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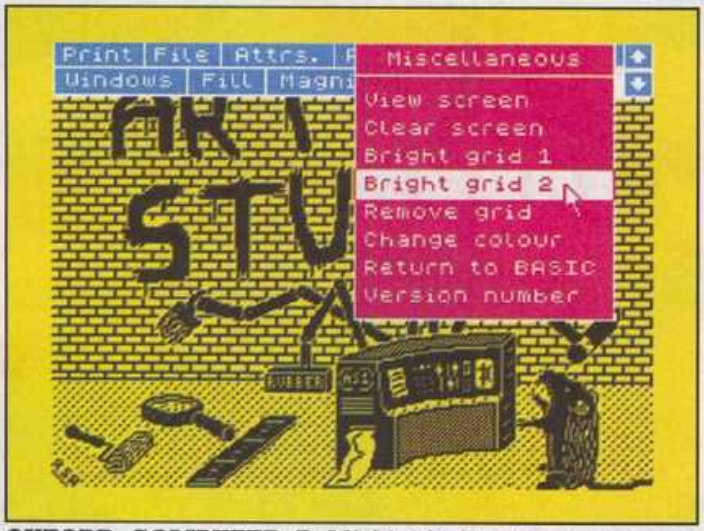


OXFORD COMPUTER Publishing's Spectrum program Art Studio has been snapped up by British Telecom. It will be released on a new label set up by BT – story inside.

Find out if you have won an Amstrad 6128 this week or at least some special *Popular Computing Weekly* cassette labels. Enter your personal Micro Magic number into our special computer program on page 6.

MICRO MAGIC

THIS WEEK'S NEWS

- BBC B production ceased
- Atari ST moves on up
- New Sinclair biography out

Clive's New Year micros

IT IS now clear that Sinclair has two new micros lined up for launch early next year – the expanded memory version of the Spectrum, and an up-market, professional successor to the QL.

The company apparently fully intends to continue with two distinct types of micro using the two different processors – Z80 and 68000 family.

Both machines are likely to offer full upward software compatibility with their respective predecessors – the Spectrum Plus and QL.

The British version of the Spanish Spectrum 128K launched in Barcelona on September 23, will be the first to appear, probably in January 1986. It is not entirely clear, however, whether Sinclair simply intends to release a UK translation of the Spectrum 128, or a modified version – perhaps with better graphic facilities.

However, the new machine will look very similar to the Plus with a Plus-style keyboard – and may well appear in the same casing.

The new QL is likely to replace the 68008 processor with a full 68000 and a built-in 3½ inch disc unit in preference to microdrives. The package – unlikely to appear until the spring – will probably include a built-in monitor.

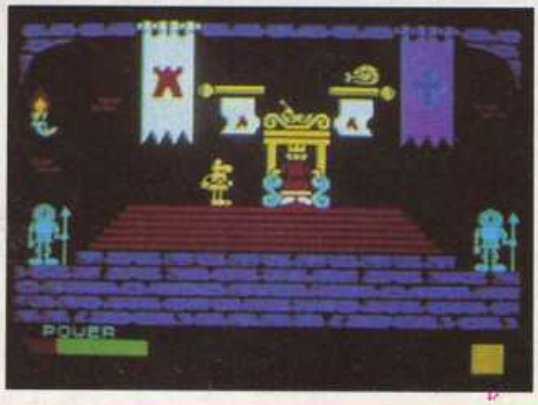
continued on page 4 ▶

TWO NEW TITLES from Mikro-Gen (left) and Mastertronic (right).

Mikro-Gen's Sir Fred (£9.95 on the Spectrum) has been licensed from a Spanish software company and is an old fashioned tale of knights rescuing imprisoned princesses.

The Last V8 from Mastertronic (£2.50 on the Commodore 64) is a hectic car race which features sophisticated music.

Both are due out next week.



INSIDE ⟩SPECTRUM DISC INTERFACE ⟩ QL MODEM ⟩ C64 SAMPLER ⟩

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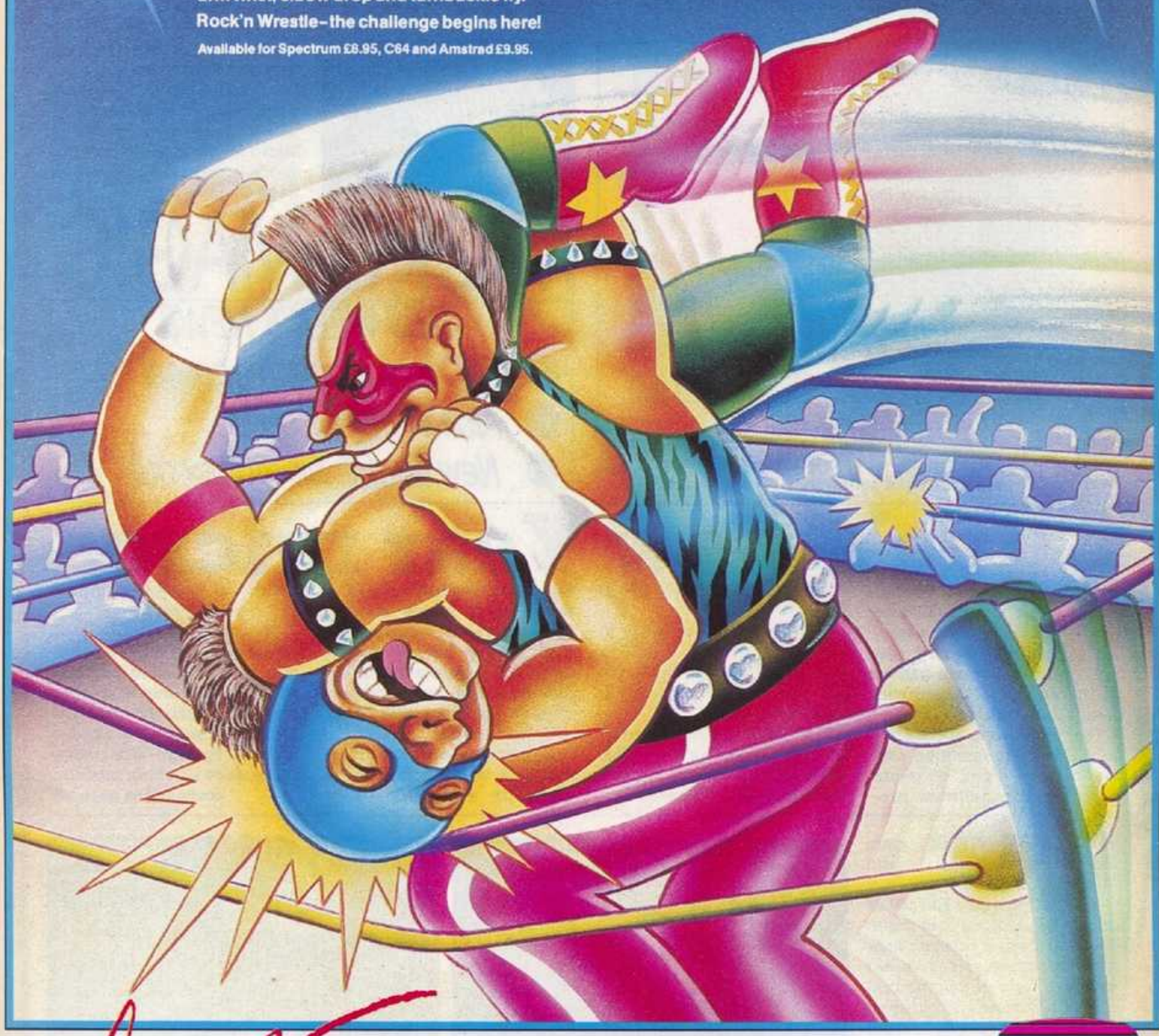

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EDITORIAL

Software piracy is probably not something which is of great concern to the average computer program buyer. After all, software piracy is just as widespread and 'acceptable' as copying a friend's music cassette. The music industry lives with the problem, so why can't the software industry?

Indeed, micro companies like Amstrad could be said to give tacit acceptance of software piracy through manufacture and marketing of twin-cassette players which can be used to copy from tape-to-tape.

Before long, though, the industry will evolve a sure-fire way of halting piracy through technological means.

In the long run that means following the music industry into CD Rom storage. Until then some form of cassette software protection will be used. A number of different systems are already being tested and most are highly unsatisfactory. From the software houses' point of view they all look great – they deter piracy. From the software buyer's angle they can introduce an unacceptable level of hassle into loading a program – for example the colour-coded cards. Even more confusing to use is the increasingly popular Lenslok system.

At present, the only system which gives something to the buyer as well as taking away ease-of-use is Mikro-Plus from Mikro-Gen. Its hardware add-on unit contains extra memory meaning more sophisticated games can be marketed.

People actually want Mikro-Plus – not as a protection device – but as a technological advance. And that means it will sell. It should please everyone from owners to programmers to retail chains like Boots and WH Smith.

The other systems are a convenience for the industry – to curb a very real problem – and a source of frustration for everyone else.

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ABC

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How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles, and any accompanying programs, should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here — so please do not be tempted. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

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ADVERTISEMENT

'The Enterprise has got the most versatile graphics around' – Steve Bak, Microdeal

PD566A

BBC 32K axed

ACORN HAS finally admitted that it has ceased manufacture of the 32K BBC model B, but claims that the Electron is still being produced.

"We have stopped selling the 32K BBC in this country," said Bob Coates, the BBC micro system's product manager. "We decided that the 128K version of the B Plus is what people want. We feel that the B Plus offers good value for money and that we cannot really be offering a BBC machine with just 32K this Christmas."

Acorn's first BBC dropped

The BBC B Plus 64K costs £469; the B Plus 128K is priced at £499.

He admitted too that Acorn had moved distribution away from the high street – none of the major chain stores are stocking the BBC machines and only Dixons/Currys offers the Electron.

"We have deliberately narrowed the number of outlets to ensure that the machine is adequately supported," Bob Coates continued. "The Electron is now available only from Dixons/Currys and appointed Acorn dealers. The 64K B Plus is also available from Acorn dealers as is the £30 kit which up-grades the 64K Plus to a 128K Plus."

His comments contrasted strongly with those of an official Acorn statement early last week that the 32K Ram model B was still being produced for the UK market and that it "would be surprising" if major high street retailers did not stock both the BBC and Electron machines this Christmas (see *Popular Computing Weekly*, October 31).

Sinclair's New Year plans

◄ continued from page 1

THE NEW Spectrum will preserve upwards compatibility by operating in two modes, like the mode switching in Commodore's 128 machine. In Spectrum Plus mode, none of the superior features of the 128, such as the Midi compatible RS232 interface, 8912 sound generator or the separate numeric keypad will operate. Some British software companies are already working on the 128K machine for programs to use the extra features in 128 mode. The 8912 sound chip is one of the features where the new Spectrum scores heavily over the current model with three-channel sound played through the television or monitor.

The Basic Rom is increased from 16K to 32K with additional Basic commands to address the new features, including *Play* to access its sound facilities. The 128K of memory is paged in 16K blocks. In 128K mode Basic the traditional Sinclair single-keyword entry is dispensed with – Basic commands must be typed in in full, letter by letter.

The Spanish Spectrum 128 has a screen display and graphic capabilities unchanged from the Spectrum Plus. Sinclair may well wish to improve graphic display for the model that eventually appears here.

While the new Spectrum will eventually supersede the Spectrum Plus as an entertainment home machine, the new QL model is intended for more serious application.

Sir Clive last week said that he hopes to launch a machine for the professional market next year, which would incorporate the strength of QDos, the QL's operating system and software.

The follow-up for the QL will almost certainly switch from the 68008 processor to a full 68000, with built-in single 3½ inch disc drive and monitor. The memory will also be increased, though probably only to 256K or 512K.

Again upwards compatibility from the QL will be an important feature, as will some built-in software in Rom. The current plan appears to be to offer the new machine in a package – and follow Amstrad and Atari down the 'one plug' route.

While Sinclair hopes that it can offer a system using windows, icons etc, and has been in discussion with Digital Research over Gem, it would like to be able to produce a similar system through QDos.

The QL successor is likely to be launched in late spring to early summer next year at around £500.

For Sinclair, a spokesman said, "I really cannot comment. There is so much speculation about what Sinclair may or may not be producing next year."

BT forms new label

BRITISH TELECOM's two software divisions, Firebird and Beyond, are shortly to become three – Firebird is to split into two factions to separate its entertainment range from more serious titles.

Firebird will remain the brand name for titles currently in its Silver range, Super Silver or Hot range, and will be run by Herbert Wright.

Tony Rainbird will develop the new and as yet unnamed section. "We are sectioning off certain programs – for instance, utilities or titles for sophisticated machine like the Atari ST," said Mike Anderiesz, of British Telecom's New Information Services.

One of the new division's first titles will be *Art Studio* (see cover).

PCW 8256 mania hits high street

AMSTRAD'S new PCW 8256 micro is now available in a number of high street stores other than Dixons, although Dixons was originally intended to be the sole high-street stockist until Christmas.

Both WH Smith and John Lewis stores have received the 8256 in the last week. John Menzies also hopes to stock the machine before Christmas.

"At the time of the launch of the 8256, it was announced that Dixons would hold exclusivity until Christmas," said a spokeswoman for Amstrad. "During the months that it has been available, other chain stores have seen the machine and have wanted to stock it.

"Consequently, a limited number have been made available so that stores can evaluate their stocks for the New Year."

"The PCW 8256 has gone into 140 of our outlets," said WH Smith's merchandise controller John Rowland. "The 8256 fits in very well with both our typewriter and computer range."

The PCW 8256 costs £458.85 at WH Smith and £460 at John Lewis.

New 800XL deal

DIXONS is to sell off remaining stocks of Atari's 800XL micro in two special value packs.

The first costs £99.99 and includes the 800XL with five software titles, joystick and cassette recorder. The second, at £169.99 is the same as the first but with three more software titles and a disc unit included.

Clive booked!

THE SINCLAIR Story is the first full-length book of the fortunes and misfortunes of Sir Clive Sinclair's various business enterprises.

Written by Rodney Dale, the account covers Sir Clive's early career as a technical journalist, and the founding of Sinclair Radionics in 1962, right up to summer 1985.

The Sinclair Story is published by Duckworth at £9.95.

Atari goes slow on 260ST

FIRMWARE up-grades for the Atari 520ST are now in sight and will be offered to current ST owners in Eprom form within the next month.

Completion of the firmware and the settlement of the dispute between Gem author Digital Research and Apple (see *Popular Computing Weekly*, October 10), means that work on putting the programs into Rom can now begin.

"The operating system, Logo and Basic are now complete, so our intention now is to build them in chip form," said Atari UK's sales and marketing manager Rob Harding. "The dealers will fit the up-grades for a nominal cost."

The nominal cost is £25, but customers who bought their 520STs at leading Atari dealer Silica Shop will get their up-grades free.

"We felt strongly that early buyers of the ST shouldn't be penalised," said Silica Shop's marketing director Tony Deane.

However, progress does not seem to have been made on the 260ST. "We are still looking at the end of this year or the beginning of next to launch the 260ST," said Rob Harding. "It is the modulator that is holding things up, though, rather than the firmware."

Amstrad in 'copier' row

AMSTRAD has failed to gain a formal declaration from the Court of Appeal that the marketing of its twin cassette recorder does not incite infringements of the Copyright Act 1956 (see *Popular Computing Weekly*, July 4).

The High Court had earlier ruled that Amstrad's, TS 39, TS 87 and SM 104 twin high-speed audio cassette machines encouraged members of the public to breach copyright in an action brought against Amstrad by the British Phonographic Institute (BPI).

However, the Appeal Court did also rule that there was no substance in BPI's allegations that Amstrad had incurred civil liability in its marketing of the machines, which reversed the High Court judgements.

The Appeal Court judge expressed the view that it was very unlikely that anyone would attack Amstrad's marketing through the 1956 Copyright Act.

Amstrad's Malcolm Miller asserted that there was no question of Amstrad either withdrawing the twin cassette decks or changing its advertising.

Virgin set to hit with Now! Games 2

FOLLOWING the success of the compilation tape *Now! Games* – which Virgin claims has sold more than 50,000 copies – the company is set to release *Now! Games 2.*

Now! Games 2 will comprise *Airwolf* (Elite), *Tir Na Nog* (Gargoyle), *Chuckie Egg* (A'n'F), *Cauldron* (Palace) and *World Cup Soccer* (Artic).

Elite from Now! Games 2

It will be available in early December for the Spectrum and Commodore 64, price £8.95.

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Letters

DIY destruction

Monitoring alien life forms (*Letters*, September 19) is an amusing if thankless task.

I must take issue with Mr Seldon's comments, though. It is a common belief among my colleagues at the Galactic Geography Survey that the human race is more likely to eat a non-earthling than to blast it. Of the thousands of different life forms on your planet we can only identify a handful that have never been eaten by humans.

Mr Seldon's main point – that there is something inherently wrong with games that involve zapping aliens – also looks somewhat strange from our viewpoint. The frightening fact is that these games merely reflect the human's inability to form peaceful relationships with anyone – even other humans. There was an interesting contradiction in the letter when Mr Seldon suggested that the xenophobic nature of some of your software would cause an otherwise peaceful alien race to vaporise your planet.

That, we feel, is a job you will do yourselves, given time.

The Alien
Name and Co-ordinates
witheld by request

128K drawback?

I was pleased to see that after months of the usual Sinclair denials the new 128K Spectrum has been unveiled – even if it is only in Spain. As a very satisfied owner of an Issue One Spectrum I am eagerly awaiting the extra memory.

But I, for one, will not be buying if the new machine in this country is launched with the same kind of keyboard as the Spectrum Plus. I want a real keyboard that can be used for something other than zapping aliens.

David Evans
Tottenham
North London

The keyboard on the Spanish 128K, at least, looks identical to that on the Spectrum Plus.

Fawlty logic

I trust that, when the 128K Spectrum is launched in Spain, it will come complete with an operating manuel?

Frank Lewis
24 Argyle Road
Sevenoaks
Kent

"All the adjectives will be available soon in a separate booklet."

Addict's delay

Why hasn't my Arcade Addict's Handbook arrived yet?

James Powell
23 Beaumont Close
Romford
Essex

Apologies to anyone who is still waiting for their free Arcade Addict's Handbook – we have been overwhelmed by the response. We hope to send them all out before the end of this month.

THAMES TV TELETHON

Popular Computing Weekly has now raised over £750 in donations from readers to be donated to the Thames TV Telethon Charity Appeal.

It has been a tremendous effort and thank you very much from all at *Popular* to those who gave money to such a deserving cause.

Micro Magic

***Popular* cassette labels**

Popular Computing Weekly

Micro Magic

The Amstrad CPC6128

We are giving away an Amstrad CPC6128 128K micro – worth £399 – every seven days until Christmas. Not only that, but every Micro Magic card is a winner – every card wins a runner-up prize of free Special *Popular Computing Weekly* cassette labels

How to find out if you win this week
To find out if you are a prize winner this week this is what you must do:

1) Key in the computer program listing printed here into your micro and *Run* the program.

2) Input your special **Micro Magic** number as data in the program when requested and press *Enter*.

3) The program will tell you if you have won a prize this week and what it is.

