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Issue 15 • Feb 18 1989

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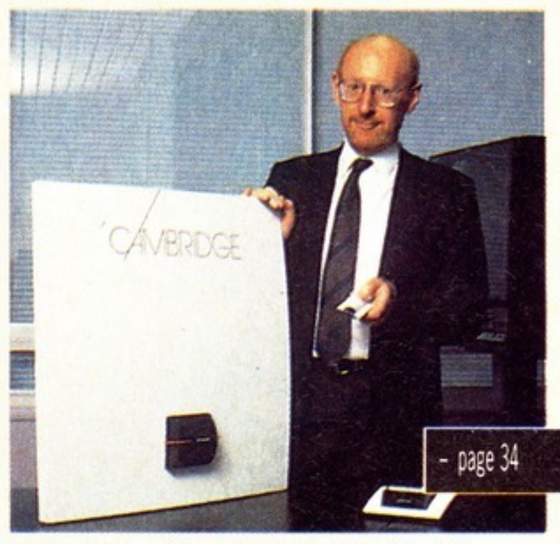

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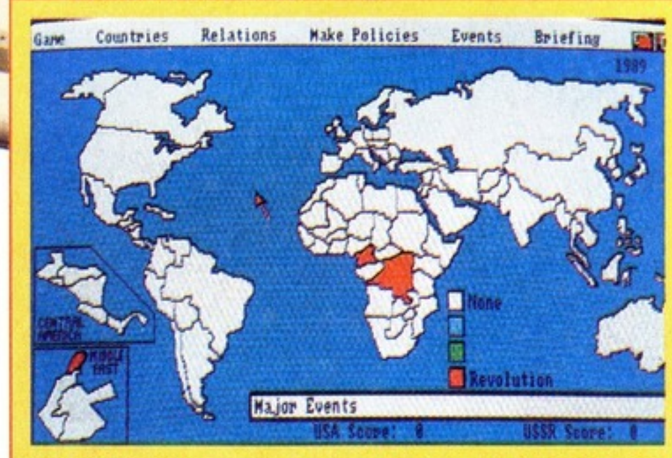

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PRICE BUSTER

Opus to launch low cost 286 and 386 PCs

Opus will next week unleash two new PCs which it contends will bring 286 and 386 computing closer than ever to the ordinary home computer user.

Both machines will be unveiled for the first time at the Which Computer? Show which kicks off next Tuesday at the NEC in Birmingham. Opus is touting the two machines as being "within the reach of anyone contemplating buying an XT but really wanting a 286 or 386 PC". Bargain hunting PC upgraders are clearly being pitched at.

The PCIV 286 will cost little more than £1,000 and comes with a mono monitor and VGA option. It also sports a 20 Mg hard disk drive, one parallel port and two serial ports.

Its more expensive brother, the PCV 386, is also being sold with a mono monitor but will boast a 40 Mb hard drive. It is likely this machine will cost £1,999. Opus is keeping exact prices to itself until the launch proper.

Though not a high profile PC manufacturer Opus claims to be the "third or fourth" biggest seller of PCs in the UK behind IBM, Amstrad and possibly Olivetti. Unlike those firms all Opus machines are manufactured in the UK.

"The significance of these machines is that they bring 286 and 386 closer than ever to the home PC buyer. Other manufacturers' machines may be in the same price bracket but they are the entry level models. Prices soon go up when you start talking about higher configurations," offered a spokesman.

Opus is also hoping to sell to the corporate end of the market place and is actively looking for orders of 20 or more at a time from one buyer. However, the firm also wants to attract upgrading home users who are seeking out faster machines than standard XTs.

"We are effectively providing a 286 with the price tag of an XT and a 386 at the same cost as a top of the range AT," commented Opus Managing director Jon Harris.

Fast and efficient 286 and 386 computers are coming ever closer for home PC users as big name manufacturers such as Amstrad and Tulip introduce new low cost machines. Amstrad's 386 was launched last September with an entry level price tag of £2,649. Commodore recently cut its prices in an effort to attract PC buyers up market (*Express* 14).

• PCV 386: Busting the £2,000 mark

• Bogeyman:: Picking a new name

Fungus the programmer

Bonkers games programmer Colin Dooley is so attached to his 'computer handle' that he's changed his name to it.

Last week the Sheffield-based Gremlin programmer became none other than Fungus the Bogeyman via a deed pole. Bogeyman, aged 22, makes the wholly plausible claim that he's the only person to boast such a label.

"Everyone calles me Fungus anyway. I got the name because it was the handle I used as a computer hacker while I was at University," he told *Express*. "It's just a name I use every day."

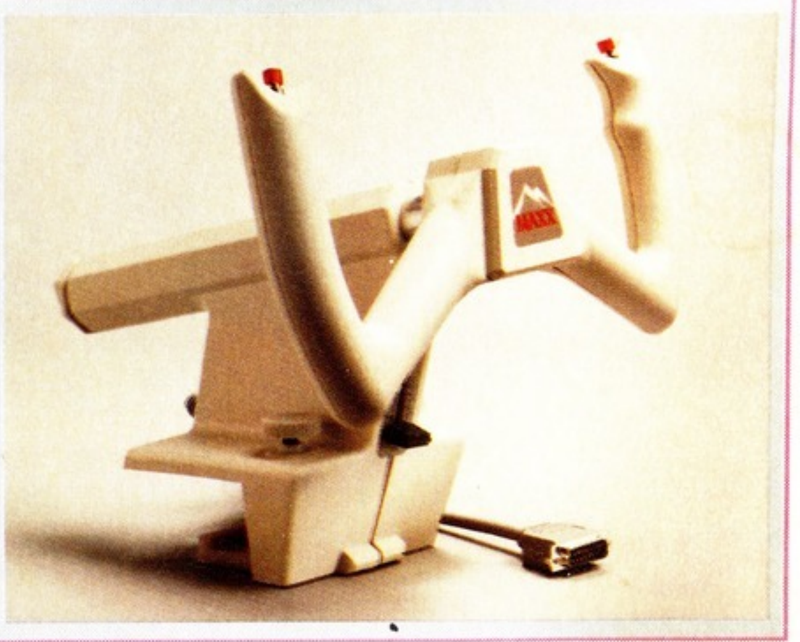
Bogeyman has worked for Gremlin for three years on such projects as *Venom Strikes Back* and *Gary Lineker's Superskills*.

Yoke-ing together the games machines

Putative computer chain store Software Circus is planing to introduce an ST and Amiga version of the Maxx games yoke into the UK later this year.

The firm is currently talking to US manufacturer Maxximum (*sic*) and is hoping that the latter will convert the PC controller to more mainstream games machines. The PC yoke costs £79.95 but it is hoped that any ST or Amiga version will be a good deal cheaper.

"We won't really be able to charge £80 to someone who's only spent £400 on a computer. That's a major buy for an ST or Amiga owner but more of a leisurely purchase for PC owners," said Circus's Steven Markham. If all goes to plan the new 16-bit yokes should be available by the late summer.



• Maxx: ST and Amiga soon

Club brings Amstrad training to the masses

A uniform nationwide chain of Amstrad training centres has been set up by the Official Amstrad User Club.

Amstrad buyers hoping to utilise their machines to the full can choose from a total of 18 centres now open in major cities throughout the UK. All Amstrad professional machines are covered including the new 2000 range.

The Amstrad User Club wants the training centres to become "almost like a high street chain". Users can enrol for a four or seven hour training session. The Club is also running a "bring along a friend for free" offer.

Four hour stints cost £136.85 with seven hours costing nearly £240. Reductions are open to members of the club. All the centres will be similar with standard training procedures and prices. Previously, the club sold licenses to individuals to run centres. According to a spokesperson this meant a lack of uniformity and gaps in the nationwide network.

"A fresh approach is needed for computer training," said the Amstrad User Club's general manager Keith Patterson. He added: "The equipment and decor of every centre are standardised. We aim to become the Rolls Royce of computer training. You can walk into any centre from Edinburgh to Ealing, Stoke to Southampton and you'll know what to expect."

The chain has been set up in conjunction with Sumlock Business Services and Headline Training.

The Who, Where, When and What of *Which?*

The *Which Computer?* Show, Britain's biggest annual business computer event kicks off next Tuesday with over 60,000 visitors expected to pass through the NEC's turnstiles in Birmingham over the four days.

Some 500 exhibitors will be planted in multifarious booths and bastions boasting the latest in high tech tick tackery from North America, the Far East, Europe, Australia and the UK. Punters parting with the £5 entrance fee can look forward to miles of rewarding foot slogging.

Launches of new products, promises of others and an array of established printers, PCs, peripherals and software are promised. Here then, a small selection of what to expect:

● ACORN: All the high performance workstations will be brought on including, of course, the Archimedes. The long awaited R140 workstation running UNIX will finally be launched.

● AMSTRAD: Nothing new is expected from the Brentwood Brigade although its daunting armada of PCs, printers and software will be in all their glory as well as another chance to peer at the firm's September PC2000 launches.

● CITIZEN: There's always a big showing from the printer giant. A full line up of the firm's printers as well as the first showing of its six page per minute laser Overture 112 and the 180E 9 pin dot matrix model.

● EPSON: All the PCs. All the printers. And some innovative new models (*Express* passim).

● COMPSOFT: A new launch of a relational database *Delta Five* is promised.

● HEWLETT-PACKARD: First public showing of the giant's HP Vectra QS/20PC which will be launched proper next month

● MANNESMAN TALLY: More printers including a low cost laser model.

● MICROVITEC: A CD-ROM PC is likely to be shown off as well as three recently launched interactive video workstations comprising laser disk player and monitor.

● MIRRORSOFT: Unveiled for the first time will be *Personal Assistant*, a front end E-Mail, telex, fax and remote database services along with old stalwarts such as the *Fleet Street* range of DTP packages.

● MITAC: Mitac's promises of entering the PS/2 age will come to fruition as the firm unveils its new family of machines starting with the MPS 1000P.

● OPUS: See opposite.

● SAGESOFT: The high profile low cost business firm will be making a first public showing of *Job Costing Module* which integrates the *BusinessWise* accounting range. As always, all the networking and low cost business software systems will be on parade.

● WALTERS: Another PC launch – likely to be a 286.

Visitors can also expect to see wares from every sector of the business community from office equipment add ons firm Accodata to PC giant Zenith.

What's on at Which?

Desktop Publishing centre and seminars *(Hall 3A).*
CAD village *(Hall 4).*
Computer solutions for the disabled *(Hall 5).*
The Computer Consultancy Centre *(Hall 5).*
New products trail.
Printer trail.
Network trail.
The Which Computer Conference: A strategic perspective - the next generation.

All the facts

Date: 21-24 February
Venue: NEC, Birmingham
Entrance: Entrance fee is £5.00. It's free though to those who preregister.
More info bookings on 0792 792 792
Exhibitors: 520
Expected attendance: 60,000

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NEW COMPUTER EXPRESS

Magnum Opus

Opus is not a name that trips off the tongue of the business computer user in the same way that Amstrad, Commodore, or Atari does – yet it is currently somewhere around third or fourth in the UK hierarchy that Amstrad leads in terms of sales.

Its figures are boosted by 'anonymous' orders from Government and educational departments, hence the backroom image of the name so far. But all this could be changing at the forthcoming *Which Computer?* Show. The Opus 286 and 386 machines are being sold at remarkable prices – just over a thousand and just under two thousand repsectively – and will be very attractive proposition to the small business upgrading from Amstrad 1512s and 1640s. Opus might well be one of the New Names of the 90s.

Show's over, folks

The demise of the Amstrad Northern Show, was sad but inevitable. There's the growing number of alternatives to Amstrad for the budget PC buyer; the reluctance of PCW owners to attend shows; and, of course, the logistical problems of choosing a show site for 'The North'. If you live in Newcastle or Hull, it's practically as easy to make it to London as it is to Manchester, given the radial nature of the country's rail and road systems. For the time being, it seems that big computer shows in the provinces are a thing of the past.

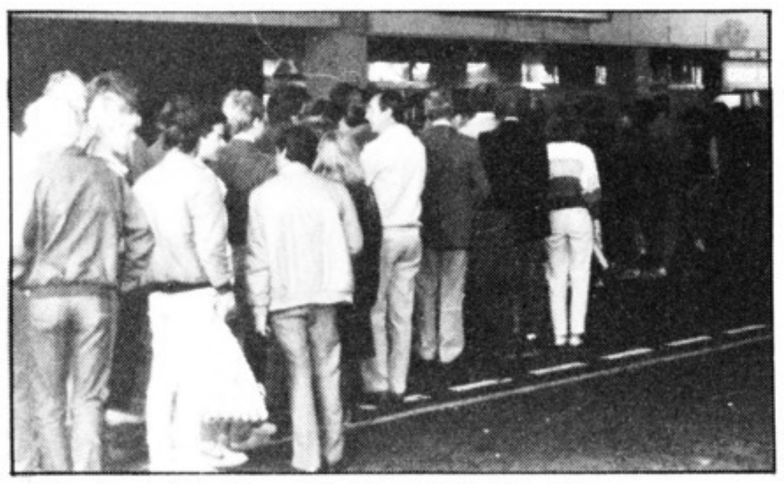
AMSTRAD NORTHERN SHOW SCUPPERED

Amstrad computer users in the North of England are to lose their show – the annual Amstrad Northern Show is to be scrapped due to a lack of interest.

The decision was taken because the Manchester based show – which covers the CPC, PCW and PC ranges – has never made any money. It was originally set up over three years ago to accomodate thousands of Amstrad users based in the North of England.

However, attendances of just 10,000 have meant that organiser Database, along with Amstrad and other exhibitors, has decided to pull the plug. The more popular London show generally pulls in around 17,000 visitors and that will continue.

Database's Mike Malone told *Express*: "It simply didn't make any money. We consulted the exhibitors and the feedback was that it was not a success. The Northern public didn't support it as we would have hoped." He admitted that Database were having "difficulty persuading exhibitors to come in".



• Attendances failed to sustain Amstrad Northern Show

VDU concern

Miscarriages may be caused by radiation from computer monitors, according to research which came to light last week.

White collar union Apex has found that of 4,000 pregnancies the rate of miscarriage amongst those women not usung VDUs was 5.7 per cent. Those who worked for up to 15 hours a week showed a rate of 8.2 per cent. But women who spent more than 15 hours per week with a VDU showed a disturbing rate of 9.3 per cent.

Apex has stressed though that the research is inconclusive. Miscarriages could have been caused by posture, the design of the workstation or stress rather than radiation.

Quick joy waggler

The days when a brand new model of "state of the art" joystick was appearing on the shelves every week have long gone. But the species is far from extinct.

The latest waggler is De Gale Marketing's Quick Joy Supercharger (above) costing £12.95. DGM – backed by arcade giant Electrocoin – usually concerns itself with Nintendo related products. It now plans to start releasing a cartload of peripherals and joysticks for mainstream computers.

Featuring standard eight direction control, six microswitches, four suction pads and two fire buttons the Supercharger is compatible with all the major micros.

• Supercharger: Quick joy

Atari warns against bugged DTP imports

Atari has warned against buying imported versions of its *Calamus ST* DTP software due to be launched next week.

The firm's software wing claims that imported versions are "bug ridden". Over the past few months Atari itself has been ironing out original bugs from the program which is sourced from Germany.

"If it's not from us it's not a proper *Calamus*," said Atari's Darryl Still. "That version is full of bugs." Atari plans to launch the long awaited package at the *Which Computer?* Show for £399.

Software importer Gainstar had planned to bring the program in from the United States at around £199. Boss Mike Fatoohi though claimed that he had not even seen Calamus yet. He admitted though that he is actively looking to import it.

Shock horror publisher in ghoulish nightmare

Another software house has pledged to break down the infamous home computer horror barrier with a string of spooky games later this year.

Tynesoft is to launch a new label, Horrorsoft, which it hopes will end the sequence of dead ideas and defunct horror games which have thus far failed to even provoke a squeak of fear amongst gamesters. The titles will only be available for the PC, Amiga and ST.

Software publishers such as CRL, Domark, Cascade and Palace have all tried and failed to bring horror to computer games with the likes of Dracula, Evil Dead, Frightmare and Friday the 13th. Tynesoft reckons it has a new formula.

"It's a very high level of adventure with just a blend of arcade," explained Tynesoft's Colin Courteney. "We've had to be careful though because there's a very thin line between horror and being too horrific. You can't say this is only for over 18s in this industry. But since it's only on the 16-bit machines we feel most of the buyers will at least be over 15."

America's "Queen of Horror" Elvira will be the focus of the first game, *Personal Nightmare*, which should arrive in the early spring.

Mind your language

Hi-Soft has confirmed that it will be launching a low cost ST interpreter for the C language in the near future.

ST owners hoping to learn the higher level language have thus far only been offered laborious and time consuming compilers. Hi-Soft claims that the interpreters available are too simplified.

Compilers are seen as being a good deal more clumsy than interpreters which can "cut corners" and save programming time.

"There've been very few low cost C interpreters around and those available are too simplified," commented Hi-Soft's 68000 product manager Andy Pennell. "This will be ideal to learn C on. People are often put off by difficult compilers," he said.

High level languages, though more difficult to grasp than lower relatives, make for faster communication with computers.

16-bit budget games loom

Budget games leader Mastertronic has drastically streamlined its line up of labels and games and is planning to introduce a new vein of 16-bit budget titles.

Soon, all games from the firm will be available as Mastertronic or Mastertronic Plus titles. The Ricochet label – which previously dealt solely in full price re-releases at budget prices (à la *Jet Set Willy*) – is to be scrapped.

Mastertronic Plus is the vehicle for higher quality budget games at £2.99. The 16-bit versions of these will cost £9.99. Plans are afoot to sell £1.99 games on 16-bit formats for around £7 or £8. Mastertronic is not confriming this though.

The firm which is part of the giant Virgin group clearly feels that too many labels under one umbrella is confusing in a market where brand names are so important. Code Masters has made something of a success out of its own clearly defined identity.

In times gone by gamesters could buy a Mastertronic game under the guise of MAD, Ricochet, Bulldog, MAD Chrome or simply Mastertronic.

End of an era?

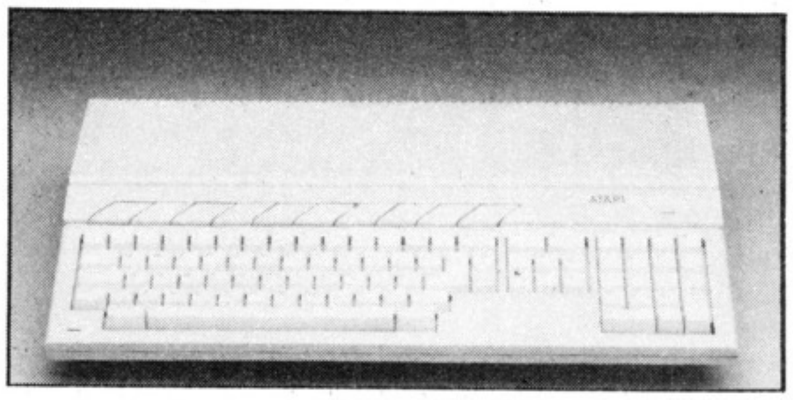
WH Smiths ponders computer future

Leading High Street chain store WH Smiths may soon stop selling computers altogether.

The 265 strong store – the first to stock the Sinclair ZX81 back in the early 1980s – will not be selling any computers this summer. Since before Christmas Smiths has only been stocking the Atari ST in most of its larger UK stores – but that machine is now being dropped for the relatively lean summer months.

Between now and the autumn the firm will be debating whether or not to re-instate the machine for next year's widely expected Christmas computer bonanza. Smiths is not planning to take on any other micros in the meantime.

Smiths computer buyer Sean Willis told Express: "We're not going to be selling the ST this summer and then we'll make a decision as to whether or not to bring it back next September." He admitted that a decision against the machine was "very much a possibility".



• Atari ST: Smiths to click on EXIT?

Industry watchers have claimed that Smiths did not sell as many STs over Christmas as it would have hoped despite operating a spcial bundle of its own. The machine's performance in Smiths is said to have not been as remarkable as elsewhere in retailsville where leisure computer sales have been at their best for five years.

According to insiders though, Smiths' top brass are still undecided as to whether to dip out of computer hardware altogether and high level meetings are expected between the firm and Atari UK's bosses. Atari said that it could not comment on any decision Smiths might take.

Over the past eight years WH Smiths has sold the Spectrum, Commodore 64, Amstrad CPC and PCW as well as the Atari ST. The Spectrum was dropped just before Christmas. Smiths feels that shop space would be better handed over to that "phenomenal" money spinner – games software.

All the same, a declining hardware presence in the multiples can only bode ill for the home computer scene which is so near to reaching the heady heights of mass market status and therefore cheaper hardware and greater software support.

Computerised canines

Doggone it. Even the canine community is to join the computer age.

The RSPCA is looking carefully at the prospect of using tiny microchips to cut down the disturbing problem of stray dogs. The agency wants to inject the chips under all dogs' skins. The chip, which is only the size of a grain of rice, would carry a ten bar code which could be read by a scanner. Each dog would have its own unique number.

Guard dogs in Ireland already have to be injected. The chip is administered through a syringe and causes the dog no more pain than a normal vaccination.

Currently, some 350,000 stray dogs have to put down every year. The RSPCA feels many of these could be saved by the microchip. Often, irresponsible owners neglect to give their dogs name tags and so they cannot be notified if a lost dog is picked up. Information held on a chip could be run through a central computer and stray dogs then be returned home.

Now Mirage joins PC fray

A new range of PCs from low end 8088s to expensive 386s has been introduced into the UK by Lantek Communications.

The Mirage range is already familiar to PC users in the US and on the continent under the name Kesys. All the machines are manufactured in Taiwan.

The entry level 250K twin floppy machine with mono monitor costs £975. The 286 version (above) retails at £1,499 and runs at a clock speed of 12 MHz. Its top of the range model weighs in at a hefty £6,000.

Also available are a line up of tower machines, laptops and desktop portables. Lantak reckons the lot are "state of the art". More info on 0255 862080.

• Mirage before your eyes: tuning into the UK

GAMES TOP TWENTY — FULL PRICE

1 / 1	Robocop	*Spectrum, C64, CPC*	OCEAN
2 / 3	Afterburner	*Spectrum, C64, CPC, ST*	ACTIVISION
3 / 2	Operation Wolf	*Spec, C64, CPC, ST, Amiga*	OCEAN
4 / 4	Thunder Blade	*Spectrum, C64, CPC, ST, Amiga*	US GOLD
5 / 7	Falcon	*ST, Amiga, PC*	MIRRORSOFT
6 / 5	Double Dragon	*Spectrum, C64, ST, Amiga*	MELBOURNE HOUSE
7 / 11	Football Manager 2	*Spectrum, C64, CPC, ST, Amiga, PC,*	ADDICTIVE
8 / 10	Giants	*Spec, C64, CPC*	US GOLD
9 / 8	Batman	*Spectrum, C64, CPC, ST, Amiga*	OCEAN
10 / 15	In Crowd	*Spec, C64, CPC*	OCEAN
11 / 9	Last Ninja 2	*Spectrum, C64, CPC*	SYSTEM 3
12 / 19	Heroes of the Lance	*Spectrum, C64, CPC, ST, Amiga*	US GOLD
13 / NE	Fun School 2	*Spec, C64, CPC*	DATABASE
14 / 14	Pacmania	*Spec, C64, CPC, ST, Amiga, MSX*	GRAND SLAM
15 / NE	War in Middle Earth	*Spec, CPC*	MELBOURNE HOUSE
16 / RE	Game Set and Match 2	*Spec, C64, CPC*	OCEAN
17 / 18	Elite	*Spec, C64, CPC, ST, Amiga, PC, BBC, Elec, MSX*	FIREBIRD
18 / 6	R-Type	*Spectrum, C64, CPC, ST*	ELECTRIC DREAMS
19 / NE	Dragon Ninja	*C64, CPC*	OCEAN
20 / 17	Return of the Jedi	*Spectrum, C64, CPC, ST, Amiga*	DOMARK

GAMES TOP TEN — BUDGET

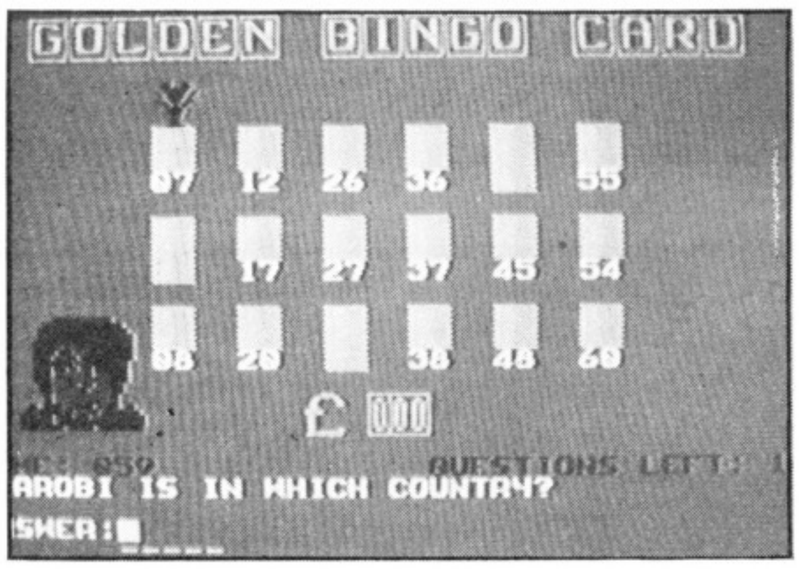
1 / 1	Joe Blade 2	*Spectrum, C64, CPC, BBC, C16, Electron*	PLAYERS
2 / RE	Treasure Island Dizzy	*Spec, CPC*	CODE MASTERS
3 / NE	World Games	*Spectrum, C64, CPC, MSX*	KIXX
4 / 2	Who Dares Wins 2	*Spectrum, C64, CPC, BBC, C16, Atari 8-bit, MSX*	ALTERNATIVE
5 / 8	ACE 2	*Spectrum, C64, CPC*	CASCADE
6 / 6	Ghostbusters	*Spectrum, C64, CPC, Atari 8-bit*	MASTERTRONIC
7 / RE	Big Foot	*Spectrum, CPC*	CODE MASTERS
8 / 13	Leaderboard	*Spectrum, C64, CPC*	KIXX
9 / 3	Bomb Jack	*Spectrum, C64, CPC, ST, C16*	ENCORE
10 / RE	Footballer of the Year	*Spec, C64, CPC, Atari 8-bit, BBC, C16, MSX*	KIXX

COMPILED BY GALLUP

NE – new entry
RE – re-entry

UNLUCKY FOR SOME!

DOMARK HITS TROUBLE



• Bobs Full House: At best, postponed. At worst, abandoned

Domark's plans to release a game based on TV quiz show *Bob's Full House* have run aground in a tangle of legal and contractual difficulties.

The bingo based game – due to have been launched last week – may now never hit the streets. At best, Domark can hope for a delay of at least a month.

The problem centres around the show's smooth-talking host Bob Monkhouse. Domark has the rights to the show but no rights have been agreed with Monkhouse himself as a separate entity. This does cause something of a difficulty, since the game is named after the celebrity.

Not only is Monkhouse's name featured but his image is also used in the gameplay. Due negotiations, it is hoped, will allow the game to be published

"We still haven't got to the bottom of it," said Domark's Mark Strachan. "We've been lead up the garden path by some people and we'll just have to sort it out."

TEA STIRRERS BEWARE...

Low cost business software house Power-Up has some bad news for those of us who like to keep out of the boss's way.

The American firm has come up with a devil of a program called Working Hours – a "human resources manager". Costing £79.95 it can keep individual records of an unlimited number of employees and can help schedule what they do and when efficiently.

Hardened tea stirrers will be distraught to learn that Working Hours also cuts out those little anomolies which make the working day that much easier. It alerts schedulers when available people aren't being scheduled or when jobs are overlapping.

Gamesweek slides under

Six month old weekly magazine Computer Gamesweek is to be closed down.

The mag will be merged with sister paper Popular Computing Weekly next week as a 24 page supplement. Insiders have suggested that Gamesweek's circulation had dipped to a level of only 11,000. Focus, the magazines publisher, does not release official figures though.

Tricky Mini Office ST version soon

Database is finally to release an ST version of its big selling business package *Mini Office Professional*.

However, the traditional integrated version won't be available until the summer. Individual modules are to be launched as they are developed with an all in one package probably arriving in the summer.

Mini Office Pro comprises of five different modules, a spreadsheet, communications package, database, graphics presentation and document processor. All bar the latter will cost £24.95 individually (the document processor will retail at £34.95). This, says Database, gives buyers the chance to pick and choose which aspect of business computing they need most.

The package has already appeared on "just about all the formats mentionable". Apparently, the ST version has been so long in coming because it's the "trickiest". *Mini Office Professiona*l should cost around £85 when it is launches as a whole.

