POPULAR NEW COMPUTING WEEKLY

A FOCUS MAGAZINES PUBLICATION

November 19–25 1987 60p

Ripper opens can of worms

Chambers – not concerned

A STORM of protest has erupted following the release of CRL's *Jack The Ripper* computer game. The game, which features pictures of brutally mutilated women, has recently received an '18' certificate from the British Board Of Film Classification.

Conservative MP Harry Greenway has lashed out at CRL and said, "This game should immediately be confiscated by the police".

Greenway was both appalled and sickened when informed that one scene in the game shows a picture of a near-naked woman lying dead in a pool of blood.

Clement Chambers, 23 year old chairman of CRL, said "People are used to horror and are interested in it. *Jack The Ripper* is something that by having explicit details in it adds a whole new dimension" he continued.

By receiving an '18' certificate, *Jack The Ripper* is subject to certain laws as who it can be sold to.

Chambers isn't too concerned that under 18's may see the game, however. "I'm not particularly worried. If you think I stay up all night worrying about it, then no. Dealers know they can't sell to persons under 18 as there is a sticker saying this on the packaging" he said.

Apparently the only warning dealers have about the nature of the game is on the packaging. Electronic Arts, CRL's distributors, didn't realise the game was of a strong nature.

John Forrest, a Director of EA said: "We knew it would be certified, but I thought it was in the same genre as other releases, so we have not really informed dealers in any major way."

According to a spokesman for The Home Office; "any dealer selling the product to under 18's could face legal action and face a fine up to £2,000".

If the product is sold by mail order, then a declaration would have to be signed by the purchaser stating that they are 18 or over.

Would any police action be taken? "We're not aware of the computer game and cannot comment", a spokesperson for Scotland Yard said.

Ken Penry, Deputy Director of The British Board Of Film Classification said the game received an '18' certificate for two reasons. "There is one particular graphic picture of a woman and also there is a passage in the dialogue which meant the game had to receive an '18' certificate".

Chris Paradine, research assistant for Jo Richardson, the Labour Party Spokesperson on women, said "I would call this pornographic material.

"This is part of a complex syndrome of trivialising and degrading women and perpetuating sexist stereotypes."

Chambers himself said, "This game isn't sexist".

This Week

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THIS WEEK the final element of the Data Protection Act came into force, giving you the right to see personal data that is held on computer files.

The storing of personal information on computers has always had a 'Big Brother Is Watching You' menace about it.

Among those who receive confidential data are banks' employers and schools, and if the information they have is inaccurate, the subject's life coudl be seriously affected.

Sarah Spencer, General Secretary for the National Council of Civil Liberties (NCCL) gave a case example. "A former employee of an international oil company was blacklisted because they thought he was a communist. Although he

continued on page 6 ▶

Sarah Spencer from the NCCL

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EDITORIAL

The mystery surrounding the Virus Amiga program looks like being a sad re-run of Commodore's "Crisis? What crisis?" attitude to the A500 grey imports affair during the summer. Then, as now, a situation arose which was affecting large numbers of Amiga owners who had paid good money – for a machine. Then, as now, it appeared that many of them ran into a problem without warning and about which they had no idea what to do. Then, as now, it came to light not through any public statement by Commodore, but from members of the public. And then, as now, Commodore surveyed the situation from a position of majestic inactivity. This is not good enough.

The pages of this magazine have been littered all too often in the past with stories of firms not keeping faith with their customers. All too often the simple truth has had to be restated – computers are not cheap, and customers have a right to expect much greater support from manufacturers in situations such as this.

Of course it may be that, as a Commodore spokesman suggested, that someone is pulling our collective leg, in which case you can expect three lines at the bottom of an inside page in next week's issue by way of grovelling apology.

But what if we are right and Commodore is wrong? Commodore will then be in the unenviable position of not only failing to respond quickly enough to a serious situation, but compounding that failure by dismissing it as a hoax. We are confident that our readers will be the arbiters in this case, as in many others and that they will prove the truth or otherwise of this extraordinary tale. In the event of it being true, we and they shall expect immediate action from Commodore to rectify matters.

Here we go again. CRL's *Jack The Ripper* has got all the Disgusteds from Tunbridge Wells and beyond crawling out of the woodwork. Once again, a software house has won masses of cheap, if not free, publicity by using the oldest trick in the book – shock horror. Once again the press – *Popular Computing Weekly* is no exception – has played along and once again the feminist lobby has found itself in bed, so to speak, with the hang 'em and flog 'em brigade.

There are two ways for the public and the computer industry to eradicate shoxploitation. One is obviously for the public not to buy it and to purchase other titles instead. In the case of games which are in any case good to play, that is maybe too much to expect.

But another way is for the rest of the computer software industry to use a little – pardon the word – inventiveness. What is so difficult about dreaming up other ways of making games attractive to the public, other ways of promoting them, so that software houses won't be tempted to appeal to the lowest common denominator? This kind of thing is, let's face it, more tiresome and boring than actually shocking. If the purveyors of this kind of product won't grow up of their own accord, maybe it's time the rest of us set them an example.

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Amiga plague mystery

MYSTERY last week surrounded a program which is corrupting discs and data held by increasing numbers of Amiga users.

According to Yuri Large, of the Amiga User's Club, the Virus program was initiated by the Scandinavian Cracking Association (SCA) to outdo all the other cracking groups.

SCA created Virus by producing a program which writes itself onto the RAM and then infects every disc which subsequently comes into contact with it. Having put the program on all the games it had cracked, the SCA then passed them to its contacts and so Virus spread.

But Commodore appeared not to be taking the matter seriously. Amanda Cridge, marketing manager for Commodore U.K., dismissed Virus as a hoax saying, "It's like something out of a science fiction boom".

Large is adamant that it does exist. "It is quite a big thing. We've had a batch of software go down and it's been on the machines in our shops. Now we won't let anyone we don't know put their discs into our machines."

In addition, Alan Hubbard of Dimension Computers, Leicester, informed us that Virus had suddenly appeared on his machines. He had no idea what had caused it.

"I'm completely in the dark about it," he said. "There was suddenly a message on the screen saying, 'Your Amiga is Alive'."

At the moment, Large thinks it is predominantly Amiga pirates who are contracting Virus, retribution for their illicit dealings, one might say.

Sooner or later, legitimate users will be on the receiving end, unless the infection can be eradicated.

Despite the mystery surrounding Virus, Large explained that it was very easy to get rid of. "Turn off the machine for a minute to allow the memory to clear and then use a Virus killer on each of your discs." Virus killer was devised by hackers in the U.S. but is available in Britain for £3.50.

While Large maintains that almost every Amiga user has heard about or seen Virus, Commodore remains unconcerned.

Another Commodore U.K. spokesman stated that Virus was a little too similar to the AIDS epidemic to be taken seriously. He added, "I think someone is pulling your leg".

● Whenever you switch on an Amiga you need to insert a boot disc which contains basic information about the initial set-up – screen colours, stack space and so forth.

The boot sector is 512 bytes long and loads very quickly. Some striking programs have been written in this sector, including graphics demos, stunning sound tracks – and now Virus.

A system booted with a Virus disc looks like any other, but the program sits there silently waiting for more discs to be inserted and then writes itself to them.

Each time a Virus disc is booted it counts, writing a number back to the boot sector. After a while there is a random delay before the machine crashes. A message appears to say 'Something wonderful has happened – your Amiga is alive'.

The usual three-key reset does not kill Virus. It sits there marking time and corrupting the next disc inserted. The only way to kill it is a full power-off re-set.

Winter Olympics game to offer holiday in Canada

NEXT WEEK Tynesoft is releasing its new winter sports' simulation game, *Winter Olympiad '88*.

As preparations get underway for the Winter Olympics in Calgary, Canada, Tynesoft believe the game will successfully capture the atmosphere of such an event.

Available free with the game is a booklet with an introduction written by David Vine. One of television's leading sports' commentators, Vine has been associated with the Winter Olympic Games for the last twenty years.

In addition, those who buy the game can enter a competition to win a holiday to the Games in February. The closing date for this will be 30th January, 1988.

The game will cost £7.95 on cassette for Spectrum, Amstrad, C16/Plus 4, and £9.95 for Commodore 64, Atari XL/XE, BBC/Electron. On disc, it will retail at £14.95 for BBC/Master Compact, Atari XL/XE and £19.95 for Amiga, Atari ST and IBM.

Winter Olympiad introduction by sports commentator, David Vine

Elite plans

Elite Software last week completed plans for its 1988 product range – involving a 120 per cent increase in programming capacity.

In a statement the company also emphasised moves it has recently taken towards expansion of its software activities, including:

MOVING its administration to Lichfield, thereby freeing the whole of its Aldridge offices for use as a software development centre;

APPOINTING George Yapp as software development manager, Niki Penny as brand manager for the Loriciels product range, and Geoff Grimes as marketing manager, thus freeing sales manager Bernard Dugdale to spend more time with customers;

STRENGTHENING its software team by adding three additional supervisors to the management, and;

BUYING Durell.

The cute computer show

By Peter Worlock

WHILE the rest of the world is preoccupied with the burning issues of the day – where is OS/2? is the Amiga better than the ST? should I buy an Amstrad PC or someone else's?, Macintosh owners quietly continue their love affair with the cute computer and Apple continues to rake in the millions.

To say that Apple is doing things its own way is a massive understatement and nowhere was this more evident than at last week's MacUser Show at North London's Business Design Centre.

The Business Design Centre and the Mac might have been made for each other, sharing that "very designer" appearance. Not for the Mac the soulless caverns of Olympia, nor the every day feel of some anonymous city hotel.

Once you had gained entrance to this hallowed ground, the first impression was bewildering to any hardened show-goer. For one thing there was near silence – no throbbing soundtracks booming from neon-lit stands; for another there were no thronging masses barging down crowded aisles. Instead there was a cool, unhurried elegance, like a Palace garden party organised by the marketing department.

But there was new product, and a lot of it. Some was newer than others: Ashton-Tate was showing *dBase Mac*, a full year after its debut (a sort of *Star Trek* of the business world), but the company insists that the software is ready this time. It is more or less exactly what you'd expect: all the features of dBase on the PC, coupled with the Mac's windows, menus and mouse-driven control.

There was a second new contender in Mac databases in the form of 4th Dimension, distributed in the UK by User Power Software. Preliminary reports are good, but at £645 it would have to be good.

Meanwhile, Blyth Software, flying the flag for Britain, was pulling the crowds (using "crowd" in its loosest sense). Its *Omnis 3* program has established a virtual monopoly in the area of serious data management on the Mac and Ashton-Tate may have taken 12 months too long in bringing *dBase* to the Mac market.

Not surprisingly, desktop publishing products abounded with laser printers, scanners and big screens coming at you from all sides. DTP software continues to be a cut-throat race for supremacy. Quark Xpress, a highly praised newcomer, drew a lot of attention, while market-leader Aldus announced *Pagemaker* version 3. This is Aldus' response to *ReadySetGo* version 3, but sneaking up on the blind side, Letraset announced *RSG* version 4.

Apple itself brought two new products to the show *Multifinder* and *Hypercard*. The first is a new Mac operating system which offers limited multitasking but is claimed to be compatible with existing software. *Hypercard* defies description and is really a new category of software: part operating system, part programming language for people who can't program, part freeform database, part graphics paint program, part *Sidekick* lookalike, and some of just about everything else you can think of.

The Macintosh Plus – improved speed, storage and peripheral expandibility

One noted Macintosh observer has said *Hypercard* will be recognised as a milestone in the history of computing. I can't help feeling it's much more important than that, but you'll have to see it for yourself.

One for the Dear Santa Department: take a Mac II, add Supermac's Spectrum graphics board and its 19-inch colour monitor and you've got a commercial graphics workstation. The system gives you a 68020 processor, megabytes of RAM. 1024 × 768 pixel resolution, and 256 colours from a pallette of millions. Not much change from £10,000 though.

On a more accessible scale, there was a Mac version of *BBC Basic*, Borland showed the latest versions of *Sidekick* and *Turbo Pascal*, and like Canute trying to hold back the tide, HSV Computer Services fought for that old computer show feel by flogging discount discs, printer ribbons and boxes of paper.

By any standards the MacUser Show has to rank as a success, not least in the sense that it demonstrated the Mac's victory – against all the odds – in establishing itself as a serious rival to the IBM PC standard.

But I couldn't escape the feeling that in achieving that success, Apple has lost something along the way – a sense of fun, perhaps, or the spirit of adventure. These may not be valuable commercial assets, but I've always thought they were the computer industry at its best.

Pirate launch

THIS WEEK budget company, Pirate Software, launched their first Spectrum +3 compilation.

The new label is called Pirate 3+3 and is priced at £9.95. Leigh Richards, Pirate Publishing Manager, explained, "Instead of paying for games on separate discs, we are offering the consumer the chance to buy three on one."

The first titles available on Pirate 3+3 are *Call Me Psycho*, *Holiday in Sumaria* and *Smash Out*, all of which were previously available for the Spectrum 48/128K.

Joint BBC Micronet venture for charity

ON NOVEMBER 27th, the BBC's Children In Need appeal will be broadcast and, with the aid of information technology, you can be part of it.

Micronet, the magazine similar to Oracle, will once again be providing an on line service. With eight computer terminals at the BBC TV Centre, it will enable you to pledge money, talk to celebrities and bid in the auction of computer products. Last year, contributions to the auction included £4500 of Acorn RISC hardware, computers from Atari and Commodore and various modem, peripheral and software donations.

Executive Producer of Children In Need, Mark Patterson said: "The BBC is always interested in using new technology, and we are delighted with the success of the on-line Children In Need appeal organised by Micronet."

Normally only available to its 20,000 subscribers, Micronet will be opening up its systems to Prestel users so that more people can access the appeal. In addition, it has linked up with ITEC, which has 150 information technology centres throughout Britain.

Such a move will allow anyone to take part in the programme if they go to their nearest ITEC centre and log into Micronet. Vic Taylor, a Director of the ITEC's commented: "The ITECs are all about introducing new technology to, the public at large, and on-line Children In Need is an ideal way to do that."

Terry Wogan will present the Children in Need Appeal

To catch a thief

THE SPIDER and *The Fly* is not an exciting new computer game but two alarms designed to protect home and office equipment.

Released by ABA Systems, both alarms are compact and unobtrusive and react to fingertip touch or the slightest movement by emitting a high-pitched 98 decibel scream.

The Spider is a central alarm box with four sensorised tentacles which are attached to equipment by double-sided adhesive pads. It is suited for clusters of equipment or those consisting of more than one element, such as disc drives and printers. An advantage of this alarm is that normal working use will not activate it. *The Spider* will retail at £39.95, excluding VAT.

The Fly is similar in size to *The Spider* but since it does not have any tentacles, it is aimed more at single items. Once set, the alarm will be activated by the slightest movement. *The Fly* is priced at £29.95.

The Spider, anti-theft alarm product from ABA Systems

Adventure '87

ADVENTURE '87, the Second National Computer Adventurers' Convention will take place next Saturday at the Sutton Civic Centre, Sutton, Surrey.

The event is aimed at all levels of adventurers, from the single user to those interested in multi-user games (MUG). The latter is a relatively new concept, originating from Essex University. The game enables a number of people to participate in the same adventure, if they have a computer, modem and telephone line. The most recent MUG is 'Shades' on Prestel's Micronet.

The convention will be the launching pad for a new MUG Federation II. There will also be seminars on the technical side of programming and software demonstrations of single-user adventures, some of which are in the play-test stage.

The Convention will start at 10 am and continue all day. Tickets are £2.50 on the door or £2.00 in advance from Mr. D. Wilkins, 21 Village Row, Mulgrave Road, Sutton SM2 6JZ. Sae and cheque payable to Sutton Library Computer Club are required with orders.

Apology

We owe an apology to Elite. In our last edition it was suggested they were pulling out of computer software.

Clearly our sources of information were inaccurate. We have it directly from Elite themselves that in the financial year to July 1987 their turnover was up 65 per cent and their profits double the previous year to July 1986 (see separate story in News Desk).

Data Protection Act in force continued

denied this, he has since been unable to get work in any other major company and believes that inaccurate information is held on file about him."

The procedure for accessing your file involves writing to the organisation concerned, stating that you wish to exercise your 'subject access right under the Data Protection Act'.

According to Eric Howe, the Data Protection Registrar, any request must be met within forty days. However, a subject may have to prove his or her identity, provide more information to help locate the data and pay a £10 fee.

After forty days he or she can either apply to the Registrar or to the courts for access. Howe added that there was limited access in certain cases, for example 'where it would be likely to prejudice the prevention or detection of crime'.

Whilst the Act is aimed at helping the public see their files, the NCCL believes the £10 fee will put many off.

Spencer, was also unhappy about other weaknesses of the Act, particularly its exclusion of manual files and the exemption clause. "Since most schools still keep paper files on pupils, it would mean that many people would still suffer as a result of inaccurate information at this stage. In addition the tax file is exempt, so that people will not have the right to see poll tax information, which is collected from all sorts of sources.

So that the public becomes aware of their rights concerning computerised data, an advertising compaign has been launched and leaflets are available at the local library or Citizen's Advice Bureau. Spencer hopes that people will make use of the Act but indicated that it was below the NCCL's expectations, stating, "We will monitor it carefully and if it proves unsatisfactory, press for it to be extended."

Any further details on the Act is available from: The Office of the Data Protection Registrar, Water Lane, Wilmslow, Cheshire SK9 5AX; tel: (0625) 535777.

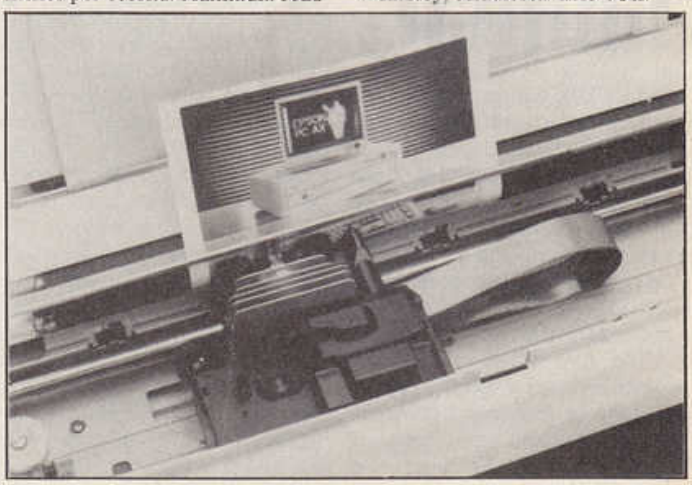
Epson scanner

EPSON is about to release an Image Scanner, giving desktop publishers the bonus of digitised bit-mapped graphic versions of images.

The Scanner will be an option on four of Epson's printers EX800/EX1000 (RRP £180 ex-VAT) and LQ2500/LQ2500 + (£195 ex-VAT). On the EX printers, the scanning speeds are 25 inches per second and on the LQs they are 27 inches per second. Maximum readable areas are 11″ × 8″ (horizontal: vertical) on the EX1000 and LQs and 6″ × 8″ on the EX800.