4) If you have won a prize you can claim it by filling in the coupon on the back of your special **Micro Magic** card. **Then send the completed card off to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.**

```
5 PRINT "Input your personal Micro
Magic number"
10 INPUT x
15 FOR z=1 TO 3
20 LET x=2 * (x+27)
30 LET x=x + 27
40 LET y=2 * x + 1050
45 NEXT z
50 IF y=1326328 THEN GOTO 60
55 IF y=12840 THEN GOTO 70
60 PRINT "Your matching Micro Magic
 number is";y
61 PRINT "Better luck next week!"
65 GOTO 60
66 STOP
70 PRINT "Your matching Micro Magic
 number is";y
71 PRINT "You have won an Amstrad 6
128!"
75 GOTO 70
76 STOP
80 PRINT "Your matching Micro Magic
 number is";y
81 PRINT "You have won cassette lab
els!"
85 GOTO 80
```

Micro Magic: Week 5 Program listing

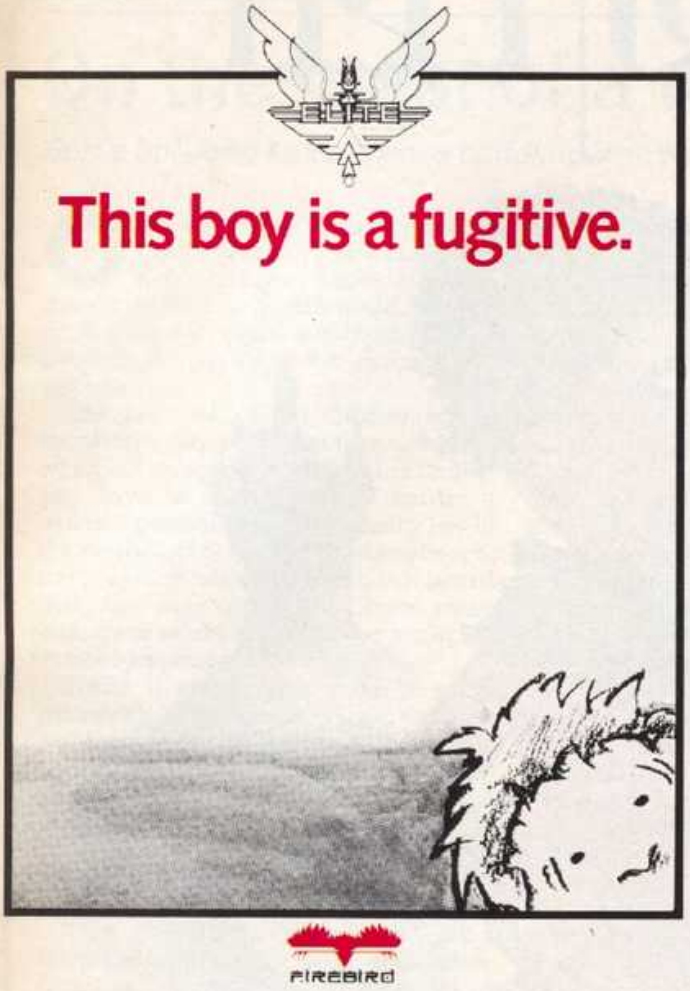
Don't forget to fill in both your name and address, and also both your winning **Micro Magic** answer from this week *and* your special **Micro Magic** number.

5) If you haven't won this week, don't give up hope. Keep your **Micro Magic** card and use it to find out if you win with next week's **Micro Magic** computer program. The same card will last you right through to Christmas, so don't throw it away – you could miss the opportunity to win.

This week's winning Micro Magic Numbers: 1326328 and 12840

If you think you've won complete the form on the back of your Micro Magic card and send it to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Micro Magic cards can only be obtained in line with the criteria outlined by Scot Press. Participants are entitled to only one card each. Cards and accompanying documentaton can be obtained free of charge by writing to Scot Press, 12-13 Little Newport Street, London WC2H 7PP.


ELITE
This boy is a fugitive.
FIREBIRD

ELITE
This girl is dangerous.
FIREBIRD

ELITE
This lady is deadly.
FIREBIRD

ELITE
This man is harmless.
MUM!
FIREBIRD

Sir Fred

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On the crest of a wave

Surf's up! ***John Minson*** *goes paddling with New Concepts*

Of all adjectives in the computing world, new has to be one of the most common. Heralding from the old world charms of Ireland, however, is New Concepts, a company which believes it lives up to that overworked epithet.

The promise of yet another sports simulation may seem less than novel but when the program is called *Surf Champ* you have to admit that it's hardly a national pastime. But its originality lies in the method of control: not the keyboard, not a joystick but a seven inch surf board that sits over the keys. Even more strange to relate, we're talking about the rubber-keyed Spectrum here.

While it could have been a mere gimmick, New Concepts has ensured that this overlay behaves just like a real board, depending on where you apply pressure. It takes 20 keys to read that input – rather too many for the average hand! And the company has protected its idea by obtaining a patent for the overlay concept.

"The profit is in new ideas," says Norman McMillan, the man behind New Concepts, and he isn't talking about mere financial income. When he's not teaching instrumentation at Carlow Technical College, he's likely to be organising touring exhibitions or conferences about the great Irish scientist, Tyndall as well as somehow finding time to run the company.

Like Tyndall, Norman is a born educator, but that doesn't mean dry book learning. He considers sport to be leisure education and at the heart of *Surf Champ* is some hard core physics, ranging from wave behaviour to the surfer's energy expenditure under various conditions. The accuracy of the simulation is endorsed by Reg Prytherch, President of the International Surfing Federation and Rod Brooks, President of the Australian Surfing Association.

"If surfers think these things are important then kids will learn they're important. Why pander to what they already know? It's a waste of time and the kids are no richer when they play the game." Norman tells of one occasion when sprite flicker was causing problems. "I got a phone call saying, 'I can take out all the physics and get the sprites to move smoothly.' I said, 'Don't you touch it, mate.'"

One bow to the high score freaks is that while the scoring closely follows that of competitions, with the more spectacular manoeuvres rating proportionately higher, it is out of 100,000 rather than a paltry ten. But it must be admitted that graphically the pre-production copy of the program that I saw was well behind the sophistication of many games; a trade off for the vast amounts of code necessary to read the keys and calculate the equations.

Doubts about lack of surface gloss fade as you play. Norman demonstrates how you paddle out, ducking under the waves, your hand flat on the board alternately pressing *Caps Shift* and *1* on the rubber-keyed Spectrum.

Next wait for the right wave and, judging your timing carefully, catch it by pressing *2*. The screen changes to show a larger sprite surfer riding the wave, in the same sort of perspective seen in photographs of the sport, Norman explains. You move your hand to the back of the board, just as in reality the surfer balances there to keep the board's nose out of the water. Pressure on either side makes you turn, the angle determined by how far up the board you are. The whole range of surf stunts are available from merely gliding along the length of the waves to hairpinning up to its top and flying into the air before twisting back on to it.

Norman says, "The paddle gives the tactile simulation – it gets as close as possible to the real thing." After a little practice I fully agree. And I can believe in the educational side of *Surf Champ* because the player is constantly learning from the physical experience, from the initial choices and from the personal details which determine how well you can hope to perform.

The idea of combining surf and micros came from Norman's teenage son, Doug, a surfer of two years vintage. A more overtly educational program, *Three Miles High* was put to one side when Anthony Kelly, a brilliant young electronic design student, said he could see a way of doing this.

That was back in summer '84. A long period followed, until May this year, when more and more people were brought in but proved unable to get the program working. At Easter Norman himself took charge and wrote the physics algorithms which were coded in Pascal because it runs 20 to 40 times faster than Basic but is easier to debug. However it's costly in terms of memory.

Meanwhile Anthony worked on the sprites and at last things began to come together. The other members of the team included Des, a pure science student, Kieran and Rocky. But Norman was still learning from harsh experience. "Programmers always underestimate. It always takes a hundred times longer." The proposed July completion date passed and their landlord began to ask questions about squatters, there were so many all night programming sessions. "In a country town they don't expect guys to be doing these things anyhow."

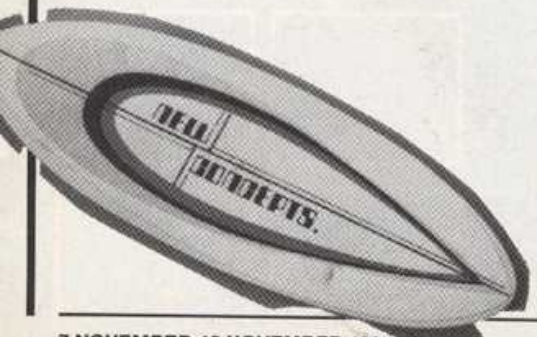
With the program itself near to completion, though with advertising and other marketing expenses still to come, the involvement of Irish government aid, in the shape of the Industrial Development Authority, became necessary.

The launch of *Surf Champ* came at the European Surf Championships in County Donegal. Some details of the game were still incomplete: alternative music had to be added; plans to make keyboard response sluggish as your surfer grows tired had to be dropped from the Spectrum version, though should reappear on the Amstrad. And there was still the problem of designing a surf board for the Spectrum Plus.

But at last Norman McMillan's dream was close to realisation, and the response from the surfers was excellent. Despite the still present financial risk, Norman was happy to talk about further New Concepts projects.

These include conversions of *Surf Champ* and new beaches with different types of wave, including a 'tube' – when you take your board and surf along the hollow as the water curls above you. Future simulations include one for skiers, and while it will initially use two plastic skis, New Concepts is looking at a yet more realistic method of user interface.

Once again Norman's enthusiasm grows. "This program is a generation ahead of anything else. It isn't just men jumping over barrels." It remains to be seen whether his faith is misplaced. "If it fails the money's lost. It's back to a cottage industry." But I wish Norman McMillan and his dream well. A lot of hard work has gone into it . . . and spectral surfing is a whole lot of fun too.



I, OF THE MASK

BY SANDY WHITE

Rebuild the robot and dominate the world in this 3-D Visual Extravaganza

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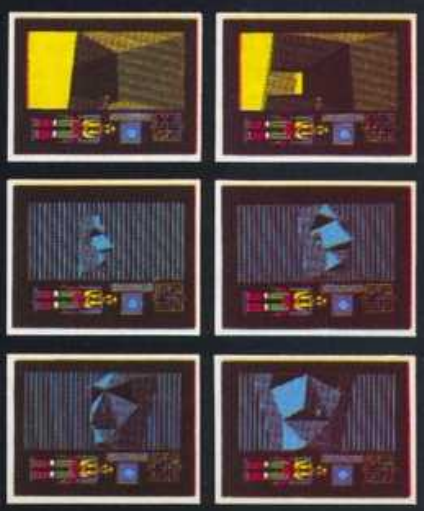
SPACEMAN

Electric Dreams SOFTWARE

Available on the 48K Spectrum, Amstrad and Commodore 64 from Electric Dreams Software. 31 Carlton Crescent, Southampton. Tel: (0703) 225282



Toolkit

Program *Utopia* **Micro** AmstradPrice £29.95 (Rom) **Supplier** Arnor, The Studio, Ledbury Place, Croydon, Surrey CR0 1ET.

Of the Rom software releases for the BBC, Beebug's *Toolkit* is amongst the most respected. *Utopia* is credited to the same author and provides CPC owners with a similar range of utilities.

Disc commands include *Format, Discopy, Disctest,* etc, – normally available only by loading a CP/M disc. There is also an *Access* command similar to the BBC for making files Read Only and there is a disc sector editor useful for recovering erased files. *Info* provides the length, start and execution address of files on tape or disc, *Copy* transfers files from disc to disc (1 or 2 drives), disc to tape, or tape to disc. *Verify* has been provided for programs or Ascii text. *List, Type* or *Dump* put file contents on screen in various formats. *Spool* echoes any screen output to a file whilst *Printon* echoes it to printer. New *Load* and *Save* commands give more options over file type and position in memory.

Programming aids include *Search/Replace* for Basic tokens or Ascii text *Move* lines of Basic, *List* all functions, arrays, variables, function key definitions (including several that are programmed at power up such as a function that restores all screen parameters to their original state – useful if you get lost in a mishmash of inks and windows), memory dump and memory edit, and a status display of program start address, length, free memory etc. Finally come the Rom control commands for switching Roms on and off (vital to run long programs such as *3D Grand Prix*), listing and selecting commands from specified Roms even if several use the same words. A powerful range of commands at a bargain price for a Rom.

Tony Kendle

Circuits

Program *Qcad* **Micro** QL **Price** £29.95 **Supplier** Stonelink Trading Ltd, Heckenrosenweg 6 3170 Githorn, West Germany.

This is a computer aided electronic circuit and PCB layout design package for the QL, consisting of the main design program *Qcad* itself, *Qcomp* a component symbol set designer and a predefined symbol set.

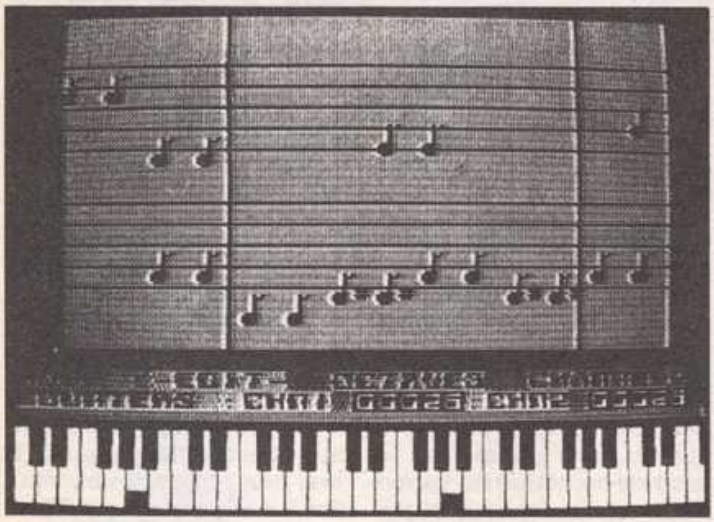
Qcad is quite friendly to use and provides such features as: freehand sketching (using cursor keys/joystick), automatic joining of points on the circuit, placing of circles, arcs etc, text labelling and a screen to printer dump routine for most dot matrix printers with graphic capabilities. The most powerful feature of all though is the use of predefined component symbols which are the solid state equivalent of a component stencil. The symbol set provided is a standard general purpose set, which should serve most requirements, in BS3939 format rather than the American style component symbols. If you require unusual component symbols then you can define your own sets using *Qcomp.*

Qcomp is an intriguing program since the component symbols you design with it are compiled as actual Superbasic procedures... an unorthodox system perhaps, but very effective. The only drawback is that the procedures are merged into *Qcad* as required which is a slow process compared with loading in a similar size data file. For those familiar with Basic this system is a clear advantage, enabling you to write complex symbols directly in Basic or even use the procedures easily created by *Qcomp* in your own programs. I found *Qcomp* easy to use, designing a small symbol set without even reading the manual.

Although *Qcad* is written in Basic this doesn't make the software too slow, though you can get the occasional problem where *Qcad* falls over on microdrive errors; no microdrive when *Qcad* tries to access it for instance.

Qcad has most features that an electronics Cader requires. Radio hams, electrohobbyists, professional designers of small circuits, and perhaps most of all electronic students who have to design a project as part of their course, will find this package of great value.

Jonathan Prestidge



Wah!

Program *Wham – The Music Box* **Micro** Spectrum **Price** £7.95 **Supplier** Melbourne House, Castle Yard House, Castle Yard, Richmond TW10 6TF.

Of all criticisms of the Spectrum its meagre sound ability takes most flak and until now the only way to make Sir Clive's machine sing has been to buy a peripheral device. But anybody who has heard the opening music of *Fairlight* will have asked, could that really be two channels?

The emulator that was used to such great effect there is now about to be made publicly available, courtesy of Melbourne House, and I've been fortunate enough to have an early version to play with. It comes with the Wham name because the finished product will include a selection of their hits but don't let that put you off – you can easily erase them from memory.

That leaves it clear for your own composition, which is achieved one channel at a time using that barely satisfactory compromise, the bottom two rows of the keyboard as a piano. Luckily there's a simple back space to correct duff notes. The whole process is geared to playing by ear and there are single step and continuous play preview facilities.

If you think percussion would liven up the track there's a controllable white noise generator with which to synthesise drums, though adding these to the finished music removes other notes at that point. There's room in memory to store six tunes,and these can be saved to tape or drive or compiled and used in your own programs. Alternatively you can output an audio signal direct from the Mic socket on to tape.

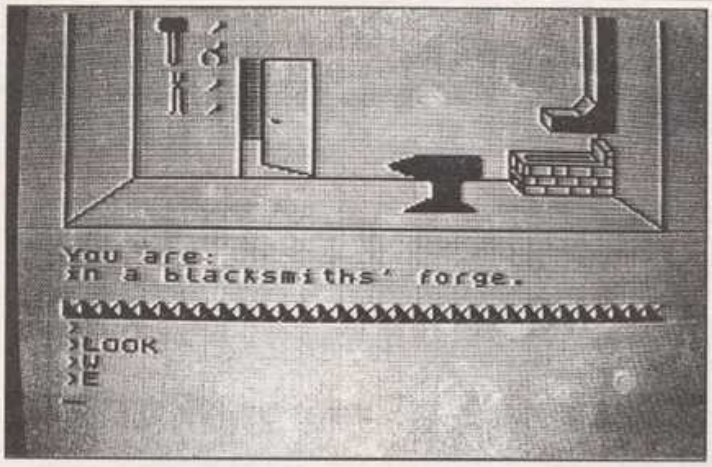
I must admit that I was disappointed that the utility wasn't more musically standard. In this prototype the notes weren't even correctly registered on the upper stave, though this should be corrected soon. All notes are entered as quavers in common time, and though you could write in other time schemes the bar lines would be in the wrong place. There's no way of differentiating consecutive notes of the same pitch.

That said, I found the program fun to use, though somewhat limited, and with slight problems as to the keyboard and control keys.

John Minson

M. goes gaga

Program *The Quest for the Holy Grail* **Micro** Spectrum **Price** £1.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2A 4JH.



Allo there, silly English person. What do you want? A 'Oly Grail, you say? Pah! Well, we will not help you, pile of wombat droppings. I unblock my nasal cavities in your direction and your aunty smells like a goat. We 'ave an 'Oly Grail of our own and no, you cannot see it. Eet is complete with 16K Ram pack, so there. Now hither away before I get nasty and twirl my bottom at you.

"What? You are still here? Then I will give you this adventure game for your silly Spectrum computer which I loathe more than those bits of fluff which you find in your navel. Somewhere there is an 'Oly Grail in it, I suppose, you ridiculous English k-nicht!"

And now for something completely different. . .

"Hallo. You look like a man of the world. Ever played any. . . computer games? May be a bit more adult than *Jet Set Willy* (knowing wink). Adventure games about grails? Great big grails? Well. . . what's it like?

"Right. Pay attention. I'll tell you what it's like. It's silly. Very silly. And I don't like it, though I'm sure some of you out there. . . Yes, you, and stop that immediately. You'll like it. But as an adventure with lots of manly things like maiming and killing and tearing the heads off gerbils while wearing women's clothing – well, it's just a non-starter. Still, if you like that sort of thing you'll have a laugh or two. Or three. Perhaps even four. Right – back to the review, and let's have no more silliness."

(Note: What our writer's trying to say is that if you're a *Monty Python* fan you'll endure the slow response time and uninspired graphics for the Pythonesque tone of this game. Ed.)

John Minson
(Silly Candidate)

D Day

Program *Crusade in Europe* **Micro** Commodore 64 **Price** £14.95 **Supplier** US Gold, Unit 10, The Parkway Ind. Centre, Ueneage Street, Birmingham B7 4LY.

Wargaming is a minority taste, but the devotion of that minority to their hobby and their continuing willingness to pay over £10 and sometimes a great deal more for sheets of papers and fiddly bits of cardboard has made them a fascinating target for software houses.

Crusade in Europe is based on the Allied campaign in Northern Europe from D-Day up to December 1944. Within that massive sweep the player can chose five scenarios. Each scenario is subdivided into sub-scenarios offering the player plenty of choice. This choice is increased by two features which the computer adds to traditional board gaming. The player need not have an opponent, but can play against the machine – a real godsend for all gamers – and the player can alter the balance of the play to favour one side or the other.

The ultimate test of any historical recreation is how well the players are encouraged to duplicate history. Here *Crusade* comes up trumps. On a tactical level the player learns to handle the various elements of the army as the better generals did and the campaigns follow either the real course of history or suggested plausible alternatives.

The game is not perfect. The first fault occurs during loading when the computer asks you for a codeword (16 are listed in the rulebook); if you type in the wrong one the game will let you play for two 'days' and then end.