NEW TITLES ON THE IBM PC FROM PRENTICE HALL

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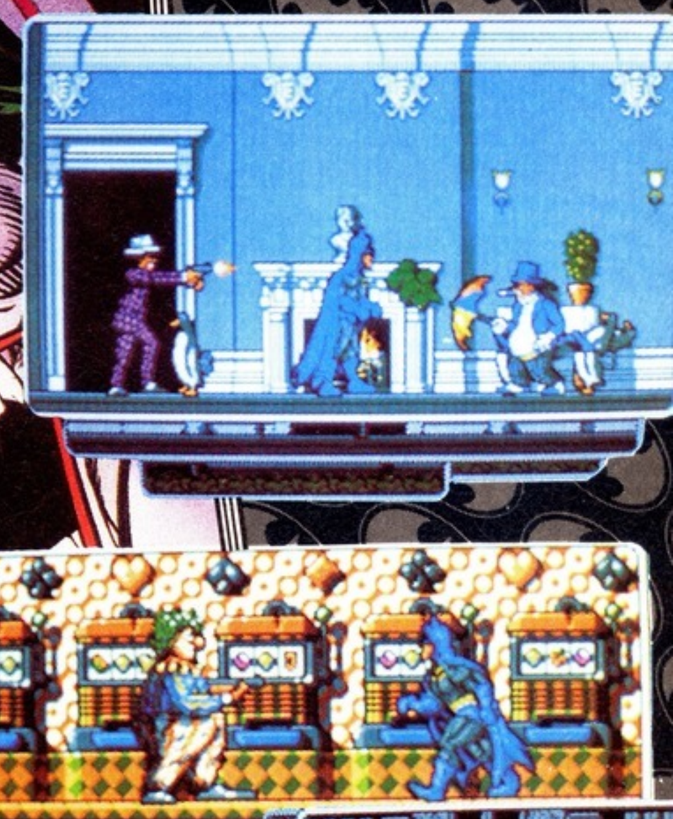

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Aztec C Professional	199.99	139.50
B.B.S.P.G. Coms Pack	119.99	96.50
Butcher II	29.99	21.50
C. Library	79.99	60.50
Calligrapher	89.99	72.50
C.L.I. Mate	39.99	29.50
Comic Setter	69.99	50.50
Comic Setter Librarys (Each)	24.99	18.50
Critics Choice	149.99	112.00
Data Retrieve	57.99	42.50
Deluxe Music Con. Set	69.99	50.50
Deluxe Paint II	69.99	50.50
Deluxe Photolab	69.99	50.50
Deluxe Print	24.99	18.50
Deluxe Print II	49.99	39.50
Deluxe Productions	139.99	122.00
Deluxe Video	69.99	50.50
DevPak Assembler	59.99	45.50
Digicalc	39.99	29.50
DigiPaint	39.99	29.50
Digiview Gold	149.99	125.00
Digidroid	59.99	50.50
Digistand	59.99	50.50
Director	59.99	45.50
DOS 2 DOS	39.99	29.50
Excellence	228.99	182.50
Express Paint	69.99	50.50
Facc II	29.99	21.50
Fantavision (Tel for availabilty)	39.99	29.50
Forms in Flight	69.99	50.50
Godspell 2	29.99	21.50
Gomf 3.0	29.99	21.50
Grabbitt	29.99	21.50
Hot and Cool Jazz	9.99	7.00
Home Accounts	29.99	21.50
I.F.F. Library	79.99	60.50
Impact	63.99	44.50
Instant Music	29.99	21.50
Interchange	49.99	39.50
Introcad	59.99	42.50
K Spread 2	79.99	60.50
K Seka Assembler	49.99	32.50
Kara Fonts	59.99	45.50
Kind Words 2	49.99	35.50
Lattice C Version 5.0	249.00	185.00
Lights Camera Action	57.99	39.50
M.C.C. Pascal Version 2	89.99	69.50
Macro Assembler	69.99	50.50
Mailshot	49.99	39.50
Maxiplan A500	99.99	79.50
Maxiplan Plus	149.99	109.50
Microfiche Filer	79.99	62.50
Modula II	139.99	109.50
Movie Setter	69.99	50.50
Music Studio	34.99	24.50
On Line	110.46	107.00
Organise II	69.99	50.50
Photon Paint	69.99	50.50
Pixmate	49.99	39.50
Power Windows 2.5	69.99	50.50
Prism	59.99	45.50
Pro Board	139.99	109.50
Pro Net	139.99	109.50
Pro Video CGI	159.99	134.50
Pro Video CGI Fonts	69.99	50.50
Pro Video Plus	249.99	185.00
Pro Video Plus Fonts	99.99	72.50
Professional Page	249.99	185.00
Project D	39.99	29.50
Publisher Plus	99.99	79.50
Quarterback	49.99	39.50
Rock and Roll	9.99	7.50
Ruby View Term	99.99	79.50
Sculpt 3D	85.00	69.50
Sculpt 3D Animate	129.99	111.50
Seasons and Holidays	9.99	7.50
Shell	49.99	34.50
Simp Library	79.99	60.50
Sonix	57.99	39.50
Studio Magic	69.99	50.50
Superbase	89.99	72.50
Superbase Professional	249.99	185.00
Superback	52.50	39.50
TV Show	69.99	50.50
TV Text	69.99	50.50
Tool Kit	39.99	29.50
Turbo Silver	139.99	115.00
Video Titler	110.00	85.50
Videoscape 3D	143.75	117.00
Wordperfect 4.1	228.99	185.00
XCad	460.00	325.00
Zuma Fonts (1-3) (Each)	34.99	24.50
Ultimate Soundtracker	39.99	32.50
E-Type	39.99	29.50
Day By Day	29.99	21.50
Protext	99.99	79.50
GFA Basic	64.99	48.50

Educational Software

Con. Sound Tratton (Age 4+)	31.95	24.50
Matchit (Age 2+)	31.95	24.50
Mathamation (Age 13+)	69.99	50.50
Mathamagician (Age 6+)	39.99	29.50
Robot Readers (Childrens Stories) (Each)	24.99	18.50

Hardware List

A500 Amiga (inc Built in Disk Drive and 1.3 Kickstart, Mouse, Power Supply, Workbench "The Very First" and Modulator)	399.00	360.00
A500 Amiga with 1084/S Colour Monitor	649.99	620.00
1084/S Colour Monitor	299.99	260.00
A500 Amiga, 1084/S Colour Monitor and 2nd Disk Drive	749.99	665.00
1084/S Colour Monitor and Philips TV Tuner	399.99	360.00
Philips TV Tuner	99.99	95.50
Cumana CAX 354 Standard Disk Drive	99.99	95.50
Cumana CAX 354 with Power Supply	150.00	135.00
Genlock 8802	299.00	270.00
Triangle Broadcast Quality Genlock	915.00	850.00
A501 1/2 Meg RAM Upgrade for A500	175.00	150.00
B2000 Amiga	1269.00	999.00
B2000 Amiga and 1084/S Colour Monitor	1494.00	1350.00
A2058 (8Mb RAM Board Populated with 2Mb)	746.35	695.00
A2088 XT Bridge Board	607.20	573.00
A5060/A2092 20Mb MSDOS Hard Disk	402.50	395.00
A2090/A2092 20Mb Amiga DOS Hard Disk	460.00	445.00
A2010 Internal 3 1/2 Disk Drive	196.65	172.00
Cumana CSA100S External 5 1/4 Disk Drive	120.00	115.00
Star LC10 Black and White Printer	297.85	255.00
NPS 1230 Black and White Printer	249.99	235.00
Star LC10	343.85	315.00
Star LC24/10	458.85	425.00
Star NR15	688.85	660.00
Star NB24/10	759.85	735.00
Star NB15	1056.85	985.00
Star Lazer 8	2287.00	2195.00
14" Cotron Hi Res Colour Monitor	747.50	695.00
20" Cotron Hi Res Colour Monitor	2070.00	1879.00
Cherry Pad A3 Digitising Tablet	632.50	595.00
Video Driver Card (Must be sold with Cotron)	396.75	360.00

EXPRESS MAIL

Dear Reader

Three pages this week, packed with another selection from our postbag. Got something to say? Make your voice heard in computing's liveliest letters page!
Send your contributions to:
Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ
PS. Sorry, NO personal replies, whether you include an SAE or not. We're too busy putting Express together!

TIME STUFFING

Wow! Amazing. Totally Zarjaz. What am I talking about you ask yourselves?

Well, time travel of course. In issue 13, which was out on Feb 4th, I was fascinated to read that issue 14 would be out on Feb 2nd.

Please, please, please could you tell me if it is a special piece of hardware and if it is, where can I buy one, and will it fit the modem port on my ST?
D Ranged, Sheffield, Notts

● ***I'm glad to be able to tell you that your ST has the necessary equipment already! The feature responsible for this effect is in fact standard on all home systems. The technical term is 'human error' but the more colloquial phrase is 'cock-up'.***

SOCCER IT TO ME

Having read your article on the Football ID card scheme (*Express* 13) I do not believe that you fully understand the problem. The article basically said "Look – here's a bunch of bozos who are scared of technology because they think it's going to cost them money." Wrong! Wrong! Wrong! Come out from behind your VDU screen and see the real world!

Granted, the money angle is the reason given by the clubs for their opposition to the scheme. However, the main issues at stake here are of misinformation and basic human rights. Misinformation because no matter how much Colin Moynihan paints a picture of mayhem every Saturday, his figure of 6,000 arrests during last season boils down to just 3 per game (that includes thefts from cars during the match when most hooligans are inside the ground!).

The issue of human rights is a more sensitive one. I for one would object to being forced to carry a card which would put me on a police computer – for that is what it boils down to – just to go to a football match on a Saturday. Of course many people just won't bother at all.

I have my own scheme which is cheap, effective and will do away with the need for all those expensive computers. All match goers should have the phrase "Potential Football Hooligan" tattooed across their foreheads. Any transgression of the law, and all the police have to do is boldly cross out the word "Potential". Simple, huh? Mr Moynihan should be told about this. After all, he does support (no laughing at the back) Charlton Athletic.
A M D Coleman, Reading, Berks

● ***The thrust of the article was that football clubs aren't worried about the cost so much as the practicalities of the scheme – the delays and consequent tension caused by the checking of each punter at the turnstiles. Most soccer clubs are already computerised to some extent (supporter's club records, financial data etc. just like any small business) and so we wouldn't have tried to portray them as a bunch of technophobic bozos.***

Sure, the issue of human rights is a more sensitive one, but this is a computer magazine, not The Guardian, and that angle has been done to death elsewhere. Anyway, most of us already have to carry a bunch of cards with us to use certain services already: cashcards, credit cards, driving licence, library card... What annoys me about my cashcard is not having to carry it, but having to wait in queues at the machine to get my money on Saturday afternoon. Multiply that queue by a thousand and that's what'll be happening at your local ground.

• Where will the players put their ID cards? (see *Soccer it to me*)

Ways to increase everyone's spending power include providing better job opportunities, and until I get in as Prime Minister in 2015 there's little I can do about it.

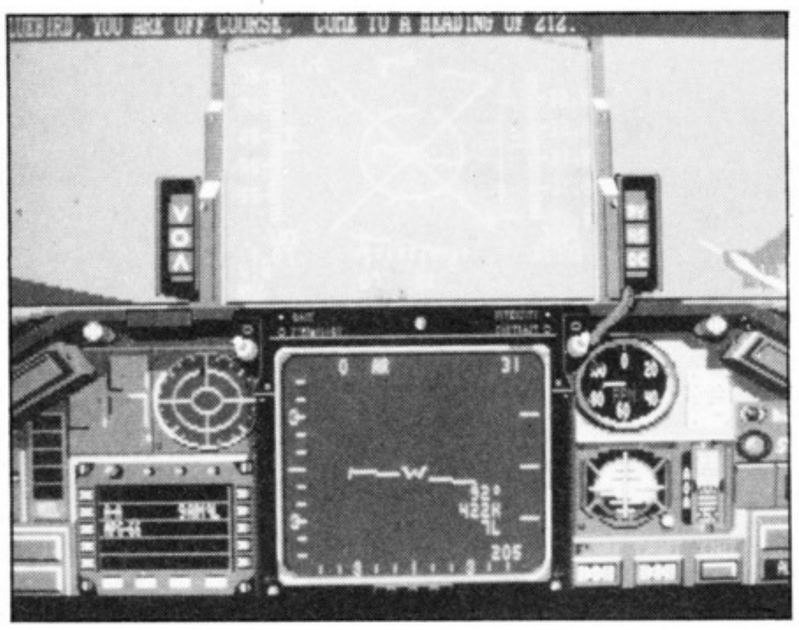
I MUST PROTEXT

I have just read issue 13 of *New Computer Express* and was surprised to see that on page 16, someone has quoted the price of *Protext* for the Amiga at £69. *Protext* for the Amiga has a recommended retail price of £99.95. This has not changed since its release last November. I would be grateful if you could rectify this mistake as soon as possible.
Douglas Thompson, Arnor Limited, Peterborough, Cambs

● ***Sorry about that! I don't know what on earth we must have been thinking of when we we came up with that figure...***

WATCH OUT FOR THE FLASHER

I recently purchased *Falcon* for my ST. I got it home, played it, played it, and played it some more. After about a week of playing this totally brilliant simulation, my F-16 Falcon started flashing on and off the screen, every time I took a hit from a MiG. Is this meant to happen, as it never used to do this?
PS Does anyone know any tips for this fab game, or even for *IK+*?
K Ware-Lane, High Wycombe, Bucks



• Who put the flasher into Falcon? (See *Watch out for the flasher*)

● ***Mirrorsoft's Technical Department says it's never heard of this problem before but is looking into it. If it's affecting the gameplay in some drastic way you can return the disk to it, it says.***

But this trick of flashing on and off every time you get hit could be useful. If you find out how it's done, tell Frank Bruno in time for next week's fight.

IT'S A MEG'S GAME

Last time I wrote to you, I offered my PD disks free to anyone who wanted them. Thanks for printing my letter. Unfortunately, no one sent for my disks as you didn't print my full address.

Now that Amigas are being sold with 1 meg as standard you'll seldom find an advert offering one. Most adverts are still offering them with half a meg. I suspect they're trying to get rid of them quickly by selling them cheaply. Well, it's still not cheap enough. Youngsters may want the ten free games, but they don't have £300 plus and with so much unemployment these days their parents don't either.
George Garven, Kilmarnock, Ayrshire

● ***Anyone wanting the free PD disks should write to East Lodge, McPhail Drive, Kilmarnock, Ayrshire, Scotland, and presumably enclose blank disks and return postage bag.***

As I've said before, I don't think the solution to the problems you indicate is to lower the price of computers, but to increase everyone's spending power: after all, if Commodore sells them too cheaply, it'll go out of business, causing more unemployment.

...AND A COLUMN FOR DYMO LABELMAKERS, PLEASE

I am writing to agree with Chris Birch (*Express* 12) who wrote asking for a column for Psion Organiser users. I have a Casio calculator, and would like to know how to use it. I also have an abacus

HETERODOXICAL RELATIONS

Do you permit a touch of heterodoxy, or even heresy? (Who was it who said that orthodoxy is my doxy and heterodoxy is your doxy?)

Your comment (under the letter *Psion Language*, *Express* 12), lumping together Z88s and Einsteins and Orics and Dragons and PETs and so on down to (up to?) MSX, annoyed me a bit. It's not just that I have and use an Einstein – so take your coat off and come out and repeat that – but that I'm fed up of that favourite game of "my computer is better than your computer" syndrome, with its main symptom of "some computers are just not worth bothering with".

I started my home computing with a Spectrum, and a 16K at that! (Tell the truth; I started my computing with a six-inch slide rule in the year 1944. Can you remember when the verb "to compute" was synonymous with "to calculate"? However, back to the Spectrum.) I didn't mind at all the rubbery keys which, as you point out in another context, can have their advantages. I absolutely loved the single-key-word entry in BASIC, and have missed this facility in every one of my other computers except the Casio portable. It had the great advantage of being a boon to those of us who karnt spel, and it was a damned sight quicker than typing out the words letter by letter. And even the 16K was enough for most mathematical work. (Do you remember when the verb "to compute"... oh, I've said that.)

But I upgraded to an Amstrad CPC464 mainly because I can't type and thus needed some kind of a word-processor. But I missed some of the Spectrum's mathematical functions. The Amstrad didn't have the Spectrum's VAL function, so it meant using the DEF FN instead, which takes a hell of a lot longer to program. What's the opposite of "streamlining?"

The cassette drive was slow of course and, as a word processor, the four-pages-of-text memory wasn't all that hot. So I started to look around for something a bit better.

The decision was made for me by me lov'ly darlin' who bought me an Einstein. Bingo! Disk drive, and with *Tasword*, an EVAL function which followed the Spectrum's VAL and enabled a great simplification of mathematical programs and a full set of other mathematical functions which reduces the need for that DEF FN. (Do you remember when the verb...) The graphics could be improved of course, but my son and I have produced some perfectly adequate graphics as visual aids in technical lectures.

But a bigger working memory for the word processor would have been nice, especially on a machine which approached some kind of industry standard. Well, my local printing company can accept work done on the Amstrad PCW, thus saving me enormous typesetting costs. My birthday was coming up and did I mention me lov'ly darlin'?

MYSTERY PRIZE WINNER

So, with a PCW8256 I have a perfectly good office machine. It's a lousy computer of course, in the sense of a calculator. (Did I make that mathematical point?) The *Mallard BASIC* has no more than bog-standard mathematics, and no graphics at all. And, when loaded, it leaves only 30K. Why, my Einstein leaves me 42K. Thus I use an Einstein as a computer, and alongside it (I have a mobile chair) the PCW, and in my briefcase the Casio 720.

Did someone mention games? Well, I have *Elite* for the Einstein, but can't seem to improve my rating, and for the PCW I have a review copy of *Strike Force Harrier* which doesn't work at all. Who needs games anyway?

But the point is this: every computer I've ever had has been useful for something and each has had its strengths in particular areas. And I wouldn't be without any of them.

I even use a twelve-inch slide rule from time to time.

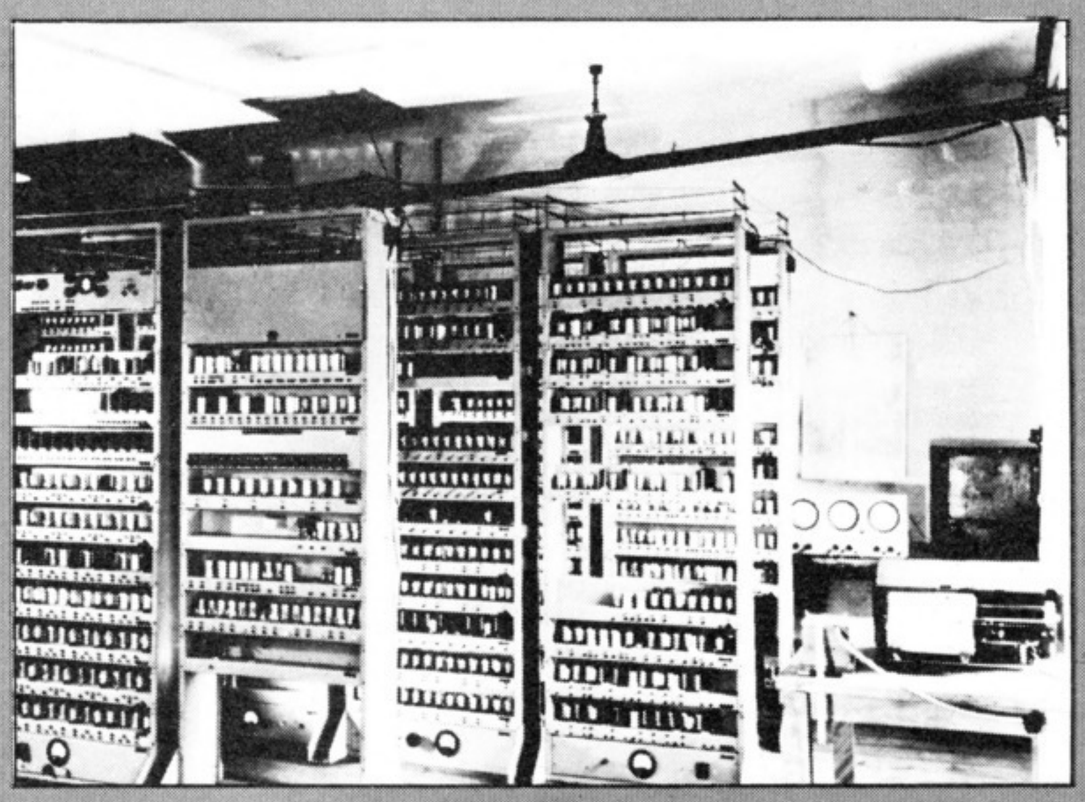
Roy Peters, Mansfield, Notts

● ***Well, I've just looked at my reply to the letter you mention and I can't see anything insinuating one machine is any worse than another. We're talking about whether or not a machine justifies a column, not how good it is. To merit a column, a machine must have a large user base of potential readers and there must be something you can write about it every week. So, a Z88 column is pointless because there are plenty of users but hardly any software or hardware to write about; an Einstein column is a waste of space because there simply aren't enough Einstein owners to justify it. (A slide rule column is a non-starter for both reasons). Both are quite sensible computers to have though (I've got a Z88, after all, and use it almost every month).***

And what's this nonsense about Mallard BASIC having no graphics? There's GSX, which is dead easy to use! Quite a few programmers with relatively poor degrees have managed to understand how to make graphics with GSX after only a few month's work, and I'm sure there will be a book out on it to make up for the fact it ain't covered in the manual any year now.

As this is the prize letter, we're sending you a valuable add-on for your slide-rule. Only joking: it's a piece of software for your PCW.

We certainly wouldn't ever want to suggest, imply or insinuate that any one machine was any worse or less rigorously designed than any other. After all, computers – say Amigas – are just like planes – say Boeings: whatever the make, they're all made and designed jolly well and hardly ever crash.



• OK, the Amiga may be better for graphics, but when it comes to heating up the room, the EDSAC I was miles better.

running MS-DOS, some measuring tape running GIV-BASIC, and my fingers, which are running AmigaDOS (very slowly).
PS My friends call me Don.
PPS Some call me Mon.
PPPS Sorry it's on school paper. I'm skiving off PE, but don't tell anyone.
PPPPS That's not my real name!
Donald Key, York, North Yorkshire

● ***You obviously have a great future as a writer, partly because of your sharp wit (cruel but fair), but mainly because you write under pseudonyms and skive a lot. When the tax returns come, you're Mickey Mouse, right?***

LOSING COPY

The letter I wrote about copy protection (*Express* 13) unfortunately seems to have suffered from a vicious attack of sub-editing in the penultimate sentence.

In the two lines which disappeared I suggested that certain types of software protection could actually encourage piracy – if the copied software is easier to use who's going to buy the original?

Being involved with PCs in a business environment I know that copy protection does not work. Incautious use of the format command on a hard disk system, a head crash or even installation by an inexperienced end-user can render source disks useless. The user therefore resorts to 'backup' utilities or a tape streamer. Having used these on legitimate backups there is, of course, the temptation to see if they work on other peoples' programs and so the story goes on. The only people to benefit are those who write 'backup' software. Are these the same people who invent the copy protection schemes?

A final question. If running accountancy software was one of your more legitimate jobs, what were the rest? The possibilities are endless – captions in girlie mags, night club bouncer, *Sun* feature writer? I think we should be told just who we are entrusting our letters to.

Jim Feltham, Morden, Surrey

● ***Well, I can't tell you all the jobs I had in case anyone from the Inland Revenue is reading, but they have included sorting cucumbers, selling used cars and driving a bread delivery van.***

Everything you say about copy protection is fair enough, though you're speaking from a business point of view of course. As all business software is thoroughly and helpfully documented (pause for laughter from business readers) a copy of a spreadsheet or accounts program isn't usable without the manual – all too often not usable with the manual either – and so there is less reason to copy-protect. It makes those vital backups impossible, and the program may be in use eight hours a day making failure inevitable sooner or later. So you could be right.

Sorry about those two lines that went missing– I think the simple explanation is that

PRINTER DRIVER IS A 13-LETTER WORD

My rude word for the month – now brace yourselves, men – is printer driver. Can *New Computer Express* succeed where all other magazines so lamentably fail? Probably not after re-reading issues 7, 8 and 9, but as a 60-year virgin I live in hope.

I often see glib references by clever-clever journalists about 'writing a printer driver', but never see an example to show us poor,

higgerant gits out here just how easy it is.

They say one picture's worth a thousand words, but I never not nohow see these bleeding words, never mind the effing pictures.

Could you therefore persuade the Wizard Worlock, by threatening him with a fate worse than death, to pen an article giving us a blow-by-blow account of exactly how these mythological beasts are written, dotting all the i's and crossing all the t's so that even I will comprehend?
John Smart, Hitchin, Herts

● ***It's one of the classic problems of documentation – Computer manual: For details on writing a printer driver, consult the printer manual. Printer manual: Printer drivers vary depending on the machine you have. See the computer manual for full details...***

We're planning to do an article on it soon, though it is tricky generalising about something that varies so much. Watch Tech Tips.

DROSS HOUSE

Complete dross! That is the only way to describe Paul Livesey's letter, *Express* 10 – *Prize Guy*. The list he compiled should have been entitled 'Why I should not be the mystery prize winner this week'.

I must admit I do not mind offending people nor am I bothered by people who offend me! Number 9 in his list proves why he should not win a prize, "I own an Atari ST." May I point out that this is nothing to be proud of and if he had half a brain he would have saved a little bit more money and bought a decent computer, like an Amiga! I own an Amiga and laugh at anyone who has bought or is going to buy an Atari ST.

The Amiga may cost more but at least the graphics are half decent and the sound is real. This isn't just a letter to slag off the ST. It is merely pointing out that there is no reason why Paul Livesey should win a mystery prize (unless it was an Amiga!)

By the way thanks for a great mag.
K Ault, South Wirral, Merseyside

● ***Let's see if I've got this right: you're saying the Amiga has graphics that are only half decent, that it costs more than the ST and is for people with half a brain, yeah?***

GOOD EVENING REVIEWERS

I have had an Amiga for a couple of months now and am very happy with the machine.

However, one thing irritates me: the fact that software houses churn out games for the Amiga which quite clearly are just not worth the £25 asking price. When people pay that sort of money for a piece of software they expect to get value for money. That is why I thought reading a review is the best way to decide what is or isn't good.

How wrong I was. One magazine says "wow this'll blow your socks off" and then another says "blocky slow moving graphics, very bad value". Who do you believe? Take your review of *Dragon's Lair* for instance. Your reviewer gave it 5 stars and couldn't praise it enough. Yet in another magazine the same game only got 69%. I'm beginning to think that software houses own some magazines.

Well anyway, my point is that games reviewers should not be blinded by great graphics and sound. They should put themselves in the shoes of the ordinary man in the street and say to themselves is this game worth £25 and will I be playing it in 6 months time? If not, I think the reviewer should give a game a "black mark" for bad value. Please reviewers, for the sake of our pockets, try to put yourself in the shoes of a money-paying software buyer.
Alan O'Flaherty, Wicklaw, Ireland

● ***We always try to mention how addictive a game will be and whether or not it's value for money, but on a weekly there just isn't the time to evaluate a game to the extent that, for example, ACE does with its predicted interest curves for each game for the coming year's play. Anyway, we'll certainly keep your comments in mind.***

Much to the annoyance of some people who've tried to influence our reviews in the past, editorial stays completely independent of our advertisers. If a game's naff, we tell you: software houses would hardly award their products one star out of five (as four games last week were – and watch the games pages for a bit of low-scoring history next week). That way you can be sure that if we say something's good, it is – in our own honest opinion at least.

As for the differences in reviews between us and other magazines, well the explanation is quite simple: we're right and they're wrong. And surely you can be blinded by graphics, but only deafened by sound? How can you review a game if you're standing in someone else's shoes in the middle of the street?

NO MORE LETTERS ON PIRACY (AFTER THIS ONE)

No matter what one does, piracy will never be stamped out. It's here to stay. I'm not a pirate, but I do alter and copy software for myself and there's no way I will be stopped.

The public, in any country, are always looking for a better bargain and you can't get a better bargain than a cheaper one. That's what sales are all about. The seller knows he'll get the customers if his product is cheapest. Enter the pirates. Of course I regret the loss of earnings or waste of time of the poor fellow who made the software, but not the company who sells it as they're the ones who put such high prices on the products. I myself don't condone piracy, but with most computer magazines publishing moans about it week after week and month after month. Don't you think folk like myself get sick reading about it? We buy a magazine for news of hardware and software, tips and technical help, reviews and previews, but not to read other people's complaints.

I'm a member of three clubs and the best one is *17 bit Software*. I read every magazine that supports the Amiga and the best one is *Express*. When are you going to expand? I'd like your mag to be thicker and an increase in price will be deserving.

● ***Quite agree: too many letters on piracy. Why can't we have more contributions on other topics? Then we don't have to keep going on about how piracy will never be stamped out, and the software houses are clearly to blame because they deliberately overprice games in order to*** ***(cont. p94)***

KONIX SECTION

What does the T stand for in the editor's name; Tantalus, I suppose? Rob Ainsley in *PCW Patch* (*Express* 11) describes his mate's X COMPILE routine for *Protext* to search for a key word across all files, and then doesn't tell us what it is!! As an eager *Protext* user this is just one of the things I need, so come along Roberta, give!

Finally, after reading about the new Konix system in issue 13, I can't help wondering whether they're about to shoot themselves in the foot. Wondering whether to offer memory expansion? I have never understood the peculiar English habit of separating games machines from 'real' computers. ZX81 owners write letters, and mainframe users play games, don't they?

Of course they must offer an up-grade path to a full-blown PC compatible, so that after the family has played games and gone to bed, father can plug in monitor, printer etc, and carry on with the accounts that he should have finished last week. To me, this would be the machine to succeed where the Sinclair PC200 may fail, so what do you think?
John Smart, Hitchin, Herts (again)

● ***Er, no-one's called me Roberta since the operation, and as for the COMPILE routine, well the magazine 8000 Plus is doing a series on Protext pretty soon and it will be in there.***

It is unlikely that Konix will be keen on making the system expandable into a computer; perhaps it sees the market splitting into jazzier, simulator-type games systems versus micros as 'serious' machines (still with games, of course, but as a sideline rather than a reason to buy your Amiga or ST say). It could be wrong, but only time will tell. What may well happen if its system succeeds is the opposite of expanding the games system, ie. that independently produced hydraulic chairs and steering wheels and so on will appear as add-ons to the 'serious' machines. Wouldn't it be nice to have a full flight sim on your Amiga or ST, chair and joystick and all?

KONIX TONIX

I must say that the new Konix console is an excellent idea (and British too, which makes a change from turning out the rubbish that Amstrad produce), in that it has up to date hardware both in the design (outward appearance) and the technical specifications which it has.

But I do not see an experienced user buying one to replace a computer. I couldn't, as I use mine for a lot more than just games, although I can see a 10 year old wanting one because of the arcade interest, in that you can change it to the simulations you want.

I hope that it succeeds though. After all, it is British and it is up against a lot of competition soon because of the other consoles: Nintendo due to the hold they have over American market, Sega because their new machine already has a basis because of already existing support. The Amiga and ST consoles should due well due to the excellence of their 16-Bit brothers. So good luck, Konix!
Matthew Wakley (also known as Egon Starblaster), Seaton, Devon

● ***Without wishing to be too xenophobic, it would be healthy for the market to see a non-Japanese challenger in the console stakes, and a lot of people outside the games industry will also wish Wyn Holloway's project well. Perhaps, if and when the console system gets going, he could turn his attentions to hi-fis, videos, cameras, cars, musical instruments...?***

• Konix: Sayonara to the Japanese console domination?

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Making movies

Are you bored with your usual run-of-the-mill home video productions? Do they need that added ingredient to transform them into an epic? If the answer to both of these questions is yes, then* MiniGEN *could be just what you've been waiting for. Rik Haynes gets wired for picture and "locks" in to this spectacular piece of unsung Amiga hardware...

• The cat sat on the mat. Well, er, deckchair actually.

