POPULAR COMPUTING WEEKLY

A FOCUS MAGAZINES PUBLICATION

June 2-8 1988 70p

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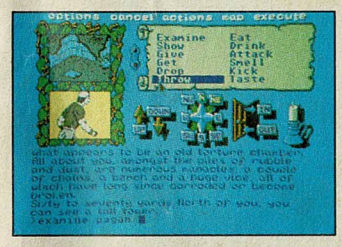

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Win an all-expenses paid day at the Oval test match

Code Masters cuts cost of disc games

CODE Masters has announced the cheapest disc games software which will retail for £2.99.

In the past, the cheapest disc software was produced by Mastertronic which released £4.99 games. Bruce Everiss, marketing manager of Code Masters, is confident about the new price point. "These will be the best-selling disc products in Britain," he says.

The initial games released consist of four titles, *BMX Simulator, Grand Prix Simulator, ATV Simulator* and *Fruit Machine Simulator*. Everiss would not say how many titles will be released each month.

The packaging is claimed to be exceptional. "It is similar to a Album sleeve with a flap at the top," Everiss says.

Despite the low cost of the games, Everiss says they are not cheap quality, "They are high-quality existing products".

The £2.99 price point is part of a long-term Code Masters plan to release further titles, "We may eventually release the disc titles and cassette titles at the same time," Everiss says.

Mastertronic, one of Code Masters rivals for the position of number one budget software house was surprised to hear of Code Masters plans and a spokesperson said "Watch this space".

STOP PRESS

New Atari PC

AT the Atari Forum in London, Atari announced the release of a new upmarket corporate PC. The Atari PC4 is an industry-standard AT machine which will cost £1,299 plus VAT and offers a 80286 microprocessor, 512K of RAM expandable to 1MB, VGA, EGA, CGA and Hercules standard monochrome graphics built-in, 1 5.25in. floppy disc drive, two serial ports, one parallel port and five AT expansion slots. Bob Gleadow, general manager of Atari said, "This latest addition to our business system range is designed to introduce Atari to the corporate business market." Previously Atari had introduced a range of low-medium priced PCs.

Beardsley's championship challenge

PETER BEARDSLEY, Britain's most expensive footballer, is set to appear in a Grandslam game based on England's challenge to win this month's European Championship.

Peter Beardsley's International Football re-creates the entire European Championship tournament in which you control your team from the qualification group matches involving teams which range from Albania to Yugoslavia and then on to the final.

The games are joystick-controlled and can be played over five or 20 minutes per half with the action controlled by an on-screen referee and watched by an enthusiastic commentator.

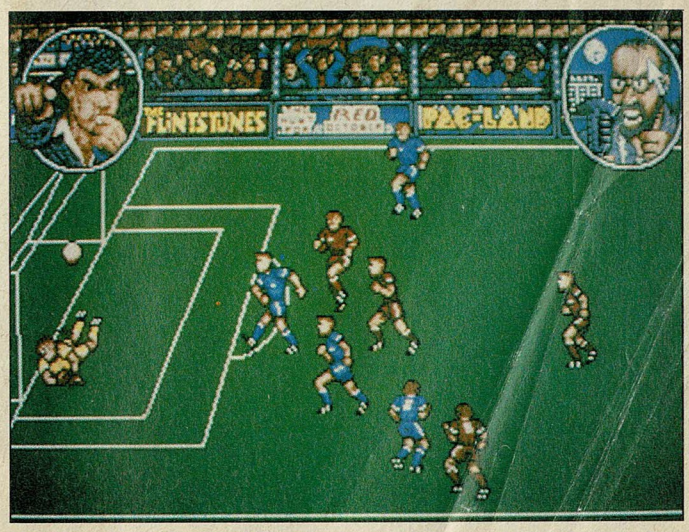
Peter Sleeman, Grandslam software development manager, enthused that "Peter Beardsley's International Football will be the best piece of football action since Match of the Day."

"We are delighted to have Britain's most valuable player signed up with Grandslam for a game which will feature brilliant animation and all the excitement of the European Championships".

Peter Beardsley's will be available on Atari ST, Amiga, C64, Spectrum, Amstrad and MSX formats later this month.

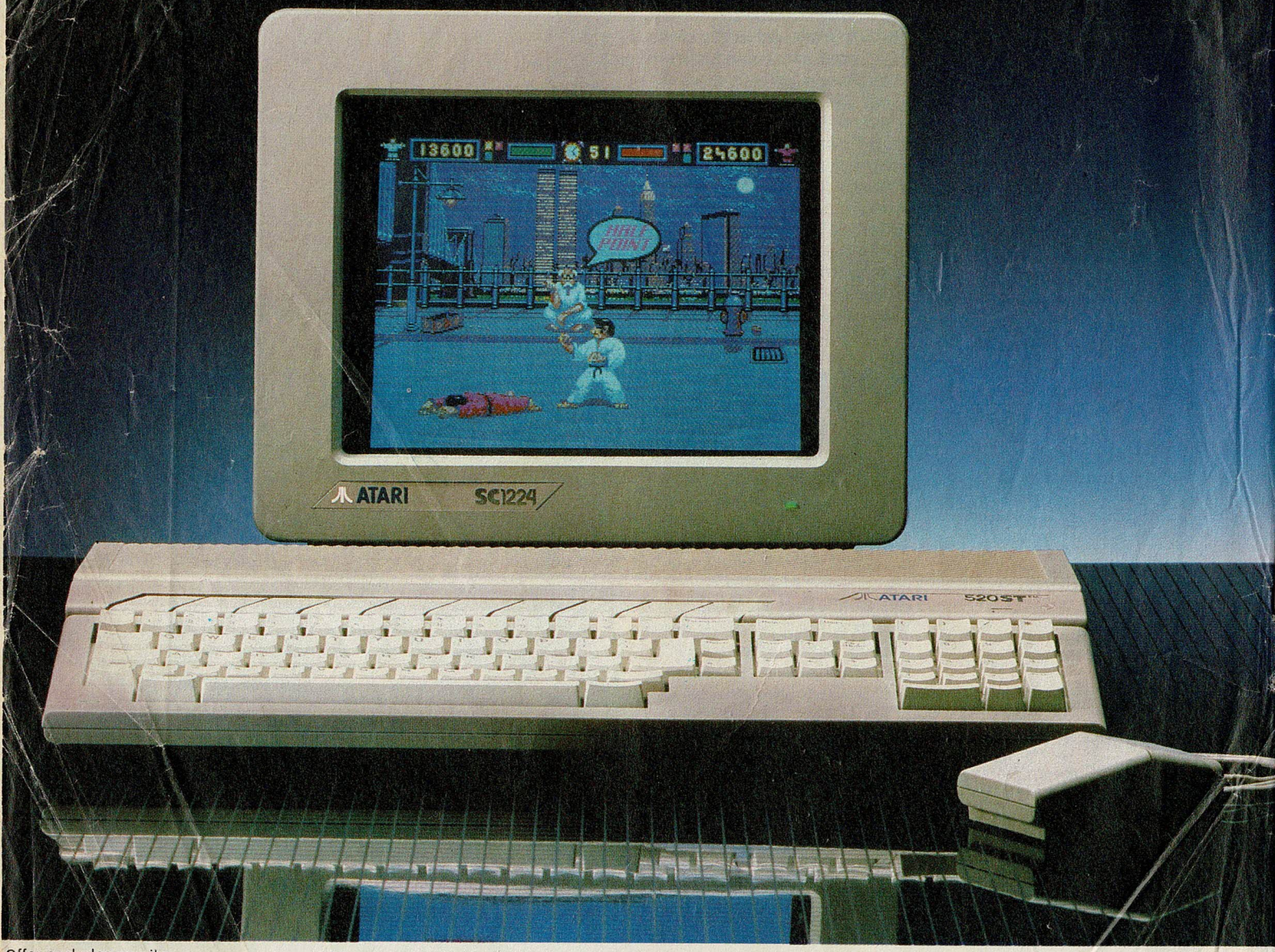
This week Grandslam also announced the relaunch of the Bug Byte budget label featuring a combination of old Grandslam and Domark games rereleased at £1.99.

Forthcoming titles include *A View to a Kill* and *Friday the 13th*.



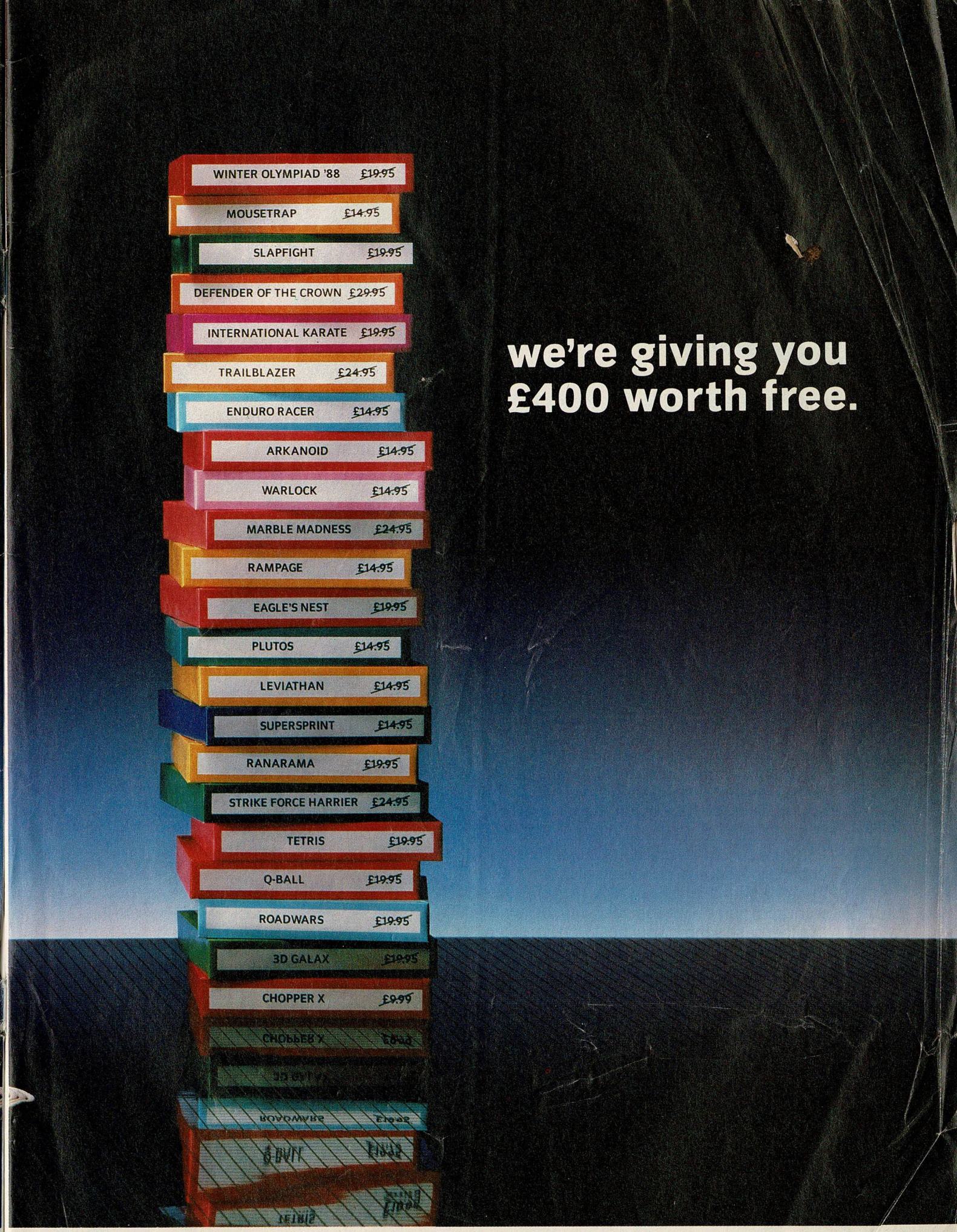
Peter Beardsley's International Football.

To make sure the Atari 520 STFM only plays games that are worthy of it,



Offer excludes monitor.

Only the Atari Summer Pack gives you the world's best home computer plus the world's best games. Twenty-two software titles that most people would give their right arms for, are yours absolutely free.



There's no catch. You really do get a 520 STFM and £414 worth of great games for just £399.99! But only until September 1st. What are you waiting for?

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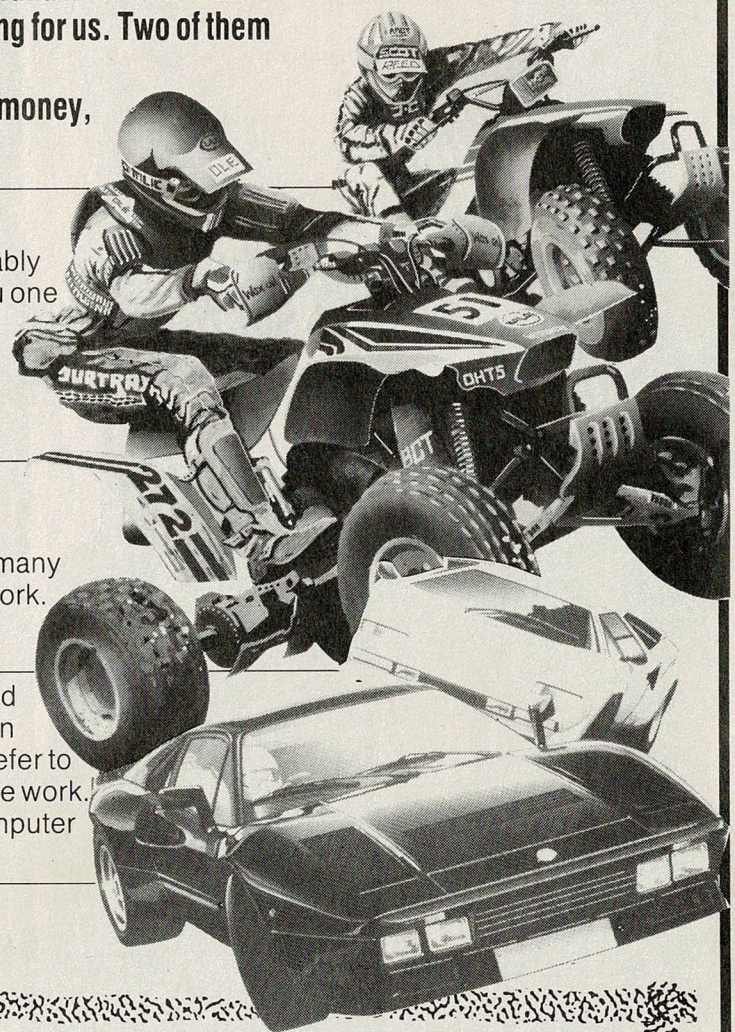
Code Masters sell £1.99, £4.99 and £14.99 games – We are the best selling software brand in Britain*. We have many successful programmers working for us. Two of them have been paid in excess of £40,000 since Christmas! We want to pay you this kind of money, but you're not talking to us! . . . YET!



PROGRAMMERS

Send us a sample of your best work (preferably published). If it is brilliant then we'll offer you one of our projects. Then you quote us on how long it will take and we will offer you several thousand pounds advance on royalties.

MUSICIANS

We are looking for enthusiastic, talented musicians who are capable of writing for as many computers as possible-send us your best work.

ARTISTS

If you are absolutely brilliant and light hearted enough to work in our enthusiastic team then there's a permanent job on offer. If you'd prefer to work from home – we can offer you freelance work. In either case send in your best work on computer for us to look at.

Code Masters

In the open market, where the customers can choose, Code Masters is consistently the No 1 best selling software brand. A success story you can join. Our titles continue to sell and sell. BMX holds the record for chart longevity. Its still there. Lots of happy programmers are profiting from Code Masters success. Join them.

If you want to make money with Code Masters software Ring David or Richard Darling. 0926-814132

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***source – Gallup's Open market Chart survey**

EDITORIAL

THIS week's news that Code Masters is to release C64 disc software for only £2.99 begins another battle in the budget war. Particularly when you realise that this new price undercuts the previous price of budget discs by more than 40 percent, a price set by Code Master's rival for the budget top spot, Mastertronic.

