Use the hex loader"
1040 PRINTD$RT$"4. Return to the main me
  nu"
1050 PRINTD$D$D$RT$" *** Select 1 to 4
  ***"
1060 GETU$:U=VAL(U$):IFU<1ORU>4THEN1060
1070 PRINTU$RT$"          ";U;" selected
  "
1080 WAIT200:IFU=4THENRETURN
1090 CLS:ONUGOSUB1100,1300,1500:GOTO1000
1100 CLS:PRINTD$RT$"Load machine code fr
  om tape"
1110 PRINTD$D$D$D$"          Due to ROM fault
  , cannot do."
1120 PRINTD$D$"          Sorry!":
WAIT1000:RETURN
1130 CLOADNF$,A,E
1140 RETURN
1300 CLS:PRINTD$RT$"Save machine code on
  tape"
1310 GOSUB350:GOSUB370:GOSUB400
1320 CSAVENF$,A(SA),E(EA)
1330 RETURN
1500 CLS:PRINTD$RT$"Hex loader"
1510 PRINTD$D$"Enter the start address "
  ":INPUTSA:S1=SA
1520 PRINTD$D$"Enter machine code as hex
  digit pairs,";
1530 PRINT"and 'S' to stop and return to
  the mainmenu."
1540 PRINT

```


ORIC PROGRAM

```

1550 Z$=RIGHT$("0000"+HEX$(SA),4)
1560 PRINTZ$;" ";MN=0
1570 S$="":FORI=1TO2
1580 GETZ$:IFZ$="S"THENWAIT400:RETURN
1585 IFASC(Z$)=127THENGOSUB1700:GOTO1580
1590 IFZ$<"0"ORZ$>"F"THEN1580
1600 IFZ$>"9"ANDZ$<"A"THEN1580
1610 PRINTZ$;S$=S$+Z$:NEXTI
1620 PRINT" ";GOSUB420:POKESA,HI+LO
1630 SA=SA+1:MN=MN+1:IFMN<8THEN1570
1640 GOTO1540
1700 IFI=2THENI=I-1:S$="":PRINTLT$ "LT$
:RETURN
1710 IFMN=0THEN1725
1720 PRINTLT$LT$LT$LT$ "LT$LT$;MN=MN-
1:SA=SA-1:RETURN
1725 IFSA=S1THENRETURN
1730 PRINT:PRINTU$U$LT$LT$ "LT$LT$;
1740 SA=SA-1:MN=7:RETURN
2000 REM Disassemble routine
2010 CLS:PRINTD$RT$ "6502 DISASSEMBLE R
OUTINE"
2020 PRINTD$:INPUT" Enter the start add
ress ";W
2030 IFW<0ORW>65535THENPRINTD$D$ "Addre
ss out of range":WAIT400:GO
TO2000
2040 IFW<>INT(W)THENPRINTD$D$ "Integer
values only:WAIT400:GOTO20
00
2045 GOSUB320
2050 CLS:L1=0:PRINT" Address Opcode Op
erand Byte value"
2060 PRINT:IFP$="P"THENLPRINT" Addre
ss Opcode
Operand"
2070 T=PEEK(W):K$=OC$(T+1):K=OP(T+1)
2080 GOSUB250
2090 IFK>0THEN2140
2100 PRINTW$;" Invalid Opcode ";U$
2110 IFP$="P"THENLPRINTW$;TAB(10);" Inva
lid Operand ;U$
2120 W=W+1:L1=L1+1:IFL1>21THEN2500
2130 GOTO2070
2140 ONKGOTO2150,2200,2300
2150 PRINTW$K$ "U$
2160 IFP$="P"THENLPRINTW$K$
"U$
2170 GOTO2120
2200 MK=0:GOSUB300:FORX=16TO240STEP32
2210 IFX<>TTHEN2250
2220 MK=1:JR=PEEK(W+1)+2:IFJR>129THEN224
0
2230 JR$=HEX$(W+JR):JR$=RIGHT$("0000"+JR
$,4):GOTO2280
2240 JR$=HEX$(W-(256-JR)):JR$=RIGHT$("00
00"+JR$,4):GOTO2280
2250 NEXTX:GOSUB310

```

```

2260 IFP$="P"THENLPRINTW$K$NM$U$
2270 PRINTW$K$NM$U$:W=W+2:L1=L1+1:IFL1>2
1THEN2500ELSEGOTO2070
2280 NM$=" to "+JR$+" ":GOTO2260
2300 NM$=RIGHT$(" "+STR$(DEEK(W+1))
,10)+" "
2310 GOSUB300:W=W+1:GOSUB300:W=W-1
2320 IFP$="P"THENLPRINTW$K$NM$U$
2330 PRINTW$K$NM$U$
2340 W=W+3:L1=L1+1:IFL1>23THEN2500ELSEGO
TO2070
2500 IFKEY$="S"THENWAIT200:RETURN
2510 IFP$="P"THEN2050
2520 GETZ$:IFZ$<"S"THEN2050
2530 RETURN
3000 GOSUB200:PRINTHM$D$D$D$RT$ "Edi
t Machine Code"
3010 PRINTD$D$D$RT$ "1. Alter a byte va
lue"
3020 PRINTD$RT$ "2. Move a block of byt
es"
3030 PRINTD$RT$ "3. Return to the main
menu."
3040 PRINTD$D$D$D$D$D$RT$ "Select 1,
2, or 3"
3050 GETZ$:Z=VAL(Z$):IFZ<1ORZ>3THEN3050
3060 IFZ=3THENRETURN
3070 IFZ=2THEN3500
3080 CLS:PRINTD$RT$ "Alter a byte
value"
3090 PRINTD$D$ "Input byte address ";:
INPUTBA
3100 PRINTD$D$ "Present value = ";PEEK(
BA)
3110 PRINTD$D$ "Enter new value ";:INPU
TNU
3120 IFNU<0ORNU>255ORNU<>INT(NU)THEN3110
3130 POKEBA,NU
3140 PRINTD$D$D$RT$ "Any more (Y/N)"
3150 GETZ$:IFZ$="Y"THEN3080
3160 IFZ$="N"THEN3000
3170 GOTO3150
3500 CLS:PRINTD$RT$ "Move a block of byte
s"
3510 PRINTD$D$D$ "Enter present start add
ress ";:INPUTSA
3520 PRINTD$D$ "Enter new start address "
:INPUTNA
3530 PRINTD$D$ "Enter number of bytes ";:
INPUTBY
3540 PRINTD$D$RT$ "Please wait"
3550 IFSA=NATHEN3000
3560 IFSA>NATHEN3700
3570 NA=NA+BY-1
3580 FORI=SA+BY-1TOSASTEP-1
3590 POKENA,PEEK(I):NA=NA-1
3600 NEXTI:GOTO3000
3700 FORI=SATOSA+BY-1

```


ORIC PROGRAM

```

3710 POKENA, PEEK(I):NA=NA+1
3720 NEXT I:GOTO3000
5000 DATABRK,1,ORAI,X,2,X,X,X,ORAZ,2
5010 DATAASLZ,2,X,PHP,1,ORAIM,2
5020 DATAASLA,1,X,X,ORA,3,ASL,3,X
5030 DATABPL,2,ORAIY,2,X,X,X,ORAZX,2
5040 DATAASLZX,2,X,CLC,1,ORAY,3,X,X,X
5050 DATAORAX,3,ASLX,3,X,JSR,3,ANDIX,2
5060 DATAX,X,BITZ,2,ANDZ,2,ROLZ,2,X
5070 DATAPLP,1,ANDIM,2,ROLA,1,X,BIT,3
5080 DATAAND,3,ROL,3,X,BMI,2,ANDIY,2
5090 DATAX,X,X,ANDZX,2,ROLZX,2,X,SEC,1
5100 DATAANDY,3,X,X,X,ANDX,3,ROLX,3,X
5110 DATARTI,1,EORIX,2,X,X,X,EORZ,2
5120 DATASLRZ,2,X,PHA,1,EORIM,2,LSRA,1
5130 DATAX,JMP,3,EOR,3,LSR,3,X,BUC,2
5140 DATAEORIY,2,X,X,X,EORZX,2,LSRZX,2
5150 DATAX,CLI,1,EORY,3,X,X,X,EORX,3
5160 DATASLRX,3,X,RTS,1,ADCIX,2,X,X,X
5170 DATAADCZ,2,RORZ,2,X,PLA,1,ADCIM,2
5180 DATARORA,1,X,JMPI,3,ADC,3,ROR,3
5190 DATAX,BUS,2,ADCIY,2,X,X,X,ADCZX,2
5200 DATARORZX,2,X,SEI,1,ADCY,3,X,X,X
5210 DATAADCX,3,RORX,3,X,X,STAI,X,2
5220 DATAX,X,STYZ,2,STAZ,2,STXZ,2,X
5230 DATADEY,1,X,TXA,1,X,STY,3,STA,3

```

```

5240 DATASTX,3,X,BCC,2,STAIY,2,X,X
5250 DATASTYZX,2,STAZX,2,STXZY,2,X
5260 DATATYA,1,STAY,3,TSX,1,X,X,STAX,3
5270 DATAX,X,LDYIM,2,LDAIX,2,LDXIM,2
5280 DATAX,LDYZ,2,LDAZ,2,LDXZ,2,X
5290 DATATAY,1,LADIM,2,TAX,1,X,LDY,3
5300 DATALDA,3,LDX,3,X,BCS,2,LDAIY,2
5310 DATAX,X,LDYZX,2,LDAZX,2,LDXZY,2
5320 DATAX,CLU,1,LDAY,3,TSX,1,X,LDYX,3
5330 DATALDAX,3,LDOY,3,X,CPYIM,8
5340 DATACMPIX,2,X,X,CPYZ,2,CMPZ,2
5350 DATADECZ,2,X,INY,1,CMPIM,2,DEX,1
5360 DATAX,CPY,3,CMP,3,DEC,3,X,BNE,2
5370 DATACMPIY,2,X,X,X,CMPZX,2,DECZX,2
5380 DATAX,CLD,1,CMPY,3,X,X,X,CMPX,3
5390 DATADECX,3,X,CPXIM,2,SBCIX,2,X,X
5400 DATACPXZ,2,SBCZ,2,INCZ,2,X,INX,1
5410 DATASBCIM,2,NOP,1,X,CPX,3,SBC,3
5420 DATAINC,3,X,BEQ,2,SBCIY,2,X,X,X
5430 DATASBCZX,2,INCZX,2,X,SED,1
5440 DATASBCY,3,X,X,X,SBCX,3,INCX,3,X

```

It's easy to complain about advertisements.

The Advertising Standards Authority. ✓
If an advertisement is wrong, we're here to put it right.

A.S.A. Ltd., Brook House, Torrington Place, London WC1E 7HN.

BBC Microcomputer System

OFFICIAL BBC COMPUTER DEALER

MODEL A AVAILABLE £299 inc. VAT

This is the best microcomputer currently on the market. 32K RAM, 32K ROM, 8 modes of operation, full colour, full-size keyboard, internal expansions such as disc interface, speech synthesizer, Econet interface. - In short, it is a personal computer capable of expanding into a small business system.

| | | | |
|---|------|-----|---------|
| BBC Microcomputer Model B | £348 | VAT | £399.00 |
| BBC Mod B - disk interface | £409 | VAT | £469.00 |
| BBC Mod B - Econet interface | £389 | VAT | £447.35 |
| BBC Mod B - disk and Econet interfaces | £450 | VAT | £517.50 |
| BBC 100K disk drive | £230 | VAT | £264.00 |
| BBC Dual 800K disk drive | £699 | VAT | £803.85 |
| Torch Z80 disk pack including Z80 2nd processor, 64K RAM and CPN operating system - free perfect software | £699 | VAT | £803.85 |
| BBC Teletext receiver (Aug) | £196 | VAT | £225.40 |
| BBC cassette recorder and lead | £26 | VAT | £29.90 |
| Disk interface kit (three fitting) | £86 | VAT | £96.60 |
| Mod A to Mod B upgrade kit | £50 | VAT | £57.50 |
| Fitting charge for A to B upgrade kit | £20 | VAT | £23.00 |
| 16K memory upgrade kit | £20 | VAT | £23.00 |
| Games paddles | £11 | VAT | £12.65 |
| 12" Monochrome monitor incl. cable | £89 | VAT | £102.35 |
| 16" Colour monitor incl. cable | £239 | VAT | £274.85 |
| User guide | £10 | VAT | £10.00 |
| Econet interface (free fitting) | £60 | VAT | £69.00 |
| Speech interface (free fitting) | £47 | VAT | £54.05 |
| BBC disk manual - formatting disk | £30 | VAT | £34.50 |
| Parallel printer cable | £10 | VAT | £11.50 |
| BBC word processor (view) | £52 | VAT | £59.80 |
| BBC Fourth language cassette | £15 | VAT | £17.25 |
| BBC Lisp language cassette | £15 | VAT | £17.25 |

100% BBC COMPATIBLE MITSUBISHI AND TEAC SLIMLINE DISK DRIVES



These drives are supplied ready cased with all the necessary cables, formatting program and user disk system guide.

