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MASSIVE 80 PAGES

NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

PC

- Sub-£1000 386
- Animator on test
- Fonts fracas
- 50 best programs

AMIGA

- Light synthesiser
- MIDI programming
- Business software
- Brain-like Amiga

ST

- Free animator
- New games world
- Piracy crackdown

PCW

- Astronomy package

C64

- Cheap software

BBC•CPC•MSX ARC•ATARI XE SPECTRUM•QL

SPECIALIST COLUMNS

AMERICAN REVOLUTION

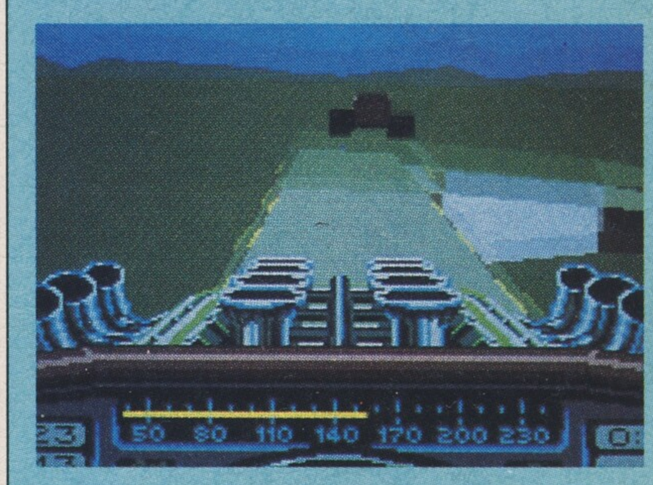
Computing thrust into the 90s by stunning Stateside launches

page 3

GRAPHIC POWER

Computer art transformed page 64

Stunt Car Racer



Number one sensation

pages 7 and 12

50 PC ESSENTIALS

40 PAGES PACKED WITH BRITAIN'S BEST COMPUTER BARGAINS

SHOPPING EXPRESS

CONTENTS

FEATURES

LET'S GO SHOPPING 61
Plenty to fill your stocking at the first Computer Shopper Show

ON THE VIDEO FRONT 64
Stunning graphics and animations galore at the computer graphics show

MAKING THE ARCHIE SING 66
The latest music technology is concentrating on the Archimedes

CHRISTMAS COMPETITION 70
£12,000-worth of kit must be carted away by our readers. Don't miss out on your share

REGULARS

NEWS 2
COMMENT 8
VOUCHERS 21
Save £10!
BUYERS' GUIDE 23
The essential PC software
READERS' CLASSIFIED ADS 34
EXPRESS SALES 39
Worth a quick look
JOBS 55
TECH TIPS 62
LETTERS 75
BACK PAGE 78

YOUR MACHINE

A new look for the expanded machine specific pages. A whole page for PC, ST and Amiga owners!

PC compatibles 9
Atari ST 10
Commodore Amiga 12
Amstrad PCW 14
Sinclair QL 14
Sinclair Spectrum 14
Amstrad CPC 15
MSX 15
BBC Micro 15
Atari 8-bit 18
Commodore C64 18
Acorn Archimedes 18

Tiny firm offers great power PC bargain

£1,000 386 MAKES LOW KEY ENTRANCE

A tiny Scottish firm is offering a fully configured 386SX PC with 20Mb hard disk and a monitor for just £999.

It's the bottom of the range model in its new City series pulled in from the Far East. The company, SFA Computers, is comprised of only six people and, while the machine is clearly a good bargain, they don't expect it to turn them into a bunch of Alan Sugars.

"We only expect to sell 10 a week to begin with and then we'll ramp up to 20 every week. We're not a big company," said boss Stewart Farmer. "Being small has a lot of advantages especially for our customers. They can call in and actually talk to the people who put their machine together. There's a closer relationship than is possible with a big company."