MiniGEN ● Amiga ● £99 (ex VAT) ● Applied Systems and Peripherals Ltd, Queensway Business Centre, Brigg Road, Scunthorpe DN16 3RT. Tel: (0724) 280222

Anybody who's suffered a truly awful home video will tell that it's definitely an experience to miss. But why is this so? Of course sometimes it's maybe the boring subject matter, but for most part it's just a case of stale presentation.

This is where *MiniGEN* comes in, because by mixing a composite video source and an Amiga-generated display, you can overlay the Amiga's graphics onto the video image to produce anything you like: subtitles, credits, logos, special effects, etc.

In simple terms, wherever the Amiga's background colour normally appears, *MiniGEN* replaces it with the video image. So using any of the myriad of graphics packages available of the Amiga, and any of the Amiga's wide range of graphics modes, impressive results can be obtained. In fact what you can do with the Amiga's display and your home video is only limited by your imagination.

Features

MiniGEN comprises the unit itself, which plugs into your Amiga, a disk containing some pictures and a manual. What you don't get is the necessary leads to connect your monitor and VCR to *MiniGEN*. When you do purchase these leads make sure they're video leads, because using audio leads will drastically reduce the picture quality.

Getting started couldn't be simpler. All you do is plug the *MiniGEN* unit into the video port on the Amiga, connect your VCR to the video-in phono ☞

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• (1) Video only...

socket on the *MiniGEN* unit and then finally connect your monitor (or second VCR if you want to record the results) to the video-out phono socket. Then you're away!

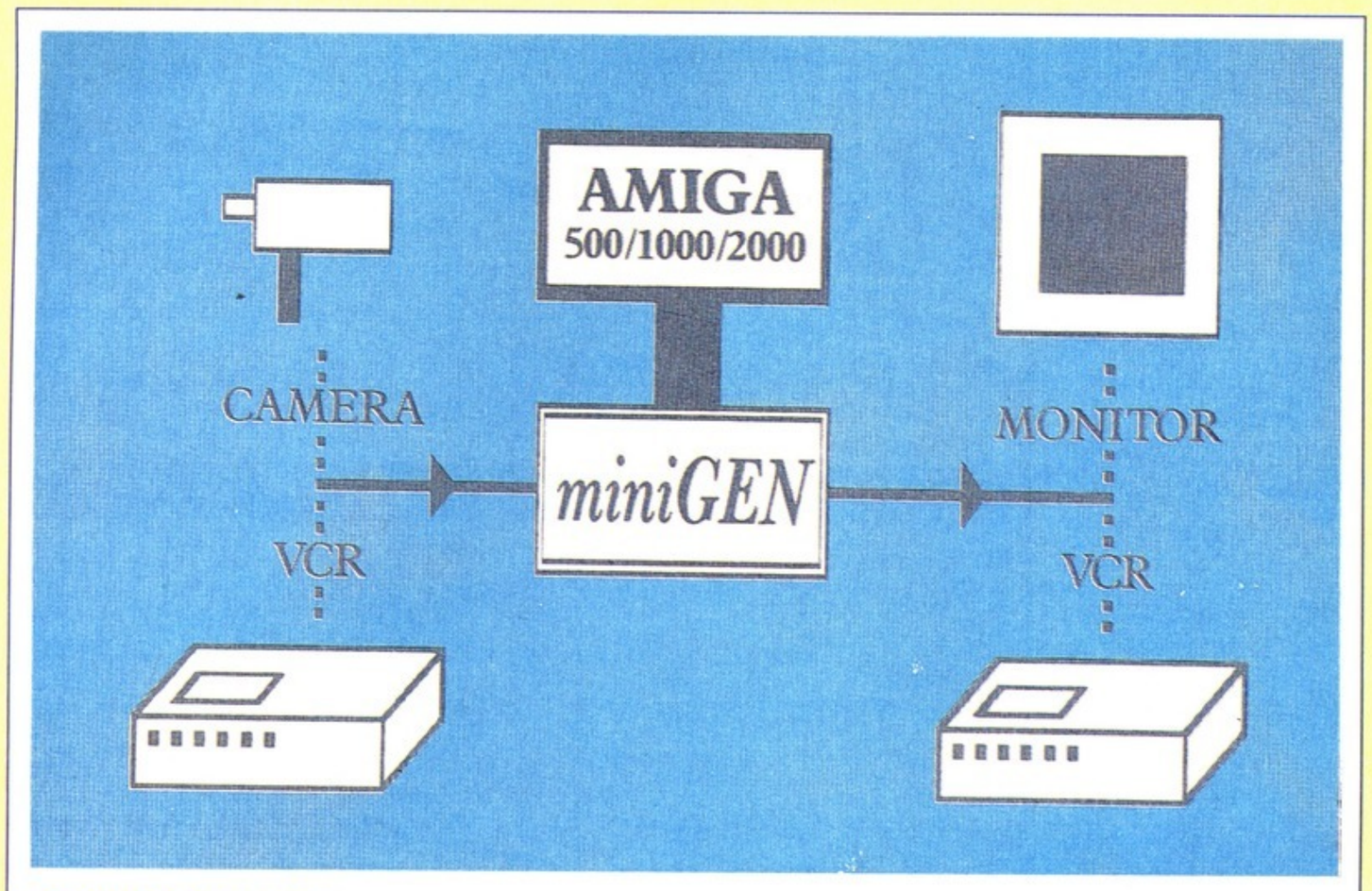
The *Minigen* unit contains a switch which allows you to flick through an Amiga only display, video only display or mixed display. This allows you to view the Amiga or video image before actually committing it to the overlaid display.

In operation, *MiniGEN* automatically checks to see if there is a source video image and then "locks" on to it. Unfortunately, the Amiga-generated display is shifted slightly to the right when both images are superimposed and you do get a degradation in the picture quality of both the Amiga and the video images. The degree to which this happens depends on the type of video equipment that used. Also, some VCRs send out non-standard sync pulses when they're put into pause or slow motion modes, which can put the Amiga display out of sync and make it jitter.

User interface

Despite the claim that *MiniGEN* is "compatible with all available software", you will unfortunately come across software which will have an odd effect on your Amiga generated display. To be more precise, the video image will remain stationary, but the Amiga image will continually scroll up the screen from bottom to top. This is caused by tampering with a register in the Amiga's custom-designed chips which controls the Amiga's external synchronisation. In practice, this means that software which doesn't use the Amiga hardware "officially" – such as games or demos – will cause this undesired scrolling effect. Fortunately, all the

• (2) ...Amiga only...



- The MiniGEN system set-up:
- Amiga computer.
- Composite-video monitor.
- VCR or video camera to play the original video image.
- Another VCR to record the overlaid computer/video images.

graphics software we tried worked without any hitch, so your graphics applications should run smoothly. Please note this is a problem with some Amiga programmers NOT *MiniGEN*, therefore you'll encounter the same effect with all Amiga genlock devices.

Documentation

The manual accompanying *MiniGEN* isn't that impressive. It's a tacky photocopied affair stapled inside a bit of card. It includes an introduction, instructions on how and where to connect everything, hints and tips concerning any problems encountered when using your VCR, a few technical details (not many though – they don't want to give the game away) and finally information on *MiniGen*'s warranty. The lack of good quality presentation isn't that important, however, as operating *MiniGEN* is a simple task. You just plug your equipment in together and the rest – well, it's up to you.

Verdict

MiniGEN is the ideal purchase for any home video producers out there.
With just a normal video set-up, an Amiga and some graphics software you can produce some impressive results. It gives every Amiga owner the chance to explore their machine's huge potential as a graphics workstation – and it certainly impresses (or was that *de*presses) owners of other micros when they see *MiniGEN* in action.

MiniGEN's relatively low price when compared to other Amiga genlock devices, coupled with its reasonable (but not outstanding) display quality, makes it a very attractive purchase.

However, the most exciting aspect of *MiniGEN* for us was the ability to play Electronic Arts' *Battle Chess* while simultaneously watching the movie *Blade Runner* on the same monitor! Sci-fi entertainment or what?

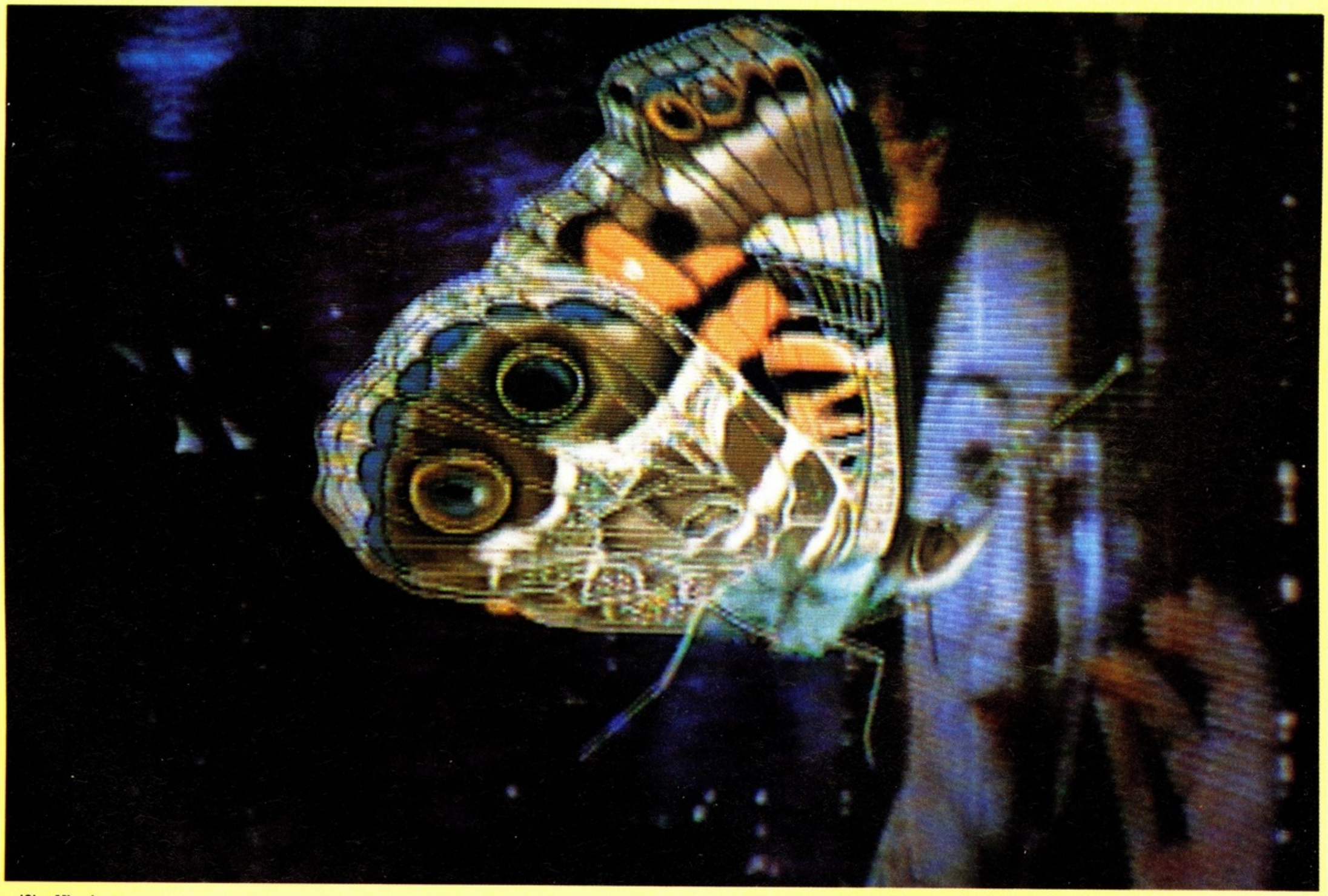
✪ ✪ ✪ ✪

HIGHLIGHTS
- Cheapest Amiga genlock device available.
- Compatible with Amiga 500, 1000 or 2000 machines.
- Includes switch to select Amiga only, video only or mixed displays.

DRAWBACKS
- Display quality varies sharply, depending on the type of video equipment used.
- The Amiga generated display is shifted horizontally to the right.
- Not compatible with all Amiga software.

Technobabble — Genlock

A hardware add-on device which produces a display overlaying computer-generated graphics with composite video images. This is achieved by synchronising or "locking" the computer's video output with the external composite video device – which could be a video camera, video cassette recorder (VCR) or even another computer.



- (3) ...Mixed

Film clip taken from Blade Runner, © 1988 Warner Home Video.

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Eyeing up monitors

What You Get Is What You See: the subject of monitors is one of the most neglected aspects of buying a computer. After all, you can use a TV, can't you? Well, as Peter Worlock explains, things aren't that simple. But if you know what you're doing, you can not only get the right monitor for your system, you can also save money

• The monitor is the first thing you notice about a system.

For something as essential as a computer's display system – imagine trying to use your machine without one – you don't see much discussion of computer monitors.

It's often treated as one of those things that "everybody knows": lots of people use TVs because everyone already has a TV, but if you want a better picture, buy a monitor. End of story.

It wasn't always that way. Just a few years ago there was a lot more discussion about monitors, because the issue was more open. When the hot machines were the Spectrum, Commodore 64 and BBC Micro, you were expected to use your domestic TV. And the resolution and colour output on these computers were borderline – a decent TV could provide a perfectly adequate picture.

Of course, a monitor always gives a better image, and for those computer owners who wanted the best there were a large number of manufacturers offering to satisfy the need.

What's changed is that computer manufacturers now view a monitor as an essential part of their computer systems. With the exception of the Amstrad PC200, all PC-compatibles are specifically designed for use with a monitor. The earliest models of the Atari ST were monitor-only systems, and it was only at Christmas that Commodore bundled a TV modulator with the Amiga.

The change in attitude has been driven by changes in technology. TVs are fine for displaying 40-column text screens or graphics screens of 320x200 in only eight or 16 colours. But machines like the ST, Amiga and PC now offer 80-column text as standard, and boast resolutions of 640x480 with colour palettes measured in the thousands.

For machines like this, a TV display might range from "appalling" to "barely adequate". (It depends on what you use your computer for: if you're an ST- or Amiga-owning gamer, a TV is reasonable, but if you're word processing in 80-column text on a TV you need your head, and eyes, tested.)

The paradox is: why, when TVs were adequate, was there more discussion of monitors than now, when monitors are essential? The answer, more or less, is marketing.

Computer manufacturers now offer their own ranges of monitors, usually with price incentives to buy one with the computer. Since these models are usually of reasonable quality, and are guaranteed to work with the machine, users can be forgiven for taking the easy route and buying one – rather than buying a third-party model which requires a fair bit of research and can often involve a painful hunt for a suitable cable.

But monitors still sell in sufficient numbers – sufficient, at least, to keep the manufacturers in the market – and there are good reasons why you might want to buy a third-party model: lower cost, better quality, or for improved specifications. The latter reason applies particularly to PC owners, who need to buy a new monitor whenever they upgrade their display adaptor.

LET'S GET TECHNICAL

All monitors – and TVs – work on broadly similar principles. Like so ...

The screen of a monochrome monitor is covered by a fine grid of phosphor dots, while the rear of the monitor houses an electron gun. This emits a stream of electrons which scans across the screen from left to right, and from top to bottom. When the electrons hit a dot the phosphor glows, and as the electron beam is turned on and off under computer control, the phosphor dots are turned on and off to create the image.

A high-quality monitor might cover the entire screen in less than a sixtieth of a second.

Colour monitors replace the single phosphor dot with three dots coloured red, green and blue. By turning on these dots in different intensities and combinations, the monitor can display any colour: for example, all three dots on at full intensity create white; red and blue together create various shades of purple, and so on.

But within this standard system of generating an image, there are several crucial variations which govern which monitors will work with certain computers. Most of these variations have to do with how the signal is sent from the computer to the monitor.

Composite video

As the name suggests, composite video uses a signal which is a composite of the various elements needed to drive the monitor: colour values and intensities, audio data and timing signals. This is very similar to the signal used by a TV, and you can think of TV signals as modulated composite video.

The modulation is the reason why computers that can output composite video – like the Amiga and ST – can't drive a TV without a special piece of hardware.

Composite signals are most used for monochrome monitors because the signal for mono is simpler. With composite colour there is a deterioration in image quality compared with other video standards.

Digital RGB

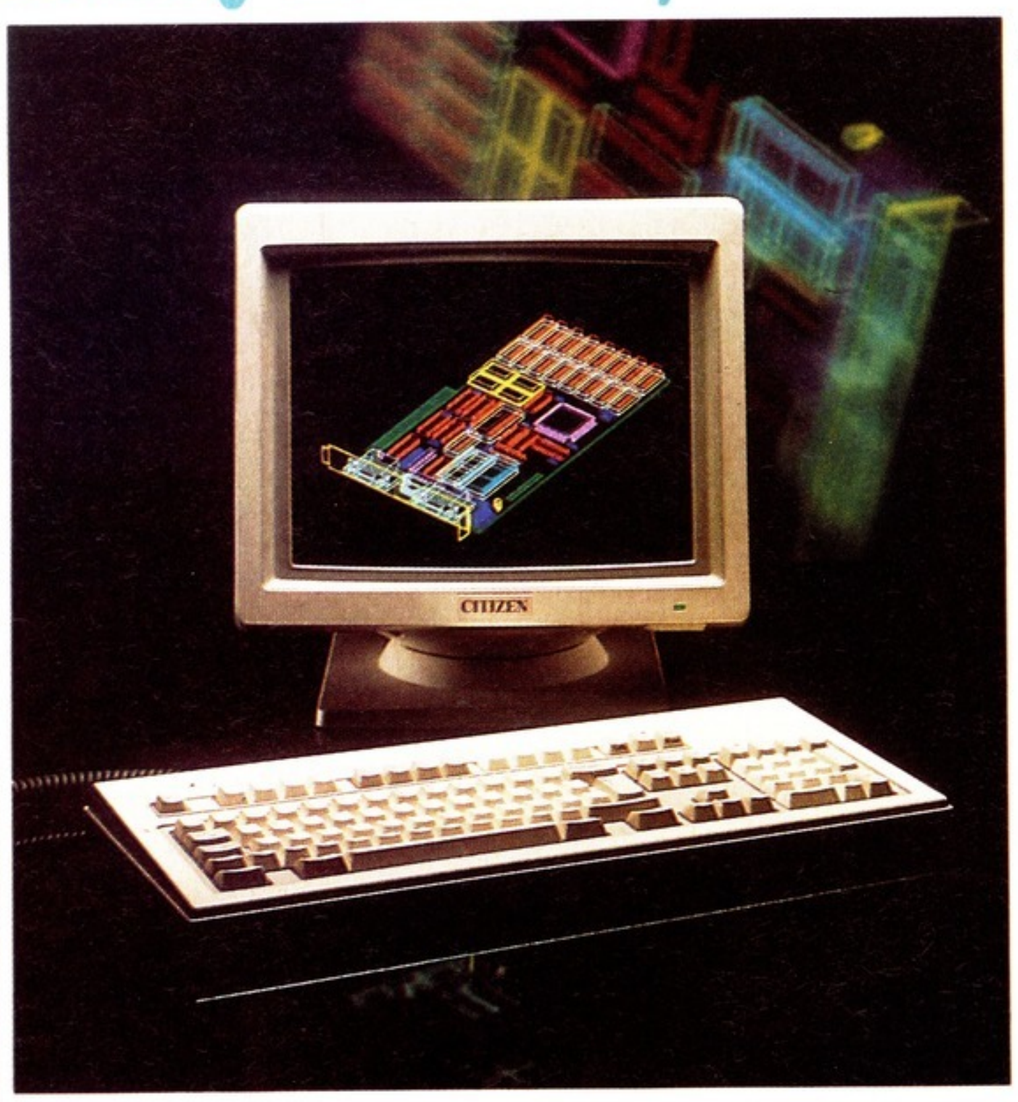
Offering a higher quality image than composite video, digital RGB was for a long time the most common standard, used by machines from the BBC Micro to the majority of PCs.

The signal includes individual components for the red, green and blue elements of the picture – hence the name – as well as separate components for audio and timing.

Because each part of the signal is carried separately, there is no interference, or deterioration, as occurs in composite video. The result is a sharper, brighter and more colourful image.

☞

Making the most of your monitor



• Citizen's hi-res VGA monitor.

Granted that most of us have to make do when it comes to positioning our computer equipment, there are still a few things you can do to get the best out of your monitor.

The two key areas to watch are position and lighting. Getting either or both of these wrong can lead to neck and back strain, eye strain, headaches, plagues of frogs, earthquake ... you get the idea.

The most common problem is glare on the monitor screen which will have you squinting to see anything at all. So place your monitor where direct sunlight won't be falling on the screen. Ditto for direct artificial light – especially fluorescent lights, which can be murder.

If screen glare continues to be a problem you might check out a filter shield, which fits across the screen and acts like a pair of polarized sunglasses for your monitor. Opinions divide sharply on filters – some users swear by them, others swear at them.

The position of the monitor in relation to you is also important. For most users, the correct position is directly in front, above the keyboard and at about eye-level. Touch-typists have more flexibility since they rarely look at the monitor; hunt-and-peck typists have more problems since they are constantly shifting their gaze from the keyboard to the monitor and back.

There are several devices that can help here. For owners of computers like the Amiga, ST, C64 etc, a system housing – a glorified shelf – holds the monitor and allows you to push the keyboard underneath. In itself this can save you a couple of square feet of desk space and it raises the monitor to a more comfortable height.

If your monitor didn't come with one, a tilt and swivel stand can be bought separately and allows minor adjustments to the monitor's position and viewing angle, minimising glare and helping to find a more comfortable set-up.

The last word in this department is a VDU arm – as found in some hotels and hospitals. These heavyweight items can be attached to the side of a desk, or bolted to a wall, and hoist the monitor into the air. This could save a lot of desk space, and is particularly useful for sufferers of spinal disorders – with one of these and a detachable keyboard, you can compute from a supine position on the floor.

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Best buys

- The Philips range is always a good buy but one good model worth mentioning is the CM 8833, highly recommended for Atari ST and Amiga owners at about £200.
- Another good range is the Samson series. Two are noteworthy 14 inch monochrome, with an unusual amber on blue display for around £85 and a 14 inch multisync for around £300.
- In terms of sheer quality the NEC multisync II is hard to beat and is the standard for VGA quality monitors. Currently priced at around £430.00.
- A newcomer to the monitor market is Amstrad, which announced an eye-catching range to go with its PC2000 range.
- Star buy of the Amstrad series looks to be a VGA standard paper white monitor at £130.

These models are available at most specialist computer shops.

The digital aspect of the title comes from the fact that the red, green and blue signals can only be altered in fixed steps, which reduces the number of colours that can be displayed on screen.

A slight variation on digital RGB includes a separate signal for colour intensity and is known as RGBI. The Commodore 128, for example, uses this format.

Analog RGB

This is the latest development, broadly similar to digital RGB but with one crucial difference: the signals for red, green and blue do not vary at fixed intervals but can be almost infinitely varied, allowing the monitor to display virtually any colour.

Computers that make use of analog RGB can generate colour palettes of hundreds of thousands of shades. For example, a VGA-equipped PC uses a palette of more than 250,000 colours, while a suitably kitted out Mac II can handle more than 16 million colours.

Screen resolution

Once, monitors could be fairly simply classified according to a rough and ready resolution guide: low-res, medium-res and high-res. Today, the situation is much more complicated and those three classifications are virtually meaningless.

For example, the Commodore 64's 320x200 display used to be considered high-res. Now, the 640x200 of the ST and Amiga is definitely medium-res. And if we agree that the ST's mono display of 640 x 400 is high-res, what about VGA's 800x600 mode? Ultra-high-res?

In which case, we'd have to coin a phrase like "super-ultra-high-res" for the increasingly common systems offering upwards of 1,000x800 for applications like CAD and desktop publishing.

When we introduce monitors into the equation, things get still more complicated. For example, it might seem that if a monitor can display 800x600 pixels, it should cope happily with 640x200 – but that isn't the case.

The catch lies in matching the monitor to the signal from the computer and that's a question of speed. There are several speed factors including the screen refresh rate – how fast the monitor can cover the entire screen – which is a function of two other factors: the horizontal frequency – how fast the electron beam can trace a horizontal line for any given number of pixels; and the vertical frequency – how many lines can be traced in a given time.

From this it can be seen that the timing of the signal from the computer is crucial, otherwise the monitor might be receiving information for the beginning of the screen before it has finishes the bottom scan lines, or vice versa, or the end of horizontal lines could be cut off, and so on.

These factors form the reason why PC owners need a different monitor for CGA and EGA: the EGA generates a different signal frequency in order to fit in the extra 150 or 230 horizontal lines. It is also why many VGA PCs are fitted with a multi-sync monitor.

VGA is compatible with all of the earlier PC adaptors, but these generate signals of different frequencies. If the PC is equipped with a VGA-specific monitor it will only be able to use the VGA graphics mode. Multi-sync monitors have special hardware that allows them to recognise the frequency of an in-coming signal and synchronise themselves to it. This allows a multi-sync monitor to be compatible with all PC video standards.

A multi-sync monitor is also the only monitor capable of displaying all three of the Atari ST's video modes. Unfortunately, such sophistication doesn't come cheap.

Making the connection

The final complication in getting any computer to talk to a monitor is making the physical connection between them. While there are standard printer cables (just about), and standard serial cables (of a kind), there is no such thing as a standard monitor cable.

When we talk about digital RGB being a standard, we're talking about the signal itself, not the connectors. Different computers – all using the same digital RGB signal – might have a 9-pin D-type connector (like the PC), or the Amiga's highly-unusual 23-pin D-type, or a round DIN connector of varying numbers of pins.

Naturally, even on computers using identical connectors, there's a better than even chance that the same pins will have different functions.

Finally, the connections at the monitor end can also vary. One point to be especially wary of: the SCART socket – which has a veritable forest of pins – is often called "a standard Euroconnector". In fact, the SCART is an "almost standard", which is the most treacherous animal of all.

The only certain solution – as *Express* has advised many times in other subjects – is to insist that the dealer who sells you a monitor also sells you a cable that will work with your computer. ●

Capable cables

One useful address for Amiga and ST owners struggling to find a correct monitor cable is Trilogic, Unit 1, 253 New Works Road, Bradford BD12 0QP, tel: 0274 691115. The company specialises in Amiga connectivity but will also help out ST owners – try them if you want to hook up any kind of RGB system – monitor or TV.

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Hey, good looking!

By popular demand, Peter Worlock continues his Beginners' series. This week, computer graphics: from simple beginnings to the latest state-of-the-art graphics

If there's one thing that gets the pulse beating a little faster it's graphics. From the slick animation of the latest arcade game, to the pristine high-res black and white images of a desktop publishing system, to the mouth-watering colours of a VGA design package, state-of-the-art displays can perk up the most jaded computer user.

With today's standards set by machines like the Amiga and ST, and the PC and Macintosh, with resolutions approaching a million pixels and colour palettes measured in hundreds, then thousands and now hundreds of thousands, we've come a long way from the days of block character displays on green-screen monitors.

But surprisingly most of the principles of computer graphics haven't changed very much. Even the earliest micros, like the Apple II and Pet had the potential to produce high-res, colour displays – what has changed is computer economics.

Ten years ago a computer with limited memory and mono monitor was expensive – around £750. But to produce high-res colour graphics requires a colour monitor (obviously!) and a great deal of memory, and some almost incidental electronics.

A bit at a time

The technology used in TVs and nearly all computer monitors is based on the dot – a cluster of phosphorescent chemicals. In the jargon, these dots are called pixels which is a contraction of "picture elements". In colour TVs and monitors, each pixel is made up of three smaller dots providing the colours red, green and blue.

The picture is produced by firing an electron gun, or three guns in a colour model, in a beam – called a raster scan – which sweeps across the screen in a series of horizontal lines. Where the electrons hit the pixels, the chemicals emit light and create the image as the raster covers the entire screen many times each second.

Nobody needs to be concerned about the way in which the computer controls the firing of the electron guns, any more than we need to concentrate on how our lungs get oxygen into the bloodstream. It's a background process that the computer handles automatically.

It's the foreground operations – how images are created – that concern us, and this is largely a function of computer memory.

The direct link between memory and graphics is easy to explain. In a monochrome display, each pixel can be on or off – black or white – and this fits neatly with the binary system used by all computers. Each pixel can be mapped to one bit of computer memory, so each byte controls eight pixels. This is why high-res displays are often called bit-maps.

A screen with 320 pixels horizontally and 200 vertically has 64,000 pixels which equals 8,000 bytes. Doubling the horizontal resolution (640x200 is the standard high-res display on most computers, including the PC, ST and Amiga) requires double the memory – 16,000 bytes. Remember, we're still dealing with monochrome displays.

This explains why the earliest computers didn't offer high-res graphics. In machines which had only a total memory of 8K or 16K, it made no sense to devote nearly 8K to the display. Also, it takes quite a lot of processor power to handle 64,000 individual dots at reasonable speed.

When we introduce colour, memory consumption goes up accordingly – although not as badly as you might think. Because of the way binary works, you don't need twice as much memory to provide twice as many colours.

It rises like this: one bit can handle two colours; two bits can map four colours, three bits can map eight colours, four bits can map 16 colours. You get twice as many colours for each extra bit of memory.

• "Why does't he get himself an Amiga with Photon Paint"

Using four bits is a natural landmark since it allows you to map each pixel in half a byte and that simplifies the job of the processor. This is why so many computers offer 16-colour modes. But memory consumption has still increased

Technobabble

A weekly assault on computer jargon — **Graphics**

Bit-map
Type of display in which pixels are individually addressable and one pixel is mapped to one bit of memory.

Pixel
A contraction of "picture element", the pixel is a single dot, the smallest object in a graphics system.

Resolution
The measure of how finely-detailed a picture can be created in any graphics system. The resolutions of different computers have traditionally been in discussed in terms of "low-res", "medium-res" and "high-res" but these are largely meaningless now since so many computers have widely differing resolutions.