Mastertronic and Code Masters have been fighting for the honour of being king of budget software ever since Code Masters was launched at the 1986 Personal Computer Show. Between them they have swapped more claims and counter-claims than they have released games – all to prove that they are number one.

As the battle continues the other budget players, such as The Power House and Alternative Software, steadily gain ground with a string of hits.

Budget software is still a growth market with new companies joining every week but this week's re-launch of the Grandslam Bug Byte label will find a very different market from that which supported its previous £2.99 games.

Now it is a forum for releasing former full-priced games at a fraction of their original price and, by the recent chart successes of *Ghostbusters, Way of the Exploding Fist* and *Steve Davis Snooker,* it seems this is what people want.

This all adds to the pressure on full-priced titles which must achieve higher levels of gameplay and quality to survive. The day is dawning when 8-bit software will be available only at a budget price as full-price software houses write only for 16-bit machines.

U.S. software house Word Perfect has announced that it will not be releasing an Atari ST version of its word processor because of piracy being rife in the market. Similarly, Epyx refused to release an Atari 8-bit version of its classic *Winter Games* for the same reason. Others are set to follow suit.

The message is abundantly clear. Think carefully before you "borrow" a copy of the latest game. If you do, you might just persuade a software house that it is not worth supporting your machine.

Tony Hetherington.

POPULAR COMPUTING WEEKLY

A FOCUS MAGAZINES PUBLICATION

Vol. 7: No. 22

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Published by Focus Magazines, Greencoat House, Francis Street, London SW1P 1DG

Typeset by Magazine Typesetters, 6 Parnell Court, East Portway, Andover, Hampshire

Printed by McCorquodale Magazines, Andover, Hampshire

Distributed by SM Distribution, London SW9, Telephone: 01-274 8611, Telex 261643

© Focus Magazines 1988.

ISSN 0265-0509

Popular Computing Weekly. Tel: 01-834 1717. Fax 01-630 6165

Subscription rates: U.K. £35 per year, overseas £49.95 per year.

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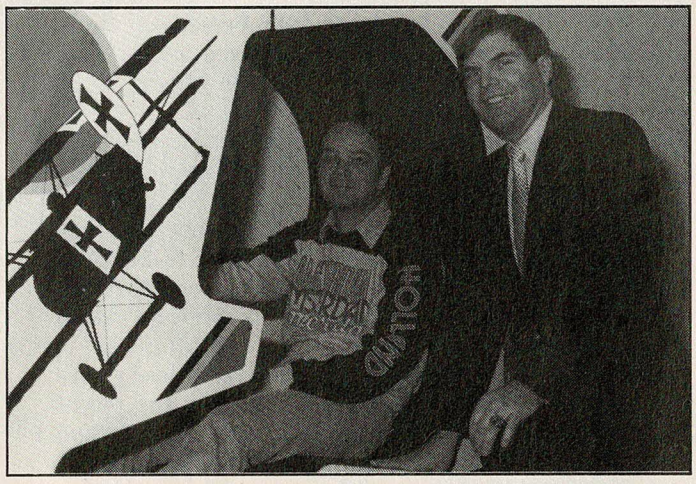
Customising computers

Microprose finds the arcade machine which launched the company

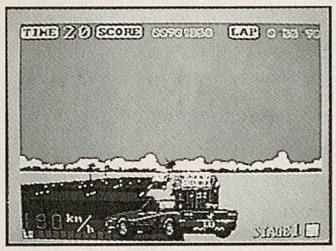
THE arcade game *Red Baron* which led Bill Stealey to meet Sid Meier and eventually prompted the two to form Microprose has been found. In the summer of 1982, Meier and Stealey were playing Red Baron in a hotel in Las Vegas. Meier said he could write a better game on his computer and Stealey said he could sell it. That led to the development of *Hellcat Ace*, which launched Microprose.

At the start of last year Microprose decided to hunt for the machine. Trying to find it was a little more difficult than anticipated. The first problem faced was that the hotel in which the game was played originally had changed owners and the video arcade was dismantled. After great persistence, Microprose discovered that the machine was in storage in Nevada and, after negotiations, took it to its east coast offices.



Red Baron.

Out Run on top



Outrun.

OUTRUN on the ST has become the first-ever 16-bit title to make number one in the Gallup Chartalk Top 50. Richard Tidsall, marketing manager for U.S. Gold, says: "We are very pleased and it is really good that an ST game has reached number one."

Tidsall attributed the amazing success to a number of reasons. "It was an eagerly-awaited game and also we put a great deal of effort into the quality of the conversion."

As to future developments by releasing added race tracks or extra difficulties, Tidsall says: "There are no plans for enhancement."

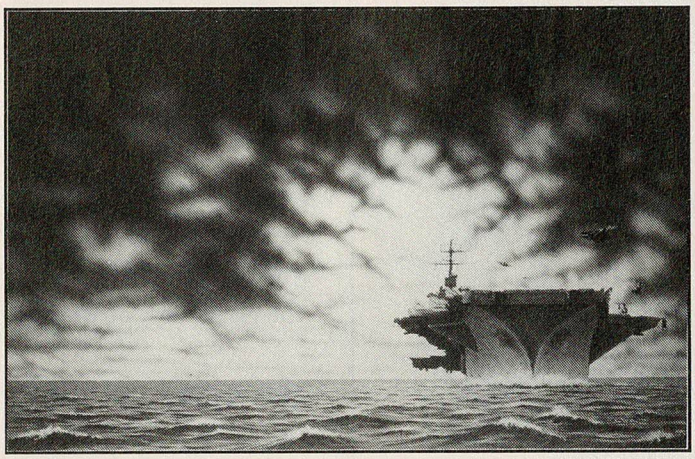
Martech carrier command

A HEADY combination of strategy and 3D arcade action is the order of the day in the latest Martech game.

The nuclear-powered *Nimitz* is the largest aircraft carrier in the world, capable of launching one of its 100 aircraft every 15 seconds.

As captain of this leviathan you are charged with protecting yourself and neutral shipping in one of the world's major trouble-spots. As is often the case, attack is usually the best form of defence and you may wish to launch your Tomcat fighters and Intruder bombers on a pre-emptive strike.

Nimitz runs on the C64 and costs £9.99/£14.99 on cassette/disc.



Nimitz ready for launch.

Beating the virus

ANYBODY using much public domain software on a PC has a fair chance of picking up a virus or two. Two are particularly virulent at the moment, the Brain and the Lehigh Virus.

If you find your files have become infected, help is imminent. Cascade Systems Ltd. is releasing *PC Immunise* in the middle of June. The system, which is hard and floppy disc-compatible, works by taking a snapshot of the computer memory and then detecting the arrival of invisible files, unsolicited commands and any changes to the operating system.

PC Immunise will cost £19.95 and further details are available from Liz Sandey at Cascade on 0423 525325.

Dial M for murder, magic and mayhem

BUDDING wizards and barbarians can now cast spells and slay orcs via a new medium – the telephone.

Computerdial has collaborated with Steve Jackson, author of many Fighting Fantasy books to produce F.I.S.T. – Fantasy Interactive Scenarios by Telephone.

By telephoning the special number, players hear descriptions of their surroundings complete with realistic sound effects. Actions such as fighting and moving are determined by pressing specific keys on the telephone keypad. Positions can be saved for up to a month so that players do not always have to start from scratch every time they dial.

The object of the quest is to explore level one of Castle Mammon – level two is being developed – acquiring as many gold pieces as possible.

Calls are charged at 38 pence a minute during peak hours and 25 pence off-peak although Computerdial is examining cheaper possibilities. For an information pack, send a stamped SAE (A5 sized) to F.I.S.T., c/o Computerdial Ltd, PO Box 530, Kensington High Street, London W8 5NP.

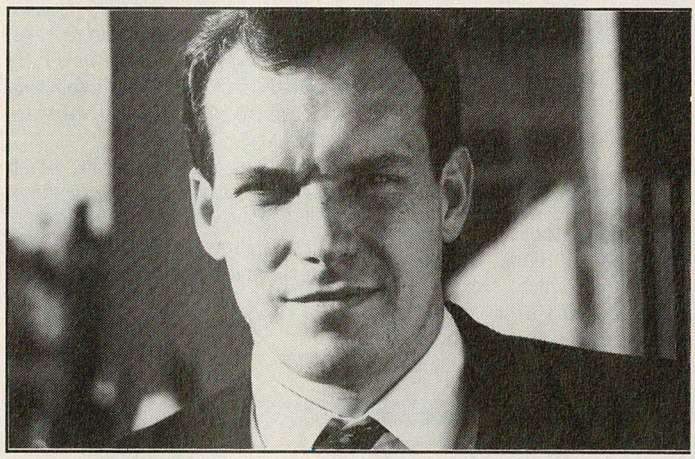
Global Portex

PORTEX, the personal organising system for PC's is now available on two new formats. A international version available in ten languages and a corporate network version has recently been launched.

The International Portex is a modification of the Portex software and allows one of ten European languages to be selected for all diary display and printing functions. Francis Showering, managing director of Portex said, "We see International Portex as the first step towards fully translating the Portex software, as it will provide our growing European market with print operations and diary display in their own languages."

The network version of Portex is similar to the single user version with a number of additional features which include, allowing other users to view a file currently in use but prevents the overwriting of that file on disc and prevents interleaved update by automatic file locking. Showering added, "The network version of Portex is an important addition to our range, given the success Portex already enjoys in the corporate market. A company with a sales team which needs to share the same address list should benefit from the new version." Portex Network costs £495 and is a licence for 16 users.

Portex is available on both 5.25 inch and 3.5 inch disc formats. Details from Portex on 01-922 8821.



Francis Showering.

Schools choose Mini Office II

EVERY student in Cheshire's seventy-five secondary schools and sixth form colleges will now have access to an integrated software package.

The education authority has just upgraded to Mini Office II, running on BBC micros.

The package consists of six modules - word processor, database, spreadsheet, graphics, label printer and communications - and is available on eight different formats.

Further information from Mike Cowley on 0625 878888.

Tandy hosts charity tournament

A NUMBER of stars from the world of television, music and sport are to be sponsored by Tandy Computers at this year's Pro-Celebrity Tennis Tournament. The event, which takes place at the Royal Albert Hall, London, on June 17, is in aid of muscular dystrophy, a crippling disease which attacks the muscles.

Stars taking part include Richard Branson and Barry Gibb.

John Sayers, managing director of Tandy Computers, says: "Muscular dystrophy has been the nominated charity of Tandy for a number of years and our participation in this tournament confirms our continuing commitment to the work."

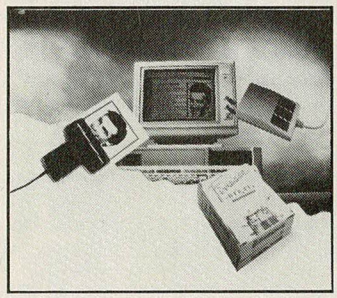
To help as much as possible, Tandy will be using its central London stores to distribute booking forms for the tournament.

For more information, contact Tandy on 0922 710000.

AMS launches budget DTP

PROFESSIONAL desk-top publishing for the PC is now available at a budget price. AMS has released *DTP Solution* which contains software, Microscan and Mouse for £389 plus VAT.

The software is *Finesse*, which is claimed to be easy to use. It has Swiss, Dutch and Charter typefaces in a wide range of sizes from six to 72-point.



Finesse.

Finesse also allows the user to import and manipulate text and graphics from external sources such as *WordStar, WordPerfect, Gem Paint/Draw* and *PC Paintbrush.*

Microscan allows you to digitise photographs, logos, signatures or illustrations by moving the scanner across the desired image. Microscan features a 105mm. wide scanning head. Colour and grey scales are represented by up to 17 half-tones at a resolution of 200 dots per inch.

Mouse gives the user responsible control through features which include high-resolution and a tracking system which provides precision interaction and surface contact at all times.

Nick Pearson, managing director of AMS, is confident of the system. "I think we have truly thrown a spanner in the works. I am sure DTP Solution will turn the DTP market upside down," he says.

For more information contact AMS on 0925 413501 or write to 166-170 Wilderspool, Causeway, Warrington WA4 6QA.

Mindscape releases new film licence

A NEW film tie-in has been announced by U.S. software house Mindscape. *Willow*, the computer game is based closely on the forthcoming Lucasfilm film Willow, directed by Ron Howard of Splash, Cocoon and Happy Days fame.

The story is that of Willow, an unlikely hero in a battle which takes him beyond the peace of his village into a world filled with giant Daikinis, little brownies and mythical fairies.

In the game, good triumphs over evil. Willow takes into his charge Elora Dan, a baby gifted with the power to destroy the wicked Queen Bavmorda. Players will join Willow and Elora Dan on a journey, racing through dungeons, traversing dark woods and blasting through ice caves.

As they travel through a series of episodes relating to the film plot, players can take different roles along the way until their pursuit of villainous minions of Bavmorda leads to victory.

The game features digitised scenes from the film and initially will be available on the IBM PC and compatibles.

Wordperfect now perfected?

THE top selling Wordperfect word processor distributed by Sentinel Software has been enhanced.

Wordperfect 5.0 features a range of powerful new features including integrated text and graphics, programmable macros, mixed fonts and more.

Wordperfect 5.0 costs £425. More details from Sentinel Software on 0753 686655.

LETTERS

Kids Aid

I read with interest your cover story May 5-11 about Peter Gabriel getting involved with The Race Against Time. I remember a while ago you ran a little news story about Kids Aid being organised by Rod Cousens of Mediagenic; would you have any news about how that is progressing, as it seems to be a while since we last heard anything?

Rod Cousens has assured us that Kids Aid is still going along as planned. At the moment the final touches are being put to this year's line-up and it should be on sale very soon.

Sexism

The main, indeed only, reason that I buy computer magazines is to read about matters pertaining to computers.

If I wanted to discuss the use and abuse of women's bodies, or sexism, or racism, I would join a debating society.

Please keep these irrelevancies out of *Popular Computing Weekly*. The letters are invariably badly written, full of specious arguments and ramble on for far too long. Witness Mr McCarthy's letter which manages to move from Ken Dodd to the Nazi holocaust in the space of one paragraph. I rest my case.

Rachel Makinson,
Penzance.

Coin-op club

I am a great fan of shoot-'em-up games, such as *Commando, Gauntlet* and *Uridium*. I know there are adventure clubs for fans of adventures but is there such a thing as a club for shoot-'em-up fans?

G. Smith,
Aberdeen.

We cannot think of any such club, perhaps one of our readers could help, or you might even consider setting up a club yourself.

Viruses

There has been much written recently about viruses. What started as a little harmless fun has now developed into something more serious. The problems do not end there.

There are many stories of disgruntled employees sabotaging company computer records by leaving bombs hidden in the software which will wipe all the records after a specified amount of time. Or people cracking the security of banks' computers and effectively holding the banks to ransom - pay me and I will show you how I did it or you will lose vast amounts you will never be able to trace.

It is no understatement to say that society would collapse overnight if all the computer systems were to go down. Just removing bank, Government and police computers would cause immediate chaos.

If a few pranksters can cause so many problems with a virus, imagine what a determined saboteur could do. It is a chilling thought.

Michael Colberton,
Dudley.

Adventures for Merlins

No, no, a thousand times no. When will Hamlett realise that adventure games are a totally separate entity from role-playing games, just as they are in no way connected to strategy games or arcade games.

Adventure games are all about problem-solving. The programmer sets a problem I have to solve. It is a battle of my mind against his. This is something entirely lacking from so-called role-playing games. I see no point in wandering at length round the countryside beating-up groups of monsters. Where is the intellectual challenge? If you want to keep to a fantasy analogy, role-playing games are for the Conans of this world - all brawn and no brain - whereas adventures are for Merlins.

John Elmley,
Holme.

Role-playing

I would like to congratulate Gordon Hamlett on his perceptive article on the future of adventures. For many years I have been playing text-only games - most graphics were too awful to contemplate. It was only when I took stock that I realised that most of the games were much of a muchness. The plots were all very similar, the same puzzles kept recurring and I went back to crossword puzzles when I wanted some mental stimulation.