The second fault is in the way information about units is communicated to the player. When they are in combat they periodically flash messages on the board, these can be quite important if a unit is taking a hammering, the messages are there and gone in just that, a flash, and there is no way of recalling ones a player has missed. In order to keep checking on a unit's status the player has to keep moving the cursor around and asking questions; this slows the computer and, consequently, the game.

Similarly the computer has a habit of issuing unilateral orders so that a player will imagine that a unit is doing one thing when it is in fact doing something totally different (which, according to the program, he would have ordered if he'd had any sense).

Supply is crucial to units and the supply phase is whizzed through so quickly that it is often difficult to tell which units are in or out of supply.

Finally the map is much more difficult to read than the hexagon decorated board most wargame players will be familiar with.

In spite of these quibbles MicroSoft have produced a game that satisfies the games players' demand for playability, historical accuracy and balance, and has added to that a whole new dimension of feel and, best of all, a game that can be played solo.

Peter Berlin

Injuns!

Program *Seventh Cavalry* **Micro** Spectrum **Price** £3.50 **Supplier** Black Knight Computers, PO Box 132, Chislehurst, Kent.

Howdy, y'all. Here is Black Knight, a long long way from home in the John Wayne country of the 1870s with a strategic war game in which you command 600 cavalry troopers on a mission to destroy 15 Indian settlements and force 4000 braves off mining territory.

Ignoring the morality of this exercise (ever see *Soldier Blue*, pardner?) you have one week to complete the mission, with each day passing in quarter hour segments. So you ride out across the varied landscape to encounter the noble and brave Indian warriors. . . sorry, redskin varmits.

Beneath you are 12 troops, identified by letter, and you command them one by one via nested menus, the main options being movement at various rates or rest, this being very much a game of military resource management. Delay gives the Indians, who move simultaneously with you, the advantage. As the screen only presents a small area of the map you'll have to split up to locate their teepees.

Congratulations to Black Knight for avoiding the usual grid, but sadly their alternative is almost as dull. Specifying movement option, with its slow response, then speed and direction time after time had become a dry round of key pressing even before noon on the first day.

There's a reasonable idea at the heart of this game and it may pass at the price but did I find it lively or engaging? The hell I did!

John Minson

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Disc system

Product *Spectrum Disc Interface* **Price** £85 **Micro** Spectrum Plus **Supplier** Kempston, Bedford.

Choosing a disc system for the Spectrum has always been a difficult task, thanks to Sinclair's lack of support for disc in favour of the Microdrive.

Kempston's offering is disc interface – and incidentally, the smallest I have ever seen – which will operate with any size drive – 3 inch, 3½ inch or 5 inch, so long as it is suitable for use with the BBC, and has a power supply.

Quite simply the unit performed all savings and loading of a variety of files without any problem. I was pleased to see that sequential files were provided although in practice I have never missed them from my system. Savings an array *a$(2000,20)* as both Data and as a file took three times as long in sequential form and 2K extra disc space.

Once opened a file can only be written to if it is a new file or read from if it is an old file.

My biggest hope was for the tape to disc copy. This is where all Spectrum drive systems suffer as no-one is producing software on disc for the Spectrum but my hopes were dashed. The software suffers from a couple of problems, first I found that the input was much more sensitive, and tape volumes had to be very precise. Secondly, the transfer works fine but is done in block. It is left to you to try and break into the loader programs and convert all this *Save/load* commands to disc syntax. As the program is transferred in block, all the protection is also transferred making it just as difficult to modify as with my old system.

To end a transfer session you have to *Break* out of the program. Often the program would refuse to do so and repeatedly dump 64K of garbage onto the disc before crashing with a disc full message.

Instructions

It is accompanied by a small, 18-age booklet, and the print is tiny so you'll need good eyesight to read it.

There are plenty of sections which offer practical advice but they seem to be thrown in ad hoc. Competent programmers can find the information they need but it could have been clearer.

Os Commands

In the software all the normal *Save* and *Load* options are provided plus most of the microdrive functions: *Format, Cat, Erase, Move, Open, Close#, Print#, Input#* and *Inkey$#*. All commands except

the last three are called by preceding them with *Print n1, n2*, etc.

It does not take long to become familiar with this system and the operating system is reasonably friendly.

What really excited me was some of the additional commands supplied. *Clear 0* will compress a program by changing all numbers into *Val "no"* form. This seems longer but be assured it does save space due to the Spectrum's floating point number system.

Clear: Print no1, no2 will perform a block delete from line no1 to line no2 inclusive.

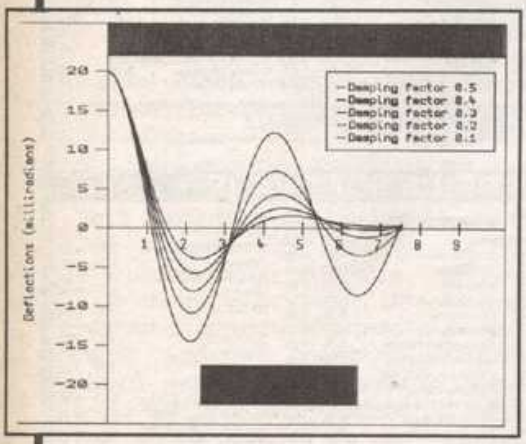
This interface is a good unit which unfortunately promises more than it effectively delivers. It would have helped if instead of a condensing routine they had provided a routine to check through the programs being transferred, and modified the *Save/Load* syntax.

Ray Elder

Plot commands

Hardware *Plotmate* plus *Lincad, Linchart* and *Lintronic* **Micro** BBC **Price** **Supplier** Linear Graphics, 28 Purdeys Way, Rochford, Essex.

The dot matrix printer is an excellent device for producing good quality text printouts. With suitable software it can even produce screen dumps, but these are far from being high quality.



There is very little to beat the standard of hard copy produced by a good quality X-Y plotter.

The Plotmate plotter from Linear Graphics is one such device which has been designed to be used in conjunction with the BBC computer – plugging into the BBC's user port.

As well as the plotter itself, you get a system disc with the software needed to drive the unit and several excellent demonstration programs, six pens, some sheets of coated plotting paper and a 72-page ring-bound manual.

The felt tip pens merely push into the pen holder and lock home with a quick twist. Once the pen is in place one of the glossy sheets of A4 size paper can be laid on the plotter bed and held in place using two magnetic strips.

The software supplied with the plotter came in two forms, the first was the 'low' form which sat low enough in memory to allow the use of the Mode 4 graphics screen. This meant that plotting could be carried out on the screen and plotter simultaneously. The second copy of the software was the 'high' version. This locates itself high in memory allowing more space for the program but output is directed to the plotter only.

All of the commands to the plotter are assigned to seven of the BBC's function keys. These commands consist of *On/Off, Move Pen* (using cursor keys), pen *Up/Down*, pen *Home* and pen *Park*. All of these commands can also be issued from within your programs.

The plotter is supplied with six pens, only one of which may be used at any one time. Although the plotter will not automatically select a new colour from a rack of pens and continue with the drawing, the BBC's *Gcol* statement can be used within a program causing execution to be halted whilst you change pens.

Using Plotmate is a dream, if you can draw a picture on the screen using the BBC's graphics commands then you can use Plotmate. It acts exactly as you would expect when using *Move* and *Draw* statements, moving with pen up and pen down, respectively. It even responds to the *Plot* 85 statement by filling a triangle. Text can be printed at any point on the drawing via the VDU5 statement. The graphics cursor being moved to any point on the drawing and the text output using the *Print* statement.

Linear Graphics has also developed a suite of software packages for use with the Plotmate.

The first, *Lincad*, is a crude computer – aided design system. The drawing facilities provided are extremely limited. The second program, *Linchart*, was much more useful. It enables you to produce both bar and pie charts with the minimum of fuss. Finally, *Lintronic*, is a system which allows the user to design, edit, and store electronic circuit diagrams.

I felt that the Plotmate and system disc plus the *Linchart* software would be the combination with facilities to deal with the graphical requirements of most users.

John Revis

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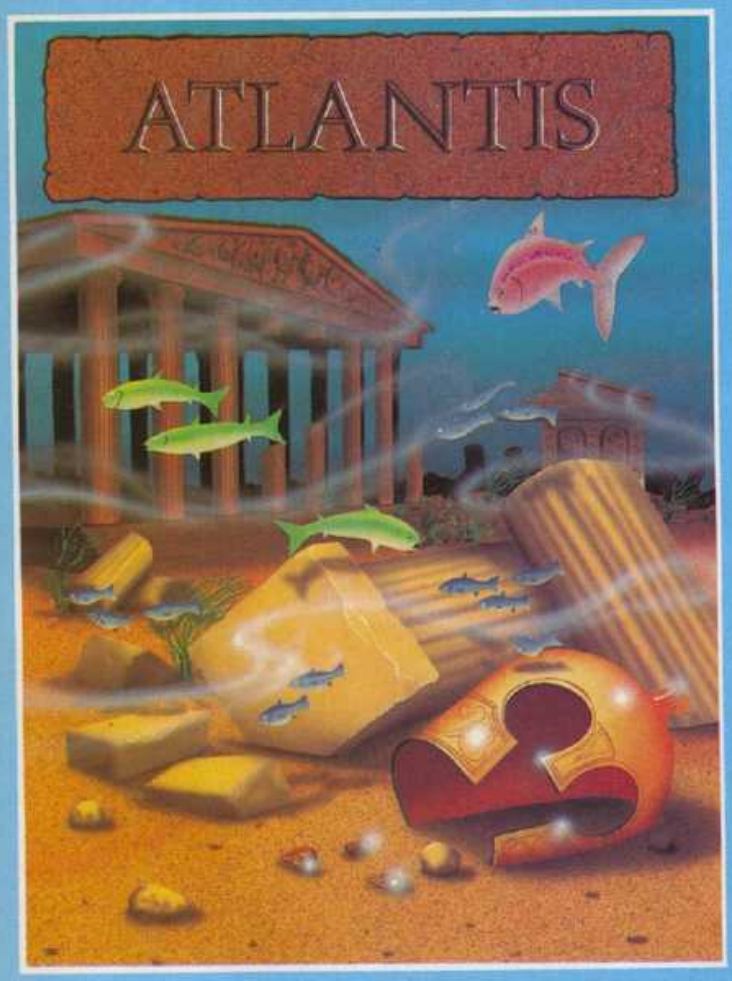

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Electro-music

Hardware *Microvox Digital Sound Sampler* **Micro** Commodore 64 **Price** £230 **Supplier** Supersoft, Winchester House, Canning Road, Wealdstone, Middlesex (01-690 1166).

Since Paul Hardcastle's 'N-N-N-N-Nineteen", there can't be many people unaware of the possibilities of sampling real sounds for musical purposes. What some may not realise is that with the introduction of digital drum machines and ever-cheaper samplers, it's now almost the rule rather than the exception for a record to be made using samplers.

Home computers are ideal for putting to use as sampling musical instruments; they contain the same sort of hardware as the dedicated devices such as the £8,000 Emulator or £20,000 Fairlight. The first affordable, professional standard sampler (fitted with the now compulsory Midi interface) available for home computers is Supersoft's Microvox digital sound sampler.

The Microvox is a neat metal box half the size of the Commodore 64, with a power supply, decent manual and software on disc. Sockets on the back are Audio In and Out; Midi In and Out; and there's also a ribbon cable connecting to the 64's cartridge port. On the front panel is the *Gain* control for adjusting the sound input level. *Mix* for balancing the original sound and the sample, *Output* level and *Repeat* for use in the "echo unit" mode.

So what can you do with the software? Sampling, which is monophonic (polyphony at this price is still some way off!) is done through the first page. Just feed in your sound source (microphone, tape, record or whatever), set the gain control and sample threshold using the bar displays, choose the sampling rate, and go. Samples can be from 0.8 to 17 secnds; for the best quality, 1.6 seconds at 10 KHz is ideal. The compander and filter sections help you to preserve the quality of your sample, which, if carefully done, can be almost indistinguishable from reality!

The waveform editor page draws pretty diagrams and allows you to loop, invert, edit, and fade in or out the sound. Imagine a whole orchestral Whoomph! sampled from compact disc, fading in, looping over and over again (backwards) then fading out – at any pitch! The range of possible effects is mind-boggling.

Samples can be made until the available memory is used up. This is likely to be to record each instrument of a drum kit, which can then be played by the sequencer section, or live from the 64's keys. Although there are other digital drum machines available for the 64, notably the excellent Syntron digidrum, they don't allow you to play from the keyboard.

You can also layer sounds together for a multi-voice effect, though as yet it isn't possible to play polyphonically. Supersoft say that C128 version of the sampler may well be duophonic, however, so that will be worth waiting for.

Most musicians will be interested in using the sampler with other Midi instruments. This recently-developed Musical Instrument Digital Interface system allows all sorts of electronic instruments by different manufacturers to be interconnected. In the case of the Microvox, control can be assigned to any of 16 channels, and the sampler played from your Midi synth.

With a full range of disc save routines to enable you to keep your best samples and re-use them at any time, and new developments on the way which will enable it to be used as a harmoniser, digital delay, phaser, flanger and so on, the Microvox is an impressive product.

For the price, you will be getting a user-friendly, high-quality add-on which once again demonstrates the importance of the Commodore 64 in electronic music and home recording. Highly recommended for budget-conscious electro-musicians, new hardware fans and n-n-n-n-nineteen-year-olds everywhere.

Chris Jenkins

Versatile

Hardware *Bright Star Modem* **Price** £179.95 **Micro** QL **Supplier** Modem House, Iolanthe Drive, Exeter, Devon EX4 9EA.

The Bright Star modem, at a tempting price of £179.95, is fully controlled via software (supplied on microdrive with the modem) which is very easy to operate and includes a help file and self-test mode to ensure correct operation. Another useful feature is a centronics interface to link the modem to a printer with a 2K buffer back-up. Switching Bright Star on (the modem carries its own internal power supply, comes with a plugged cable and carries an off-on switch at the rear) gives the printer control mode as the default. Driving the printer does not require any additional software and can normally be handled via the QL's keyboard.

The Bright Star has an auto-scan feature which enables the modem to sort out the communication protocols after establishing contact with a remote computer. As working out the correct protocols can be a frustrating business for those inexperienced in going on-line, this is a very useful addition to a generally well-designed product.

Bright Star's operating baud rates are 300/300, 1200/75, 75/1200 and 1200/1200. At the moment Bright Star lacks an auto-answer/auto-dial facility but models selling at £209.95 with this feature are in the pipe-line. My review Bright Star is clearly a prototype and isn't much to look at but – having seen the real thing at the PCW show – the finished product is much better, even if it still isn't the most attractive piece of computer add-on equipment I've ever run across. Bright Star is a versatile communicator that is both well-designed and offered at a competitive price.

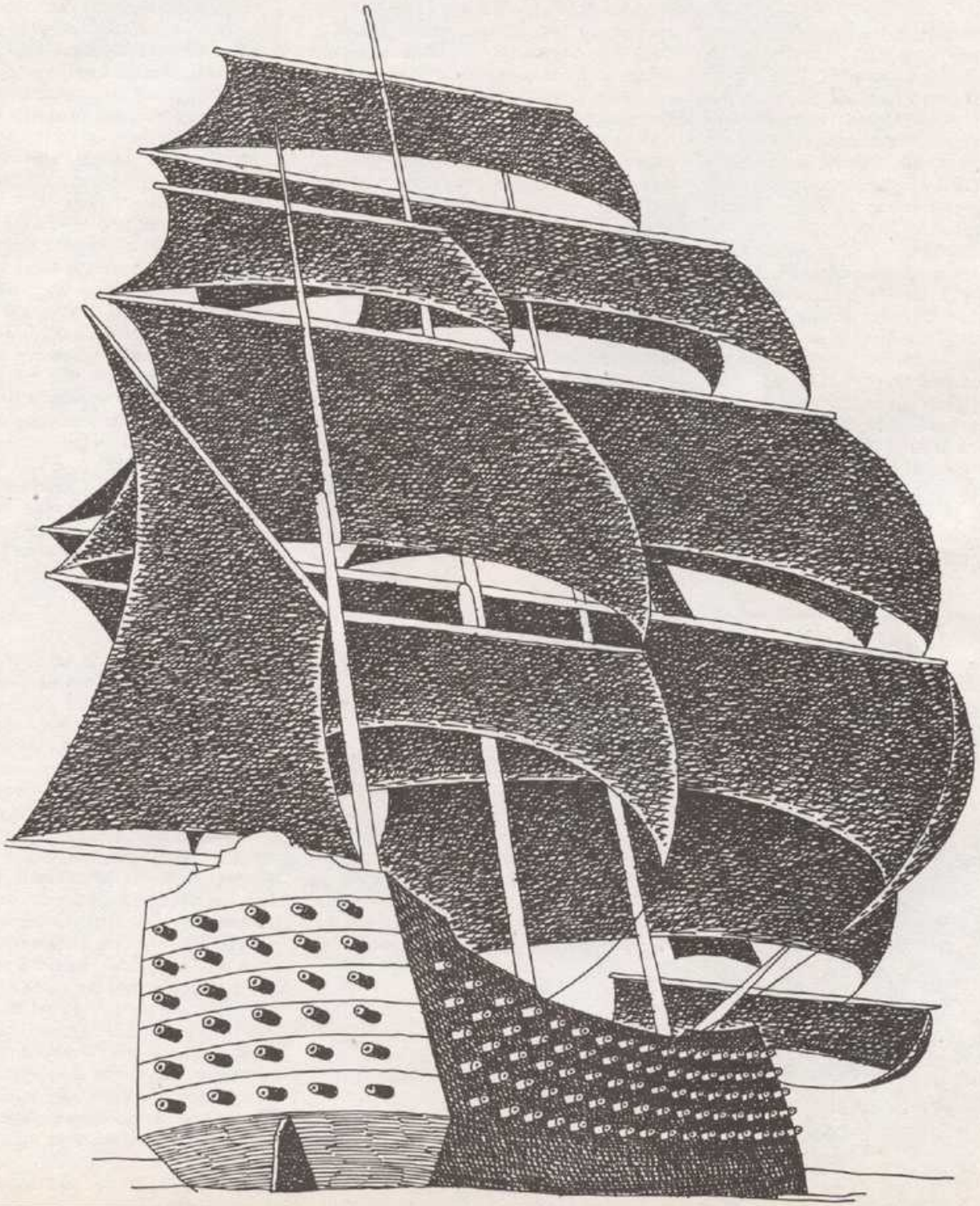
Brian Beckett

Man O' War

Heave to and splice those mainbraces as David Muir shivers your timbers on the Amstrad

This game is a simple simulation of old style naval warfare between galleons on the high seas. You play against the computer using cursor and copy keys, or joystick. Eye patches, wooden legs and parrots can be considered as purely optional.