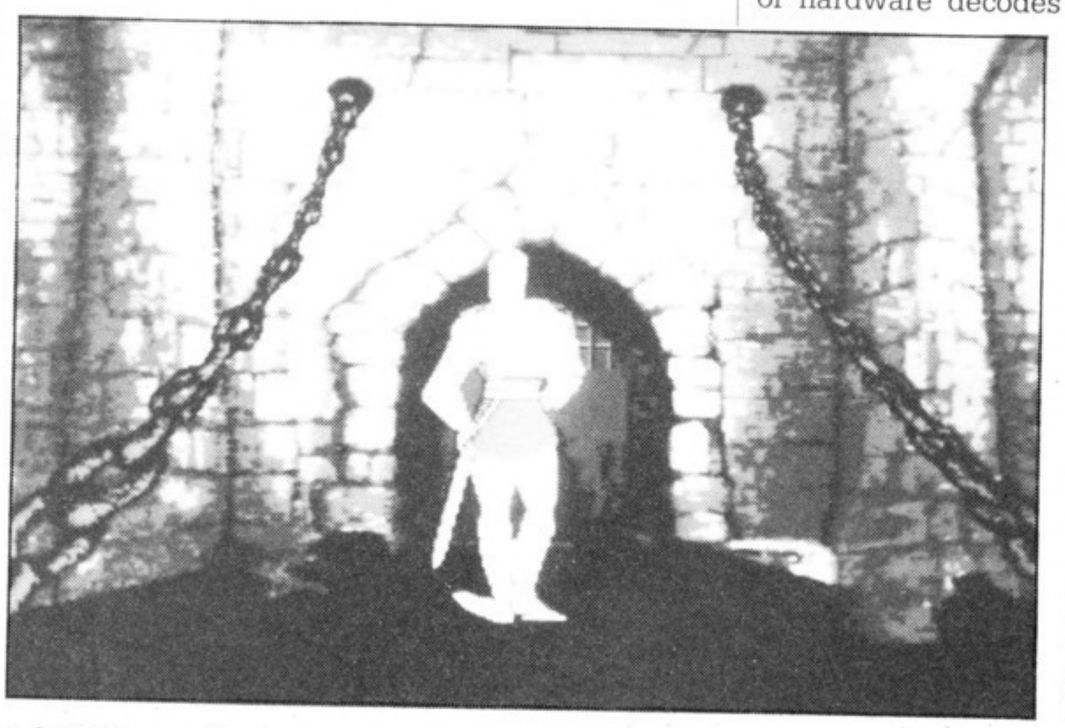
One aspect of resolution often overlooked is the size of the individual dots, in addition to the number of dots displayable on screen. For example, the Macintosh has a resolution of 72 dots per inch whereas PCs and other machines may have a resolution only about half that. Yet the PC might have many more pixels on its standard display. The difference is one between higher (ie, finer) resolution, and a larger display area. Although this doesn't make much difference on screen, it can be important when printing out graphic images.

Video RAM
The area of the computer's memory in which graphic images are assembled for display on screen. Most computers simply take whatever memory is needed from the computer's main memory. The Amiga is unusual in that it can only use low memory (the standard RAM as opposed any expansion RAM). The PC design is commendable in that video adaptors incorporate their own video RAM, so no matter what size of display is used, main memory remains

considerably: our 640x200 display in 16 colours occupies one byte for every two pixels – 128,000 pixels equals 64,000 bytes or more than 62K.

Fewer bytes

An obvious question arises from the use of character graphics. Most computers create their characters on a matrix of 8x8 pixels. On a screen



• Computer graphics have come a long way since the early days, as this shot of Dragon's Lair on the Amiga shows

80 characters wide by 25 characters deep that translates to our 640x200 high-res screen. So how can the computer display 80x25 characters without taking up 16K of memory?

The reason the high-res display needs all that memory is because each and every pixel can be changed at will. But the pixels of the block character don't change. The 8x8 matrix that makes up, say, the letter A is always the same.

Therefore, the computer can hold a table in memory which describes the eight bytes that describe the letter A, the eight bytes that describe B, and so on. Then each group of eight bytes can be assigned a code – and this is precisely what the ASCII code does. "A" is code 65, "B" is code 66 and so on.

Now instead of requiring eight bytes to place the letter A on screen, the computer only needs the single byte with the value of 65. A special bit of hardware decodes the character number and displays the pixels that create the letter.

So the screen memory for an 80x25 character display is only 80x25 bytes, or 2,000 bytes. By using character-based screens instead of bit-mapped high-res displays, computers can save a lot of memory: less than 2K compared to nearly 16K.

When you add the possibility of colour characters, the savings become even greater. By allocating half a byte to each character space on screen, you can have 16 colours in only 1,000 bytes. The 80x25 character display in 16 colours only occupies 3,000 bytes instead of 64,000.

Resolving differences

In terms of hardware there are now three trends at work in computer graphics: higher resolution, more colours, and dedicated hardware to control these facilities.

The nearest thing to a standard in terms of resolution is probably 640x400, represented by EGA on the PC, the Amiga's interlaced mode graphics, and the ST's monochrome mode. Oddly enough, for a computer that was long derided for its poor graphics, it is the PC that is leading the field forward.

The new VGA standard has resolution up to 800x600, and the so-called VGA-plus cards are offering up to 1000x800.

The situation is similar in the field of colour palettes, although there is a greater variety of features on offer. The ST offers 16 colours from 256, or all 256 colours with a very limited range of software; the Amiga 32 colours from 4,096, or all 4,096 again with a limited range of software. An EGA PC offers 16 colours from a small palette of 64, but once more the PC points the way forward with VGA.

Under VGA you can have 256 colours on screen from a palette of more than 250,000.

However, if you want to know what's waiting down the line, look no further than the current "state-of-the-art" Macintosh graphics systems. With the latest 24-bit video boards you get resolution of 1,200x1,000 pixels, and 16 million colours on-screen at the same time. At this point, the numbers become meaningless. We're talking about completely lifelike, better-than-video quality images.

The catch is the fairly expensive price-tag on this kind of equipment. Apart from the £5,000-plus cost of the Mac itself, the video boards run to about £2,000, and a suitable monitor to about £3,000. ●

Next week

Although the developments in hardware have been impressive, the technology would mean little without the software to drive it. In the next part of the series, we'll look at the different kinds of program available for driving graphics.

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ATARI ST

ST COMPUTERS

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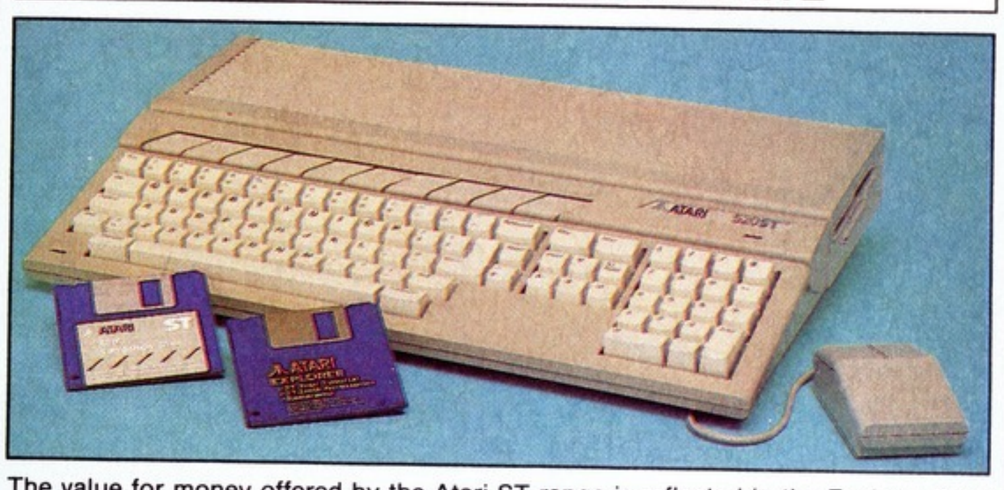

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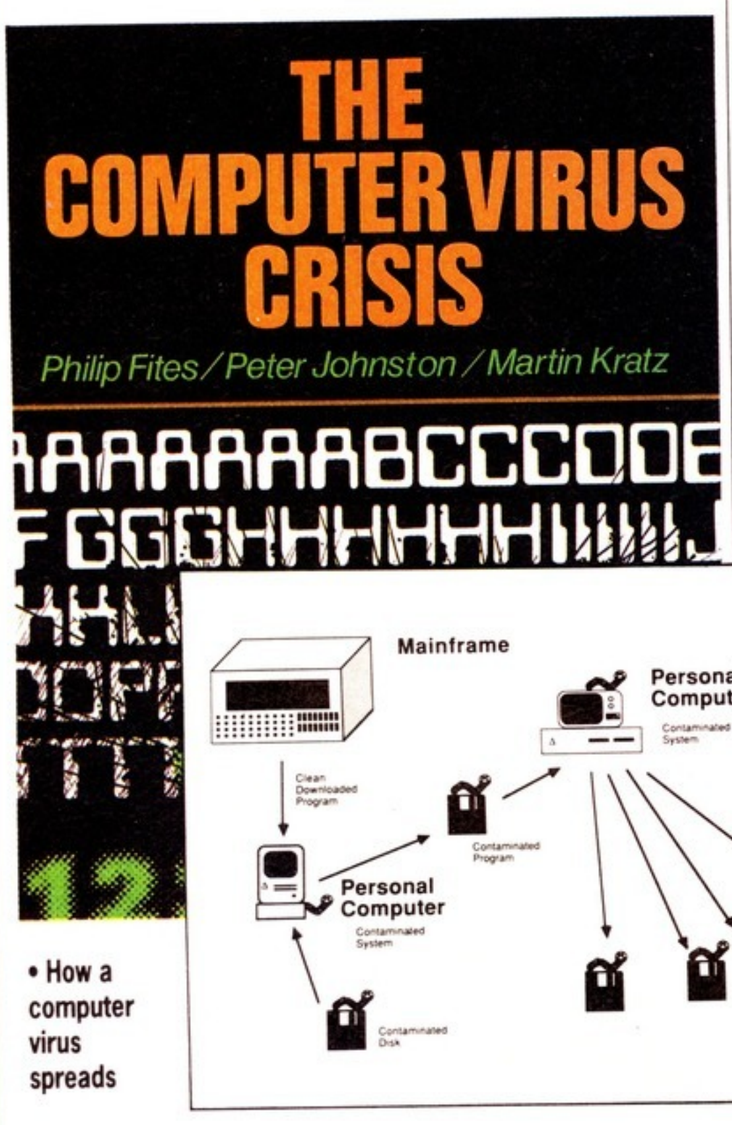
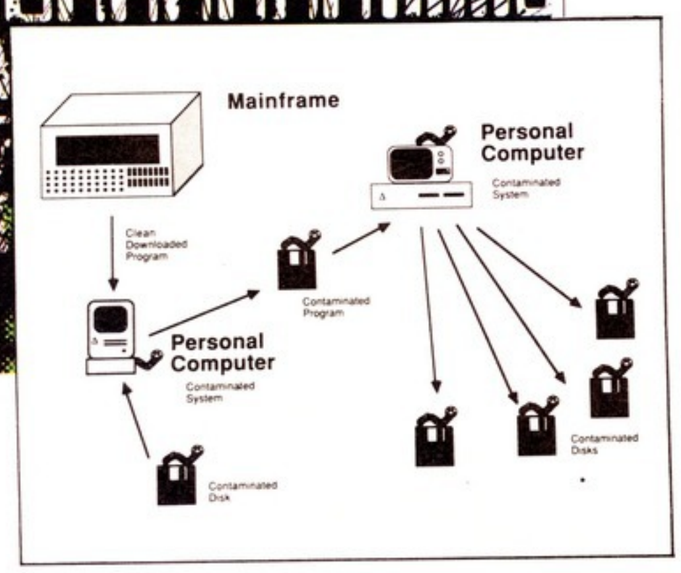
Read all about it!

Viruses have been called the AIDS of computing. But what sort of organism actually lies behind the media hype? Basil Pigg looks at three books that aim to explain the practicalities behind the problem...

The Computer Virus Crisis ● Philip Fites, Peter Johnston & Martin Krantz ● Van Nostrand Reinhold (Available in England from S&S on 0494 791900) £13.95 ISBN 0-442-28532-9





• How a computer virus spreads

Viruses are very much in the news lately. The recent 'Friday the 13th' virus which promised to erase everybody's data on that date when they switched on their machines attracted a lot of publicity from the papers. (In fact, in the end more data was probably lost through spontaneous disintegration of dusty disks – and once again the virus-busters profited).

The way people talk about computer viruses you'd think they were like their medical namesakes, almost living things. The terminology has been poached to such an extent that we talk glibly of infected disks, vaccines, cures, carriers...

The temptation to compare viruses to AIDS is irresistable to the media, who produce documentary style programs which inevitably confuse more than they enlighten. Perhaps it's not good television to start off saying what a computer virus is, ie. a straightforward computer program written by a disgruntled programmer or a computer-literate vandal; so they don't. The impression many must have is that viruses are quasi-living beings, sinister and evil arrivals from outer space which will destroy civilisation as we know it.

The Computer Virus Crisis, despite its alarmist title, avoids shock-horror tactics and tabloid-style hyperbole. It starts right off telling you what a computer virus is, tells you how it works, details the dangers, precautions and counter-measures, and even gives you a 'day in the life of a virus'. It assumes no previous knowledge save a vague computer literacy, and isn't shy of explaining 'obvious' things ("You can't get it by shaking hands, touching a doorknob, or having someone next to you sneeze..."). The approach is very American and college textish, setting out all the facts very clearly and in bite-sized sections. Certainly the worried business or home computer user should find it all quite easy going.

Fites, Johnston and Kratz have done an admirable job in making the book as comprehensive as possible; there are sections on famous viruses, anti-virus precautions, how to recognise a virus, virus-busting programs, the cost of viruses... even a detailed breakdown of the structure of a virus for the really technically minded. Though the approach is not specific to any machine, the prevalence of Macintoshes and PCs (but mainly the former in America) in the commercial sector pulls the emphasis over to those models. There are plenty of useful illustrations, though the subject of viruses is not one that lends itself to works of art.

The only drawback, unfortunately a major one, is that many of the references are inappropriate or not very useful to the British reader – all the virus-busting software addresses are of course American. Otherwise, a good book that should answer most questions about viruses in a clear and straightforward manner.

Computer Viruses – A High Tech Disease ● Ralf Burger ● Abacus (5370 52nd St SE, Grand Rapids, MI 49508) £17.45 ISBN 1-55755-043-3

In contrast to the restrained approach of the authors above, Burger succumbs to the temptation to parallel medical and computer viruses. By the time you get to page five of this book you're already faced with a table outlining the similarities between them ("Biological viruses: May not exhibit symptoms for a long time. Computer viruses: An infected program can work without error for a long time..."). Burger is also not afraid of getting his hands dirty straight away: page 10 sees the first dump of the hex listing from a virus-infected section of code, and to compensate for the lack of illustrations, the book contains many hundreds of lines of BASIC, Pascal and machine code listings.

These listings are not, of course, to enable you to write your own viruses, oh no; they are mere demonstrations to let you see how they can infect your system. And work they certainly do, if you have a PC, the inclination to type them in, and plenty of disposable disks.

There are sections on the dangers of viruses, the latest 'research', reports on the meetings of the Hamburg Chaos Computer Club, protection strategies and so on. The approach is resolutely technical, though, and the 'protection strategies' are essentially assembler listings. Great if you are happy with machine code, less than useful otherwise. If you are looking for straight answers to basic questions, you could well feel that the book is deliberately talking over your head.

There's a curious feeling about the book; it reads like a medical report on a real biological disease most of the time – which is, one supposes, exactly what Burger intends. Whether or not it succeeds, and whether this is a valid approach or not is open to question, but certainly for the technically minded reader – the hobbyist, perhaps, rather than the business person – there is plenty of interest.

Once in 10^{150} blue moons

One of the oddest sections in Burger's book is on the chances of a program's code mutating (through faulty copying) at random into a virus. By pulling a few rather obscure mathematical rabbits out of somewhat arcane hats (though many mathematics A-level students will recognise it, Stirling's approximation to n!, for example, is not the sort of thing that comes up on Bob's Full House) Burger comes to the cautious conclusion that a randomly generated virus will occur somewhere in the world once every 10^{283} years. Burger spells out this number, apparently in all seriousness, as 1000000000

BESTSELLERS

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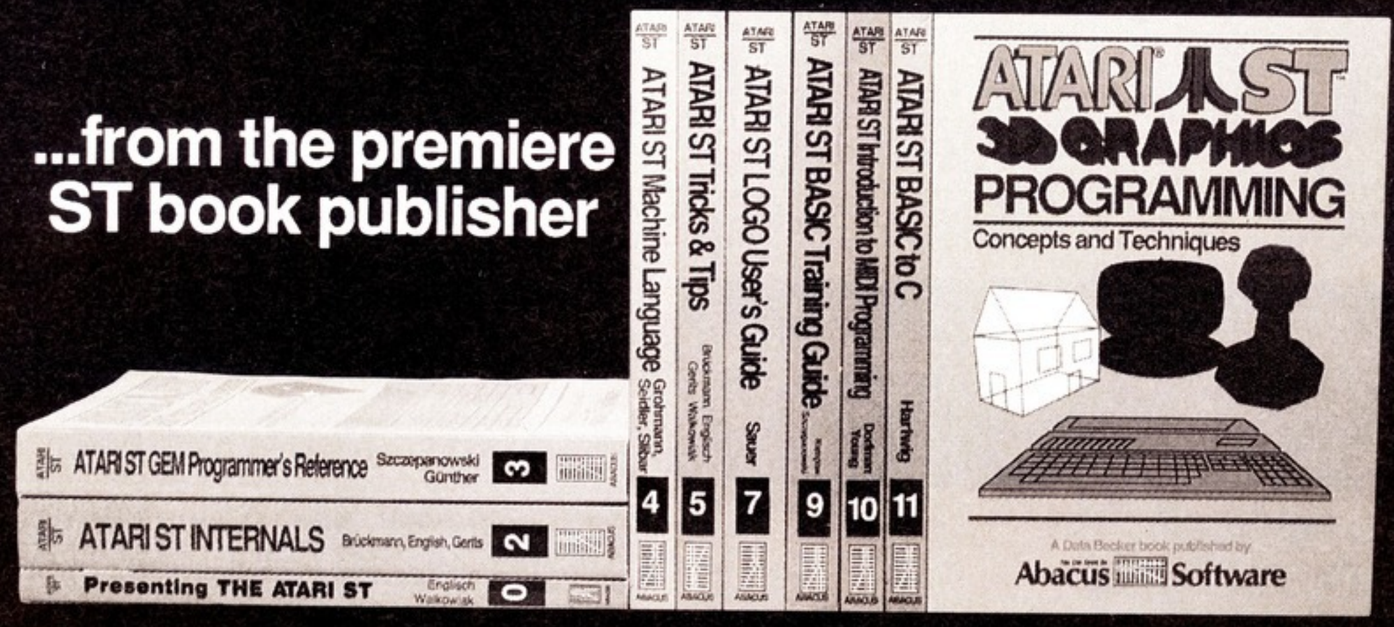

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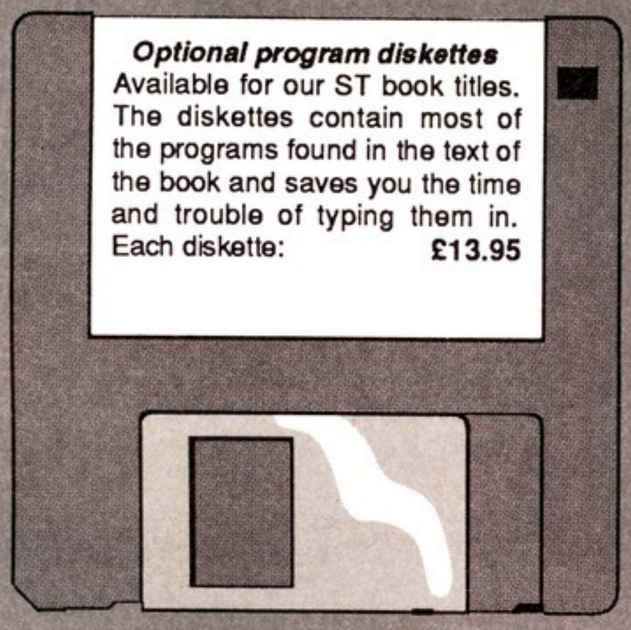

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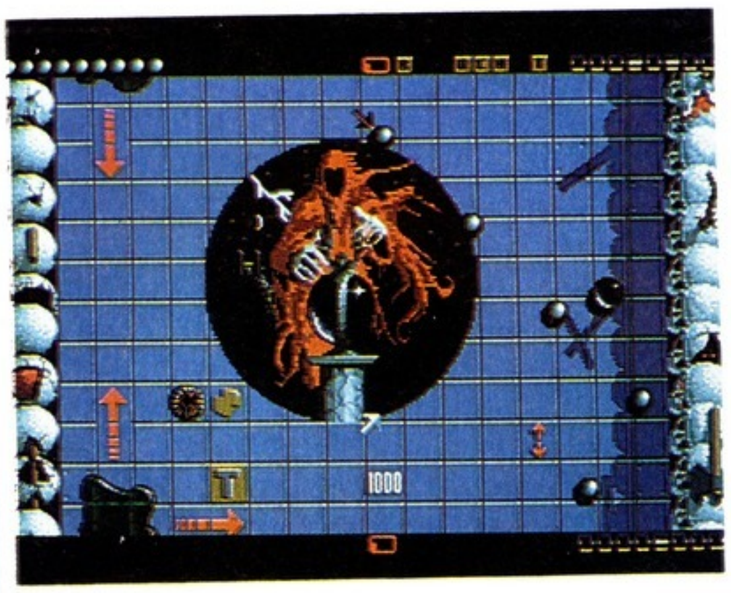
Ein, zwei, drei

Rik Haynes races down the Autobahn to see what's at the end of the Rainbow

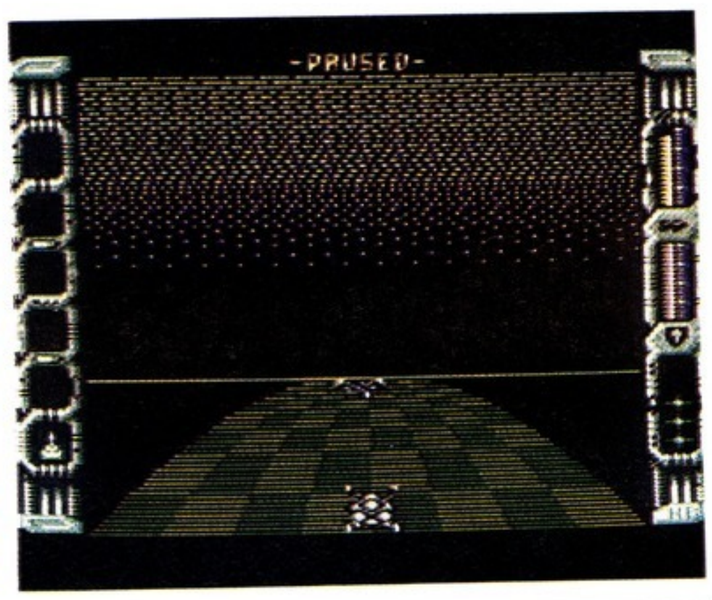
BALLISTIX
PSYCLAPSE/PSYGNOSIS

Ballistix is a thrilling and bizarre blend of football and pinball. Playing against a human or computer-controlled opponent, you've got just one simple aim – to score (goals, that is). However, it's not that simple because the game also contains magnetic whips, splitter balls and bumpers which all do unexpected things at the height of the on-pitch struggle – so you'll have to be on the ball in this game. Available shortly on ST and Amiga.



ELIMINATOR
HEWSON

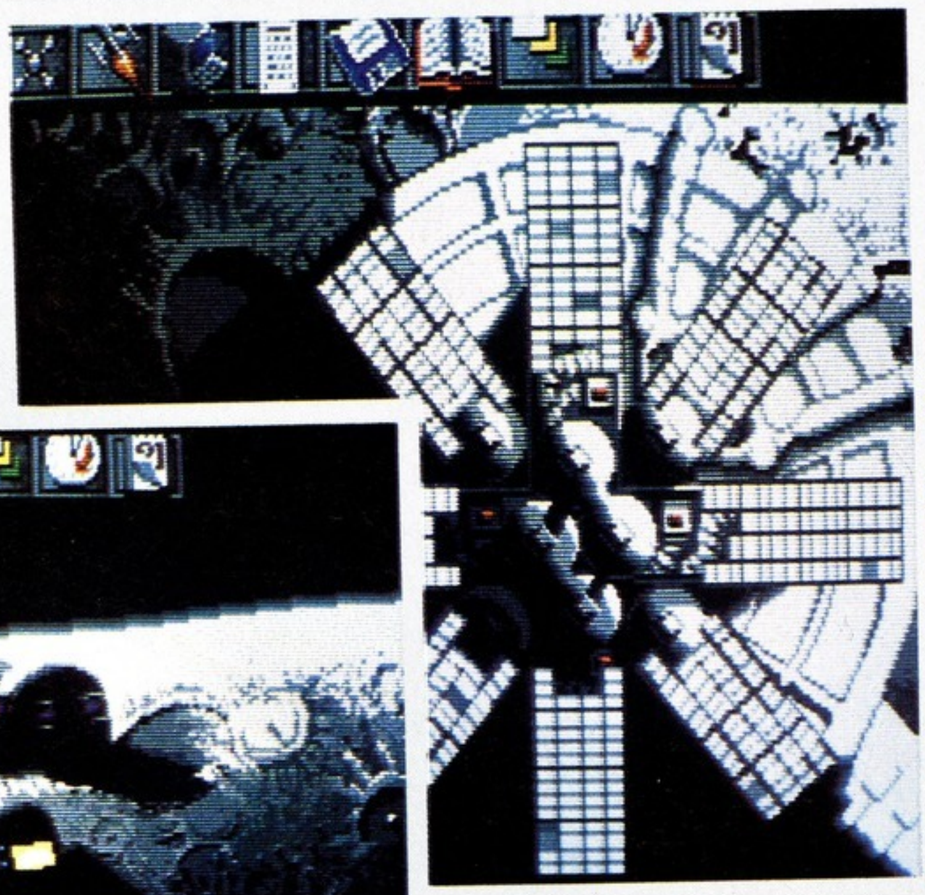
Already out on ST and Amiga formats since last year, *Eliminator* is due to make its way on the C64 soon. Gameplay has you taking to a highway in a futuristic turbonutterbastard vehicle, avoiding all sorts of obstacles and hazards in an electrifying sci-fi racing-simulation conceived by the author of the cult Hewson game, *Nebulus*. Watch out for the *Express* review next week...

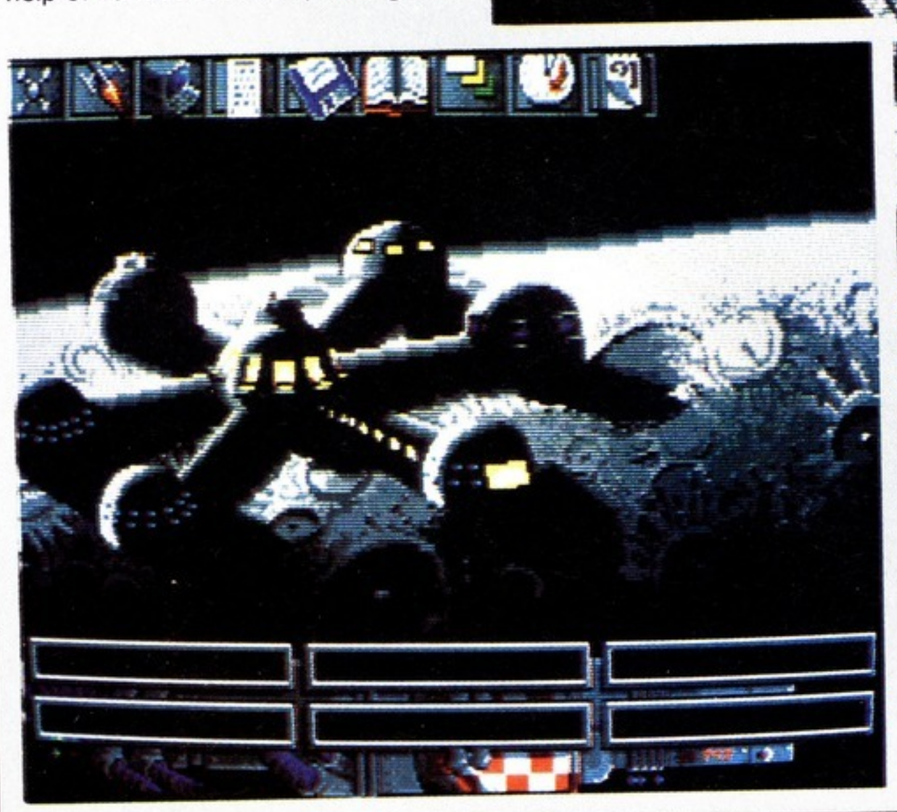


MILLENIUM 2.2
ACTIVISION

23rd Century Earth has been rendered uninhabitable by an asteroid collision, so it's up to you as the leader of a surviving moon base to return mother Earth to her former glory. Luckily, you've got the help of various research, mining and scientific facilities to help you in this task – but, meanwhile, time is running out.

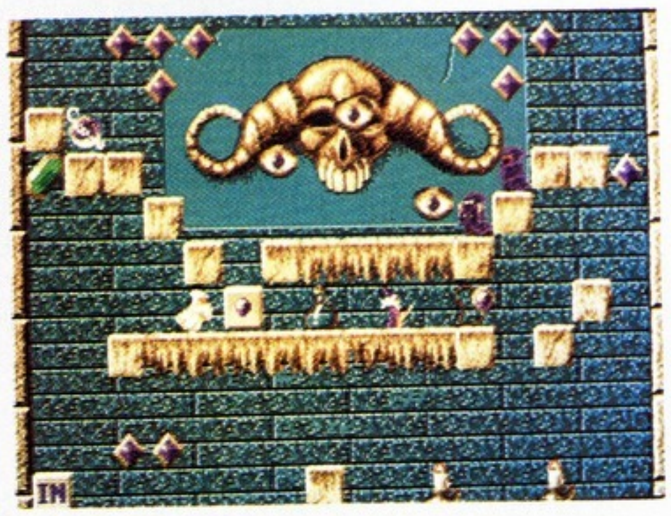
Millenium 2.2 is strategy game boasting some attractive visuals, and should be out next month on ST, Amiga and PC.





SPHERICAL RAINBOW ARTS
(Germany)

Spherical transports you into a platform-type arcade adventure controlling a sphere (strangely enough) through some 100 screens. You encounter the usual supply of adversaries and the odd teleport, spell or shield. *Spherical* may also include a spectacular breakthrough to PC owners, as Rainbow Arts is promising a 16-colour CGA version! PCers out there – keep your fingers crossed. Out later this year on C64, ST, Amiga and PC.