It comes complete with scanning software and is suitable for all IBM PC-compatible machines. Thus users can integrate scanned graphics with text from any word processing or similar application, without paying a fortune for new software.

For further information, contact Epson (UK) Ltd, 388 High Road, Wembley, Middlesex HA9 6UH.



Scanning on Epson's printer

A MERRY CHRISTMAS AT THE MICROFAIR

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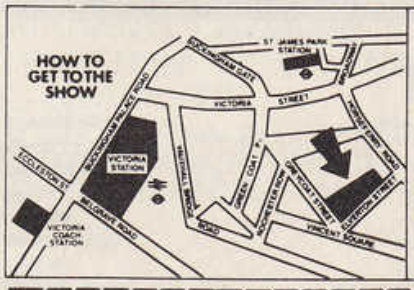

Underground: Nearest stations are Victoria, and St James's Park.

British Rail: Victoria Station.

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NEWS DESK

DIARY DATES

NOVEMBER

November 21
Wales and West Computer Show
Central Hotel, Cardiff
Details: Regional computer show of particular interest to Dragon users
Tickets £1 adults, 50p children
Organiser: R & A J Preston, (0656) 880965

November 28
Adventure 87
Europa Gallery of Sutton Civic Centre, Sutton, Surrey. 9.30–4.30
Details: National Computer Adventurer's Convention, Seminars and Workshops
Adults £2.50, £2.00 in advance from Mr D Wilkins, 21 Village Row, Mulgrave Road, Sutton SM2 6JZ
Organiser: Vernon Quaintance, 50 Beatrice Avenue, Norbury, London SW16 4ON, evenings 01-764 6556

DECEMBER

December 5
6809 Colour Show
Grand Hall, Connaught Rooms, Gt Queen Street, London
Details: Show for Dragon and Tandy owners
Tickets £2 adults, £1 children
Organiser: John Penn, (04203) 5970

December 12
Christmas ZX Microfair
New Horticultural Hall, London SW1
Details: Latest innovations for Sinclair users
Advanced tickets: £1.50 adults, £1 children
Tickets on the door: £2 adults, £1.50 children
Organiser: Mike Johnson, 01-801 9172

JANUARY

January 28–30 1988
The Amstrad Computer Show
The Great Hall, Alexandra Park, London
Details: Displays and demonstrations of all the latest hardware, software and peripherals for Acorn computers
Adults £3, Under 16's £2 – £1 off for advance tickets
Organiser: Database Exhibitions, 061-456 8383

Prices, dates and venues of shows can vary, and you are therefore strongly advised to check with the show organiser before attending. We cannot accept responsibility for any alterations to show arrangements.

SOFTWARE HOTLINES

Well with Duncan Evans, our usual Hotlines writer taking a well earned two week holiday in Bermuda, the job of writing this column has, again, landed on my desk.

The first game I managed to get my grubby little hands on this week had something really special going for it; it's free! Programmed by **Wordmongers,** it is given to all purchasers of 32K blank eproms for the Z88. Using scrolling reminiscent of the ZX81, the game, called *Scrazble,* is amusing, although what it loses in gameplay, it makes up for in price!

On the more serious side, screenshot of the week award goes to **Magnetic Scrolls** for *Jinxter* (above). I'm sure they're bored with people complimenting their game because of the quality of the graphics. but let's face it, that is a pretty important part of any graphic adventure.

Available on almost every machine you have heard of, the game should be available in the not to distant future.

Konami, the company with the rights to some of the best arcade games ever, are putting the finishing touches to *Salamander* for the Spectrum (below). Based on the fabby (© J. Cook 1985) arcade game, *Salamander* promises to be one of the best shoot-'em ups ever of the Speccy.

As *Salamander* should be ready before Christmas, what I want to know is when they are going to start work on WEC Le Mans!!!

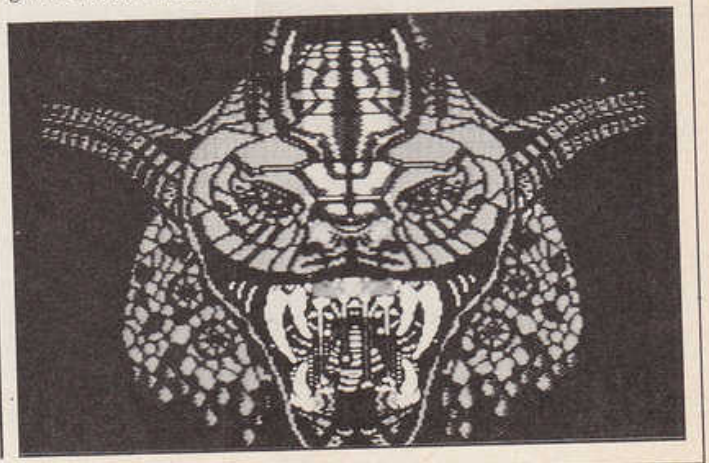
As a cricket fan I, like many others, got up at some ungodly hour to watch England give the World Cup to the Aussies. Whilst drowning my sorrows later, I had a great idea for a game. We've had Peter Shilton's *Handball Maradonna*, what about Mike Gatting's reverse sweep giveaway???

You're probably sick of hearing about it, but a screenshot for *Jack the Ripper* just arrived on my desk. I must be honest here, I feel the game has gone a little too far, and that screens of women with their intestines hanging out ought not to be allowed, whether or not they have an 18 certificate.

Little has been heard from either **Rainbird** or **Hewson** about the Braybrook/Turner dispute, so let's hope that it has been settled amicably, it would be a pity not to get any new games from these two because of the dispute.

Well, that's it for this week, I'll speed to you again next week, and Duncan will be returning the week after that (once he has his handicap down to six!!).

Daniel McGrath



CHARTS

Top Twenty

1	(3)	Grand Prix Simulator	Code Masters
2	(1)	Joe Blade	Players
3	(2)	Soccer Boss	Alternative
4	(12)	Game Set Match	Ocean
5	(6)	Renegade	Imagine
6	(5)	Pro Ski Simulator	Code Masters
7	(NE)	California Games	US Gold
8	(11)	World Class Leaderboard	Access-US Gold
9	(4)	Indiana Jones	US Gold
10	(8)	BMX Simulator	Code Masters
11	(9)	Dizzy	Code Masters
12	(16)	Fruit Machine Simulator	Code Masters
13	(7)	Back To The Future	Firebird
14	(10)	Paperboy	Elite
15	(19)	Comp. Hits 10 Vol. 4	Beau Jolly
16	(13)	Live Ammo	Ocean
17	(18)	ATV Simulator	Code Masters
18	(20)	Six Pak 2	Hit Pak
19	(24)	Barbarian	Palace
20	(25)	Bubble Bobble	Firebird

All figures compiled by Gallup/Computer Trade Weekly

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The Data Protection Act – will it protect?

Francis Botto outlines the new Data Protection Act and analyses the effect, if any, it will have on accessing and protecting personal information.

On November 11, Eric Howe the Data Protection Registrar truly became the Data Protection Registrar, with powers to prosecute offenders in the criminal courts, and initiate searches of premises if suspicions arise. But just how effective is the Act going to be; will it be a 'white elephant Act' being impossible to enforce?

The Data Protection saga began in July 1984, with the very purpose of eventually governing the conduct and manner of computer bureaus, individuals or establishments utilising computers to store personal information. In other words, the Act is an attempt to keep tabs on data users. As expected, a logical starting point was to catalogue all data users by requesting them to apply for registration. In the brief registration period – November 1985 to May 1 1986 – little more than half of Britain's data users registered. Though this may sound totally discouraging or perhaps disgraceful, we are assured by the Data Protection office that this is in keeping with similar ventures implemented by our European counterparts. According to the Act, data users failing to register are technically offenders, who may subsequently be fined up to £2,000 in the lower courts with unlimited fines in the higher courts.

Principles

In theory, the Act is quintessentially concerned with protecting the rights of individuals like you and me, by attempting to ensure all collected data is accurate, solely relevant, legitimately acquired, divulged for a particular purpose and perhaps most important the Act seeks to impart personal information with subjects concerned – a right we are presently deprived. Eric Howe has drafted eight easily understood principles that set the Act's purpose in motion.

- The information to be contained in personal data shall be obtained, and personal data shall be processed, fairly and lawfully.

- Personal data shall be held only for specified and lawful purposes.

- Personal data held for any purpose or purposes shall not be used or disclosed in any manner incompatible with that purpose or those purposes.

- Personal data held for any purpose or purposes shall be adequate, relevant and not excessive in relation to that purpose or those purposes.

- Personal data shall be accurate and, where necessary, kept up-to-date.

- Personal data held for any purpose or purposes shall not be kept for longer than is necessary for that purpose or those purposes.

- An individual shall be entitled:
  - ○ at reasonable intervals and without undue delay or expense:
  - ○ to be informed by any Data User whether he holds data of which the individual is a subject; and
  - ○ to access to any such data held by a Data User, and,
  - ○ where appropriate, to have such data corrected or erased.

- Appropriate security measures shall be taken against unauthorised access to, or alteration, disclosure or destruction of, personal data and accidental loss or destruction of personal data.

Arguably, though most of the principles can be comfortably put into practice, the seventh principle seems to be the one which threatens the Act's over-all effectiveness. For example, if a subject feels a data user possesses inaccurate personal data or is illegally vending information, unless the subject knows of the data user, the subject is helpless, as is the case now.

Also after November 11, data concerning any tax or duty will remain inaccessible as will information likely to hinder the prevention or detection of criminal activities.

Of course I'm not suggesting the Act will be useless, but merely highlighting the problem of pinpointing the not so scrupulous data users. For, many individuals now falling victim to such data users will no doubt continue to do so.

Who should register?

In many respects the Act is sensibly aimed, so not everyone who uses their home computer to store personal information need register. Here are some examples:

If you store information about members of your family for other than professional purposes.

Personal information relating to members of your computer club or whatever can gain you exemption providing the eight Principles are observed and each and every member of your club approves of his or her personal data being stored.

Certain payroll and accounting operations are also exempt.

If you are not sure whether or not you should register, it is perhaps advisable to contact the Registrar's office for further information, which will be issued to you free of charge. And if ambiguity should occur, and we are informed that it will, then it is perhaps safer to pay the £22 registration fee rather than risking a heavy fine that could cripple your company, organisation, club or whatever.

Professional data users of any kind are most likely obliged to register even if they are data users in a third party sense,

Eric Howe, with microfiche equipment used for viewing the Data Protection Registry

where perhaps their accountant handles personal data – you don't even have to own a computer to be a data user. Once again, if in doubt contact the Registrar's office.

The register

As would be expected the register is open to scrutiny by the public, with copies of the register and index already available in many of Britain's main libraries. The register, besides containing data users and registration numbers, also conveys the type of data stored and the use to which it is put, and to whom the information is divulged. Additionally, the register is a catalogue of addresses that can be contacted to request copies of your personal data.

However, here is the 'sting in the Act's tail', data users are to be eventually permitted to charge for this service – the price of which will be decided by the Home Office.

You could be forgiven for thinking that the seventh principle infers there will be no charge – in fact it merely implies this notion. But just how contradictory principle 7 is will largely depend on the forthcoming cost of the service.

The outcome

The outcome of the Act in terms of ability to tame the likes of ruthless data users will largely depend on the effectiveness of complementary detective work in sifting out offenders. And as for this new openness the Act seeks to achieve, that will largely depend upon the cost of obtaining such information – which will make or break the Act.

In short we shall just have to wait and see, but I for one am sceptical.

For further information contact:

Office of the Data Protection Registrar
Springfield House
Water Lane
Wilmslow
Cheshire SK9 5AX
Tel: 0625 535777

LETTERS

Now the good news

I note with dismay the absence of any reference whatever to the puzzle in your issue dated 10-13 November. Obviously, you have not been able to agree a fee with Gordon Lee and you have not been able to kid any of your readers to do it cheaper. If the puzzle is phased out, I shall certainly not bother to renew my subscription.

Phil Amey
Esher, Surrey

Puzzle saga continues

I agree with several points in Mr Godman's letter ("Sinister ring"). I too fail to see how you can devise a consistently new format for a written puzzle. Perhaps once or twice you could, for example, write it in "Playfair" cypher, or pehaps as an ordinary crossword; but what then?

To my mind, a written puzzle needs to be no more than just that - a written puzzle.

Being set in print, all that seems to be necessary is that the problem should be clearly and fairly set out (though the problem itself need not be obvious): it should have a unique solution unless otherwise stated; and it should be most conveniently solvable by the invention and use of a program which can be run on the average micro (since it is after all written for a "popular" computer magazine). What else is needed which is not merely a fancy waste of column inches?

But do your allegedly discontented readers really want a true puzzle at all? It is probably uncharitable to suspect that the "overwhelming demand" comes from those who find the puzzle in their existing format too difficult and/or too much trouble; and that what they are really after is an easier crack at the £10.

Perhaps the "overwhelming demand" is in effect for some sort of quiz rather than a true puzzle, with questions like "Who runs Amstrad computers? Tramiel, Sinclair, Sugar or Dr Runcie?"

I suggest that there are too many of these already, and that they are in any case screamingly dull. You might just as well run a straight lottery. Perhaps this is what you will end up with - perish the thought!

Or perhaps an "overwhelming" number of solvers find the puzzles too easy, and are tired of waiting for their names to "come out of a hat"?

Somehow I doubt it. Only you know the true reasons for the "demand", and you haven't specified them.

Please may we have our puzzles back as they were? They were usually of just the right standard, and I thought the setter(s?) did an admirable job. Like Mr Godman, I buy PCW mainly for the puzzle, in very narrow preference to other magazines which don't have one.

Incidentally, when can we expect the solutions and winners of puzzles 271 to 275?

M W Peters
Blandford, Dorset

We've been pleasantly surprised by the volume of support for Mr Lee and his puzzles - but puzzled by the fact that it's taken the temporary disappearance of the puzzles to provoke it.

The good news is that the puzzle will be returning as before very soon - either next week or the week after.

As for your suspicious mind, Phil Amey, shame on you! You clearly underestimate the respect we have for our readership if you think we would not keep you all fully informed about an issue which is obviously of such interest.

In addition, your idle and mistaken speculation upon the private dealings between us and our puzzle compiler is, shall we say, less than constructive? What about informed contributions like this next one - Ed.

Join hands

I would like to request, through your magazine, those dynamic and expanding hardware/software dealers that the Zambian computer scene is expanding quickly though still at infancy. Those willing to hear more or those willing to join hands with new distributors are welcome to contact me at the address:

Crispin Lavu
Infordeal Consultant
c/o PO Box 30029
Lusaka, Zambia, Central Africa

Surely some mistake?

I am doing a project on "Alternative Medicines" for my General Studies AO. I obtained your address from research into the book "Healing Without Harm", so I decided to write and see if you would be so good enough to help me in anyway with my research.

As I have said I am doing my General Studies AO, which means I am in the first year of the sixth form (ie starting "A" levels).

I am enjoying doing this project very much, and I have learnt a great deal from doing it, as in the beginning I hardly knew what it was all about. I would be very grateful if you could in any way help me and look forward to hearing from you.

Sandie Delmar-Morgan (Miss)
Horsham, W Sussex

"Will you be wanting any precautions to use with that, Sir?"

Great debate

Further to the great debate on the Atari ST v Amiga, I would like to add my views.

Bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla.

Bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla.

Bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla, bla (letter edited for length).

Mark Stevens
Cowley, Oxford

Protect the dishonest

I'm writing regarding the two letters printed in Vol 8 No 44 regarding poor service received from mail order companies.

I have to ask what was the point in printing them at all. Surely the idea behind the writing of such letters is for the author to air his grievances about a particular company and to warn other readers from falling into the same trap. Therefore by not naming the companies concerned you have rendered the letters pointless.

In effect by not naming the two companies concerned you have protected the dishonest at the cost of those who try to give a good service. The net result of all this is that at a time of the year crucial for mail order companies' survival, you have in effect persuaded a large number of potential customers not to buy goods via mail order.

The end result is potentially disastrous for all concerned. If this type of letter continues then we and no doubt several others of your advertisers may well question the wisdom of continuing to spend money on advertising in your magazine whilst we are unnecessarily condemned and - if enough decide this way - the magazine could collapse through lack of revenue.

Anonymous
Mail-Centa
Belper, Derby

How wrong you are. By not naming the companies concerned - by agreement with them, by the way - we were avoiding the danger of legal action by them. We tried to contact both companies and printed the letters to show the readers in question that it is worth contacting us if problems are encountered with one of our advertisers.

Surely you would agree that your primary responsibility is to your customers. It is after all their money you spend when you advertise.

Here at *Popular Computing Weekly* we are constantly amazed by the shoddy service customers receive from computer companies, large and small.

We have a responsibility to our advertisers certainly - but we all, press and advertisers alike - have a greater responsibility to our readers and your customers.

It is for that reason that we take up their queries. We accept that companies like yours provide a good service, but until the industry as a whole shapes up, surely you and we must declare open season on companies which fail in that responsibility.

We are in a dilemma. If we name companies which are failing their customers badly, we risk being sued. If we do nothing, we are seen to be in league with disreputable firms. If we investigate, print a letter but do not name the firm in question, other companies cry foul. Surely reputable companies - unnamed or otherwise - have nothing to fear.

We're sorry but *Popular Computing Weekly* cannot guarantee to reply to *all* letters requesting a personal answer. It helps us enormously if readers are prepared to have general queries answered on these pages, so, if possible, please do not send SAEs.