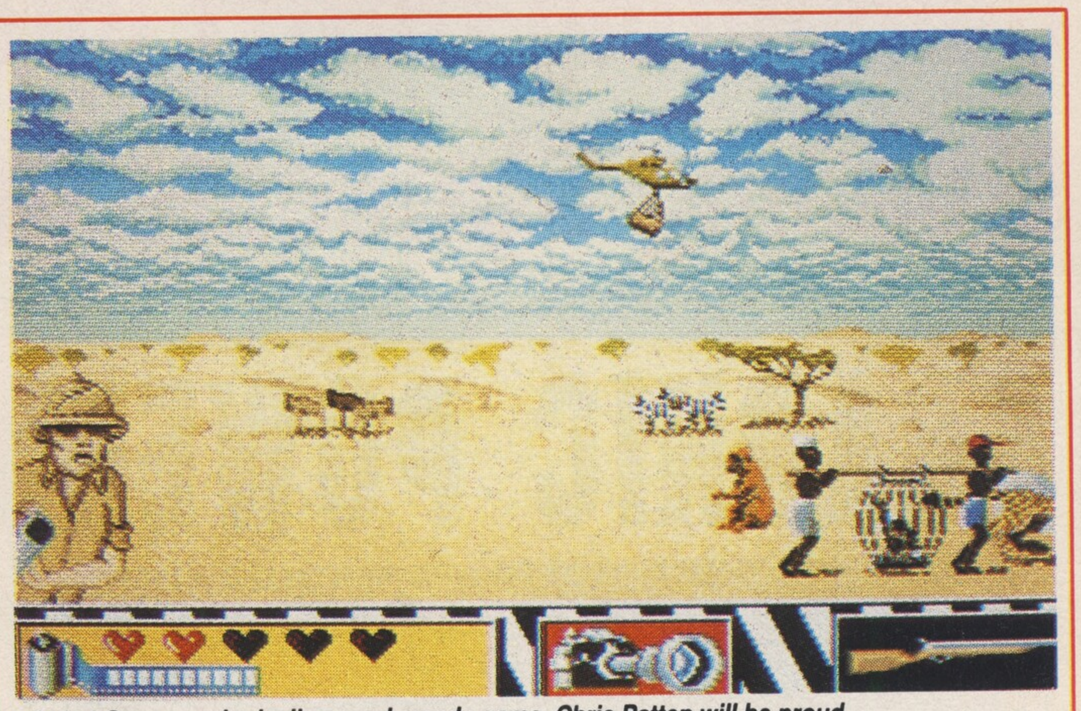
The 386 machine is a tower system with 1Mb of RAM on board and DOS 4.0. The monitor is nothing to shout about — buyers get a choice between green and amber screen. But at just over £1,100 including VAT for a full 386SX few can justifiably complain.

Higher spec versions are also available – A 40Mb fast disk version with VGA colour graphics and a few peripherals costs £1,799 + VAT. And a full 386 (One up from SX versions) costs only £1,299.

"There are an increasing number of low cost 386 systems, and we felt we had to pitch ours in a special way. That's why the entry level model is slotted in at under £1,000," explained Farmer.

SFA is already responsible for the low cost Clipper AT PC Kit. Enquiries on 041 840 1477.■

• *City 386: bargain tower system gives top performance for under £1,000*



• Safari Guns*: ecologically sound arcade game. Chris Patten will be proud*

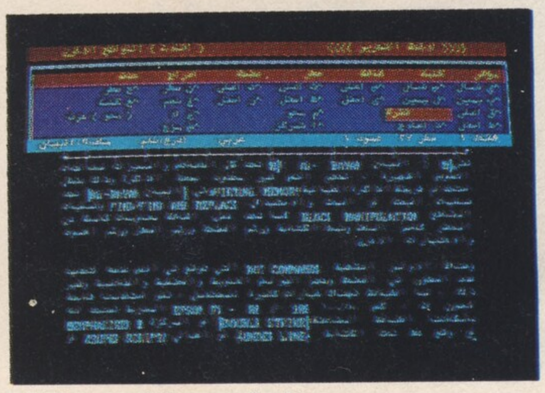
Watching the wildlife

French software house Infogrames has come up with possibly the first ecologically sound shoot-'em-up.

Instead of the normal 'shoot anything that moves' philosophy found in most games, *Safari Guns* has more peaceful themes in mind. Putting the player in the shoes of an African gamekeeper, your responsibility lies in monitoring the wildlife by taking photographs and protecting them by eliminating poachers. Blowing away big game hunters could be construed as violent but, lets face it, the blighters deserve everything they get.