DANGERFREAK RAINBOW ARTS
(Germany)

Hopefully not as dire as the TV show *The Fall Guy*, *Dangerfreak* throws you into the hectic, dangerous and unsung job of being a film stuntperson. Faced with doing all the hard work on three films, you'll have to complete the five stunts in each movie if you want to earn loadsamoney. *Dangerfreak* is still undergoing constant development in the gameplay and audio-visual departments, but it should finally arrive on C64, ST, Amiga and PC sometime this year.

DARK CHAMBER RAINBOW GAMES
(Germany)

Rainbow Arts' sister company, Rainbow Games, is involved in producing its own arcade coin-op game under a working title of *Danger Freak*, an eight-level scrolling shoot-em-up supporting some stunning visuals and hard hitting gameplay. The screen shot you see here was produced on a VGA PC using *DPaint* – and with Rainbow's extensive knowledge of 16-bit programming, home micro versions aren't completely out of the question. Watch this space...

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Home Finance Program By Peter Veale.

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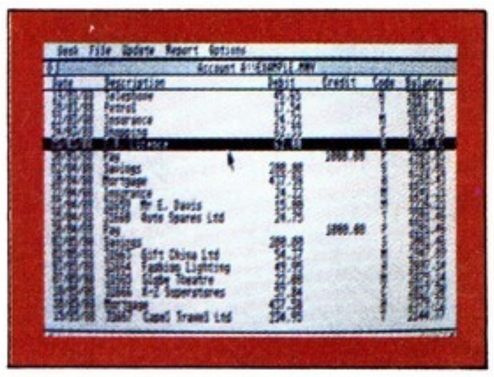
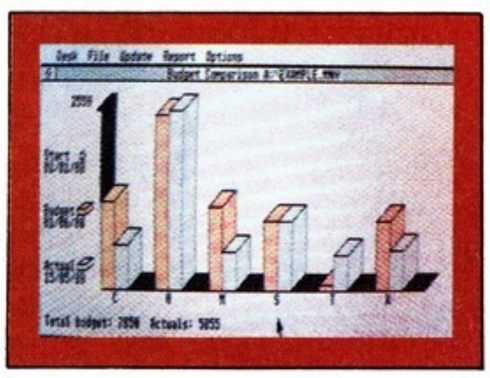
"Personal Finance Manager is a sophisticated home financial package, it will probably help you save money."
ST UPDATE.

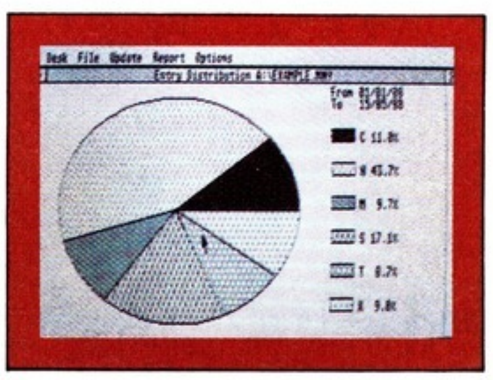
"PFM is just the ticket if your expenditure is as disorganised as mine."
POPULAR COMPUTING WEEKLY.



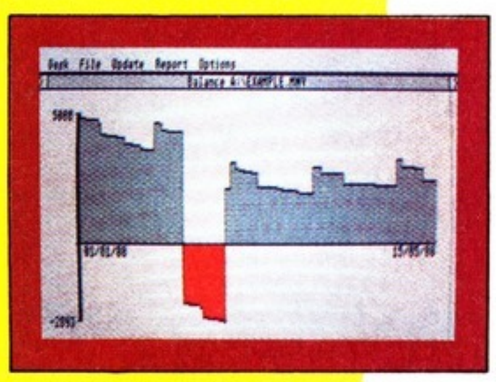
MAIN ACCOUNT SCREEN



BUDGET COMPARISON BAR-GRAPH SHOWING BUDGETS & ACTUAL EXPENDITURE OR INCOME



PIE CHART SHOWING SELECTED ENTRIES OVER CHOSEN DATES



BALANCE DISPLAY SHOWING HIGHS & LOWS OVER SELECTED DATES

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● *After the post-christmas lull, things appear to be picking up again on the games front. This week's releases saw us putting the world in order and preparing for the future of space exploration before setting out forever on a search for intergalactic wealth. And on the way we even got to indulge in a little sex and violence...*

BATTLETECH

INFOCOM/ACTIVISION

PC • £29.99dk
Out soon on C64

***Battletech – The Crescent Hawk's Inception* is a role-playing type game based around FASA Corporation's entertaining and cult boardgame *Battletech* – a sci-fi wargame involving such advanced weaponry as Mechs (giant piloted robots), the futuristic replacement for our modern day tanks.**

Beats a Renault Five any day...

● GAMEPLAY

Battletech throws you into the dangerous but exciting time of the 31st century, a time which sees the Star League's demise and civil war between the five successor states (Davion, Steiner, Kurita, Marik and Liao) erupt into a fierce and destructive struggle for what's left of the old Star League's technological and economic resources.

As Jason Youngblood, your job is to protect The Lyran Commonwealth from an onslaught of Kurita forces, a tough task indeed as you've only got 20 C-Bills to start with – about as useful as a five-pence piece.

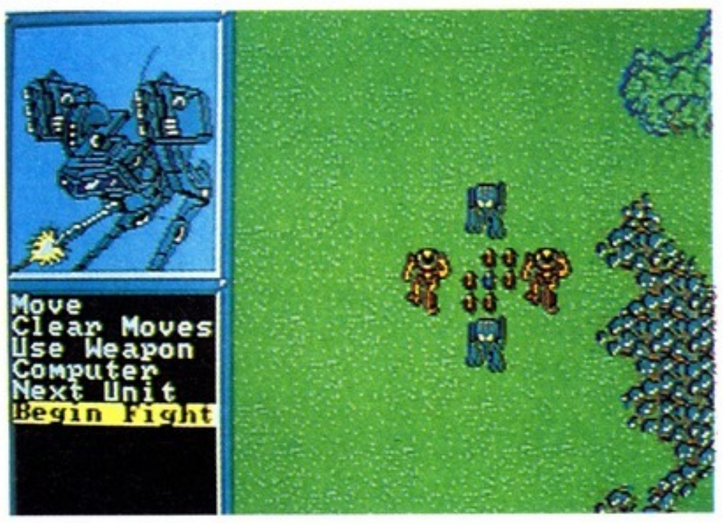
Play consists of single keypress commands for directing your movements around a scrolling landscape containing a reported 4 million individual locations (sorry we didn't have time to explore every one!) – plus menu systems for controlling combat, communication and buying and selling, etc.

● GRAPHICS AND SOUND

CGA visuals aren't spectacular, just competent, with purely functional backdrops and flea-sized sprites. Audio isn't up to much: the soundtrack sounds like a terrible rendition of a 1970's Jean Michel Jarre tune – but then you can't expect any great shakes from the PC's sound hardware.

● OTHER VERSIONS

Battletech is currently under development on the C64, while owners of other machines will probably have to confine their *Battletech*-ing to the boardgame.



• Let the fight begin...

● EXPRESS VERDICT

Battletech is a playable mixture of role-playing and strategy, and marks the continuing disappearance of Infocom's "non-graphic" stance to computer gaming. It's just a pity that the game didn't follow the board-game more closely. A *Battletech* version of *Balance of Power* or *UMS* – including arcade elements – would get our vote every time. Mind you there's always a chance with *Battletech II*...

✪ ✪ ✪

Rik Haynes

ORBITER

GREAT REALISM

SPECTRUM HOLOBYTE

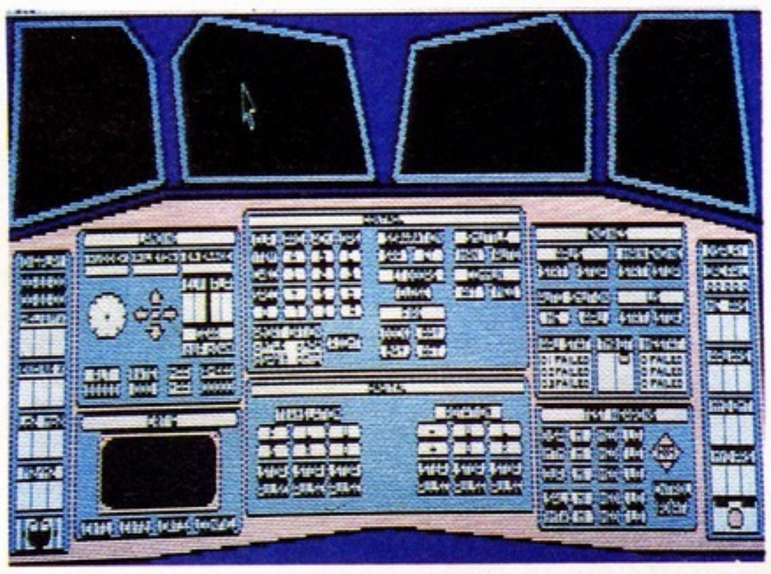
ST • £24.99dk
Also on Mac, PC

Spectrum Holobyte is perhaps best known for its recent *F-16 Falcon* release, which currently leads the flight sim stakes with its technical realism and multi-viewpoint graphics. Holobyte intends to come as close to on-screen holography as possible, hence the name. But whereas *Falcon* comes close to their goals, *Orbiter*, a Space Shuttle simulator, relies solely on in-depth realism.

● GAMEPLAY

Six and a half minutes after leaving Florida, the Shuttle is travelling at Mach 23.5 or just over 17,000 miles per hour. It's just as well then that there's an auto-pilot for takeoff.

Mission control is able to guide you through every necessary procedure to get you up and away on your first training flight and from then on it's down to you to complete the missions at hand.



• Which one of the 397 billion buttons on the shuttle's control panel do you press next?

Besides deploying telescopes and linking up with satellites and space labs via your Remote Manipulator System and Manned Manoeuvring Unit, you have to learn how to fly the damned thing. And – yep, you guessed it – complexity is the order of the day.

The screen is divided into four quadrants, each of which is switchable to display a choice of 3 monitors updating maps, radio messages and orbital data, besides status screens on your payload, engines, control, weapons systems and exterior views.

Once you've familiarised yourself with operational procedures, quite a time-consuming process, you can elect to jump in where not many men have gone before.

Luckily, *Orbiter* comes with a choice of time-compression features to shorten the lengthy periods of space flight where nothing much happens.

● GRAPHICS AND SOUND

Orbiter's graphics are confined to dense banks of notated push-buttons and slider controls representing all the main functions of Space Shuttle control. These all look fabulously convincing and should keep the average techno-buff glued to the screen for months. The only alternative displays are pretty primitive representations of the Earth's surface below you and starfields everywhichway out in the depths of space.

Sound is similarly varied. There's a great computerised voice representing mission control which guides you through take off, but after this all you're likely to hear is the sound of engines burning.

● OTHER VERSIONS

Mac and PC versions are completed but as yet unseen, though there shouldn't be much difference between them and this version.

● EXPRESS VERDICT

You can't really get much more up to date than this in terms of simulations, but *Orbiter* does concentrate rather heavily on solid procedural realism.

For instance, it would be nice to actually have the choice to land the shuttle on the runway, but there's no way of removing the instrumentation panels enough to give you the kind of subjective control simulations rely on for addictiveness. In this sense it's a surrogate experience – but still one worth checking out.

✪ ✪ ✪ ✪

Andy Storer

DRAGON NINJA

OCEAN

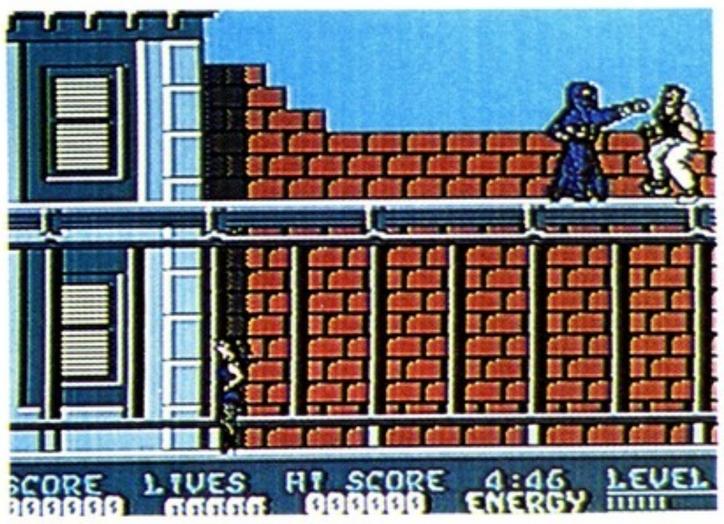
C64 • £9.95cs, £14.95dk
Also on Spectrum, CPC
Out around Easter on ST, Amiga

***Bad Dudes vs Dragon Ninja* finally makes an outing on the C64 after a rapturous reception on the CPC (*Express* issue 12) – so how does it shape up against the tough CPC competition...**

● VERSION UPDATE

No surprises in the gameplay department. It's all non-stop horizontally-scrolling kick-em-up fighting fury as you take on the scum of the city. At your command is the usual selection of punches, kicks, throws and underhand tricks which you'll need to master if you want to live through your encounters with deadly Ninjas, horrible guard dogs, and the kind of girlie that you'd never even think of taking home to meet your mother.

Audio-visuals are up to scratch, with very well defined and colourful sprites (not a blocky lego-type character in



• Getting your lights punched out

sight), complemented by credible – though somewhat routine – backdrops.

The bass-line thud sound spot-effects could really do with some sampled grunts and groans, while the accompanying soundtrack is an adequate white-noise influenced dance-track. By far the best audio ingredient is the superb *Last Ninja*-esque soundtrack on the title page – has Ocean finally found a worthy successor to the excellent Martin Galway in the guise of music-maestro Jonathan Dunn?

● OTHER VERSIONS

CPC *Dragon Ninja* just has the edge over the other 8-bit versions because of its attractive and colourful display, though the Spectrum version puts up a good fight. ST and Amiga versions are currently under development, and they're looking very promising.

● EXPRESS VERDICT

Dragon Ninja is a great release for anybody wanting to get down to some basic fist 'n' foot action. It's just a shame that the coin-op's simultaneous two-player option is missing.

✪ ✪ ✪

Rik Haynes

EMMANUELLE

COKTEL VISION

Amiga • £19.95dk
Also on CPC, ST

This French piece of oh la la software sees you in the enviable position of trying to get your evil way with the infamous Emmanuelle, in a totally sexist graphic adventure, appropriately called *Emmanuelle*.

● GAMEPLAY

(Or should that be foreplay?)

You start the adventure of your lunchtime by flying down to Rio to sample its beaches, carnival and women (if you get half a chance).

You control your character by clicking on-screen objects like buildings, boats, etc. If there's a character around you can click on them in order to hold a conversation. During your talk, you'll be given a selection of things to say. But remember, it's the right word spoken at the right time that decides on whether or not you'll be alone that night...

Unfortunately, its not all surf and sex because you've got limited supply of money and energy, some tough and extremely rough competition, and quite a few locations to visit before you finally get to encounter the elusive Emmanuelle.

• Hmm, time to get those blinds fixed...

● GRAPHICS AND SOUND

Audio-visuals are up to a good standard, with a varied selection of well drawn, colourful landscapes and characters interspersed with the odd dose of animation. Even the – ahem – bedroom scene is tastefully done. In fact much better done than the endless supply of tacky Emmanuelle movies.

Audio is restricted to sampled sound spot-effects, which are far too scarce.

● OTHER VERSIONS

No details on the other versions of *Emmanuelle* are currently available.

● EXPRESS VERDICT

Emmanuelle is another in the recent batch of sexual fantasy adventures which, while not being as exciting or exhilarating (or as exhausting, for that matter) as the real thing, do however represent good – but not necessary clean – fun. A sort of upmarket computer version of the tasteless *Carry On* movies.

Emmanuelle is a game which should appeal to any aspiring sexist pervies out there, but it probably won't amuse the less liberal or female Amiga owner. For instance, the phrase "Let's get down to it baby" is just an example of the programmer's considered and thoughtful tackling of the subject of heterosexual relationships. Enough said.

✪ ✪ ✪

Rik Haynes

BALANCE OF POWER 1990

MINDSCAPE

Amiga • £24.99dk
Due out on PC, ST, Mac

***BOP*'s release over here in '87 made a significant impression on sales in an entertainment industry hitherto hellbent on variants of arcade violence. Complex tactical and strategic elements coupled with real-world scenarios pulled in punters for whom diplomacy meant something rather more delicate than auto-saturation blasting. Now there's an enhanced update available, maybe you should at last trade in your laser.**

● GAMEPLAY

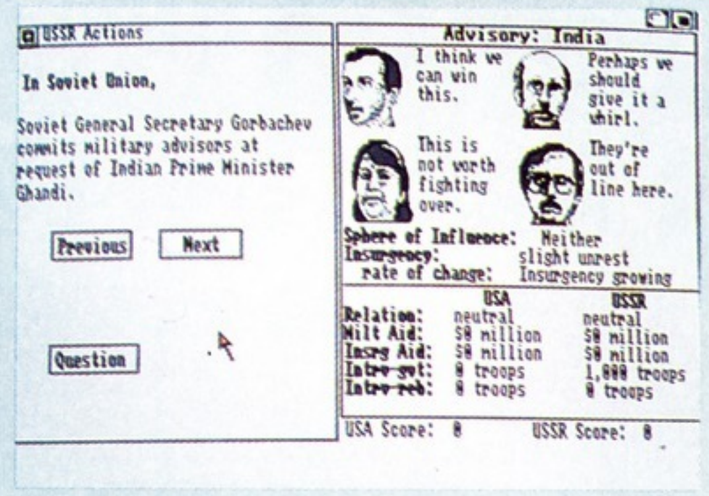
You opt to play either the USA or USSR in a bid to maximise your geopolitical prestige over a period of 8 years beginning in 1990. In short, the aim is to become as popular as possible by cultivating militarily powerful allies and ensuring your enemies are few and weak.

You gain prestige by buying other countries' sympathies – giving them economic or military aid – or actively undermining them by encouraging insurgency.

You are presented with a wealth of database material in the form of maps, charts and diagrams relating to various current events and conditions of the world's nations and click on a chosen country to implement policy. A series of pull-down menus allow you to enact a choice of interventions ranging from diplomatic pressure to direct military invasion. After assessing the current state of play at both world and local scales – by calling up news reports and background material, you implement decisions in as many countries as you wish and then pass control to either the computer or another player.

For each far-reaching decision you take, the opposition asks you to back down. You have a choice whether to do so and lose credibility points, or stick it out and hope they lose their cool before you do. This process centres on a series of defence condition levels known as DefCon states – if you get down to Defcon 2 and refuse to budge on a position, your opponent may push The Button. At this point the game ends. And the world.

BOP now has 80 countries instead of the original 62, additional data in the background section and a new crisis advisory feature. The range of and attention to detail is staggering. The most significant enhancement however is the inclusion of a new fourth level – "Multipolar". Here, policy decisions effected by all countries interact throughout the course of the game, thereby presenting your chosen Superpower with diplomatic and military crises outside of your control.



• Perhaps you should give the whole world a whirl

Gameplay is both informative and gripping. Working your way down to DefCon 2 over some seemingly innocuous decision like giving Jordan $20 million of economic aid, only to be blown to kingdom come, makes you wonder how any of us are still breathing. You can only thank God that Reagan really was a puppet.

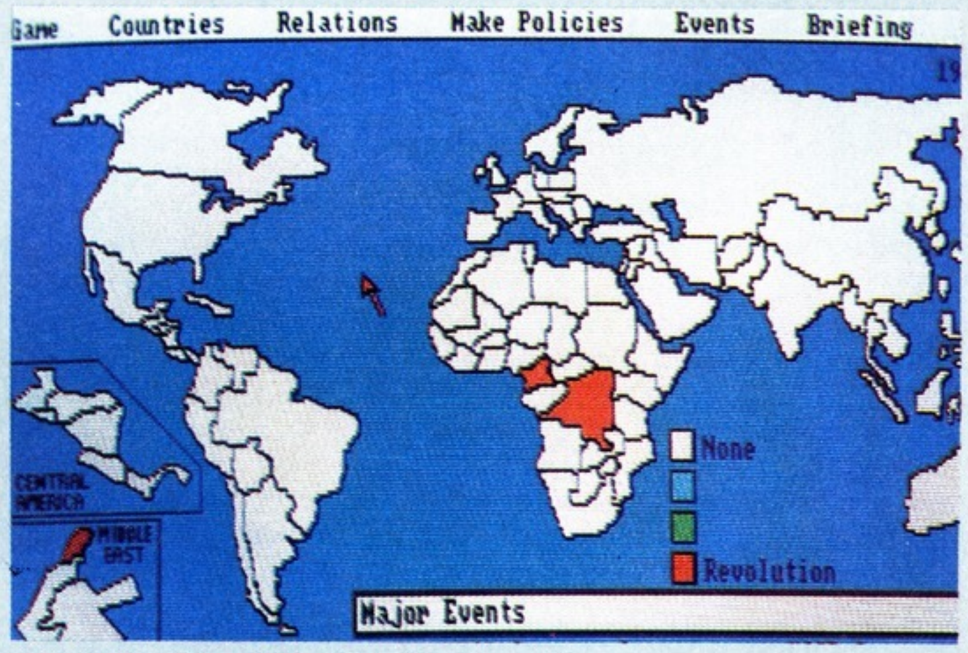
● GRAPHICS AND SOUND

No sound whatsoever – but then who needs it? We're talking serious visual overload here, with hundreds of screens crammed with information. The main world map can be instructed to illustrate several screens showing the distribution of power, influence, peace, war etc, whilst sub-screens show newspaper reports, history, GNP, consumer spending, investment, population and military personnel among others. If nothing else, it's one helluva geography lesson. All screens are neatly laid out and update fast considering the amount of data on call.

5 GAME

● OTHER VERSIONS

Mac, PC and St versions will all be released shortly but as are yet unseen, although this is one game where machine differences will not be apparent.



• The future of the world is at your fingertips again.

● EXPRESS VERDICT

This has to be an essential purchase for anyone who has an interest in international politics and the diverse interrelationships which shape the world we live in. Needless to say, it's also great fun. The scale and scope of the project is immense and ensures continued playability along with great value for money. A real gem.

✪ ✪ ✪ ✪ ✪

Andy Storer

FEDERATION OF FREE TRADERS

GREMLIN

ST • £29.99dk
Due out on Amiga

• Just one of the 8,388,608 solar systems available for you to explore

After two years in development, *FOFT* is finally about to hit the streets and is surely guaranteed massive sales if those of *Elite* are anything to go by. Comparisons are unavoidable, since there's the same depth, breadth and randomness to ensure open-endedness. But here you have a play area of 1,034 square miles of galactic space, so we're talking serious scale. While you're wandering around forever you should have plenty of time to judge just how far space trading adventures have moved on.

● GAMEPLAY

You begin the game as a Federation Cadet with 100 credits, and through successfully completing various missions attempt to work your way through the eight ranks up to Pirate Prince status.

This quest will take you on a trading adventure across 32,768 galaxies each comprising 256 solar systems containing 16 planets! At first you are given badly-paid, low risk tasks such as delivering packages to distant worlds or escorting freighters in the more civilised areas of space, so you must use this time to trade goods and build up sufficient capital to enhance your ship's capabilities.

There are 15 missions involving searches, investigations, evacuations and interceptions; each accruing different credit. Using Galnet – a galactic

• Just checking out that everything's OK before a mission

comms network – you are able to access stock market data on a range of commodities and buy, deliver and sell accordingly after hyperspacing to dock at space stations or planet-bound silos. After journeying to a world you are able to descend through its atmosphere and navigate *Virus*-style patchwork landscapes whilst dodging ground defence systems.

You can choose to opt out of the Federation career structure by ignoring mission briefs and simply play the market. There's also a healthy trade in black market goods going on and you can communicate with passing ships and arrange to trade surpluses.

There are 32 different kinds of spaceships out there and not all are by any means friendly. Pirates and con-artists abound, so you'll have to stock up on the most powerful lasers, missiles and shields that you can afford to ensure a safe passage. Your ship's computer – Eddie – can also be used to let you load in a dozen or so sub-games to help you pass the space-time. *FOFT* is massive and the scope enormous. It has all the hallmarks of a classic you could still be playing in the mid-nineteen nineties.

● GRAPHICS AND SOUND

FOFT comprises four types of screen display. First off there are the beautifully crafted animated rotating maps of solar systems and galaxy spirals with which you derive data to pinpoint your destination. Then there are the text screens displaying the market's commodity data, the Galnet comms system and ship's computer.

Both of these are competent enough in themselves, but *FOFT*'s strength lies in its galactic space sequences of filled 3D vectors. All moving objects and planets are depicted by super-solid graphics which move extremely smoothly and illustrate a thorough understanding of dynamic animation.

If this weren't enough, you can also head down to a planet and be treated to the filled grids of terrain relief mapping which consists of green plains, valleys, hills and oceans. Your ship hangs mid-screen as you guide it over and through a smooth-scrolling world. It's obvious a great deal of care and attention has gone into the visuals, which is fitting for a game exhibiting so much ambition.

FOFT comes with a second disk full of ST sound chip renditions of well-known classical musical pieces to accompany your travels, whilst the various spot-effects encountered during combat are more than adequate to enhance the overall sense of atmosphere.

• This pirate didn't want to trade, so you lock on with Class 1 lasers

● OTHER VERSIONS

There's an Amiga version in the pipeline which should be ready in a couple of months and will feature enhanced sound and music, though will not differ in terms of graphics or gameplay.

● EXPRESS VERDICT

FOFT has all the compulsive alternate reality of *Elite* and more. It appears to have been designed to provide possibly the most comprehensive escapism available backed up with state of the art graphics. Its sheer scale and depth should ensure good sales and put Gremlin Graphics back on the map. Well worth the thirty quid, since you could be playing it for years.

5 GAME

✪ ✪ ✪ ✪ ✪

Andy Storer

• Hooking into Galnet before opening communication channels

• The ship's computer displays just some of the options to hand

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Clive and kicking

Sir Clive Sinclair virtually invented the British home computer industry. The 80s were a bad time for him with the ill-fated C5 car and QL computer. But, as Mike Scialom reports, he's back in business...

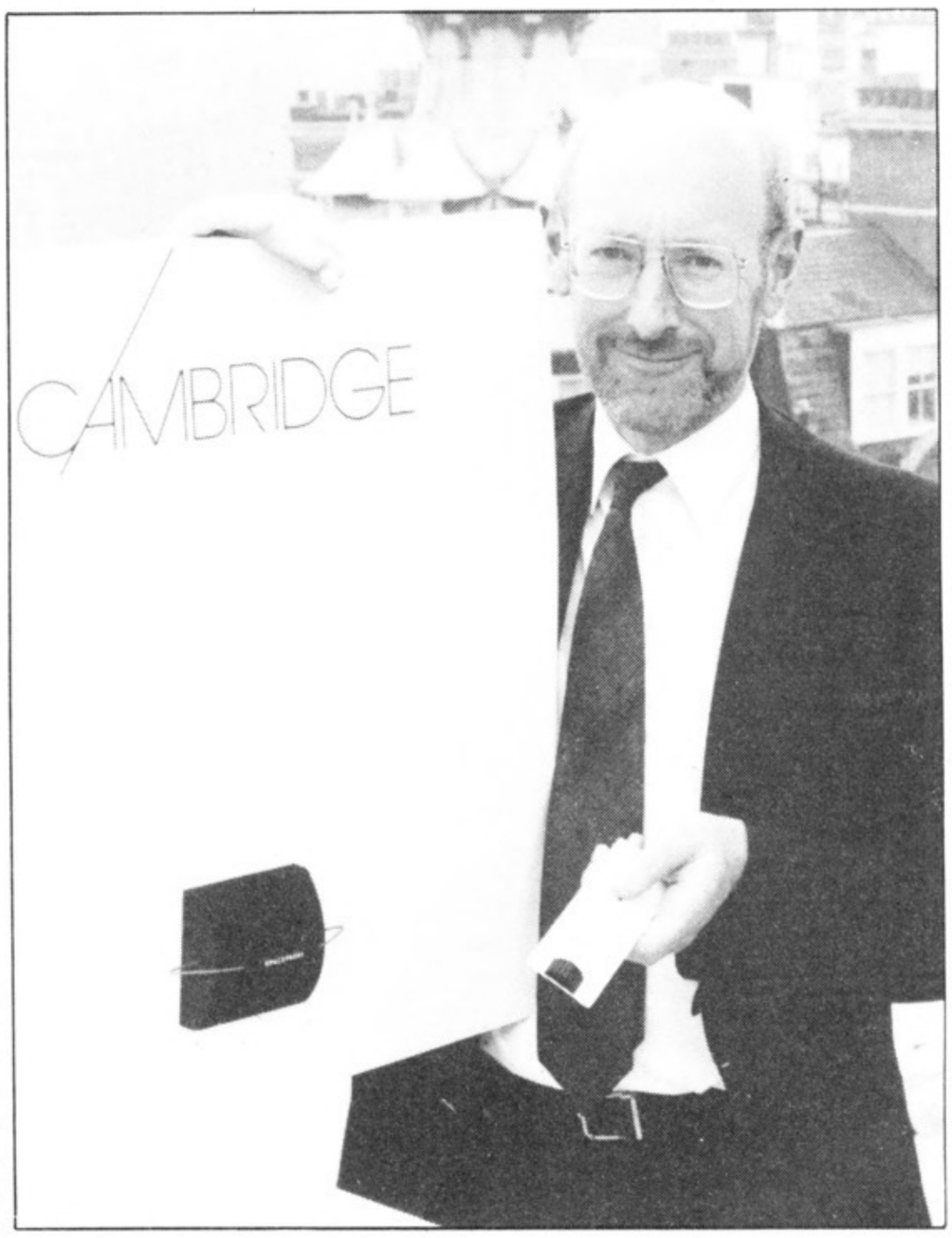
According to whether or not he has a decent product available in the marketplace, Sir Clive Sinclair is either a revered genius or a self-deluding nutter. He has produced a string of gadgets which veer from the laughably pathetic to the awesomely successful, including the first pocket calculator, the Black Watch digital wristwatch, pocket TV, C5 'electric car' and the first affordable satellite TV dish. In the computer world Sir Clive is credited with starting the home computer revolution with the ZX81 and best-selling Spectrum, plus the optimistic (but not fully developed) QL, to today's respectable Z88.

Whichever way it is, Sir Clive is at least a self-invented man. His rise to become Britain's foremost computing legend began in his teens. There was little to suggest that he would become an entrepreneur. His lower middle class roots offered few obvious outlets for his interest in electrical gadgets, which started in his teens. He was supported by his dad – an electronics expert who used to work with his son in his London office up until about 1986. At 17 the young Sinclair became a journalist with Practical Wireless, a job he held for several years with some success.