The listing is well punctuated with Rem statements and when run produces a title screen and full playing instructions. *Man O' War* uses many Amstrad specific features, such as windows and interrupt driven subroutines, so it would not be easy to transport to another machine.



```
10 '
20 'MAN O'WAR by D.MUIR '84
30 '
40 GOTO 1080
50 '
60 'update scoreboards
70 '
80 CLS #1:IF chits>2 THEN chits=0:sh=sh+1:sc=sc+100:cff=-1:IF pl<
3 THEN IF sh>0 THEN IF sh/5=INT(sh/5) THEN pl=pl+1
90 PRINT #1,chits;:SOUND 7,1000,20,5,2,2,7:RETURN
100 CLS #2:PRINT #2,sh;:RETURN
110 CLS #3:PRINT #3,sc;:RETURN
120 CLS #4:IF phits>2 THEN phits=0:pl=pl-1:pff=-1:GOSUB 140
130 PRINT #4,phits;:RETURN
140 CLS #5:PRINT #5,LEFT$(tpl,pl+1);:IF pl=0 THEN lff=-1
150 RETURN
160 '
170 ' move player shell/computer shell
180 '
190 DI:IF NOT pk THEN 240
200 LOCATE pfx,pfy:PRINT " ";
210 IF pfy<5 OR (pfy=14 AND FNp<3 AND FNp<8) THEN pk=0:GOTO 240
220 pfy=pfy-1:LOCATE pfx,pfy:PEN 1:PRINT CHR$(145);
230 IF ABS(cx+2-pfx)<2 THEN IF pfy=7 THEN LOCATE pfx,pfy:PEN 2:PR
INT CHR$(238);:chits=chits+1:sc=sc+10:pk=0:GOSUB 80:GOSUB 110
240 IF NOT ck THEN RETURN
250 LOCATE cfx,cfy:PRINT " ";
260 IF cfy>21 THEN ck=0:RETURN
270 cfy=cfy+1:LOCATE cfx,cfy:PEN 1:PRINT CHR$(148);
280 IF ABS(px+2-cfx)<2 THEN IF cfy=21 THEN LOCATE cfx,cfy:PEN 2:P
RINT CHR$(238);:phits=phits+1:ck=0:SOUND 7,1000,20,5,2,2,7:GOSUB
120
290 RETURN
300 '
310 ' move computer boat
320 '
330 DI:cm=cm+1:IF cm=cl THEN cm=0:cd=-cd:cc=3-cc:cl=10+5*INT(RND*
5):RETURN
340 IF cx+cd>36 OR cx+cd<1 THEN cd=-cd:cc=3-cc
350 cx=cx+cd:LOCATE cx,cy:PRINT USING "&";t(cc);:RETURN
360 '
370 'prime computer gun
380 '
390 DI:IF cff OR pff THEN RETURN
400 IF ck THEN RETURN ELSE ck=-1:cfx=cx+1:cfy=cy+4:IF ABS(px-cx)>
10 OR (FNc>3 AND FNc<8) THEN ck=0:RETURN
410 PEN 2:LOCATE cfx,cfy:PRINT CHR$(238);:SOUND 7,2000,10,4,1,1:R
ETURN
420 '
430 ' player move
440 '
450 EVERY 20,2 GOSUB 330
460 EVERY bai,3 GOSUB 390
470 EVERY 4,0 GOSUB 190
480 IF lff THEN 1010 ELSE IF pff OR cff THEN s=REMAIN(0):s=REMAIN
(2):s=REMAIN(3):bai=bai-5:GOTO 560
490 IF INKEY(8)=0 OR INKEY(74)=0 THEN pd=-1:pc=2:GOTO 530
500 IF INKEY(1)=0 OR INKEY(75)=0 THEN pd=1:pc=1:GOTO 530
510 IF INKEY(9)=0 OR INKEY(76)=0 THEN 520 ELSE 530
520 IF pk THEN 530 ELSE pk=-1:pfx=px+1:pfy=py-1:LOCATE pfx,pfy:PE
N 2:SOUND 7,2000,10,4,1,1:PRINT CHR$(238);
530 IF px+pd>36 OR px+pd<1 THEN pd=-pd:pc=3-pc
540 px=px+pd:LOCATE px,py:PRINT USING "&";t(pc);
550 EI:DI:GOTO 490
560 IF cff THEN cff=0:SOUND 7,3000,40,7,0,0,3:LOCATE cx,cy:PRINT
USING "&";t;:FOR j=1 TO 20:NEXT:LOCATE px,py:PRINT USING "&";t;:G
OTO 910
570 IF pff THEN pff=0:SOUND 7,3000,40,7,0,0,3:LOCATE px,py:PRINT
USING "&";t;:FOR j=1 TO 20:NEXT:LOCATE cx,cy:PRINT USING "&";t;:G
OTO 910
580 '
590 ' set up
600 '
610 MODE 1:BORDER 12
620 INK 0,20:INK 1,1:INK 2,26:INK 3,7
630 DEFINT a-r:DEFREAL s:DEFSTR t-z
640 DEF FNp=VAL(RIGHT$(STR$(pfx),1)):DEF FNc=VAL(RIGHT$(STR$(cfx)
,1))
650 SYMBOL AFTER 200
660 ENV 1,5,-1,2
670 ENT 1,2,100,2,3,0,2
680 ENV 2,1,5,2,5,0,2,4,-1,2
690 ENT 2,2,100,4,3,0,4
700 RESTORE 950:FOR i=200 TO 223:READ a1,a2,a3,a4,a5,a6,a7,a8:SYM
BOL i,a1,a2,a3,a4,a5,a6,a7,a8:NEXT
710 DIM t(2)
720 t(1)=CHR$(15)+CHR$(2)+CHR$(32)+CHR$(209)+CHR$(210)+CHR$(211)+
CHR$(32)+STRING$(5,8)+CHR$(10)+CHR$(32)+CHR$(212)+CHR$(213)+CHR$(
214)+CHR$(32)+STRING$(5,8)+CHR$(10)+CHR$(15)+CHR$(3)+CHR$(32)+CHR
$(206)+CHR$(207)+CHR$(208)+CHR$(32)
730 t(2)=CHR$(15)+CHR$(2)+CHR$(32)+CHR$(200)+CHR$(201)+CHR$(202)+
CHR$(32)+STRING$(5,8)+CHR$(10)+CHR$(32)+CHR$(203)+CHR$(204)+CHR$(
205)+CHR$(32)+STRING$(5,8)+CHR$(10)+CHR$(15)+CHR$(3)+CHR$(32)+CHR
$(215)+CHR$(216)+CHR$(217)+CHR$(32)
740 t=SPACE$(5)+STRING$(5,8)+CHR$(10)+SPACE$(5)+STRING$(5,8)+CHR$
(10)+SPACE$(5)
750 u=CHR$(220)+CHR$(221):u1=u+u+u+u+u+u+u+u+u+u:u1=u1+u1
760 u=CHR$(222)+CHR$(223):u2=u+u+u+u+u+u+u+u+u+u:u2=u2+u2
770 u=STRING$(40,CHR$(143)):u=u+u
780 u3=SPACE$(4)+CHR$(218)+CHR$(219)+SPACE$(8)+CHR$(218)+CHR$(219
)+SPACE$(4):u3=u3+u3
790 u4=CHR$(218)+CHR$(143)+CHR$(143)+CHR$(219)
800 u5=SPACE$(4)+CHR$(229)+CHR$(229)+SPACE$(8)+CHR$(229)+CHR$(229
)+SPACE$(4):u5=u5+u5
810 u6=CHR$(229)+"  "+CHR$(229)
820 tpl=" "+STRING$(3,235):pl=3:sc=0:hits=0:sh=0:bai=90
830 '
840 ' print screen
850 '
860 LOCATE 1,1:PAPER 2:PEN 3:PRINT u+u1;:LOCATE 1,23:PRINT u2+u;
870 PEN 2:PAPER 3:LOCATE 1,1:PRINT "HITS        SHIPS        SCOR
E":LOCATE 1,25:PRINT "HITS          LIVES";
880 WINDOW #1,5,12,1,1:WINDOW #2,18,25,1,1:WINDOW #3,31,40,1,1:WI
NDOW #4,5,14,25,25:WINDOW #5,20,30,25,40:FOR i=1 TO 5:PAPER #i,0:
PEN #i,1:CLS #i:NEXT
890 PAPER 0:PEN 2:LOCATE 1,12:PRINT u3:LOCATE 4,13:PRINT u4:LOCAT
E 14,13:PRINT u4:LOCATE 24,13:PRINT u4:LOCATE 34,13:PRINT u4:PEN
1
900 PRINT CHR$(22)+CHR$(1);:LOCATE 1,12:PRINT u5:LOCATE 4,13:PRIN
T u6:LOCATE 14,13:PRINT u6:LOCATE 24,13:PRINT u6:LOCATE 34,13:PRI
NT u6:PRINT CHR$(22)+CHR$(0);
910 GOSUB 80:GOSUB 100:GOSUB 110:GOSUB 120:GOSUB 140
920 cx=36:cy=5:cd=-1:cc=2:px=1:py=19:pd=1:pc=1:cl=10+5*INT(RND*4)
:cm=0
930 LOCATE cx,cy:PRINT USING "&";t(cc);:LOCATE px,py:PRINT USING
"&";t(pc);
940 GOTO 450
950 DATA 0,0,0,12,8,30,35,43,28,16,124,130,146,186,199,1,0,0,0,48
,32,240,136,168,127,65,73,127,65,73,93,107,17,125,131,1,1,17,57,2
15,252,4,36,252,4,36,116,172,74,255,128,68,96,191,160,223,146,255
,0,146,0,255,0,255,162,255,2,68,8,240,32,224
960 DATA 0,0,0,12,4,15,17,21,56,8,62,65,73,93,227,128,0,0,0,48,16
,120,196,212,63,32,36,63,32,36,46,53,136,190,193,128,128,136,156,
235,254,130,146,254,130,146,186,214,69,255,64,34,16,15,4,7,73,255
,0,73,0,255,0,255,82,255,1,34,6,253,5,251
970 DATA 1,3,7,15,31,63,127,255,128,192,224,240,248,252,254,255,2
55,255,125,73,73,146,0,0,255,255,190,146,146,73,0,0,0,0,146,73,73
,125,255,255,0,0,73,146,146,190,255,255,68,46,77,85,73,82
980 '
990 'end of game
1000 '
1010 FOR i=1 TO 4:SOUND 7,400+100*i,50,7:FOR j=1 TO 200:NEXT:NEXT
:MODE 0:CLS:PEN 1:PRINT "    FINAL SCORE:":PRINT "   ";sc:PRINT:P
RINT:PRINT "   GALLEONS SUNK:":PRINT "   ";sh:PRINT:PRINT:PRINT "
    ANOTHER GO?"
1020 q$=INKEY$:IF UPPER$(q$)="Y" THEN 1030 ELSE IF UPPER$(q$)<>"N
" THEN 1020 ELSE CLS:END
1030 CLS:LOCATE 1,24:PRINT "INSTRUCTIONS? (Y/N)
1040 q$=INKEY$:IF UPPER$(q$)="Y" THEN RUN 1100 ELSE IF UPPER$(q$)
<>"N" THEN 1040 ELSE RUN 610
1050 '
1060 'titles
1070 '
1080 MODE 1:INK 0,1:INK 1,22:CLS:PEN 1
1090  DATA 10,10,32,32,32,32,207,223,222,207,32,222,207,223,32,20
7,223,207,32,32,222,207,223,217,32,32,207,32,32,207,32,222,207,22
3,32,207,207,223,32,32,32,32,32,32,32,207,221,220,207,32,207,2
18,207,32,207,207,207,32,32,207,32,207,32,32,32,207,222,223
1100 DATA 207,32,207,218,207,32,207,218,220,32,32,32,32,32,32,
32,207,32,32,207,32,207,32,207,32,207,221,207,32,32,221,207,220,3
2,32,32,207,220,221,207,32,207,32,207,32,207,221,223,-1
1110 RESTORE 1090
1120 READ p:IF p=-1 THEN 1130 ELSE PRINT CHR$(p);:GOTO 1120
1130 LOCATE 5,24:PRINT "INSTRUCTIONS? (Y/N)";
1140 q$=INKEY$:IF UPPER$(q$)="N" THEN 610 ELSE IF UPPER$(q$)<>"Y"
 THEN 1140
1150 '
1160 'instructions
1170 '
1180 MODE 1:INK 0,1:INK 1,22:CLS:PEN 1
1190 CLS:PRINT "MAN O'WAR":PRINT "=========":PRINT:PRINT "In this
 game, you command a galleon and fight against the computer's shi
ps."
1200 PRINT:PRINT "Your galleon at the bottom of the screenmoves a
utomatically back and forth, but you can change its direction usi
ng rightand left cursor keys or joystick. Cannonballs are fired u
sing the joystick fire button or copy key."
1210 PRINT:PRINT "Islands may obstruct your line of fire."
1220 PRINT:PRINT "It takes 3 hits to sink a ship and you  have 3
ships or lives available. You winan extra life for each 5 ships y
ou sink."
1230 PRINT "You score 10 points for each hit and 100for sinking a
 ship.":PRINT:PRINT "(PRESS ANY KEY)"
1240 q$=INKEY$:IF q$="" THEN 1240 ELSE 610
```

In different directions

Machine code scrolling on the Spectrum – with some help from ***Henry Burek***

This program demonstrates the use of machine code routines to smoothly scroll the screen display in two different directions. The routines are Poked in from *Data* statements into the Print buffer (the left scroll starts at 23296 and the right scroll starts at 23327). However both routines are fully relocatable.

Both routines can be modified to scroll any number of columns from one column only to the whole screen. They can also be modified so that there is no wrap-around effect and the display disappears when it has scrolled off.

In the demonstration program a pattern of circles is first drawn and then right and left halves of the pattern continuously move towards the middle. To demonstrate the opposite effect, change the 255 in Line 220 to 239 and change the zero in Line 280 to 16.

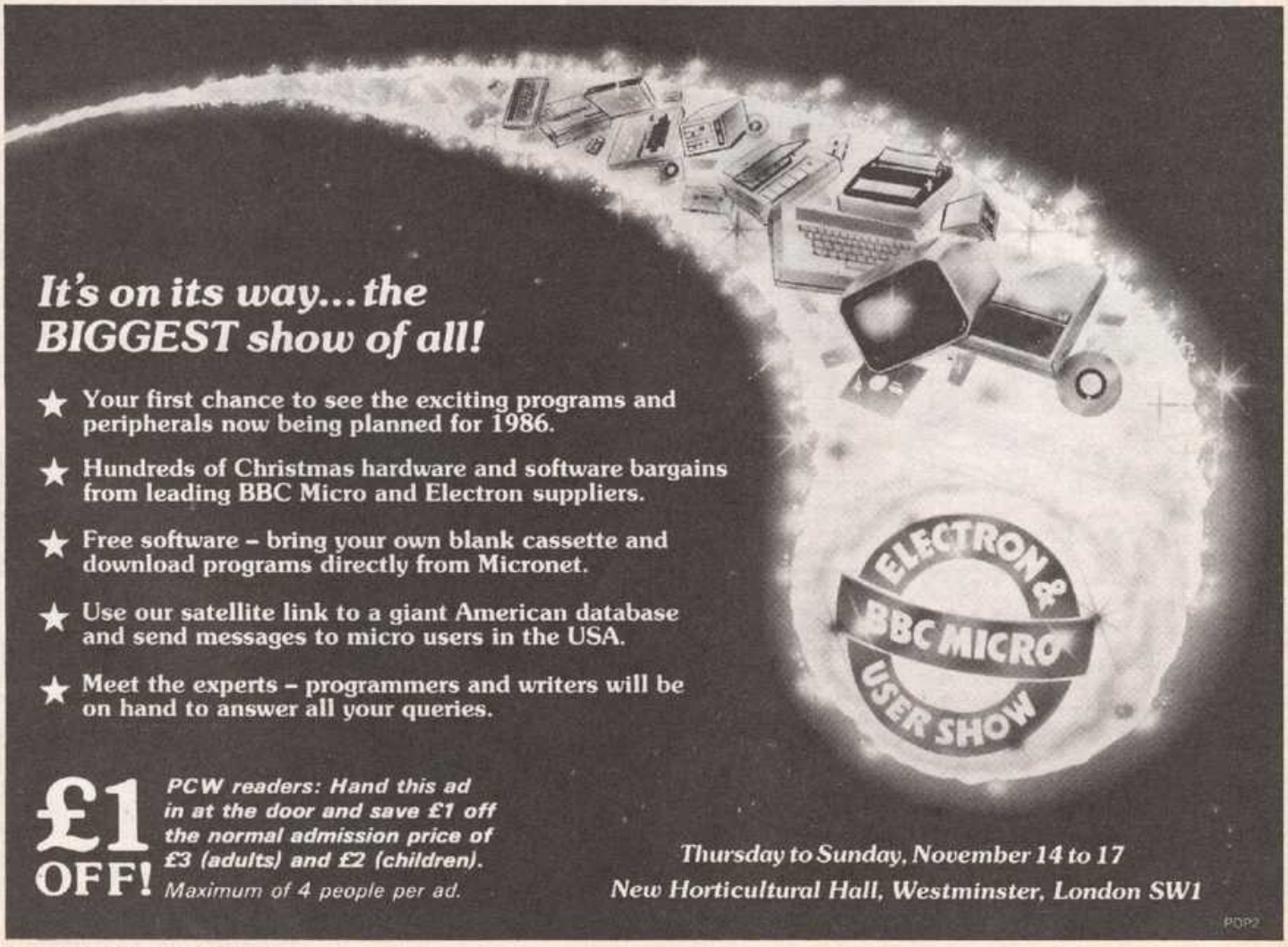
Left Pixel scroll

```
      LD HL,22527   33,255* ,87 Poke with 224+c, where c is
toP   LD D,H        84          the rightmost column.
      LD E,L        93
      XOR A         175
      LD B,16       6,16*       Poke with n, where n is the
loop  RL (HL)       203,22      number of columns to be
      DEC HL        43          scrolled.
      DJNZ loop     16,251
      JRNC jump     48* ,4      Poke with 24 to cancel
      EX DE,HL      235         wrap-around.
      SET 0,(HL)    203,198
      EX DE,HL      235
jump  LD BC,16      1,16* ,0    Poke with 32-n, where n is
      XOR A         175         the number of columns to be
      SBC HL,BC     237,66      scrolled.
      LD A,H        124
      CP 63         254,63
      JRNZ toP      32,229
      RET           201
```

Right Pixel scroll

```
      LD HL,16384   33,0* ,64   Poke with c, where c is the
toP   LD D,H        84          leftmost column.
      LD E,L        93
      XOR A         175
      LD B,16       6,16*       Poke with n, where n is the
loop  RR (HL)       203,30      number of columns to be
      INC HL        35          scrolled.
      DJNZ loop     16,251
      JRNC jump     48* ,4      Poke with 24 to cancel
      EX DE,HL      235         wrap-around.
      SET 7,(HL)    203,254
      EX DE,HL      235
jump  LD BC,16      1,16* ,0    Poke with 32-n, where n is
      XOR A         175         the number of columns.
      ADD HL,BC     9
      NOP           0
      LD A,H        124
      CP 88         254,88
      JRNZ toP      32,229
      RET           201
```

```
  5 CLS
 10 LET st=23296
 20 FOR n=st TO st+61: READ a:
POKE n,a: NEXT n
 60 PLOT 0,175: DRAW 255,0
 70 PLOT 0,157: DRAW 255,0
 80 PLOT 0,18: DRAW 255,0
 90 PLOT 0,0: DRAW 255,0
100 FOR m=63 TO 191 STEP 128: F
OR n=16 TO 64 STEP 16: CIRCLE m,
87,n: NEXT n: NEXT m
110 FOR n=1 TO 64
120 RANDOMIZE USR 23296
130 RANDOMIZE USR 23327
140 NEXT n
150 FOR m=63 TO 191 STEP 128: F
OR n=16 TO 64 STEP 16: CIRCLE m,
87,n: NEXT n: NEXT m
160 RANDOMIZE USR 23296
170 RANDOMIZE USR 23327
180 GO TO 160
190 REM
200 REM   Scroll left
210 REM
220 DATA 33,255,87,84,93,175,6
230 DATA 16,203,22,43,16,251,48
,4,235,203,198,235,1
240 DATA 16,0,175,237,66,124,25
4,63,32,229,201
250 REM
260 REM   Scroll right
270 REM
280 DATA 33,0,64,84,93,175,6
290 DATA 16,203,30,35,16,251,48
,4,235,203,254,235,1
300 DATA 16,0,175,9,0,124,254,8
8,32,229,201
9900 SAVE " CIRCLE  MERGE EXAMPL
E" LINE 1
```

Parallel lines

Connecting your 64 up to a Centronics printer – the second and final part by ***Eric Deghaye***

Now you've typed in the listing, all you have to do is make up the cable to connect your Commodore to the printer.

The cable

All we need is some wire, the plugs, and a box for the user port plug as it is unprotected.