There are some useful utilities included: e.g. Epson Screen Dump Program, Memory Dump, Free, Duplicate, Merge and Relocate. Power consumption of these drives is very low (0.2A typ. at 12V, 0.4V typ. at 5V per drive). Power is taken from the BBC computer.

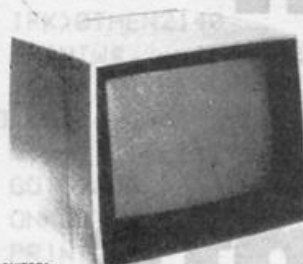
| | | | |
|---|------|-----|---------|
| Single drive 100K 40 tracks | £169 | VAT | £194.35 |
| Dual drive 200K 40 tracks | £329 | VAT | £378.35 |
| Single drive 400K 80 tracks | £239 | VAT | £274.85 |
| Single drive 400K 40 80 tracks switchable | £259 | VAT | £297.85 |
| Dual drive 800K 80 tracks | £449 | VAT | £516.35 |
| Dual drive 800K 40 80 tracks switchable | £469 | VAT | £539.35 |

COMPLETE WORD PROCESSOR FOR ONLY £1,099 + VAT

This package consists of BBC Microcomputer, View wordprocessor, 400K Slimline disk drive, High resolution 12" Green monitor, Juki 6100 18CPS Daisy Wheel printer and all the necessary cables and documentation. The above package can be supplied with components of your own choice, e.g. 800K disk drive or a different printer. Please phone us for a price for your particular requirement.

Special package deal £1,099 - VAT £1,263.85

PROFESSIONAL MONITORS



GREEN MONITORS

12" Green screen monitors with composite and sync input. Suitable for most computers.

| | | | |
|--|-----|-----|---------|
| * 18 MHz band width, high resolution | £89 | VAT | £102.35 |
| * 15 MHz band width, normal resolution | £69 | VAT | £79.35 |

COLOUR MONITORS

* MICROVITEC RGB input 14" monitor supplied with RGB lead for BBC

| | | | |
|---|------|-----|---------|
| * SANYO SCM 14" Normal res 14" 400 dots, RGB input supplied with RGB lead | £209 | VAT | £240.35 |
| * SANYO SCM 14M Medium res 14" 600 dots, RGB input supplied with RGB lead | £199 | VAT | £228.85 |

| | | | |
|---|------|-----|---------|
| * SANYO SCM 14H High res 14" 800 dots, RGB input supplied with RGB lead | £399 | VAT | £458.85 |
|---|------|-----|---------|

EPSON FOR RELIABILITY



EPSON FX80: 80 column, 160 CPS, normal, italic and elite characters, 256 user definable characters, superscript, subscript, 11 x 9 matrix, bi-directional logic seeking, hi-res bit image printing (960 x 8 dots/line), friction and puffed, 9 international character sets, Centronic parallel interface.

FX80 PRICE £349 - VAT £401.35

EPSON RX80: 80 column, 100 CPS, normal, italic and elite characters, 11 international character sets, hi-res bit image printing, bi-directional logic seeking, 4" to 10" adjustable pin feed, Centronic parallel interface.

RX80 PRICE £239 + VAT = £274.85

EPSON FX 100 136 column, 160 CPS friction and tractor feed, up to 15" adjustable carriage, hi-res bit image printing, true descenders. PRICE £479 + VAT = £550.85

RS232 Interface for all above printers £55 + VAT = £63.25

RX80 FT (friction tractor) £269 + VAT = £309.35

Tractor feed for FX80 £79 - VAT £90.85

Roll holder for FX80 £12 - VAT £13.80

Ribbon for MX80, FX80, RX80 £8 - VAT £9.20

Ribbon for MX100 £12 - VAT £13.80

SEIKOSHA DOT MATRIX PRINTERS WITH HIGH-RES GRAPHICS



GP-100A 80 column, 50 CPS, dot addressable hi-res graphics, 10" wide, fully adjustable, tractor feed, 7 x 5 print matrix, Centronic parallel interface.

GP-100A 50CPS PRICE £175 - VAT £201.25

GP-250X 80 column, 50 CPS, 10" wide, fully adjustable, tractor feed, true descenders, 64 user definable characters, double height and or double width printing, 8 x 5 print matrix, Centronic parallel and RS232 (serial) interfaces both included.

GP-250X PRICE £219 - VAT £251.85

NEW GP-700A 7 COLOUR PRINTER

This latest addition to Seikoshia range gives you print in seven colours, 10" wide carriage, friction and tractor feed, 50 CPS print speed, dot addressable high-res graphics, 4 hammer printing mechanism, 10 CPI or 13.3 CPI, special Quite printing mode, Centronic parallel interface.

GP-700A SPECIAL INTRODUCTORY PRICE £349 - VAT £401.35

GUARANTEED LOWEST PRICES
We guarantee that our prices are the lowest on the market. If you can find any item advertised and in stock at less than our price we will match that price.

NEW LOW PRICES ON STAR



The most cost effective quality matrix printers to be launched this year. DPS10 and DPS15 features include friction and tractor feed and roll holders as standard. 100 CPS print speed bi-directional logic seeking 9 x 9 matrix gives true descenders. 2 3K buffer as standard hi-res bit image plus block graphics, sub and super script, italic printing, auto underlining, vertical and horizontal tabulation, left and right margins set, skip over perforation, back space and self test.

STAR DPS10 10" carriage 80 columns

SPECIAL PRICE £219 - VAT £251.85

STAR DPS15 15" carriage 136 columns

SPECIAL PRICE £279 - VAT £320.85

RS232 INTERFACE FOR ABOVE £50 - VAT £57.50

POCKET COMPUTERS AND CALCULATORS

* CASIO PB-100 Basic language pocket computer, 544 program steps, Qwerty keyboard, 12 char display £34.75 - VAT £39.95

* CASIO FX-700P Basic language, scientific functions, 1568 program steps, Qwerty keyboard, 12 char display £43.44 - VAT £49.95

* CASIO PB-300 Basic language computer, scientific functions, 1568 program steps, built-in mini printer, Qwerty keyboard, rechargeable batteries and charger, 12 char display £78.22 - VAT £89.95

* CASIO FA-3 Cassette adaptor for PB100, PB300, FX700 £17.35 - VAT £19.95

* CASIO FP-12 Printer for BB100 and FX700 £39.09 - VAT £44.95

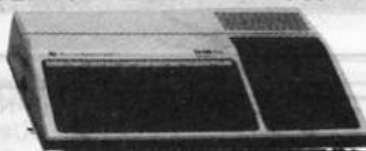
* SHARP PC-1211 Basic language computer, scientific functions, 1424 program steps, 24 char display, Qwerty keyboard £60.83 - VAT £69.95

* SHARP PC-1251 Basic language computer, 4K RAM, 24K system ROM, 24 char display, Qwerty keyboard, user defined key, numeric pad £69.52 - VAT £79.95

* SHARP CE-125 Cassette recorder and mini printer for use with PC-1251, incl. batt. charger £86.91 - VAT £99.95

* SPECIAL PRICE PC-1251 - CE-125 £146.95 - VAT £169.00

TEXAS INSTRUMENTS TI 99/4A



This microcomputer is based on TMS9900 16-bit microprocessor. It includes 16K RAM, 16 colour high resolution graphic (192 x 256). The screen display is 32 characters, 24 lines TI-BASIC. Full-size keyboard. For Software there are about 1000 programs to choose from. There are a lot of peripherals available, e.g. Disk Drives, Disk Interface, Speech Synthesizer, Extra RAM, Additional Language (PASCAL, TI-LOGO, ASSEMBLER).

TI HOME COMPUTER HARDWARE

| Title | Description | Price inc VAT |
|---------|--|---------------|
| T199-4A | Complete with UHF modulator and power supply | £99.95 |

PERIPHERALS

Speech Synthesizer When used with selected modules will reduce electronic speech £41.95

Peripheral Expansion System This unit takes all card peripherals and on internal disk drive £79.95

Disk Drive - Internal 92K formatted drive, mounts internally in peripheral expansion system £149.95

Disk Controller Controls up to 3 disk drives, complete with disk manager command module £109.95

Card 92K formatted capacity per side acts as 2 drives DSK1 & DSK2 total capacity 184K bytes £219.95

Disk Drive External Complete with own case, power supply & connecting cables £259.95

RS232 Provides 2 serial RS232 ports, and one parallel port for interfacing £79.95

Expansion Card Adds 32K bytes extra RAM bringing total capacity to 48K bytes £79.95

Expansion Card P-Code Card Includes the UCSD-PASCAL P-code interpreter £189.95

Matrix Printer 80 column matrix printer pinter GP-100A - cable £219.95

Matrix Printer GP250X 80 column matrix printer with RS232 and Centronic parallel interface £273.95

Epson RX80 80 column, 100 CPS matrix printer £297.85

Printer

Please send S.A.E. for software prices

THE AFFORDABLE DAISYWHEEL PRINTER

ONLY £339 + VAT



- * 18 CPS - Bi-Directional Logic Seeking
- * 10, 12, 15 CPI - Proportional Spacing
- * "Drop in" Daisywheel - Triumph Adler Compatible
- * Supports all Wordstar features
- * Diablo protocols - IBM Selectric ribbon
- * 2K Buffer as standard - 100 character Daisywheel

SPECIAL OFFER JUKI 6100 DAISYWHEEL £339 - VAT £389.95

THE CP80 QUALITY PRINTER

ONLY £219 + VAT



- * 80 CPS - Bi-Directional Logic Seeking 80 Columns
- * Ejection and Adjustable Tractor Feed
- * Patented Square Needles up to 9 x 13 matrix
- * Hi-Res Graphics and Block Graphics

SHINWA CP80 PRINTER £219 - VAT £251.85

SPARE RIBBON FOR CP80 £5 - VAT £5.75

THE NEW SHARP MZ 711 COLOUR COMPUTER

64K user memory - 4K video memory screen, Construction 40 x 25, Internal optional cassette and printer.

Special introduction price £199 + VAT = £228.85 (free 10 games included)

Internal cassette recorder option £33 + VAT = £37.95

Internal 4 colour printer plotter option £109 + VAT = £125.35

Akhter Instruments Limited

DEPT HCW EXECUTIVE HOUSE, SOUTH RD., TEMPLEFIELDS, HARLOW, ESSEX CM20 2BZ. UK.

TEL: HARLOW (0279) 443521 OR 412639

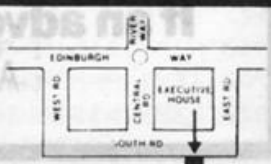
TELEX 995801 REF - A18

ORDERING INFORMATION

All orders which accompany a cheque, cash or postal orders are GARRAGE FREE (UK only). Please make cheques and postal orders payable to 'AKHTER INSTRUMENTS'. A carriage charge of 3% of invoice total is applicable to BARCLAYCARD and ACCESS orders. We accept official orders from Government and Educational establishments. We accept VAT FREE EXPORT orders, please phone or write to check shipping cost.

OPENING HOURS: MON-FRI 9am-5.30pm, SAT 10am-2pm.

We welcome callers, no parking problems.



SOFTWARE REVIEWS

Bewitched VIC-20 £5.50

Imagine Software, Imagine House, 5 Sir Thomas Street, Liverpool

Enter Imagine's latest offering for the VIC-20. New in name, but old in concept. In fact, it doesn't need much imagination to see its resemblance to a certain P** Man game.

In essence you are dumped in a huge maze, which makes full use of the VIC's expanded screen capabilities.

Movement from one area of the maze to the next is prevented by coloured doors.

In order to open any given door, you must pass you key shaped man through the key shape of the colour corresponding to the door.

Confusing, isn't it? It's even worse on a black and white TV.

In order to stop you a horde of ghosts (sounds familiar) rush around trying to slice you up. Naturally, they get nastier as you progress.

Graphically, the game is average. Apart from the use of the expanded screen, the programmer doesn't use the VIC's capabilities to any real extent. You have a music option, but if you take my advice you won't use it (you can't switch off during the game).

If you like repetitive games with fast action, you'll like this. I found it fun initially, but soon became bored.