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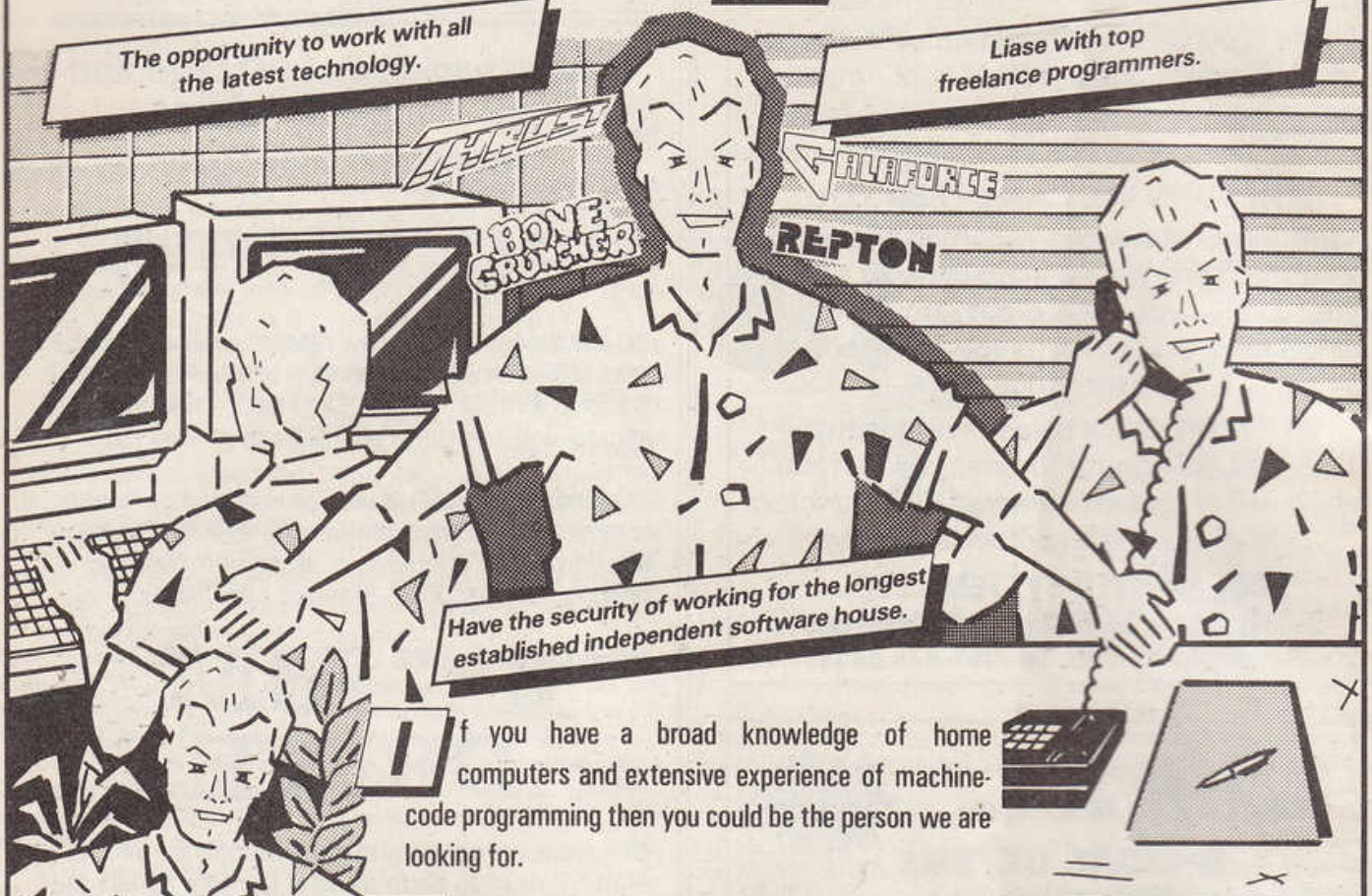

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Fight to the top

After a long wait, the game that launched a thousand Amigas has arrived for the ST, *Defender of the Crown*.

The time is November 1149 and dirty deeds have been perpetrated. The King has copped a one-way ticket to the great tournament in the sky and the kingdom's in a bit of a mess. Saxons and Normans are blaming each other and warfare is about to erupt across the green fields of England.

You play a decent law abiding, pure of heart Saxon lord, with his own castle in the country, and are determined to wipe the scummy Norman filth clean off the map and claim the crown for yourself.

There are three main options available to the man (or woman) who would be king; seek conquest, hold a tournament, or go raiding.

Initially, all territories except those containing castles are unclaimed and contain vassals who are only too willing to join your force. As buying an army, be they soldiers, knights, catapults or small castles, takes up an entire game turn, the best bet to start with is to blitzkrieg the countryside and avoid opposing armies. This way you can gobble up territories, which put varying amounts of gold into the castle coffers, and mop up lots of floating vassels. When you go home there's a huge pile of swag to spend on building a really big army.

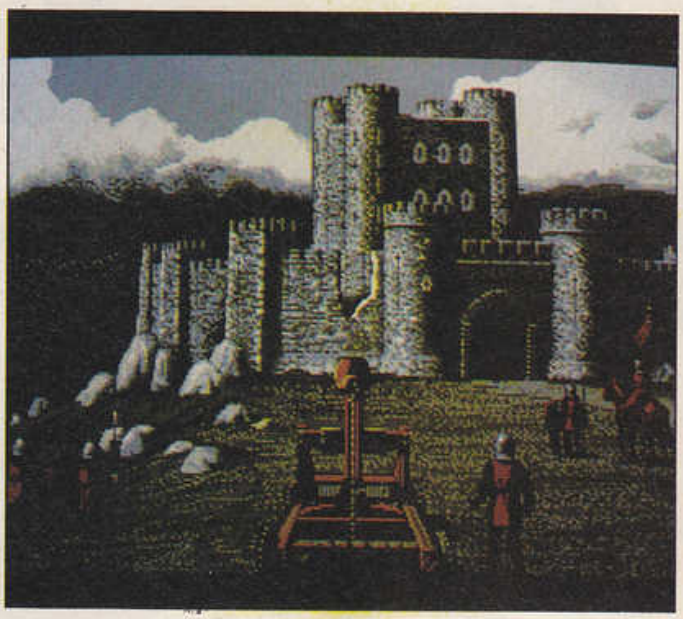
You'll need a large pack of Saxon troops to take on the enemy castles, as even the smallest force can be difficult to extract from behind those stony walls. To attack a castle you should need a catapult, to make a hole in the wall, although you don't have to demolish it completely. However, there is a bug in the early versions which results in the defenders supplying you with a catapult if you haven't bought one!

In addition to reducing the wall to rubble (an undamaged one doubles the defensive strength) you can throw Greek fire into the courtyard to make things even hotter for the residents, or even lob a dead horse over to spread disease.

One of the arcade elements is that you are responsible for firing the catapult, and it's by no means as easy as the Amiga original, which was too easy.

Should you win the day and take someone's home castle, then they are eliminated from the game and you take control of all their lands. A couple of interesting points are that you can be given safe passage through Saxon lands, and that you only have to capture all three Norman castles to win the game.

The other main option is holding a tournament whereby you can joust for leadership points or land.



Jousting represents the next of the arcade sequences, in that you see your opponent thundering towards you, and you have to point your lance, which bounces up and down wildly, at the very centre of his shield and click the the mouse button when you hear a metallic clanging sound.

Your third option is to go raiding, which involves two swordfights, one in the enemy castle's courtyard, and one in the keep.

Although none of the characters would give Errol Flynn a moment's worry, the swordfighting is certainly good fun.

If you win both fights then you get to plunder the castle's treasure room.

The adult entertainment aspect comes into play when a Saxon lady is kidnapped by the Normans. To avoid being called a big girl, and other Saxon insults, by your men you must stage a rescue. This involves repeating the raiding scene but this time the reward is much more satisfying than a few gold pieces. The Saxon doxie shows her gratitude by inviting you into her bedchamber. In a couple of humorous, but pretty tacky, scenes the obliging wench becomes pledged to you.

This has two side effects. One is that her piccy appears on the map alongside yours and that your men fight better in battle. The second is that whichever Saxon lord was her protector, bows out of the game and hands over his lands to you. Well worth the effort really. Let's talk about the graphics, which after all were the selling point for the original. A couple of superfluous scenes have been cut, but the main ones are still there. I could expend lots of words like fabby, excellent, brilliant, until it became nauseating. And it would all be true. But the most glowing comment must surely be that on the ST, the graphics are virtually the same as on the Amiga original.

Defender of the Crown on the ST is a lot more difficult and more challenging than before, and, unless you want to watch endless repeats on the TV, essential entertainment this Christmas.

Duncan Evans

Program *Defender of the Crown* **Micro** Atari ST **Price** £24.95 **Supplier** Mirrorsoft, Athene House, 66-73 Shoe Lane, London EC2.

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TITLE **Dark Sceptre**
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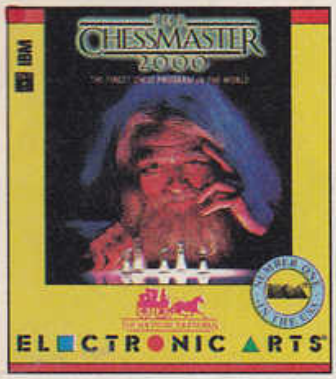


Amstrad CPC

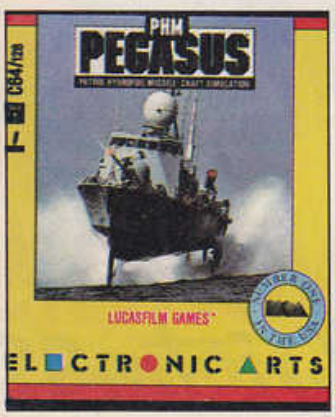
Program *Spore* **Type** Arcade **Price** £1.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Program *Combat Mission* **Type** Arcade **Price** £1.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Program *Agent X2* **Type** Arcade **Price** £1.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Program *Grid Iron* **Type** Simulation **Price** £1.99 **Supplier** MIL, Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

Program *The Elite Collection* contains *Bomb Jack, Commando, Frank Bruno's Boxing, Airwolf, Battleships, PaperBoy, Ghosts 'N' Goblins, Bomb Jack II* **Price** £14.95 (cassette), £19.95 (disc) **Supplier** Elite Systems Ltd, Eastern Avenue, Lichfield, Staffs WS13 6RX.

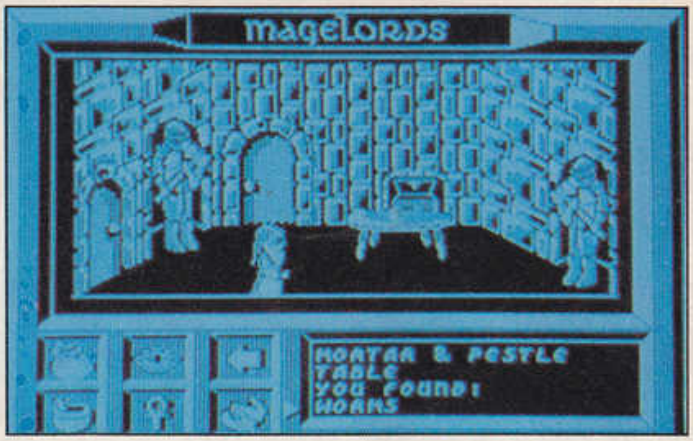


Oh no, it's back to the dungeons. Why can't people set computer games in interesting places. Like a Ferrari dealer showroom or a Bangkok cathouse. Instead we have to put up with scenarios that sound like the deranged ramblings of a terminal Genesis fan in the last stages of Tolkeins' disease.

With *Spellbinder* we're in a place called the Castle of Lorraine, which sounds like a plug for someone's girlfriend.

The basic plot is like all the other basic plots you've ever heard and contains people with silly names, such as 'Magelord' and 'Eldon the Spellbinder'. Essentially you have to explore the castle to find and collect the ingredients for a powerful spell.

There are all the usual castle-type things, like one-way doors, secret passages and, um, teleports. While you're wandering around, picking things up, examining other things and generally having a cool time you tend to bump into nasty creatures, like Deathmonks, Zombies and Forest Hags. A couple of those can spoil your whole day, though you can cast spells to heal yourself.

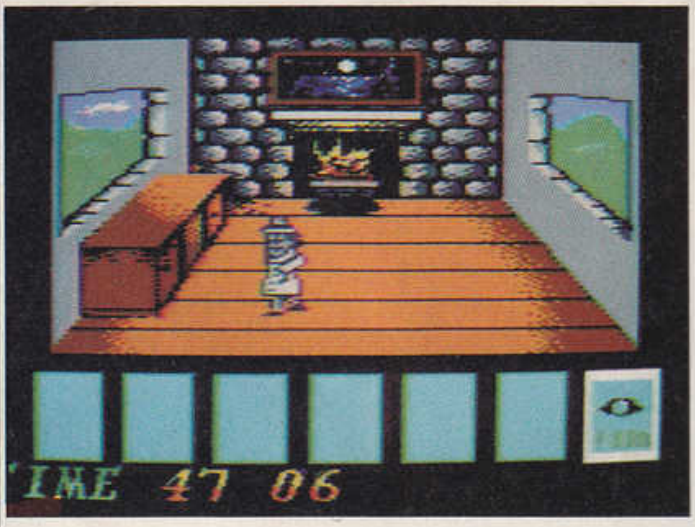


Rising another attack of rheumatism, I started my exploration of the castle. This is a graphic adventure in the Knightlore tradition, and at first sight the graphics are quite pretty. They're monochrome, but come in a range of colours and are detailed, and your character moves smoothly around the screen.

After a while, however, all the locations start to look the same. If you haven't already got well into the game by then you'll probably just give up, as I did. I think I'd rather have a real adventure game and do without graphics, or have a good fast arcade game. Some people will doubtless love *Spellbinder*, but frankly I am on the side of the Deathmonks.

Steve Mansfiel

Program *Spellbinder* Micro BBC B Price £9.95 (cassette), £11.95 (5.25in disc), £14.95 (3.5in disc) Supplier Superior Software Ltd, Regent House, Skinner Lane, Leeds LS7 1AX.



The latest release from Melbourne House puts you in the starring role as cartoon supersleuth *Inspector Gadget*, chief investigator of the Service. Inspector Gadget has been sent by his boss Chief Quigley to investigate a series of mysterious going ons that have been occurring at the International Circus.

Together with his ever faithful companions, Penny and Brains, his pet dog, Gadget enters the circus. The three of them then started their investigations by entering the Big Top, unfortunately, for Gadget, a loose EXIT sign swung down and knocked him flat out.

Having recovered from the accident, Gadget awoke and realised that Penny and Brains have gone missing. What Gadget first thought of as being an accident was no more than a devious plot by the wicked MAD organisation to undermine Gadgets investigations.

Now they have got Penny, Gadget must find her and ensure that MAD don't start a world war. Unfortunately for Gadget, as he was lying unconscious all his special gadgets were stolen. Gadget is unable to get into action until he can find all his essentials. And this is where the 'fun' of the game starts as Gadget visits all the areas of the circus after his gadgets. Without the gadgets, Gadget is unable to arrest the MAD spies. Time is of the essence, the future for Penny rests with Gadget, indeed the future of the world rests wit him.

What a brilliant plot for a game, what wonderful atmospheric music is played as you explore the circus, it's a real shame that the actual gameplay and graphics are a slight let down. As a budget game *Inspector Gadget* would be brilliant at £1.99, but at £8.95 it's not too impressive. The movement on the characters are not very smooth and Gadget himself moves in 'block' directions.

Although not one of their best releases, *Inspector Gadget* will appeal to all Gadget fans, and the music is so good, it should be able to sell the game on its own.

Leslie Bunder

Program *Inspector Gadget* Micro Commodore 64/128 Price £8.95 (cassette), £14.95 (disc) Supplier Melbourne House, 8-10 Port Street, London EC2.

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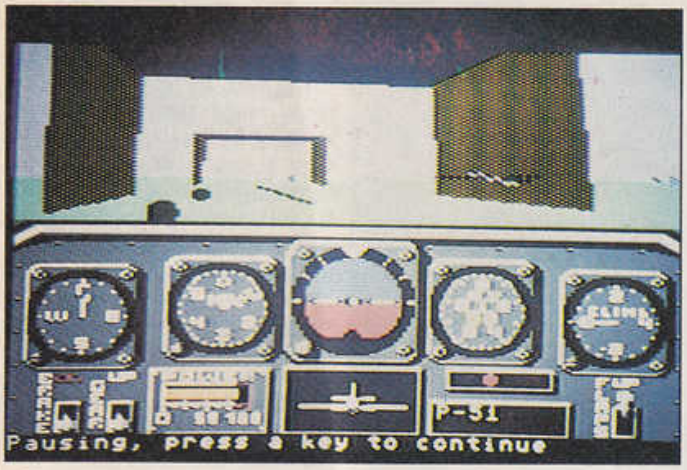


Anyone who watched the fascinating BBC2 television series on test pilots about two months ago will be pleased to hear that there is now a game that can recreate this 'seat-of-the-pants' type of flying; *Chuck Yeager's Advanced Flight Simulator.*

Programmed by Electronic Arts, and released in the UK on a variety of machines – in this case the Commodore 64 – by the European arm of this well respected software house.

As with the rest of EOA's games, this AFS comes with a lengthy and well written manual which is essential reading for anyone attempting to get the most from the game – especially if you are a flight sim enthusiast.

Graphically, AFS is excellent, although as you would expect of the Commodore 64, the animation is not exactly fast, though by no means unplayably slow.

In play the game allows you to sample the delights of 14 different planes, ranging from Sopwith Camels to 'Top Gun' like F-16 Fighting Falcons. To add to the problems of being a test pilot, there are also three experimental planes.

The most obvious comparison to make is with *Flight Simulator II,* the industry standard simulator from Microsoft. Although AFS is not quite as smooth or relaxed, it more than makes up for this with action and 'thrills'.

The philosophy behind the game is typically American, but thankfully Chuck Yeager seems more endearing than most, and even quite amusing.

"Crash is not a word pilots ever use. I don't really know why, but the word is avoided in describing what happens when several tons of metal ploughs itself and its pilot into the ground. Instead, we might say "He augered in." Or, "He bought the farm!"

Overall, AFS is a game that will appeal to everyone who has wondered when simulations will start to bridge the gap between arcade games and simulations.

Daniel McGrath

Program *Chuck Yeager's Advanced Flight Simulator* **Type** Simulation **Price** £9.95 **Machine** Commodore 64 **Supplier** Electronic Arts, 11/49 Station Road, Langley, Berks.

Leviathan could be the greatest game since *Space Invaders,* but anything that uses a dongle gets top marks in the pain in the backside department. Yes, in this Amiga incarnation, it's wrestling time as you evict a defenceless mouse from its home and replace it with the sawn off end of a joystick plug.

Enough of that though. Now to the plot. Refreshingly, English Software hasn't bothered with one. Just fly your ship, *Leviathan,* over (and into with sickening regularity) three types of landscape, each one being presented in a couple of different colours, and destroy every enemy ship that you find. All within the time limit. I liked that; completely unpretentious stuff.

As usual your ship is continually running out of diesel so landing on the arrows near the fuel pods in the Cityscape is recommended rather than the take a spare can approach.

On the control panel at the bottom of the screen there's all the regular guys; score, fuel counter, lives indicator, timer, value of BP shares, and a couple of new ideas. One is a snapshot of the type of enemy coming next while two arrows flash green to point in which direction the enemy is actually lurking.

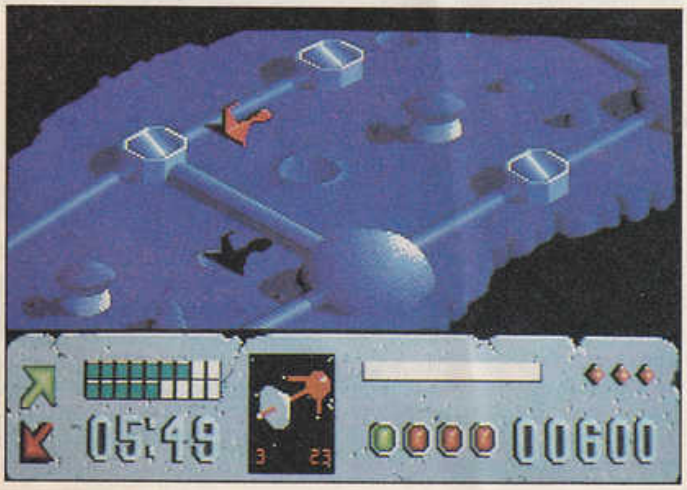
In play *Leviathan* is a Zaxxon-style game, but much better. The screen scrolls diagonally up and down, and does so very smoothly when you're moving at top speed. The graphics for the landscapes are made up of shades of one particular colour at a time, enabling detailed shadowing and similar effects to be realistically portrayed.