Then a friend showed me a copy of *Ultima IV*. There was something about the generation of the characters in the Gipsy's caravan which sparked the imagination and from then I was hooked. Admittedly, the game tends towards the tedious in the middle as you wander round building the party but if this is the future of adventure games, I am all in favour.

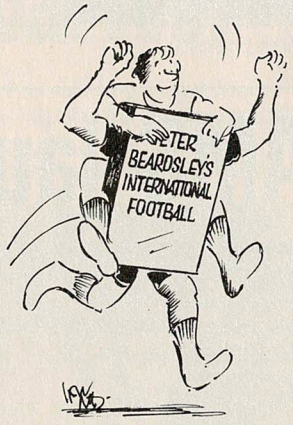
Tom Werrington,
Burnley.

To PC or not PC

In *Popular Computing Weekly* on the Letters page advice was given to buy a PC in preference to the CPC6128 which the correspondent was considering. That advice is surprising when you consider how well the Z-80 is still being used in a variety of very reliable and flexible home computers, especially when you consider how fully the CPC6128 has been supported with a range of superb software from Arnor Ltd.

Is there any popular PC which can boast a similar very convenient collection of excellent ROMs such as Protext, Prospell, Maxam, Utopia and BCPL, among others?

John Gray,
Eastbourne.



"He won't fit in the box"

Upgrading

I wonder if the 16-bit market will ever reach its full potential in this country? Consider the comparison between the States and the U.K. In the States, there seems to be a willingness to trade in an old computer to own the latest model. Commodore 64 owners were more than happy to upgrade to an Amiga when that arrived on the scene.

It is not something peculiar to computers; it applies to hi-fi and cameras as well. One acquaintance has a range of top cameras. He uses his Minolta on Mondays, Canon on Tuesdays, Nikon on Wednesdays and so on. Admittedly the example is an extreme one but the principle holds.

Now consider the Brits. Young Johnny wants a new Amiga and goes begging to parents. What is the reply? "You cannot have one. You have a Spectrum in the cupboard you never use. Go and play with that instead."

The people who are buying in the States are largely in the 20 to 30 age group. Here it is the parents of teenagers who have to find the cash. Perhaps the marketing managers for Commodore and Atari should be concentrating their efforts elsewhere?

James Nicholson,
Aberdeen.

Sexist software

I am writing with reference to John McCarthy's letter in the issue dated May 19-25. I do not mind people voicing their opinions on sexism, but considering that most programmers are male, and I believe most home computer users are male, there is bound to be a certain amount of sexism which cannot really be excused.

I found it difficult not to laugh at McCarthy's letter, as he describes capitalism as if it were a disease. It is as much as a disease as communism or socialism; vote with your wallet is a good rule for buying your software, because if a company sees demand fall it will stop making such programs. The ordinary software house is out to give you what you want. If not, it goes out of business from lack of sales.

There has not been one law which has accounted for individuals and there never will be. No amount of laws and demonstrations can prevent prejudice - they just breed it and suppress it. The only people who can stop prejudice are the parents of children, the people who have the most impact on them.

None of this, however, has anything to do with computing, so while I am writing I might as well warn Amstrad users wanting to buy printers. I bought a 9-pin printer and found that pin 8 and 9 would not work. Any number using the Most Significant Bit, bit 8, had the MSB knocked off when entering the printer. This is because the Amstrad printer port has pin 9 - which the printer uses for receiving numbers with the MSB - as a GND pin, meaning if I sent 10000000 (Binary) to the printer, it would see it as 0 and if I sent 10110101 to the printer, it would see it as 00110101. I hope this is helpful.

Richard Shepard,
Cheshire.

EXCITING COIN-OP CONVERSIONS!

A brand new label to be launched this September is looking for experienced development teams and freelance programmers.

We have some of the hottest Coin-Op titles to be licensed this year and have conversion work (8- and 16-bit) available for talented individuals.

If you have a successful background in Coin-Op conversion work or are a programmer with a proven track record in the writing of original software, then please contact us immediately in the strictest confidence.

Telephone: The Software Development Manager — 01-585 3308
or write to us with full details of your work to date and availability.

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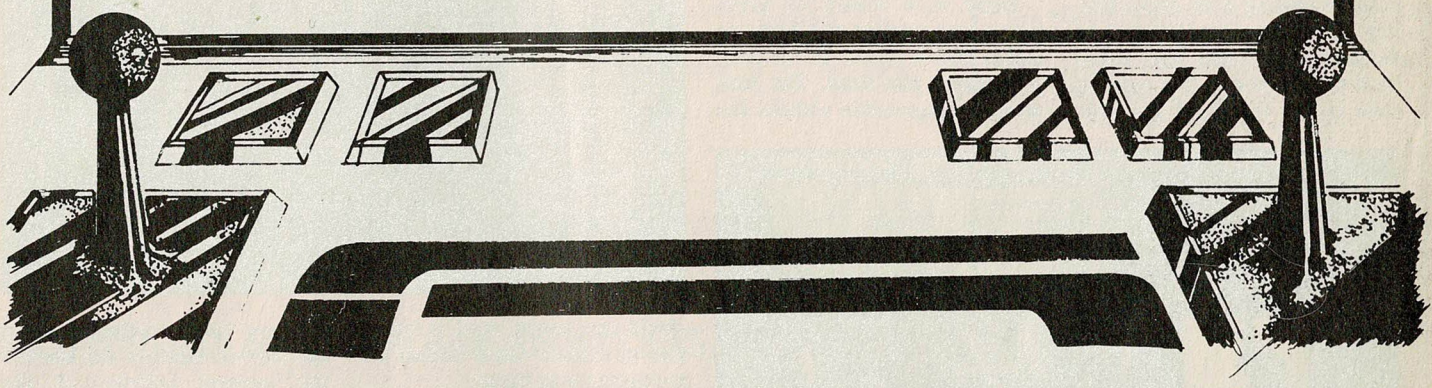

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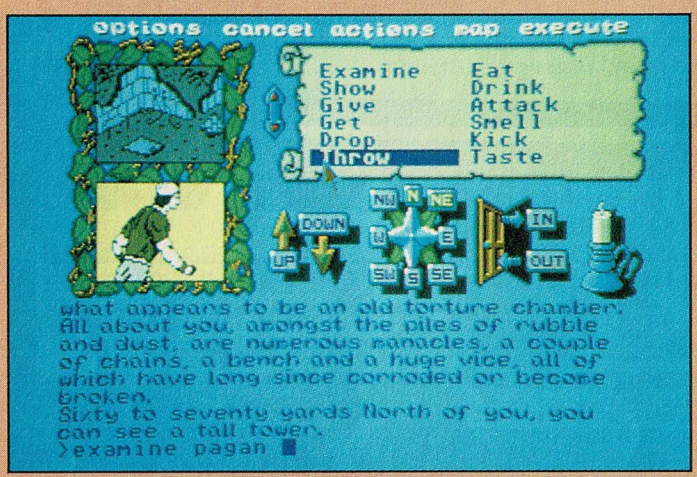
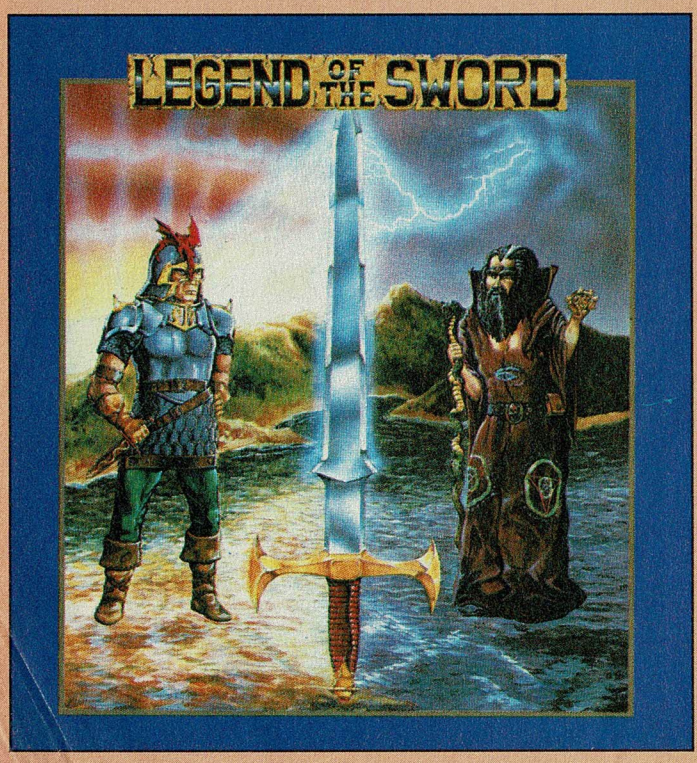
Live by the sword

Legend of the Sword – Atari ST

Six brave compatriots stand on the deck of a ship as the captain decides where to land. The captain was faced with three possible landing sites, each offering new opportunities and dangers to the men who would have to disembark. The captain calls to the leader of the men. "Where to?" he shouts. So begins a most peculiar adventure, as the company of six sets out in search of the fabled shield and sword of Anar, the only weapons capable of defeating the evil wizard Suzar.

Suzar is a wizard of great power and cunning and being so makes him a threat to the king who wants him dead. The task would be impossible without the shield and sword, so it is essential to collect them before an encounter with Suzar.





As the leader of the group of questors you have your own personal reasons for finding and killing the wizard. Many years ago your character was the lone survivor from a battle in which Suzar decimated your compatriots with his foul magiks.

Legend of the Sword is an adventure game which utilises GEM to speed the interaction between the player and the problems. All movement can be achieved by clicking the mouse pointer on one of the three movement icons – one icon for up and down, another for compass movement, and one controlling in and out movement.

The second of the three main display areas shows the menu selected from the top of the screen. Some of the menus contain frequently-used words and are used to speed normal text input. The structure of the menu is such that it is possible to play the game almost entirely with the mouse.

That area of the screen is also used to display the map which the computer makes as you explore the adventure. By clicking on the map with the mouse pointer a full screen display of the map can be obtained.

The third section of the screen displays two graphics, one for the current location and one for the current activity of the player.

Despite this seeming lack of interest in your welfare the men seem like a good bunch. They will help you occasionally if it is not too inconvenient. Your fellow travellers may follow you as you explore the land but they tend to keep to themselves as much as possible, often standing back and watching as you leap.

This is an adventure with a feel of a role-playing game as you and your five fellow adventurers run round bashing heads.

As the story unfolds it becomes apparent that it is aimed at older adventurers. As seen by the sometimes bloodthirsty graphics, a parser knows some of the phrases an adventurer will use when a little stuck.

As an unusual style adventure with good graphics and fast gameplay, this could be the start of something big.

Reviewer: Adrian Pumphrey
Price: £24.95
Supplier: Rainbird
POPULAR RATING
Graphics: 17
Sonics: 18
Gameplay: 39
74

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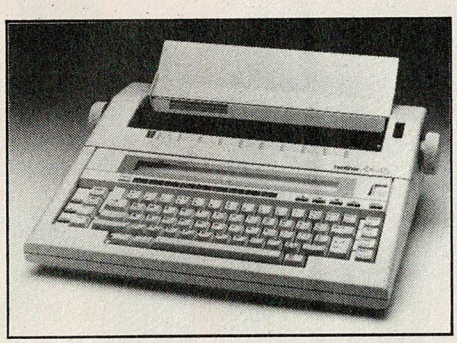
ATARI

Brother set to sew up PC market?

After establishing a reputation for producing high-quality sewing machines, typewriters and microwave ovens, Brother looks set to establish a niche in the PC market. Leslie Bunder reports.

Brother is well-known for producing printers, microwaves and even sewing machines. At this year's Hanover Fair, Brother announced that it will be entering a new market. After much research, it has decided to make in-roads in the IBM PC-compatible market. "We have a large base of Brother dealers who started asking about a Brother PC. They wanted to sell a machine which offered good profit margins to make it worth their while, so we decided to offer a machine with full support," says John Carter, national sales and marketing manager.



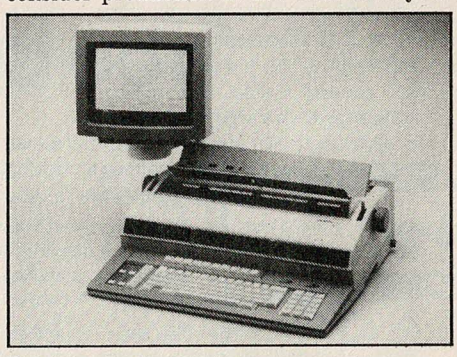
Brother, better-known for typewriters and sewing machines enters PC market.

The initial Brother range will consist of the BC-10 and BC-20. The BC-10 offers 640K of RAM and one 380K 5.25in. floppy disc drive as standard with the option of additional floppy or hard disc drives. The BC-20 is a much more advanced machine; it offers 1MB of RAM and a 1.25MB 5.25in. floppy disc drive. Both machines have options of hard disc and a choice of monitors.

John Carter, Brother national sales and marketing manager.

Despite the fact Brother is from Japan, the machines are not manufactured there. "We have close contacts with a company in Korea called Goldstar. It manufactures a number of our knitting machines and other goods. We provide a specification for the way we want the product to be built. The cost of designing and constructing your own PC is enormous. Our intention is to offer it as an addition to our product line," Carter says.

It is a possibility that Brother may consider production in the U.K. Last year the company transferred production of its printers from Japan to Wrexham. "There is always a possibility as the U.K. side manufactures typewriters, microwave ovens and printers. It is not planned at the moment to make a PC in the U.K.," Carter says.



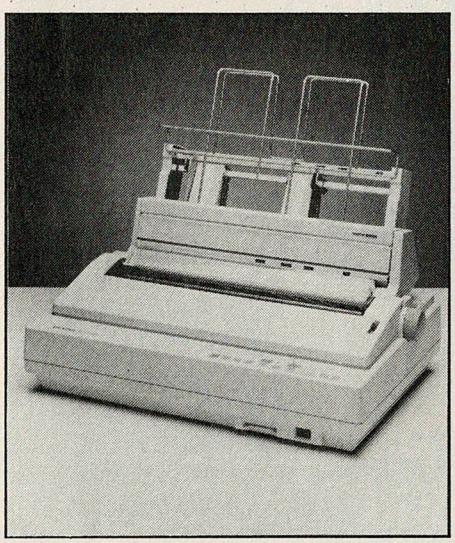
From typewriters to computers.

Until now Brother has manufactured computers for other manufacturers. "We make a lap-top for Wang. So it was only a matter of time until we produced a machine with our name."

Brother has still not finalised a price for the machines. "We will expect them to be 10-15 percent higher than the Amstrad price," Carter says.

Does Carter see the machines competing against Amstrad or other PC manufac-

turers? "We do not see ourselves really competing against anyone in that market. It is obvious Amstrad has the mass market area but not everybody wants to buy an Amstrad. Our whole effort behind it is the support and the training we offer. If you do not buy an Amstrad from Dixons, what support do you get? We have a number of accounts which will buy Brother because of the support we offer."



4018 printer – the fastest dot matrix on the market.

As well as the PCs, there are plans for other computers to be released. "We are looking very much at the lap-top market and very much at the 386 market. We crawl before we run – that is why we do not have a whole range of products. If we are successful in this market we will extend the range."

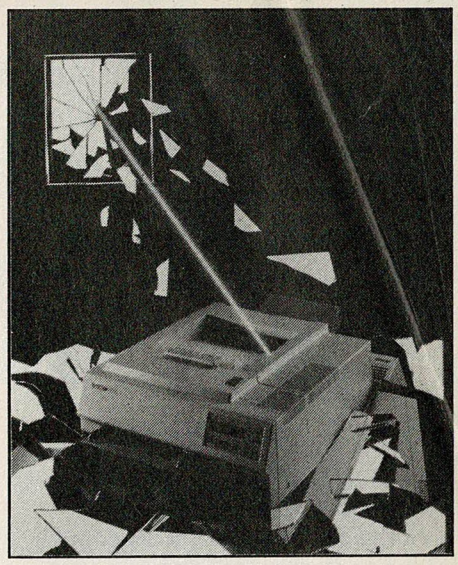
With Brother producing computers and printers, is there any possibility that it will consider a portable word processor like the one from Smith Corona? "Our typewriting division will be bringing out products like that – I think there is definitely a need for it. Our machine will be similar to the form of the Smith Corona, which has a typewriter with a printer and a screen," says Carter.