Parts	(Maplin code)
Centronics	Fk61R
2 × 12way edge connector	BK74R?
Multicore box 10 × 50 × 25mm	WYO3D

First make a small hole in the box and push the cable through, then strip the tip of 11 of the wires from the cable at both ends. Now cut a hole in the box to fit the 2 × 12 connector. Do not solder it yet, instead solder the connections as shown in fig 1. The detail of the plugs is shown in fig 2.

When all the soldering is done, secure the 2 × 12 connector in the box any which way but loose (I bolted mine), then after checking for solder splashes, close the lid of the box and assemble the case of the centronics plug. It is a wise decision to put a label on the box saying which side is up.

The use

Now the cable is ready, and you can plug it into your commodore and printer and run the software. Whenever you type '%' followed by return, the printer should spring into life by writing *'Ready'*. If it doesn't, check your connections in the cable, and if the computer hangs up when you type '%' and doesn't come back to life after *Run/Restore*, check your software for a mistake. If *Run/Restore* brings things back to normal, then the fault is possibly just a bad connection.

CONNECTIONS

Pin parallel	– connect to – Centronics	Function
8	1	STROBE
C	2	data 0
D	3	data 1
E	4	data 2
F	5	data 3
H	6	data 4
J	7	data 5
K	8	data 6
L	9	data 7
B	10	AKNLG
A	16	Logic ground level

Fig 1.

Fig 2

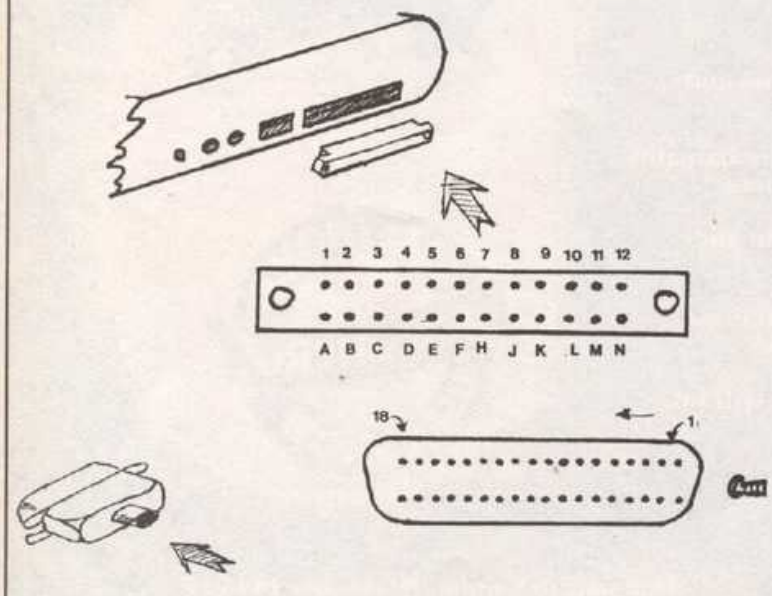
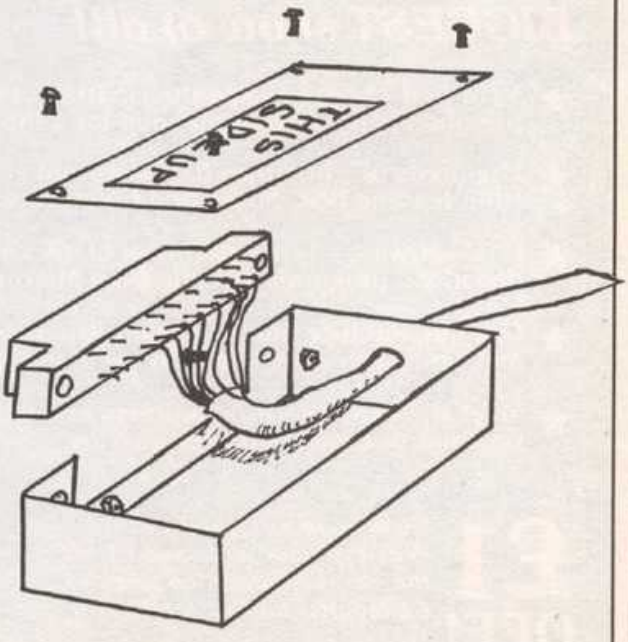


Fig 3



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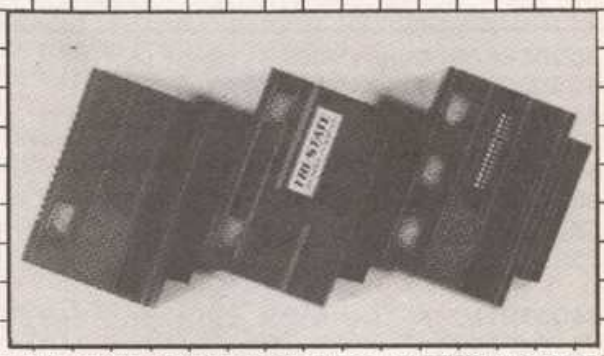

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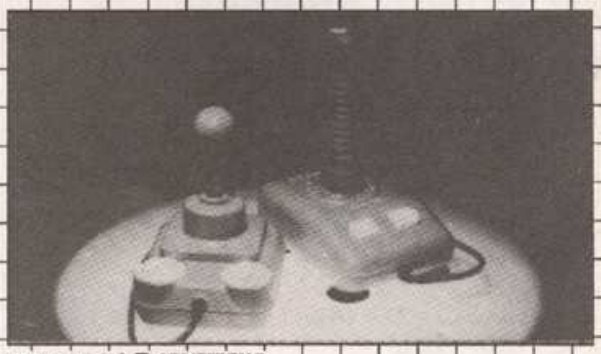

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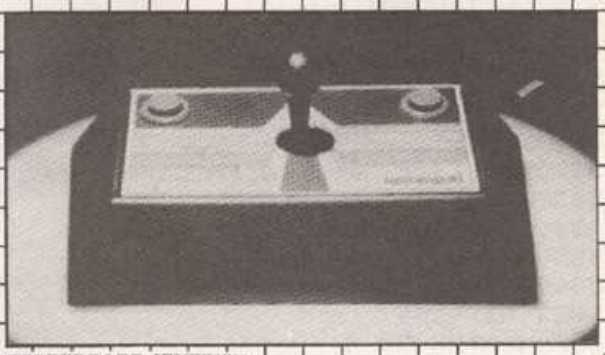

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Music, music, music

More musical goings-on for the BBC B by ***Cy Noble***

This week the final part of the music creation program for the BBC B. Next week, we'll be printing a program to take the tune data (written by this one) and write a Basic program version ofthe tune. Lastly there will be a program to play your composition via machine code interrupts so you can use them in your own games, etc.

If you don't feel up to all that typing, write to Cy Noble at 323 North Circular Road, London N13, enclosing £10 for the entire suite of programs on cassette, £11.50 for a five inch disc and £15 for a three inch disc.

```
 3520DEFPROCenv:VDU26,12
 3530LOCAL I,A%,B%,C%,P%
 3540PROCtitle("ENVELOPE DEFINER")
 3550VDU26,28,0,24,39,2
 3560PRINT"Do you want to"''
 3570PRINT"1> Load envelopes"
 3580PRINT"2> Save envelopes"
 3590PRINT"3> Change or Define envelopes
"
 3600PRINT"4> Go back to Input option"
 3610*FX21,0
 3620G%=0:REPEAT:G%=GET-48
 3630UNTILG%>0 AND G%<5
 3640IF G%=1 PROCloadenv:PROCenv
 3650IF G%=2 PROCsaveenv:PROCenv
 3660IF G%=3 THEN 3690
 3670IF G%=4 ENDPROC
 3680GOTO3610
 3690CLS
 3700A%=&8C0:C%=1:E%(0)=C%
 3710REPEAT:IF ?A%=0 THEN 3780
 3720PRINT"Envelope ";C%;
 3730FORB%=1TO13
 3740E%(B%)=B%?(A%-1):IF E%(B%)>127 E%(B
%)=E%(B%)-256
 3750PRINT;",";E%(B%);
 3760NEXT:PRINT
 3770C%=C%+1:A%=A%+16
 3780UNTILC%>16 OR ?A%=0
 3790E%(14)=1:E%(15)=101:E%(16)=10
 3800REM Chan,      freq,      length
 3810INPUT"Envelope number ",E%
 3820IF E%>16 OR E%<0 PROCboob:PROCenv
 3830E%(0)=E%
 3840A%=&8C0+(16*(E%-1)):E%(0)=E%
 3850FOR B%=1TO13
 3860E%(B%)=B%?(A%-1):IF E%(B%)>127 E%(B
%)=E%(B%)-256
 3870NEXT
 3880CLS:FOR B%=0TO6:PRINTCHR$134:NEXT
 3890VDU26,28,1,8,39,2
 3900PRINT"Select parameter to change th
en"
 3910PRINT"hold down arrow keys to chang
e it."
 3920PRINT"Up/down arrows for fast chang
e"
 3930PRINT"Left/right arrows for slower"
 3940VDU131:PRINT"Parameters of Envelope
 ";CHR$133;E%(0)
 3950PRINT"<SPACE> to hear note <DEL> st
ops it"
 3960VDU26,28,0,24,39,8:CLS
 3970FORB%=1TO13:PRINT;CHR$(B%+64);CHR$1
29:NEXT
 3980FORB%=14TO16:PRINT;CHR$(B%+64);CHR$
133:NEXT
 3990VDU26,28,2,24,39,8,12
 4000PRINT"Step length"
 4010FORB%=1TO3:PRINT"Pitch chg ";B%:NEX
T
 4020FORB%=1TO3:PRINT"Steps in ";B%:NEXT
 4030PRINT"Amp attack"
 4040PRINT"Amp decay"
 4050PRINT"Amp sustain"
 4060PRINT"Amp release"
 4070PRINT"Attack targ"
 4080PRINT"Rel. targ"
 4090PRINT"Channel";CHR$134
 4100PRINT"Note val";CHR$134
 4110PRINT"Duration";CHR$134
 4120VDU26,28,14,24,39,8
 4130FORB%=1TO13:PRINTCHR$131:NEXT
 4140VDU26,28,14,24,39,8
 4150PROCprintenv(0,E%)
 4160*FX21,0
 4170VDU26,28,22,24,39,10:CLS
 4180REPEAT:*FX21,0
 4190P%=INSTR(PROMPT$,GET$)
 4200IF P%>17 P%=P%-17
 4210UNTIL P%>0
 4220IFP%=17 THEN 4370
 4230VDU23,1,0;0;0;0;26,28,25,24,39,12:P
RINT"Select from"'"A to P"''"(S=Stop)"
 4240PROCprintenv(P%,E%):*FX4,1
 4250REPEAT
 4260I$=INKEY$(10000)
 4270I=INSTR(PROMPT$,I$)
 4280IF I>17 I=I-17
 4290IF I>0 P%=I:PROCprintenv(P%,E%)
 4300IF INKEY(-90):A%=21:X%=4+E%(14):CAL
L&FFF4
 4310IF INKEY(-99):PROCsoundnote(E%)
 4320IF INKEY(-58):E%(P%)=E%(P%)+4:PROCp
rintenv(P%,E%)
 4330IF INKEY(-42):E%(P%)=E%(P%)-4:PROCp
rintenv(P%,E%)
 4340IF INKEY(-26):E%(P%)=E%(P%)-1:PROCp
rintenv(P%,E%)
 4350IF INKEY(-122):E%(P%)=E%(P%)+1:PROC
printenv(P%,E%)
 4360UNTIL INKEY(-82)
 4370VDU23,1,1;0;0;0;:*FX4,0
 4380ENDPROC
 4390:
 4400DEFPROCprintenv(A,E%)
 4410IFA>16 A=0
 4420VDU26,28,15,24,22,8:CLS
 4430IF A=1 E%(A)=E%(A) MOD128
 4440IF A=2 AND ABS(E%(A))>127 E%(A)=0
 4450IF A=3 AND ABS(E%(A))>127 E%(A)=0
 4460IF A=4 AND ABS(E%(A))>127 E%(A)=0
 4470IF A=5 E%(A)=ABS(E%(A)) MOD 256
 4480IF A=6 E%(A)=ABS(E%(A)) MOD 256
 4490IF A=7 E%(A)=ABS(E%(A)) MOD 256
 4500IF A=8 AND E%(A)<-127 E%(A)=-127
```

```
 4510IF A=8 AND E%(A)>127 E%(A)=127
 4520IF A=9 AND E%(A)<-127 E%(A)=-127
 4530IF A=9 AND E%(A)>127 E%(A)=127
 4540IF A=10 AND E%(A)>0 E%(A)=0
 4550IF A=10 AND E%(A)<-127 E%(A)=-127
 4560IF A=11 AND E%(A)>0 E%(A)=0
 4570IF A=11 AND E%(A)<-127 E%(A)=-127
 4580IF A=12 AND E%(A)<0 E%(A)=0
 4590IF A=12 AND E%(A)>126 E%(A)=126
 4600IF A=13 AND E%(A)<0 E%(A)=0
 4610IF A=13 AND E%(A)>126 E%(A)=126
 4620IF A=14 E%(A)=ABS(E%(A)) MOD 4
 4630IF A=15 E%(A)=ABS(E%(A)) MOD 256
 4640IF A=16 E%(A)=ABS(E%(A)) MOD 256
 4650FOR B=1TO16:IFA=B PRINTCHR$134;CHR$
136; ELSE PRINTCHR$131;
 4660PRINT;E%(B);CHR$134
 4670NEXT
 4680A%=&8C0:FOR B%=0TO12:B%?(A%+(16*(E%
-1)))=E%(B%+1):NEXT
 4690ENDPROC
 4700:
 4710DEFPROCsoundnote(e%)
 4720 ENVELOPE e%,E%(1),E%(2),E%(3),E%(4
),E%(5),E%(6),E%(7),E%(8),E%(9),E%(10),E
%(11),E%(12),E%(13)
 4730 SOUND E%(14),e%,E%(15),E%(16)
 4740*FX21,0
 4750ENDPROC
 4760:
 4770DEFPROCtitle(T$):LOCAL T%:T%=(32-LE
N(T$))/2
 4780FOR A=0TO1
 4790PRINTTAB(T%,A);CHR$141;CHR$129;CHR$
157;CHR$135;T$"  ";CHR$156
 4800NEXT
 4810ENDPROC
 4820:
 4830DEFPROCerrline
 4840CLOSE#0
 4850*FX4,0
 4860VDU26,28,0,24,39,0,12,14
 4870REPORT
 4880PRINT" Error no.";ERR;" at line ";E
RL''
 4890*FX138,0,76
 4900*FX138,0,73
 4910*FX138,0,83
 4920*FX138,0,84
 4930A$=STR$(ERL)+","
 4940FORK%=1TOLEN(A$)
 4950A%=138
 4960X%=0
 4970Y%=ASC(MID$(A$,K%,1))
 4980CALL&FFF4
 4990NEXT
 5000*FX138,0,13
 5010ENDPROC
 5020:
 5030DEFPROCnotes(a,b,c,d)
 5040LOCAL A,X,Y:X=0:Y=0
 5050VDU26,28,0,5,39,0,12,15
 5060FORA=0TO5:VDU132,157,135:IFA<>5 PRI
NT
 5070NEXT:VDU26,28,3,5,39,0,12,15
 5080FORA=5TO255 STEP48
 5090PRINTTAB(X,Y)"C=";A;
 5100Y=Y+1:IF Y>5 Y=0
 5110NEXT:X=X+5:Y=0
 5120FORA=13TO255 STEP48
 5130PRINTTAB(X,Y)"D=";A;
 5140Y=Y+1:IF Y>5 Y=0
 5150NEXT:X=X+5:Y=0
 5160FORA=21TO255 STEP48
 5170PRINTTAB(X,Y)"E=";A;
 5180Y=Y+1:IF Y>5 Y=0
 5190NEXT:X=X+5:Y=0
 5200FORA=25TO255 STEP48
 5210PRINTTAB(X,Y)"F=";A
 5220Y=Y+1:IF Y>5 Y=0
 5230NEXT:X=X+5:Y=0
 5240FORA=33TO255 STEP48
 5250PRINTTAB(X,Y)"G=";A;
 5260Y=Y+1:IF Y>5 Y=0
 5270NEXT:X=X+5:Y=0
 5280FORA=41TO255 STEP48
 5290PRINTTAB(X,Y)"A=";A;
 5300Y=Y+1:IF Y>5 Y=0
 5310NEXT:X=X+5:Y=0
 5320FORA=49TO255 STEP48
 5330PRINTTAB(X,Y)"B=";A;
 5340Y=Y+1:IF Y>5 Y=0
 5350NEXT
 5360PRINTTAB(11,5)CHR$131"+4 = sharp: -
4 = flat";
 5370VDU26,28,a,b,c,d
 5380ENDPROC
 5390:
 5400DEFPROChelp(a,b,c,d)
 5410LOCAL t%
 5420VDU26,28,0,6,39,0:CLS
 5430FOR t%=0TO4:VDU132,157,135
 5440PRINT:NEXT
 5450VDU26,28,3,24,39,0:CLS
 5460PRINTTAB(10)"MUSIC DATA INPUT"
 5470PRINT"E<N>=Edit D<N>=Delete(note) X
=Sync"
 5480PRINT"P<N>=P/back(from) I<N>=Insert
(Note)"
 5490PRINT"R=Repeat section C=Define Env
 S=Save"
 5500PRINT"N=Display note values H=This
page"
 5510VDU26,28,0,24,39,5:CLS
 5520PRINT"No.";TAB(5)"Chan";TAB(10)"En/
V";TAB(15)"Note";TAB(20)"Len"CHR$136"B"C
HR$137"Stops p/back"
 5530VDU26,28,a,b,c,d
 5540ENDPROC
 5550:
 5560DEFPROCcassette(C$)
 5570*MOTOR 1
 5580PRINT"Insert disc/cassette & press
"CHR$129;C$
 5590PRINT'CHR$136"cassette motor on if
rewind required"
 5600PROCyesno
 5610IF Y%=0 THEN 5600
 5620ENDPROC
```

New boots for old

New Boots for your old Psion programs courtesy of ***Mike Lloyd***

The 'boot' files on the bundled Psion software microdrives are straightforward SuperBasic programs, each about a dozen lines long. They produce the rather boring red header screen before clearing the memory, closing the default windows and loading the machine code programs which actually do the work. Because they are so easily amended QL owners can use their imagination to create personalised header screens to look at for the 20 seconds or so that it takes to load the machine code.

To start with, load any of the 'boot' progams without, of course, running it. List it and identify the lines which are essential for loading the machine code. These contain the *Clear, Close, Lbytes* and *Call* commands. Be careful, there are slight variations in the boot programs on each Psion microdrive. Delete all the lines which go to produce the header screen and renumber the remaining lines from Line 200. To allow for tests of the screen commands, temporarily add a *Stop* command immediately prior to Line 200. This is now the basis for your own 'boot'.

Although the opportunities for designing an intricate and outlandish screen are very tempting, it should be remembered that the 'boot' programs are retained in memory throughout the operation of the main code. A very long 'boot' takes up room which would otherwise be available for data, and so is not very desirable.

Nevertheless, if you are tempted to write a long program, consider erasing the 'help' file from the cartridge if more sectors are required in order to save the routine.

It is possible to add to your 'boot' extra facilities such as a *Baud* command (if your printer needs it), an *Input* line to allow a choice between setting a printer to NLQ or normal dot matrix mode, or an output from the system clock.

If you feel artistic then background graphics of, for example, a quill pen could be included. The final result is bound to be better than the boring Psion original, and it can reflect your individual computing style.

When you have produced a satisfactory screen, delete the *Stop* command, erase the previous 'boot' on the microdrive (covering the protection tab area with sticky tape if the tab has been broken off) and then save the new version of 'boot'.

To give you some ideas, new boot progams for *Quill* and *Chess* are reproduced below, together with a screen dump of one of them in action.