It's nice to see a game that actually looks like it's running on an Amiga rather an ST, and the Greekscape in particular is delightfully done.

The music on the title page, by the prolific David Whittaker, is up to the mark without being in the jaw dropping class.

Still, this Amiga version of *Leviathan* is easily the best, and one for the Christmas stocking of those who like mindless action games.

Mark Ullyat



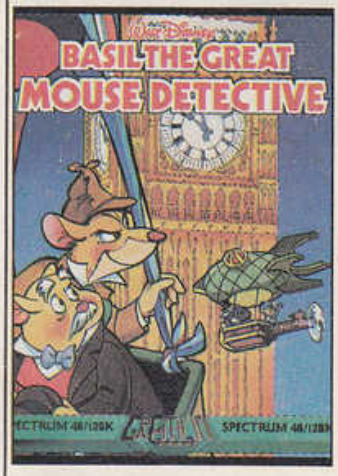
Program *Leviathan* **Micro** Amiga **Price** £24.95 **Supplier** English Software, 1 North Parade, Manchester M3 2NH.

Software guide continued

Atari ST

Program *Talladega* **Type** Simulation **Price** £1.99 **Supplier** MIL, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 1AA.

Program *The ChessMaster* **Type** Simulation **Price** £24.95 **Supplier** Electronic Arts, Langley Business Centre, Langley, Nr Slough, Berks SL3 8YN.



Amiga

Program *Red October* **Type** Combat Simulation **Price** £24.95 **Supplier** Argus Press Software Ltd, Victory House, Leicester Place, London WC2H 7NB.

Program *The ChessMaster 2000* **Type** Simulation **Price** £24.95 **Supplier** Electronic Arts, Langley Business Centre, Langley, Nr Slough, Berks SL3 8YN.

Software guide continued

Commodore 64

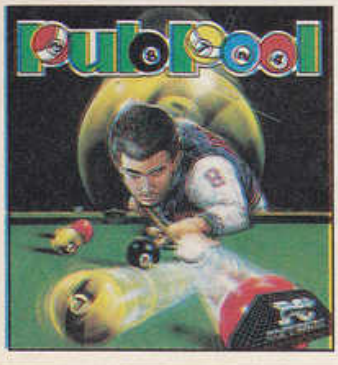
Program *Bosconian* **Type** Arcade **Price** £1.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

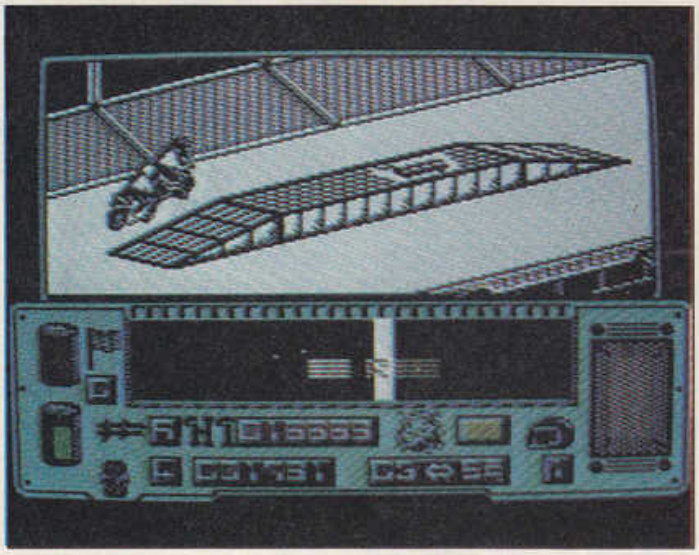
Program *The Elite Collection* contains *Bomb Jack, Commando, Frank Bruno's Boxing, Airwolf, Battleships, PaperBoy, Ghosts 'N' Goblins, Bomb Jack II* **Price** £14.95 (cassette), £19.95 (disc) **Supplier** Elite Systems Ltd, Eastern Avenue, Lichfield, Staffs WS13 6RX.

Program *Tailadega* **Type** Simulation **Price** £1.99 **Supplier** MIL, Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

Program *Alice In Videoland* **Type** Adventure **Price** £2.99 **Supplier** MIL, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

Program *Basil The Great Mouse Detective* **Type** Adventure **Price** £9.99 (cassette), £14.99 (disc) **Supplier** Gremlin Graphics Software Ltd, Units 2/3 Holford Way, Holford Industrial Estate, Birmingham B6 7AX.





While the world waits with an expectant hush for *Super Hang On* to make an appearance on the shelves – Mirrorsoft have sneaked out a motorcycle extravaganza of their own in the form of *Mean Streak* – weighing in on the Spectrum (48K and 128K natch) and Commodore 64 and it's not half bad.

Best played (as with all motocycle games) with a hair dryer taped to the top of the telly for added effect, Mirrorsoft have shunned the "over the shoulder" perspective usually adopted, and plumped for the more technically demanding (though less trouble on the knees) "sitting in the grandstand" view, with a nicely done diagonal scroll, as in *Paperboy*. But whereas the latter lacked the gratuitous violence needed for a truly classic work (relying heavily on the teen-age sub-conscious need to exercise the work ethic and several dodgy under-the-counter payments) *Mean Streak* requires the plucky gamester to blow thousands of Outcast Bikers away in a veritable orgy of destruction.

The senario is set a Mad Max-like far future, with your riding round the Battletrack (a disused, rubble strewn motorway circling a capital city), a Rebel, shunning the hedonistic *New Ways* which seem to amount to staying indoors watching reruns of Neighbours . . . riding your Super Bike, armed with machine guns, rockets and oil.

The aim is to complete the circle round the city (all five levels of it) blowing away everything in your path, watching out for the pin-tacks, picking up extra fuel, avoiding sundry nasties on the track, and generally having a good time. As an extra incentive for hackers, there is a competition attached to the game so that if you complete all the levels, you get a special code – and so get a chance to qualify for a play-off to win a fabby new ultra trendy mountain bike. Coooo.

There are one and two player versions on both the Speccy and the CBM, which you pit yourself against a biological opponent, and the 128K and 64 versions have the appropriate hip-hip body popping music.

Admittedly buying this game won't gain you automatic admittance to your local HA chapter – but for the true feel of the open road in times to come, wear some funny clothes, load it up, turn on the drier and think of the M25. Fabby.

John Cook

Program *Mean Streak* **Micro** Spectrum 48K/128K, CBM 64 **Price** £7.95/£8.95 **Supplier** Mirrorsoft, 66-73 Shoe Lane, London EC4, Tel: 01-377 4645.

The *Travel Game* is a game for adults which does not have an X-certificate; nor does Samantha Fox make an appearance.

In fact, the game is charmingly old-fashioned in its appeal, but very modern in the sophistication of its programming: you match your brains against those of a very cunningly-devised program. The idea is to travel round the world, collecting clues at various locations. The prize which awaits you at the end of the journey is the answer to the Endgame; this answer is currently worth 5,000 which increases by 1 each time another copy of the game is sold.

This sounds easy but RuleFormat, the producers, expect that it will take several months before the Endgame is cracked. The problems begin with the fact that you start off with only £500 and you need money to pay for travel by boat, train or plane as well as to buy the souvenirs which lead to your next destination and your next clue. You must take decisions about how to plan your route to maximise speed and minimise expense; the best strategy is not always obvious.

As you progress the game becomes more difficult and unexpected things happen; your expertise increases as you advance. You must accumulate extra money by answering a set of brain-teasing questions most of which are based on numbers and letters rather than general knowledge. Perhaps the best way of capturing the game's flavour is to say that it has already received the endorsement of Magnus Magnusson.

There are no graphics in the program in order to ensure that the game will run on any PC. The screen is functional and looks more like a business application than a conventional game. A box in the top-left reminds you of your current location; a box top-right records the passage of time. Most of the screen is taken up with the box where information, questions and help text appear. Your instructions are typed in at the bottom of the screen.

The program is written in C – in other words, it is a classy and sophisticated program with no apparent bugs. If, like me, you enjoy working out puzzles and trying to unravel secrets, then I would recommend the *Travel Game*. How far have I got? Well, I have just spent my second expensive night in a London hotel and, when I resume playing this evening, I will be staring at a large overdraft, desperate to scrape together enough money to continue my journey.

Robert Hollier

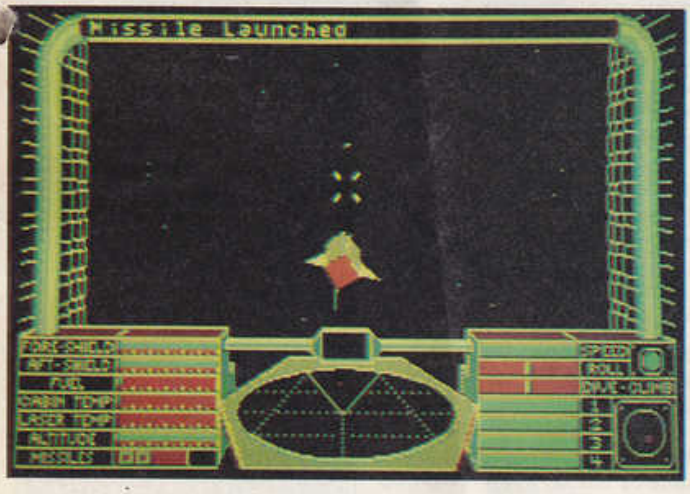
Program *Travel Game* **Micro** Adventure **Price** £24.95 + 95p p&p **Machine** Any IBM PC compatible **Supplier** The Travel Game, Freepost, Liverpool L1 8AB, (051) 708 8202.

The game that launched a thousand space pilots is now available on the IBM PC and compatibles. Along with *Starglider*, *Elite* must be the most eagerly awaited conversion, and those who glimpsed it at the PCW show will know that this version has something special – a solid 3D option!

For the few who have never heard of *Elite*, it is quite simply the best 3-dimensional space combat game going. You pilot a Cobra Mk. III, a ship well-suited to both combat and trading. Trading is an integral part of the game as you need to increase your credit balance in order to afford all those cute little accessories, such as docking computer, military lasers, fuel scoops and so forth. However, piracy and bounty hunting can also prove profitable. The aim is to increase your rating from 'Harmless' to 'Elite'. However you should be offered your first mission before reaching that coveted status . . .

When you load the game (the disk is not protected will copy straight to hard disk), you may select either Shaded or Line Elite. Both utilise low res. and four colours, and these are hatched to produce shading variations on the control panel and ships. Firebird recommend an 80286 micro at 6Mhz or higher to appreciate the solid animation, but the PC1512 display is adequately smooth.

Before play starts you are prompted for a word chosen randomly from the enclosed novella.



This consistently refused to work for me, and I eventually tried the Flight Training Manual instead. Instant success! Firebird will be changing the entry screen to specify the current manual.

The title screen displays your sleek Cobra Mk. III, rotating in time to the Blue Danube Waltz. The shaded Cobra looks very impressive, although you might catch the odd screen-swap flicker on a PC1512, it's still remarkably smooth.

Unable to resist an immediate test flight (and having flown Cobras before on a Beeb!), I promptly hit F1 and launched into the cold void above planet Lave. The PC key layout is easy to adjust to, and I was soon skimming the space station, wondering if it was worth annoying the local police fleet? Commonsense said No, but I opened up on the station anyway. Instantly a stream of police Vipers erupted from the dock opening and commenced to return fire. I counted 10 of them before my career as a Cobra pilot was abruptly curtailed, and the screen displayed my wreckage spinning away towards Lave.

Because there are any number of IBM clones operating at varying speeds, not to mention the '286 and '386 families, there is an option to increase/decrease the rate of frame display, on a scale of 1–10 (highest), with '8' being the default. Unfortunately this also seems to affect the frequency with which the keyboard is scanned, so while '10' offers the smoothest animation, it loses you accurate steering and your Cobra tends to veer at the lightest touch. On the Amstrad I found the default of '8' was fine for combat, but docking required setting of '1' (at least until I can afford a docking computer!).

There is little doubt that IBM *Elite* is a masterly conversion. The shaded space stations are most impressive to behold as they rotate majestically against a backdrop of drifting stars and distant, blazing sun. Also impressive is the circling attack manoeuvre taken by police Vipers as they dart from dock, fly round the space station in a chain, then pursue you and set up a circling attack formation around you. Very pretty though somewhat lethal to watch. The most pleasing image was that of two incoming missiles on the rear view screen, rapidly gaining ground, but lost just before impact as my Cobra completed count-down and leapt into the colourful display of Hyperspace.

Elite's appeal was always long-term: with over 2000 planets to trade with and the elusive rank of *Elite* to be gained, not to mention the occasional mission on behalf of the Space Navy, there is always something to do. It's destined to be the most popular PC game this Christmas, if not this year.

Pete Gintz

Program *Elite* **Type** Adventure **Price** £24.95 **Supplier** Firebird, 67–76 New Oxford Street, London WC1A 1PS.

Software guide continued

BBC/Electron

Program *Warehouse* **Type** Arcade **Price** £2.99 **Supplier** MIL, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

Spectrum

Program *Slaine* **Type** Adventure **Price** £8.99 **Supplier** Martech, Martech House, Bay Terrace, Pevensey Bay, East Sussex BN24 6EE.

Program *Grid Iron* **Type** Simulation **Price** £1.99 **Supplier** MIL, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

Program *Agent X II* **Type** Arcade **Price** £1.99 **Supplier** Mastertronic, 8–10 Paul Street, London EC2.

Program *Alien 8* **Type** Adventure **Price** £1.99 **Supplier** Mastertronic, 8–10 Paul Street, London EC2.

Program *The Elite Collection* contains *Bomb Jack, Commando, Frank Bruno's Boxing, Airwolf, Battleships, PaperBoy, Ghosts 'N' Goblins, Bomb Jack II* **Price** £14.95 (cassette), £19.95 (disc) **Supplier** Elite Systems Ltd, Eastern Avenue, Lichfield, Staffs WS13 6RX.

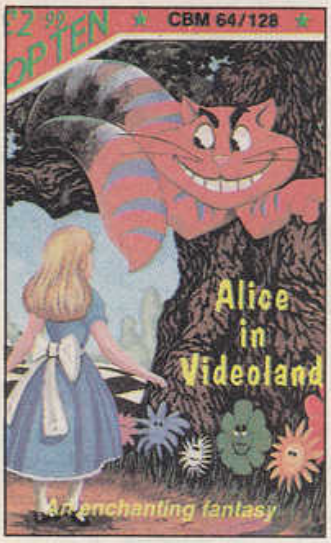
Software guide continued

IBM PC

Program *The ChessMaster 2000* **Type** Simulation **Price** £24.95 **Supplier** Electronic Arts, Langley Business Centre, 11-49 Station Road, Langley, Nr Slough, Berks SL3 8YN.

Program *Vegas Casino* **Type** Simulation **Price** £9.95 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Program *Pub Pool* **Type** Simulation **Price** £9.95 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.



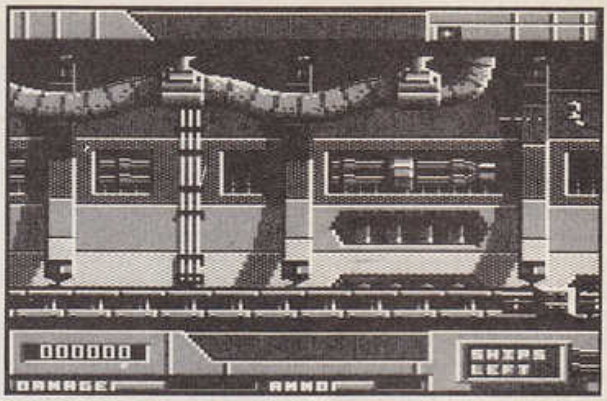
Remember the age old game of *Defender*, where the object of the game was to fly across a planet and rescue humans from aliens who were going to turn them into zombies?

The folks at The Edge seem to remember the game particularly well. Unlike a lot of copies of that all time classic, The Edge have taken *Defender* as a basic plot and expanded on it. RISK is primarily a shoot 'em up but it also contains elements of strategy in the actual gameplay as you can equip your spaceship with various objects as you set about customising the ship.

You can add thrusters, boosters, retros infact a whole host of objects that will help you seek out and destroy those offending aliens.

There are several different objects involved in the game. The first is to explore the planet Christon 3 and destroy the aliens who have occupied the planet.

Further objects involve you having to rescue as many scientists as possible from the planet and eventually find the underground complex to get hold of more fighting power and the blueprints of a top secret weapon system that was being researched on Christon 3. Graphics are large and detailed.



The mountainess terrain, looks very realistic but it's really no surprise as apparently a lot of work has gone into the writing of the game by brothers Chris and Tony West.

Controlling your spaceship is done a la *Defender* in that you are positioned horizontally and there is a box on the top of the screen showing you where the aliens are coming from and how near they are to you.

The music on RISK is very good and is very reminiscent of a theme tune to some top sci-fi adventure film.

It's a real shame that during the actual playing of the game there is no music playing.

The only sound effects are of you shooting at the aliens. It would have been nice if the authors could have let the music from the introduction run into the game.

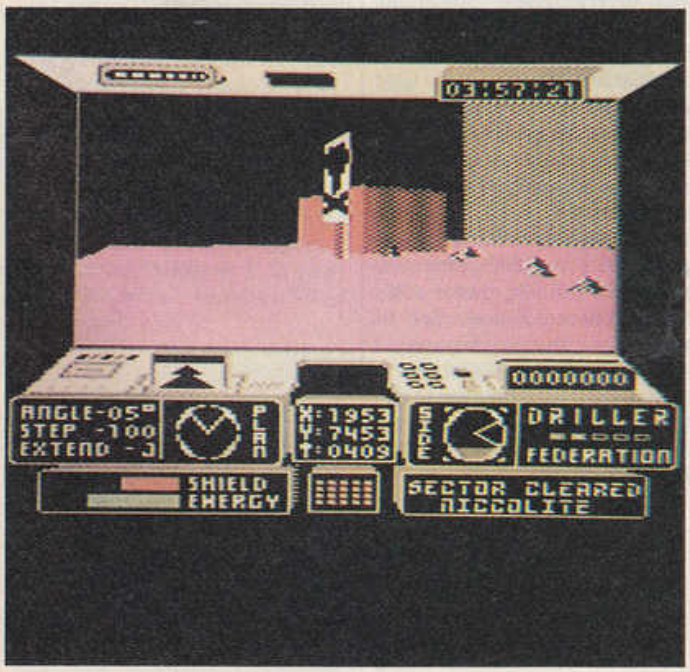
What could have been considered as a 'rip off' of an old game has turned out to be a game with added originality.

It's pleasing to see that old ideas can be taken to and brought back in a modern way. Congratulations to The Edge. How about bringing out a new version of *Asteroids* or *Space Invaders*, Edge?

Leslie Bunder

Program *Risk* **Micro** Commodore 64/128 **Price** £8.95 (cassette), £12.95 (disc) **Supplier** The Edge, 36-58 Southampton Street, London WC2E 7HE, 01-831 1801.