| | |
|-----------------|-----|
| instructions | 80% |
| playability | 65% |
| graphics | 50% |
| value for money | 60% |



Hexpert Commodore 64 £7.95

Anirot Software, 8 High Street, Horley, Surrey

What I always wanted, a game involving a small, charming furry alien called Bert!

This unfortunate country cousin has been kidnapped by a wicked witch and dumped on a pyramid of hexagonal pillars.

His task is to skip from pillar to pillar painting them as he goes.

A pair of bouncing balls and a rather annoying snake move about trying to slice Bert up... all very nasty.

There are a pair of rotating

Get your finger on the button...

...for a high-speed action game. Our reviewers pick the winners and the losers

disks which can be used to escape the opposition.

The bouncing balls appear to have little aggressive intelligence, and are renewed as they leave the bottom of the screen. The snake, on the other hand, wastes no time in tracking Bert down.

The game uses nice graphics with the ubiquitous sprites.

I had only one moan. The colours used were not ideal if you have a black and white set: pale blue and yellow are almost

identical shades of grey.

For some reason, the title page takes a ridiculous time to finish its display and became rather tedious. Overall, a rather nice game, and worth a look.

| | |
|-----------------|-----|
| instructions | 75% |
| playability | 75% |
| graphics | 95% |
| value for money | 85% |



Crawler Spectrum £4.95

CRL, 140 Whitechapel Road, London E1 1ED

The game is a souped up machine-code version of the old favourite of magazine listings: Snake. In this version, you play a crawly thing whose sole purpose in life is to eat bugs.

You crawl around the screen preying on the innocent insects, at the same time being careful not to crash into yourself or the edge of the screen.

Toadstools are dotted around the screen and trying to eat these is not recommended.

Each time your carnivorous crawler intercepts an insect his body grows longer — making it progressively more difficult for the player to safely manoeuvre around the screen.

The graphics are fair and as smooth as a 'square-to-square' game can be. The bothersome bug is quite well programmed too — he seems to jump out of your jaws at just the wrong moment.

The game has nine skill levels. Level one is acceptable but level nine is blindingly fast. In fact, after level five the game becomes unplayable.

The speed of level five can be achieved by careful programming in BASIC and hence the machine-code in this game is largely redundant.

I cannot recommend that you spend lots of hard-earned money on this game. Why not copy it out of a magazine instead?

| | |
|-----------------|-----|
| instructions | 60% |
| playability | 65% |
| graphics | 50% |
| value for money | 35% |



Hunchback 32K BBC £7.95

Superior Software, 69 Leeds Road, Bramhope, Leeds

This program fully lives up to the high standard of graphics set by previous offerings from Superior Software.

The aim of the game is to guide the Hunchback, who doesn't look all that hunchy, to rescue the lovely Esmeralda.

Naturally there are numerous obstacles and diversions to overcome, including gaps along the wall, the pendulum, flying rocks, arrows and mean-looking, spear-carrying guards.

The game has plenty of variety, with 13 screens to complete, each successive one being of increasing difficulty, and three skill levels.

The action can be controlled from either the keyboard or with a

joystick, the choice of keys being sensible and comfortable to use.

The program loads in two parts, part one being the Superior Software logo followed by the main program.

The instructions are scant, just half a screen displayed by the program. I think these could be extended to explain just how the game plays in a little more detail.

The game is fun to play. I found grappling with the pendulum on the second screen more difficult than some of the later obstacles.

On-screen scoring and a high score are other features, though sadly there is no pause facility.

| | |
|-----------------|-----|
| instructions | 60% |
| playability | 80% |
| graphics | 95% |
| value for money | 85% |



Halls of the Things 48K Spectrum £7.50

Crystal Computing, 2 Ashton Way, East Herrington, Sunderland SR3 3RX

The inlay card states "... the finest quality arcade style action yet seen on the ZX Spectrum",

but the screen tells a different story.

Whoever wrote the blurb on the inlay card obviously hasn't seen many of the arcade style games that are on the market for the Spectrum these days.

Although the figure on the screen does move smoothly under your control, it moves a little too fast at times for comfort — a simple delay loop in the program would work wonders.

Set inside an eight storey tower

block, there are many rooms and passages to search for the screen rings that you need to complete your task.

I never did find any rings, but there are plenty of bottles and what look like those triangles of red balls used in a snooker game.

You have a bow and arrows, and some magic at your disposal. I'm not sure what a vorpal sword is, or that it should even be allowed, but nevertheless, you have one.

This game is also described as "... a new dimension in computing games ... the animated adventure". That's as maybe, but there is nothing in this game that makes for compulsive playing.

| | |
|-----------------|-----|
| instructions | 90% |
| playability | 50% |
| graphics | 75% |
| value for money | 50% |



Why Microdeal followed the Dragon trail

For Dragon owners at least, Microdeal is now a household name. Its range of over 40 programs for the Dragon has dominated the software charts, and one program in particular — appropriately named The King — has reigned almost unchallenged at Number 1 for some months.

Now Microdeal has finally decided to make the move into BBC software, and will follow that up with programs for the VIC-20, Commodore 64 and Atari. But it is one of the very few software companies to have resisted the temptation to write software for the Spectrum.

What has Microdeal got against the Spectrum? The answer John Synes, Microdeal's MD, gives to that question is "Mad dogs and Englishmen go into the Spectrum market!"

"There must be at least 50 sizeable companies now doing Spectrum software, but hardly any of them are doing anything for the Dragon. That leaves the field pretty clear for us — so why should we join the crowd supplying the Spectrum too?"

John Synes got into Dragon software through a family connection — the connection between the Tandy Colour computer and the Dragon. But his first commercial contact with the computer world was as distributor of CLOAD, an American cassette-based magazine specialising in the Tandy Model 1 micro.

From selling CLOAD he diversified into imported Tandy Colour computer software, for which he needed a programmer to carry out modifications for the UK market. When the Dragon came along, the similarity between it and the Tandy Colour meant that the programmer could quickly convert Tandy software for the new machine.

John started to sell Dragon software in August 1982, and at first the response wasn't exactly overwhelming. He recalls: "I went to the Personal Computer World show in September with five titles for the Dragon — and sold eight of each."

Things were a little easier at the Northern Computer Fair, when more Dragons had been sold, and in December last year John decided to invest in full colour advertising.

Now Microdeal software is on sale in 350 dealers, including Boots, Menzies and Dixons. As well as the software division,

What makes a company decide to specialise in one machine? John Synes told Candice Goodwin why Microdeal didn't go with the crowd

there's an advertising division, a distribution division which handles Imagine and Virgin as well as Microdeal itself, and a tape duplicating division, equipped with £40,000 worth of copying equipment.

All this has taken off since June, when John left his job as a manager at Tesco to go into the software business full time.

John has a team of 21 full-time staff, including four programmers, who are currently working on converting programs for other machines.

Though John is aware that software standards are rising all the time, he isn't worried about keeping up. "It's not getting

more difficult for us — in fact, it's getting easier because, having made a name for ourselves, we get the cream of the programs submitted to us."

But as well as submitted material, about 60% of Microdeal's current range started life in the USA, in the form of Tandy Colour programs. Again, John feels this gives Microdeal an edge over the competition because "the American software's of a very high standard."

"After all, the Tandy Colour's been around there for three years — people have had plenty of time to get to know the machine. Whereas in the UK, because the 6809 processor the Dragon uses is

complicated, people look at it and get frightened off."

One of the penalties of Microdeal's reputation for good software is that its programs are widely copied. "Piracy is an enormous problem for us", said John. "For every program we sell, I reckon there are five or six copies."

To combat the problem, Microdeal is developing a dongle — a hardware device that is sold with the program, and without which the program cannot be run. "It would be worth it for the more expensive games", John reckons. "We could absorb the extra cost of £1 or so, because I know we'd sell more programs."

Piracy problems aside, Microdeal's future looks bright as it prepares to launch another batch of eight Dragon programs to follow up its five recent releases.

"I think the market will hold up for the bigger companies", John said, "But you have to be prepared to spend money to establish your name in people's minds." With a £10,000 advertising budget for its Frogger program alone, Microdeal is making sure that it isn't going to be forgotten.



Some of the Microdeal team: from left to right, top row, Andrew Best, distribution; John Hancock, general assistant; Steven Hipgrave, distribution; bottom row, Paul Johnstone, distribution; Tracey Mayo, receptionist; Lynn Crane, mail-order manageress; Jenny Pope, John Synes' PA; Jayne Downing, accounts

More than fun and games!

FIRST STEPS with the Mr. Men

by Primer Educational Software

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

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



QUICK THINKING!

by Widgeit Software

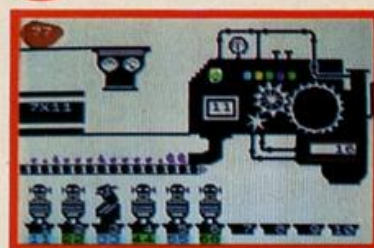
Two mind-stretching, space-age games to test mental arithmetic and nimble fingers.

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

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

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

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



Available now on cassette for the Spectrum 48K and Commodore 64 (BBC B and Electron versions coming shortly.) **£6.95**

CAESAR THE CAT

by Andromeda Software

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

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

Available on cassette for the Commodore 64

£8.95



Prices include VAT and post and packaging. MIRRORSOFT programs will be available soon from selected branches of W.H. Smith and Boots, and other leading software stockists. Trade enquiries welcome: phone 01-822 3580.

MIRRORSOFT

SOFTWARE FOR ALL THE FAMILY

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

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

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

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

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

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

Signature.....
Name.....
Address.....
Postcode.....

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



A STEP BEYOND THE ARCADE...



Demon Knight · The Valley · Strategy 1—Invasion · Strategy 2—Bismark
White Barrows · Detective · Cells & Serpents · Stockmarket
Conquering Everest · Cloneit/Renumber · Gallery of Death · Planetfall

HORNSBY



ASP SOFTWARE
145 Charing Cross Rd, London WC2H 0EE
Tel: 01-437 1002

Now available from:

Telford Electronics
Inside Bangers
Telford Town Centre
Shropshire

John W Bagnall Ltd
18 Salter St
Stafford ST16 2JU

Mega Ltd
7 Anley St
St Helier
Jersey

Computer Cabin
24 The Parade
Silverdale
Newcastle
Staffs

Software City
3 Lichfield Passage
Wolverhampton
W Midlands

D A Computers Ltd
104 London Rd
Leicester LE2 0Q2

Fal Soft Computers
8 St Georges Arcade
Falmouth
Cornwall TR11 3DH

Statacom Ltd
234 High St
Sutton
Surrey

William Smith (Booksellers) Ltd
University Bookshop
White Knights
Reading RG6 2AH

The Car Shop
103 Lower Lickhill Road
Stourport

Canterbury Software Centre
9 The Friars
Canterbury
Kent CT1 2AS

JCV Organisation Ltd
Units 7/8
Wharf St
Warwick
CV34 5FO

3D Computers Ltd
230 Tolmouth Rise South
Surrey

Vision Store
96/98 North End
Croydon CR0 1UD

Philip Copley Hi Fi Ltd
6 Wisley Street
Clifford Court
Ossett
Wakefield
N Yorks

Micro North
7 Broad Street
Bury
Lancs

4-Mat Computing
67 Friargate
Preston
Lancs

Channel 8 Software Ltd
51 Fishergate
Preston
Lancs

Windsor Computer Centre
Thames Avenue
Windsor
Berks

Rush Hi Fi & Video
5-6 Cornhill
Chelmsford
Essex

Amersham Computers
18 Woodside Rd
Amersham
Bucks

Godfreys
30 East Walk
Basildon
Essex

Estuary Software Products
261 Victoria Avenue
Southend on Sea
Essex

Software Centre
128 Wigmore St W1

Dimension
27/29 High St
Leicester

Vic Oddens
5 London Bridge Walk
London SE1

Computer Plus
2 Church Lane
Banbury
Oxon

K P Cameron & Computer Shop
12a Kings Parade
Cambridge

Gemini Electronics
50 Newton St
Manchester

Sherwoods Photographic Ltd
11-13 Gt Western Arcade
Birmingham B2 5HU

Brainwave Micros Ltd
24 Crown St
Ipswich
Suffolk IP1 2LD

Micro Business Centre Ltd
17-19 Lichfield St
Wolverhampton WV1 1EA

Trend & Hi Fi Video
167 High St
Walthamstow
London E17 9PD

Eddy's (Nottm) Ltd
ENL Audio Visual
116/118 Alfreton Rd
Nottingham NG7 3NR

Cannock Computer Systems Ltd
18 Old Penkridge Rd
Cannock
Staffs WS1M2

G Foster
CB TV Hi Fi & Video
Sales & Service
59 Tamworth St
Lichfield
Staffs

ONE HUSBAND'S VIEW

My wife will never be the same

Heaven help any frog that crosses the road in front of me, and if I get my hands on Pac-man I'll do something with his fruit no programmer ever thought of.