Since the shooting involved is for ideologically sound reasons and the interests of the natural world are catered for, *Safari Guns* can be safely classed as an "environmentally friendly product". Microprose was the first company to release a major product into this field with the Greenpeace game *Rainbow Warrior*. Does the appearance of the Infogrames product herald a new genre in computer gaming?

Safari Guns is on ST, PC and Amiga.■



•Al Bayan: *filling an Arabian gap*

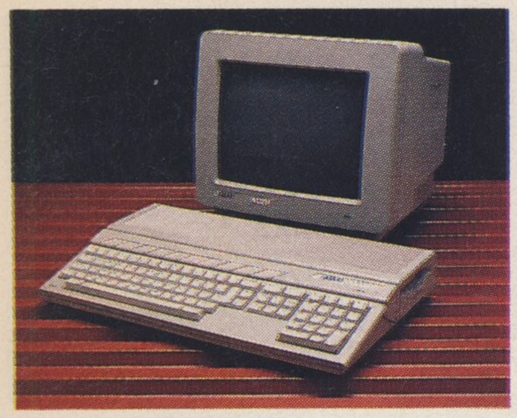
Arabian bytes

A bilingual word processing package which solves the problem of switching between English and Arabic has been developed by a Manchester based company.

Rocketfield has come up with the *Al-Bayan* system which allows text to be entered, edited and printed in either character set. The two languages are totally different but *Al Bayan* is claimed to be able to switch between the two at the stroke of a key. It can also change from left-to-right writing to right-to-left.

Rocketfield's boss Dr. Mohammed Tikrity has been working on the software for four years. "There are 200 million Arabic language speakers in the world and *Al Bayan* will help English speakers to communicate with them," he claimed.

Al Bayan (which means 'well written' in Arabic) is available on the PC for £280. More on 061 224 4032.■



• The STE: 512K version arrives

520STE launched

Over a thousand exhibit at Las Vegas Comdex

AMERICA SHOWS THE WAY FOR THE 90s

By Ian Burley and Colin Campbell

Atari was last week showing off a 520K version of its next generation ST the STE at the Comdex show.

The machine is identical to the 1040STE first shown in August except for the limited memory. However, 520ST buyers will now be offered the advantages of the ST Extended .

It boasts a built in blitter which will speed graphics up considerably. There's also a larger palette of colours – up from 512 to 4,096. However, the machine can still only display 16 colours at one time.

When the 520STE arrives here in the new year it will cost the same as the current entry level ST – £299 for a basic version and £399 with the games bundle.

A spokesman for Atari said "It's hardly surprising that we've launched a 520STE."

When details of the machine were first leaked (*Express* 33) some members of the press scorned the notion sticking to the misguided belief that the firm would only upgrade the 1040. ▩

The city of Las Vegas played host last week to the newest and the best in personal computer technology – and 115,000 visitors came to see the spectacle.

Autumn Comdex attracted more than 1,000 exhibitors which had to be spread over a dozen locations around the city. This event is easily 10 times bigger than the PC Show and acts as a huge advertisement for what the next 12 months will bring.

Eager British computer owners need not envy the American's collection of goodies – most of them will be here within the next few months.

• The subject which gripped this year's bonanza was the pocket PC revolution. Both Atari's low cost Portfolio and the Poqet PC have fascinated show goers. This level of enthusiasm assures the Portfolio's future (which is already selling well here). It hasn't escaped potential buyers' attention that five Portfolios can be bought for the price of a Poqet. Technically though the latter is a marvel.

• The new generation of personal computer made its first Western debut. Canon's power station called the Navigator comprises of an IBM compatible PC, telephone, fax, answering machine, printer and touch sensitive screen. Many had feared the product would not come out of Japan so swiftly. But Americans will be able to buy it for just under $3,000 (about £1,900). Rumour has it that a UK launch has been pencilled in for early next year.

• Commodore is showing off a new Amiga – but it's not the so called 'Amiga 3000'. This is an upgraded version of the A2500 with a 68030 chip. Not surprisingly the 25MHz machine has been christened the A2500/30.