Incentive has been talking about its 'Freescape' technique for a while, but at last here's the finished Spectrum version of *Driller*, with CBM64 and Amstrad to follow. Was it worth the wait? Yes, especially if you've enjoyed games like *Mercenary* and *Sentinel*. *Driller* gives you a solid 3-D landscape, with objects that you can walk round, walls you can climb on (and fall off!) and the ability to look in any direction. Look up as you walk through a passageway and you'll see the roof going by, and if you raise your viewpoint when you come to a wall you can look over into the next playing area.



Control requires most of the keys on the keyboard, though a joystick makes life easier; Kempston, Sinclair and Cursor are supported. Even with a stick you'll still need another 16 keys! These enable you to look up and down, tilt left and right, do a U-turn, rise and fall vertically and teleport drilling rigs.

Drilling rigs? Well there is a game in here as well! It takes place on Mitral, where a build-up of gas beneath the surface needs an experienced driller just like you to explore Mitral's 18 sectors and place the drilling rigs in the right spots to relieve the pressure. You also only have four hours (real-time) before a meteor hits Mitral, and if the gas problem hasn't been sorted out by then the resulting explosion could mean the end of civilisation as we know it. With a potential playing time of four hours, it's as well there's a SAVE feature.

There are 16 controls around the main viewing screen, so I won't go into all those, but some of the more sensible include the ability to alter your rate of movement and the angle through which you turn round when you look to left or right. *Driller* does take a while to get started, as you try to get used to everything that's going on, but it repays the effort.

Driller has lots of amusing touches. Not a fast-action shoot 'em-up, and I've a feeling the Freescape technique will produce even better games than this, but it's a good (if pricey) start.

Mike Gerrard

Program *Driller* **Type** Adventure **Micro** Spectrum **Price** £14.95 (tape), £17.95 (disc) **Supplier** 2 Minerva House, Calleva Park, Aldermaston, Berkshire RG7 4QW.

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See C Signor

The first C compiler for the Acorn Archimedes has appeared. David King concludes that it is not all that it could have been.

Acorn currently has two versions of the C language in their software catalogues, and one is 400 times faster than the other! I'm referring to *Acornsoft C* for the BBC Master Series, and also *Acorn C* (notice the lack of 'soft') for the new 'BBC Micro', none other than the Archimedes.

These two products serve to underline just how many worlds apart Acorn's old 8-bit BBC work-horse and the new 32 bit super-micro are. It is not just speed of course; with the 8-bit C language you are restricted to fairly small programs because of memory limitations, and run-time code is not true machine code, but an intermediate interpreted type, which is also non-portable. The Archimedes on the other hand has pretensions to being a full-blown Unix work-station, and so C forms an extremely important part of the new machine's initial repertoire of languages.

Programming C

If you want to program in C on your Archie, you'll need a 1 megabyte machine – either an A310, or an expanded A305. The version of C we looked at was a pre-production release, and this was openly admitted and warned about in the documentation. Acorn has had ARM (Acorn RISC Machine) C compilers running for well over a year now, and according to details supplied with the version we had, our version was a recent release originally written in C itself. We ran Norcroft release 1.40. Acorn have opted for the ANSI (American National Standard for Information systems) standard, which should mean good portability across the already crowded spectrum of rival C compilers on other machines.

Features

The package has all the basic features you would expect from a professional C compiler, a linker is included (an essential part of a C system but often supplied as an 'extra'!) – though ours wasn't documented! Nevertheless, there were no surprises here, and users familiar with other commonly available systems shouldn't have any problems getting started.

The Archimedes doesn't currently have any floating point co-processor hardware, however a floating point emulator is supplied, and you're directed to have this present when using the compiler.

No editor is supplied, though Acorn programmers swear by their in-house developed Twin editor – a multi-tasking version of Edit as supplied on the Master 128. We didn't have this but got by using View under the Archimedes 6502 emulator! There's no debugger either, which could put some professional applications houses off.

The pre-production compiler on sale at present does have some annoying bugs, but these are not too serious and they are documented. Some limitations are also evident, like the lack of linker documentation, and the lack of flexibility in some features – the stack is fixed at 16K for example – but addendums supplied promise to shore up these weaknesses in later releases.

```
>TV.SIEVE

#include <stdio.h>

#define true 1
#define false 0
#define size 8190

char flags[size+1];

main()
{
    int i,prime,k,count,iter;
    printf("10 iterations\n");
    for (iter = 1; iter <= 10; iter++)
    {   count = 0;
        for (i = 0; i <= size; i++) flags[i] = true;
        for (i = 0; i <= size; i++)
        {   if (flags[i])
            {   prime = i + i + 3;
                for (k = i+prime; k <= size; k += prime)
                    flags[k] = false;
                count++;
            }
        }
    }
    printf("\n%d primes.\n", count);
}
}_
```

A shot of a typical C program in action

Acorn C has a standard library, once again with nothing basic missing. Extensions to the library include graphics calls – basically links to the extended graphics in the Archimedes' Arthur operating system, plus the ability to use what was referred to as the Arthur WIMP system.

We didn't have time to test this feature but assume this is a reference to the Archimedes Desktop Windows module.

A Sieve of Eratosthenes program is supplied, and we used this to find the first 1899 prime numbers.

Speed

Execution speed of the resulting ARM code was impressive – just 0.58 of second. This compares with over three minutes for the poor old Master 128 running Acornsoft C. For some reason we were unable to get Beebug's C compiler for the BBC to accept the example program. Brasscourt C for the BBC Model B, which compiles true machine code, was much more impressive at 38 seconds, but still over 60 times slower than the Archie. However rather more relevant comparisons disappoint. Running the same Sieve program on both Motorola 68020 based NCR and Intel 80386 based Altos Unix multi-user systems, the same program ran three and five times faster respectively.

This has to be down to the compiler, and perhaps the early 0.20 release of Arthur in our Archimedes. The Archie's ARM is capable of matching, or even exceeding, the performance of either a 68020 or an 80386, so we can only deduce that those machines have better optimised compilers.

However this probably shouldn't be all that surprising. *Acorn C* is currently the only commercially available C compiler for the Archimedes and will probably benefit greatly from further optimisation in later releases. Acorn will send later releases to current users as long as they receive a user-registration coupon supplied with the original package.

Conclusion

Perhaps this initial release of *Acorn's C* package is a touch disappointing, but it's still good enough to get going with, and certainly very important for Acorn's crusade to get the Archie recognised and installed as a powerful business/utility workstation. □

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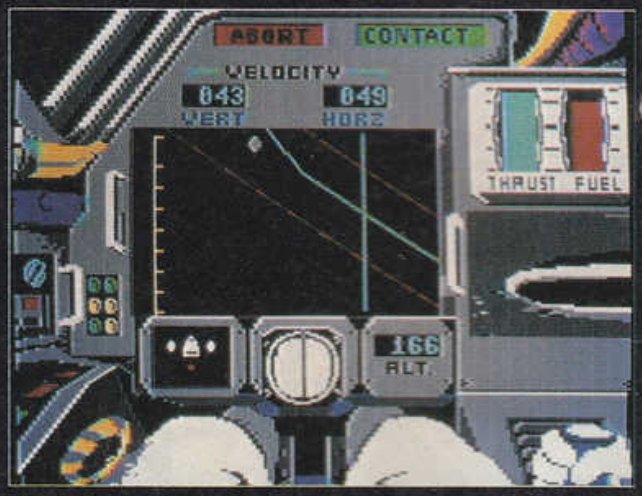
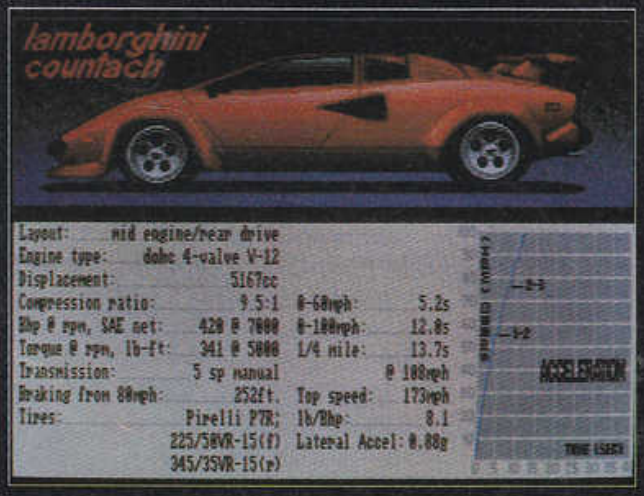


ARE THEY CRATERS OR BOULDERS BELOW? YOU NEED TO BE COOL TO TAKE MANUAL CONTROL OF THE APOLLO LANDER DURING DESCENT.



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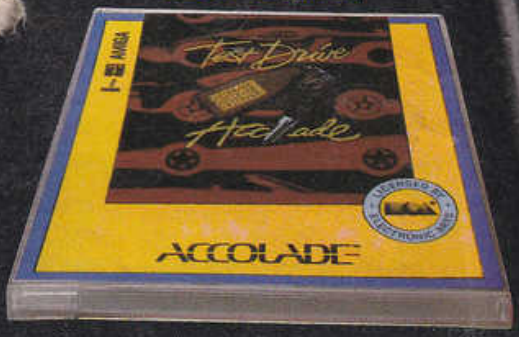

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ELECTRONIC ARTS™

The dotted line syndrome

If you are thinking of selling computer games, or already do so, David Lester has some handy advice on signing contracts, how to avoid financial disappointment and how to tackle legal wrangles.

Most programmers are on something of a high when they finally agree on the terms by which MegaBucks Software Ltd. will publish their latest hit. Their eyes fill up with pound signs and unfortunately realism takes something of a back seat.

Signing a contract

When you negotiate a deal with a software house for it to market your game, they will usually require you to sign a contract. I was staggered recently when the Hewson programming experts left to join Firebird – and it was revealed that there had in fact been no written contract. I would hazard a guess that in the future all software houses will require programmers to sign a contract. They do say one learns by one's mistakes . . .

But this is not something to be afraid of – but rather, something you should push for as programmers, since the contract is there to protect both parties, and might end up your only means to get what is owed to you. Contracts have been used widely in the industry ever since it began, and they are usually fairly similar. But, as history has shown, you should read anything through very carefully, and be aware of what you are signing before you pen your scrawl on it.

Unfair Terms Act

The English legal system is such that the contract may not be the be-all and end-all of any agreement. If you sign a contract which later turns sour, you may have some comeback under the Unfair Terms Act – which over-rules any written contract under certain conditions, and may help you. Being under 18 might also help, but don't rely on it, if you can sign something you are happy with, do so.

Verbal

Another interesting, and little known, point about the law of contract is that a contract need not be in writing, it can be spoken. So if a firm offers you £10,000 for the UK rights to your latest *Jupiter Ace* program over the phone, they can technically be held to it: the problem, of course, is in proving that they made that offer. For any contract to be valid, there must be an Offer ("I'll give you £1500 for that Spectrum game"), Acceptance ("I accept") – and some sort of consideration (in our example, the £1500 from the software house, and the UK rights to the Spectrum game from the programmer) although it doesn't matter how much – a penny will do.

There is a lot more detail than that, of course, but generally speaking if you have those three elements, then a contract exists which is legally binding. The law is currently changing, or about to, concerning the ability of minors (anyone less that 18, for your information, John, not someone who works underground!) to make contracts, if this is relevant to you, it might be worth your while checking with a solicitor about this.

Signing a contract

So, what are the main points to watch out for in publishing contracts with software houses? The basis of the contract will explain who both sides are (ie, you and "your agents" and the software house, and their agents; for practical purposes, this merely means you and them!). It will then explain what the contract does: usually licensing the rights to manufacture, market and distribute your software title, or the copyright to it; it will then have a section about what "consideration" you are being given for licensing these rights, ie, the royalty arrangement you have negotiated, or the lump-sum payment, or whatever.

"The English legal system is such that the contract may not be the be-all and end-all of any agreement . . ."

Copyright

Most programmers I have come across like to maintain ownership of the copyright to a title, and simply license the rights to it. This then gives you control over sub-licences, and the rights to any income earned from subsidiary products (such as T-shirts sold with the game name on it, etc). That is, assuming that you do not assign these rights to a publisher, too. You might not think that this is desperately important, but just suppose that your program really hits the big time: there have been instances where board game manufacturers have converted a software game to a board game; and where arcade game firms such as Taito or Sega have bought the rights to a home computer game for conversion into an arcade game (for example, *Star Glider*). While this is pretty rare, you would be none too happy if you saw nothing of the profits of these licences. My advice is therefore to only assign the precise rights your publisher needs.

Publisher's rights

The other side to this coin is that the publisher will usually make you sign a clause saving that you guarantee that you own all rights to the product, and will protect the publisher from any infringement of them. This just means that if anyone starts producing copies of your title which are a bit too close for comfort, the publisher can make you sue, they cannot sue themselves, since they are not the owners of the copyright. This could get expensive, so the first time I saw this, I felt decidedly worried about signing it. But if you are with a reputable firm then they will probably help you out financially if it comes to this (which is very unlikely anyway). And if you are with a smaller firm, then they will probably be less keen to sue anyway. You can be fairly happy about this simply because the publisher

will be even harder hit than you by any infringement, so it is in its interests to help you sue.

Royalties

Then comes the royalty or payment clause. It is impossible to say what you can reasonably hope to get. The best thing to do is just to show the game to several publishers, and take the best offer you can get (never just accept the first offer you are made, just in case . . ; there are less programmers ripped-off now than there were "in the early days", but it still happens from time to time).

For budget software titles, an outright payment of about £1,000 to £1,500 is fair, unless you are dealing with one of the big three firms, who should double that figure. The best thing by far, though, is to obtain an advance on royalities, so that if sales really do take off, you get a piece of the action. I have only come across two firms which refused to offer royalties, so you should be able to negotiate such a deal. On full-price, expect royalties of about 15 to 20% (of the net price, ie, what the software house actually receives from the distributors for the game, and some sort of advance but the market is just so volatile (sounds like the City, doesn't it!) that predicting the size of any advance would be foolhardy.

This is the clause to check, recheck, and check again. Simply make sure it says what you agreed with the publisher, and nothing else. Note how often the royalties are paid, too, some firms only pay them once a quarter (every three months) which means that you won't see anything for a long time after you have finished the game. If you possibly can, negotiate this down to monthly payments; while you should still get the same sum, if your firm goes bust after two months, at least you will have had two months' payments rather than none! (not to mention any interest earned on the cash).

Conversions

You should make sure that the contract is clear about arrangements for conversions of your game to other formats (assuming that you are providing it on only one or two yourself). This can be an extra source of income which might make you more money even than the original, so don't sign away your rights to money here. One publisher I have come across claims that its contracts, don't actually entitle the original programmer to any of the proceeds from conversions – if so, don't sign it.

If you think about how many formats some games are available on (with 8 and 16 bit, there must be at least 9 relatively common ones) that is a lot of sales. As copyright holder, you should be entitled to at least 25% of what the converter gets for the new versions. Talk this over with your software house, they should be quite happy with this arrangement, and you can then include it in the contract. You should also take into account whether or not you keep the right to license out conversions to other software houses – for example if the publisher of the original version doesn't publish on the Spectrum or Commodore, would you be allowed, under the terms of the contract, to license a second firm to publish the Spectrum or Commodore version, respectively, of the game. If not, you stand to lose out.

Overseas sale

Similarly, make sure you are happy with any arrangements for overseas sales. This is clearly crucial if your game is likely to be a hit somewhere like the United States, but if it is a small-time UK-only game, it probably won't matter so much. But for any arcade game, and most good strategy, adventure, or simulation games, there could well be large markets overseas or your program. There is usually an extra clause dealing with this, which usually drones on about sub-licences. I would reserve the right to veto any sub-licence with which I was not happy (unlikely, but you never know) and negotiate a fairly high proportion of sales revenue for these sales. After all, there is not much work involved at that stage – the artwork and packaging has all been done, and the costs of actually producing the tape or disc are extremely low. It's just a case of using your own judgement about what is either fair, or the fairest deal you can get (not always the same, unfortunately).

"The main point is to avoid at all costs signing any sort of exclusive agreement . . ."

Sub-licensing

This sub-licensing is more important now than it used to be, since so many titles are released at first on their own, then later as either budget titles, or on compilations, or both. Of course, when you first sign up a contract, you have no idea whether this will happen or not, and if so how much revenue will be generated by it. So I would suggest having a clause which lets you re-negotiate the terms of any such deals yourself, as and when they arise. That way, you might have a better idea of the likely success of the budget title or compilation, and be able to get a better deal for yourself. The software houses might not be too keen on this, though, since it is a very lucrative sideline for them, but stick up for your rights; it is, after all, your talent (and that of their other programmers) which earns their living for them.

There are two other clauses to note, one you should try to include, the other you should try even harder to exclude! Firstly, you should incorporate a term of the contract about what happens if they go bust, or are taken over. If they get taken over by someone who doesn't like your game, sales could literally stop dead, and with them, your income! You need to specify the different types of possibility here in some depth as people have been caught out before by excluding one or other of the categories. Allow for "ceasing to trade, going into liquidation or receivership, bankruptcy or being acquired by a third party"; should any of these events happen, you then automatically own any rights assigned under the contract once again, and as such are free to go and resell them to a new firm, if you can find one interested.

The main point is to avoid at all costs signing any sort of exclusive agreement, whereby you agree to (and are legally bound to) offer the publisher of your current title first refusal on all subsequent programs for the life of the contract. Under an exclusive agreement, the software house can get away with paying you very little for your new titles, since you cannot legally offer them anywhere else. One to avoid.

Protect your interests

There are no easy answers to protecting your interests, and none which will guarantee anything. If in doubt, go elsewhere, or at least get as much as possible in up-front money. One way out is to use an agent, who then fights for you and arranges contracts on your behalf . . . for a small fee; two such firms I know of are Marjacq and Black Knight Computers Ltd.; the latter usually take a commission of about 10%, and report an increasing level of interest from programmers who have worked for major firms, most of whom have a story to tell concerning their own brand of shark.

A tight contract will only help you if there is someone you can sue, and so long as that someone, or firm, has enough readies to pay your debt and costs. Otherwise, even the law won't be able to help. So why bother? Because without a decent contract which protects your interests, you are definitely sunk. It's a great world, isn't it . . ! □

Eastern Delights

Mark Jenkins with computer news from the heart of it all . . .

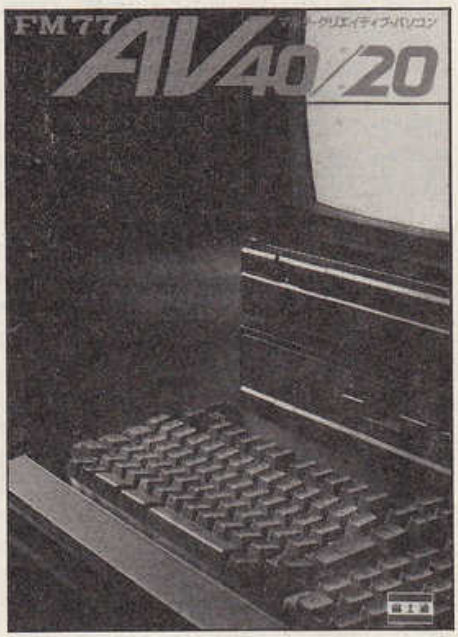
Thanks to the Yamaha Corporation Of Europe, which has recently been set-up to co-ordinate Yamaha's activities in the UK, France, Germany, Spain, Italy and elsewhere, we recently got a chance to fly over to Japan to check out next year's new products. As far as Yamaha are concerned, the main line in computer music is the *CX5* series, which as you'll probably know is in a state of flux in the UK. However, thanks to Yamaha's "X-Day 6", a trip to their retail store in the Shibuya area of Tokyo, and various other exhibitions, we have managed to gather quite a lot of information about the state of computing in general, and music computing in particular. In the land that does all that sort of thing best . . .