Listing for 'chess' boot

```
100 CLOSE#1:CLOSE#2:lscreen
110 addr=184064
120 a = RESPR(0):a = RESPR(a-addr)
130 LBYTES mdv1_chessc,addr
140 CLOSE#0:CALL addr
150 STOP



200 DEFine PROCedure lscreen
210 MODE 4
220 OPEN #1,con_512x256a0x0_32:INK 4:
PAPER 0:CLS:CSIZE 2,0
230 AT 3,6:PRINT 'Loading...'
240 INK 7:CSIZE 3,0:FOR x=5 TO 12:AT
x,13-(x MOD 2):PRINT FILL$(CHR$(200)&
CHR$(32),8)
250 CSIZE 3,1:INK 7:PAPER 2:AT 4,11:P
RINT" QL CHESS "
260 INK 4:PAPER 0:CSIZE 2,0:AT 17,8:P
RINT"by PSION with Richard Lang"
270 AT 19,9:PRINT"Copyright 1984 PSIO
N LTD"
280 AT 21,6:PRINT 'This copy belongs
to Mike Lloyd'
290 END DEFine lscreen
```

Listing for 'Quill' boot

```
100 WINDOW 512,256,0,0:PAPER 0:CLS:CS
IZE 2,0
110 AT 4,4:PRINT"Loading ... "
120 CSIZE 3,1:STRIP 0,2,1:AT 2,13:PRI
NT ' QUILL '
130 PAPER 0:CSIZE 2,0:AT 4,28:PRINT'w
ordprocessor'
140 AT 16,9:PRINT"Copyright PSION Ltd
 1984"
150 AT 18,12:PRINT'This copy belongs
to'
160 AT 20,15:CSIZE 3,1:STRIP 0,2,1:PR
INT 'MIKE  LLOYD'
170 BAUD 4800
180 CLOSE #1:CLOSE #2:WINDOW #0,400,2
0,35,215:CLEAR
190 EXEC_W mdv1_quill
```

Loading ... QUILL wordprocessor

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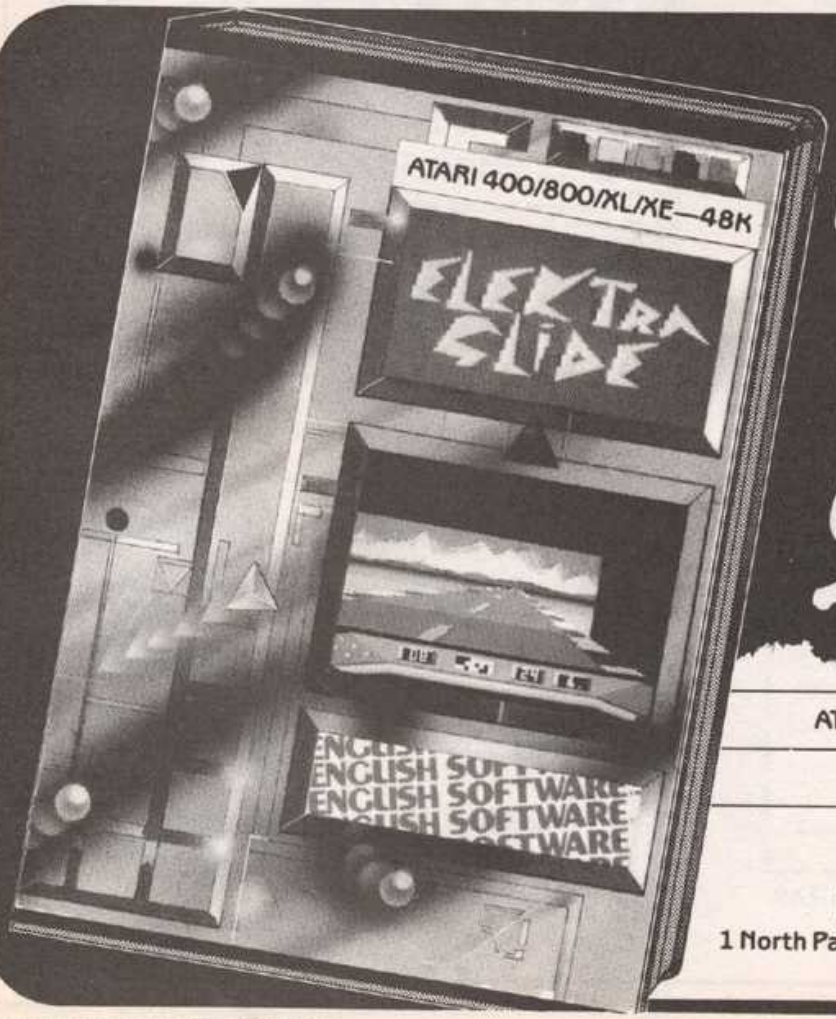
MIKE LLOYD



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Sneaky cheating!

This week is devoted to a long and rather special program. It represents, perhaps, the pinnacle of sneaky cheating.

Kenneth Devlin has written an editor routine that works on the *Save* game data of the Commodore 64 version of *Elite*.

Using his program you can give yourself any equipment, cargo, cash, legal status or position in space that you desire! The program comes in 12 sections – 1000 initialise; 2000 save; 3000 display equipment; 4000 load; 5000 menu; 6500 print cargo; 6600 print goods available; 6800 keyboard scan; 7000 change equipment; 8500 change cargo; 8600 change goods available; 9000 data. Some of these parts, and the Rem statements can be omitted to make a more compact listing. You must have sections 1,4,7, and 12, though.

The only thing it doesn't change is your combat status – you have to do something yourself!

```
Elite Editor Program  Copyright Kenneth J Devlin 1985
The following listing is for the Commodore 64
All capital 'i's  are to be entered as ones
1000 IF T=0 THEN 1020
1010 FOR A=0 TO 3:POKE 43+A,B(A):NEXT:GOTO 5010
1020 POKE 55,175:POKE 56,37:CLR
1030 DIM B(3),E$(16),F(6),G$(6),H$(3),W(10),P(7,8):J=9648
1040 REM POKE IN MACHINE CODE
1050 FOR A=0 TO 42:READ D:POKE 20000+A,D:NEXT
1060 REM READ IN CARGO
1070 FOR A=0 TO 16:READ B$(A):NEXT
1080 REM READ IN EQUIPMENT
1090 FOR A=0 TO 6:READ F(A),G$(A):NEXT
1100 REM READ IN LASERS
1110 FOR A=0 TO 3:READ H$(A):NEXT
1120 REM READ IN INITIAL FILE
1130 FOR A=0 TO 77:POKE J+A,0:NEXT
1140 FOR A=0 TO 16:READ D:POKE J+A,D:NEXT
1150 FOR A=0 TO 26:READ D:POKE J+A+51,D:NEXT
1160 POKE J+22,22
1170 REM READ IN GALAXIES
1180 FOR A=0 TO 7:FOR T=0 TO 8:READ P(A,T):NEXT:NEXT
1190 REM READ IN MACHINE CODE SAVE
1200 FOR A=0 TO 34:READ D:POKE25000+A,D:NEXT
1210 GOTO 5010
2000 REM SAVE
2010 PRINT CHR$(147):PRINT"SAVE FILE:":PRINT
2020 INPUT"FILENAME";N$:IF LEN(N$)>15 OR LEN(N$)<1 THEN 2010
2030 POKE 30000,LEN(N$)
2040 FOR A=1 TO LEN(N$)
2050 POKE 30000+A,ASC(MID$(N$,A,1)):NEXT
2060 STS 20000
2070 STS 25000
2080 RETURN
3000 REM DISPLAY EQUIPMENT
3010 PRINT CHR$(147):PRINT"EQUIPMENT:":PRINT
3020 FOR A=0 TO 6:IF PEEK(J+40+A)=F(A) THEN PRINT G$(A):NEXT
3030 IF PEEK(J+22)=37 THEN PRINT"LARGE CARGO BAY"
3040 PRINT"NO. OF MISSILES:";PEEK(J+51)
3050 FOR A=0 TO 3:E=PEEK(J+16+A):IF E<>0 THEN PRINT H$(A);:GOSUB 3510:PRINT" LASER"
3060 NEXT
3070 PRINT
3080 PRINT"FUEL"TAB(14)PEEK(J+13)/10;" LIGHT YEARS"
3090 PRINT"LEGAL STATUS"TAB(15);:E=PEEK(J+52)
3100 IF E<>0 AND E<>28 THEN PRINT "FUGITIVE"
3110 IF E=28 THEN PRINT"OFFENDER"
3120 IF E=0 THEN PRINT"CLEAN"
3130 PRINT"GALAXY NO."TAB(14)PEEK(J+15)+1
3140 PRINT"CASH"TAB(14);
3150 PRINT(PEEK(J+12)+PEEK(J+11)%256+PEEK(J+10)%256^2+PEEK(J+9)%256^3)/10;" CR."
3160 GOTO 6800
3500 REM SUB-ROUTINE FOR LASERS
3510 IF E=15 THEN PRINT" PULSE";
3520 IF E=50 THEN PRINT" MINING";
3530 IF E=143 THEN PRINT" BEAM";
3540 IF E=151 THEN PRINT" MILITARY";
3550 RETURN
4000 REM LOAD
4010 PRINT CHR$(147):PRINT"LOAD:":PRINT
4020 FOR A=0 TO 3:B(A)=PEEK(43+A):NEXT:T=1
4030 LOAD"",1,1
5000 REM MENU
5010 PRINT CHR$(147):PRINT"ELITE FILE EDITOR:KENNETH J DEVLIN 1985":PRINT
5020 PRINT"1 LIST EQUIPMENT"
5030 PRINT"2 LIST CARGO"
5040 PRINT"3 LIST CARGO AVALIBLE AT PRESENT PLANET"
5050 PRINT"4 CHANGE EQUIPMENT"
5060 PRINT"5 CHANGE CARGO"
5070 PRINT"6 CHANGE GOODS AVAILABLE"
5080 PRINT"7 SAVE FILE"
5090 PRINT"8 LOAD FILE"
5100 PRINT"9 END"
5110 GOSUB 6800:Z=ASC(A$)-48:IF Z<1 OR Z>9 THEN 5110
5120 ON Z GOSUB 3010,6510,6610,7010,8510,8610,2010,4010,5140
5130 GOTO 5010
5140 END
6000 REM PRINT GOODS SUB-ROUTINE
6010 FOR A=0 TO 16:PRINT B$(A)TAB(15)PEEK(J+A+Y):NEXT:RETURN
6500 REM PRINT CARGO
6510 PRINT CHR$(147):PRINT"CARGO:":PRINT
6520 T=23:GOSUB 6010:GOTO 6800
6600 REM PRINT GOODS AVAILABLE
6610 PRINT CHR$(147):PRINT"GOODS AVAILABLE":PRINT:Y=53:GOSUB 6010
6800 GET A$:IF A$<>"" THEN 6800
6810 GET A$:IF A$=""THEN 6810
6820 RETURN
7000 REM CHANGE EQUIPMENT
7010 PRINT CHR$(147):POKE J+73,0:PRINT"CHANGE EQUIPMENT:":PRINT
7020 FOR A=0 TO 6:PRINT G$(A)TAB(23)"Y/N/S"TAB(29);
7030 GOSUB6800:IFA$<>"Y" AND A$<>"N" AND A$<>"S" THEN 7030
7040 IF A$="N" THEN POKE A+J+40,0
7050 IF A$="Y" THEN POKE A+J+40,F(A)
7060 PRINT A$:NEXT
7070 PRINT"LARGE CARGO BAY"TAB(23)"Y/N/S"TAB(29);
7080 GOSUB6800:IF A$="S" THEN 7120
7090 IF A$<>"Y" AND A$<>"N" THEN7080
7100 IF A$="N" THEN POKE J+22,22
7110 IF A$="Y" THEN POKE J+22,37
7120 PRINT A$
7130 PRINT"NUMBER OF MISSILES"TAB(23)"0-4/S"TAB(29);
7140 GOSUB 6800
7150 IF A$="S" THEN PRINTA$:GOTO 7180
7160 IF A$<"0" OR A$>"4" THEN 7140
7170 PRINT A$:POKE J+51,VAL(A$)
7180 PRINT"LASERS"TAB(23)"Y/N/S"TAB(29);
7190 GOSUB 6800:IF A$<>"Y" AND A$<>"N" AND A$<>"S" THEN 7190
7200 IF A$="S" THEN PRINT A$:GOTO 7370
7210 PRINT
7220 IF A$="N" THEN POKE J+16,15:FOR A=0 TO 2:POKE J+17+A,0:NEXT:GOTO7370
7230 PRINT"      LASERS-";
7240 PRINT,"1-PULSE",,,"2-MINING",,,,"3-BEAM",,,,"4-MILITARY",,,"5-NONE"
7250 FOR A=0 TO 3
7260 PRINT B$(A)TAB(15);
7270 GOSUB 6800:IF A$<"1" OR A$>"5" THEN 7270
7280 IF A$="1" THEN POKE J+16+A,15
7290 IF A$="2" THEN POKE J+16+A,50
7300 IF A$="3" THEN POKE J+16+A,143
7310 IF A$="4" THEN POKE J+16+A,151
7320 IF A$="5" THEN POKE J+16+A,0
7330 IF A=0 AND A$="5" THEN POKE J+16,15
7340 PRINT A$
7350 NEXT
7360 REM ALTER CASH ETC.
7370 PRINT"GALAXY NUMBER"TAB(23)"1-8/S"TAB(29);
7380 GOSUB 6800
7390 IF A$="S" THEN PRINT A$:GOTO 7450
7400 IF A$<"1" OR A$>"8" THEN 7380
7410 PRINT A$
7420 G=VAL(A$)
7430 FOR A=0 TO 8:POKE J+A,P(G-1,A):NEXT:POKE J+15,G-1
7440 REM CASH
7450 PRINT"CASH (-1 TO SKIP)"TAB(27);
7460 INPUT MO:O=0
7470 IF MO=-1 THEN 7550
7480 MO=MO%10
7490 IF MO<0 OR MO>4%10^9 THEN 7460
7500 IF MO<256 THEN POKE J+12,MO:GOTO 7550
7510 T=INT(MO/256):IF T<255 THEN POKE J+11,T:MO=MO-256%T:GOTO 7500
7520 T=INT(T/256):IF T<255 THEN POKE J+10,T:MO=MO-T%256^2:GOTO 7500
7530 T=INT(T/256):IF T<255 THEN POKE J+9,T:MO=MO-T%256^3:GOTO 7500
7540 REM FUEL
7550 PRINT"FUEL (0-7.0,-1 TO SKIP)"TAB(27);
7560 INPUT FU
7570 IF FU = -1 THEN 7620
7580 FU=FU%10
7590 IF FU<0 OR FU>70 THEN 7560
7600 POKE J+13,FU
7610 REM LEGAL STATUS
7620 PRINT"LEGAL STATUS:SELECT 1-CLEAN",,,,"2-OFFENDER",,,"3-FUGITIVE"
7630 PRINT,,"S-TO SKIP"
7640 GOSUB 6800
7650 IF A$="S" THEN 7700
7660 IF A$<"1" OR A$>"3" THEN 7640
7670 IF A$="1" THEN POKE J+52,0
7680 IF A$="2" THEN POKE J+52,28
7690 IF A$="3" THEN POKE J+52,255
7700 RETURN
8000 REM SUB-ROUTINE FOR CARGO ROUTINES
8010 FOR A=0 TO 16
8020 PRINT B$(A)TAB(12)PEEK(J+Y+A)TAB(17)"ALTER (Y/N)"TAB(30);
8030 GOSUB 6800
8040 IF A$<>"Y" AND A$<>"N" THEN 8030
8050 IF A$="N" THEN PRINT A$:GOTO 8110
8060 INPUT Q:IF Q<0 OR Q>255 THEN 8060
8070 IF Y=23 THEN PC=PEEK(J+A+23)
8080 IF Y=23 THEN IF TC-PC+Q>MA THEN Q=MA-TC
8090 IF Y=53 THEN TC=TC-PC+Q
8100 POKE J+A+Y,Q
8110 NEXT:RETURN
8500 REM ALTER CARGO
8510 TC=0:FOR A=0 TO 16:TC=TC+PEEK(23+A+J):NEXT
8520 MA=PEEK(J+22)-2
8530 Y=23:PRINT CHR$(147):PRINT"ALTER CARGO:":PRINT
8540 GOSUB 8010:GOTO 6800
8600 REM ALTER GOODS AVAILIBLE
8610 Y=53:PRINT CHR$(147):PRINT"ALTER GOODS AVAILABLE:":PRINT
8620 GOSUB 8010:GOTO 6800
9000 REM MACHINE CODE
9010 DATA 162,73,24,138,134,187,69,187,106,125,175,37,93,176,37,202,208,242,141
9020 DATA 251,37,169,73,24,138,125,175,37,93,176,37,202,208,247,141,252,37,73
9030 DATA 169,141,250,37,96
9040 REM CARGO
9050 DATA "FOOD","TEXTILES","RADIOACTIVES","SLAVES","LIQUORS","LUXURIES","DRUGS"
9060 DATA "COMPUTERS","MACHINERY","ALLOYS","FIREARMS","FURS","MINERALS","GOLD"
9070 DATA "PLATINUM","GEM STONES","ALIEN ITEMS"
9080 REM EQUIPMENT
9090 DATA 255,"EMC",255,"FUEL SCOOPS",127,"ENERGY BOMB",1,"EXTRA ENERGY UNIT"
9100 DATA 255,"DOCKING COMPUTER",255,"GALACTIC HYPERSPACE",255,"ESCAPE POD"
9110 REM LASERS
9120 DATA "FRONT","REAR","LEFT","RIGHT"
9130 REM INITIAL FILE
9140 DATA 0,20,173,74,90,72,2,83,183,0,0,3,232,70,64,0,15
9150 DATA 3,0,16,15,17,0,3,28,14,0,0,10,0,77,58,7,9,8,0,0,0,0,64,239,39,70,28
9160 REM MACHINE CODE SAVE
9170 DATA 162,1,169,1,32,186,255,173,48,117,162,49,160,117,32,189,255,169,176
9180 DATA 133,251,169,37,133,252,162,253,160,37,169,251,32,216,255,96
9190 REM GALAXIES
9200 DATA 0,20,173,74,90,72,2,83,183
9210 DATA 0,103,81,148,180,144,4,166,111
9220 DATA 16,101,137,41,105,33,8,77,222
9230 DATA 16,90,121,82,210,66,16,154,189
9240 DATA 16,91,107,164,165,132,32,53,123
9250 DATA 16,95,72,73,75,9,64,106,246
9260 DATA 16,99,86,146,150,18,128,212,237
9270 DATA 16,99,90,37,45,36,1,169,219
```

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Tony Bridge's Adventure Corner

Original atmosphere

Colossal Cave, the original adventure, has a lot to answer for – it was after seeing this classic that Scott Adams got the bug (no pun intended) to write his own brainteasers. But this first adventure required a huge mainframe to run on; who would have dreamed, as they say, that the same program would one day be seen on the lonely Spectrum with its vast 48K memory?

Spectrum, Commodore and Amstrad versions abound, most coded by the author. It's no surprise, though, that several authors should get the idea to use *The Quill* when writing their version (I'm not even going to attempt to unravel the copyright situatuation, except to say that Crowther and Woods, the original authors, should surely be millionaires now if they had received those royalties surely due to them!).

The first *Quill'd Colossal* was sent to me 18 months ago. It was mentioned in The Corner then, but to recap: author G L Watson has used all but four bytes of the Spectrum's memory in faithfully recreating the classic, and the layout is standard *Quill.* The tape I received was Verson 1.0, so there may be more recent versions now. There's little to complain about here, though it's a pity that you have to *Get* objects piece by piece, rather than *Get All.* This is a criticism that can be levelled at all early *Quill'd* efforts – newer versions of Watson's *Cave* may be more interesting, but the version I have is rather dull. If you're interested in seeing the program that started it all, this has the advantage of being cheap – just £2.50 for the tape. *Zork* was being worked on by the writer back then, but I imagine that even if all the text of that monster could somehow be squeezed into the Spectrum (multi-parts, possibly?), Infocom would be more assiduous at protecting their copyright. Contact: G L Watson, 38 Cumbria Close, Houghton Regis, Dunstable, Beds LU5 5RY.