But what he really wanted to do was start his own company. In 1962 he took the leap and founded Sinclair Radionics, building and supplying radio kits to enthusiasts. He opened with one of the tricks that was to become a hallmark two decades later, bringing both success and disgust from his customers. He took a quarter page advertising his products mail order, and made these sales his main source of income.

To be fair, there was little alternative, but one of the things the young Clive learned was that he didn't have to buy parts until he knew the level of demand – and if that meant keeping people waiting, then so be it. This was later to be at least part of the reason for his fall from grace in the mid-80's, which eventually led to his name being bought by Amstrad's Alan Sugar, thereby replacing Sinclair as Britain's foremost computer king.

In the 60's and 70's Sinclair produced the world's first pocket calculators and digital watches ahead of the Japanese. But he sold the business when it ran into difficulties. Reasons for the sale included poor quality control, a field which has earned Sinclair a vaguely unreliable air about his business practice which he has yet to fully shake off. But the company made him rich for the first time.



• Sinclair: what's up his sleeve now? Pundits say it's the portable phone

When he started Sinclair Research in 1979 there was no home computer market. There was a personal computer market used in business, but no manufacturer was producing a computer as a home entertainment system – a consumer durable like videos or fridges.

The ZX81, a 3K mono computer which plugged into a TV, appeared in 1981 and was the first computer to cost under a hundred pounds. It sold over one million units, and was followed by the Spectrum which brought sales up to three million units. In 1983, Sir Clive got a knighthood which recognised his success in creating a computer games industry – an industry he ironically saw as a spin-off market for a long time.

That Sinclair feeling

But Sinclair sought wider success. In 1985, he tried to break the mould of making games machines by launching the QL – incredibly enough with a non-standard keyboard and disk drive which made it unacceptable for the business market for which it was intended. It was Sir Clive's last computer launched under his own name. The Spectrum Plus and 128 showed he had lost his touch. Expensive attempts to conquer the American market had failed.

Various buy-out attempts came to nothing until Sugar bought the company in 1986, effectively ending an era and starting a new and more functional era of computer use. Around the same time he had turned his passion for an electric car into some sort of reality with the C5, and was then forced to watch the plastic trike turn, in the full glare of the national spotlight, from an 'interesting' launch to a ghastly failure, as its potential danger became apparent. Sir Clive had to settle for being yesterday's man for a while.

Not for long. Forced to choose another name for his new company, Sir Clive came up with Cambridge Computer and launched the Z88. Rather amazingly for a portable that doesn't run MS-DOS, it has established itself as a very credible option. More recently Cambridge launched its satellite receiver, and a portable running MS-DOS seems to be in the pipeline. Intriguingly, if Cambridge can produce this within the A4 size of the Z88, it could yet steal the market from Amstrad's PPC, which is seen by many as The Portable That Almost Was...

Sir Clive's rehabilitation was confirmed this month by his reappearance in The Sun (for getting married again), and shows the Great British Public to be a forgiving lot.

The reason for this is simple. Sir Clive is seen as a Barnes Wallis sort of character, a wacky bloke who invented the electronic age's equivalent of the bouncing bomb which worked against all the odds (the Japanese perhaps being the opponents this time around?). It's an image that suits him well. His rather quizzical expression, his membership of Mensa (the club for those with

Dates

1942 Born in London
1962 Founded Sinclair Radionics, which brought the first calculators and digital wristwatches to market
1979 Founded Sinclair Research
1980 Launch of ZX80
1981 ZX81 launched
1982 Launch of ZX Spectrum – the first colour home computer
1983 Knighted for services to computer industry
1985 QL launched mail order – demand means some wait up to six months
1986 Sinclair sells the rights to use his name on all future computers to Amstrad. Sir Clive founds Cambridge Computer
1987 Z88 launched
1989 Cambridge launches the first affordable home satellite receiver in the UK

silly IQ's) and his much-quoted verbal excesses (see box) all add charm to the idea. But it's difficult to say exactly what Sir Clive is about because he's not technically too strong, nor does he manage his businesses very well.

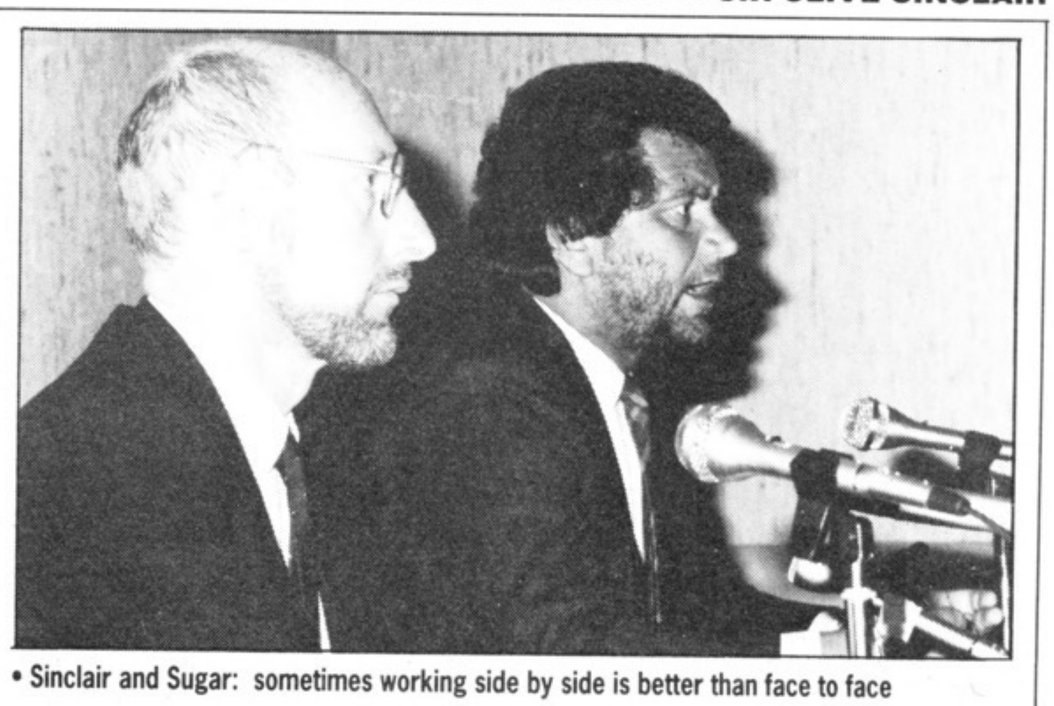
Perhaps his strength is the audacity to bring out the products he does – and make them succeed. His skill is in bringing down component parts in both cost and size, making his products attractive. His nose for economies of scale appears undiminished. But for all that he is not very good at selling his products. Rather, he offers them. Indeed if he ever did any market research (he doesn't believe in it) he may well have been persuaded not to try to sell a home computer. But then he probably would have launched the QL with a full travel keyboard and 3.5 inch drives rather than microdrives...

No, the fact is that Sinclair doesn't like building big businesses. His companies are all to do with him. None of his employees has ever really emerged out of the background – the nearest perhaps being Richard Altwasser who designed the Spectrum's innards and is currently engineering head at Amstrad. By keeping things small he ensures he can follow his latest passion without the hassle of worrying about his employees continued employment. Just as well, the cynics might say.

Clive and well

While Sir Clive is hot news again, these days he seems something of a reformed character. His previous pet indulgences – a loathing for anything to do with Acorn, and a tendency to sell a personal vision of a new electronic 'Golden Age' which did not always translate into products that match the needs of the average computer buyer – are things of the past. It's just as well – these unhelpful fetishes served his rivals better than himself. Indeed, they allowed the strange axis between Sir Clive and Alan Sugar to spring up.

A more unholy alliance you couldn't imagine. In temperament and looks, direction and lifestyle, the two men are exact opposites. Sugar has been openly rude about Sinclair, with comments about pregnant calculators and boffins, and there's no love lost at Sir Clive's end. It's now apparent that Sugar bought the Sinclair name for negative rather than constructive reasons. Basically, he wanted the name to stop Sinclair selling under his own name, because anything with the name Sinclair behind it has a ridiculously popular appeal to the computer-buying public.



• Sinclair and Sugar: sometimes working side by side is better than face to face

What does he aim to achieve in the future? It's difficult to answer exactly, as Sinclair likes to cause a stir, and there's no obvious revolution around the corner. But once again he's in the position he most favours – the underdog who has public sympathy for his position selling new types of products. With Cambridge Computer he has found success with the portable Z88. With Shaye Communications he intends to launch a miniature pocket telephone, and with Anamartic we are promised a WSI (wafer scale integration) product which promises to speed up the operational speed of a chip by a factor of more than twenty.

But what Sir Clive really wants is to create a new revolution. That always seems to be his goal, in whatever field. Whatever happens next, we are assured of a good run for our money where Sir Clive's concerned. His entertainment value is huge, and if some of his products are a bit off-beam, that's because computing is still a young field. There's still room for pioneers, and in Sinclair we find one of the most committed pioneers this country has produced for a good few decades. ●

Verbal Extravagances

On fifth generation computing:

'The sort of machine I foresee is a machine you can talk to, it can talk back to you, it can think, it has information and knowledge, and it's expert in certain spheres – for example in medical knowledge where it could act as a doctor.'

On the next Renaissance, the silicon-inspired Golden Age:

'The development of artificial intelligence is going to happen and the consequences are very considerable and mustn't be ignored. I've no doubt there will be sects which oppose it. This is to be expected and is correct and all points of view have got to be looked at. I'm trying to alert other people to a situation that will arise.'

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BATTLECHESS	49.90	24.96	54.90	24.92	54.94	25.96	44.94	24.96
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F-16 Combat Pilot	24.95	End Feb	Digital Integration
Federation Of Free Traders	29.99	Imminent	Gremlin
Fusion	24.95	Late Feb	Electronic Arts
Galdregon's Domain	19.99	Out Now	Pandora
Gary Lineker's Hotshots	19.99	February 27	Gremlin
Gridrunner	9.95	Early March	Llamasoft
Incredible Shrinking Sphere	19.99	Imminent	Electric Dreams
Kenny Dalglish's Soccer Manager	19.95	Imminent	Zeppelin
Operation Neptune	24.95	February 24	Infogrames
Orbiter	24.99	End Feb	Mirrorsoft
Robocop	19.95	Easter	Ocean
Skyfox II	24.95	March	Electronic Arts
Teenage Queen	19.95	Out Now	Infogrames
War in Middle Earth	24.99	March 9	Melbourne House
Wec Le Mans	19.95	March	Imagine
Zany Golf	24.95	Out Now	Electronic Arts

IBM & COMPATIBLES

Abrams Battle Tank	3.5+5.25	24.99	March	Electronic Arts
Batman – The Caped Crusader	5.25	19.95	March	Ocean
Billiards	5.25	19.95	February	Ere/Infogrames
Crazy Cars II	5.25	24.99	End Feb	Titus
Dragon Ninja	5.25	19.95	March	Imagine
F-16 Combat Pilot (CGA)	5.25	24.95	Out Now	Digital Integration
F-16 Combat Pilot (EGA)	5.25	24.95	End Feb	Digital Integration
Fast Break	5.25	24.95	Out Now	Accolade/EA
Final Frontier	3.5+5.25	24.99	Imminent	PSS
Firezone	5.25	24.99	End Feb	PSS
Modem Wars	3.5+5.25	24.95	March	Electronic Arts
Operation Neptune	5.25	24.95	March	Infogrames
Robocop	5.25	19.95	Easter	Ocean
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War in Middle Earth	5.25	24.99	March 9	Melbourne House
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MACINTOSH

Fish!	34.99	February	Rainbird

MSX

Hercules Slayer Of The Damned	T 7.99	Imminent	Gremlin
Who Dares Wins II	T 1.99	Imminent	Alternative

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Captain Blood	D14.95	Out Now	Exxos
Dark Fusion	D12.99	February 22	Gremlin
Dragon Ninja	D14.95	Out Now	Imagine
Emlyn Hughes International Soccer	D14.95	Out Now	Audiogenic
Fish!	D15.99	Out Now	Rainbird
Gary Lineker's Hotshots	D12.99	February 27	Gremlin
Kenny Dalglish's Soccer Manager	D14.95	Early March	Zeppelin
Purple Saturn Day	D14.95	March	Exxos
Skate or Die	D14.95	Early March	Electronic Arts
Spitting Image	D14.95	Out Now	Domark
Trivial Pursuit	D19.95	Out Now	Domark
Wec Le Mans	D14.95	Imminent	Imagine

Out Now = Released within the last month
Imminent = Expected at time of publication

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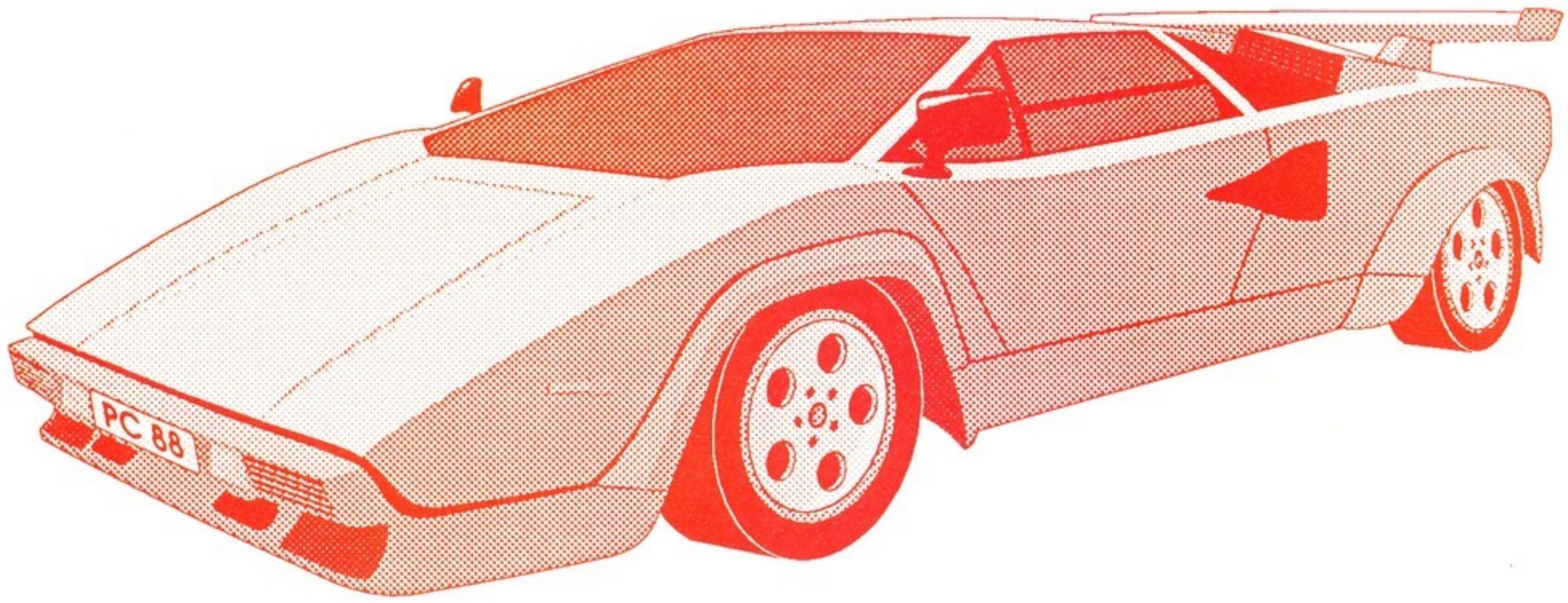

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TIPS

HELP!
Code query

First of all I'd like to thank you for the help about machine code on the C64 (issue 6). I found your advice very helpful and I have just written a BASIC program to change hexadecimal numbers into decimal and POKE them into memory.

However, I can't get my program to save and load my code properly using the OPEN commands. I would be grateful if you could tell me how to do this.

W Cooper, Fair Oak, Hants

• As far as I can see from the program listing you sent, the only thing you need to change is in line 420. Edit this to read:

420 INPUT# 1, X

rather than using GET# to retrieve the byte values.

BUG OF THE WEEK

C64-owning *Double Dragon*-ers will probably already know all about this one, but if not...

If you take your character to the back of the screen and jump up in the air as the baddies advance, when you come down again you'll find they're rooted to the spot. You can then go along and kick the **** out of them.

Incidentally, we want more bugs – we know they're out there! Remember, there's a free 26-issue subscription in it for the winners...

Pycnota paradoxica • This species is the only member of its genus and was known previously as P. nidorum. It occurs in northern and central Europe following its mass migration from Japan in cases of contaminated disks. The beetles live underground, in the nest of small mammals, but mostly in Japanese-flavoured software.

HELP!
All ports in a storm

I own an IBM AT clone. I have a CGA graphics card, disk controller card and an RS232 serial port, and it is with the RS232 port that I am experiencing problems.

The 9-pin serial port itself works perfectly but the printer port doesn't work at all. And since adding the RS232 port my other printer port on the CGA card does not work either.

I have tried setting the other port on the RS232 port to LPT2 but it has no effect. Please can you or any of your readers help? I have an Amstrad DMP3000.

MJ Pitt, Runcorn, Cheshire

• One or both of us is very confused Mr Pitt. From your description I can't tell how many ports you've got and whether they are serial ports or parallel printer ports.

However, I can offer some general advice. I assume the story goes something like this: your AT came equipped with a standard 9-pin serial port and a standard parallel printer port and these worked fine.

At some point you added a serial expansion card which has two 25-pin serial connectors and that's when your problems began.

The first observation is that no matter how many serial ports you have, they should have no effect at all on the operation of your printer port. This raises the possibility that your expansion card has not two serial ports but one serial and one parallel.

If this is the case then your AT now has a total of two serial and two parallel ports.

Another possibility is that the card has two serial connectors but only one port is operative. This is a common occurrence with dual serial cards, and you will have to add extra memories and controllers to make the second port on the card operative.

Third, in any event, when you add a second serial port (in addition to the 9-pin serial port fitted as standard) you almost certainly need to configure the additional port otherwise both ports try to map into the same area of the PC's memory. Configuring is done by a set of DIP switches on the serial card, or your motherboard, or both. This is also true of parallel ports if you find you now have two of these.

You suggest that by removing the serial card, your standard AT ports behave normally. The question then is to determine exactly what is on your new expansion card. Either refer to the documentation, or go back to the dealer.

The good news is that you'll certainly be able to get everything working – but before you can find the solution you need to know exactly what the problem is.

HELP!
BASIC choice

After programming on the BBC Model B for a while I became used to using the PROC statement. On my ST, though, I can't seem to find any PROC statement and the manual is useless.

Also the REPEAT...UNTIL statement doesn't seem to appear either. Any suggestions?

Neil Livingston, Rosyth, Fife

• Only one: buy another version of BASIC. Computer Concepts' *FastBASIC* is very similar to *BBC BASIC*, so you should be instantly at home there. Or try Hisoft's BASIC which has REPEAT...UNTIL and SUB constructions – almost identical to PROC.

The Hisoft version is favourite since it's also a compiler and produces ultrafast, standalone code. £80 for the full-featured version, or *Power BASIC* – a slightly cut-down implementation – will cost only £50.

HELP!
Amiga vs PC

I am seriously considering buying an Amiga A500, mainly for its excellent graphics. I am also interested in running PC software. Therefore I was wondering if I could buy a fast PC emulator for the Amiga and perhaps a Cobol compiler.

Another option I have considered is waiting until PCs with VGA graphics are more widely available to see how they will compare to the Amiga on price.

Any advice you can give me would be gratefully received.

Chris Longley, Houghton-le-Spring, Tyne & Wear

• I'm afraid the answer on emulators remains the same: no dice.

The problem is that one computer can't satisfactorily emulate a similar computer – and the PC and Amiga are broadly similar. Emulation really only works when the machine to be emulated is much inferior – as with a PC emulating a Spectrum, for example.

The only realistic way of adding PC-compatibility to an Amiga is via the PC Bridgeboard for the A2000 – and that effectively puts an entire PC into the Amiga's case. As you can imagine this is not a cheap solution.

As to VGA systems, it's not so much a question of availability as software support and how much you want to spend. VGA systems are already widely available but so far, very little software actually makes the most of the enhanced graphics (*Deluxe Paint II* is a notable exception).

An A500 with second floppy disk drive and colour monitor will currently cost you about £700, or £1,000 for a 20Mb hard disk system. A VGA-equipped PC like the Amstrad 2086 will cost around £800 for a basic system, or £1,000 for a model with hard disk (the extra for VGA is offset by the much cheaper PC hard disks).

On the Cobol front, the Amiga looks like a loser...

I thought *Nevada Cobol* was available but apparently the Amiga currently has no Cobol compiler at all.

TIP
ST & chips

Having just read issue 11 *Tech Tips*, one other thing should be stressed if people are considering upgrading the memory of their STs: are the chips standard DIL packages or surface-mount?

I recently order a 512K upgrade from Ladbroke Computing. I wasn't asked what chips were in my machine and it wasn't until the chips arrived and I had the ST apart that I discovered that the new STs have surface-mount chips.

The upgrade pack was sent back and Ladbroke refunded my money but I had to pay an £18 charge for delivery. So if other readers want to avoid this hassle, look inside your computer. If your ST uses surface mount, as most of the new 520s do, then upgrading is going to be very expensive as I was told the chips would cost almost three times as much as DIL chips.

D R Bennett, Bath, Avon

PS: Anyone got any clues for *Captain Blood*?

HELP!
Monitor substitute

I own an Amstrad 464 and from it I have learned a lot. However, I feel that the time is now right to upgrade to a more powerful machine and I am considering the Atari ST.

As the ST is quite expensive and comes as a standalone keyboard, I am faced with the choice of TV or monitor – unfortunately I can't afford a monitor. However, I know for a fact I can sell the 464 keyboard to a friend, so is it possible to use the Amstrad colour monitor with the ST? Would the 640x400 resolution be compatible with the colour resolutions used by the ST?

If it is possible, it might make a good project to publish as other readers might be interested.

Clive Bentham, Lincoln

• You'll be pleased to learn that there should be no problem. Consult the Amstrad and ST manuals for wiring details and then approach any independent computer/video shop. Most will make up a suitable lead for you.

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So whether it's help offered or needed, write to: Tech Tips, New Computer Express, 4 Queen Street, Bath, Avon BA1 1EJ.

HELP!
Spectrum sound

I recently had the good fortune to acquire a secondhand Spectrum +3 for £25 and it works perfectly in every respect except one: the sound. The multi-channel sound, either on ☞

commercial software or invoked from BASIC is very distorted and raspy (and certainly inferior to my old Spectrum 128's sound.

Does this suggest that the sound chip is faulty? Is it a simple mod to fit a new chip?

Secondly, I would very much like the flexibility and greater capacity of a 3.5" disk drive and have seen adverts for cheap drives with a "Shugart" interface. Would one of these connect directly to my +3 as drive B?

Grant Punchard, Aldershot, Hants

• The thing about silicon chips is that they tend to work properly or not at all. So the odds are that your sound problem is caused by a physical problem with the Spectrum. Since your +3 is likely to be out of warranty it wouldn't hurt to whip the casing apart and have a look inside. Check for loose connections on the audio side.

While you're in there, take a peek at the sound chip. If it is socketed rather than soldered into the board, you're in luck. Assuming the long-shot and that the chip is at fault you can replace it quite easily since you can lever out the old one and simply plug in a replacement.

The AY-3-8912 is a standard sound chip – used in Amstrad CPCs and Atari STs – and is readily available from many electronics suppliers. Check one of the specialist electronics magazines for adverts.

If the chip is soldered in then life becomes difficult, involving horrible instruments of torture like solder suckers. Better to bung it off to a repair firm.

The Shugart interface will almost certainly work with your machine, but you may have problems making the physical connections. Why not check with the dealer – you might even be able to buy one on a "trial or return" basis.

TIP C64 Touch typer

In *Express* issue 12 there was a query from a Mr Oswald about a typing tutor for the C64. I would be grateful if you would pass on this copy of *Touch Type 64*.

Also, could you answer two questions for me:

1. Is COBOL (either public domain, or commercially) available for the Amiga?

2. What does a GURU meditation number mean?

Colin Howard, Jarrow

• Well, Mr. Howard, the answer to question 1, I'm afraid, is "no". COBOL is a very old language and pretty well dead.

As for question 2, GURU meditation numbers tell you what actually happened when the machine crashed. You can find out what particular disaster the numbers refer to in the Amiga's *Hardware Reference Manual*, which can be obtained from most good bookshops at around £25.

As for enclosing a copy of *Touch Type 64* for sending on to Mr Oswald, well we reckon such a spirit of generosity has got to be worth a 26-issue sub!

TIP Half-price disks

Cheeky C64 owners seeking to get more memory out of their disks can access the unused second side simply by cutting a slot on the left hand side of the disk sleeve to correspond with the one on the right. Disks sold as single-sided aren't guaranteed to work both sides, of course!

HELP!

Graphic greats

I am a student on the BTec graphics course. At present I am engaged on a project concerning all aspects of computer generated animation.

I am writing for the addresses of companies which generate computer games such as Realtime Graphics and Argonaut. I am only interested in companies that produce games like *Who Framed Roger Rabbit*, *Purple Saturn Day*, *Captain Blood*, *Space Harrier 2*, etc.

Marieanne Churcher, Coleford, Gloucs

• A bit of a problem this, since several of your contenders are foreign. *Roger Rabbit* comes from Buena Vista Products which is the computer software arm of Disney Studios, *Captain Blood* from French house Infogrames, and *Purple Saturn Day* from French collaborators Infogrames/Ere Informatique.

A second problem is that for the companies you name, graphics are their stock in trade – literally the lifeblood of the firm. You are unlikely to get much information out of them on these trade secrets.

However, you can try writing to them, care of their UK publishers/distributors: **Argonaut and Realtime, c/o Rainbird Software, Wellington House, Upper St Martins Lane, London WC2H 9DL.**

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Captain Fizz	9.70	9.70	NetherWorld	13.90	13.90	Zany Golf	16.80	16.80
Crazy Cars II	14.70	14.70	Nineteen Part One	11.70	11.70	Zoom	11.70	--.--
Custodian	13.90	13.90	Outrun	13.90	13.90	Led Storm	13.90	13.90
Cybernoid	13.90	13.90	Overlander	14.70	11.70	Lombard RAC Rally	14.70	14.70
Dark Fusion	13.90	13.90	Pioneer Plague	14.70	--.--	Manhattan Dealers	14.70	14.70
Double Dragon	11.70	11.70	Pools of Radiance	15.90	15.90	Menace (Draconia)	11.70	11.70
Dream Zone	14.70	14.70	President is Missing	14.70	14.70	Mini Golf	13.90	13.90
Dungeon Master	--.--	14.70	Project D Backup Tool	29.50	--.--	Microprose Soccer	14.70	14.70
Dungeon Master (1mb)	15.70	--.--	Purple Saturn Day	14.70	14.70	Motor Massacre	13.90	13.90
Dragon Ninja	14.70	12.70	Rambo III	14.70	11.70	Advanced Ski Simulator	11.70	11.70
E. Weaver Basketball	13.90	--.--	Return of the Jedi	11.70	11.70	Advanced Rugby Sim.	11.70	11.70
Elite	14.70	14.70	Road Blasters	16.80	16.80	Borodino	17.70	17.70
Empire Strikes Back	11.70	11.70	Robocop	14.70	11.70	Black Tiger	16.80	13.90
Espionage	11.70	11.70	R-Type	11.70	11.70	Cosmic Pirate	11.70	11.70
F-16 Fighter Pilot	14.70	14.70	Scenery Disk No. 7	12.70	12.70	Crack II	11.70	11.70
Five Star Compilation	--.--	14.70	Scenery Disk No. 11	12.70	12.70	Dragonscape	9.70	9.70
Fantavision	29.00	--.--	SDI (Activision)	11.70	11.70	Hybris	17.70	17.70
Final Assault	13.90	13.90	SideArms	15.70	15.70	I Ludicrous	14.70	11.70
Flight Simulator II	23.90	23.90	Skrull	14.70	14.70	Inc. Shrinking Sphere	14.70	11.70
Flying Shark	14.70	14.70	Shoot-Em Up Con' Kit	14.70	14.70	Populous (EA)	16.80	16.80
F.O.F.T.	17.70	17.70	Star Wars	11.70	11.70	StormTrooper	14.70	11.70
Fright Night	11.70	11.70	Starglider II	14.70	14.70	Scorpion	14.70	14.70
Galdregon's Domain	11.70	11.70	Sword of Sodan	17.70	--.--	Trained Assassin	14.70	14.70
Galactic Conqueror	14.70	14.70	STOS	--.--	19.90	WEC Le Mans	14.70	11.70
Games - Summer Edition	13.90	13.90	STAC	--.--	29.90			
Games - Winter Edition	13.90	13.90	SunDog - Frozen Legacy	--.--	8.90			

8 BIT SOFTWARE

TITLE	SPECTRUM CASS	SPECTRUM DISC	CBM 64 CASS	CBM 64 DISK	AMS CASS
Ace of Aces	2.95	--.--	2.95	--.--	2.95
Action Service	5.95	--.--	6.95	9.95	6.95
Afterburner	7.45	10.45	7.45	10.45	7.45
Airborne Ranger 128	9.95	--.--	9.95	13.95	--.--
Alien Syndrome	6.45	--.--	6.45	9.95	6.45
Am. Civil War Vol 1, 2 or 3	--.--	--.--	--.--	14.95	--.--
Archon Collection	6.95	10.45	7.45	10.45	7.45
Arkanoid 3 Revenge	5.50	9.95	6.00	9.95	6.50
Armalyte	--.--	--.--	6.95	9.95	--.--
Army Moves	3.95	--.--	3.95	--.--	3.95
Artura	5.95	8.95	6.95	9.95	6.95
Barbarian Psygnosis	6.95	--.--	6.95	--.--	6.95
Barbarian 2 Palace	6.95	--.--	6.95	9.95	6.95
Bards Tale I	6.95	--.--	7.45	10.95	7.45
Bards Tale 2 or 3	--.--	--.--	--.--	12.95	--.--
Bat	--.--	--.--	--.--	--.--	12.95
Batman Caped Crusader	5.95	9.95	6.25	9.95	6.25
BattleField	--.--	--.--	--.--	14.95	--.--
Battle in Normandy	--.--	--.--	--.--	14.95	--.--
Best of Beyond	2.95	--.--	2.95	3.95	--.--
Best of Elite Vol 1	3.95	--.--	3.95	--.--	3.95
Bionic Commandos	6.95	--.--	7.45	10.95	7.45
Black Tiger	6.95	--.--	7.45	9.95	7.45
Bubble Bobble	5.45	8.95	5.95	8.95	5.95
Buggy Boy	5.50	--.--	6.95	9.95	6.95
Butcher Hill	6.45	10.95	7.45	10.95	7.45
California Games	3.95	10.95	7.45	10.95	7.45
Captain Blood	6.95	--.--	6.95	9.95	6.95
Carrier Command	9.95	13.95	9.95	13.95	9.95

8 BIT SOFTWARE

TITLE	SPECTRUM CASS	SPECTRUM DISC	CBM 64 CASS	CBM 64 DISK	AMS CASS
Carriers at War	--.--	--.--	--.--	14.95	--.--
Caveman Ugh-Lympics	--.--	--.--	7.45	10.45	--.--
Circus	6.95	10.45	--.--	--.--	--.--
Combat Game	--.--	--.--	6.95	8.95	--.--
Combat School	5.45	9.95	5.95	9.95	5.95
Combat Game	1.00	--.--	1.00	--.--	1.00
Cybernoid 1 or 2	6.45	--.--	7.45	10.95	7.45
Daley Thompsons 88	6.50	--.--	6.50	9.95	6.50
DarkFusion	5.95	--.--	8.95	6.95	9.95
Dark Side	6.95	9.95	6.95	9.95	6.95
Death Lord	--.--	--.--	--.--	10.45	--.--
Deja Vu	--.--	--.--	--.--	13.95	--.--
Derek Belles Le Mans	--.--	--.--	7.45	10.45	--.--
Double Dragon	6.95	9.95	6.95	9.95	6.95
Dragon Ninja	6.95	9.95	6.95	9.95	6.95
Druid	2.00	--.--	2.00	--.--	2.00
Echelon	6.95	--.--	7.45	10.95	7.45
Elite 6 Pack 1, 2 or 3	6.95	--.--	6.95	9.95	6.95
Emlyn Hughes Football	6.95	9.95	6.95	8.95	6.95
Empire Strikes Back	6.95	--.--	6.95	9.95	6.95
Espionage	5.95	9.95	6.95	9.95	6.95
Europe Ablaze	--.--	--.--	--.--	14.95	--.--
Exploding Fist +	6.00	--.--	6.95	8.95	--.--
4 x 4 Off Road Racing	6.95	--.--	7.45	10.95	7.45
F16 Combat Pilot	9.95	13.95	9.95	13.95	9.95
Fair Means or Foul	5.45	8.95	6.95	8.45	6.95
Fast Break	--.--	--.--	7.45	10.45	--.--
Fernandez Must Die	6.95	9.95	6.95	9.95	6.95
First Command	--.--	--.--	--.--	10.45	--.--

8 BIT SOFTWARE

TITLE	SPECTRUM CASS	SPECTRUM DISC	CBM 64 CASS	CBM 64 DISK	AMS CASS
Iron Lord	6.99	8.99	6.99		
Joan of Arc	--.--	--.--	6.99		
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19 Boot Camp	6.99	5.99	6.99		
NetherWorld	5.30	6.99	8.99		
Nigel Mansell	6.99	8.99	8.99		
Night Raider	8.99	8.99	6.99		
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Par 3/4	10.50	10.50	10.50		
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Rambo III	6.30	6.99	6.99		
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Return of the Jedi	6.99	6.99	6.99		
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TO ALL SEGA OWNERS

Hello!