First, the *CX5* series. Users who have been frustrated by the apparent deletion of the line due to the failure of the MSX standard in the UK will be pleased (or more frustrated) to know that it is going strong in Japan, Spain and Germany still take large numbers of MSX computers – and the home market is healthy, so much so that two expanded models – the CX5HII/128 and thge CX11 – are currently available. These are, of course in addition to all the other MSX machines from Sony, Canon, Toshiba, Mitsubishi and many others, which can be used as music computers now that Yamaha have made their SFG-05 FM synthesizer cartridge available separately.

A music computer is only as good as its software, and currently Yamaha Japan offers a long line of options. The full list runs as follows.

- *Computer Music* Workshop; Keyboard Chord Master, Keyboard Chord Progressions, Guitar Chord Master
- *FM* Auto Arranger; FM Auto Arranger Utilities
- *Graphic artist;* Graphic Artist Utilities
- *FM Voice Data;* Vols 1, 2, 3
- *DX100/DX27 Voice Data;* Vols. 1, 2
- *DX 21 Voice Data;* Vols. 1, 2, 3
- *RX15 Rhythm Data;* Rock Vol. 1, Vol. 2, Swing/Shuffle
- *RX11 Rhythm Data;* Rock Vol. 1, Vol. 2, Swing/Shuffle
- *RX21 Rhythm Data,* Rock Vol. 1, Vol. 2
- *Music Pad,* Music Pad Accessories

The last of these, the Music Pad, is a chunk of hardware similar to a flatbed plotter which allows you to enter music, arrange pieces and create new sounds using a plotter pen to control the computer. Yamaha also make a word processor available for their MSX machines, and use the CX11 to run automatic testing routines at their DX synthesizer factory in Toyooka.



The Japanese FM77AV40 and Fujitsu monitor

The most popular MSX line in Japan seems to be the Sony Hit Bit, which can be built up into a complete business system. If you don't want to use a keyboard, this can be run from a tiny numeric control pad with just 0–9, cursor, and function keys, and you can clip on a 300/1200 bps MODEM to communicate with music networks such as PAN, IMC and ES1 Street. Similarly, Panasonic's 32k MSX computer has an optional clip-on "MSX-Audio" cartridge called FS-CA1 which gives it polyphonic synth voices for use with packages such as the standard *"MSX-Music"*.

If you really want to integrate your music, hi-fi, computing and TV interests, the Fujitsu FM77 AV/AV20/AV40 is the one for you. It's described as an Audio-Visual Computer and comes with a powerful polyphonic sound-chip, two disc-drives, TV, keyboard and hi-fi sound outputs. A MIDI interface, the FM77-40 is optional, as are various boards to add SCSI (hard disc) interfacing, e-mail, and what looks to be a voice-activated control system, or perhaps just a sound sampler.

The FM77 is shown being used for computer-aided design, MIDI control of Yamaha, Korg and Roland synths and effects (using a package called *FM Music World* created by Fujitsu and Music Plan) running an FM Music Editor, creating abstract graphics, doing word processing and accounting tasks, and generally being a bit of a jack-of-all-trades.

Of course, it's hard to give an idea of the cost of the machine since so many options are available. Prices in Tokyo are high now due to the strong Yen, but to give you some idea, the Apple Mac and SE are about the same price in Tokyo as in the UK, so you won't in fact make any enormous savings on electronics by shopping in Japan nowadays.

However, if you're after equipment which isn't available at all in the UK, Japan is still the place to be. The country's leading computer graphics and music magazine, Epsilon, covers MIDI basics, digital mixers, photographic equipment, professional video equipment, computers from manufacturers such as NEC, Sharp and Panasonic, computer graphic tips with BASIC listings, drum machines, scanners, CAD packages, films, books records, and shows.

Epsilon is largely in Japanese, but it is good to look at and contains tempting pictures of lots of items not yet available in the West. The publishers would no doubt be pleased to hear from you if you'd like to subscribe. Write to them in (straightforward) English c/o Studio Somewhere, 1-29-1 Gohongi, Meguro-ku, Tokyo 153, Japan, Tel: Japan 03 793 0655 (9 hours ahead).

Incidentally, non-Atari owners will be pleased to hear that the ST is very little in evidence in Japan, and that Yamaha seems to have no intention of flooding the world with ST-based software. However, one still suspects that the Japanese professional musicians are stealthily using Steinberg's Pro-24 and other MIDI music packages familiar in the West rather than more obscure packages for NEC or other micros. More Far Eastern stuff next week! □

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KENN GARROCH

A bit dense

G A Sansom, of Orpington, Kent, writes:

Q I have read in your column a couple of times about discs and the different densities and formats. However, most of what you say seems to go right over my head. Could you explain in very simple terms the various aspects of discs – with pictures if possible?

A Starting from basics, a disc is a round piece of plastic coated on each side with a layer of magnetic material (Fig. 1). This material is very similar to that used on magnetic tapes and if it is magnetised in one direction, stays that way until it is changed to another direction. At its simplest level, the direction in which the material is magnetised can be taken as a one or a zero and can be read back from the disc by a coil of wire which senses the direction. This makes them easily written to and read as well as giving a pretty reliable system.

To store as much information as possible on the disc, its area is split up into tracks which are then split into sectors (Fig. 2). Each sector holds a series of ons and offs according to the information stored. This sectioning of the disc is known as its format and is purely magnetic ie, the physical aspect of the disc is not changed by it – allowing the same disc to be used under different formats.

A common format is to split one side of the disc into 40 tracks, each having 10 sectors and each sector holding 256 bytes of information. The whole disc can therefore hold up to 102400 or 100k bytes of data. To find the first track, the index hole is usually used. This is a physical hole in the disc whose position can be detected by means of a light beam shining through it. Sector zero can then be found by allowing a certain amount of time to elapse before reading or writing – since the speed at which the disc is spinning is known.

To read or write the tracks, an arm holding the read/write head is positioned over the disc and can be moved in and out in precise steps (Fig. 1) one for each track. To find track zero – usually the outermost – the arm is pulled back as far as it can go until it hits a stopper. This position defines track zero, and all other track positions are based on offsets from this.

Before a blank disc can be used, it must be formatted and this operation is performed by taking the two positions described above ie, track, zero and sector zero, and then writing information to each track that splits it up into the correct sectors. Once this is done, a couple of tracks are set aside to hold the directory information ie, what files start where and how long they are. This directory info varies quite a lot from system to system and is usually the reason why discs that may be incompatible at first sight, can often be read by a system if the format is known.

There are a couple of ways of getting more information on a disc, the most obvious of which is to use both sides in this situation, there is a read/write head positioned on each side of the disc giving twice the number of tracks. The other way is to increase the number of tracks, usually doubling them ie, from 40 to 80. An 80 track (or double density) double sided disc with the sector format described before would hold 409600 or 400k bytes (1k is 1024 or 2^{10}). It is also possible to have quadruple density but this is quite rare since it puts great demands on the quality of the magnetic material and the drive mechanism. To get 80 tracks the read/write arm must move exactly half as far for each track as before – obviously things are getting a little delicate when it is moving half as far again.

Floppy discs come in four main sizes, 3″, 3.5″, 5.25″ and 8″ with the 3.5″ and the 5.25″ being by far the most common (Fig. 3). The formatting of these is pretty much as before and the number of tracks, sectors and bytes per sector varies from system to system. You'll have noticed that 5.25″ and 8″ discs have notches in their cases. This is for the write protect and if the notch is there, the drive is able to write to it. If, however, the notch is covered with a write protect tab (a piece of sticky foil), the hardware in the disc drive stops any information being written protecting the disc from harm.

When discs are manufactured, they are coated on both sides and then tested to see how well they hold the information. If both sides work well then the disc is sold as double sided double density. If one side has faults then it may be sold as single sided, and if both sides have minor faults then it will be single density. Since the disc is always coated on both sides, it can be used in a double sided double density system, but is not guaranteed to retain its data. I have a number of discs that I have used without any problems in this way – both 5.25″ and 3.5″, however, it is not recommended. You should always buy the correct density and sides specified by the computer system manual, since most discs are guaranteed for life (I'm not sure whose but then I'm not Methuselah – yet) you will have no trouble.

One final thing is that Commodore disc drives don't use the index hole and so can be turned over allowing both sides to be used in a single sided system. You do have to buy special discs, or cut an extra write protect notch in the other side of the disc to make them work however.

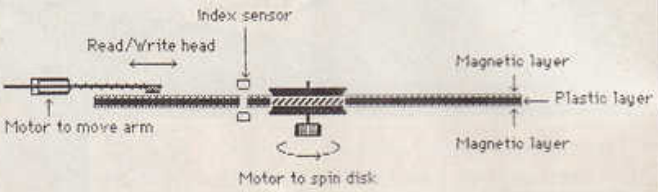


Fig 1 – the main components of a disk and drive seen edge on.

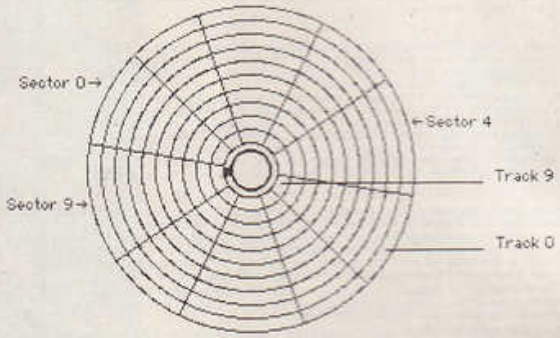


Fig 2 – the sectors and tracks (only ten shown) of a floppy disk.

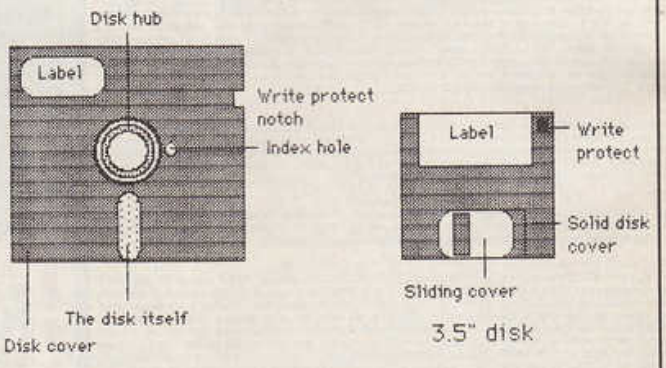


Fig 3 – the commonest disk types.

Testing time

C Wooley, of Pelsall, W Midlands, writes:

Q I use three Amstrad computers, the PC1512, CPC6128 and the PCW8256, and find the Basic on two of them quite good. However, I have hit on a problem with Locomotive Basic 2 in that the TEST and FLOOD commands do not operate. For me this is a serious problem in that I have persuaded my company to purchase a PC1512 so that I could write the required programs.

I have been in touch with Amstrad, Locomotive Software, and Digital Research and, although they were very helpful, there seems to be no solution to the problem.

It turns out that Basic 2 was written for use with the original GEM environment which was not complete. What I find strange is that when DR needed these commands for GEM Paint, they included them. Locomotive, however, didn't, but left the commands there anyway ie, they are in the manual but don't actually work.

Could you please identify a Basic which is compatible with the Amstrad PC machine and which will support the graphics commands that I need. I would also like to know if other Basic 2 users have encountered other problems and ways of resolving them.

A I think that Microsoft's GWBasic is the one you want, although I am not 100% certain. Other possibilities are Borland's Turbo Basic and Quick Basic (MS). Since I don't use PCc's very often, I am not really an expert on the software available. The best thing would be to ring a couple of reputable dealers and ask their advice – possibly our reader's know for sure?

Sound Out

T F McCabe, of Walton, Liverpool, writes:

Q What I want to do is use my 520 STFM with an Amstrad colour monitor that I used to use with my CPC464. Thanks to you, the video connection is fine, the problem is the sound output. I know which pins to use but I am a bit worried about what to connect it to. Could you clarify the situation please?

A The manuals for the ST state that the sound output is 1 Volt peak to peak but I cannot find the impedance which I "assume to be around 1KΩ. In plain English, this means that it more or less matches the common 'phono' input of most modern amplifiers.

It also more or less matches most modern (Walkman type) headphones. This leaves you with three choices, a pair of headphones with the two channels connected to the single output for the ST, straight connection to an amplifier – the CD input is suitable otherwise one of the tape inputs will do.

The final, and by far the most difficult is to obtain an amplifier especially for the system. I haven't got space here to detail this but basically it should have 1kΩ 1V p-p input, and be able to drive an 8Ω speaker at about 10 Watts.

Personally, I prefer the headphones since they cause no disturbance to anyone else, and they can be quite loud.

Coded

Philip E Jones, of Anfield, Liverpool, writes:

Q I wonder if you can help me? I am at University and studying a computing course, the system is using Algol 68, but so far I have only learned, Basic, Pascal and some Z80 machine code. I know that Algol 68 and Pascal are similar and that a Pascal compiler can be bought. But, I would like to know if there is such a thing as an Algol 68 compiler, and if so how much will it cost? If there is more than one, which is best? I own a Spectrum 128K (the one Sir Clive brought out).

A As far as I know, you are completely out of luck when it comes to Algol 68 compilers, especially for the Spectrum. There may be an IBM PCc (small c stands for clone) version but I think that this is rather unlikely as well.

The problem is that Algol 68 was designed well before the age of the micro-computer, in 1968 in fact. This means that any compilers for it will be written for elephantine machines such as the ICL 1900 series, at least, that is the only computer I have ever used it on.

I think that the best thing to do would be to stick with Pascal and maybe c as these are the closest to Algol. If you can get to grips with Pascal, converting to Algol should be fairly easy.

Perhaps some of our readers know of an Algol implementation for micro-computers? If so then please let me know.

Driving force

R Stevenson, of Islington, London, writes:

Q I plan to buy an ST but need advice in order to decide between the following options:

1) Buy a 1040 STF

2) Buy a 520 STFM with 1 Meg upgrade and a Cumana 1 Meg drive.

The second option would seem to give the equivalent of a 1040 and a second drive, for not much extra cost. But would it?

Is a 520 STFM with RAM upgrade really the equivalent to the 1040 (except for the drive) or would there still be some differences?

What about the drive? Would the external drive be able to do all that the 1 Meg internal drive does on the 1040 eg, when booting?

A As far as I can see, the 520 STFM plus memory upgrade plus 1M Cumana drive would come to approximately £477 (I didn't look for the cheapest prices around) whereas the 1040 STF is £480 and including a Cumana drive this would come to £619. So it looks as though you are right about the price advantage.

As far as I know, the 520 with a RAM upgrade should behave exactly like a 1040 since the operating system takes care of the additional RAM when the machine boots up.

Also, since pretty well all ST software comes on single density discs, it should all run from the internal drive. The only drawback with the system you propose is that you will not be able to boot from the external drive unless you. either fit the switch shown in P&P a couple of weeks back, or fit a double density disk drive (also in P&P a while back).

As I have said before, my answers are all 'as far as I know' and I have been known to be wrong (ableit rarely) I would think that your best bet would be the 520 + upgrade + external drive since it seems a far better deal than the 1040 + external drive.

Giving the boot

A Bradshaw, of Chorley, Lancs, writes:

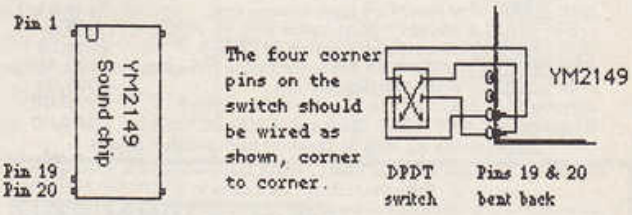
Q I've read a couple of times in your mag, people asking how to use auto running programs on 1 Meg disks when their STFM's always boot up on the built in ½ Meg drive.

Pins 19 and 20 on the YM2149 sound-chip control the drives, switching these over, switches the boot drive. I have enclosed a drawing showing how to put a switch in, this allows either drive to be drive A.

Fitting the switch means desoldering the two pins, and cold soldering four wires, one wire to each of the pins, and a wire to each of the holes where the pins came from. These four wires are then taken out of the ST via the mouse/joystick port and attached to a DPDT (Double Pole Double Throw) switch.

Anyone who wants the switch fitted but has little experience of soldering should get someone who is capable to do it for them.

A Thanks for the tip, it is pretty obvious when you think about it, the only drawback is that the warranty will be invalidated – but this is usually not too great a problem.



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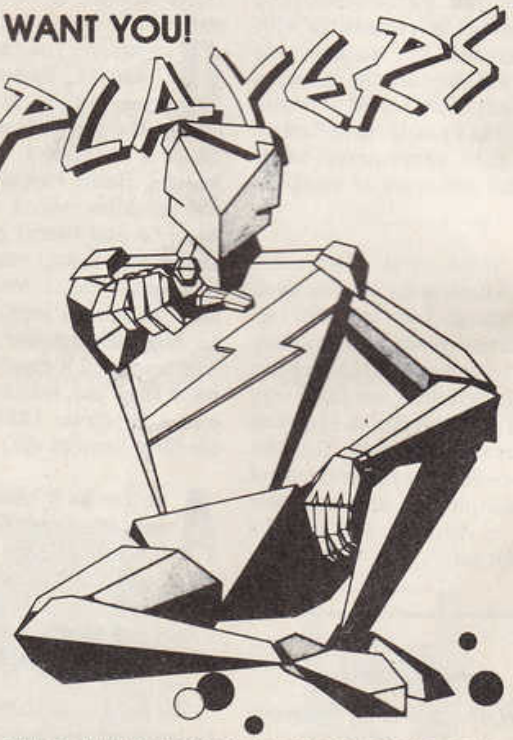

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On the latch

Kenn Garroch continues, in the second part of his series on interfacing, to deal with aspects of decoding on the Z80.

Last week, I looked at the two basic input output (i/o) systems to use on home microcomputers, the 6502 and Z80 types. This week I'll look at how to decode the address and data buses on the Z80 (8080 etc) to bring it up to a similar state as systems using w.i.m. chips.

There are six main signals that have to be decoded to specify an i/o access, the address bus which tells the hardware which part to use, the data bus where the information is read in or written out, the read and write lines which define the direction and the memory and iorq selects to separate memory from i/o. When an input or output instruction is come across by the processor the port number is placed on the data bus, the memory request is sent high ie, deselect, the i/o request is set low and for an in, the read is set low and write high. For a write, the read and write signals are swapped and the data bus has the data to be written placed on it.