It's my fault, which makes it worse. I knew it was addictive even before I bought the wretched thing. I kept careful control on my own habit but I forgot to warn her. There didn't seem to be any need. She'd never been interested in mechanical things. Perhaps it was the careful side of her nature that led her astray, seeing my expensive toy standing idle for so many hours in the day.

Whatever it was, there's no going back now. She may recover, she may not, but either way she'll never be the same woman again, the change is too fundamental.

How do you describe an obsession? I suppose it was best summed up by our youngest in the tragic phrase: "That's the fourth time we've had fish fingers this week, Mum". She didn't believe us, of course. They never do. Lost in a cloud of inputs, enveloped in GOTOs, isolated from reality in a never ending loop, the outside world ceases to be relevant.

Culinary monotony aside, the children are protected from the worst of it. The machine is installed in our bedroom and they never see her the way I do. She sits into the night alternately hissing at the loss of a gun emplacement or gloating over the annihilation of another alien fleet.

Her knuckles turn white and she has developed a variation of Rubic's Thumb we call Pac-finger. As she crouches over the keyboard I plead with her to give it up until too tired to argue any more (or paralytic with laughter) I fall asleep, exhausted.

The cruellist part is that she is a superb games player. I'm not macho, I don't need to compete. But her taunts at my feeble performance are so destructive. It is creating role confusion in me and it is going to lead to severe behaviour problems in our two sons. No one else knows, but they have to live with the fact that their mum can beat them at everything from Meteors to 3-Dimensional Noughts and Crosses.

I bought it as a word processor to do my writing but I can't get on it and my typist is now too busy flying our bedroom based 747. For the first time ever I'm looking forward to Wimbledon fortnight.

It's not all bad though, the home computer must be one of the most powerful anti-depression therapies known to man, and the family that plays together has at least got something to talk about over the breakfast table.

**Michael Goldsmith
Braunton, Devon**

● This space is for you to sound off about the micro scene, to present bouquets, to hurl brickbats, or just to share your opinions or experiences. Send your contribution to Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Please include your occupation and your interest in computing.

MIKRO-GEN

presents
TWO
great games
from Saturn
Developments



The chart-hitting

Mad Martha



Poor little Henry is the hen-pecked hero of this domestic tale. One night Henry can take no more. He steals his wages from his wife's purse, and sneaks out of the house being careful not to wake the baby or trip over the cat, and heads for the bright lights to have some fun. Trouble is he runs out of money. His only way to raise some cash is to gamble his few remaining pounds on the spinning wheel of the roulette table. Just as Henry is getting in to his evening at the tables his wife - Mad Martha - has noticed his absence. Realising Henry has absconded with the housekeeping she sets out after him with an axe. Guess what part you play in this happy tale? That's right, you're Henry. Watch out for that axe!

A game to invest in... funny, genuinely original, and the graphics are great... hit the key to begin, the Spectrum plays a real Hollywood-style movie theme tune, and the hunt is on!
Personal Computer News

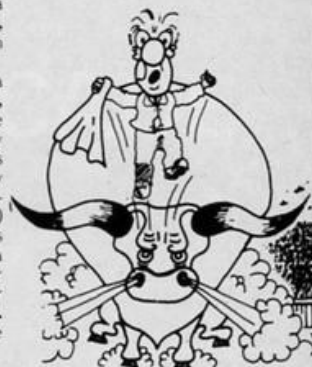
Marvellous adventure, really dotty... a refreshing change from some of the doomladen programs encountered nowadays... a game where you won't get to the next stage without solving the present conundrum.
Popular Computing Weekly

And now -

Mad Martha II



Time for the annual holiday and Martha decides to visit her half-cousin Manuel, who is a waiter in a plush hotel in Barcelona. One afternoon, Martha sets out on a bus tour with her son, young Arbuthnot, leaving orders for Manuel to keep an eye on Henry. Unbeknown to Martha, crafty Henry has a Spanish pen-pal, and has planned a secret rendezvous. Henry leaves the hotel, brimming with enthusiasm and Manuel (who is totally wacky!) is hot on his trail. The adventure takes us through the thrills and spills of a madcap chase, taking in amongst other delights, a bull fight in which poor Henry is forced to play the leading role. Guaranteed laughs and fun for all the family!



*** FOR 48K SPECTRUM ONLY £6.95**

Post & Packing 40p

- ★ Full adventure format - accepts multiple commands at one entry, in plain English
- ★ Witty, intelligent replies to commands
- ★ Skill level select for beginners
- ★ Every location in full screen, high-res, colour graphics
- ★ Three exciting arcade-type games as an integral part of the adventure
- ★ Full help facility and save game command

Available from retail outlets or direct from:

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

OR PHONE YOUR ACCESS/VISA NUMBER: (0344) 27317 (9am-6pm)

MAIL ORDER PROTECTION SCHEME

If you order goods from Mail Order Advertisers in this magazine and pay by post in advance of delivery, this publication will consider you for compensation if the advertiser should become insolvent or bankrupt, provided:

1. You have not received the goods or had your money returned; and
2. You write to the publisher of this publication explaining the position not earlier than 28 days from the day you sent your order and not later than 2 months from that day.

Please do not wait until the last moment to inform us. When you write, we will tell you how to make your claim and what evidence of payment is required.

We guarantee to meet claims from readers made in accordance with the above procedure as soon as possible after the advertiser has been declared bankrupt or insolvent to a limit of £1,800 per annum for any one advertiser, so affected, and up to £5,400 p.a. in respect of all insolvent advertisers. Claims may be paid for higher amounts, or when the above procedures have not been complied with, at the discretion of this publication, but we do not guarantee to do so in view of the need to set some limit to this commitment and to learn quickly of reader's difficulties.

This guarantee covers only advance payment sent in direct response to an advertisement in this magazine (not, for example, payments made in response to catalogues, etc. received as a result of answering such advertisements):

CLASSIFIED ADVERTISEMENTS ARE EXCLUDED.

★ ★ ★ DRAGON/ORIC WORDPROCESSOR ★ ★ ★

Fed up with game playing??? Turn your Oric-1 48K or Dragon-32 into a word processor for only £17.25. Our cassette based WP is menu and cursor driven. The main options are:

| | | | | |
|--------|----------------------|----------|-----------|-------|
| CREATE | EDIT | RETRIEVE | SAVE | PRINT |
| RENAME | VERIFY (Dragon only) | | TAPEPRINT | |

Other features include character and bulk delete, tabulation, auto repeat (Even on the Dragon!), a printer menu enabling you to specify your document format independent of text entry, and save of print format with document. This WP is suitable for any printer which can be interfaced to the Oric or Dragon-32. Hear what the reviews say:

"All in all a very well written and documented piece of software" — ORIC SOFTWARE. "Easy to use. Clear documentation. Works well with Microline, Epson and Seikosha printers" — DRAGON USER

The JUNIPER COMPUTING WP is available from good computer dealers, or direct from ourselves, for £17.25, including operating manual.

CHEAP PRINTERS!!!! FREE DELIVERY!!!!

We are now able to offer the following very special prices on printers:

| | M.R.P. | Our Price |
|--|--------|----------------------|
| Star DP510 80 col, 100cps, F/T, 2.3K buffer | 332.35 | 282.35 |
| Star DP515 136 col, 100cps, F/T, 2.3K buffer | 458.85 | 335.00 (Yes 335.00!) |
| Shinwa CT1 CP80 80 col, 80cps, F/T | 332.35 | 282.35 |
| Star STX80 80 col, 60cps, Friction | 171.35 | 149.95 |
| MCP40 4 colour printer plotter | 169.95 | 149.95 |
| Seikosha GP100-A | 247.25 | 215.00 |
| Epson FX80 80 col, 169cps, F/T, 2K buffer | 503.70 | 470.00 |
| Epson RX80 80 col, 100cps, tractor | 342.70 | 312.70 |

COMPUTERS — NEW LOW PRICES!!! FREE DELIVERY!!!!

| | |
|--------------------------------|--------|
| Oric-1 48K With free game | 139.99 |
| Dragon 32 | 172.00 |
| Dragon Disc Drive & Controller | 275.00 |

All prices include VAT and delivery to UK mainland. Prices subject to change without notice. Please send cheque or PO with order. ACCESS accepted. Send for our FREE DRAGON/ORIC software list.

JUNIPER COMPUTING

8 Pembroke Green, Lea, Malmesbury, Wilts SN16 9PB.
Tel: 066-62-2689.

SOFTWARE REVIEWS

Cross Country Car Rally TI-99/4A (Extended BASIC) £13

By Norton Software, from Stainless Software, 10 Astone Road, Stockport

This game is absorbing for all the wrong reasons. It has a number of poorly-trapped errors which result in bizarre situations which would have made Einstein sit up and take notice.

The aim, well documented, is to drive safely across the USA from California to New Jersey.

Sprites are used to good effect to give an almost vertiginous sense of relative movement.

You must avoid crashing into other motorists, blowing up your engine, missing detours, and the police — well, we all know what

American roads are like — and you start with a lump sum of \$50,000 which is eaten away by the cost of motoring, States-style.

Unless, of course, you decelerate too hard, in which case you end up travelling backwards, but not just that — you are actually travelling at a negative speed.

I found myself absorbed in the task not of playing the game, but of trying to avoid playing it — the bugs make an otherwise boring exercise unusually enjoyable. No doubt Einstein would have invoked a Special Special Theory to explain it.

P.B.

| | |
|-----------------|-----|
| instructions | 90% |
| playability | 90% |
| graphics | 95% |
| value for money | 40% |



Hang Glider Pilot TI-99/4A £13

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

The object of this game is to jump from a ridge, and before landing,

fly for as long and as far as possible without crashing.

The view you have of the hang glider is from above, but you also have an excellent artificial horizon as well as meters to tell your altitude, your speed ROC (rate of climb/descent), and velocity.

There are only six keys used to control the hang glider — the four arrow keys, as well as A and F.

Moon Buggy Commodore 64 plus joystick £7.95

Anirog Software, 8 High Street, Horley, Surrey

Well, yet again another arcade machine clone, albeit a good one.

You control a small, six-wheeled moon buggy moving left to right. The background scrolls to the left to give the impression of movement.

In order to give the effect of depth, the speed of scrolling of the background decreases according to the distance of the background from you.

Your progress is impeded by sundry objects. You have to clear craters by jumping over them, boulders can be jumped or shot.

The odd land mine must be jumped and tanks must be shot

before they shoot you.

The arch enemy is an alien helicopter which attempts to bomb you. These are to be shot. Your score is a function of your survival time and the number of opponents destroyed.

Graphically the game is very good with nice use of sprites and good animation.

Unfortunately, the programmer seems to believe that all 64 owners should also possess a joystick. It wouldn't be much bother to offer keyboard control as well.

But overall, a well-written game which should keep you occupied for the odd hour. A.W.

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



Danger Truck/ Bumper Thumper 16K ZX81 £4.50

Work Force, 140 Wilsden Avenue, Luton, Beds

There are two separate games on this tape, which represents good value at the price.

In Danger Track, on side one, you have to drive a car through a

moving maze, trying to capture a number of flags while avoiding oil spots and trying to escape from five attacker cars

You can use smoke bombs to confuse the attackers, but as the game runs very quickly this is not much help!

The number of flags and oil spots can be varied. The graphics are bold and the movement fast, if jerky. Loading was faultless and the game was difficult enough to keep your attention.

On the other side of the tape is Bumper Thumper, which is an interesting variation on Pacman.

You inhabit a maze made of grey blocks which can be moved around. The object of the game is to push three special blocks completely out of the maze while avoiding the 'ghost' who is chasing you.

This is not as easy as it sounds; it is possible to push the blocks into such a position that they are jammed and won't move!

In both these games you have three lives and there is a Hall of Fame at the end.

If you enjoy games that involve dodging around mazes, this is a good buy. C.C.R.

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



Transport of delight

After travelling by land and air in this selection of games, our reviewers arrived at a decision...

The latter two are used for very steep banks/turns.

Anyone who has played on a flight simulator will know that the arrow facing away from you (in this case, key E) is used to pitch the nose of the aeroplane down, and the arrow facing towards you (in this case, key X) pitches the nose up.

No so in this case. Key E is used to pitch the nose up, and key X is used to pitch it down. Very confusing!