In the last two months Brother has launched the HL-8 as its first laser printer and is claiming a 10 percent share of the laser printer market. "The market for laser printers is enormous; it is growing very, very rapidly. In the future many applications will go towards laser. We have not ordered enough," Carter says.

Despite the emergence of laser printers, Carter still thinks there is a market for dot matrix. "There will always be the dot matrix printer because people need it for printing carbon sets. There will always be a need for an impact printer."

How will the EEC plan to impose a levy on Japanese dot matrix printers affect Brother? "At the moment the effect on Brother is not enormous as we do not have a huge market share like Epson."

With the PC computers to go on sale at the end of June, it will be interesting to see how well-received they are by the end-user. According to Carter: "We are putting a good deal of support into the machines." □



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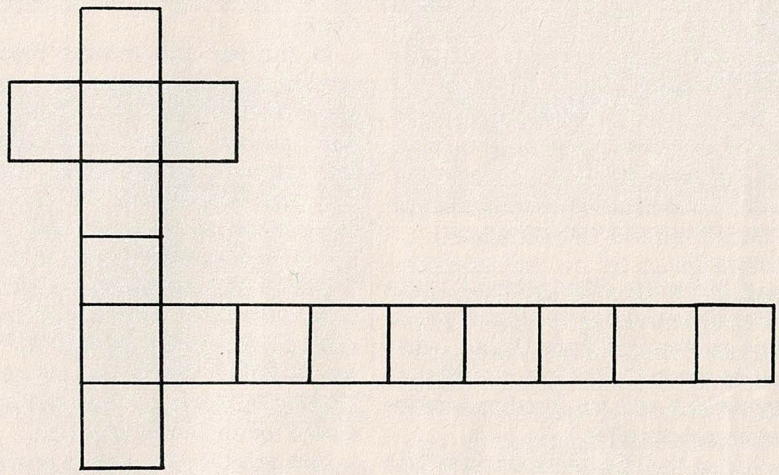
POP

Crossnumber Conundrum

Here is a small Crossnumber
Holding values only three,
Two run across and one runs down,
As you can clearly see.

Across, a certain number
And its cube are entered there,
While down must fit the value
That is just that number's square.

There's just one set of values
And only one will do,
The task of finding which it is
Is one I'll leave to you.



PUZZLE SOLUTION

Solution to Animal Magic of May 26-June 1.

The correct substitution was 176 times 523 equals 92048. From the letters given we are looking for two three-digit numbers which, when multiplied, produce a five-digit result having the second digit the same as the middle digit of the second of the multipliers. All the other digits are different.

Each of the values for 'CAT' and 'DOG' are permutated in turn. Two preliminary tests - carried-out by the subroutine - determine if all digits are different. To perform this test the digits for inspection are transferred to variable Z$ before going to the subroutine which sets a flag to 1 if any match is found.

The product of the two values is then calculated and checked, first to see that it has only five digits and, second, that its second digit matches the middle digit of 'DOG'. The final test is to check that all remaining digits are different, again using the subroutine. In this case the string Z$ contains 'cat', 'dog', and 'horse' minus the 'O'.

Any values which pass this final test are printed-out. This results in six possible sets of figures but the professor informed his students of the value of the letter 'D'. From the list printed-out it can be seen that in three of them 'D' has a value of '1' and in two of them it has a value of '2'. Therefore only if 'D' equals '5' is a single solution possible, so it must have been this value which appeared on the blackboard.

```
>
  10 FOR CAT=102 TO 987:C$=STR$(CAT)
  20 Z$=C$:GOSUB 1000
  30 IF FLAG=1 THEN 150
  40 FOR DOG=102 TO 987:D$=STR$(DOG)
  50 Z$=C$+D$:GOSUB 1000
  60 IF FLAG=1 THEN 140
  70 HORSE=CAT*DOG:H$=STR$(HORSE)
  80 IF HORSE>98765 THEN 150
  90 IF MID$(D$,2,1)<>MID$(H$,2,1)THEN 140
 100 Z$=C$+D$+LEFT$(H$,1)+RIGHT$(H$,3)
 110 GOSUB 1000
 120 IF FLAG=1 THEN 140
 130 PRINT C$;" * ";D$;" = ";H$
 140 NEXT DOG
 150 NEXT CAT
 160 END
1000 L=LEN(Z$):FLAG=0
1010 FOR F=1 TO L-1:FOR G=F+1 TO L
1020 IF MID$(Z$,F,1)=MID$(Z$,G,1)THEN FLAG=1:F=L:G=L
1030 NEXT:NEXT
1040 RETURN
```

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Do you already own a computer
If so, which one do you own? .....

One for the road

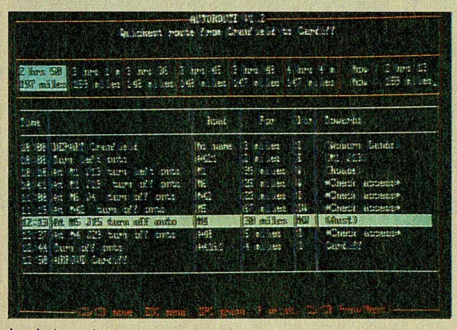
An intelligent mapping program from Next Base could be the answer to your navigational problems. Barbara Gaskell is your guide.

Buyers of early home computers were often misled into believing that the humble machine would revolutionise every aspect of their lives. Everything from walking the dog to monitoring the Stock Exchange was considered possible in an attempt to make a sale. In fact, the only program useful to almost everyone was the word processor.

Autoroute from Next Base is an exception; everyone who owns a car will almost certainly find it useful. Next Base hopes that it will replace the road atlas in almost every office and home which owns an IBM PC or compatible. Autoroute needs a PC or compatible with at least 512K of memory and two 360K floppy disc drives. In practice, either two 720K 3.5in. drives, two 1.2MB or a hard disc are needed.

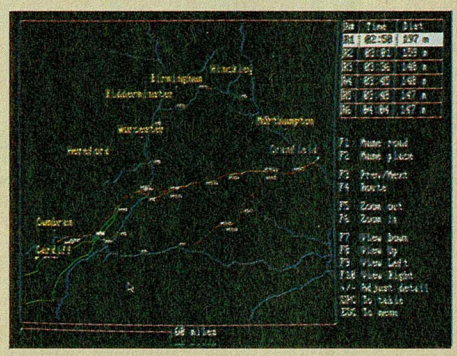
Autoroute uses a system called MetaWindows which allows you to write PC programs without worrying about the different graphics standards used on the PC. Fortunately, MetaWindows can also determine the configuration of most machines, so installation is a matter of running the install program and confirming that MetaWindows has guessed correctly.

Autoroute is an intelligent map of almost all the roads in the U.K., plus details such as the times of ferry routes. By intelligent I mean that it knows motorways are faster than B-roads, London traffic grinds to a halt during the rush hour, driving at a constant speed is more economical. Next Base says there will be regular updates as the road system changes.



An Autoroute.

Given two points, a start and a destination place, Autoroute will calculate the fastest, shortest and most economical route between the two. Unlike people, who tend to look for the nearest thing to a straight line, Autoroute will work off its database of knowledge. The results are surprising; I cut 20 minutes from a 250-mile journey I make every two weeks.



Intelligent map.

Not everybody drives in the same manner and other factors such as the type of car you drive may well influence your average road speed. Consequently you can specify your average speed on different types of road and your preferences for one road type over another. If you hate motorways and adore B-roads, do not expect lightning times from London to Manchester, for example.

The main screen consists of nothing more than a menu-bar with options selected by cursor keys or by first letter. The Journey option lets you enter details of your journey. When entering it you can specify places to visit on the way, places to avoid and your departure or arrival time. It does not matter if your spelling of place names is not too good – Autoroute will offer a list of near spelling if it does not recognise what you have typed.

Having entered your journey details, moving to the Calculate option will start Autoroute looking for the best routes. A shrinking bar shows how it is progressing. Up to six routes may be found with the quickest, cheapest and shortest suitably marked. Pressing the spacebar takes you to a graphic screen map.

For most of this review I used an Amstrad PC1640 with an EGA screen; on this the maps are stunning. Different road types are shown in different colours, place names and road names are marked and yet everything is readable even in densely-packed London. Using a mouse or the cursor keys, it is possible to scroll the map in any direction and obtain the name of any unlabelled road or town. Function keys allow you to zoom in or out and increase or decrease the detail shown. Unfortunately the lack of resolution when using a CGA screen makes it more difficult to use.

Alternatively, you can display the journey information as a table of road names, distances, directions and headings. The table can be printed and taken on your journey or saved to a file for use within a word processor. It is also, in theory, possible to print the maps but I found the output very disappointing.

Cheaper version

Autoroute costs £135 plus VAT. Next Base hopes to produce a cheaper version and a far more comprehensive version aimed at transport firms. There will also be an Atari ST version but do not hold your breath.

As soon as I received Autoroute I was glued to my machine for the best part of half a day. Everyone who wandered by has spent at least an hour entering routes and then another half-hour justifying the way they travelled. I have learned a good deal from the package and now always consult it before going on a new journey.

I doubt if Autoroute will be as successful as the word processor but I am sure that almost every PC owner will want a copy. If you can afford it, buy it now; if not, wait for the cheaper version. Either way I guarantee you will not regret it. □

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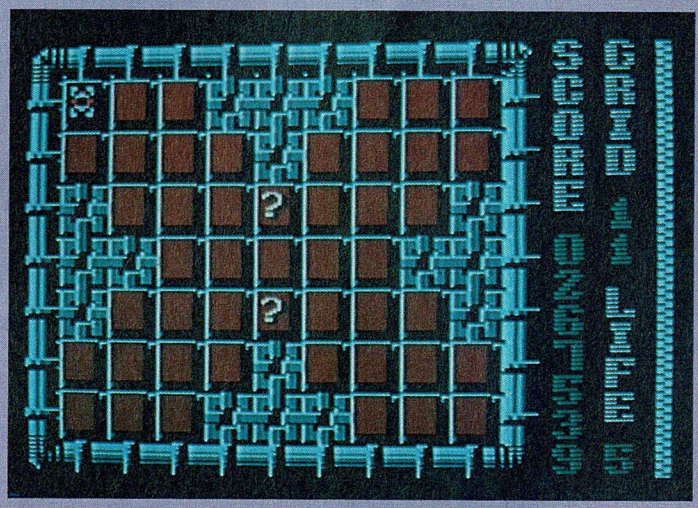
Oops and Virus

Two products which are looming on the horizon are *Oops* and *Virus*. Both games look a little special and are sure to be hits when they are released. Oops and Virus defy the pigeon-hole style of categorising as they rely on original implementation of old but good ideas, bringing a new dimension to the games concept.

The best way to describe Oops is as a bird's-eye view of a platform game. The platforms are represented as blocks on which the players must remain or fall to their doom. The object of the game is to collect gravity pods; after each pod is collected a new one appears ready for collection.

There are certain features in the game which are definitely hostile and they include an electron bomb which bounces round the screen hoping for the ever-fatal contact and the rimlords which patrol the edges of the screen ready to zap any player who stays in one place for too long.

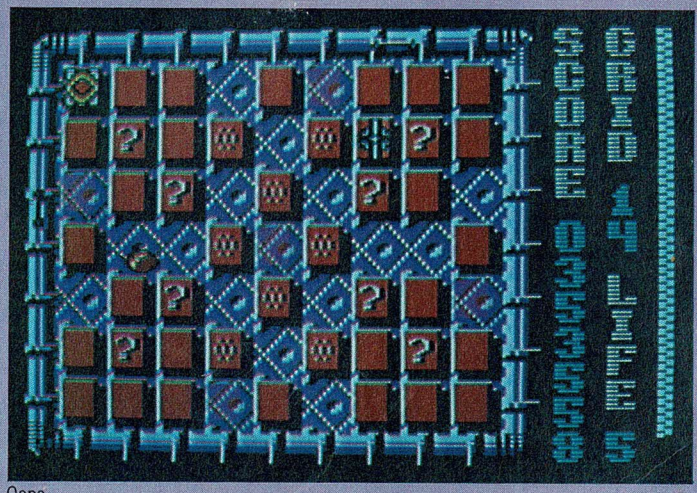


Oops.

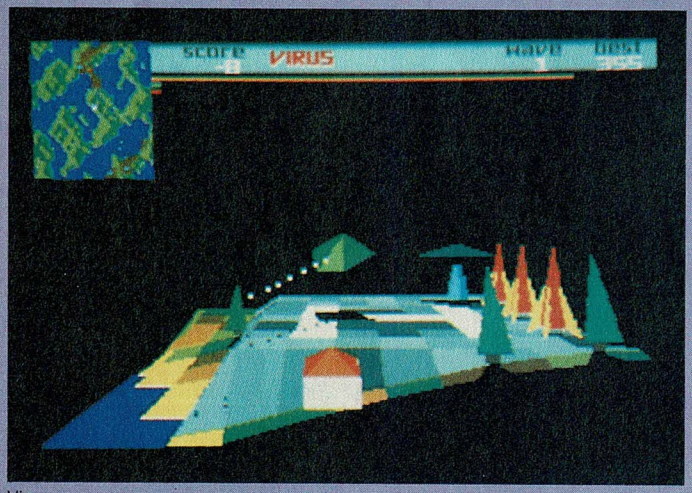
While moving round the platform the player will come into contact with question-marks which have a set random effect. Some question marks push the player along the platform, whereas others award bonus points; some crack sections of the platform and render them uncrossable.

Not only is the player faced with tiles which crack after one crossing but with tiles which blink on and off, making skilful timing essential.

Time remaining at the end of each level is converted into bonus points for that ever-important high score. Oops is imaginative and deceptively simple and will entice you time and time again for just one more game.



Oops.



Virus.

Oops should be available for the CBM 64 at £9.95, the Spectrum for £7.95 and the 16-bit machines for £19.95 some time during July.

Virus, better known to Archimedes owners as *Zarch*, is about to make its appearance on the ST. The game contains all the features found in the Archimedes version, plus a few improvements.

At first it may have seemed an impossible task to convert the pride and joy of all Archimedes owners to run on the ST but the programmers at Rainbird have produced a perfect conversion.

The plot follows a lone fighter craft as it attempts to destroy the alien beings who are spreading a virus which is destroying the once proud and green land. Movement in all directions is allowed, so it is possible not only to fly into the screen but out of the screen towards yourself.

The improvements the programmers have included are 11 extra types of alien craft and fish in the sea, as well as the occasional sea monster.

If you liked the game on the Archimedes you will love the ST version, despite the fact that the programmers have even copied the movement control from the Archimedes version, although they have included a keyboard control option. □

POPULAR COMPUTING WEEKLY READERS' SURVEY

What do you think of *Popular Computing Weekly*? Do you like the news, reviews and features? Here is your chance to tell us what you want.

Everyone who completes and returns this survey by July 1 will be sent an issue of either *Popular Computing Weekly, ST Update, Which PC, Your Amstrad PCW, Your Computer* or *Sinclair QL World* absolutely free. Every question *must* be answered to qualify.

1. Age group:
13 or under ☐
14-16 ☐
17-18 ☐
19-22 ☐
23-27 ☐
28-30 ☐
31-35 ☐
36-40 ☐
41-50 ☐
Over 50 ☐

2. Male/female: ☐

3. What computer do you own?
Spectrum ☐
Atari ST ☐
Commodore Amiga ☐
IBM PC or compatible ☐
BBC ☐
Amstrad PCW ☐
Commodore 64 ☐
Z-88 ☐
QL ☐
MSX ☐
Other ☐
(please specify) .....