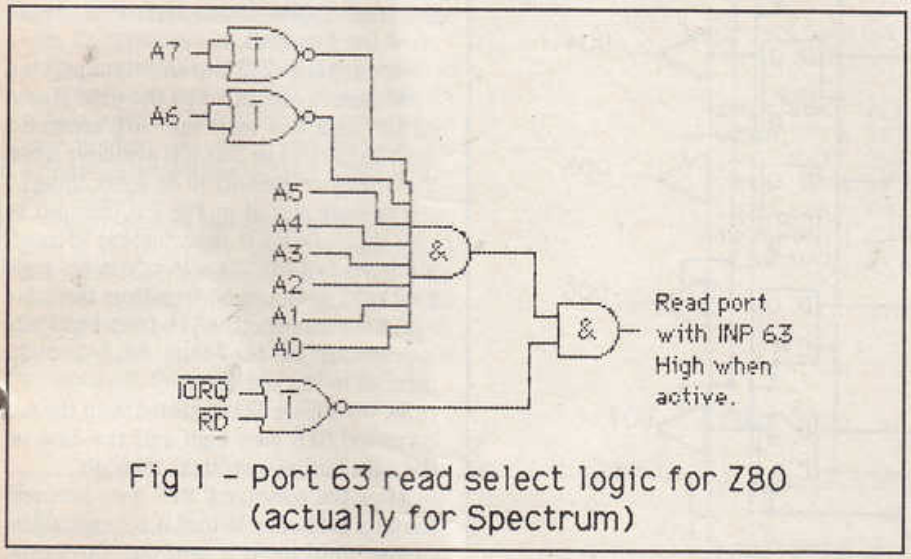

Fig 1 - Port 63 read select logic for Z80 (actually for Spectrum)

Simple logic

Some simple logic is needed to decode all of these signals into a single signal that foils the external hardware to become active. Because the data bus is constantly in use for memory access, simply placing a byte of data on it ie, physically setting the 8 lines to different states is not allowed as it would interfere with the rest of the system.

To get around this a system known as Tri-State is used for any signals to be placed on the bus. All chips designed to be interfaced directly to a data bus have tri-state outputs, and when they are in tri-state mode, are effectively invisible to the data bus as though they were physically switched off, not set high or low.

When the processor is ready to receive input, the tri-state can be disabled (also known as chip/device select) allowing the processor to read the information placed on the data bus.

Decoding

The logic circuit shown in Fig 1 is one way of decoding the various signals to give a signal that is used to disable the tri-state when the microprocessor is ready. To form a simple read/write port, the 8212 chip (Figs 2 and 3) can be used. This is simply an octal (8 lines) buffer that has tri-state and latching capabilities. It can be used for either input or ouptut depending on how it is wired up. When it is used as an output port, the latching facility becomes important. Since the data is only available on the microprocessor's bus at the time it is written, the 8218 needs to store it so that any external circuitry can read it at any time.

Latches

For instance, when using the computer to control a set of lights (up to 8 Light Emitting Diodes or LEDs), each data line on the bus defines one of them. Setting bit 0 to 1 (5V) turns the light on, and setting it to zero (0V) turns it off.

Since the data bus is being used for a number of other things like reading and writing memory, reading the keyboard, etc, simply attaching the light to one of its bits will cause it to flash. To sustain the output sent with the OUT command, the byte that was sent out on the data bus has to be held in the 8212 until it is changed by the computer. The latches perform this function. Each of the C inputs is a clock that takes the state of D and passes it along to Q where it remains until another clock pulse is sent, or the latches can be cleared with a pulse on R.

Device select

There are two device select lines, DS1 and DS2 and to disable the tri-state, DS1 is set

continued on page 38 ▶

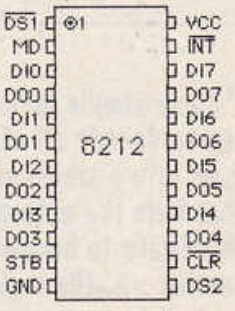

Fig 2 - 8212 pinout

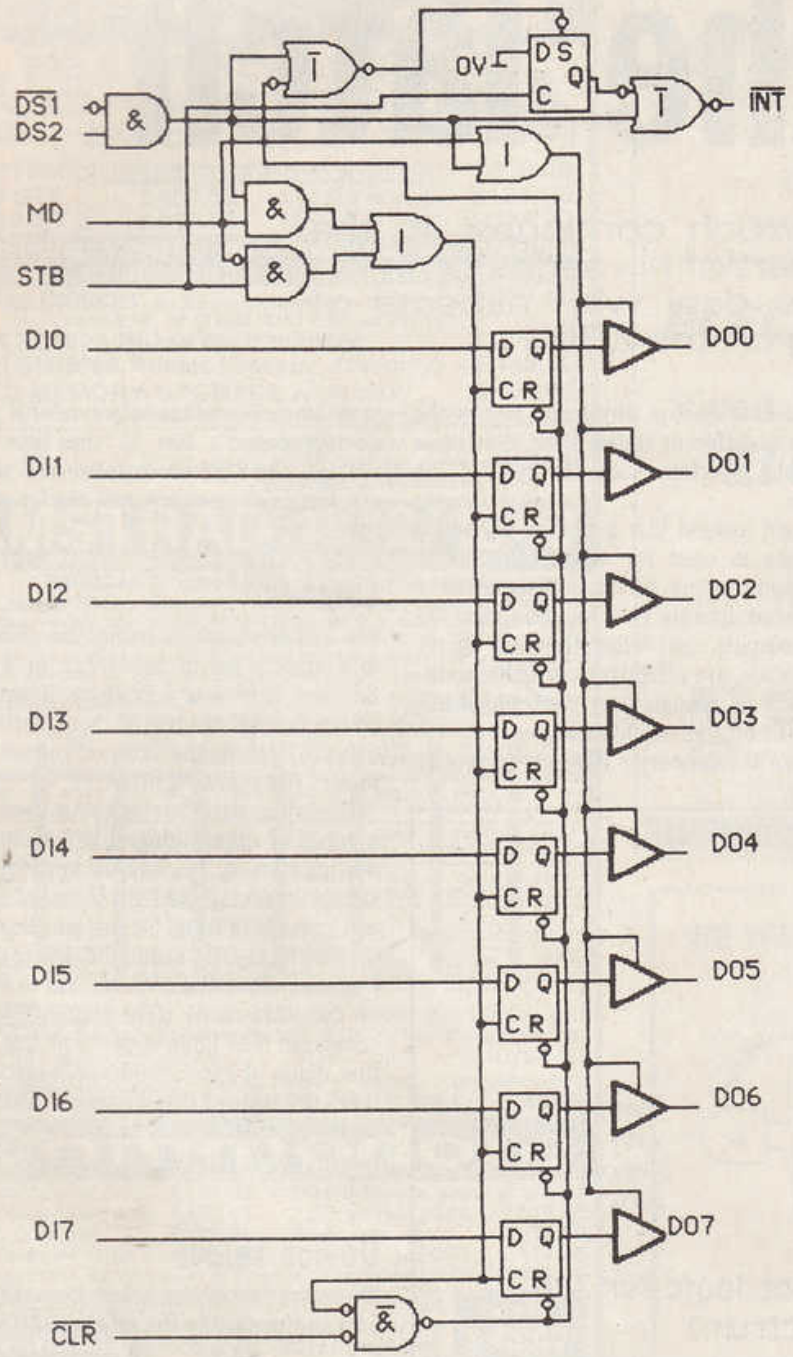

Fig 3 – 8212 internal logic

◀ continued from page 37

low, and DS2 high. For an output, they will always be in this position for an input (to the processor), they are only set when needed.

The advantage of having two select lines is that either a high select or low select can be used simply by setting the other line to its active state.

The circuit in Fig 1 can be used to make the 8212 into an input port by taking the output of the last AND gate ie, select, and using it to control DS2. DS1 is attached to 0V so that the output from the chip is placed on the data bus when DS2 goes high. At other times it is in tri-state mode.

Inputs

The inputs to the 8212 work according t the table in Fig 4, SEL is used to denote the DS lines in selected state ie, DS1=0 & DS2=1 is SEL=1 and any other state is SEL=0.

There are other lines on the 8212 and examination of Fig 3 in conjunction with the truth tables shown last week should show the functions.

Forming the 8212 into an output port is a little more complicated as the data placed on the data bus with the OUT command must be latched so that it is available when the processor goes off to do other things.

The logic circuit in Fig 1 is changed so that write (WR) is used instead of read, MD is set to 0 and the select from the logic goes to STB. As can be seen from the table in Fig 4, a transition of STB from 1 to 0 sets the output of the chip from straight through to latched data.

So, when port 63 is selected with the out command STB goes high and the data on the data bus goes straight through.

After the command, STB goes low, and the data is latched so that it appears at the cursors until more is sent out. Obviously, the 8212 is changed around so that the D1 lines come from the data bus, and the D0 lines are the output. □

"Some simple logic is needed to decode all of these signals into a single signal that foils the external hardware to become active . . . the logic circuit is one way of decoding that."

STB	MD	SEL	Data out is:	
0	0	0	Tri-state	unseen by processor data bus
1	0	0	Tri-state	
0	1	0	Data latch	This is data that was latched in
1	1	0	Data latch	
0	0	1	Data latch	
1	0	1	Data in	Data input straight through to output
0	1	1	Data in	
1	1	1	Data in	

Fig 4 – truth table for 8212

Spectrum Various

J Collins

The following routines were sent in as a series by J Collins of London. They all use the same loader and so you will have to include lines 10-50 of the first one with them all.

The first is Music which allows dual channel sound to be played. The syntax is:

INPUT USR 60300,duration,note 1,note 2.

Where the duration varies from 0-255. The routine starts at 60300 and is 45 bytes long. The loader is included in this listing to show how it works.

The second routine is Bases and is used to convert and print decimal numbers into the bases of 16 (hexadecimal), 2 (binary), and 8 (octal). To convert the 8 bit number (0-255) to one of these bases, use RANDOMISE n where n is the number. To print the number use LET xx=USR 6140Y the last digit (Y) depends on which base you want. Y=0 is hexadecimal, Y=3 for binary, and Y=6 for octal. Use lines 10—50 from the Music listing for the loader.

The third routine is Fade and is used to fade out any graphics on screen. The utility is called with RANDOMISE USR 61600.

The fourth utility (POKE$) allows strings to be poked into memory. The syntax for the routine is INPUT USR 61700,addr,string where addr is where the string will start and the string is a normal string ie, "This is OK" or p$ or p$(2 TO 4) etc.

Finally, Passord also involves string but this time in the guise of a password system that locks the Spectrum up until the correct password is entered. The syntax is: INPUT USR 61000,pass$ where pass$ is any form of string as described for POKE$. Short of turning the computer off, there is no way out.

Music

```
  5 LET x=60200: LET y=60245: LET s=8
 10 CLS : PRINT "Setting up code
    -please wait"
 15 FOR n=x TO y STEP s: LET tot=0
 20 FOR m=0 TO s-1: READ a
 25 POKE n+m,a: LET tot=tot+a
 30 PRINT AT 2,0;n+m: NEXT m: READ tot1
 35 IF tot<>tot1 THEN  PRINT AT 2,0;
    "Data error in line ";: GO TO 50
 40 NEXT n: PRINT AT 2,0;"Code created":
    STOP
 50  PRINT 1000+(((n-60000)/8)*5): STOP
1000 DATA 205,121,28,205,129,28,205,148,1069
1005 DATA 30,245,205,148,30,245,205,148,1256
1010 DATA 30,71,241,103,241,111,243,229,1269
1015 DATA 209,37,32,5,238,16,211,254,1002
1020 DATA 98,45,32,245,238,16,211,254,1139
1025 DATA 107,16,238,251,201,0,0,0,813
```

Bases

```
5 LET x=61400: LET y=61530: LET s=8

1000 DATA 195,225,239,195,8,240,195,44,1341
1005 DATA 240,58,118,92,245,31,31,31,846
1010 DATA 31,205,237,239,241,230,15,254,1452
1015 DATA 10,56,2,198,7,198,48,42,561
1020 DATA 81,92,229,245,62,2,205,1,917
1025 DATA 22,241,215,225,34,81,92,201,1111
1030 DATA 42,81,92,229,62,2,205,1,714
1035 DATA 22,58,118,92,103,6,8,203,610
1040 DATA 124,32,5,62,48,215,24,3,513
1045 DATA 62,49,215,203,36,16,240,225,1046
1050 DATA 34,81,92,201,42,81,92,229,852
1055 DATA 62,2,205,1,22,58,118,92,560
1060 DATA 245,203,7,203,7,230,3,198,1096
1065 DATA 48,215,241,245,203,63,203,63,1281
1070 DATA 203,63,230,7,198,48,215,241,1205
1075 DATA 230,7,198,48,215,225,34,81,1038
1080 DATA 92,201,0,0,0,0,0,0,293
```

Fade

```
5 LET x=61600: LET y=61650: LET s=8

1000 DATA 1,0,24,33,0,64,54,0,176
1005 DATA 205,203,240,17,7,0,25,124,821
1010 DATA 254,88,32,2,38,64,11,120,609
1015 DATA 177,32,235,33,0,88,17,1,583
1020 DATA 88,1,255,2,58,141,92,119,756
1025 DATA 237,176,201,197,6,30,16,254,1117
1030 DATA 193,201,0,0,0,0,0,0,394
```

Poke $

```
5 LET x=61000: LET y=61053: LET s=8

1000 DATA 231,205,140,28,205,241,43,120,1213
1005 DATA 254,0,32,8,121,50,104,238,807
1010 DATA 254,0,32,2,207,11,33,125,664
1015 DATA 238,235,237,176,33,125,238,6,1288
1020 DATA 3,253,203,1,110,40,250,253,1113
1025 DATA 203,1,174,58,8,92,190,32,758
1030 DATA 235,35,16,237,201,97,97,97,1015
```

Password

```
5 LET x=61700: LET y=61722: LET s=8

1000 DATA 205,129,28,231,205,140,28,205,1171
1005 DATA 241,43,213,197,205,153,30,197,1279
1010 DATA 209,193,225,237,176,201,0,0,1241
```

UFO 2

Steven Pattullo

This week is the second part of the arcade game *UFO 2*. Last week's section should be named - in the order they were printed - RECON, SPRITE and CHARSET.

The two sections in this week's and next week's issues should be typed in and named ALPHA CHARS, M CODE and UFO 2.