My name is Tony Takoushi and I will be running the Sega Club with the help of the delectable Manolya (more on her later!)

The club has been set up to give Sega console owners the very latest news on happenings in the Sega world, this will include news on the latest hardware (joysticks, 3D glasses and light gun to name a few), software and THE ARCADES!!

As you are probably aware Sega is NUMBER ONE in the arcade world with hits like Space-Harrier, Outrun, Hang On, Thunderblade and the latest smash hit Afterburner. In coming months there will be promotions for arcade merchandise including T-Shirts, stickers, badges and sweatshirts from Sega arcade hits.

Each issue of the newsletter will feature news, reviews, competitions and club promotions. Each issue will feature an EXCLUSIVE review of a new Sega game, the hit coin-op Thunderblade is featured in this issue. So if you want the latest news and reviews join the Sega Club! When you have registered as a member of the Sega Club you can ring in to the Sega Hotline with any questions you may have about the club or get the latest news. You can also leave your high score and if it is good enough it will be listed in our Master Blasters list in coming issues!!

Both Manolya and myself will be manning the Hotline and if you happen to be stuck at a certain point in a game then use the Hotline for some tips, we are here to help you.

A national network of user groups will be set up, BUT IT WILL NEED YOUR SUPPORT!! I am looking for Sega owners to set up local clubs around the country and I will attend your club nights and tell you all about the latest games and maybe even demo the latest prototypes to hit the UK as well as giving you special Sega merchandise. Club visits will be feature articles in future issues of the newsletter, so now is your chance to be famous, get a club going and let us know!!

The Sega Club is being set up FOR YOU, so do write in and tell us what you want to see or if there is anything you do not like.

So do not waste any more time...fill in your details below!

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STOS – you for it?

I hear that Mandarin is beavering away at add-ons for *STOS*, and first out of the starting blocks at the end of Febraury should be the compiler (*COMPOS*?), which will sell for £19.95 and as well as compiling your code it will also strip out any unused "overheads" from the program to give you a bit more elbow room.

Sprite 600 offers – guess what – 600 sprites, all fully-animated, which you can grab or adapt for your own games. There'll be spaceships, dragons, even a hang-glider – which will help me considerably with my planned mega-game: *Cyril Smith Goes Hang-Gliding*. And at £14.95 that makes the price of sprites seem quite reasonable.

And even as I type these words *STOS Maestro* add-on is being polished off, and should be out by the start of March. This will be on two disks, and the first enables you to copy an extension file onto your *STOS* disk to add an extra ten sound commands to the language. Disk Two will be full of samples, and these can be incorporated by using complicated commands like PLAY SAMPLE 1. The samples will be the typical sounds that make game-playing so relaxing: explosions, bullets, sirens, screams – that kind of thing.

Just as the *STOS* sprite editor allows you to grab sprites from commerical releases and use them for your own amusement (as long as there's no breach of copyright involved), so the sound sampler does the same for sound effects, and will allow you to use many of the PD sampled sounds that are available.

and feed in your own sound effects for sampling: get your dog to bark into a microphone, combine it with a tune and there you are – a barked National Anthem!

A STOS by any other name

The news that tickled my fancy most this week was hearing that the name Mandarin will be giving to the Amiga version of its STOS programming language is...*AMOS*!

This is thought to be the first time that a computer program has been named after a character in *Emmerdale Farm*. Just as well there'll never be a Dragon version: *DROSS*!

Corrupt data

I know plenty of people who've been struggling with the Magnetic Scrolls adventure, Corruption, but ST owners with the impeccable good taste to read Club ST can benefit from a few tipettes I've got for you. I'll write some of these backwards so that you don't need to read them if you don't want, despite the havoc this plays with my spelling checker and the Express sub-editors.

If you're worried because you always end up in hospital after lunch with Jenny, don't panic! This cannot be avoided. What to do with the screwdriver from the glove compartment? WODNIW S'OVLOV KAERB. Then hang on to the object as you need it again later for a spot of burglary. What to do in the hospital's TV room? RAEB YOT MORF EPOCSOHTETS TEG. Finally, what to do in the toilet...no, not that! NRETSIC NI KOOL. But don't take what you find.

If you're totally flummoxed by the adventure and want a full solution to it, then through the kindness of my heart I'm prepared to let you have a copy if you send a stamped addressed envelope to me at Club ST, New Computer Express, Future Publishing Ltd, 4 Queen Street, Bath BA1 1EJ. That's also the address for any other ST comments, questions, queries, hints, tips, unwanted disks, fivers etc.

Why not strangle a programmer today?

Life is hard enough as it is, as we wend our way through this veil of tears, so why do programmers sometimes have to add to the misery with their niggling little irritations?

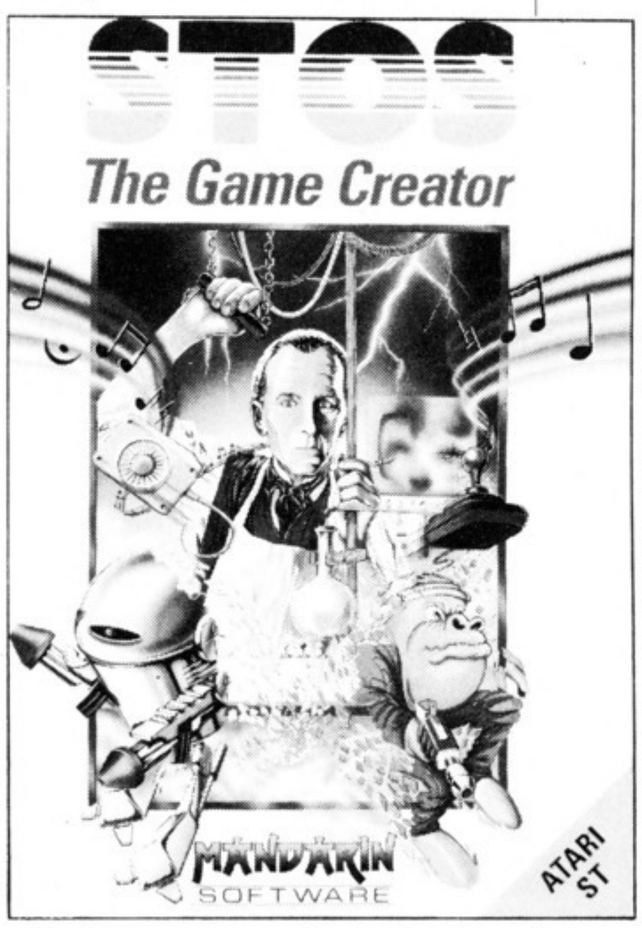
I loaded up the US Gold strategy game *Joan of Arc* the other day and, as is my wont, tried putting Disk A in drive A and Disk B in drive B.

That may sound pretty obvious to people without a second drive, but second drives are always double-sided and where programs come on two disks you're never quite sure whether they've made the second disk single or double-sided. If it's only single-sided then it needs to go in drive A at the appropriate time, but some programs use a double-sided disk and if you stick it in drive B at the start it'll be accessed automatically. Of course, they never bother to tell you which it is, but that isn't the irritation.

Anyway, *Joan of Arc* started to load, and after the first section had loaded in there were a few whirrs and clicks before I got the message that "drive B is not responding", probably meaning nothing more than that disk B is single-sided so will need to be put in drive A.

Cancel or retry? Oh, let's go for a "retry" just in case...I'll click on that...hang on a tick, what's this? WHERE'S ME LITTLE ARROW GONE? HOW CAN I POINT AND CLICK WITHOUT A POINTER? Yup, the mouse pointer had ceased to be. It was no more. It was an ex-pointer. Nothing for it but to load again and start over. Well, I did tell you it was only a little irritation.

Mike Gerrard



The basic software package will set you back £24.95, but for £69.95 there will also be a hardware version with plug-in cartridge: *STOS Maestro-Plus*. Mandarin is offering an upgrade service for the difference in price, if you want to start small and then move up. With the cartridge you can be more creative

PC UPDATE

Ya pay ya money

It's all very easy to pontificate about new PCs and peripherals, trying to indicate which is the best buy and which piece of junk to avoid. It's very much another thing, though, when you come to dig your own hand deep into the bank's pocket and fork out for a new machine to serve you for the next few years.

Everyone has their own requirements when it comes to a PC, and the first piece of advice I always offer to anyone buying a machine is to select the software first and then buy a machine to run that software. This is all very well for a home or small business user, who will probably only have three or four applications which need to run on the machine. Spare a thought for the poor journo, though, who earns his pennies from running all kinds of weird programs and setting down his thoughts in some kind of coherent form. What I need is a PC which runs anything I care to put on it, for at least as long as it takes me to evaluate it.

My trusty Digitask PC 16 has served me well for the last two years and has been well worth the £900 odd I spent on it. It has accepted a V20 chip instead of its original 8088, taken on a reliable but noisy hard card which is only barely faster than a floppy, and accepted an EGA card which has pretentions towards VGA compatibility. It's run everything from *Designer*, a big, hairy graphics program for Microsoft Windows, to *Davrelle*, a super-dooper presentation program under GEM, without a murmur. It's even fought with the programs sent in by readers for the *PC Plus* SuperDisk, and lived!

What I need, though, is more speed, more memory and a bigger and faster disk drive to cope with programs which expect to find a PC AT as a start, with at least half a megabyte of EMS memory and a VGA screen. Ideally, I should try and future-proof myself with a cutting-edge-of-technology machine which won't look lame for a few years yet.

My first thought was a Wells American CompuStar, the spectacular tower machine I've mentioned before in this column as having everything replaceable and enough room inside for half the population of Devon. It can have both an AT bus and a PS/2 bus and any processor from an 8088 to a 25MHz 80386. Although i'ts pricey (the configuration I'd earmarked would have been something over £3100), I hoped to get a reasonable discount. Not so – Wells apparently has a "very tight policy" on discounts and would only offer 5%.

Ah well, have to think again. I'll let you know how I get on.

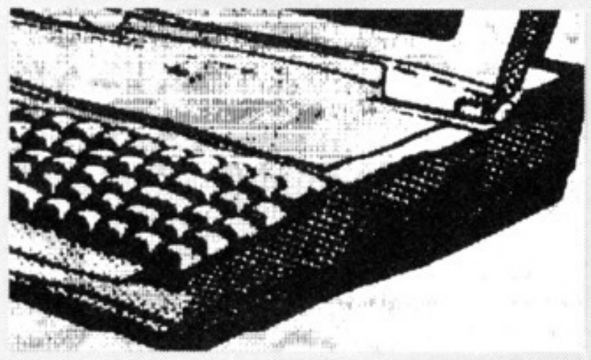
Scandalous behaviour

Someone recently told me that the resolution of a scanner shouldn't be confused with the resolution of a printer, as they were different quantities (I'm not sure who it was, but most probably a scanner salesman). His idea was that although most scanners produce images at a resolution of 200 dpi and most lasers print at 300dpi, the two resolutions are compatible.

Well, there are lots of strange things in the world, look at the coelacanth for instance, but a dot's a dot in my book and the same number of them to the inch must surely give equal resolutions. Can you tell the difference, though? Well, by way of a truely scientific test here are sections of three scanned images at 200, 300 and 400 dpi, all scanned with the same scanner and printed out on the same printer. Can you see the difference, and which do you think is the best?

• 200 dpi...

• ...300 dpi, the same resolution as most lasers...



• ... and this is top whack, 400 dpi.

Step IVward

This must get the prize for nastiest pun of the week – it's pronounced *Step Forward*. It's a package designed for people writing applications in *Clipper*, *Foxbase* or *Quicksilver*. If you are thinking of changing over to the bigger and bulkier *dBase IV* and also thinking about the effort of rewriting all your source code for the new version of the world's most popular database, then *Step IVward* may be of interest. It does the conversion for you – well 95% of it anyway. And that must be worth a good few pounds of anyone's money. Ashton Tate thinks it should be worth £89.00 of yours, plus VAT. The only remaining question is "Is *dBase IV* that much better than *Clipper*, *Foxbase* or *Qicksilver* that you would want to upgrade?".

Step Backward

While I'm on about Ashton Tate and *dBase*, did you know that AT was suing *Foxbase* for being too like *dBase*. As this is happening in the US, AT is suing it for a LOT of money. *Foxbase*'s counter claim (there had to be one, didn't there?) is that AT gave *Foxbase* tacit approval by distributing its literature at an AT seminar a couple of years back. Seems a fair point to me, but this one'll run and run.

Sky's the limit

OK, yet another pun on Sky TV, to mention in passing that Alan Sugar is so happy with GPT (GEC and Plessey Telecoms), which is making his cheapo receiver dishes, that he is thinking about transferring some of his PC manufacture to this country too. Could be a good way of avoiding EEC "local content" rules, come 1992.

Simon Williams

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AMIGA BLIT

Fancy Some Free Software?

In this age of expensive software, when the average game can set you back £25 or even more in some cases, the lot of the computer user on a tight budget can often look decidedly unfair. If, on the other hand, I was to tell you that out there in Amiga land there are literally thousands of commercial quality software titles just waiting to be scooped up for just the price of a disk, would you call me mad and demand my instant resignation as *AmigaBLIT* columnist?

This amazing source of free software is of course the Public Domain libraries that seem to have sprung up in such an abundance in the past year or so.

Public Domain? Its all cr*p! nothing but boring printer spoolers and other useless utilities that usually don't work anyway! This is a view that only within the last year or so have the public domain libraries been able to shake off. Sure, in the early days of public domain on the PC, most such software wasn't worth the disk it was stored on, but things have most definitely changed.

The Amiga Public Domain scene is one of the most active, and certainly the most exciting, on any machine. Nearly every day, new disks are be compiled by the various public domain companies and the rate of growth is staggering.

Probably the most famous name in Amiga Public Domain is that of Fred Fish. The Amiga community owes a great deal to the efforts of this one man, for without him that machine's PD scene would undoubtedly not be where it is today.

Fred Fish has collected and catalogued more than 180 disks crammed full of first-class material from some of the top Amiga programmers. You'll find software from such big names such as Bryce Nesbitt, R J Mical (author of *Intuition*) and Dale Luck (author of the Amiga graphics software) scattered through the Fish collection. Even at the recent European Developers conference, where many of todays top Amiga programming gurus such as Jez San were to be found, Fish disks were hot property.

So what kind of programs are available? Well, quite simply, you name it and the chances are it already exists within the Public Domain. There's something there to please every taste, from fast action arcade games and fun programs to word processors, databases, spreadsheets and even advanced assembly language tools.

Many Amiga magazines, most notably *S T Amiga Format*, carry regular monthly features detailing the latest and greatest Public Domain software available.

From personal experience, my choice of supplier would undoubtedly be George Thomson Associates, based in Arran in Scotland. George Thomson is always first with many of the top libraries, including the Fish collection, and the service is first rate. In fact, many UK PD suppliers that claim to be the best actually purchase their disks from here. George Thomson Associates can reached on 077082 234.

Professional Page under threat

The undoubted king of the Amiga desktop publishers is Gold Disks' *Professional Page*. With its powerful colour separation capabilities and extensive WYSIWYG page controls, there is just nothing to touch it on the Amiga...until now.

Due for release any day now, *PageStream* from the American company Soft Logik, looks set to give *Professional Page* a run for its money. *PageStream*, formerly called *Publishing Partner Professional*, was developed for use on anything from a simple 9-pin dot-matrix right up to a top-notch Linotronic imagesetter (as used to produce *Express*). Dot matrix support within past Amiga DTP packages has been little short of pathetic, but *PageStream* features a special page description language (not unlike postscript) that has been designed specifically with the dot-matrix owner in mind.

Other features include a powerful word processor with built-in spell checker – no more having to type the body text in a word processor then import it into your pages. *PageStream* also boasts powerful control over kerning, tracking, leading and hyphenation, the ability to create master pages, tags and style sheets and other wondrous features. Look out for *PageStream* soon.

Message Port

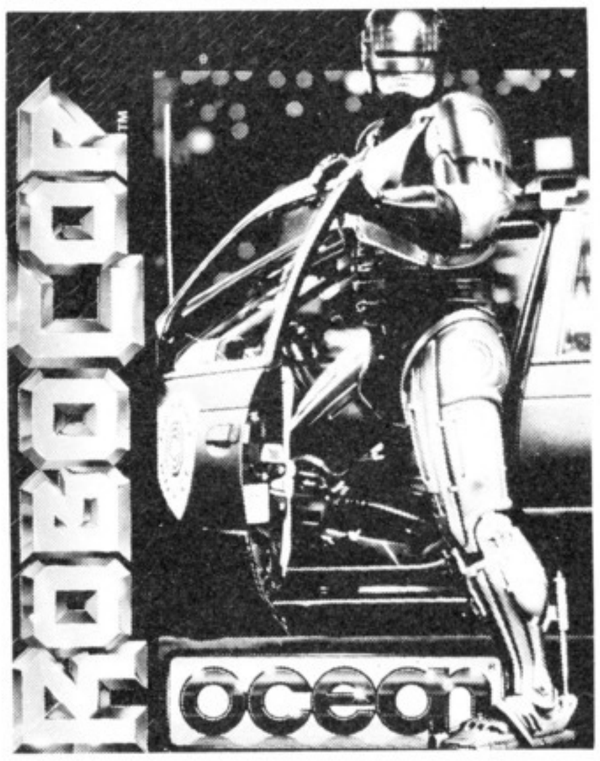
If you have any comments on any issues raised within AmigaBLIT or any issue within the Amiga scene in general, why not drop me a line and air your opinions; don't worry, well supply the soap box! Similarly, if you have any great tips or tricks for any item on software on the Amiga, be it a game or utility, then Id love to hear from you! The address to write to is: AMIGA BLIT, NEW COMPUTER EXPRESS, 4 QUEEN STREET, BATH BA1 1EJ.

Games Snippets

There's a lot happening on the Amiga games scene over the next couple of months. Titles to look out for include:

Denaris ▪ US Gold
You read about it in last week's *AmigaBLIT*, but for those of you who don't know, this is the one to watch. *Denaris* is fast and furious arcade action at its very best.

Populous ▪ Electronic Arts
You play God or the Devil as you guide your people, trying to help them prosper and multiply. *Populous* is set to be one of the big games releases of '89.



RoboCop ▪ Imagine
Based on the arcade version of the hit film, *RoboCop* has you playing the lead role. If the Amiga conversion is anything like the arcade version (a personal favourite of mine), this could be worth looking out for.

Jason Holborn

SPEX

Ex-cellent

In my early Spectrum-owning days, most of the time spent burning rubber keys was given over to programming. I had just progressed past the

10 PRINT "ROB WOZ ERE"
20 GOTO 10

stage when the gaming bug bit and refused to let go, except for short periods of parole using adventure writing utilities like *GAC* and *PAW*.

The main reason for loss of interest in BASIC came about because of the huge improvement in commercial software. I didn't mind sweating blood trying to write something of worth when I thought there might be money in it, but when the fruits of labour were so poor in comparison to what you could pick up in the local software store, I gave up.

To write anything of commercial standard you had to learn machine code, and that meant unhealthy hours in front of the computer messing around with hex codes and other unspeakable horrors. Time which could be spent playing games!

If there's ever been a package to reawaken my interest in BASIC programming, *Ex-BASIC* from Companion is the one. *Ex* stands for Extended, and it certainly is that, with an impressive 66 brand spanking new commands. These can be incorporated into standard Speccy BASIC with minimum hassle and impressive results.

They range from scrolling and colour changing commands to wacky sound effects and interrupt handling. Also included are some toolkit functions like RENUMBER and TRON.

Anything you write with the operating system can be made to look professional with an Alkatraz loader. This makes life difficult for hackers and pirates.

I found the package easy and fun to use, and although you probably couldn't write an entire program of commercial quality on it, Companion suggests it's suitable for demos or routines in games, for example. As well as that, I can see *Ex-BASIC* being ideal if you want to produce something specific like a specialist education program and are already familiar with BASIC.

Companion's next trick is a sprite designer which would possibly tie in with *Ex-BASIC*. Now with that, and a liberal sprinkiling of machine code, you could really achieve something. And even if your ambitions don't stretch to star programmer, there's still a lot of fun to be had just messing around.

Ex-BASIC retails at £11.99 from Companion at **193 Brampton Road, Carlisle, Cumbria CA3 9AX**. If you want further info on this or their other products, which include a font designer and IMBOS – a similar program for Microdrive users – send an SAE, and tell them I sent you.

Double Scotch

Everyone knows small is beautiful and that size doesn't matter – but what you do does – so let's start treating some small one and two-man/woman bands with the respect they deserve. In a millenium or five, when that fateful day comes and the Spectrum is no longer considered a popular enough machine for commercial support, the real enthusiasts will be the ones we rely on for support.

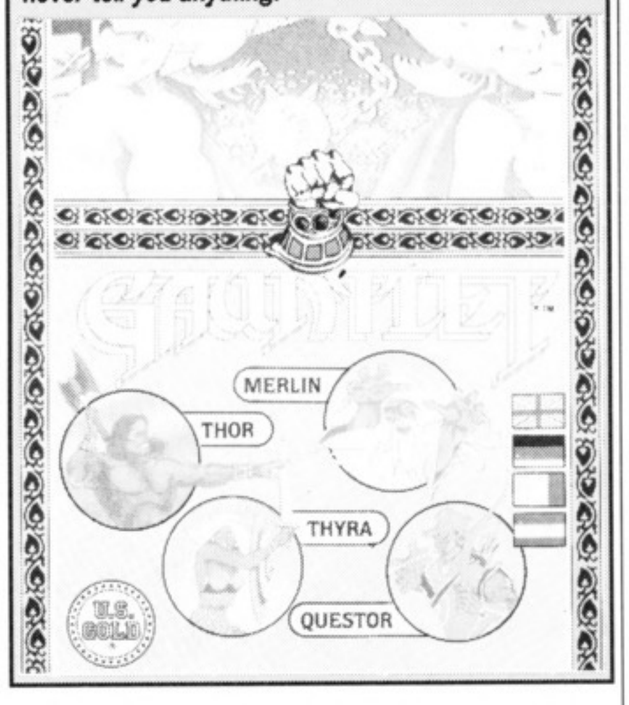
With independent software you're spared the 6-side pull-out adverts and unbearable amounts of hype, but can often find products of excellent quality from people who really care about their customers.

Not being a sizeist, I have already given a brief whistle-stop tour of the independent adventure scene a few weeks ago. One of the indie comapnies mentioned, Tartan Software, said they received numerous requests for information and sent their latest release along for judgement. Called *Double Agent*, it's an excellent text-only affair with a handy line in schizophrenic gameplay.

You control two separate characters, with the aim of the game being to find each other and combine to take advantage of each hero's special skills. Guaranteed fun for all the family!

Handy tip

Following on from last week's* Jet Set Willy *cheat, here's another oldie tip, this time for the excellent* Gauntlet, *now out on the Kixx label for £2.99. To walk through walls, press SYMBOL SHIFT and the direction you want to move in. Now don't say I never tell you anything.



Other recommended purchases in Tartan's 13-strong catalogue of adventures are *Six-In-One*, a package of six adventures and tutorial designed to introduce a beginner to the wonders of troll-bashing, and *Shipwreck/Castle Eerie*, two adventures with fairly corny plots but good gameplay and problems.

For more details, contact my favourite homemade adventure producers at **61 Bailie Norrie Crescent, Montrose, Angus DD10 9DT**. And no, I'm not related in any way, shape or form to any member of the company. My interest is founded purely on admiration. (Is the fiver in the post yet?)

Disk-raceful!

Grant Punchard dropped me a line as another foaming-at-the-mouth +3er:

"...I can buy blank 3" disks for around £2.50, and I'm sure software houses can buy in bulk a lot cheaper. So what justification is there in the +3 version of software costing between £4 and £8 more than tape? The argument is the disk version doesn't sell many copies ... I feel sure that a fairer pricing policy would significantly improve sales. I often buy the tape version, hack into it and transfer onto disk. It is only with multi-load games where the disk version is indispensible."

Alas, software houses are obviously going to price their wares as high as they can get away with, the mean, heartless, mercenary things.

Who knows, if we keep moaning one day they might come to their senses. Then again, pigs might fly, Robin Alway will get a column in on time and a Big Mac will taste better than the packaging it comes in.

Grant also wants to say a public thank you to US Gold for replacement of duff software by return of post. Consider it said, comrade!

Robin Alway

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SECTOR 64 SECTOR

Releases

Xenon ▪ Melbourne House ▪ £9.99

Coming out at the end of February on the C64 is the hit classic *Xenon* from the Bitmap Brothers, which first saw the light of day on the ST and Amiga.

The game takes you across a vertically-scrolling backdrop which can go up and down. Your job is to control a land vehicle in an attempt to help the Fleet, which is under attack. There's a bit more to it than that though 'cos a quick wiggle with your joystick will turn your craft into a plane which can then fly over all the ground-based obstacles. Easy enough, but for the fact you've got to avoid millions of bullets and missiles from – amongst other hazards – opening and closing doors on the ground. At the end of each level you're faced – of course – with a big meanie, which must be disposed of before you can progress further. As usual, there are collectable weapons available en route to narrow the odds a little.

Majik ▪ Mastertronic ▪ £1.99

New out this week, *Majik* starts off with the slow death of King Markham, who very badly wants to be reunited before his death with his only son and heir, Prince Gideon. No problem so far, except that Gideon is a prisoner of the evil Dolmir (sounds like a pasta sauce). Dolmir has his sights on the kingdom when the old king dies.

In play, you take on the role of a magician called Piradon (sounds like a headache pill), and it's your job to rescue the luckless Gideon. You can take it for granted it won't be easy, but then being a magician you have some pretty useful powers.

Sweep ▪ Mastertronic ▪ £1.99

This second Mastertronic release sees you cast in the role of a chimney sweep who faces the every so slightly unusual hazards of deadly ghosts, sparks, rats and fires. Your only defence is to obtain a brush for sweeping the chimneys, rocks for killing the rats and water for dousing the fires.

If you've succeeded in sweeping all the chimneys by the end of the game you'll be confronted with a bonus game feature. And bear in mind you lose 3,000 points for every chimney left unswept.

Hacker ▪ Ricochet ▪ £1.99

Ricochet's latest release is Activision's popular *Hacker* – a game that lets you hack with your home micro and never get caught.

Don't get too excited, though, it's only a game. It seems you've stumbled onto something during a late-night session with your modem. Somehow you've made a connection with a computer you didn't know existed. PLEASE LOG ON is the prompt.

This is the ultimate hacking simulation, without the risk of prosecution or the liability of huge phone bills! But just bear in mind (a) systems sometimes crash, (b) passwords can be obvious and (c) the need to think laterally all the time.

Listing

This week's listing gives you a screen split half way through allowing you to have a bitmap memory at the top and character memory at the bottom. This method is used a lot in adventure games. The "Y" co-ordinate for the split is POKE 49219,Y.

```
0   B=49152
1   FORL=0TO106:READA:POKEB+L,A:NEXTL:SYS49250
10  DATA 120,169,192,141,21,3
20  DATA 169,13,141,20,3,88
30  DATA 96,162,1,189,63,192
40  DATA 141,35,192,238,14,192
50  DATA 232,224,2,208,5,169
60  DATA 0,141,14,192,32,66
70  DATA 192,173,17,208,9,11
80  DATA 141,17,208,169,1,141
90  DATA 25,208,169,127,141,13
100 DATA 220,169,129,141,26,208
110 DATA 76,49,234,66,82,0
120 DATA 169,162,141,18,208,169
130 DATA 59,141,17,208,169,24
140 DATA 141,24,208,96,169,253
150 DATA 141,18,208,169,27,141
160 DATA 17,208,169,21,141,24
170 DATA 208,96,169,27,141,17
180 DATA 208,76,0,192,0,0
```

Cheats

Audiogenic's *Impact* is one of the best *Breakout* clones around, but if you're having trouble making headway, try these passwords, courtesy of Steve Snake, the C64 version's programmer.