It has 2Mb of memory as standard with a 68882 maths co-processor, 88851 memory management unit, and a 40Mb hard drive. It costs a hefty $4,696 (£3,000) Owners of the standard A2500 can upgrade with a 68030 card which costs £1,400. The Amiga 2000 range in the US has undergone some price reductions – the standard machine drops from $2,195 to $1,899.

Commodore is quietly confirming that another machine will be launched in the first half of next year (*Express* 54). And that it will not be called the Amiga 3000 (or even the Amiga).

• Toshiba was showing off its new generation of portables. At the top of the range is the T3200SX. It's not too light at 17 pounds but the firm is pitching it against desktops as well as other luggables. The machine features six internal expansion slots, up to 13Mb of internal memory, VGA graphics via gas plasma display as well as OS/2 as an option. It will cost about $4,000 when it arrives here.

Visitors could only marvel at the depth of the show. Even so, there's little to be had at the bottom end of the market – the Nintendo's of this world steer clear of what is, essentially, a business orientated occasion. But even the most hardened games player could not fail to become lost in this wealth of brilliant hi-tech tick tackery.▩

Art for Archie's sake

Clares' *Artisan* paint system, probably the best known Archimedes package of them all (by Archimedes standards anyway) is due for a major upgrade in the shape of *Artisan 2*.

That's based around the requests and criticisms that Clares have received from thousands of devoted users including education users. The educational use of *Artisan* is all important to Clares, as many of the enhancements present in version 2 are aimed at making Artisan a more efficient teaching tool. Many new features have been added as a direct result of the requirements of the National Curriculum.

Probably the most major enhancement over the original *Artisan* is that *Artisan 2* is now completely compatible with the multitasking capabilities of RISCOS.

• *Pro Artisan*: Archie colour

For educational use, *Artisan 2* can be configured to lock out any of Artisan's operations, therefore limiting the available options to those required. For example, you can easily restrict young Johnny to only four colours and freehand draw mode, therefore forcing Johnny to concentrate on only those aspects of the program.

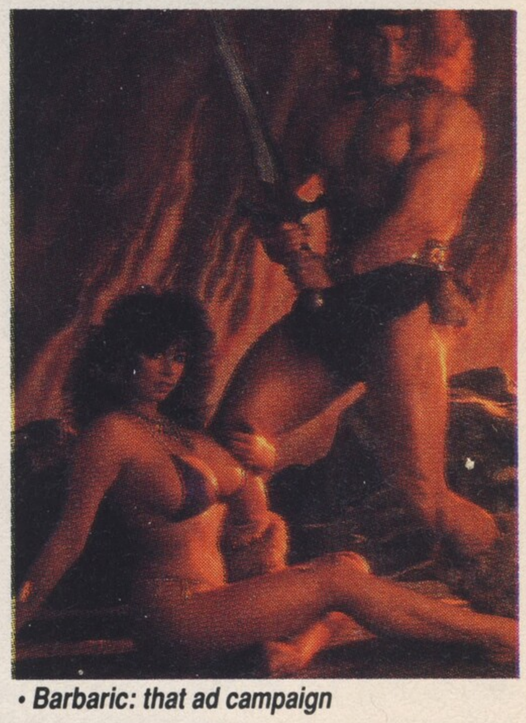
According to Clares, the only real criticism they received concerning *Artisan* was the way that menus were handled. Unlike the original, *Artisan 2* now includes `sticky' menus that will only disappear once you start an operation. Previously, menus would disappear as soon as the mouse left the window.

It's available from Clares (0606 48511) for £59.95. Upgraders will get a special deal.▩

The recent international animation festival in Bristol, featured a host of computer generated and assisted graphics which are revolutionising the world of animation.

Of all the entries, none sparked more interest than John Lasseter, creator of the award-winning Luxo Jnr. His latest offering KnickKnack, left, was produced via a Pixar Image Computer from a storyboard developed on a Mac running HyperCard. *KnickKnack's a short, witty tale of long-distance passion - between a miniature snowman and a plastic bikini-clad model.*

Lasseter, an ex-Disney and Lucasfilm man, attended the show as guest of Apple UK which is heralding the Mac as the premiere platform for low-cost professional animation.▩



• Barbaric: that ad campaign

Is nothing sacred?