Another program mentioned in The Corner last year was *The Dunshalt Donut.* Ross Harris was one of the first writers of a Quill'd adventure that offered rather more than a program on a tape. He didn't too well with it, which was a pity, as the little booklet that came with the tape was a gem, and the game itself was quite tough and atmospheric – the Thing in the bed, even though I was always careful not to disturb it, was quite spine-chilling. Harris has a special way with a title screen, and the screen of his version of *Colossal* is a beautiful picture, capturing exactly the atmosphere of the original. Once into the game, you'll find that this is version 2.0, so again we may see newer versions in time; there is also a copyright notice in favour of Anubis Software, Ross Harris' company – I'm sure DEC and Crowther/Woods would be interested in *that* information!

Before getting into the adventure proper, information is available, and this is typed teletext-style in a colourful redesigned character set. Though this is helpful, particularly to newcomers to the art, the old Spelling Monster rears its unnecessary head again, which is a great pity so early in the game.

A well-worn path

The game itself follows the same very well-worn path as the original, although I'm glad to see that the demand of two years experience has been answered and the location descriptions are rather more complete than usual – there's even a stab at an explanation for the snake being so scared of the bird. Harris uses *The Quill* well, but almost disguises the fact. At just £1.50, it's obviously good value, and the tape includes a bonus program called *Satirical.* This is a parody of the parody from Delta 4, *Spectacle,* an hilarious voyage through an imaginary Micronet-like database. One of these is quite enough, though, and while *Satirical* is thrown in with *Colossal,* it's rather inconsequential and frankly time-wasting. Ross has many good ideas though, and I look forward to his next program. Ross Harris, 30 The Riggs, Auchtermuchty, Cupar, Fife KY14 7DX.

I've gone on at some length about these two programs, but I find it incredible that, while there are many programmers willing to use the original Crowther/Woods scenario, there don't appear to be any eager to tackle a graphic version. Ross Harris has created a marvellous picture as a title to his program – how I'd love to see some of those old familiar locations illustrated in this fashion!

One of the programs that featured in Gilsoft's *Gold Collection* was *Barsak The Dwarf,* by P and V Napolitano. I felt at the time of its release that it was a competent yet rather dull game, with lots of locations but nothing much to do and no sense of urgency about the problems – the player didn't seem to be involved to any degree. The authors have recently sent me an updated version which they have written using *The Illustrator.*

Terse descriptions

Eagerly loading it in, I assumed that this new version would be substantially different from the original – but I was very disappointed. Yes, some rather nice pictures were there, each one signed by PV, but the location descriptions are extremely terse. The major change is a RMC, or Random Mobile Character: this sounds very grand, but is in fact something called Frododo, which wanders on to the stage every so often and utters some inanity.

The locations are quite coherent; that is, the player has the sense of wandering around a real building, in this case a castle, but although the descriptions sometimes include lines like "there is a table here", you cannot always *Examine* those items. Maybe you can *Get* or *Put* something under the table, but I have not been able to do this.

The playing area is easy to explore, though there are obviously certain places which remain secret until problems are solved – I was glad to see that the Draconian measure of the first version (death within a few moves from hunger) has been substantially altered here. Now the player has quite a number of moves before he succumbs, plenty of time in which to find a source of food. Now, though, there is the problem of finding water – I haven't solved this one yet, thus proving that there must be more locations than at first appears.

The graphics really add nothing to the adventure, and if you have already have a copy of *Barsak,* then remain content – if not, it's an intriguing little adventure that is certainly worth the new asking price of £1.99. Contact P & V Napolitano, 48 Ledger's Road, Slough SL1 2RL. Next week, more *Quill'd* adventures, including the very first *Patch'd* game.

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:CUROFF	Turn off text cursor
:CURON	Turn on text cursor
:DEPRO	Deprotect a BASIC program
:DPEEK	Two byte peek
:DPOKE	Two byte poke
:DSCREEN	Move whole screen down one line
:FILL	Fill any area with a colour
:FLUSH	Clear input buffer
:FRAME	Wait for frame flyback pulse
:GETCHAR	Get a character from the screen
:GEYKEY	Get a character from the keyboard
:GPEN	Set the graphic pen to an ink
:GOVER	Turn on the graphics XOR function
:HELP	List the SYSTEM X commands
:INVIS	Make the screen invisible
:INVERSE	Swop pen and paper
:LSCREEN	Move whole screen left
:MOTOR	Turn cassette relay on/off
:PRON	Echo screen printing to printer
:PROFF	Turn off echo to printer
:PROTEC	Protect a BASIC program
:RPEEK	Peek into a ROM
:R	Reset pens, inks, border and mode to default
:RESET	Reset pens, inks, border and mode to default
:RSCREEN	Move whole screen right
:SHIFT	Shift a block of memory
:USCREEN	Move whole screen up one line
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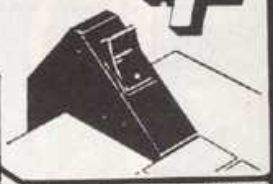

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Spiderman on Spectrum. Where is Dr Octopuss and where is Electro. Andrew D Angus, 39 South Road, Lerwick, Shetland, Scotland.

Fourth Protocol on Spectrum. I need help with Thorn in connection with medical security. J Rogers, 26 Harry Price House, Hartlebury Road, Oldbury, Warley, B69 1FQ.

Return to Eden on Amstrad. How do I get into the city? I can offer help on Jewels of Babylon, Message from Andromeda and Snowball in return. David Carr, 'Thornlea', Oak Road, Mottram Saint Andrew, Macclesfield, Chesure.

Magic Mountain on Spectrum. I asked for the Scroll as my one wish from the genii in the bottle but he didn't grant my wish and disappeared in a puff of smoke! What can i wish for he will grant? A R McDowall, 7 Third Avenue, Wellingborough, Northants.

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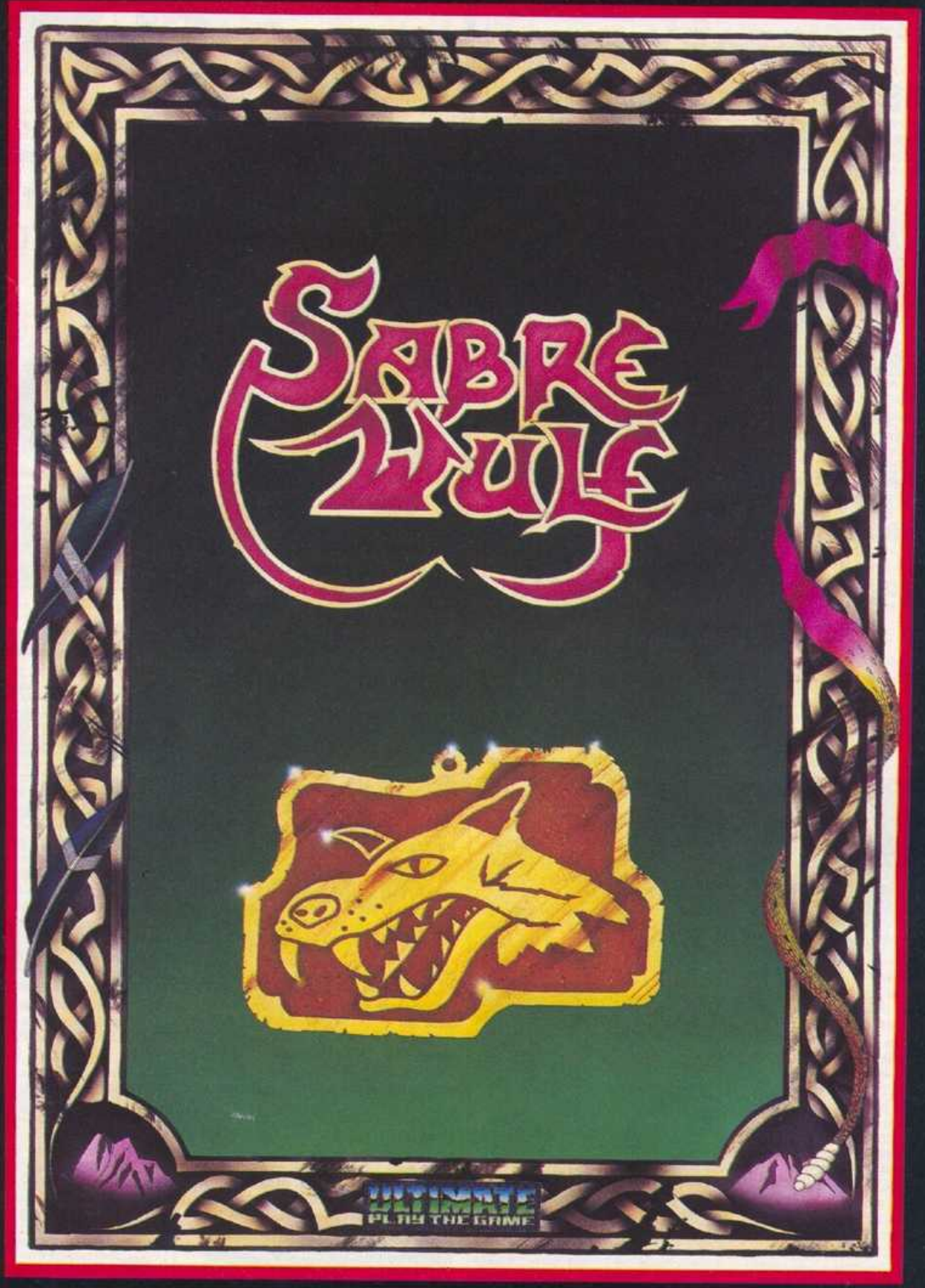

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Bubbling Under

ACE/**Spectrum/C64/C16 (Cascade);** Kennedy Approach/**C64 (Microprose/US Gold);** Monty On The Run/**C64/Spectrum (Gremlin Graphics);** One Man and His Droid/**Spectrum (Mastertronic);** Quest For the Holy Grail/**Spectrum (Mastertronic);** Soul of a Robot/**Amstrad (Mastertronic);** Robin of Sherwood/**Various (Adventure International).**

All figures compiled by Gallup/Leisurescope

Top Twenty

1	(–)	Monty on the Run *(Spectrum/C64)*	**Gremlin Graphics**
2	(1)	Way of the Exploding Fist *(Spectrum/C64/Amstrad)*	**Melbourne House**
3	(3)	Frank Bruno's Boxing *(Spectrum/C64/Amstad)*	**Elite**
4	(4)	Impossible Mission *(Spectrum/C64)*	**Epyx/US Gold**
5	(7)	Formula One Simulator *(Spectrum/C64/C16)*	**Mastertronic**
6	(6)	Finders Keepers *(Spectrum/C64/Amstrad/MSX)*	**Mastertronic**
7	(8)	Daley Thompson's Supertest *(Spectrum)*	**Ocean**
8	(13)	Action Biker *(Spectrum/C64)*	**Mastertronic**
9	(–)	Starquake *(Spectrum)*	**Bubble Bus**
10	(4)	Hacker *(Spectrum/C64/Amstrad/Atari)*	**Activision**
11	(9)	Fighting Warrior *(Spectrum/C64)*	**Melbourne House**
12	(14)	BMX Racers *(Spectrum/C64/C16)*	**Mastertronic**
13	(6)	Who Dares Wins II *(C64)*	**Alligata**
14	(15)	Graham Gooch's Test Cricket *(Spectrum/C64)*	**Audiogenic**
15	(11)	Fairlight *(Spectrum)*	**The Edge**
16	(–)	Chiller *(Spectrum/C64/Amstrad/MSX)*	**Mastertronic**
17	(18)	Beach-Head *(Various)*	**Access/US Gold**
18	(19)	Bored Of The Rings *(Spectrum/C64/BBC)*	**Silversoft**
19	(–)	Nonterraqueous *(Spectrum/Amstrad)*	**Mastertronic**
20	(5)	Now Games *(Spectrum/C64)*	**Virgin**

Figures compiled by Gallup/Leisurescope

Readers' Chart No 49

1	(1)	Way of the Exploding Fist *(Spectrum/C64/Amstrad)*	**Melbourne House**
2	(2)	Fairlight *(Spectrum)*	**The Edge**
3	(4)	Daley Thompson's Supertest *(Spectrum)*	**Ocean**
4	(6)	Hypersports *(Spectrum/C64)*	**Imagine**
5	(–)	Spy Vs Spy *(Spectrum/C64)*	**Beyond**
6	(3)	Now Games *(Spectrum/C64)*	**Virgin**
7	(–)	Bored of the Rings *(Spectrum/C64/BBC)*	**Silversoft**
8	(9)	Frank Bruno's Boxing *(Spectrum/C64/Amstrad)*	**Elite**
9	(5)	Summer Games II *(C64)*	**Epyx/US Gold**
10	(7)	Red Moon *(Spectrum/C64/Amstrad)*	**Level 9**
	(–)	Flight Simulator II *(C64)*	**Sublogic**
	(–)	Nightshade *(Spectrum)*	**Ultimate**

Winnng Phrase No 49: "Willy shoots the tax man" From Craig Bono of Selby, N. Yorks.

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1756 PERSHORE ROAD, COTTERIDGE, BIRMINGHAM.
Tel: 021-458 4564

New Releases

HIGH LEVELS

Imhotep is Ultimate's latest Commodore 64 game and it leaves me baffled as to what, exactly, Ultimate think they are doing. *Imhotep* is an utterly unoriginal zap, zap game of the most repetitive kind.

It could easily have been written two or more years ago and Mastertronic would put it out for £1.99. Its single saving grace is that it is quite a well designed zap game and is addictive in a slightly irritating sort of way.

I'll spare you the plot; suffice to say you have to survive and battle your way over a scrolling landscape of pyramids and palm trees (at least to begin with). You are a little man on a flying vulture and the baddies are lots of other men of lots of other vultures. Your vulture is equipped with the usual laser blast device (do the NSPCA know?) with which to shoot down anything that moves.

There is some subtlety to the game in that different coloured vulture riders behave in different ways; some actively seek you out and must be blasted as soon as possible, others can safely be dodged and they will fly off

harmlessly.

The game quickly gets fiendishly difficult to play with an enormously high level of joystick dexterity and reaction speed being required. Though a challenge, this is also infuriating since no one in the office could figure out how to change the level.

We didn't get to see later screens despite a great deal of effort and concentration.

It seems fairly obvious that this game wasn't written by Ultimate in house – it doesn't have the Ultimate look and there is an author's credit on the opening screen. So what made them decide to release it? More particularly, what made them think they can charge £9.95 for something that is clearly not a top of the range game? I'm mystified. Maybe later levels get very much more sophisticated, but I doubt it.

It isn't terrible, but I strongly advise you not to just go out and buy this one because of the Ultimate name and the pretty box. See it in action first, then decide.

Program *Imhotep*
Price *£9.95*
Micro *Commodore 64*
Supplier *Ultimate Play the Game*
Ashby de la Zouch

NUMBER ONE

The Last V8 along with *Spellbound* and *Hero of the Golden Talisman* form the first three titles in Mastertronic's new MAD range. Games thought to have a bit extra than the usual titles and consequently put out at a higher price. Though one would hardly call £2.99 high.

The Last V8 is an unusual road race game with some astounding music from Rob Hubbard who seems to be capable of things on the Commodore 64 that enable people with a complete arsenal of DX7s, Fairlights and Linn Drums.

On this occasion the music sounds like 12 rock bands playing simultaneously with Keith Emerson on synthesizers and Mike Oldfield on guitar – it's very LOUD!

I like the plot of *The Last V8* as well; it has definite Moorcock/Mad Max touches – humanity has been decimated (as usual) and you are a scientist charged with the task of bringing together the remnants of mankind.

To achieve this you have constructed a car, a hybrid of old parts and new technology – the last V8.

The game involves steering the V8 around a series of landscapes – each section must be completed within a strict time limit (before the

occasional stray nuclear device drops and melts your car).

The skill of the game comes in the successful negotatiation of the track.

The screen is divided into two sections – car instrument panels on the bottom two thirds and a scrolling aerial view of the track in the top third. Though the car is fairly tiny, the rest of the scrolling background is nicely detailed.

There are buildings, houses, trees and rivers, but careful design gives the required impression of an empty rather bleak landscape.

To begin with the game is fiendishly difficult; negotiating the first section of track within the time limit seems impossible – although you begin to realise that provided you do not actually bump into anything there are some shortcuts.

One final feature of the game, it has synthesized speech – quite good it is, too, though there are some words like radeaschen that take a while to figure out.

At £2.99 the game is already a steal, so hopefully everybody will buy this game rather than copy it. It makes quite a few full price titles look faintly ridiculous.

Expect to see it in the number one slot within the next three weeks.

Program *The Last V8*
Price *£2.99*
Micro *Commodore 64/ Commodore 128*
Supplier *Mastertronic 8-10 Paul Street London EC2A 4JH*

ALIEN TARGET

More goodies from Mastertronic with *Space Hunter* a space game that reminds me vaguely of *Codename Mat.*

Your task is to search through 15 star systems capturing food transporters before alien horrors can grab them and blast you to bits.

All this involves piloting the usual space cruiser at warp speeds through the usual clusters of little white dots and blasting at the usual fleets of triangular shaped alien space ships. The screen shows alien targets, range and a map of the local star system.

A battle computer also helps you blast things in an orderly fashion.

A new touch for this sort of game is a docking option where you can get beamed aboard various supply ships that are around.

In this mode the screen changes to a side view of the interior of the place you've entered and you get to hunt about looking for food – it looks rather like a boring maze game with big blocky graphics.

However, as unoriginal as the game is, it has the immediate virtue of being cheap and is as fun to play as many of its expensive rivals. Worth a look or two.

Program *Space HUnter*
Price *£1.99*
Micro *Commodore 64*
Supplier *Mastertronic 8-10 Paul St. London EC2A 4JH*

New Releases

EXTENDED

Pride Utilities' program, *System X*, is an extension to Amstrad Basic – it adds 30 new commands, some fairly trivial, but others very useful indeed.

All commands are preceded by a slash to tell the machine that these are not part of the usual command set.

Trivial additions include *Capoff* and *Capon* to switch the caps lock of or on within a program.

Interesting and useful commands include *Dpeek* to peek two locations at once, *Getchar* to read a character from the screen text position and place it in a string and *Motor* to switch the 464 cassette player on or off or other devices connected to the 464 remote plug.

Other commands cover moving sections of memory around and speeding up saving – both potentially very useful indeed. £9.95 is a reasonable price for this kind of utility.

Program *System X*
Price *£9.95*
Micro *Amstrad*
Supplier *Pride Utilities*
7 Chalton Heights
Luton
Beds
LU4 9UF

RETARDED

Bum. Breasts. Poo Poo. Hilarious eh? I can't find the right word to describe *Whoopsy* from Shards Software. Well actually I can but decorum restrains me.

The phrase 'utterly juvenile' does spring to mind, *Whoopsy* is the sort of game five year olds may well snigger over.

Here's the plot; you are a baby and over several screens, all of them almost exactly the same as one another, you must collect toys and dodge your mother.

Your mother can be distracted from her attempts to spoil your fun by the simple expedient of judicious use of your non-potty trainedness. Leaving your mark causes mummy to rush towards the offending mess and clear it up giving you time to grab some more toys.

It's a laugh a minute as you can imagine.

The graphics are OKish, mummy, in particular, is well designed.

Whoopsy is the end result of the sort of ideas very socially retarded programmers have after having drunk 12 pints of Special Brew.