Landing is rather a complicated business but, as the instructions say, 'technique comes with practice'!

Even though this program is very pricey at £13, I enjoyed playing it tremendously. J.J.

| | |
|-----------------|------|
| instructions | 88% |
| playability | 91% |
| graphics | 100% |
| value for money | 90% |



Maurice Minor Dragon 32 £6.95

J. Morrison Micros, 2 Glensdale Street, Leeds LS9 9JJ

A racing car game for the Dragon. Your vehicle is disguised as an old Morris Minor. You have carelessly wandered into the middle of a Grand Prix race and now have to battle it out to the finish.

Steering to left or right is achieved with the right-and joystick, and the fire button acts as the accelerator.

Standard Formula One cars are overtaking you, and if you use the throttle you can catch up and overtake them. Regularly-placed oil slicks ensure that you have very little chance of making the finishing line.

The game is endowed with six levels of play, from Sunday

Driver upwards. But I found little difference between any of the levels — all were too difficult for me.

Graphics are reasonable, the sound of the engine is realistic enough and the game can be very fast and smooth.

But it does not grab the imagination and if you are looking for the Dragon equivalent of the famous Atari arcade game Pole Position, forget it.

On the other hand, considering the quality and the price of a lot of Dragon software available now, it may not be such a bad buy.

D.W.J.

| | |
|-----------------|-----|
| instructions | 90% |
| playability | 65% |
| graphics | 75% |
| value for money | 72% |



AGF

PROGRAMMABLE JOYSTICK INTERFACE for Spectrum or ZX81

NOW
AVAILABLE
from
SELECTED
RETAILERS

ONLY
32.95
+£1.00pp

PROGRAMMABLE INTERFACE

The AGF Programmable Joystick Interface is a unique design offering the use of any Atari-compatible joystick with absolutely all software, whether it is cassette or ROM cartridge, with the Sinclair Spectrum or ZX81.

The hardware programmable interface requires no additional software and accurately replicates the keys of the computer in a manner which is responsive to absolutely ALL key reading methods, both BASIC and Machine Code.

The interface does not interfere with key operation and can therefore be used simultaneously with the keyboard.

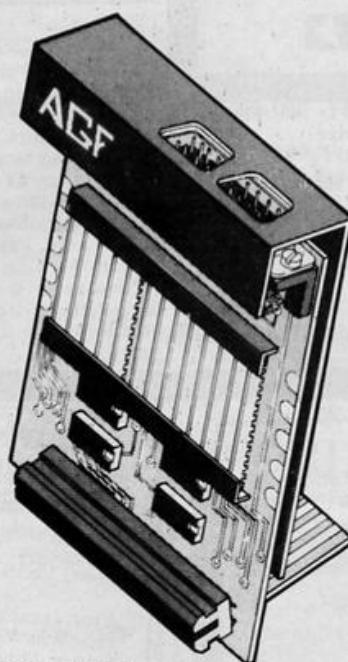
There is no need to remove the interface once fitted as the rear extension connector will accommodate further expansion, i.e. printers or RAM packs etc. This important feature avoids excessive wear to the expansion port.

The key replication principle pioneered by AGF means that your own programs can use eight directional joystick movement by utilising simple key reading BASIC.

Two joystick sockets are provided which share the same keys, for use with the majority of two player games. Several interfaces may be used on the same computer for multiple joystick applications.

The interface is programmed by a two digit code, which is looked up on a programming chart supplied, for each direction and firing button. The two numbers are then selected on a pair of leads which are clipped onto appropriately numbered strips on the interface.

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



KEY FEATURES

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

PACKAGE CONTENTS SUPPLIED

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

JOYSTICKS

CONTROLLERS

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

If you require extra Joysticks for our original interface module mark order 'OLD' Joysticks

ONLY £7.54 inc VAT + P&P

PLEASE ALLOW 28 DAYS FOR DELIVERY

ALL ORDERS CONFIRMED

| | | | |
|--|-------------------------------|------------------------------|-------|
| FROM: MR/MRS/MISS | | | |
| ADDRESS | | | |
| | | | |
| HCW39 | | | |
| SEND C.W.O. (NO STAMP NEEDED) TO: A.G.F. HARDWARE, DEPT. | | | |
| FREEPOST, BOGNOR REGIS, WEST SUSSEX, PO22 9BR | | | |
| QTY | ITEM | ITEM PRICE | TOTAL |
| | PROGRAMMABLE INTERFACE | 33.95 | |
| | JOYSTICK(S) | 7.54 | |
| | PACK(S) QUICK REFERENCE CARDS | 1.00 | |
| ONE | VIDEO GRAFFITI | FREE | |
| ZX81 <input type="checkbox"/> ZX SPECTRUM <input type="checkbox"/> | | Please tick | |
| DEALER ENQUIRIES WELCOME | | EXPORT PRICES ON APPLICATION | |
| | | FINAL TOTAL | |

Top Ten programs for the Spectrum

- | | | |
|----|----------------|----------------|
| 1 | Lunar Jetman | Ultimate (3) |
| 2 | Jungle Trouble | Durell (-) |
| 3 | Bugaboo | Quicksilva (5) |
| 4 | Scrabble | Sinclair (-) |
| 5 | Zip-Zap | Imagine (-) |
| 6 | Zzoom | Imagine (8) |
| 7 | The Hobbit | Sinclair (-) |
| 8 | Countabout | Longmans (-) |
| 9 | Manic Miner | Bug Byte (10) |
| 10 | Ant Attack | Quicksilva (1) |

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

Top Ten programs for the Commodore 64

- | | | |
|----|-----------------------------|-----------------|
| 1 | Attack of the Mutant Camels | Llamasoft (-) |
| 2 | Purple Turtles | Quicksilva (5) |
| 3 | Quintic Warrior | Quicksilva (7) |
| 4 | Tank Attack | Supersoft (-) |
| 5 | Ring of Power | Quicksilva (8) |
| 6 | Cosmic Split | PSS (9) |
| 7 | Aquaplane | Quicksilva (-) |
| 8 | Motormania | Supersoft (-) |
| 9 | Frogger | Interceptor (2) |
| 10 | Spritman | Interceptor (4) |

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

Top Ten programs for the VIC-20

- | | | |
|----|-------------------------|---------------------|
| 1 | Wizard and the Princess | Melbourne House (-) |
| 2 | Wacky Waiters | Imagine (3) |
| 3 | Panic | Bug Byte (4) |
| 4 | Catcha Snatcha | Imagine (5) |
| 5 | Matrix | Llamasoft (7) |
| 6 | Arcadia | Imagine (1) |
| 7 | Amok | Audiogenic (-) |
| 8 | Bewitched | Imagine (-) |
| 9 | Skyhawk | Quicksilva (2) |
| 10 | Frantic | Imagine (8) |

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

Top Ten programs for the Dragon 32

- | | | |
|----|------------------------|----------------|
| 1 | Frogger | Microdeal (1) |
| 2 | Mined Out | Quicksilva (3) |
| 3 | Cuthbert in the Jungle | Microdeal (-) |
| 4 | The King | Microdeal (10) |
| 5 | Ring of Darkness | Wintersoft (-) |
| 6 | Champions | Peaksoft (6) |
| 7 | Pettigrew's Diary | Shards (-) |
| 8 | Drone Databank | Cablessoft (4) |
| 9 | Dragonfly II | Hewson (-) |
| 10 | Empire | Shards (7) |

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

BEST SELLERS

Top 30

- | | | | |
|----|-------------------------|-----------------|---------------|
| 1 | Valhalla | Legend | Spectrum (26) |
| 2 | Jetpac | Ultimate | Spectrum (1) |
| 3 | Manic Miner | Bug Byte | Spectrum (2) |
| 4 | The Hobbit | Melbourne House | Spectrum (20) |
| 5 | Kong | Ocean | Spectrum (6) |
| 6 | Zzoom | Imagine | Spectrum (4) |
| 7 | Lunar Jetman | Ultimate | Spectrum (27) |
| 8 | Trans-Am | Ultimate | Spectrum (3) |
| 9 | Cookie | Ultimate | Spectrum (7) |
| 10 | Killer Gorilla | Program Power | BBC (8) |
| 11 | 747 Flight Simulator | Doctorsoft | BBC (-) |
| 12 | Arcadia | Imagine | VIC-20 (-) |
| 13 | Horace and the Spiders | Psion | Spectrum (5) |
| 14 | Hall of the Things | Crystal | Spectrum (10) |
| 15 | Cuthbert in the Jungle | Microdeal | Dragon (13) |
| 16 | Pool | CDS | Spectrum (23) |
| 17 | Chuckie Egg | A&F | Spectrum (17) |
| 18 | The King | Microdeal | Dragon (24) |
| 19 | Bewitched | Imagine | VIC-20 (29) |
| 20 | Pssst | Ultimate | Spectrum (15) |
| 21 | Frogger | Microdeal | Dragon (21) |
| 22 | Penetrator | Melbourne House | Spectrum (22) |
| 23 | 3D Combat Zone | Artic | Spectrum (16) |
| 24 | Harrier Attack | Durell | Spectrum (-) |
| 25 | Falcon Patrol | Virgin | CBM 64 (-) |
| 26 | Dungeon Master | Crystal | Spectrum (28) |
| 27 | Cuthbert Goes Walkabout | Microdeal | Dragon (12) |
| 28 | Johnny Reb | Lothlorien | Spectrum (18) |
| 29 | Horace Goes Skiing | Psion | Spectrum (19) |
| 30 | Aquaplane | Quicksilva | Spectrum (-) |

Compiled by PCS Distribution (0254 691211) and sanctioned by the Computer Trade Association. Chart is for retail sales in individual outlets in the UK and Northern Ireland for the fortnight ended November 20

Top Ten programs for the ZX81

- | | | |
|----|------------------|----------------|
| 1 | Scramble | Quicksilva (1) |
| 2 | 1K Chess | Sinclair (4) |
| 3 | Fantasy Games | Sinclair (-) |
| 4 | Sabotage | Sinclair (5) |
| 5 | Espionage Island | Sinclair (-) |
| 6 | Chess | Sinclair (6) |
| 7 | Asteroids | Quicksilva (7) |
| 8 | Space Raiders | Sinclair (-) |
| 9 | Defender | Quicksilva (2) |
| 10 | Football Manager | Addictive (8) |

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

MR CHIP SOFTWARE

SPECTRUM GAMES

SPECTRUM DARTS (48K)

Five games of darts for 1-5 players, 501, Cricket, Killer, Round the board, Noughts and Crosses, four levels of play per game, take on the computer or friends at these games of skill and judgement.£5.50

WH££LER DEALER

As for the Commodore 64, but now available for the 48K Spectrum, Texas TI99/4A and Dragon.£5.50

VIC-20 GAMES AND UTILITIES

JACKPOT

This is it, the ultimate Fruit Machine for the VIC with nudge, hold and respin 100% machine code. "Overall Jackpot is a beautifully written simulation giving superb graphics, animation and use of colour. In fact, this program makes Commodore's Fruit Machine cartridge look unbelievably cheap and nasty." Home Computing Weekly No. 20 19/7/83.£5.50

KWAZY KWAKS

Accuracy and speed are required for this Shooting Gallery, superb use of colour and graphics in this new and challenging game from the author of Jackpot. 100% machine code, joystick or keyboard control.£5.50

PACMANIA

Choose your own game from the following options — difficulty 1-3 speed 1-3, size of maze 1-3, visible or invisible maze, still or moving power pills, define your own key controls, any combination, if this is your type of game, then this is the one for you, for the 3K expand VIC.£5.50

BUGSY (Joystick Only)

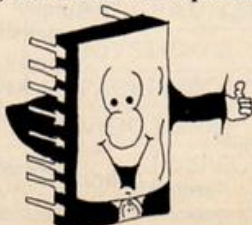
This is a Minefield with a difference as you step on the stones whilst collecting purple boxes which give you both time and points, they disappear from beneath your feet. DO NOT DESPAIR! "BUGSY" will randomly replace the stones but avoid bumping into him or its sudden death! An original compulsive and challenging game.£5.50

MINI-ROULETTE — PONTOON — HI-LOW

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

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

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



COMMODORE 64 GAMES AND UTILITIES

JACKPOT 64

At last its here, specially written for the 64, by the author of "JACKPOT" the ultimate Fruit Machine program for the VIC.£5.50
(available from 1st Nov)

WESTMINSTER

A game for up to four players, can you lead the party of your choice and win the general election, you tour the 60 constituencies (seats) buying votes, when you can, (just like the real thing), this must be one of the first board type games specially written for the computer. Why play on your own, have fun with your family and friends playing WESTMINSTER.£5.50

WH££LER DEALER

A game for two to twenty players, become a tycoon of the motor trade, you must obtain gearboxes, tyres and engines to produce cars for sale. Form syndicates, buy and exchange parts, buy dealerships, but be careful, you may become bankrupt and have to liquidate, find out what you are made of, have you got what it takes to become a WH££LER DEALER.£5.50

LUNAR RESCUE

Our new version, avoid the asteroid belt, to rescue the stranded scientists, then fight your way back to the mother ship, fast reactions are required to safely land and dock your lunar module.£5.50

PURCHASE LEDGER

Easy to use, single entry, handles 400 invoices per month, Gross/Nett purchases, V.A.T.£14.50
Disk Version£17.00
(available from 1st Nov)

SALES LEDGER — As Above£14.50
Disk Version£17.00

CHIPMON — Contains a one- or two- pass Assembler, Disassembler and Monitor. A programming aid for the development of machine code programs and routines on the CBM 64.£12.50

BANK MANAGER — As our Super Bank Manager, but for the 64.£7.50
Now available on disc with added facilities.£10.00

Full documentation with all utility programs.