4. Do you intend buying a computer in the next 12 months? Yes/No
If yes, please specify which machine:
.....

5. On a scale of 1 to 5, mark how interested you are in the following topics - tick the appropriate box:

	1	2	3	4	5
Games software	☐	☐	☐	☐	☐
Business software	☐	☐	☐	☐	☐
Hardware	☐	☐	☐	☐	☐
News	☐	☐	☐	☐	☐
Software hotlines	☐	☐	☐	☐	☐
Adventure	☐	☐	☐	☐	☐
Programming	☐	☐	☐	☐	☐
Puzzles	☐	☐	☐	☐	☐
Graphics	☐	☐	☐	☐	☐
Communications	☐	☐	☐	☐	☐
Education	☐	☐	☐	☐	☐
Applications software	☐	☐	☐	☐	☐
Spreadsheets	☐	☐	☐	☐	☐
Artificial intelligence	☐	☐	☐	☐	☐
Expert systems	☐	☐	☐	☐	☐

6. What other computer magazines do you read?
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QL World ☐
Computer Shopper ☐
Your Amstrad PCW ☐
Micro Mart ☐
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PC User ☐
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Which Computer? ☐
Which PC? ☐
Computing ☐
Other ☐

7. How many other people read your copy of *Popular Computing Weekly?* If none, put '0'. ☐

8. How much have you spent on games software in the last 12 months?
Less than £10 ☐
£10-£50 ☐
£50-£100 ☐
£100-£150 ☐
£150-£200 ☐
More than £200 ☐

9. How much do you intend to spend on games software in the next 12 months?
Less than £10 ☐
£10-£50 ☐
£50-£100 ☐
£100-£150 ☐
£150-£200 ☐
More than £200 ☐

10. How much did you spend on non-games software in the last 12 months?
Less than £10 ☐
£10-£50 ☐
£50-£100 ☐
£100-£150 ☐
£150-£200 ☐
More than £200 ☐

11. How much do you intend to spend on non-games software in the next 12 months?
Less than £10 ☐
£10-£50 ☐
£50-£100 ☐
£100-£150 ☐
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More than £200 ☐

continued on page 20 ▶

READERS' SURVEY

12. Are there any features you would particularly like to see given regular coverage in *Popular Computing Weekly?*

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13. How often do you read *Popular Computing Weekly?*

Every week ☐
About every two weeks ☐
Once a month ☐
Occasionally ☐

14. If you are a regular reader, give the most important single reason why you continue to buy *Popular Computing Weekly,*

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16. Job type.

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Academic ☐
Student ☐
Computer ☐
Services ☐
Manual ☐
Other ☐

17. Do you have any other comments about *Popular Computing Weekly* which might help to improve the magazine?

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The Race Against Time – CPC

The race against time has started as Omar Khalifa sets out across the world to raise funds for the starving people of the Sudan. Omar starts his epic run in a relief camp somewhere in the Sudan. From there he must find the airport from where he will be able to travel across the world, spreading the news of the great event being held in aid of the Sudanese people.

There are six areas of the world for Omar to visit and in each section he must light a bowl and raise a flag. As a flag is raised a digitised voice says "Change the world".

Water is Omar's greatest enemy, for if water in any of its forms touches the torch Omar is carrying the flame will be extinguished and the game will end, as Omar will be unable to light any bowls.

The Race Against Time is an arcade adventure game in which objects must be collected and manipulated for the objectives to be accomplished.

The graphics, although only three-colour, are good and the sound effects, including Peter Gabriel's song, Games without frontiers, which plays at the start, are also good.

So whether you fancy a game to stimulate the brain cells or work to help charity, The Race Against time is worth every penny.

Reviewer: Adrian Pumphrey
Price: £4.99
Supplier: Code Masters
POPULAR RATING
Graphics: 15
Sonics: 16
Gameplay: 36
67

Blood Brothers – CPC

The Scorpians are the scourge of the galaxy, destroying all who stand between them and their booty, attacking the peaceful planets, slaughtering the inhabitants and stealing their wealth.

Such was the fate of the peace-loving inhabitants of the planet Sylonia. Time and again the pirates arrived. Each time they killed a portion of the population and stole its wealth. In their latest venture the pirates killed the parents of 18-year-old twins. Hark and Kren.

Although the people of Sylonia are peace-loving, Hark and Kren are skilled in combat and advanced weapon technology. They vow to use their combat skills to avenge the death of their family and recover the wealth of Sylonia. To that effect Hark and Kren perform the ancient Indian ritual of the blood brother.

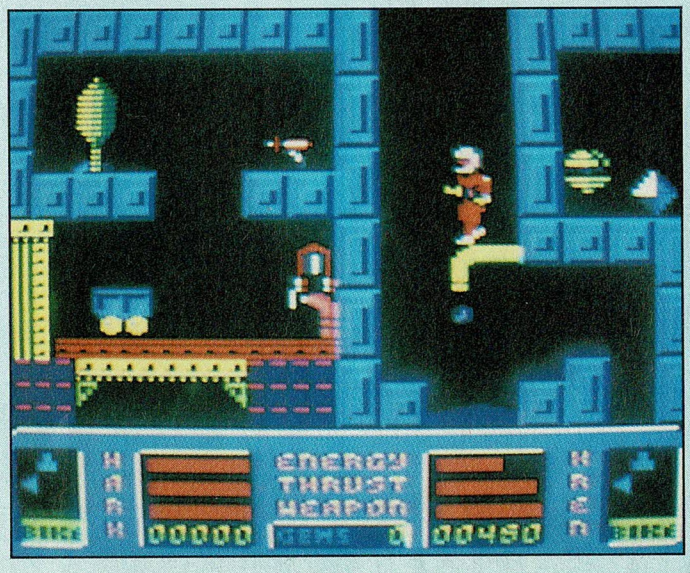
The game starts with the brothers at the entrance to a mine. At that point they can fly their skywalker bikes at large rectangles while trying to avoid colliding with them in an attempt to get back to where they started.

Alternatively, a brother descends into the mine and retrieves the gems. With the help of a jetpac they can fly, enabling them to travel all over the screen.

When one of the brothers shoots at an alien, the recoil from the gun pushes the player off the screen and on to the next one.

The graphics are unimpressive, as are the sound effects. The game control is strictly average and the gun recoil is ridiculous. If you buy the game you may soon begin to appreciate why the brothers slit their wrists.

Reviewer: Adrian Pumphrey
Price: £9.99
Supplier: Gremlin
POPULAR RATING
Graphics: 12
Sonics: 6
Gameplay: 27
45



Your complete guide to all the software released this week

AMSTRAD

Program *Metropolis* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

Arcade adventure action as Moonboots is stranded in *Metropolis*. The only chance for Moonboots is to refuel its rocket and escape.

Program *Astroball* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

Play a ball on a quest for magic objects which will save the people from the dark forces.

Program *Firezone* **Price** £12.95 **Supplier** PSS, 452 Stoney Stanton Road, Coventry CV6 5DG.

High-tech strategy game from the 21st century after the breakdown of the superpower blocks.

ATARI ST

Program *Buggy Boy* **Price** £19.95 **Supplier** Elite Systems Ltd, Eastern Avenue, Lichfield, Staffs WS13 6RX.

Program *Beyond the Ice Palace* **Price** £19.95 **Supplier** Elite Systems Ltd, Eastern Avenue, Lichfield, Staffs WS13 6RX.

Travel beyond the ice palace to fight the evil which has encroached on the land.

BBC

Program *Barbarian* **Price** £9.95/£11.95 **Supplier** Superior Software Ltd, Regent House, Skinner Lane, Leeds LS7 1AX.

CBM 64

Program *Metropolis* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

continued on page 24 ▶

Software guide continued

◀ continued from page 23

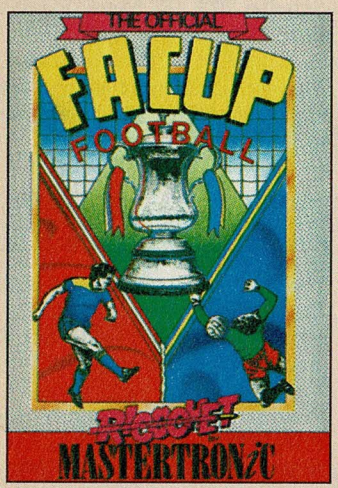
Arcade adventure action as Moonboots is stranded in *Metropolis*. The only chance for Moonboots is to refuel its rocket and escape.

Program *I-Xyra* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

A combination of platform game and shoot-'em-up. Recover the imperial logo which fell off the space ship from a soap bubble factory, armed only with a weapon whose name is too long to mention.

Program *FA Cup Football* **Price** £1.99 **Supplier** Ricochet, 8-10 Paul Street, London EC2A 4JH.

Football fever time again as Mastertronic releases the official *FA Cup Football* game on the Ricochet label.



SPECTRUM

Program *Norman* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

Norman is the first 'plummet game' for the Spectrum. Do an impression of a very fat superman and free-fall through the air while destroying energy cubes.

Program *Powerama* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

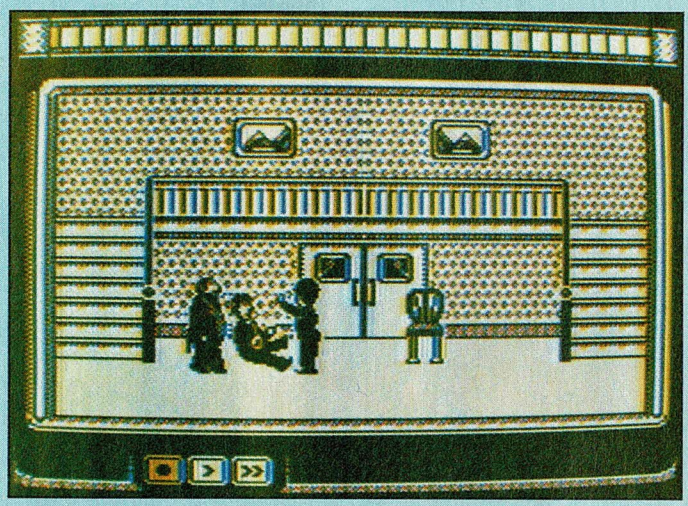
Blasting frenzy time again as you hunt the aliens, blast 'em and then fight the humorous mothership at the end of each level.

Starring Charlie Chaplin – Spectrum

I will resist the temptation to start this review with lights, camera, action. Instead I will start with a more gentle and satirical introduction.

Charlie Chaplin was seen by many to be the funniest actor alive and a game which sets out to capture the essence of Chaplin's acting talents and eccentric humour seems to be setting itself an impossible task.

One thing this game has achieved is a brilliant example on what does and what does not make a good computer game. The basic game idea of shooting a film starring Charlie Chaplin is good but the Spectrum has neither the power nor the memory capacity to achieve satisfactory results.



The game reasonably good if extremely limited as you move Charlie round the film set thumping other characters in an attempt to make a block-busting film.

Once a scene has been shot it can be edited ready for the final showing to the general public where the final fate of your film and this game rests.

After the public showing of your film the accountants give a rundown on how much money you lost on the picture.

This game is a valiant attempt to produce an original product incorporating a well-known historical figure; there is nothing wrong with the gameplay, graphics and sonics but the scope is very limited. A good try but could do better.

Reviewer: Adrian Pumphrey
Price: £8.99/£12.99
Supplier: U.S. Gold
POPULAR RATING
Graphics: 16
Sonics: 10
Gameplay: 25
51

Monopoly – Commodore 64

Go to Jail! Go directly to Jail. Do not pass go. Do not collect £200. Words which either have you breaking into a cold sweat or rubbing your hands with glee. *Monopoly* is the kind of game you either love or hate.

The computer version of Waddington's classic board game contains all the features of the original. Properties can all be traded, mortgaged and auctioned as you become involved with the unacceptable face of capitalism.

Up to six players can play, each being either human or computer-controlled. The computer players all play a fairly mean game, mortgaging themselves to the hilt as they try to build as many properties as possible.

Game control is via keyboard or joystick and involves selecting an option from a menu bar at the top of the screen. They are arranged in an unusual order, the ones used most frequently being in the middle rather than at the beginning of the list. There were a few problems with control; keeping a finger on a key for a fraction of a second too long resulted in unwanted choices being made.

Most of the controls work well but a few, such as building houses and, especially, offering a trade, prove cumbersome. With human opponents it is easy to haggle before agreeing a final settlement. Against the computer each offer has to be entered separately. All you get back is whether or not your offer has been accepted.

In practice, the conversion works very well, not least because no-one has the arduous job of being the banker. What the game lacks, though, and what ruins it totally is that there is no atmosphere generated. Half the fun of Monopoly is that you can gloat over impending bandruptcies and cheat as much as the other players will allow you to do. It just does not work on a micro.

Reviewer: Gordon Hamlett
Price: £12.95(c)/£15.95(d)
Supplier: Leisure Genius
POPULAR RATING
Graphics: 18
Sonics: 14
Gameplay: 25
57

Every Second Counts – Commodore 64

Ivan Ellovanitch was a Russian revolutionary – True or False? This is a typical example of the kind of questions asked in Paul Daniels' popular television quiz programme *Every Second Counts*.

For anyone who has not seen the programme, the format is very simple. Three couples compete not for points but for seconds. Each correct answer adds to their clock. At the end of the game the couple with the biggest total goes forward to compete for prizes. The more time they have earned the longer they have to answer the questions.

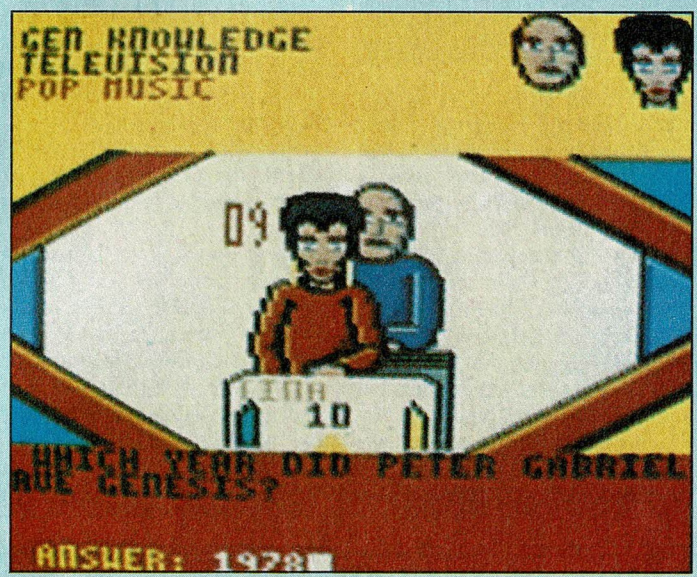
The computer version is an accurate simulation of its source. The couples must first select their faces from a graphic screen before selecting one of six sets of questions which are loaded separately.

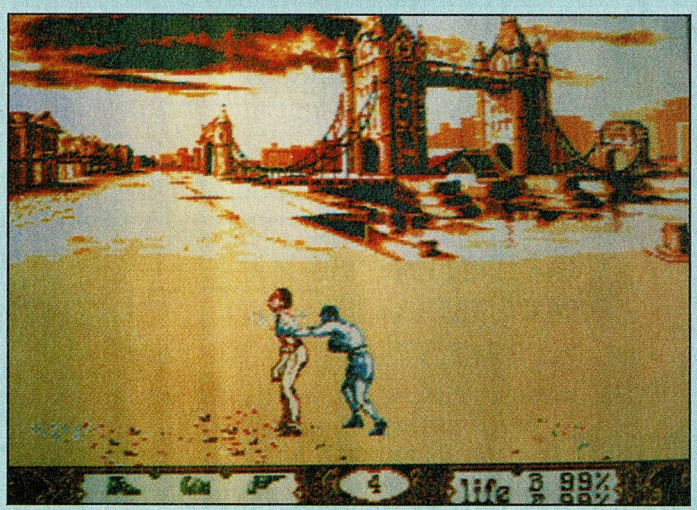
The first two rounds consist of the kind of true/false questions and correct answers are worth two seconds on the clock. Then follows a bonus round. Competitors select from three categories and must type-in the answer – 10 seconds if you are correct on the first attempt, nine on the second and so on.