PC owners are a quiet lot. Not for them silly gimmicks and violent shoot-'em-ups. Just nice and cosy spreadsheets, and word processors. It's all very adult

But now for the PC comes Palace's notorious *Barbarian*. The game caused a minor earthquake when it first arrived two years ago. Advertising featured pictures of scantily clad sextress Maria Whittaker with a terribly big bloke next to her. It really was appalling.

Still, if you can stomach the hype you'll find a jolly good hack and slash game. It costs £29.99. *Barbarian II* comes with a free game, *The Sacred Armour of Antiriad*.▩

Atari Games loses bitter fight to arch rival

NINTENDO WINS TETRIS BATTLE

Nintendo was last week trumpeting a victory in the law courts against its bitter rival Atari Games.

The Japanese console giant has won the video game rights to the massive computer hit *Tetris*. The incredibly addictive building block game is all set to be a multi-million seller on the Nintendo console and Gameboy handheld this Christmas – but only Nintendo will reap the profits.

Atari Games' subsidiary Tengen had claimed that it had secured the rights to the game from British software house Mirrorsoft. That firm had ingeniously brought the game over here from the Soviet Union where it was written. Mirrorsoft then released it on virtually every home computer imaginable scoring a hit each time.

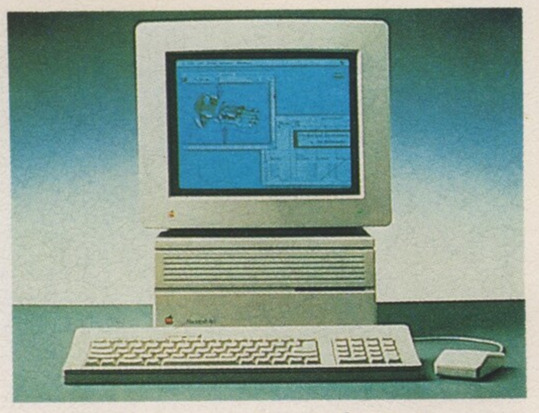
• *Nintendo and Tetris: Blocking Atari*

However, Nintendo secured the video game rights direct from the Soviet agency ELORG. It says that the Tengen/Mirrorsoft deal is completely void.

A San Francisco judge stopped Tengen selling its Nintendo version last May with Nintendo claiming infringement of copyright. Last week Nintendo was awarded exclusive rights to the game. That means it is the only firm able to release the game on the Atari console or the Sega. Nintendo does not currently have a policy of supporting rival entertainment systems.

Atari Games and Nintendo can't stand each other. The two firms are also embroiled in a $100 million alleged patent infringement lawsuit which should be resolved at the beginning of next year.

Atari and Tengen have dared to challenge Nintendo's policy of keeping a tight reign on what games are released for its system and by whom. But the bitter dispute which has featured prominently in American business publications and computer magazines for more than 12 months now will come to an end in the new year.■



• *Apple Macs: too expensive for most*

A Mac on the cheap

There's now a way to compute on Apple's Macintosh without re-mortgaging the house or selling off the family silver.

Originally marketed as the 'computer for the rest of us', the Apple Macintosh is still far from making it into the hands of the person in the street. Apple attaches high prices to its silicon successfully excluding all but professional users.

But now Bradford-based computer supplier MacSolutions has decided that it's time for the home and small business user to perform their computing on a Mac.

The company has located a large cache of Apple Lisas, the Apple computer which was the forerunner of the Mac, upgraded the machine with a Mac Plus-compatible operating system and is selling the computer for an affordable £775.

The upgraded Lisa comes with 1Mb of RAM, 800K internal and external floppies, and a 12-inch screen providing it with even more functionality than a Mac Plus/SE. There's System 6.0.2 compatibility and three user expansion slots too, easing upgrade paths and making the computer a better proposition than the usually closed architecture Mac.

But probably the strongest point in the Lisa's favour is that the machine is a genuine Apple computer. No problems arising from clones which just won't run that piece of software which you so desperately need to use.