Program *Whoopsy*
Price *£6.95*
Micro *BBC*
Supplier *Shards Software*
Roycrift
15 Linton Rd
Barking
Essex

Pick of the week

BIZARRE SCENARIO

The Pawn is an extremely sophisticated text adventure for the QL; sophisticated partly because of its long evocative descriptions of each location, but primarily because of its complex language parser which can negotiate the most fiendishly twisted English language sentences imaginable.

The program is capable of understanding, for example, instructions to take certain combinations of objects, eg, get all except the ring. If the objects are inside an object, eg, a bag, you can refer to the collected objects as the *contents* of the bag.

The provisional manual summerises what is possible in an instruction from a mythical adventure (I'd love to play it): Get all except the cases, but not the violin case, then kill the man eating shrew with the contents of the violin case. Remove the shrew's tail and use it to tie the pole and the noose together.

The Pawn also features other characters that you will wish to converse with, you can use both Ask (as in Ask the troll about the food) or Say (as in Say to Norman "how's your stone cladding"). Like Infocom games it features basic commands like Brief/Verbose to toggle the length of text description and a Score which is constantly displayed.

Other clever options include a command Left n and Right n where n is the position of the margin – useful on TVs with slightly dodgy displays – and Contrast which lets you choose green and white text.

The plot is something I am reluctant to say much about except that it is not the usual po-faced stuff and instead features a bizarre scenario of warring drink manufacturers – well, I think that's what it all means. The actual point of the plot is one of the things you have to find out in the game.

The Pawn is an extraordinarily clever adventure and I think it is also one of the few QL programs that actually looks like it is using some sophisticated programming power and a 6800 series chip. Any QL owner even half interested in adventures should buy it.

Program *The Pawn*
Price *£19.95*
Micro *QL*
Supplier *Sinclair Research*

This week

Program	Type	Micro	Price	Supplier
Hi Rise	Arc	Amstrad	**£7.95**	Bubble Bus
Your Health	Ut	Amstrad	**£7.95**	Hisoft
AtariSmash Hits 4	Arc	Atari	**£11.95**	English
Elektraglide	Arc	Atari	**£8.95**	English
K Ram	Ut	Atari	**£29.95**	Kuma
Devpac ST	Ut	Atari ST	**£49.95**	Hisoft
6502 Macro Ass/ Diss	Ut	Atmos	**£10.95***	R McLaughlin
Computers at Work	Ed	BBC	**£14.95**	BBC
The Mole Concept	Ed	BBC	**£14.95**	BBC
Unfiormly Acc. Motion	Ed	BBC	**£14.95**	BBC
Powerplay	S	BBC	**£14.95**	Arcana
The Last V8	Ad	Commodore 64	**£2.99**	Mastertronic
Golden Talisman	Ad	Commodore 64	**£2.99**	Mastertronic
Henrys House 2	Arc	Commodore 64	**£6.95**	English
Imhotep	Arc	Commodore 64	**£9.95**	Ultimate
Little Computer People	Ed	Commodore 64	**£14.95**	Activision
Rick Hudson	Ad	Electron	**£9.95**	Robico

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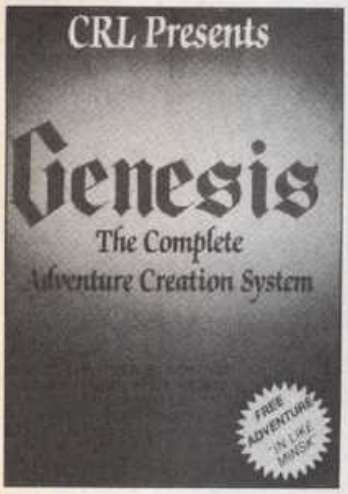
DIFFERENCES

The second adventure generator for the Amstrad in the space of two weeks – this time *Genesis* from Camel Micros,



marketed by CRL. It's always a problem taking a quick look at detailed programs like these – you really need to spend weeks at the keyboard before delivering a definitive report. However, when comparing the two packages, it's worth reporting on some first impressions.

Both are graphic adventure generators (with the addition of sound with *Genesis*), yet one is £9.95 (*Genesis* again); the Incentive offering being £22.95. . . that's one big difference. But there are differences. *Genesis* offers 50 Marker/Counter variables. . . Incentive's *Graphic Adventure Creator* offers almost eight times as many. Although the 'number of locations' statistic can be misleading, Camel estimate easily getting 80-100 locations each with its own graphic in memory, while Incentive quote 200-300. The Incentive package also allows multiple input – *Genesis* does not.

This is not to say that Genesis is a bad buy – as the example program shows, (both produce code that runs independently of the creator by the way) it can produce perfectly acceptable results. I just get the feeling that GAC is probably the better of the two. However, if you find its cost prohibitive, *Genesis* is the one for you.

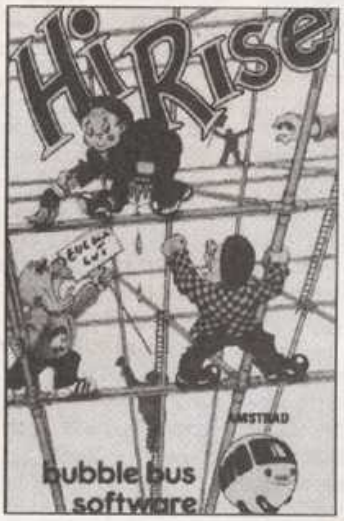
Program *Genesis*
Price *£9.95*
Micro *Amstrad*
Supplier *CRL*
CRL House
9 Kings Yard
Carpenters Road
London E15 2HD

STRIKE-BREAKER

Hi Rise is a game that, though lacking any elements to make you gasp, wow amazing, is so utterly playable and horribly addictive that all other considerations fade away. It is also, I thnk, one of the first good games to be released on the Amstrad first.

The plot is the usual arcade idiocy. You are Builder Bob, little alliterative person, and your task is to paint a series of scaffolds. Unfortunately, the striking workers (we are not told their names but Sam, Sonny, Simon, Sonja, Stan, Stanislaus and Solzhonitznyn are names that spring to mind) don't wnt you to break the strike and chase you arround the scaffold. They can be stopped only by a court injunction and sequestration of their union assets – well, actually that's a lie, you stop them by squirting glue in front of them.

What makes the game is the 3D design of the scaffold – it looks vaguely like *Ant Attack* with shading used to give a sense of thickness to the girders. It also means that you can't see what lurks behind every corner, adding to the difficulty of the game. There are 99 different scaffolds to master and I haven't even been able to complete the first one but next time . . . excellent fun.



Program *Hi Rise*
Price *£8.95*
Micro *Amstrad*
Supplier *Bubble Bus*
87 High Street
Tonbridge, Kent
TN9 1RX

TIME LIMIT

Every so often I get sent a program from people hoping to make it big (whatever that means) and asking what I think of their first effort. *Steeplejack* is from a company called DigiTape, which describes it as 'not best nor cheapest but fun to play' and that's about right, I think.

The game involves destroying, section by section, a series of objects – the first screen is a British Rail train. This involves planning your path around the object to do the most damage as quickly as possible. You are under a strict time limit and it proves difficult not only because of the sheer amount of destruction you have to achieve, but also because inside each object there lurk various nasty objects that may leap out and zap you, forcing you to start all over again.

Graphically the game is no more than average but there is a touch of originality to the game and it is fun to play. At £2.99 it's a little more than standard budget price but not offensively so. It rates a look, anyway.

Program *Steeplejack*
Price *£2.99*
Micro *Spectrum*
Supplier *DigiTape*
Freepost
Swansea

Compiled by Graham Taylor

New Releases is designed to let people know what software is coming on the market. If you have a new game or utility which you are about to release send a copy and accompanying details to: New Releases, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD.

Activision, 15 Harley House, Marylebone Road, London NW1, 01-486 7588. **Arcana,** Avondale Workshops, Woodland Way, Kingswood, Bristol, Avon BS15 1QH, 0272 6571. **BBC,** 35 Marylebone High Street, London W1M 4PP. **Bubble Bus,** 87 High Street, Tonbridge, Kent TN9 1RX, 0732 355962. **CRL,** CRL House, 9 Kings Yard, Carpenter's Road, London E15 2HD, 01-533 2918. **Electric Dreams,** 31 Carlton Crescent, Southampton, Hampshire S01 2EW. **English,** Box 43, Manchester, M60 3AD, 061-835 1358. **Hisoft,** 180 High Street North, Dunstable, Beds LU6 1AT, 0582 696421. **Kuma,** Kuma Computers, 12 Horseshoe Park, Pangbourne, RG8 7JW, 07357 4335. **Mastertronic,** Park Lorne, 111 Park Road, London NW8 7JL, 01-402 3316. **Psion,** 22 Dorset Square, London NW1 6QG, 01-723 9408. **R. McLaughlin,** 28 Farmfields Close, Sheffield S19 6LR, 0742 470094. **Robico,** 3 Fairland Close, Llantrisant, Mid Glamorgan, CF7 8QH, 0443 227354. **Sigmasoft,** 8 Pine Dale, Rainford, Merseyside, WA11 8DP. **Superplant,** Llangeitho, Tregaron, Dyfed, Wales SY25 6QG, 097423 223. **Ultimate,** Ultimate Play the Game, Ashby-de-la-Zouch, Leicester, LE6 SJV, 0530 411485.

Wider perspective

I remember my first meeting with an Apple II computer in 1979, a computer so elementary that it had an Integer only Basic in Rom, and required a plug in card to load the floating-point Applesoft Basic.

The first thing that happened to my Apple was that the top came off, revealing a large part of the workings, and nearly all the chips.

That experience is probably most easily shared these days by owners of BBC computers, who are forever having to take off the top to their machine, for this purpose or that.

Look at those chips arrayed for inspection, to see what types of chip they area, and where they were fabricated.

Opening up any microcomputer these days – regardless of manufacturer – is like taking a journey round the world. And in the journey, the developing countries seem to take over a large part of the itinery.

There is no such thing any more as a completely British, US, or Japanese microcomputer. Fabrication of the final product may take place in Britain or wherever, but only small number of the components will actually be made in Britain.

Of the indigenous computer manufacturers in Britain, how many are anything other than computer assemblers? How much of the hardware for the final product is British? Often very little. I am not suggesting that we should ignore the British content of a product, rather I am saying that we ought to start examining that part of the content of a product which comes from the developing countries of the world and asking ourselves how the micro companies can produce their models at such seeming incredibly low prices.

How many people who contributed to charity appeals for the dying in Africa also bought a microcomputer because it was exceptional value for money? How many of these people who bought such a computer realise the often apalling conditions for the mainly female 'sweatshop' workers in some developing countries?

The attitude of computer assemblers is rather short-sighted (as well as being rather selfish).

Many of the problems in Africa, say, are due to the way in which aid from the developed world (East and West) is given. Most ends up as military aid, but another popular form of aid is to develop (cheap) manufacturing, which in turn is used to help to subsidise industries in the developed countries. The debt problems of the Third World can be directly attributed to worthless aid and exploitation of cheap labour. Yet, Governments and governing bureaucracies will not act to help the needy in any real sense – for example, the present farce concerning Britain and the EEC's reasons for not giving aid.

How can the individual help? In South Africa black workers have been exploited in a similar manner, and public pressure in the West caused many multinational companies to start paying living wages to black employees (how well it worked in practice is another question). This was not action at the level of governments, but action on firms to act in a humane manner.

I would suggest that any microcomputer company which trades anywhere in the world also has duty to do its utmost to ensure that the workers in those countries, producing good for our exploitation, should be paid a minimum wage.

The prices we pay for our micros in the high street would have to increase, but given the profit margins on computers, there would not be a vast increase in price for the end user.

It is time micro firms began to look beyond profits to a wider perspective which includes concern for the individual, be that individual in this country or thousands of miles away.

Boris Allan

Grid values

Puzzle No 182

In this Crossnumber puzzle can you find the value of A, B, and C that fit into the grid?

ACROSS	DOWN	
1. B^2	1. B	4. A * B
5. B * C **	2. A^3	5. C − 1
7. B^3	3. A + B	6. A

Solution to Puzzle No 177

The numbers which satisfies the five given conditions is 933157.

```
10 LET N=2
20 LET S=N*N
30 R=S+1
40 P$=STR$(R)
50 FOR Q=2 TO LEN(P$)
60 Q$=MID$(P$,Q,1)
70 IF Q$="0" OR Q$="2" OR Q$="4" OR Q$="5"
   OR Q$="8" THEN GOTO 120
80 NEXT Q
90 X=R
100 GOSUB 130
110 IF T=1 THEN PRINT X
120 N=N+2:GOTO 20
130 T=0
140 FOR F=3 TO SQR(X)+1 STEP 2
150 IF X/F=INT(X/F) THEN 180
160 NEXT F
170 T=1
180 RETURN
```

From condition ii) we know that the required value is one more than a perfect square and so the program generates successive squares. As this value must also be prime, the square must be even so as to produce an odd value when 1 is added. Therefore the number to be squared must also be even. Each value is tested, firstly to determine that all digits are odd (Lines 40 to 80), and then to test for primality. The simplest (though not the shortest) method is by trial division (Lines 130 to 180).

All values that pass the primality test are printed out.

Winner of Puzzle 177

The winner is J P Mensink of Ryde, Isle of Wight, who receives £10.

Rules

The closing date for Puzzle 182 is December 4.

The Hackers

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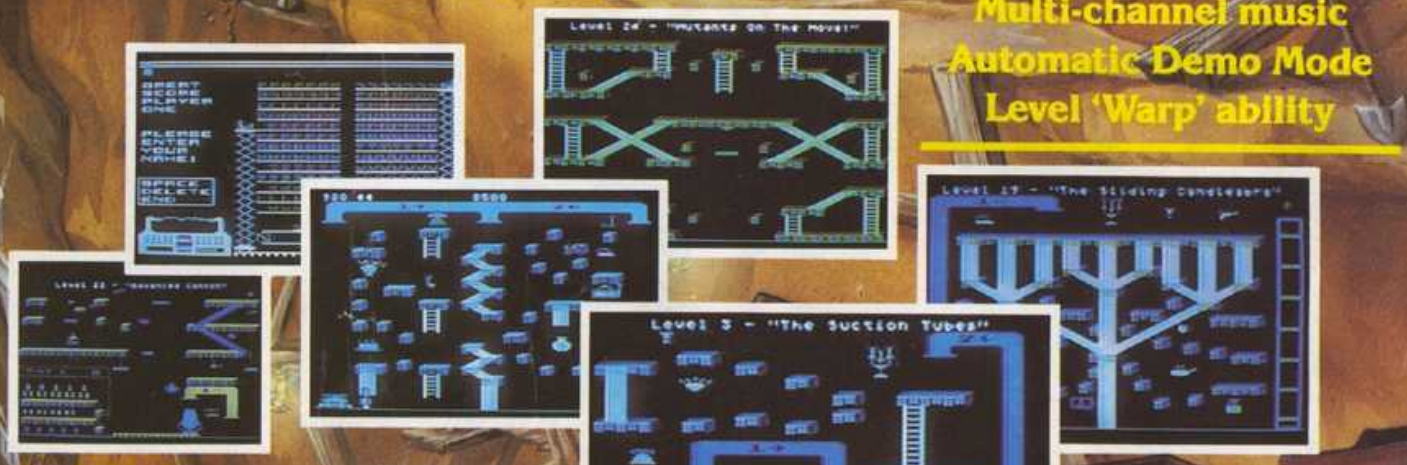

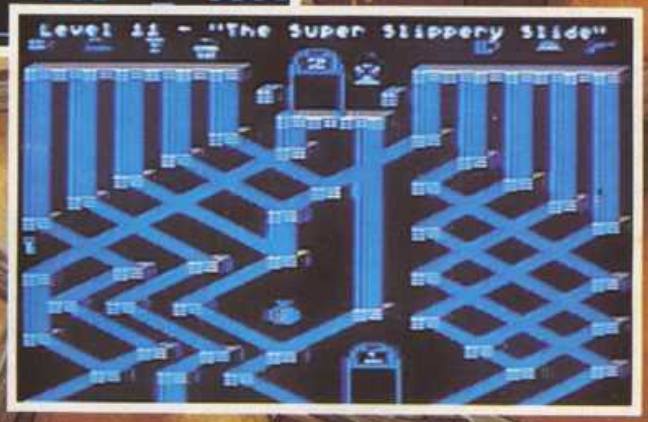

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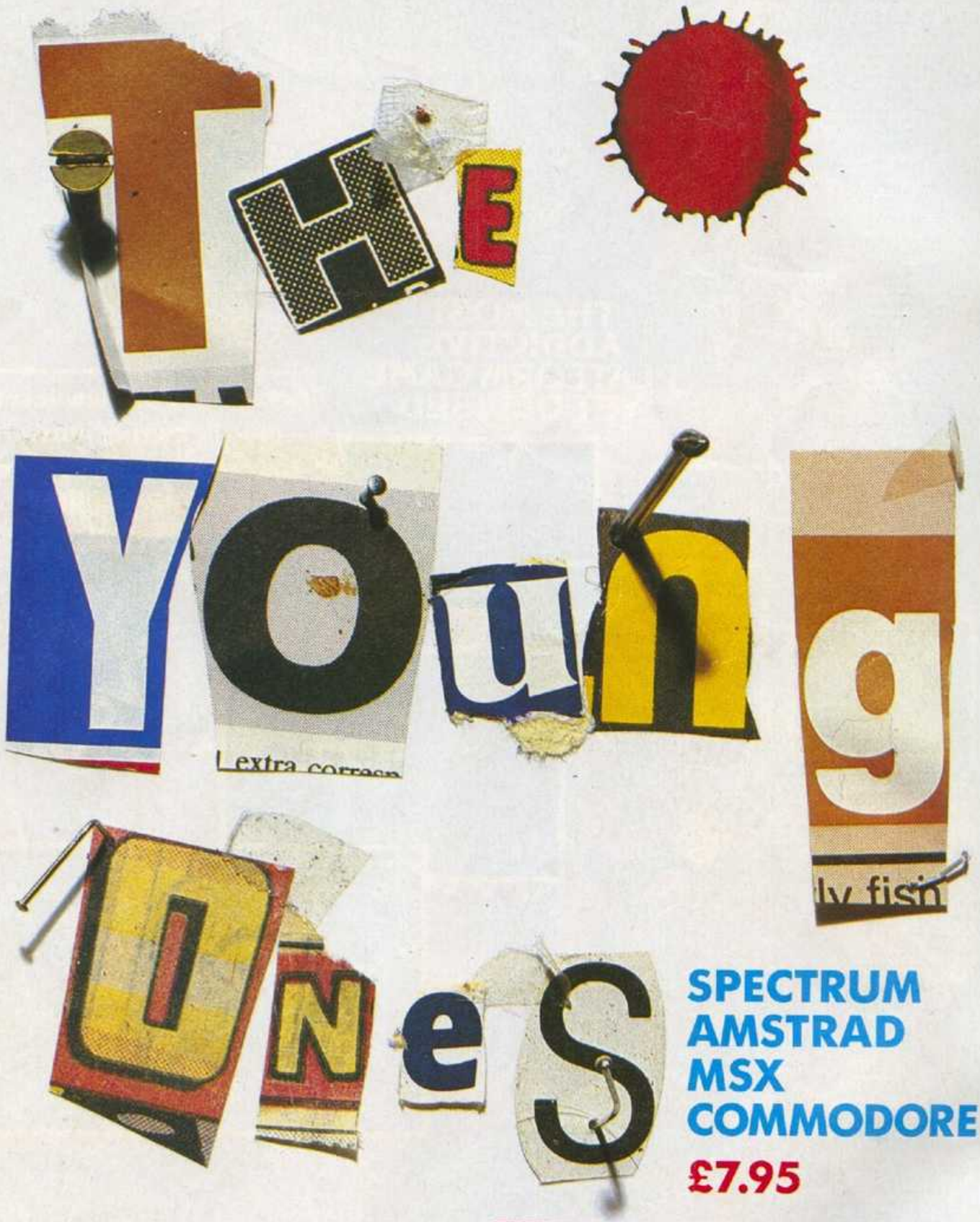

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