Minor spelling mistakes are tolerated for those with a less than perfect command of English. If the correct answer is Carl Lewis, Lewis on its own was not allowed but Carl Lois was.

The winners go to a final round where they have to compete against the clock as they attempt to amass points. Selecting from two categories, the couple have to answer four, five, six and finally seven questions on their chosen subjects. Every Second Counts is great fun to play but initial interest is likely to wane quickly and I found no desire to return to it.

Reviewer: Gordon Hamlett
Price: £7.95/£10.95
Supplier: Domark
POPULAR RATING
Graphics: 13
Sonics: 8
Gameplay: 21
42





Bob Winner – Atari ST

Bob Winner came to life in the docks of New York and vague memories flooded his mind. He knew that they were waiting for him. His only chance was to fight his way across the world to the temple, where all will be revealed.

Bob Winner is an android with the ability to copy the form of his enemies. Once he has taken the form of one of his enemies Bob will be able to enter into combat with them. If he manages to kill two of the enemy players he will be rewarded with a key. Once Bob has collected three keys he will be able to unlock the temple door and end the game.

Bob can change only into the form of his opponent if he is carrying the relevant object – a shoe for the French boxer; a glove for the boxer; and a gun for the gun fighter. Combat with the two boxers is relatively easy but combat with the gun-slinger is nearly always fatal. If you combine this with the natural hazards such as swamps and mini-volcanos and the wasps and knives which appear a few inches in front of your face you will find that the game is almost impossible to play.

Bob Winner is a brave attempt at a new style of game play, featuring digitised characters and backdrops from three countries, combined with a wide range of character movements. It is perhaps unfortunate that the game is too difficult to play, mainly because of the poor character response time and the speed of some of the obstacles.

Reviewer: Adrian Pumphrey
Price: £19.99
Supplier: Loricels
POPULAR RATING
Graphics: 17
Sonics: 8
Gameplay: 28
53

Software guide continued

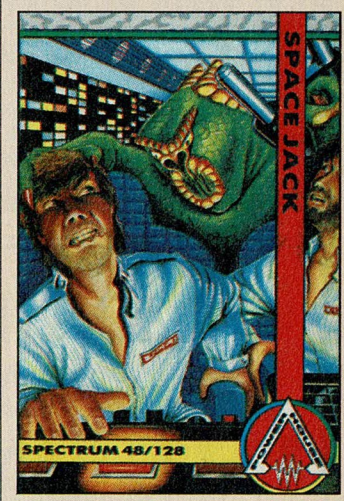
◀ continued from page 24

Program *Metropolis* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

Arcade adventure action as Moonboots is stranded in *Metropolis*. The only chance for Moonboots is to refuel its rocket and escape.

Program *Space Jack* **Price** £1.99 **Supplier** Powerhouse Publishing Ltd, 204 Worpole Road, London SW20 8PN.

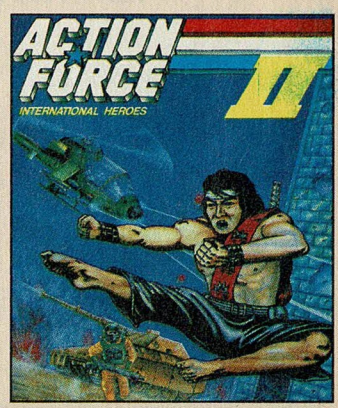
Blast, land and collect your way through scenes as the best federation takes on the biggest and the best of the evil alien empire.



SPECTRUM +3

Program *Action Force II* **Price** £14.95 **Supplier** Virgin Games, 2-4 Vernon Yard, London W11 2DX.

The action men are back in an attempt to rescue the hostages from the slumland tower blocks.



SOFTWARE HOTLINES

SOFTWARE HOTLINES

As the software industry matures, more and more programmers are experimenting with new techniques in an attempt to produce the long-sought-after masterpiece which will be known as a classic of its time.

One such game is *Whirlygig* from Rainbird. The company has been developing three-dimensional techniques for games such as *Carrier Command* and the long-awaited sequel *Star Glider II*; using these techniques Rainbird is producing a shoot-'em-up game which looks set to revolutionise the computer industry.

Whirlygig follows the escapades of a rebel human in a bid for freedom from the self-reproducing spaceships which use humans as slaves.

The human in question has kidnapped a baby space fighter and is on the rampage in an attempt to locate and travel through the star gates to freedom.

The graphics are truly amazing; the universe in which the game is set is two-dimensional but all of the objects found within it are represented in true 3D format. Areas of light and dark shade the objects as they move around the galaxy light sources producing exceptionally realistic graphics and, they hope, an all time smash hit.

Whirlygig is still in the early pre-production stages on the Atari ST but when it is finished it will surely take its place at the top of the Gallup polls.

Staying with the 3D aspect I would like to introduce you to *Laser Squad* a tactical warfare system.

Laser Squad is an expandable strategy game on the Commodore and Spectrum. The game features wargaming with more emphasis on the individual characters, each with their own characteristics which affect their effect within the game.

Three scenarios are planned for inclusion with the game, with further scenarios with which to expand the game to follow.

Each scenario has a different objective and available equipment giving the game long lasting appeal. The 3D aspect of the game is the game map which is displayed in a pseudo 3D style.

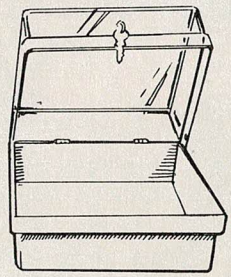
Laser Squad will be released in August for the Spectrum and in October for the CBM 64 version.

On the preview page you will be able to read about *Oops* and *Virus*, while looking at Virus at the Rainbird HQ I was treated to a viewing of *Star Glider II* on the Amiga and Atari ST. The main point of interest apart from the graphics and scope of the game is the fact that the game is currently on a dual format disc.

Both ST and Amiga versions of the game are contained on the same disc, which is surprising considering the amount of code needed for the game.

The main other point of interest about *Star Glider II* is the view enemy option, which allows you to view the three-dimensional objects contained the game. It will be possible to use the objects as brushes and draw on the screen in between playing the game.

Adrian Pumphrey



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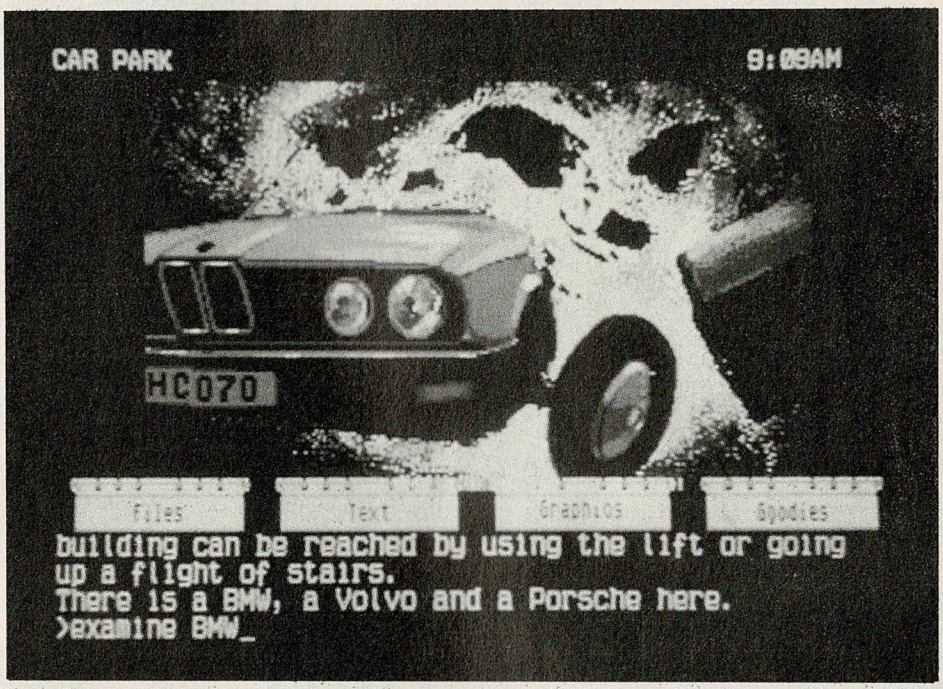
The foul stench of Corruption

Ken Matthews looks at the latest adventure releases and offers more advice for those still trying to master the Dungeon.

Bill Benson, won't you please come home? That is exactly what he must do to complete *Bermuda Project*, the latest Mirrorsoft release for the ST and Amiga which is due in mid-June. Bill, the erstwhile journalist, has sought to escape the rigours of sub-editing and talked his editor into allowing him to chase the disappearance of a charter flight in the notorious Bermuda Triangle. His flight suffers a similar fate and our hero must brave the dangers of cannibals, voodoo and the local fauna to discover the wherewithal to return home and file his story.



Corruption – BMW.

Uninvited

Playing the game is reminiscent of the *Faery Tale* adventure from Micro-Illusions/Activision which won such critical acclaim on the Amiga. In Bermuda Project, too, you move the main character with the mouse and click to bring up various game options. The action takes place in real-time and you must move quickly in the early stages to allow progress later.

The island on which you have crashed is represented in good quality graphics with plenty of detail, although the change of background colour as you move from beach to forest and so on can seem a little sudden. The puzzles are plentiful and logical, though, and since all the commands you can use are shown in menus which appear beside the character when you click, are reasonably simple to solve. Most of the game will be spent searching for the items you need to make progress.

After playing *Dungeon Master* it is difficult to enthuse about any other real-time graphics adventure but Bermuda Project is definitely a cut above average and good fun to play but the price of £24.99 may discourage many.

Also sent to me by Cathy Campos of Mirrorsoft was *Uninvited* from Mindscape. Developed by ICOM Simulations, the game is another icon-driven adventure in the style of *Deja Vu* and *Shadowgate*.

Scripted as a Gothic horror, the game has you surviving a car wreck to find your brother missing and the only help in sight is a spooky mansion on the horizon. You leave your wrecked car and wander in and so the nightmare begins. I am told the game has been available for some time on the Amiga but now ST owners can join in the action.

Mandarin Software has announced a new triple format version of *Time and Magik* and *Gnome Ranger* as programmed by Level 9, which has found only a small piece of machine-specific code is necessary to handle the differences between the formats. "Producing a multi-format disc in this way is technically difficult but takes very little space and gives players the best possible game," claims Peter Austin. The new format will cover the Spectrum +3 and Amstrad CPC and PCW machines.

Hottest news on the traditional adventure front is about *Corruption*, the latest title from Rainbird/Magnetic Scrolls. Clare Edgeley says that the wry humour of previous releases will be absent in this hard-hitting look at the deceitful world of high finance.

Framed by your partner, you are caught between the police and a drugs baron who wants to send you on a trip to the bottom of the Thames. To survive you must prove more ruthless and cunning than the opposition.

Corruption claims to be a no-nonsense, complex, graphics adventure which relies on manipulation of characters and the careful extraction of information, just like the world it attempts to portray. The graphics are of the highest standard.

The plot and puzzles should, if they match expectations, help to silence the critics of previous releases who seem to have found the problems either facile or too obscure and lacking in logic.

QL help

The bad news is that players will have to wait until July before they can put the disc into the Amiga, ST or IBM PC. Still, it is good to have something to which to look forward.

A letter from Richard Alexander mentions the lack of coverage for QL machines. CGH Services offers a title called *QL Adventurers' Forum* which covers adventure, strategy and wargame titles and is available either on Microdrive cassette or as hard copy at £1 per issue. CGH also plans to release user-written software for the machine, so QL owners can contact CGH at Cwm Owen Hall, Pencader, Dyfed, Wales SA39 9HA.

The postbag this week was enormous

and consisted almost entirely of requests for help on Dungeon Master. Everyone enclosed SSAEs and will receive personal replies since some requests cover the last stages of the game. I apologise for any delay in replying but the number of requests is almost overwhelming. Several have difficulty with the same area - the treasure rooms of level three. Since this is sufficiently early in the game I print the answer to help anyone who may be stuck.

Mapping problems

To progress with Time is of the Essence you must first ensure that no characters are wounded or over-burdened. You have only a short time after pressing the button to reach the end of the corridor and pass through the secret wall before it closes.

Once inside that area you will encounter an open pit. The button by the pit does not close it but activates a teleport beam for a short time. If you throw an object into the field it will drop on a pressure pad which closes the pit. To pass the next pit you must face the button by it and, as you press, move backward two steps quickly as the pit remains closed for only a short time.

These tips should help you solve this area and stress that Dungeon Master is very much a real-time game. There are many more puzzles later which require split-second timing and have none of the leeway shown here.

The remaining puzzle in the treasure rooms is in The Vault, where you are invited to "cast your influence, cast your might". The clue is in the scroll found in the chest in the open area. You must cast the zo spell across the pit to open the door. You should then see a pressure pad to close the pit which can activate by throwing an object.

Several general enquiries have been on the subject of mapping the game. Dave Barker of Peckham has mapped it in large scale, using a programming template providing a detailed large-scale solution but it is very difficult to hold alongside you as you play. Henry Mueller is using the map supplied by Express Software which I have yet to see.

I did not map the game much at all but relied on the old standard of following the left-hand wall to take a person through a real maze. The disadvantage is that some hidden buttons open areas behind the party which will be discovered only on a second circuit of that level but, by running two saves, I could use one for scouting and a second to cover the ground economically to conserve food and water.

I still have mixed feelings about a map being available commercially. A map *per se* would not be too bad as you would still have to solve the puzzles and destroy the monsters but if the solutions are shown it turns the best role-playing game ever on a machine into a pedestrian hack-'n-slay which is a pity both for the programmers and the players who lose so much of the fun and atmosphere of the game.

Finally, on strategy, a few have asked my opinion on the Rainbird *Universal Military Simulator* which was released earlier in the year on the ST and is due to appear on the Amiga soon.

Until last week I had not seen UMS but I now have a copy and have spent the last few days getting to grips with it. So far I am impressed as it seems to provide anything the player can imagine in terms of the various types of unit for battle simulations.

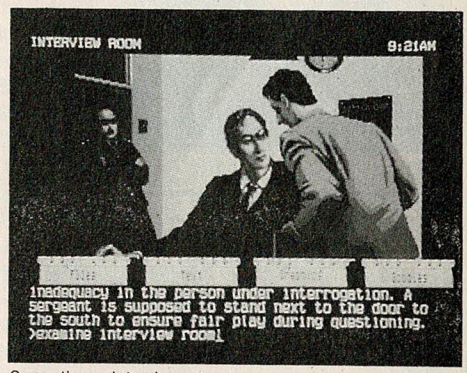
Scenarios are included from Arbella to Gettysburg to allow the player to get the feel of UMS before tackling the intricacies of the game design functions.

UMS includes a topographical program to allow the simulation of hills and depressions and for the placement of woodland. It is surprising that there appears to be no facility for the placement of rivers, marshes and similar terrain which would be impassable to some types of unit. It is possible to view the terrain and battle from any angle, which is exceptional in my experience.