The upgraded Lisa can be obtained from MacSolutions on 0274 394636. ■

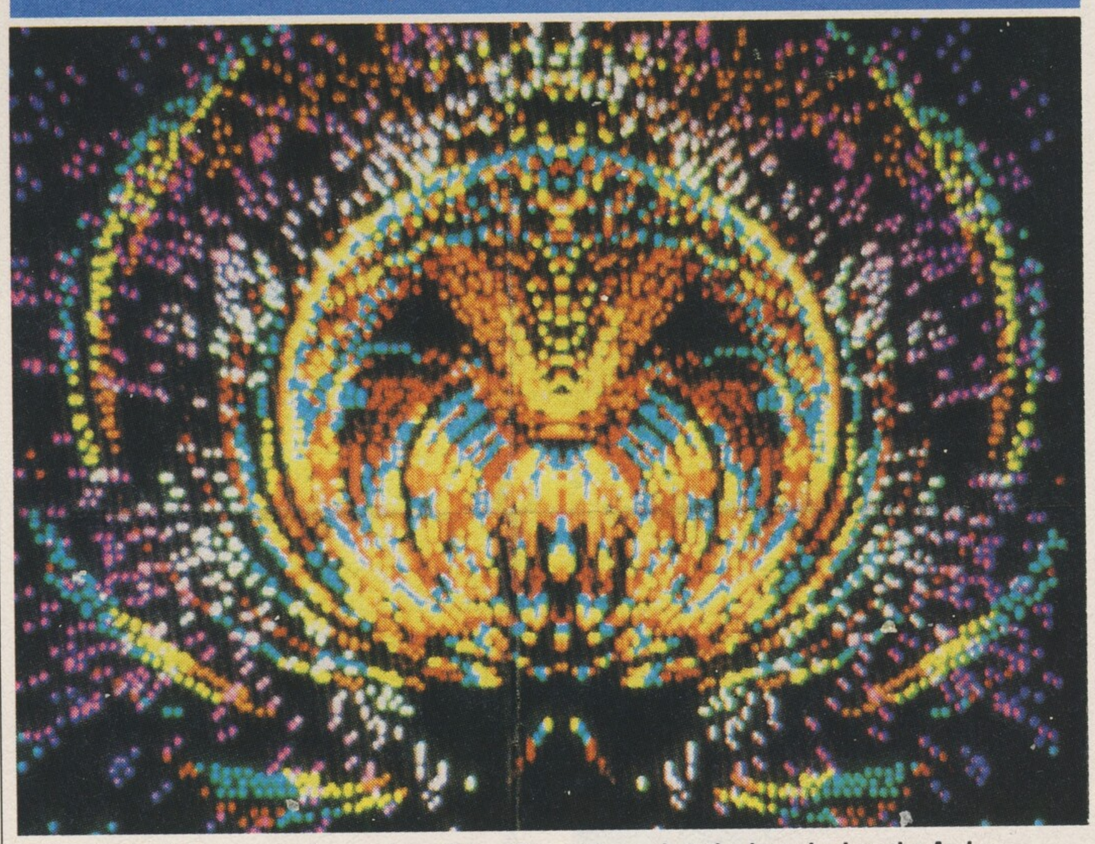
• *CD-ROM: Watching business*

Business profiles

It would seem fact often follows pretty quickly in the footsteps of fiction since after *Express*'s first birthday issue supplement, *New Computer Excess*, carried a story on the wholly fictitious Profile CD-ROM, the well-known business software corporation Lotus has announced a similar disc.

CD/Private+ UK is an optical database of over 100,000 UK registered public and private companies which includes information on profit and loss, assets, growth rates, credit ratings and management profiles. For £9,000 a year, City and general business users will be able to access regularly updated analysis and report information. Although this kind of guide has been around in the States for some time, this is the first specifically targeted at the UK business market. ■

IT'S LIKE, TOTALLY WILD, MAN



• *Freaky ST light to graphics package* Trip-a-Tron, *above, is to be launched on the Amiga.*

The cult program was written by strange software developer Jeff Minter. The idea is to mix curious colour and light patterns with sound synthesis – and it's all very psychedelic.

The Amiga version is promised to be just as 'way out' as its ST predecessor. "I'm just testing the program at the moment and there's a few bugs left to zap," said Minter. It'll cost £34.95 and should be arriving any time now.■

The return of the Thingi

Remember Thingi? It was that bit of white plastic which stuck to the top of the personal computer and on which you could attach really important bits of paper.