Other software available for the VIC and Commodore 64, send for free brochure, including RABBIT SOFTWARE at £5.50 each.

Send Cheques/PO's to:

MR CHIP SOFTWARE

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

Wanted: High quality software, of all types, for export and UK distribution.

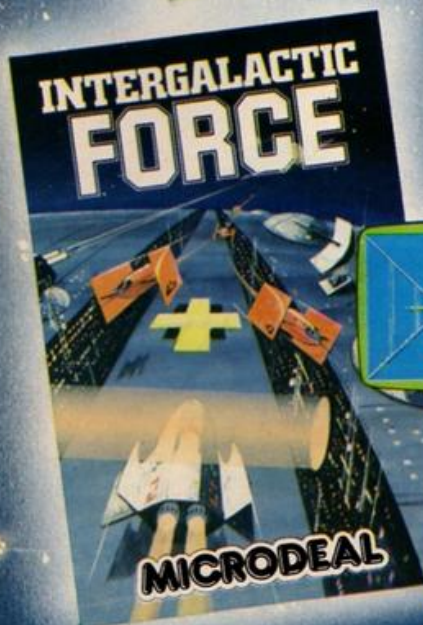
All programs now available on disc please allow £2.50 extra.

DEALER ENQUIRES WELCOME

WHEN IT COMES TO DRAGON 32

Software

"WE'VE GOT
IT TAPED"



41 Truro Road, St. Austell, Cornwall PL25 5JE. Tel: 0726 3456

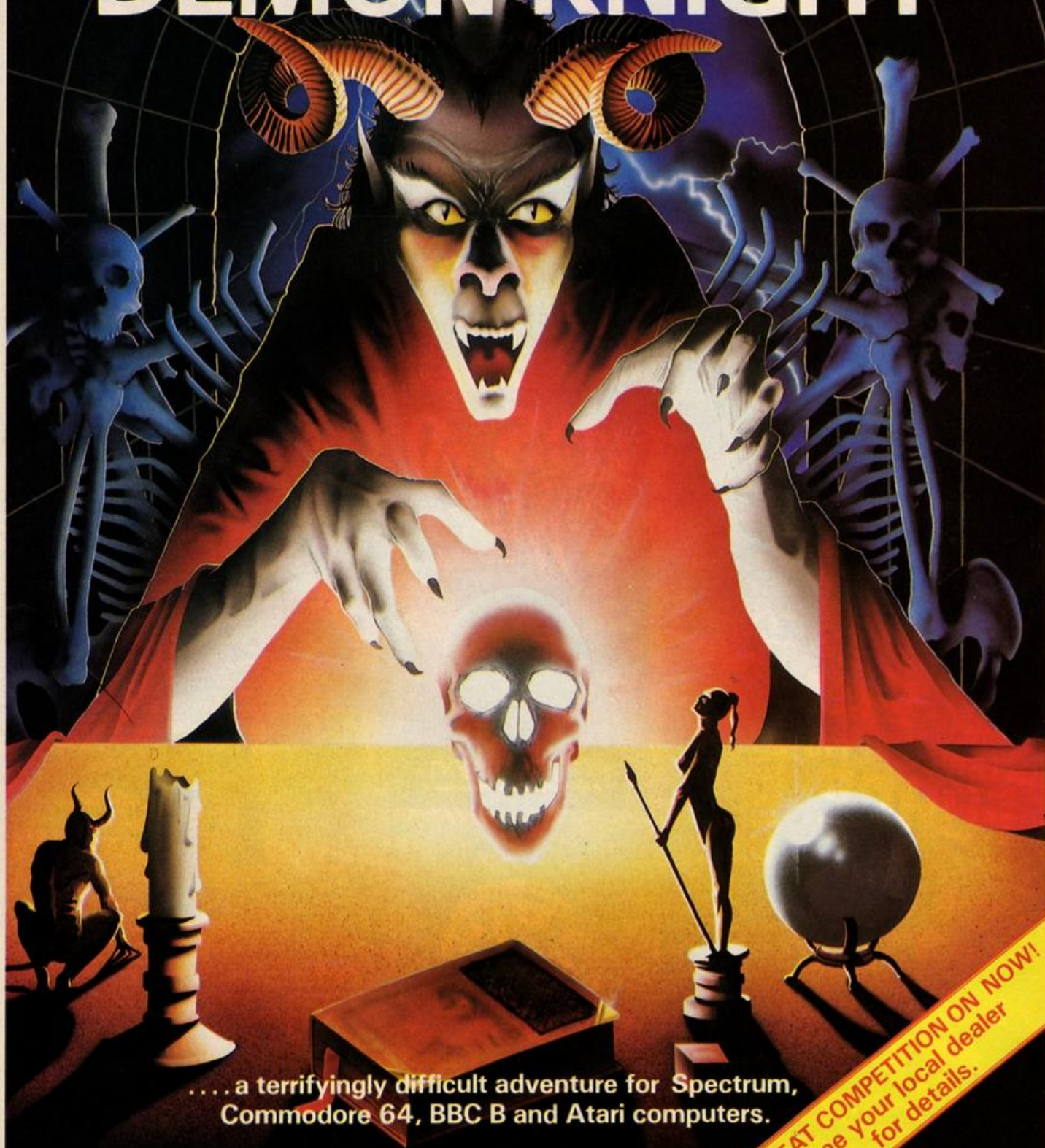
All cassettes £8 each

ASP
ASP SOFTWARE

A MEMBER OF THE ARGUS PRESS SOFTWARE GROUP

subjects you to...

DEMON KNIGHT



....a terrifyingly difficult adventure for Spectrum,
Commodore 64, BBC B and Atari computers.

GREAT COMPETITION ON NOW!
See your local dealer
for details.

Hornsey

NATIONWIDE SHOPS & DEALERS

CORNWALL

FAL-SOFT COMPUTERS

8 St. Georges Arcade, Falmouth, Cornwall. Tel: 0326 314663.
We are stockists of BBC, Sinclair, Commodore, Dragon, Oric, Colour Genie, MPS-2 and Comex-35.

CAMBRIDGESHIRE

GAMEKEEPER

Computer Software Specialists
at JUST VIDEO
Fitzwilliam Street
Peterborough
Tel: Pet. 310554

DEVON

WEST DEVON ELECTRONICS

15 Station Road,
Horrabridge. Tel:
Yelverton (0822) 853434

Dragon and Genie –
Service and repairs
Dragon 32 £174 (inc. VAT)
Colour Genie £169 (inc. VAT)
OKI Microline 80 Printer £245
(inc. VAT)
4 colour printer/plotter £169
(inc. VAT)
Dragon 184K disc drive £274
(inc. VAT)

Send for lists & sample
print outs. Free postage:
W. Devon Electronics, 15
Station Road,
Horrabridge. Open some
evenings in addition to
normal opening hours.

ESSEX

BBC ★

SPECTRUM ★ TEXAS

Extensive range of
software/hardware/books always in
stock.

ESTUARY SOFTWARE PRODUCTS
261, Victoria Avenue, SOUTHEND,
Essex. Tel: 0702 43568.

HEREFORDSHIRE


GAMEKEEPER

Computer Software Specialists
at VIDEO CITY
45/47 Fisher's Green Road
Tel: Stevenage 353808

GAMEKEEPER

Computer Software Specialists
at DJ RECORDS
16 High Street
Hitchin
Tel: Hitchin 56805

LANCASHIRE

 **LEIGH COLOUR
LABORATORY LTD.**
87 Chapel St, LEIGH, Lancs.
Tel: Leigh (0942) 607661

Open: Monday – Friday 9.00 – 5.30
and most Saturdays 10.00 – 4.00.

– Be Wise, Use The Specialists –

**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.**

LONDON

DAVID SHACK SOFTWARE

Over 150 games for the Spectrum and
100 for the VIC-20. Also BBC, CBM
64, Dragon, Atari, software sold at
discount prices. SAE for lists to:

294 Romford Road,
Forest Gate E7. Tel: 01-555 9303

ARMCHAIR ACTION COMPUTERS BEAT THESE PRICES

VIC-20 KIT £135
Commodore 64 £198

Commodore 1541 Disc Drive £209
Spectrum 16K £97. Spectrum 48K £127

Large range of software available for any of the above machines plus Oric,
Dragon & BBC.

Open Monday – Saturday 10am – 5.40pm (5 pm Wednesday)

Contact Armchair Action at: 41 Drayton Green Road, Ealing, London W13
(next to West Ealing Station). Tel: 01-567 1944

SURREY

COMPUTASOLVE LTD.

8 Central Parade, St. Marks
Hill, Surbiton, Surrey KT6 4PJ.
Tel: 01-390 5135.

Open 9.30-18.30 Mon-Sat
Over 600 different software
titles in stock. We are pleased to
demonstrate any program
before you buy.

We stock all leading home micro's

SUSSEX

Sussex Computer Centre
39 High Street
LITTLEHAMPTON
West Sussex Tel: 5674

We are stockists of Sinclair, VIC, Atari,
Dragon, Oric, Lynx, Sharp, Colour Genie
and Texas Instruments.
Members of Spectrum Discount Group.

The Micro Store HOME COMPUTER CENTRE

We carry a large selection of
hardware/software/accessories
for BBC, ORIC, SPECTRUM,
CBM 64, VIC-20, ATARI 400,
600 & 800, DRAGON &
MEMOTECH.

13B West Street,
Horsham, W. Sussex
Tel: 0403 52297

SCOTLAND

THE GAMES SHOP AND COMPUTER SOFTWARE CENTRE TEL. NO. 0224-643740

3 Waverley Place, Aberdeen AB1 1XH.
Stockists of Spectrum, Dragon, VIC-20
and Commodore 64 software. Extensive
selection of books and magazines.

LERWICK, SHETLAND

Tel: 0595 2145
Software, Books, Accessories
Service

BBC Micro, Dragon-32, ZX81,
Spectrum, VIC-20, CBM-64
Open Mon-Sat 9.30am-5.30pm

STAFFS

Computerama - The Midlands Home Computer Specialists

**FOR BBC, SPECTRUM &
ALL LEADING MICRO'S**
STAFFORD: 59 FOREGATE ST
TEL: 0785 41899

STOKE-ON-TRENT:
MARKET SQUARE ARCADE
TEL: 0782 268620

 24 The Parade
Silverdale, Newcastle
Tel. 0782 636911
**Official dealers for
Commodore, Sinclair, &
Acorn. BBC service and
information centre**
Huge range of hardware and
software backed up by
sophisticated service department

SOMERSET

PHOENIX SOFTWARE CENTRE

A large range of software in stock for
ATARI, BBC, DRAGON, ORIC-1,
SPECTRUM, COM 64 & VIC-20.

Also stockists of BBC &
SPECTRUM COMPUTERS.

Open Mon – Sat 9am – 6pm.
Access & Barclaycard accepted.

88 Huish, Yeovil, Somerset
Tel: (0935) 21724

**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.**

Please include my business details in the next available issue of Home Computing Weekly

Business Name:

Address:

Tel. No.:

Open Hrs:

Contact (Office Use Only):

Post To: H.C.W. (Shops & Dealers), 145 Charing Cross Rd., London WC2H 0EE.

**£6 per
single column
cm or phone us
for series
discount.**

HOME COMPUTING WEEKLY CLASSIFIED

Lineage:
35p per word



01-437 1002
EXT 211.