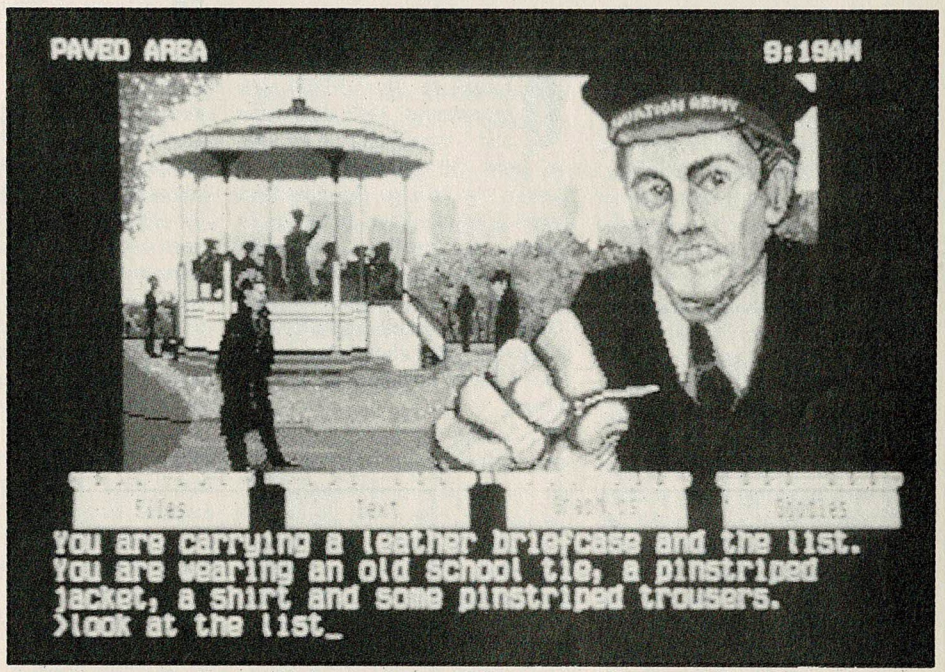
The unit design function allows full scope for creating units of your choice and the option of wildcards can let the user include units like bombers for air support or wizards and other special characters for fantasy-type scenarios. I found this part of UMS the most useful and comprehenesive, as it gives the package its true flexibility.

I was impressed by the concept and design of UMS but I felt that some important features to be expected in a wargame were missing. Wargames in general are not generally visually impressive and UMS shares that in its monochrome presentation. The grids and hexes which feature in most simulations could be replaced, since both mouse and joystick can allow for eight directions of movement.

One of my favourite simulations was *Operation Whirlwind*, which involved little historical detail or realism in terms of morale/casualties but the game map and the movement were attractive. Limited military intelligence was shown by enemy units appearing only as your scouts came within range.



Corruption - Interview.

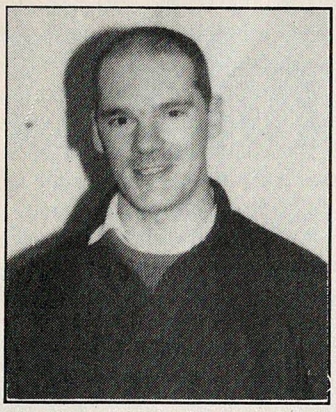


Corruption - Bandstand.

Surely 16-bit machines with excellent graphics and huge memory would allow excellent simulations and the ease with which windows are manipulated could cover every detail one could expect.

Having said that, I do not intend that as a criticism of UMS, which for the most part delivers what it promises and delivers it more stylishly than many other packages I have seen. I am hoping to see some 16-bit releases in the future which use the full potential of the hardware they support.□

KENN GARROCH



Amiga graphics

Julian Hunt, of Norwich, Norfolk, writes:

Q I have an Amiga 500 and am interested in producing some spectacular graphics, specifically those produced by the *Mandelbrot* set. I wonder if you could recommend a book on the subject? I have a reasonable grounding in maths but would probably not be able to understand anything too complex.

A The best book on the subject I have seen is *The Beauty Of Fractals* by H O Peitgen and P H Richter published by Springer-Verlag. It has many examples of the fractals possible from both the Mandelbrot and Julia sets.

Upgrading

Paul White, of Worlington, Cumbria, writes:

Q I own a BBC Model B and was thinking of upgrading either to an Atari ST or Amiga 500. I want to know if I could use my printer, disc drive and monitor with the ST or Amiga. I have a Microvitec Cub monitor, a Cumana 5.25in. disc drive and an Epson FX printer. If I can use these devices, will they connect directly to the ST or Amiga or will I have to buy leads? If so, where can I get them?

A The monitor and the printer should work with both machines, although you will need leads, since the BBC/ST/Amiga connectors are generally non-standard. Getting leads should not be too difficult, as most dealers should stock them. The disc drive is another matter and I am not sure whether the BBC disc drives will work with the Amiga and ST.

If any readers know how it is done I would appreciate some ideas, since I have had a number of letters on the subject. It would also be a good idea to put all those extra 5.25in. drives to some use.

Virus infection

P Kenton, of Liverpool 19, writes:

Q I have encountered the same problem of blank Amiga. I think that it is caused by a software protection device – a virus. Not long ago I bought some software from a reputable supplier and made a back-up copy for my own use. The copy was, however, useless and sent the Amiga into a coma. I forgot all about this until a few weeks later when the problems encountered by Andrew Craig appeared on my machine. Every write-protected disc failed to verify in the internal drive but verified in the external or internal drive if write-enabled. This problem extended to all my discs. Initially I concluded as you did. When I tried to initialise the faulty discs I found that they could not be formatted even after disc doctoring.

I became suspicious when after using the format command from the CLI, the command could not be found even though all the other commands could. I concluded that I had caught a virus which allowed only write-enabled and therefore infectable discs to be inserted into the internal drive but which was clearly ignorant of the external drive's existence. Installing all discs which could possibly have been infected cured the problem.

To finish, a spooky little mystery of my own. Some time ago I corrupted a disc accidentally. Seeing the DF1:BAD report under the icon I got into the CLI and proceeded to use the disc doctor in the usual way and when I had finished I got rid of the window. Imagine my surprise to see that the disc had been renamed 'Lazarus'. Needless to say, I have never used that name for any disc directory, program or file and Lazarus has never popped up since then. Exhaustive searches of both the Amiga manual and the Amiga DOS manual failed to provide an answer. Do you have one?

A I am still not convinced that the problem I had was a virus, since it has now disappeared. That does not mean that the virus does not exist; the reason for it is beyond me – perhaps some people are natural vandals.

The Lazarus name seems fitting for a retrieved disc, especially if the original name could not be found. Any machine which produces the message 'GURU MEDITATION' must have been programmed by someone with a fairly unusual mind.

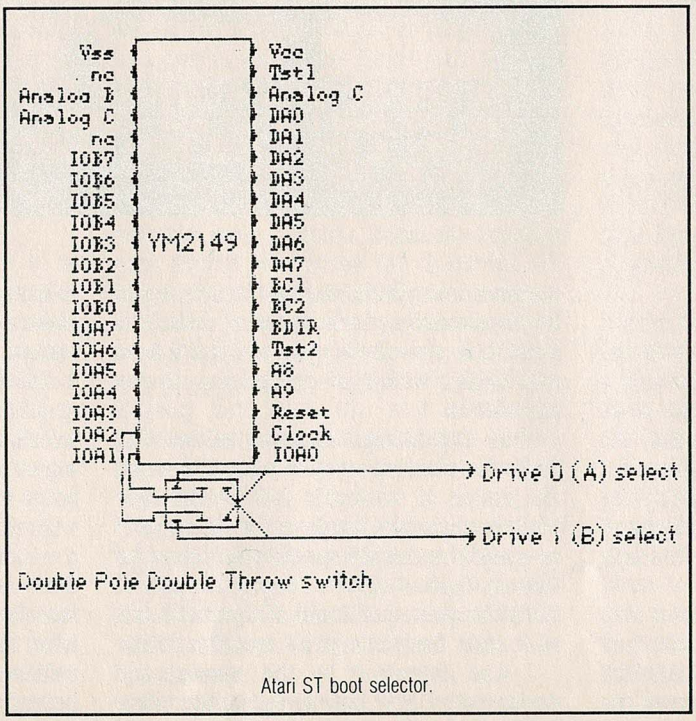
Atari boot

Jason Boydell, of Bolton, Lancs, writes:

Q I have an Atari STFM with an external 1MB disc drive and I would like to be able to boot the machine from it. Could you tell me the modifications I would have to make to allow this? Ideally, I would like to switch between drives for booting but to be able to boot from drive B would be sufficient. I know a little about electronics and I know how to take the ST apart.

A There are probably a number of ways of doing this but the most obvious is to swap over the drive select lines so that drive 0 (internal) becomes drive 1 and vice versa. The drive select lines are from the sound chips I/O port A bits 1 and 2 and a changeover switch placed on them should do the job. The diagram shows which lines need to be altered; you will have to find the most convenient place to insert the switch.

A DPDT – double pole double throw – switch is used and its operation swaps over the drive select lines.



Atari ST boot selector.

Cured

K A Welsman, of Barton Hill, Bristol, writes:

Q With reference to a letter in the April 28–May 4 edition on the subject of a blank Amiga. I, too, have suffered from all the symptoms described. Being a member of Bristol Amiga User Group, we have almost all experienced the symptoms of a blank screen and drive validating error. The cause is not a fault with the hardware but is, dare I swear – a virus. This one locks up the machine and leaves you with the only alternative of powering down.

That is why after you have booted a disc which is infected and then inserted a disc which is write-protected, the virus has not settled in and it does not recognise the disc as being write-protected and tries to write to the disc anyway.

A Provided you do not have this virus on protected software, which could present a few problems, all that is necessary is to kill it by installing a boot block with INSTALL from the CLI, i.e., INSTALL DF0:.

If this solution does not work and the fault remains there is probably something wrong with the hardware.

Connections

Keith Reynolds, of Stockport, Cheshire, writes:

Q In the May 5–11 issue you discussed a problem from M B Nailor regarding his Atari ST and the Brother HR5 printer. I also have this combination and the connections are strobe, data 1-8, busy, the associated grounds, and the printer 0V lines. Pins 16 and 17 on the printer are connected to ground and this works well with *1st Word* with a slightly modified printer routine.

I wrote to Atari for advice when I discovered that the print screen gave strange problems and encountered a "not invented here" attitude because I was not using its printer. Although its letter was very polite, it was obviously not interested in helping me with my problem.

I decided to scan the advertisements in various magazines and saw one for the Cygnus Trading Co in London. It was claiming it had "all the answers for simple dumps," so I telephoned. A very polite and informative conversation took place where I was promised success.

Within days of sending a cheque for a program, I received the all-important disc. It contained variations for horizontal and vertical formats, two being in high density. In a nutshell, they worked perfectly, albeit very slowly – a problem with the HR5, not the program. I hope the information is of some use to Nailor and others.

Number-crunching

N S Savill, of Ascot, Berkshire, writes:

Q I have been running number-crunching programs in Basic on a UK101 (6502) computer which I built from a kit in 1979. I have not replaced the 101, which is marginally faster than the BBC, as computers have only recently become appreciably faster. I have added a Triumph Adler Alphatronic CP/M computer for word processing but its Basic is slower.

Your test in issue 38 showed that the Atari ST with a HiSoft compiler is faster by a factor of nearly 30. That would indicate a four-hour program would run in about eight minutes, give or take a factor of two, but I would not be willing to type-in the programs so they will have to be transferred via the RS232 ports in ASCII. Will the combination of an ST with a HiSoft compiler cope with this? Also, after the programs have been transferred I would not be willing to edit out the line numbers and change multi-statement lines to single-statement lines, so will the compiler cope with both of those features?

I was stunned by the revelation in the Stacks of Basic review that none of the Basics would wrap around Basic lines which are longer than the screen width. I can only suppose that while home computers are used mainly for games, the manufacturers ignore the requirements of the few serious users. Possibly you can suggest a better combination of computer and compiler?

A year ago I fitted a maths co-processor – an 8087 – to an Olivetti M24 – not mine – and this reduced the run time of a Fortran program by a factor of 14. Probably the Motorola co-processor (68881) would give a similar improvement when added to a 68000. Do any of the home computers with 68000 have provision for adding a co-processor or have expansion boards to take one? It would be essential that either a high-level language compiler or an assembler which is capable of using the co-processor should be available.

The eight 32-bit registers and the multiply and divide instructions of the 68000 might make writing programs involving integers only in assembly language a practical proposition. Which is the best assembler for the ST or for any other computer which you recommend?

A I can see no problems in transferring the Basic programs as text files from the 101 to the ST. It is so long since I heard about the UK101 that I cannot remember its capabilities but I am surprised that it is faster than a BBC B, which is one of the fastest 8-bit home micros. HiSoft Basic will take any straight text file and attempt to compile it. It takes line numbers and uses them as labels but there is the oddity that you can have the same line number twice, e.g.:

```
30 PRINT "Hi there"
30 PRINT "Ho there"
```

Any jump to line 30 always takes the last as the label to goto but this should not cause you difficulty since normal numbered Basic programs always use consecutive line numbers. Multiple statements on a line are no difficulty either, so you should have no trouble with this aspect of the 'port'. I do not know what kind of Basic you have on the 101 but unless it is fairly standard Microsoft you may have to do a number of modifications to get it to work. Obviously, any PEEKs and POKEs will not work.

There are two points of view I can see concerning the ability of the text editor to wrap lines around the screen. The first is that on the ST – indeed any machine with a reasonably fast processor like the 68000 – the screen can be moved sideways fast enough to allow reasonable editing of long lines without the need to wrap them around on to the next line. Slower machines cannot do this and remain usable.

On the other hand, having used so many machines which wrap their lines, it is rather disconcerting to have the whole screen shift sideways every time a long line crops up. I would prefer the ability to wrap as an option, since sideways scrolling screens are annoying when writing Basic programs; you cannot see the whole line at once. A solution is to get the high-res monitor on which 80 columns is usually adequate.

Another solution is to use an editor or word processor which will wrap the lines and then compile using the stand-alone compiler – takes a straight text file – which is part of HiSoft Basic to test the program.

So far as I know none of the current 68000 home machines has Motorola maths chips. I susspect that both Commodore and Atari are planning machines which either have the option or have them fitted as standard – some of the larger ST and Amiga machines may already offer this – since they give a large increase in speed. If and when the co-processors become available, I am sure the assemblers and compilers will cope with them.

If you want to go for machine code on the ST the HiSoft new version of GenST is an excellent assembler. It is fast and provides a number of options the older assemblers lacked.

If you really want to have access to fast processing you might consider the Acorn Archimedes. It is the fastest home micro I have used and it also has superb graphics and a fast disc filing system. Its only disadvantage is that there is nowhere near so much software available for it as there is for the ST. It is also more expensive and it seems that Acorn has done its usual trick of producing a great machine which is unsupported because of its high price and lack of marketing.

Mouse trained

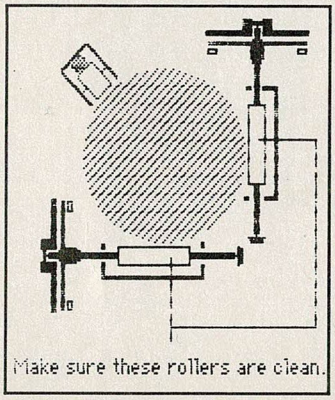
F Glossop, of Chesterfield, writes:

Q I have had my Amiga for two months and have just started having problems with the mouse. When I move it, the pointer moves in small jerks and is not very accurate. I have tried cleaning the internal rubber ball but this does not seem to make any difference. What should I do, send it back or is there some other way of getting it to work again?

A The chances are that the mouse is still dirty, the dirt being on the rollers which sense the movement of the ball. There are two ways of cleaning them. The first and easiest is to remove the sliding cover on the bottom and use a screwdriver to scrape the dirt from the metal rollers. This is fiddly and usually produces some of the dirt inside the mouse. Too much of this and it will get indigestion and begin to play up again.

The other way is to remove the bottom cover, then the two screws and then take off the top cover. You will then be able to see the internal workings of the mouse and be able to gain better access to the rollers.

Clean them as before and make sure that they are bright and shiny. Make sure no more dirt gets in the workings; that is fairly easy since you have full access to the innards of the rodent. Once cleaned, put it back together and try to make sure that you always use it on a clean surface. If necessary get a mouse pad on which to use your mouse.



Inside a mouse.

Copy Protection

Paul Morley

The following two programs in Hi-soft Power Basic allow users to copy-protect their own Basic programs. Listing one is the actual protection program. It works by formatting a disc and writing a specific number to track 80 of the disc. The number can be changed by the user.

Listing two should be incorporated in your own Power Basic program. This will read the disc at track 80 and determine whether the number matches what is expected.