Full loading and playing instructions will be in next week's issue.

```
READY.


10 I=51200
20 READ A:IF A=256 THEN END
30 POKE I,A:I=I+1:GOTO 20
51200 DATA 255,255,195,195,195,195,255,255
51208 DATA 248,252,254,239,255,255,231,231
51216 DATA 248,252,254,239,254,231,255,254
51224 DATA 120,252,254,239,224,227,255,126
51232 DATA 248,252,254,239,231,231,255,254
51240 DATA 248,252,254,231,240,224,255,254
51248 DATA 248,252,254,231,240,224,224,224
51256 DATA 120,252,254,224,239,231,255,127
51264 DATA 224,228,230,231,255,231,231,231
51272 DATA 56,28,28,28,28,28,28,62
51280 DATA 120,124,30,31,28,220,252,120
51288 DATA 224,228,230,239,252,238,231,231
51296 DATA 224,224,224,224,224,224,255,255
51304 DATA 64,236,254,223,215,215,215,215
51312 DATA 128,196,230,247,255,255,239,231
51320 DATA 120,252,254,239,231,231,255,126
51328 DATA 248,252,254,239,255,254,224,224
51336 DATA 120,252,254,239,231,239,254,127
51344 DATA 248,252,254,239,255,254,238,231
51352 DATA 120,252,254,240,126,15,255,126
51360 DATA 248,252,254,31,28,28,28,28
51368 DATA 224,228,230,231,231,231,255,126
51376 DATA 224,228,230,239,238,252,248,240
51384 DATA 192,196,214,215,215,255,255,110
51392 DATA 128,196,238,254,124,126,255,231
51400 DATA 224,228,230,255,126,30,252,120
51408 DATA 120,252,254,206,28,14,15,126
51416 DATA 24,24,24,255,255,256

READY.


READY.


10 I=49152
20 READ A:IF A=256 THEN END
30 POKE I,A:I=I+1:GOTO 20
49152 DATA 169,147,32,210,255,169,0,141
49160 DATA 32,208,141,33,208,120,169,127
49168 DATA 141,13,220,169,64,141,20,3
49176 DATA 169,192,141,21,3,169,1,141
49184 DATA 26,208,141,25,208,169,255,141
49192 DATA 18,208,173,17,208,41,127,141
49200 DATA 17,208,88,96,0,0,0,0
49208 DATA 0,0,0,0,0,0,0,0
49216 DATA 173,25,208,41,1,208,3,76
49224 DATA 49,234,141,25,208,173,18,208
49232 DATA 201,255,240,0,169,255,141,18
49240 DATA 208,162,0,160,0,169,1,141
49248 DATA 132,3,189,60,3,201,1,208
49256 DATA 3,76,183,193,201,2,208,3
49264 DATA 76,196,193,201,3,208,3,76
49272 DATA 224,193,201,4,208,3,76,242
49280 DATA 193,201,5,208,3,76,14,194
49288 DATA 201,6,208,3,76,27,194,201
49296 DATA 7,208,3,76,55,194,201,8
49304 DATA 208,3,76,73,194,200,200,24
49312 DATA 46,132,3,232,224,8,208,186
49320 DATA 169,0,141,187,3,173,30,208
49328 DATA 41,1,201,1,208,5,169,1
49336 DATA 141,187,3,173,182,3,201,1
49344 DATA 208,118,173,0,220,201,126,240
49352 DATA 30,201,125,240,39,201,119,240
49360 DATA 48,201,123,240,62,201,118,240
49368 DATA 69,201,117,240,78,201,111,208
49376 DATA 87,76,201,194,76,56,193,169
49384 DATA 1,141,60,3,169,2,141,69
49392 DATA 3,76,56,193,169,5,141,60
49400 DATA 3,169,2,141,69,3,76,56
49408 DATA 193,169,3,141,60,3,173,69
49416 DATA 3,201,2,240,43,238,69,3
49424 DATA 76,56,193,173,69,3,240,32
49432 DATA 206,69,3,76,56,193,169,2
49440 DATA 141,60,3,169,2,141,69,3
49448 DATA 76,56,193,169,4,141,60,3
49456 DATA 169,2,141,69,3,76,56,193
49464 DATA 173,83,3,201,1,208,13,162
49472 DATA 1,173,82,3,157,249,199,232
49480 DATA 224,3,208,248,173,16,208,41
49488 DATA 32,201,32,208,8,173,21,208
49496 DATA 41,223,141,21,208,173,16,208
49504 DATA 41,128,201,128,208,8,173,21
49512 DATA 208,41,127,141,21,208,169,0
49520 DATA 141,30,208,173,30,208,41,132
49528 DATA 201,132,208,8,173,21,208,41
49536 DATA 123,141,21,208,173,30,208,41
49544 DATA 136,201,136,208,8,173,21,208
49552 DATA 41,119,141,21,208,173,30,208
49560 DATA 41,144,201,144,208,8,173,21
49568 DATA 208,41,111,141,21,208,173,30
49576 DATA 208,41,1,201,1,208,5,169
49584 DATA 1,141,187,3,76,49,234,165
49592 DATA 1,208,56,253,69,3,153,1
49600 DATA 208,76,157,192,165,1,208,56
49608 DATA 253,69,3,153,1,208,165,0
49616 DATA 208,24,125,69,3,144,3,32
49624 DATA 101,194,153,0,208,76,157,192
49632 DATA 165,0,208,24,125,69,3,144
49640 DATA 3,32,101,194,153,0,208,76
49648 DATA 157,192,165,0,208,24,125,69
49656 DATA 3,144,3,32,101,194,153,0
49664 DATA 208,165,1,208,24,125,69,3
49672 DATA 153,1,208,76,157,192,165,1
49680 DATA 208,24,125,69,3,153,1,208
49688 DATA 76,157,192,165,1,208,24,125
49696 DATA 69,3,153,1,208,165,0,208
49704 DATA 56,253,69,3,176,3,32,113
49712 DATA 194,153,0,208,76,157,192,165
49720 DATA 0,208,56,253,69,3,176,3
49728 DATA 32,113,194,153,0,208,76,157
49736 DATA 192,165,1,208,56,253,69,3
49744 DATA 153,1,208,165,0,208,56,253
49752 DATA 69,3,176,3,32,113,194,153
49760 DATA 0,208,76,157,192,173,16,208
49768 DATA 77,132,3,141,16,208,169,0
49776 DATA 96,173,16,208,77,132,3,141
49784 DATA 16,208,173,16,208,45,132,3
49792 DATA 205,132,3,208,5,169,95,76
49800 DATA 140,194,169,255,96,234,234,234
```

```
49808 DATA 173,16,208,41,32,201,32,208
49816 DATA 8,173,16,208,73,32,141,16
49824 DATA 208,173,21,208,9,32,141,21
49832 DATA 208,169,7,141,65,3,173,16
49840 DATA 208,41,4,201,4,240,17,173
49848 DATA 4,208,233,29,141,10,208,173
49856 DATA 5,208,141,11,208,32,17,195
49864 DATA 96,173,84,3,201,1,208,62
49872 DATA 169,144,141,255,199,173,16,208
49880 DATA 41,128,201,128,208,8,173,16
49888 DATA 208,73,128,141,16,208,169,3
49896 DATA 141,67,3,169,7,141,76,3
49904 DATA 173,0,208,105,30,141,14,208
49912 DATA 173,1,208,141,15,208,173,21
49920 DATA 208,9,128,141,21,208,32,73
49928 DATA 195,169,0,141,84,3,76,56
49936 DATA 193,162,24,169,0,157,0,212
49944 DATA 202,208,250,169,15,141,24,212
49952 DATA 169,50,141,5,212,169,130,141
49960 DATA 6,212,169,129,141,4,212,160
49968 DATA 0,162,0,140,1,212,140,0
49976 DATA 212,232,224,100,208,245,200,192
49984 DATA 65,208,238,169,0,141,24,212
49992 DATA 96,162,24,169,0,157,0,212
50000 DATA 202,208,250,169,15,141,24,212
50008 DATA 169,10,141,5,212,169,130,141
50016 DATA 6,212,169,17,141,4,212,160
50024 DATA 65,162,0,140,1,212,140,0
50032 DATA 212,232,224,100,208,245,136,208
50040 DATA 240,169,0,141,24,212,96,256

READY.


READY.


0 REM IF SIMON FROM DEVON READS THIS THEN
  CONTACT STE CAUSE IVE LOST YOUR ADDRESS
1 DIM A$(5):DIM Z(5):A$(1)="STEVEN
  PATTULLO":A$(2)="OUR SNOOKER MOB"
2 A$(3)="KEV OX":A$(4)="KENT MURRAY":
  A$(5)="GAZZA JONES":POKE 49873,143
3 SC=0
4 FOR N=1 TO 5:Z(N)=500 :NEXT
5 POKE 839,3:POKE 840,3
8 POKE 53270,24:PRINT "■":POKE 53282,14:
  POKE 53283,6:POKE 49873,144
9 GOSUB 10000:SC=0
10 POKE V+21,0:POKE 51193,146:FORN=704 TO
   719:POKE N,0:NEXT:POKE 51192,143
11 POKE V+27,0
20 FOR N=39 TO 46:POKE V+N,7:NEXT:POKE
   V+37,8
21 GOTO 100
25 IF (PEEK(V+30)AND132)=132 THEN POKE
   V+21,PEEK(V+21)-4
26 IF (PEEK(V+31)AND1)=0 THEN 62000
27 IF (955)=1 THEN 62000
28 RETURN
30 FOR N=837 TO 844:POKE N,2:
   NEXT:POKE 842,6
100 PRINT "□"
999 PRINT "■■■■■■■":X=0:POKE 852,1:POKE
    51192,144:POKE 51197,139
1000 PRINT"                    ?$$$$$$$$$$|?$$
     $$$|?$$$|"
1002 PRINT"                    &++_●|++++'&++
     +++'&+++'"
1004 PRINT"                    &++ /XO++++'&-.
     ../'&+++'"
1006 PRINT "     ?$$$$|     &++++++++++'&;
     <<<='&+++'"
1008 PRINT"    ?++++////////////++++++'&++
     +++'&+++'#%"
1010 PRINT"  ?++++++++|   &++++++++++'&++
     +++'&+++'(*"
1012 PRINT" ?++//++++++'¯$$$$$%++_|+'&++
     +++'&+++'"
1014 PRINT" —++//+++++'_)))))*++ /O+'&++
     +++'&+++'"
1016 PRINT"  —++++++++♠  &++++++++++'&++++
     '&+++'#%"
1018 PRINT"    —++++////////////++++++'&++++
     '&+++'(*"
1020 PRINT"     —))))♠     &++++++++++'&-.../
     '&+++'"
1024 PRINT"                &++_●|++++'&;<<<=
     '&+++'"
1026 PRINT"                &++ /XO++++'&++++
     '&+++'"
1028 PRINT"                —)))))))))♠—)))))
     ♠—)))♠":GOSUB 35000:FORF=1TO5
1029 FORN=50 TO 1005TEP2:POKE S+4,33:POKE
     S+1,N:POKE S,N:NEXTN,F:POKES+24,0
1030 FOR N=51194 TO 51196:POKEN,131:NEXT:
     POKE 51197,139:POKE 842,10
1034 POKE 850,131:POKE 950,1:POKE 951,1:
     POKE 832,7
1035 POKE 841,2:POKE 832,7:POKE837,2:
     POKE 51192,143
1040 POKE V+1,150:POKE V,70
1050 POKE V+3,160:POKE V+2,80
1060 POKE V+40,0:POKE V+28,253
1090 POKE V+21,17:X=0:POKE V+16,16
1095 POKE V+9,150:POKE V+8,100
1100 FOR N=1 TO 30:GOSUB 25:NEXT
1105 POKE V+5,119:POKE V+4,240:POKE V+7,
     183:POKE V+6,240:POKE 841,4
1110 POKE V+21,29:POKE 830,7:POKE 831,7:
     POKE 839,2:POKE 840,2
1120 IF PEEK(955)=1 THEN 62000
1135 IF (PEEK(V+16)AND1)=1 AND PEEK(V)>
     60 THEN GOTO 2000
1136 GOSUB 25
1137 X=X+1:IF X=20 THEN SYS 49808:X=0
1138 IF (PEEK(V+30)AND132)=132 THEN
     POKE V+21,PEEK(V+21)-4
1140 GOTO 1120
2000 PRINT "■■■■■■■■■■":FOR N=51194
     TO 51196:POKE N,140:NEXT:SC=SC+100
2002 PRINT"  #%#%#%#%#%#%#%#%#%#%#%#%#%
     #%#%#%#%"
2004 PRINT"  (*(*(*(*(*(*(*(*(*(*(*(*(*(*
     (*(*(*(*"
2006 PRINT"#%-....////.////.////.////.///
     /..//..."
2008 PRINT"(*:++++/++++////+/++++/////+/++
     +++//+++"
2010 PRINT"#%:++++////++//++////++//++///
     /++//++#%"
2012 PRINT"(*:++++////++//++////++//++///
     /++//++(*"
2014 PRINT"#%:+++++++/++//++/+++++//+++++
     /+++++++"
2016 PRINT"(*;<<<<////<<//<<////<<//<<///
     /<<//<<<"
2018 PRINT"  #%#%#%#%#%#%#%#%#%#%#%#%#%
     #%#%#%#%"
2020 PRINT"  (*(*(*(*(*(*(*(*(*(*(*(*(*(*
     (*)*(*(*"
```

continued on page 42 ▶

◀ continued from page 41

```
2030 POKE V,20:POKE V+2,30:POKE V+16,28:POKE 852,1
2040 POKE V+21,29:X=0:POKE 841,2
2050 POKE 839,2:POKE 840,2
2060 POKE V+5,150:POKE V+4,100
2090 POKE V+7,150:POKE V+6,100
2100 POKE V+9,150:POKE V+8,100
2110 FOR N=1 TO 500:NEXT
2120 POKE 831,8:POKE 840,5
2130 POKE 832,6:POKE 841,5:POKE 839,4
2145 IF (PEEK(V+16)AND1)=1 AND PEEK(V)>80 THEN GOTO 3000
2146 GOSUB 25
2147 X=X+1:IF X=10 THEN SYS 49808:X=0
2148 IF (PEEK(V+30)AND132)=132 THEN POKE V+21,PEEK(V+21)-4
2149 IF PEEK(955)=1 THEN 62000
2150 GOTO 2145
2180 IF (PEEK(V+30)AND132)=132 THEN POKE V+21,PEEK(V+21)-4
3000 PRINT "▒▒▒▒▒▒▒":FOR N=51194 TO 51196:POKE N,142:NEXT:SC=SC+100:POKE 852,1
3002 PRINT"      \\"
3004 PRINT"      |||                          ?$$$$$$"
3006 PRINT"    ?$$$|                         ?+++++++"
3008 PRINT"   ?+++++| ´´´  ?$$$$$$$$$$$$$$$++++++++"
3010 PRINT"$$$+++++++´$$$´?+++#$%#$%#$%#$%++++++++"
3012 PRINT"+++#$%++´´+++++´´++()*()*()*()*++++++++"
3014 PRINT"+++&+´++++++++++++++#$%#$%#$%#$%++++++++"
3016 PRINT"+++&+´++´´+++++´´++()*()*()*()*++++++++"
3018 PRINT"+++()*++++´)))´++++#$%#$%#$%#$%++++++++"
3020 PRINT")))+++++++♠´´´ —+++()*()*()*()*++++++++"
3022 PRINT"   —+++++♠       —))))))))))))))++++++++"
3024 PRINT"    —)))♠                        —+++++++"
3026 PRINT"     —¯¯¯                         —))))))"
3028 PRINT"     ¯__"
3030 POKE V+16,252:POKE V,20:POKE V+2,30
3040 X=0:Y=0:POKE 830,7:FOR N=839 TO 841:POKE N,2:NEXT:POKE V+21,253
3050 POKE 831,7:YX=0
3060 POKE 832,7
3070 POKE V+5,100:POKE V+4,130
3080 POKE V+7,150:POKE V+6,90
3090 POKE V+9,200:POKE V+8,130
3100 IF Y=0 THEN POKE 830,6:POKE 832,8:POKE840,1
3101 GOSUB 25
3109 IF PEEK(955)=1 THEN 62000
3110 IF Y=1 THEN POKE 830,8:POKE 832,6:POKE 840,2
3120 IF X=5 OR X=15 OR X=25 OR X=35 OR X=45 OR X=55 THEN Y=0
3130 IF X=0 OR X=10 OR X=20 OR X=30 OR X=40 OR X=50 THEN Y=1
3137 IF (PEEK(V+16)AND1)=1AND PEEK(V)>70 THEN GOTO 4000
3140 X=X+1
```

PROGRAMMING: ST

Film Show

D Eaton

This is the continuation and end of last week's GFA Basic program - a Degas picture show utility. □

```
Procedure Rd_buff
  Fi%=Fi%+1
  F$=Mid$(Buf$,31,Instr(31,Buf$,Chr$(0))-31)
  D$(Fi%)=F$
Return
'
Procedure Get_pic
  Sget A$
  A$=A$+Left$(A$,34)
  Bload D$(P%),Varptr(A$)
  Colr$=Mid$(A$,3,32)
Return
'
Procedure Col
  Void Xbios(6,L:Varptr(Colr$))
Return
'
Procedure Fixit
  On Error Gosub Fixit
  T%=Fatel
  If T%=-1
    Resume Start

  Endif
  Run
Return
```

MICRO-FILE

FOR SALE

MICROWARE COMPUTER SERVICES

AMIGA HARDWARE

Amiga 500 inc. Deluxe Paint modulator & Starter Pack £449
Amiga 500 inc. Deluxe Paint modulator & Starter Pack & 1081 Colour Medium res monitor £739
Amiga 500 inc. Deluxe Paint modulator & Starter Pack + NEC 3½" Disc Drive £559
Amiga 500 inc. Deluxe Paint modulator & Starter Pack + 1081 Monitor & NEC disc £849

PERIPHERALS

1081 medium res. colour monitor £329
Philips ATH43 med. res. colour monitor stereo £279
Philips 8852 med/hi res. colour monitor stereo £319
NEC 3½" 880K disc drive £129
512K RAM expansion with clock £99
Diggi view II with A500 ..... £189
Easy drawing tablets for A500 ..... £289
20Mb hard disc for A1000 ..... £669
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ATARI HARDWARE

Atari STM with ½Mb disc drive, mouse and software £279
Atari STM as above + mono monitor £369
1040 STF 1Mb drive mono monitor 24K RAM £499
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AUDIT TRAIL ON (N) OR OFF (F)		(N)
IGNORE UPPER/LOWER CASE Y/N		(Y)
WHOLE WORDS ONLY Y/N		(Y)
(C)ONFIRM OR (A)UTOMATIC		(C)
PROCESS ALL SUB PROGRAMS Y/N		(Y)
QUANTUM REPORT FILE		(QUANTUM MSG)
SEARCH FOR (		)
REPLACE WITH (		)

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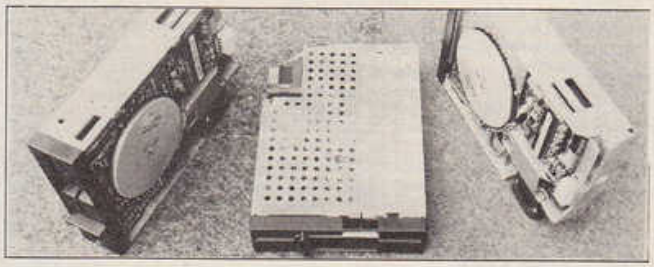

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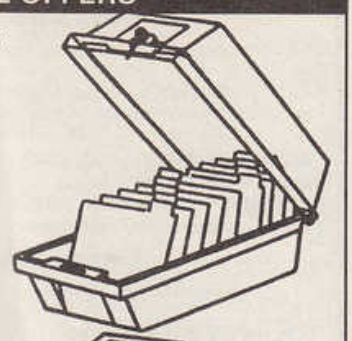

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What are we playing at?

"Is this just a game or is it real?" asks the boy at the keyboard

"What's the difference?" answers the voice synthesiser of the computer.

This is the chilling moment in the film *War Games* when the young hero realises that by hacking into someone else's mainframe he may have gone just a little too far. This particular mainframe – you will recall – turns out to be the artificial intelligence running the whole of NATO's nuclear arsenal! And playing 'Global Tactical Thermonuclear War' with this baby is definitely not recommended for light entertainment.

Instead, maybe our hero should have got stuck into *High Frontier* the Strategic Defence Initiative simulation from Activision. At least then he would have known that any harm he could wreak would stop at his monitor – or in the realms of his imagination. Just good clean fun.

No room here for informed discussion, questioning the practicalities and desirability of SDI in the world arena. *High Frontier's* promo blurb makes sure you know whose side you're on right from the start: "4,000 Soviet nuclear warheads are targeted at the North American mainland . . . You are the project leader committing staff and funds to make SDI a reality. You must make the decisions that could save the American mainland . . ." Oh good. Because, let's face it, if the whole world were teetering on the edge of oblivion we'd all want to be reassured that the good ol' U.S. of A. was going to be ok. Sod the rest, and especially those Ruskies with their awful 'Evil Empire'.

Activision are by no means alone in their very definite approach to who the good guys are. A number of battle simulation games do away with the niceties of any pretence of attempting to remain apolitical. Why waste time and trouble inventing imaginary enemies when we all know what the public want? Micro Prose's *F15 Strike Eagle* provides us with all the hi-tech weaponry we need to blast those nasty MiG fighters, and to cheerfully bomb Egypt, Lybia, Haiphong, Hanoi, the Persian Gulf, Iraq, or Syria. Gung ho ho ho!

Are these games too warlike – too violent? Is this what I'm driving at? No. SDI at least involves, as far as I can gather, shooting down missiles, not people; and any war game or battle simulation will inevitably involve a degree of sanitised violence, as will any kind of fictional adventure from *Hansel and Gretel* to *Raiders of the Lost Ark*. What is worrying here is not so cut and dried as the anti-violence lobby would probably see it. I am certainly less concerned than the German government seem to be about the odd decapitation in fantasy games such as Palace Software's *Barbarian*, which they have just banned. I personally don't believe that the graphics in such a game could possibly produce images of violence so realistic as to cause offence, or that violence itself in a game necessarily incites violent behaviour.

Fantasy as a fictional genre is generally regarded as useful because it allows great moral questions to be pondered in symbolic form. A great deal of hack and slay or zapping with futuristic weapons goes on in the tussle between the forces of light and darkness. Look at Tolkien as a prime example, or *Dr. Who!* The problem I perceive is not the action itself in computer games, but rather the values and rationale which underpin the action. *High Frontier* and *Strike Eagle* have more worrying qualities than the more overtly 'shocking' *Barbarian*.

They are set very firmly in the real world, and they propose a definite set of political preconceptions for gameplay, which qualify the action whilst inadvertently reinforcing an insidious and reactionary 'us and them' mentality.

Though I have said that I dispute that the portrayal of violence in games in itself incites violent behaviour, I can see a problem where violence is portrayed against a 'realistic' backdrop, and is seen as nothing short of desirable. Where the violence becomes the main focus of the game and is merely gratuitous.

The software companies know how important the scenario is. How else do you explain the inclusion of a 48 page novella in Firebird's classic *Elite?* Outside the simple maze or platform format, computer games are after all role play. And the more satisfying the scenario, the more satisfying the playing of the role. But what values are we willing to take on board in the process – or to compromise?

The software companies should realise this, and take careful responsibility in future games design concepts.

With echoes of War Games, the *High Frontier* promo concludes that it's ". . . hopefully as near as you'll ever get to the real thing . . . or is it?"

"Is this just a game or is it real?" The action is just a game, but what's underneath the action – and what does playing it say about me? □

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