SYCO, MATT, TORK, UBIK, GIJO, YOGI, RRAP

Demo crazies!

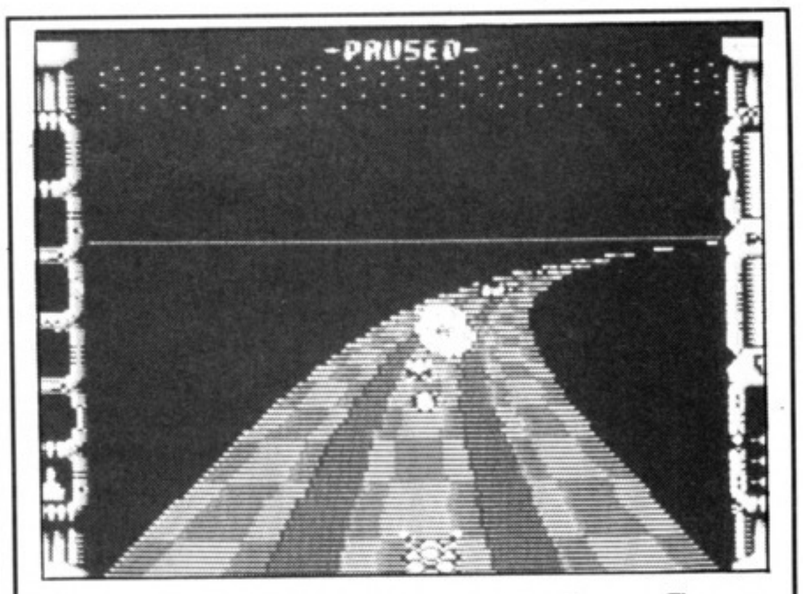
When they're not busy trying to outdo each other, every now and then demo programmers try their hands at something different, adapting the latest ideas and fashions to computer format.

I noticed recently after all the hype about Acid House music, a lot of demos on 64s throw objects about the screen accompanied by remixed samples from Acid House records.

One 64 demo I saw had the silly little smiley faces randomly appearing over the screen in different shapes and sizes, while playing an excellent remix of *Humanoid*.

If you've produced a demo which you think is worth writing about, then why not send it along on disk to Sector 64 at the usual address.

Ian + Mic



Coming soon on the 64 is *Eliminator*, from Hewson. The man behind this masterpiece is John Phillips, author of the famous *Nebulus*. The game features fast 3D graphics, non-stop action and state of the art scrolling. Music is by our old friends, Maniacs of Noise.

CPC centre

CPC goes Sunday Spurt!

There's a rather worrying development going on that I feel you, as a concerned citizen, should know about. As if that *Psycho Pigs UXB* poster that the news pages of this very organ insist on reprinting every couple of weeks or so weren't enough, things are going steadily Sun-ward. Don't believe me? Consider the evidence...

- First of all, Coktel Vision announces a game shortly to appear on the Amstrad which is called *Emanuelle*. And it ain't a Christmas Simulator neither!
- Then those entirely respectable bespectacled besuited meat-and-two-veg chaps at Code Masters join in the tabloid fun with a press release that blatantly exploits the talents of two innocent young boys (see picture). Where will it end? Will Rob Ainsley pose for an *Express* centrespread? Will Rik Haynes reveal all (what, all)? Watch this space...

• EXPLOITED! – and that's just the programmers...

Getting shirty

It's nice to know at least five of you are paying attention. Last week I wanted to know what was the first prize in TVS's *Motormouth* version of *Weird Dreams* (coming soon(ish) to your CPC screen!), and I'd somehow blagged five of the strictly limited edition *Motormouth/Weird Dreams* teeshirts to give away to the winners. Step forward you five who all knew that the first prize in TVS's version of *Weird Dreams* is a trip on Concorde to Egypt: Andy Lambirth, London (a real fan – author of the only letter ever to appear on these pages!); Debbie Slot, Portsmouth; Peter Davies, Nottingham; Geraldine Woodhouse, Newcastle; and Peter Carroll of Oxford. Well done all, hope the teeshirt fits!

WACCI racers

I've just received a copy through the post of a new CPC fanzine. It's called, enterprisingly enough, *AEM* – for *Amstrad Enthusiasts Magazine*. Editor is Neil Selwyn (who's not on the 'phone apparently – get in touch, Neil, on 0225 446034!), the content is good(ish) and the price is 90p plus large SAE from **AEM, Highfield, Coombe Keynes, Near Wareham, Dorset, BH20 5PS**.

By the way, if you know of any CPC fanzines – apart from the ever-wonderful and hilarious *WACCI*, of course – please let me know on the 'phone number just quoted, and I'll give them a plug.

True or false?

Readers of Denmark's *Soft Today* (he's making it up, he must be making it up) voted *Bubble Bobble* 1988's Best Game. True or false?

Answer at the end of the column.

Dizzy

Sarah Drummond of Ayr is obviously not one of those unlucky people whose copy of *Treasure Island Dizzy* is bugged. She's sent in a few tips, some of which I must admit I hadn't worked out for myself:

- collect snorkel from tree house;
- get spade from sea bed and drop on top of stone on sea bed;
- get detonator from tree house and dynamite from sea bed to shift rock in order to reach gold coins;
- get sword from tree house and drop at grave far side of sea bed;
- trade video camera, cursed treasure, gold coins and microwave oven with old man;
- drop axe at rope bridge;
- and finally, drop golden key on barrel underground and get microwave oven.

Sarah also wants to know if the Olivers plan a third *Dizzy* adventure, "as he is such a loveable character and the music is always very lively". Well, David Whitaker says thanks for the kind words about the music, and I can reveal exclusively that the Olivers do have very firm plans for a third, and indeed a fourth and fifth, *Dizzy* adventure. Look out soon for *Dizaster If It Doesn't Sell Loads* and *Dizgusting Puns With Steve Carey*. Their next project, though, is called *Fast Food*, and they claim it's "the most playable game ever released for the CPC". Wonder if they can think of a way of getting stockings and suspenders involved...

- And this week's "True or False" is True. Just goes to show, you never can tell, well who'd have believed it.

Steve Carey

A Savage poke

Finally this week, a listing for 255 lives on all three levels (disk) of that brilliant game Savage, courtesy of Tony Jones of Bristol (who was in bed when I called).

The poke asks you which level is to be poked and then selects the appropriate data. And you can save it to the game disk without worrying about corrupting it.

```
10 RESTORE 300:FOR i=&50 TO &55
20 READ a$
30 POKE i,VAL("&"+a$) :NEXT
40 CALL &BC02:MODE 2
50 MEMORY &9FFF
60 PRINT"Enter level to be poked (1,2 or 3) :";
70 a$=(INKEY$) :a=VAL(a$)
80 IF a<1 OR a>3 THEN 70
90 PRINT a$:ON a GOSUB 110,130,150
100 CALL &A000
110 file$="loader2"
120 pokend=&5E:RESTORE 250:GOSUB 170:RETURN
130 file$="loader"
140 pokend=&60:RESTORE 270:GOSUB 170:RETURN
150 file$="loader2"
160 pokend=&5E:RESTORE 290:GOSUB 170:RETURN
170 LOAD file$,&A000
180 POKE &A056,&50:POKE &A057,0
190 FOR i=&56 TO pokend
200 READ a$
210 POKE i,VAL("&"+a$)
220 NEXT
230 BORDER 0:FOR i=0 TO 15:INK i,0:NEXT: MODE 1:RETURN
240 'level 1 pokes
250 DATA 3e,ff,32,3c,03,32,de,03,c9
260 'level 2 pokes
270 DATA 3e,ff,32,11,26,32,48,26,c9
280 'level 3 pokes
290 DATA 3e,ff,32,00,0d,32,b3,0c,c9
300 DATA cd,83,bc,cd,7a,bc
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PCW PATCH

Changing times

One of the very few quibbles with the PCW package is the lack of ports. It's true that the 9512 machines come with a centronics port but the earlier 8000 machines lack even that.

If you've decided to break out of your PCW you need an interface. My advice is to ignore the official Amstrad CPS8256 interface in favour of one by SCA. This beautiful piece of kit not only comes with an RS232 port (and a secondary one on the same socket), a centronics port, but also a built in battery backed clock. SCA supplies a manual and a disc full of clever programs too.

With this interface and one of the supplied programs you can initialise the PCW clock on startup and thus arrange for automatic time and date stamping of files. This much neglected feature of CP/M 3.00 can help Angry of Kettering keep track of those elusive missives.

If you've already bought the Amstrad offering, all is not lost. SCA now offers the clock separately in a form that fits inside the CPS 8256. The SCA interface is around £57.50 inc, the clock module £19.95. Tel 0903 700288.

Here to stay

Amstrad assures me that supplies of 8512s with proper board edges sticking out of the back instead of those silly connectors foreigners use should now be available again. Another temporary hiccough in the laws of supply and demand thankfully over.

This little episode prompted amused sneers from 'new wave' Amiga owners (who never seem able to afford a printer, sneer, sneer) about how long the PCW could last. Let's consider the question.

The PCW sells first and foremost as a typewriter replacement (as does the PC). Typewriters were invented in 1808 by P. Turri, an Italian. In 1874 C. Sholes and C. Glidden sold the first modern typewriter. That held sway for around a century.

When a cheaper and more flexible compleat writer's machine comes along the PCW will stop selling and Amstrad will stop making it; don't hold your breath waiting.

Editor wanted?

If you're into programming; BASICally going Forth to C if Pascal suits, boldly Logoing where Algol hasn't been, or just Assembling peaceably, then you need a a good fast text editor. I use one even with *Mallard BASIC* because I get angry when I hit the up arrow key and nothing happens; us old folk have to watch the blood pressure.

Lucky readers of sister magazine *8000 Plus* have the chance to get the current subscribers disk (also available seperately) which among other goodies has the PD editor *VDO25* on it configured for the PCW. Best editor I know of for the PCW and only 7k.

An upgraded version called *VDE* is available from the PD library of the defunct *PCW File*, disk £25. Send £2, an SAE (bubble bag please) and a formatted disk to **Bob Ellis, "Rowan", 100 St Peters Close, Moreton-on-Lugg, Hereford, HR4 8DW**. 0432 761860 after 7pm.

Steve Patient

QL corner

QL forum

Recorders of car registration numbers and assorted train-spotters, here is something for you. A hotchpotch of QL news on cartridge or disk (to be supplied by you), spasmodically produced by **Ian Bruntlett, 25 The Broadway, High Barnes, Sunderland** at about 50p a go.

Hard miracles

February 6th saw the first public demo of Miracle's 30Mb hard disk. It connects via the ROM socket at the QL's rear, instead of via the left-hand expansion socket. The reason for this, I guess, is that Miracle's Trumpcard (with which the hard disk may be used) gobbles up 256K of I/O RAM: using the ROM port will slow things down a bit, but the hard disk will still be significantly faster – and more reliable – than floppy technology.

The QL suffered for ages from the lack of a cheap hard disk. CST had an SCSI hard disk option for the THOR, but had pitched the price unrealistically high. The Miracle hard disl, at £399, is a very important new product, especially when used in conjuction with a PC emulator.

The hard disk driver was written by Tony Tebby, talented designer of *QDOS*, boss of QJUMP and author of the toolkit and floppy driver used in all the respectable disk interfaces (most of whose manufacturers remembered to pay him for the privilege!).

Always seeking to be a step ahead of the pack, PDQL has announced *Hardback and Finder* for £25. It will give hard disk users the facility for smart wildcard copying and saving, with various string search options.

Full details from Miracle Systems, NBC, Dean Rd, Yate, Bristol BS17 5NH (Tel 0454 317772), on PC emulation from DP, 222 The Avenue, London E4 9SE (Tel 01 527 5493) and on utilities from PDQL, Unit 1, Heaton House, Camden St, Birmingham B1 3BZ (Tel 021 200 2313).

Miracle obviously read this column! Following our hint in the December 24th *Express*, it has slashed the 768K Trumpcard to under £250. At that price, it can be recommended. Miracle has changed TC's price three times in a year...

This hard disk scoop has put back our BASIC utility round-up a week.

Reviews!

QL manufacturers which want their products reviewed should send them to me at QL Corner, New Computer Express, Future Publishing Ltd, 4 Queen Street, Bath BA1 1EJ.

Multitasking front ends!

My favourite is *Taskmaster*, which is simple and functional. The alternatives are *ICE* (from the long-defunct Eidersoft, now flogged by Transform), which is dated and still bugged, and *QRAM* (from QJUMP, sold by CARE), which is sophisticated, possibly too complex for some users and allegedly less tolerant of the shortcomings of programs one tries to run under it. *Taskmaster* costs £25 from **Sector, 39 Wray Crescent, Ulnes Walton, Lancs PR5 3NA** (Tel 0772 454328).

Eric Simmonds

SECTOR SOFTWARE

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9 pin, 80 column, 144cps, Centronics input, IBM and Epson compatible, Tractor Sheet and Friction Feed, Paper parking facility

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BEEB BOX

B! B! Commodore!

I am aware that *Express* has already reviewed Commodore's stab at a BBC emulator, but I feel there is still room for additional comments from the BBC corner.

I have to say I was extremely disappointed. Not in the level of compatibility, because testing that is a long-term job. I was disappointed because the package will not read BBC disks, nor does it come with a single piece of BBC BASIC software to its name. Furthermore, the serial lead needed to transfer software is NOT bundled, which is a serious mistake in my view. Also, the manual is a poor affair, in the Commodore tradition, and very confusing.

My overall verdict for Beeb owners is to go for an Archimedes if you want to run fast BBC BASIC programs. However, for Amiga owners it is still far and away the best BASIC for that machine.

Board with game

Computer-moderated games have always been a doubtful arena for me because I find that the machinery intrudes into what should be a purely cerebral pastime. However, you may disagree, and those people who are keen on war simulations will be interested in *Tankattack* (one word) from CDS.

In this two to four-player game you must form an alliance to defeat your foes.

A board and pieces are provided, and you must decide your overall strategy with them. Interaction, though, is with the computer, and this instance the machine acts both as reporter and overseer in the conflict.

Putting a suitable !BOOT file on a disk is one of the best ways of making sure that a piece of software will run on the widest possible range of machines, the most common !BOOT file being BASIC, followed by a PAGE=&1900. But many other options are possible. *Tankattack* had no !BOOT file at all!

Andrew Brown

200K Masters!

Three years ago Acorn launched a new computer; it was called the Master 128, and I remember the occasion well. The launch was held at the BBC in London, and I managed the impossible; I got a camera past the BBC doormen, only to have it stolen on the way home!

There was acute gloom about the future of Acorn at the time, which was only partly lifted by the launch. Now, three years on, Acorn has just announced the 200,000th Master computer, and it says demand is outstripping supply at the moment.

I think the occasion deserves three cheers, only slightly muted by the fact that the overwhelming majority of them are going into schools, rather than into people's homes.

The 200,000th machine was handed over to Westway school for handicapped youngsters.

MSXTRA

Roll your own

If you read last week's mag, you may have noted that I received a copy of *Afterburner* that now loads. Believe it or not, I have already had a couple of queries regarding this game.

The first was from a software retailer asking if I had any problems loading this game, as he had heard that there were problems with loading. I assured him that although you may have to reduce the volume and treble output in relation to most tape software load-ing levels, *Afterburner* will load.

The second query was from a young lad asking how you could get the plane to do a 360 degree roll. To tell you the truth, when I started playing *Afterburner* I couldn't roll the plane either. If you try to roll by following the instructions in the manual you won't get anywhere. I have found that you can only roll the plane if the nose is pointing upwards, and you then bank from side to side. With practice you will soon be able to roll the plane every time.

One thing I did notice when I read the instruction book supplied was that Mr Micro had a hand in the programming of this game. It also programmed *Elite* for the MSX, and a cracking job it made of that, too. This company certainly knows how to write for the MSX.

A couple of MSX titles to look out for later this year are *Chicago 30s*, from US Gold (I believe), and a budget compilation called *Micro Value 2* – no suppliers' name as yet. There's still no shortage of MSX software, and the French software house Infogrames has assured me that it will be releasing more titles for the MSX later this year.

Hot air

It's amazing how much misinformation there is regarding computer hardware and software.

For example, I've just found out that even though it was listed on a distributor's circular and also on a retailer's monthly software list, Domark's Star Wars will definitely not be released on the MSX.

Not only that, Domark informs me that Trivial Pursuits is being converted to the MSX format, but unless you can speak Spanish it is not going to be much good, as only a Spanish version is being coded.

Regarding MSX hardware, we know that the MSX2+ computers exist, but – typically of the Japanese – we still have no definite launch date for Europe, and it seems odds-on that there will be no official UK launch, although we are bound to see some of these computers reach our shores on the "grey" market.

I hope that when, eventually, we see these machines in Europe, we don't see the Japanese once again overpricing their product, thus killing it before it is established.

Fine tip

A tip for Grandslam's *Pacmania*: when you've just scoffed a power pill and you're in hot pursuit of the ghosts, you will find that by jumping at the ghosts you will cover the ground far more quickly.

Keith Neal

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Issue 2: Which computer?, the perfect wordprocessor, Konix console
Issue 3: Portable computing, Alan Sugar profile part I, yuppie software
Issue 4: Sega's16-bit console, best value PC, games that change your life
Issue 5: PC 200 fiasco, DTP guide, computer art, Unix explained
Issue 6: MGT Coupe, careers in computing, Realtime profile, cracking
Issue 7/8: Best games of '88, review of the year, look forward to '89
Issue 9: Censorship controversy, classic computer problems solved
Issue 10 : PC software guide, Christmas games tips, Release Schedule wk 1
Issue 11 : CDI technology, choosing a printer, Alan Sugar profile final part
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PSsst!

Another dose of antidote to computing hype

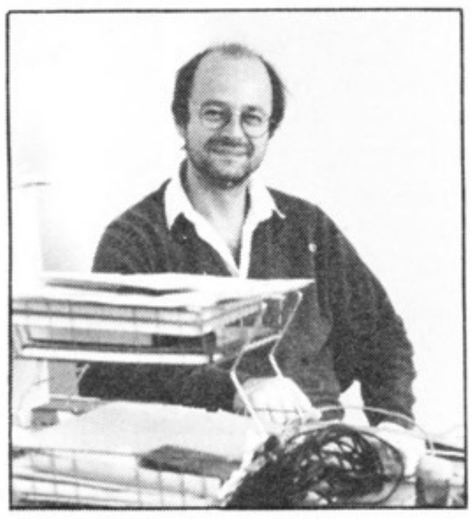
A Day in the Life

Another PSsst! look at twenty-four hours in the lives of real people and their computers. This week it's a day in the life of Ron Gribble, writer of Black Torrington, Devon.

I wake up with Radio 4 at seven and just can't wait to get out of bed and work on my PCW. This was the first computer I bought and it's changed my life completely. Before I bought one it took me a year to write a novel of just 50,000 words. Now I can write one in four months with double the words! It has developed my writing talent so much. One day of course I hope to get something published. Did you know that the novel writer John Creasey had hundreds of rejection slips before he was famous? I have hundreds of rejection slips too so I am well on the way.

Lots of people have PCWs, you'd be surprised. All my friends have one.

Anyway I start work straight away. It really is marvellous what technology can do for the writer. For instance, you can change all occurrences of one word to another, automatically! This is obviously very useful. Really the applications are unlimited... I can't think of many offhand, but say I wanted to change the name of my hero, Fred, to Mary say. I can't think why you'd want to do that, but you can see it would be very useful. There are lots of other things I can do. Say, for example, my hero is called Jim. By assigning this phrase to the letter J, then just by holding down [ESCAPE][SHIFT] then pressing backslash and J, it enters the word 'Jim' for me automatically! You can see how much time that will save.



Actually this morning it was going wrong whenever I tried to use it – I got a 25k file called 'read me' or something inserted at that point, so I had to spend a couple of hours fixing it. Michael Bentine, the humorous writer, has a PCW, by the way.

Most of my morning is spent polishing up my latest work. Did you know that using a word processor I can insert one document inside another? Everything is stored on disk, of course. This is very useful and lets me re-use old chapters I wrote for other books for other projects. It really is marvellous how you can edit your manuscripts. I can go whole days sometimes without writing anything new, I'm just editing existing work, putting those finishing touches on it.

Incidentally, did you know that Jeffrey Archer, the writer, has a PCW? I think he's one of the great men of our time. I think I read somewhere that he doesn't actually use them, though.

In the afternoon I work on my BASIC program that I'm writing. It's a tool for writers to help them write books. I started on it for my own purposes two years ago and one day a friend said, why don't you sell it? So I'm going to market it when it's finished. At the moment it's 125k of BASIC and is about half done but you can see the time it will save when I get it finished. It has many of the facilities of a word processor and some of a database too.

The travel writer, Jan Morris, has a PCW, by the way.

In the evening we often go out, for weekends and so on. We travel by train as I can't afford a car. I have a Z88 portable which I use to write on the move. Using it I can write on the train and when I get back home, transfer my work to the PCW and work on it from there. It's such a time-saver, turning unproductive time into productive time. Actually I spend most of the time on the train explaining to people what my Z88 is and how it all works. It doesn't often lose all my work. I wonder if it's because I use rechargeable batteries – it says not to in the manual.

I think I read somewhere that Douglas Adams, the writer, has a PCW. Or maybe it's an Apple Macintosh. Amstrad don't make that I believe. I think you can get word processors for other computers.

Before I go to bed I play a few computer games. I think by this time I've earned the right to relax after all this productive work. Did you know you can even get 'Space Invaders' for the PCW? And I listen to Radio 4 again. Did you know that their 'Science Now' program is put together using PCWs? They really are everywhere.

My wife, Brenda, acts as my agent. She also has a PCW but isn't a writer, she uses it to do freelance typing – it earns our living until I get some success. She doesn't understand computers as much as me, of course. She thinks of it only as a tool to do a job. If only she knew!

Shoot from the Lip... *the week's most quotable sayings*

"It is almost certain that mischief makers are not going to be content with just computer systems so look out for practical jokers and facile fun loving types."
Psychologist Dr Barry Cripps dishing out the tips to the paranoid on how to sniff out your company's resident hacker.

"I'm a Northern lad and I've sold kit here all my life. It's a personal loss but you can't put sentiiment before your company. It doesn't help anyone."
Database's Mike Malone mourning the demise of the Amstrad Northern Show.

"It's horror but not sick horror. There's no vomiting on screen. Just worms coming out of peoples heads."
Fear not. Tynesoft's Colin Courteney knows the meaning of sick horror.

"Of course it's worth the trouble. Look at all the publicity I've had. Now people know I'm here. They've been ringing me up and saying 'good luck with your fight against Dixons'."
Newcastle computer dealer Brian Dixon who is refusing to change the name of his shop – Dixons Computer Centre – despite pressure from High Street giant Dixons.

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How you and your computer can make music – Express names the best packages for your machine

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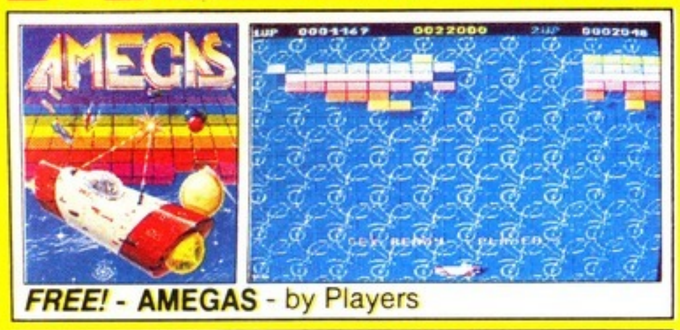

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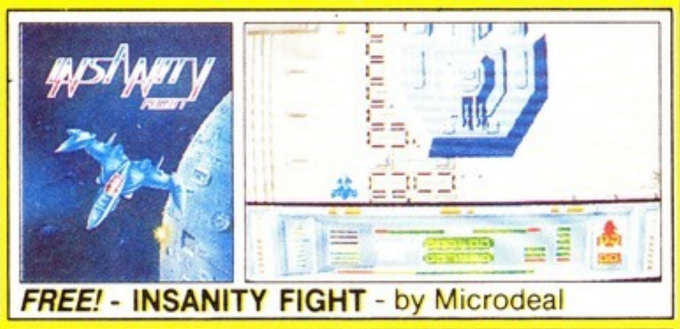

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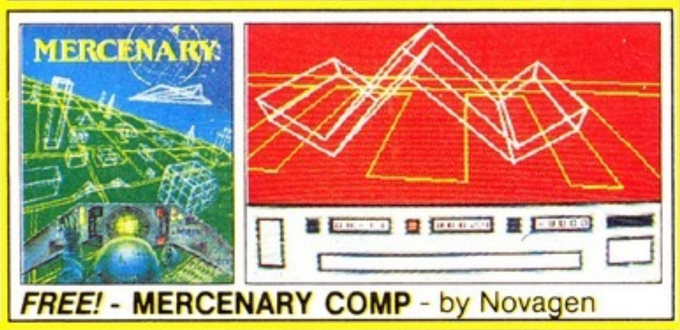

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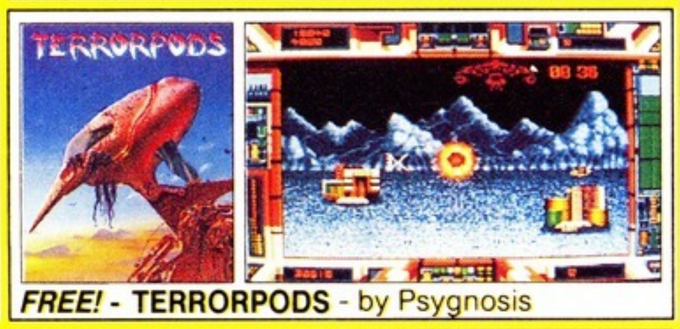

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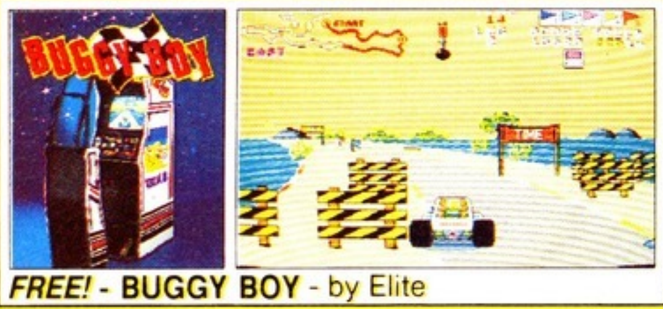

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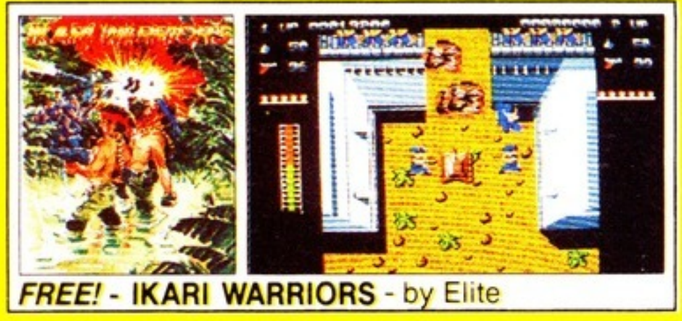

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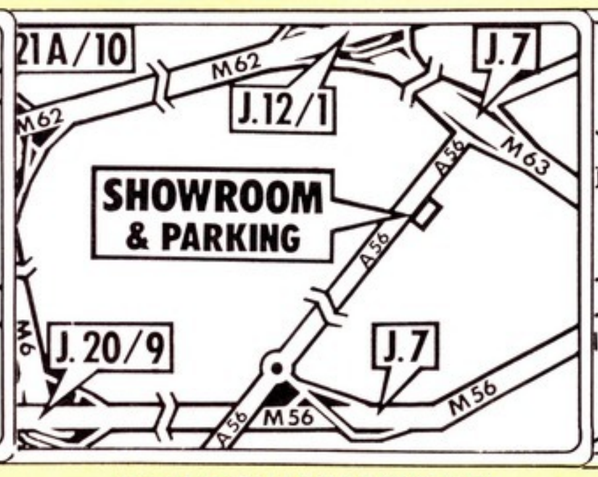

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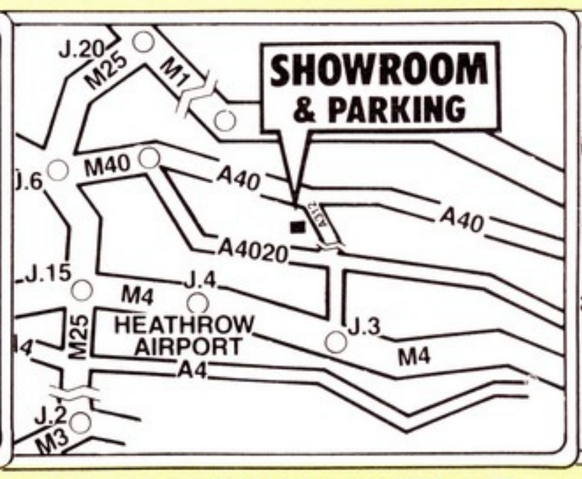

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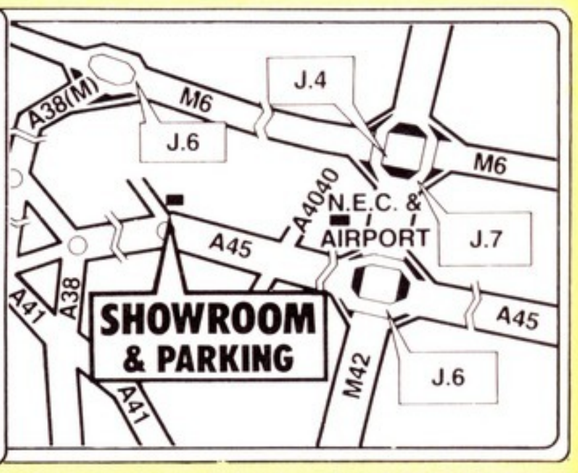

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