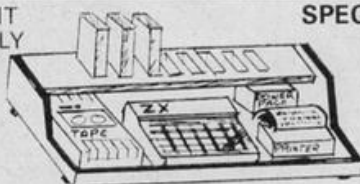
Send your requirements to:
Debra Stuppel
ASP LTD.
145 Charing Cross Road,
London WC2H 0EE

Semi display: £6.00 per single column centimetre
Ring for information on series bookings/discounts.

All advertisements in this section must be prepaid.
Advertisements are accepted subject to the terms and
conditions printed on the advertisement rate card (available on request).

ACCESSORIES

UNIT
ONLY



SPECTRUM & ZX 80/1
USERS
LOOK THIS
WAY
PUT AWAY
ALL THOSE
UNTIDY
WIRES

With this amazing new unit designed by a Spectrum user. Put on a chair, floor, on your lap. Move it all in one go. Made of polished Mahogany, ply or black. (State colour) at £23.50 inc. VAT & p&p. Send cheque, P/O to:

E. R. Cameron & Son Ltd. Est. 1870
H/O 9 The Vineries, Enfield, Middx. EN1 9DQ

FOR HIRE

Oric Software Library. Two weeks hire £1. Annual Membership £5. Stamp for list. Les Wilson, Penallick, Tintagel, Cornwall.

To Hire a Computer from ZX81 upwards, ring or write to: Business and Computer Services, 292 Caledonian Rd., N1 1AB. Tel: 01-607 0157.

VIC-20 Software Hire. Free Membership 60p per week, S.A.E. for Membership Kit to: VSH, 12 Clipstone Avenue, Nr. Peel Street, Nottingham.

**BUY OR SELL
HARDWARE
THROUGH H.C.W.
H.WARE SECTION. IF
YOU'VE ALREADY
BOUGHT WHY NOT
ADD-ON? MAKE SURE
YOU APPEAR IN THE
RIGHT SECTION.
RING 01-437 1002
EXT 211**

REPAIRS

ZX81 - Spectrum. We can now offer out-of-guarantee repairs by our Computer Dept. Our engineers have had over three years experience servicing Sinclair Computer products. Price including p&p. ZX81 — £11.50; 16K Ram — £9.95; Spectrum — £18.75. Send with cheque or PO. T.V. Service of Cambridge, French's Road, Cambridge CB4 3NP. Phone (0223) 311371.

**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.**

HARDWARE

Home and Business micro computers bought and sold. Apple equipment always required. Your BBC stockist in Berkshire. Tel: 0344 84423

**FUTURE
TECHNOLOGIES
(HCW) 1 Hollybrook Rd., Shirley
Southampton SO1 6RB**

CBM 64 Computer £198
with cassette & 2 blank tapes £242
80 Column Board for 64 £115
VIC 20 starter pack £139
Cassette alone £44.90, tapes £1 each
Spectrum 16K £99.95 48K £129.95
Also Atari, Texas, accessories,
software. Cheque/PO with order.
Send large SAE for lists (23p stamp)
Add £1 P&P for orders under £50
All prices include VAT

FOR SALE

New TI-99/4A, expansion box, speech synthesizer, joysticks, 12 TI games, 11 others, ex-BASIC mini-memory, new: over £600. Cost: £299! Call 01-722 7846 after 5p.m.

For Sale. Pet Commodore 2001 27K + typewriter keyboard, dual disk drive, five manuals + 2 disks. £270 o.n.o. Phone Ruislip 76609 after 6p.m.

TI-99/4A for sale. Plus Chess cartridge, assorted software. £125. H. McNeill, Isle of Colonsay, Argyll PA61 7YR.

Tandy Model 100 portable computer. £400. Phone 0455 611479.

BIG DISCOUNTS BY MAIL

SPECTRUM 48K..... only £120.95
ORIC 48K..... £129.95
COMMODORE 64..... £210.00
BBC Model B..... just £385.00

All prices include VAT & delivery by Securicor.
Send Cheques/Crossed P.O.'s payable to:

MR. T. PRYLE
70 Carlisle Road, Edgbaston, Birmingham,
West Midlands.

LYNX LYNX LYNX
COMPLETE KEYBOARD PACKAGE OF
A DATA STAND PLUS DATA CARDS

• Quality DATA STANDS to help in typing in programs
• DATA CARDS contain full keyboard information
• Keyboard entry of user defined graphic characters.
• Also a new approach to number conversion.
Avoid those '0's & '1's RRP £14.95 plus
Dealers enquiries welcome. £1.50 p&p.
Cheques & P.O.'s only. Please allow 28 days for delivery.

PERIPHERAL PRODUCTS
209 KENTON LANE,
KENTON, MIDDX.
Tel: 01-907 3406

**ALL YOUR COMPUTER
NEEDS from our FREE**

COMPREHENSIVE CATALOGUE OF
MICROCOMPUTER ACCESSORIES
and SOFTWARE
see please to:

ALLCOM
20 Harwood Road,
Lichfield, Staffs.

BOOKS

TI-99/4A Christmas ideals. New book by Stephen Shaw: "Getting Started with TI-99/4A" £5.95. Super dust covers only £3.50. Add 45p handling. "T.C.H.S." 40 Barrhill, Brighton BN1 8UF.

CLUBS

Software Exchange. Swap your used software. Spectrum speciality. FREE membership. S.A.E. UK SEC, (HCW), 15 Tunwell Greave, Sheffield S5 9GB.

COURSES

KIDS

**LEARN HOW TO USE AND PROGRAM
A HOME COMPUTER**

- 4-hour course
- Personal use of a computer
- Be trained by a group of experienced American Instructors
- Only £9.85 plus VAT

RESERVE YOUR PLACE NOW
Tel: 01-587 0455

Presented by:
COMPUTER INNOVATIONS

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., (H.C.W.) ENFIELD GREEN, SURREY TW20 0QR.

DO YOU OFFER A SERVICE PEOPLE IN COMPUTING REQUIRE? IF SO WHY NOT TELL THEM ABOUT IT?
RING 01-437 1002 EXT 211, TO APPEAR IN THE SERVICES SECTION.

ALL YOUR CASSETTE NEEDS

Blank cassettes C15 with case, 40p each.

Labels in Blue, White or Yellow, 20 for 36p. Inlay cards in Blue, Red or Yellow 20 for 60p. Library cases, 9p each.

Postage on each complete order 55p. Stonehorn Ltd, (HCW), 59 Mayfield Way, Barwell, Leicester LE9 8BL.

Express parcels and distribution, greater Merseyside area. Aitken County Courier Service. 051-625 8670 anytime.

SOFTWARE APPLICATIONS

SPECTRUM KOPYKAT IMPROVED PERFORMANCE

Simply the best. Copying any program is now as easy as LOADING and SAVING your own programs. Any ZX Spectrum program can be backed-up onto a fresh tape. Even programs that cannot be stopped can now be copied. 100 per cent machine code. Prints file names. Copies headerless files. SPECTRUM KOPYKAT uses no program area so full size programs over 41.7K (9K for 16K machines) can be copied. PLUS FREE Header Reader program.

Despatched by first class return of post.

Send cheque/PO for £4.95 to:

MEDSOFT

61 Ardeen Road, Doncaster, South Yorks DN2 5ER.

IT CAN EVEN COPY ITSELF

Atari 400/800 owners! Back-up your cassette programs, including M/code Auto-Boot. Repeat facility. Cheque/PO for £6 to: J. E. Evans, 52 Heyes Avenue, Rainford, St. Helens, Merseyside WA11 8AR.

VIC IMITATOR

Copies virtually all VIC-20 cassette based programs, including basic machine code, multipart programs and programs using various protection techniques. Written in machine code. Easy to use works on any memory size. For a quick delivery, send Cheques/POs for £6 to:

IAN WAITE, DEPT HCW
11 Hazlebarrow Road, Sheffield S8 8AU.

FOOTBALL FOLLOWERS

Follow your teams and be first with the league table with FOOTBALL FOLLOWER. Program available for ZX SPECTRUM. Send £2 to:

FOOTBALL FOLLOWER
4 Brampton Court,
Bowerhill, Melksham.

TAPE COPIER

The most advanced BACK UP COPIER for ANY SPECTRUM available. MICRODRIVE COMPATIBLE. Does any other copier come near? LOOK at SOME of its options:

- MAXBYTES copies programs occupying the FULL 16K or 48K! Verifies. Repeat copies. Auto. Abort. STOPS programs.
- Loads CONTINUOUSLY (not just one part at a time like most copiers) even without pressing a key. Copies HEADERLESS and ALL programs that we are aware of! Very simple to use.
- We offer a FULL MONEY BACK GUARANTEE if you are not fully satisfied. Cost only £4.49.

LERM (DHC),
16 Stonepit Drive, Cottingham,
Mkt. Harborough, Leics.

SOFTWARE GAMES

Computer games, discount prices. Free catalogue. Send s.a.e. to: A. D. Software, 17 West Street, Wath Upon Dearne, Rotherham S63 7BR.

LANTERN SOFTWARE TI99/4A

Discover our range of arcade games and utilities. High quality software at New Low Prices.

Daddy's Hot Rod £5.95 Troll King £5.95

Runner on Treiton £5.95

NEW !! Builder/Minefield - Two great

games for youngsters - £4.95

The Black Tower - from the author of

Troll King - £5.95

Hunchback Havoc - 24 sheets of action

- unequalled in speed and graphics -

simply the best - £5.95

For a full list of these, our Ext-Basic range

and more send S.A.E. to: 4 Haffenden

Road, Tenterden Kent TN30 6QD.

SPECTRUM PROGRAMS

Gnasher £4.95, Arcadian £4.95, Escape £4.95, Backgammon £5.95.

All 16K and many more. Crossed cheques/PO's to: VYAJYS HK or SAE. For full list to VYAJYS HK, 11 Margaret Avenue, St. Austell, Cornwall.

ORIC XMAS !

ORIC 148K Micro-computer £139.95

Quickshot Joystick & Cable £24.95

IJK Xenon 148K £7.50

Kenema Ass. Othello 48K £5.50

Prices Inc. VAT & P&P. SAE for full lists.



Phildata,
8, Richmond Terrace,
Pudsey, W. Yorks.,
LS28 9BY.

ACCESS Orders. Telephone (0532) 578851

VIC-20 Adventures. Kraal's Kingdom - in two 16K parts £4.95. Marooned - 16K, very addictive £4.50. Add 50p p+p. Buntasoft, 149 Monks Walk, Buntingford, Herts. SG9 9DS.

MICROSONIC Programs for the unexpanded TI99/4A

| | |
|-------------------------|-------|
| Air Attack | £5.25 |
| Alien Alert | £4.25 |
| Grand Prix | £3.95 |
| Galactic Zoo Keeper | £5.25 |
| Space Vault | £4.50 |
| Hangman and Masterbrain | £4.25 |

All prices are inclusive. Dealer enquiries welcome. Please send Cheque/PO's to: **MICROSONIC**, 85 Malmesbury Road, Chaddle Hulme, Cheshire SK8 7QL.

CRICKET CAPTAIN For 48K Spectrum

Captain your team through a one-day competition. Choose side and set batting order, bowlers and field positions. 3D Hi-res match action makes this a spectacular and exciting Cricket simulation. 10 levels of play and save game facility. Send Cheque/PO for £4.95 to:

Allanson Computing, 77 Chorley Rd., Adlington, Chorley, Lancs.
Guaranteed Immediate Despatch.

CALLING ALL VIC-20 OWNERS!

Buy your Christmas software now at January Sale Prices. Rabbit, Romik, Audiogenic etc. from £4.95. And ex-rental software from £1.95. Phone now for full details on 01-482 1768 or write to:

49 Mayfield Road,
Sanderstead, Surrey.

NEW!! DIFFERENT!!

ATARI 400/800 ★ CBM 64

"W.U.N.D.E.R. LAB"

Find the missing Professor, get the Time-Lab keys, travel back in time and try to avert a nuclear disaster. A thinking adventure—

NO ZAPS OR MONSTERS!

Cassette £7.50 or SAE details (CBM 64, Atari 16K or 48K)

Loosley, 18 Longlands Road, Sidcup, Kent DA15 7LT.

For all the family - 48K Spectrum

FIND THE LINK - CALL THE MISFIT

A game of general knowledge, memory, perception, deduction for 2-10 players. 376 different puzzles. Fun for Xmas parties. Ideal as a present. Only £5 inc. p+p. Cheque/PO, cash to:

M. I. Mander,
Somerford Grange, Brewood, Staffs.

TI-99/4A Christmas Special. Any three programs for £5. For list S.A.E. Binbrook Software, 10 Potterill Lane, Sutton-on-Hull HU7 4TF.