If all is well, the program will run, if not, it will exit back to the desk-top. □

```
 Copywrite          by P.Morley  1988

REM $OPTION A+,U+
LIBRARY "xbios"
DEFINT a-z

'Define variables
DIM buffer_store(4000),write_stor(256),read_stor(256)

buffer&=VARPTR(buffer_store(0))
fl_write&=VARPTR(write_store(0))
fl_read&=VARPTR(read_stor(0))
CONST copycode=100        'place your own copycode number here
POKEW fl_write&,copycode

'introduction screen
CLS
PRINT "PLACE DISK TO COPY PROTECT IN DRIVE A"
PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
dummy=INP(2)

'format track 80

eror=FNflopfmt(buffer&,0,0,9,80,0,1)
                IF eror<>0 THEN eror$="FORMAT":GOTO finish

'write copycode to disk
eror=FNflopwr(fl_write&,0,1,80,0,1)
                IF eror<>0 THEN eror$="WRITE TO":GOTO finish

'read and verify
eror=FNfloprd(fl_read&,0,1,80,0,1)
                IF PEEKW(fl_read&)<> copycode THEN eror=1
                IF eror<>0 THEN eror$="READ FROM":GOTO finish


finish:
CLS

IF eror<>0 THEN
                PRINT "AN ERROR OCCURED WHILST TRYING TO ";eror$;
                " THE DISK"
ELSE
                PRINT "COPY PROTECT INSTALLED"
END IF

PRINT "PRESS ANY KEY TO RETURN TO THE DESKTOP"
dummy=INP(2)
STOP -1
```

```
'Listing two
'this code is to be incorporated into your own programme


REM $OPTION A+,U+              'force array and underline checks
LIBRARY "xbios"
DEFINT a-z

DIM pal(16)
DIM read_stor(256)

fl_read&=VARPTR(read_stor(0))
CONST copycode=100          'copycode must equal the value selected
                            'in the copywrite listing

'read and verify
eror=FNfloprd(fl_read&,0,1,80,0,1)
        IF PEEKW(fl_read&)<> copycode THEN GOTO finish

'################################################
'If all is well your own programme will occupy this space and be
' executed the following line is used for demo purposes only

PRINT "THIS PROGRAMME WORKS OK":dummy=INP(2):STOP-1

'################################################

finish:
CLS
PRINT "  YOU ARE NOT USING THE ORIGINAL DISK  "
dummy=INP(2)

'to make life awkward set all palettes to black
'DO NOT INCLUDE UNTIL YOU HAVE TESTED THE PROGRAMME

setpalette pal()
STOP-1
```

Oric Printer

J Cook

This small program for the Oric Atmos directs all keyboard input to the printer if one is connected. □

```
5 CLS: REM Set printer function
10 POKE #2F1,#8
20 REPEAT
30 GET A$ : PRINT A$
40 UNTIL A$ = "¦"
50 POKE #2F1,#0
60 REM : The ¦ key is at the
        top right of the Oric
        Atmos keyboard.
```

Memory Swap

Adam Wright

This small routine for the Commodore 64 swaps any two areas of memory up to a maximum of 256 bytes.

To perform the swap, use the following command:
SYS 49152, start address 1, start address 2, number of bytes to be swapped. □

```
0 REM MEMORY SWAP
1 DATA 32,40,192,132,250,133,251,32
2 DATA 40,192,132,252,133,253,32,40
3 DATA 192,201,0,240,3,76,72,178
4 DATA 136,177,252,170,177,250,145,252
5 DATA 138,145,250,192,0,208,241,96
6 DATA 32,253,174,32,138,173,32,247
7 DATA 183,96
10 MS=49152:CK=0:FORA=MS TO MS+49
20 READ D:POKE A,D:CK=CK+D:NEXT A
30 IF CK<>7287 THEN PRINT "ERROR":STOP
40 SYS MS,53280,53281,1

READY.
```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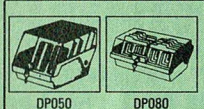

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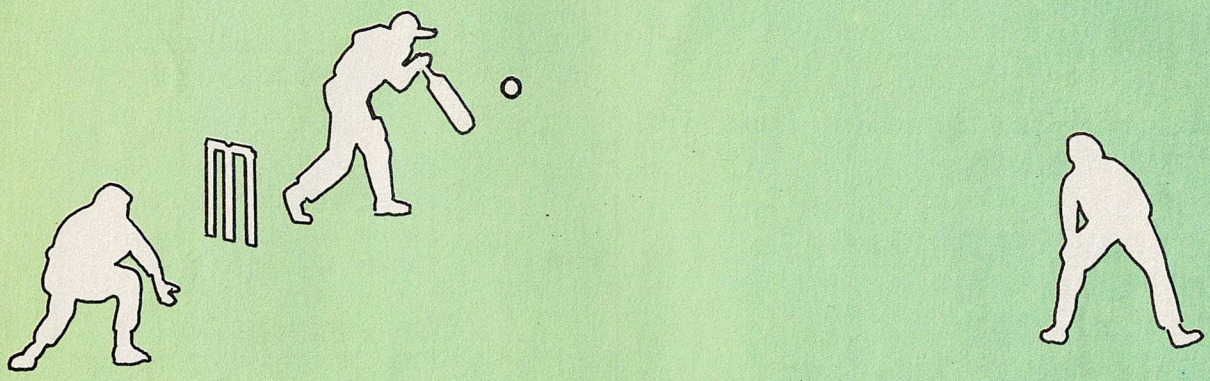


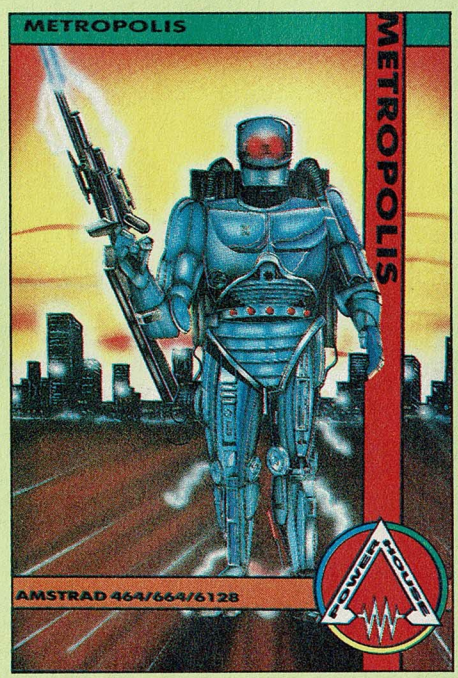
In only a few months The Power House has established itself as a leading force in budget software. With a series of titles, both original and re-releases, it is a budget house with which to be reckoned.

To celebrate the success of The Power House, we are offering a number of super prizes.

The first prizewinner will receive an all-expenses-paid trip to the Oval Cricket Ground on Saturday August 6 to watch England v. West Indies, plus three Power House games, *Dambusters, Metropolis* and *Powerama.* For the runners-up we offer a choice of one of the three titles and we have 20 games to give away.

Powerama is a vertically-scrolling shoot-'em-up in which the player controls a humble scout ship and must prevent a colossal alien fleet heading towards the Earth. Metropolis is an arcade adventure

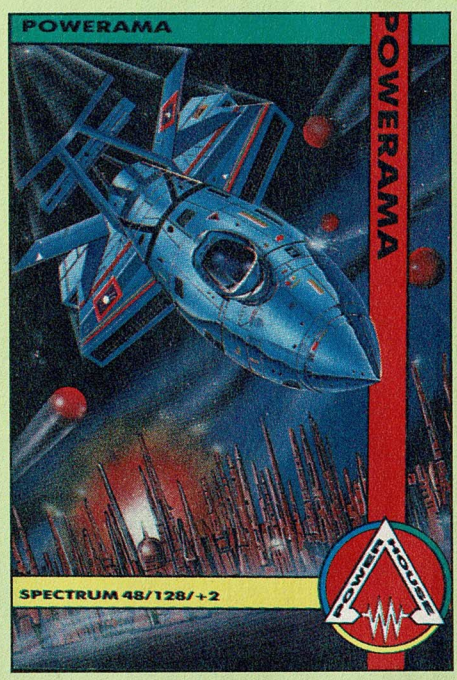
Dambusters.



Metropolis.

in which Moonboots, the lunar explorer, is stranded in Metropolis and must refuel his spaceship. Dambusters is based on the epic World War 2 raid on the Moehne and Eder dams.

All you have to do to win a prize is answer the following two questions correctly:



Powerama.

1. How many ways are there of being out in cricket?
a, 5. b, 10. c, 15.

2. Who wrote Dambusters?
a, Epyx. b, Sydney Development. c. Activision.

All games are on Commodore 64, Amstrad CPC and Spectrum. Please state for which machine you require it.

Send entries on a postcard to: Power Competition, Popular Computing Weekly, Greencoat House, Francis Street, London SW1P 1DG.

Competition closes June 16. □

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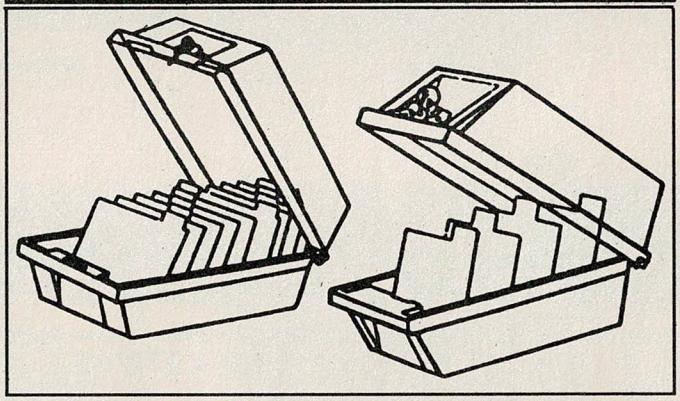

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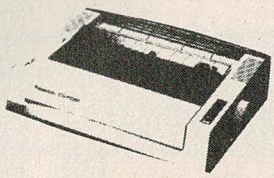

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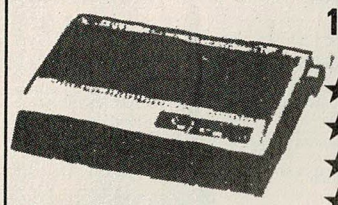

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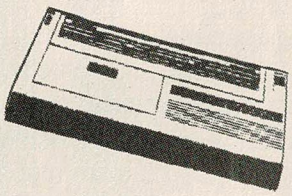

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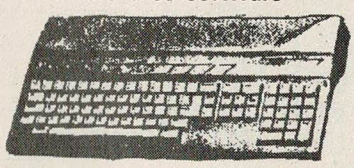

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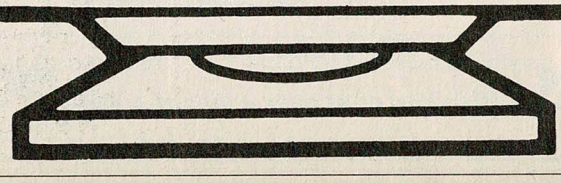

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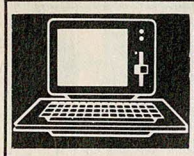

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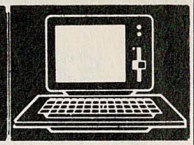

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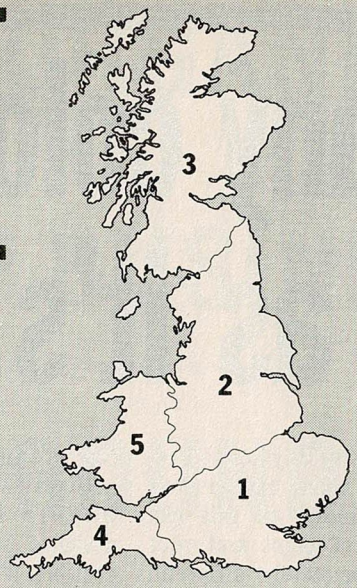

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You can have any colour you want so long as it's black

Have you ever wondered why today's and all previous personal computers have looked so incredibly boring? All have been in either white or black, have had a QWERTY keyboard and a few holes into which their owners can insert various cables. All have also had roughly the same shape, variations on a theme of rectangular. Only very rarely was there change and when it happened it was not particularly daring – grey Atari XLs, a buff Dragon and the occasional red function keys would not change the world. The only real departure was with the Elan/Flan – or, for more recent computer converts, the Enterprise – with its low, curved shape, built-in joystick and unusual blue-black colour with some green keys.

The trend, like many others in the micro industry, appears to have been started by Sir Clive Sinclair, who first sold the white ZX-80. Then, when the rest of the world – comprising at that time the Vic 20 – copied him, he launched designer black on the world with the ZX-81, Spectrum – although that had a designer rainbow in one corner – QL, Z-88 and so on. Before he arrived on the scene the principal colour was grey – in TRS-80s – a colour which, as some MSX machines have since proved, does not go down well with punters. If you are prepared to take a few risks, unfold your imagination and let loose, all this can change. A few cans of paint and your machine can look completely different. Anyone who has seen a Llamasoft stand at a computer show can attest the impression left by Jeff Minter's psychedelic Atari ST – demonstrating *Colourspace,* of course – and will be aware of the possibilities. Anything is possible, from space invaders and monsters to a pinstripe business machine – to anything you like. Just be careful the paint does not get at the innards.

For hard-pressed or non-artistic directors an American company, Aesthetics Technology, offers a computer-customising service, one of the most popular designs apparently being a granite Macintosh. Marble and wood Macs are also available at about $895. Ironically a black Mac is also available.

After paint, why not go further? Cases could be reconstructed into more interesting shapes, or incorporated into other things – building a PC into a desk, for example, or a mouse-shaped mouse. Many such ideas are trivial, ridiculous or pointless but, if carried far enough, re-designs of casing could lead to other improvements, perhaps with the replacement of the QWERTY keyboard with something not designed to slow typewriters as much as possible. We are now, as we are frequently informed, in the computer age and computers do not have little hammers which jam.

What I am talking about is the avoidance of risks by designers. Rather than risk something new and possibly better, they stay with an accepted standard or design. The problem is not confined to the computer industry; the hi-fi industry continues to make rectangular box loudspeakers because that is what it thinks the public wants, despite problems with that particular shape.

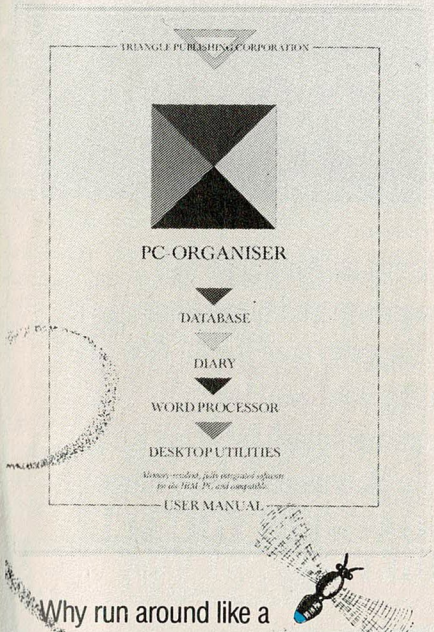
What is needed are a few risk-takers, without which the world would have got nowhere. If such people no longer exist, we may well be stuck where we are permanently with only our boring white or black computers to amuse us.

Professional designers or manufacturers clearly are unwilling to produce something even slightly daring or unusual. Thus it will have to be left to imaginative, artistic users who are bored with their machines. □

Robert Halliday

HACKERS

THE PC ORGANISER, DESIGNED TO STOP BUSINESS PERSONS FLYING ROUND LIKE A



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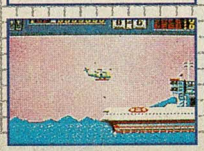

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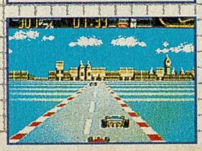

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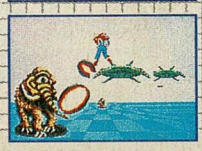

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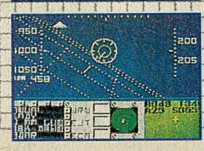

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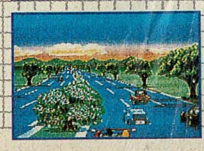

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