Andromeda Software. Quality games for TI-99/4A. S.A.E. for details. 56 Wells Street, Haslingden, Lancashire BL0 9AN.

**BUY OR SELL
HARDWARE
THROUGH H.C.W.
H.WARE SECTION. IF
YOU'VE ALREADY
BOUGHT WHY NOT
ADD-ON? MAKE SURE
YOU APPEAR IN THE
RIGHT SECTION.
RING 01-437 1002
EXT 213.**

SOFTWARE EDUCATIONAL

Tables 12 (BBC A/B cassette). The easy way to learn multiplication tables. For home or school. Prompt dispatch. £5 payable to D. F. Steven, 61B Tehidy Road, Tywardreath, Par, Cornwall PL24 2QD.

TI-99/4A times table tuition and division tuition. Only £4.50. Each. Maximum memory utilisation, optional speech: Jamieson, 8 Long Row, New Lanark, Strathclyde.

USER GROUPS

TI99/4A. Yahtzee free. Details only when you join nationwide group. S.A.E. TI-users, 40 Barrhill, Brighton, BN1 8UF.

WANTED

PERSONAL COMPUTERS

All models bought for cash.

Morgan Camera Company
160 Tottenham Court Road
London W1. Tel: 01-388 2562

Cartridges wanted. Good prices paid for Atari, VCS, 400/800, Intellivision, VIC-20, etc. Write only. L. Sutherland, 14 Middlefield Crescent, Aberdeen. AB2 2PW.

XMAS GIFTS

Micro-Users SOFTWARE T-SHIRTS and SWEATSHIRTS

| | |
|------------|---------------------|
| 1 Apple | 6 I'm User Friendly |
| 2 Spectrum | 7 Have you seen my |
| 3 Oric 1 | Peripherals? |
| 4 Epsom | 8 Z80A |
| 5 Invader | 9 6502 |

100% Cotton T-shirts in white, red or sky

£3.25 each inclusive.

Poly-cotton Sweatshirts in white or grey

£5.50 each inclusive, small, medium, large

and extra large sizes.

Mail Order only from:

One Per Cent Screens, Unit 12, Star Lane

Estate, Great Wakering, Essex.

DO YOU OFFER A SERVICE PEOPLE IN COMPUTING REQUIRE? IF SO WHY NOT TELL THEM ABOUT IT?
RING 01-437 1002

CLASSIFIED ADVERTISEMENT — ORDER FORM

| | | |
|-----|-----|-----|
| 1. | 2. | 3. |
| 4. | 5. | 6. |
| 7. | 8. | 9. |
| 10. | 11. | 12. |
| 13. | 14. | 15. |
| | | |
| | | |
| | | |

PREFERRED CLASSIFICATION

Please place my advert in Home Computing Weekly for _____ weeks.
Please indicate number of insertions required.

Advertise nationally for only 35p per word (minimum charge 15 words).

Simply print your message in the coupon and send with your cheque or postal order made payable to Argus Specialist Publications Ltd to:

CLASSIFIED DEPT., HOME COMPUTING WEEKLY,
145 Charing Cross Rd., London WC2H 0EE.
Tel: 01-437 1002.

Name

Address

Tel. No. (Day)



| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

SAVE HUNDREDS ON YOUR HI-FI-NOW!

HI-FI NOW! – the new magazine with a new way of giving you the buying information you need – NOW!

HI-FI NOW! – will tell you the £99 speaker that sounds like £200 – NOW!

HI-FI NOW! – will help you spend £15 to make your personal stereo like a million dollars – NOW!

HI-FI NOW! will even make sure you spend £2,000 wisely – NOW!

HI-FI NOW! – answers the questions you are asking about hi-fi – NOW!

Wharfedale, KEF, Rotel, Sansui, Marantz, Koss, Sony, Pioneer, Hitachi. Just some of the names in the first issue of HI-FI NOW!

HI-FI NOW! AT YOUR NEWSAGENT NOW! ONLY 85p!

'NOW WIN THE POOLS'

THIS IS MEANT FOR YOU — ESPECIALLY IF YOU USE SINCLAIR SPECTRUM COMPUTER, or even ANY COMPUTER — OR NO COMPUTER AT ALL

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

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

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

| First Dividends | Second Dividends | Third Dividends | Fourth Dividends | Fifth Dividends | Sixth Dividends |
|-----------------|------------------|-----------------|------------------|-----------------|-----------------|
| 765 | 1,818 | 2,942 | 1,952 | 631 | 93 |

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

I HOLD THE UNCHALLENGED WORLD'S RECORD FOR POOLS WINS

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

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

I have CHALLENGED THE WORLD with my record of wins and with all the evidence that I possess — NO ONE has ever been able to accept the Challenge — I KNOW NO ONE EVER WILL.

MY SECRET IS NOW PLACED ONTO COMPUTER CASSETTE FOR YOU.

THE METHOD IS THE GREATEST TREBLE CHANCE WINNER IN THE HISTORY OF FOOTBALL POOLS — IT WILL LAST FOREVER — BOTH FOR ENGLISH AND AUSTRALIAN FOOTBALL POOLS, WITH EQUAL SUCCESS.

I now intend to give a limited number of people the opportunity of making use of my method — perfected over 25 years and proving itself on EVERY ONE OF THOSE TWENTY-FIVE YEARS.

You will have noted details of my personal achievements so far, as given to you above.

A GRAND TOTAL of 8,201, yes 8,201 POOLS DIVIDENDS, including 765 FIRST DIVIDENDS.

My Pools Winnings Dividend slips now number so many, that they fill a very large suitcase and will stand as my evidence of all claims in ANY COURT OF LAW IN THE WHOLE WORLD.

Taking just the past 25 years into consideration, I have won ON AVERAGE over 328, (THREE HUNDRED AND TWENTY-EIGHT) Pools Dividends EVERY YEAR — or — AN AVERAGE of over SIX DIVIDENDS EVERY WEEK for TWENTY-FIVE YEARS.

You have my absolute Guarantee of the complete authenticity of every claim, cheque, document, letter, etc, contained herein.

Don't take my word for it, read what people write about me and my method:—

I won on Zettors last weekend. It was not a big sum, but all the same it was a very nice surprise for me. J.C., Lancs.

I appreciate the straightforward method you adopt, which is such a contrast to the rubbish of misrepresentation which is so common in the Betting World, by unscrupulous and self-opinionated charlatans. C.H., Devon

Winning cheque received today, sincere thanks. D.N., Devon

I congratulate you on your achievement. R.R., Wales

I should like to thank you for a most exciting season and look forward to hearing from you again. J.C., Hants.

I would like to acknowledge cheque and say how much I appreciate your integrity. J.M., Scotland

Many thanks for your system, it is all you say and more. J.C., Lancs.

Your wonderful system won me £3,527. I intend to visit London soon and will be able to come and see you personally. (Overseas Client). P.M., Kampala.

Many thanks for trying so hard to please us all, your brother should be thanked also. One of our daughters, WHOSE HUSBAND YOU HELPED ENORMOUSLY, has just phoned, the four of them have just spent a lovely holiday in Spain. K.R., Isle of Man.

I do have losing weeks, but ON AVERAGE my winnings show over SIX DIVIDENDS EVERY WEEK for the past 25 years.

I know that you are now utterly flabbergasted, it always happens to everyone with whom I come into contact. Please just sit back and imagine for a moment my FIRST DIVIDEND wins alone — they now number 765 (seven hundred and sixty-five) and will probably be even more by the time this advertisement appears in print.

I AM NUMBER ONE IN THE WORLD AND NO ONE DISPUTES IT.

For as long as I continue to enter the Football Pools my wins will continue. I have already said, they apply, with equal success to both English and Australian Football Seasons.

I intend to release a STRICTLY LIMITED NUMBER of copies of my cassette, — DO NOT DELAY AND FIND YOU ARE TOO LATE, in which case I would have to refund your money.

I am so confident of YOUR success that if I do not win at least THREE FIRST TREBLE CHANCE DIVIDENDS in the first 20 weeks of entering, I will completely cancel the balance of the purchase price and you do not have to pay me another penny, at any time, no matter how vast your winnings.

I only wish that space would allow me to give you photographs of my winnings slips, cancelled cheques, etc, but it is of course impossible — they now number 8,201 dividends. I have however given JUST A FEW EXTRACTS FROM ORIGINAL LETTERS I hold from my small Clientele.

I am the Inventor and Sole Proprietor of my method, Registered as EUREKA — ('I have found it'). I am known as The Professor in Pools Circles — I am of the Highest Rank in Forecasting — this is beyond dispute. I am marketing a limited number of Computer Cassettes, under my Registered Company — FOOTBALL ENTERPRISES.

My initial charge for a copy was £75, but for this SPECIAL REDUCED PRICE OFFER I will send you a copy, for £20, (twenty pounds) ONLY, plus your Promise to pay me the balance of £55 — ONLY IF YOU WIN AT LEAST THREE FIRST TREBLE CHANCE DIVIDENDS IN YOUR FIRST 20 WEEKS OF ENTERING — otherwise you owe me NOTHING FURTHER.

This is surely proof absolute of my supreme and utter confidence in my own abilities and in the capabilities of my discovery. I could easily CHARGE £2,000 per cassette on the evidence I possess, but that would not be fair to everyone, which is what I want to do.

My method is WORLD COPYWRIGHT, any infringement and immediate proceedings will be taken, without prior warning. It is truly ingenious and has stood the test of time.

My cassette is simplicity itself to operate and you'll be given FULL DETAILS for weekly calculating. Your entry need not involve you in any large weekly stakes, you can enter for as little as 25p, if you wish.

I charge NO COMMISSION on any of your wins — no matter how BIG they may be.

I realised a long time ago, that it was no good sitting down and dreaming about winning the pools, so I burnt the candle at both ends, working late into the night, occasionally RIGHT THROUGH THE NIGHT, I KNEW there was a way, eventually it all paid off and has been doing so ever since.

I am unable to vary my offer to anyone, so please do not request it, as I shall very easily dispose of the cassettes I have prepared and am making available.

IMMEDIATELY I perfected my method I commenced winning right away, (first with just a little £163, the first week I used it), I HAVE NEVER LOOKED BACK SINCE, amongst all those dividends was one for over EIGHT THOUSAND POUNDS for just one eighth of a penny stake.

I will release a copy on cassette, to you, on receipt of the completed order form and your Signature thereon, confirming you will treat it in the STRICTEST CONFIDENCE between us and retain it for your OWN USE ONLY.

PLEASE NOTE:

If you happen to be the proud owner of a Computer other than Sinclair Spectrum, you can still purchase a copy of my method, for the same price and program it YOURSELF on to YOUR OWN COMPUTER — or even if you do not have a computer.

I sent in my FIRST entry last week and won 2nd and 3rd dividends, as you will see from the enclosed certificate. One more and I would have collected over £400 for FIRST dividend. Once I've won a fair amount I shall be staking from winnings and at 2p per line, A FIRST DIVIDEND last week at this would have been over £3,000. C.A., Yorks.

I am very interested indeed and enclose £20 herewith. I agree to pay you the balance of £55 ONLY if I win at least THREE FIRST TREBLE CHANCE DIVIDENDS in my first 20 weeks of entering — otherwise I owe you NOTHING FURTHER at any time — no matter how much money I win. My Signature below is my Undertaking to retain complete and absolute confidence about the method.

Name.....

Address.....

.....

.....

Signature.....

HCW

The Managing Director,
Football Enterprises,
'Anvon',
9 New Road,
Haverfordwest, Pems.

Please tick if cassette is for:
Sinclair Spectrum (48K) ☐
Any other Computer ☐
No Computer at all ☐

ARCADE ACTION & ADVENTURE WITH...

..The Guardian

You are at the Gateway to the Anti-Matter World of Migon do you dare enter will you survive?

48K SPECTRUM

£5.95

Krazy Kong

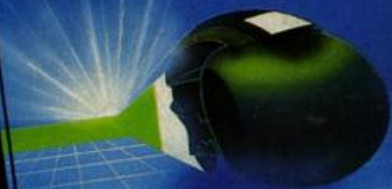
All machine code, super fast action. 4 screens of fireballs barrels & conveyor belts.

SPECTRUM 48K 5.95



PSS
PERSONAL SOFTWARE SERVICES

LIGHT CYCLE



Light Cycle

Race your Light Cycle on the infamous grid. Fast action all the way

SPECTRUM 16K 48K 5.95

PSS
PERSONAL SOFTWARE SERVICES

...RESCUE JANE. BUT BEWARE. KONG IS OUT TO GET YOU...

Krazy KONG