Now comes Thingi 2. This redesigned model is stylish and brilliant and is a testament to British ingenuity (or something). And what's more, it only costs £7.49.

Privileged visitors to the Computer Shopper show this weekend will see the launch. More from manufacturer Little Office on 051 666 1190.■

Pests in the picture

Price Waterhouse has stepped up its publishing campaign against computer crooks with a new video.

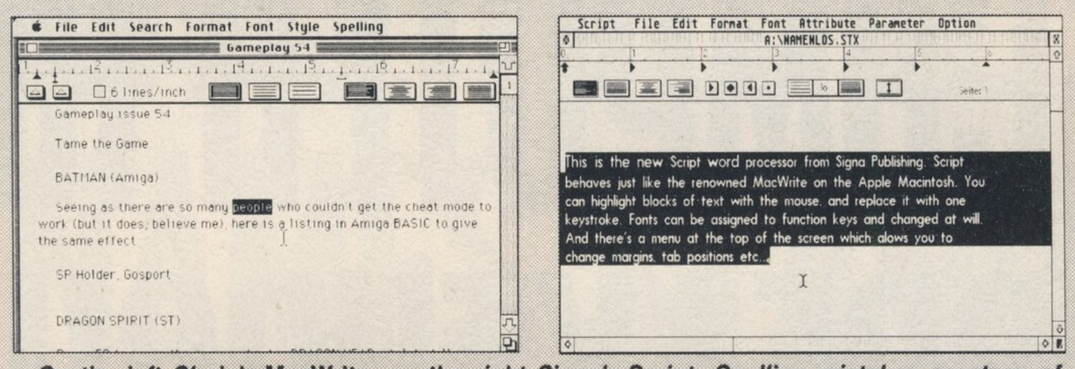
Called Managing Data Security the video is aimed at Britain's bosses who are worried about the threat of computer snoops and crooks both inside their companies and outside.

The video covers accidental data corruption, viruses and hackers and explains the measures companies should take against these pests. It explains the difficulties by taking a "fly on the wall" approach to an imaginary company.

These anti hacker aids rarely come cheap though. Price Waterhouse's video weighs in at £120 (and it only lasts 26 minutes). Contact number is 01 379 0873.■

My word: A MacWrite lookalike for the Atari ST

By Jez Glenwright



• On the left Claris's MacWrite, *on the right Signa's* Script. *Spelling mistakes courtesy of 'Uncle' Jerry Glenwright.*

When first launched, newshounds everywhere dubbed the ST the 'Jackintosh' – the power of the Mac but with a price the person in the street could afford.

Unfortunately, the ST has been left far behind when it comes to quality software. But now Signa Publishing – a company well known for its involvement in the ST serious software scene – is about to launch a word processor which will become the standard by which others are judged.

Emanating from Germany, *Script* behaves exactly like the highly popular word processor from Claris *MacWrite*, but at a processing speed which leaves Apple's baby for dead.

Features include the ability to highlight words, lines and complete blocks of text and replace them with a single key stroke. There's a series of icons at the top of the screen which allow you to left, right and centre justify, set tab and margin positions and adjust the leading of documents.

***Script* allows you to hold many fonts in memory and assign them to function keys. If you want to change typeface mid-way through a sentence, simply press the appropriate function key. And for the power user, all the *Script* capabilities are accessible via 'hot keys'.**

Apple has a reputaion for objecting when products have a similar look and feel to their own. Whether it will think an ST product worth litigation remains to be seen.

***Script* will be available shortly from Signa Publishing (0252 341600) and will be priced between £70 and £80.**

Brain the size of an Amiga

An Amiga owner is planning to write the first program for his machine which really explains the functions of that most baffling "computer" – the brain.

Dr. George Walsh – a professional neurophysicist – has been fascinated by the old grey matter all his life. But he's only had an Amiga for a few months. He's hoping to use the machine's graphic capabilities to write a program which explains the cerebral stuff in a simple form.

"There are plenty of books on the subject but most people can't understand them. The Amiga gives me the chance to explain the brain in a way the layman can understand," he said.

He's planning to write the program on the Amiga using *Deluxe Paint III* for drawing the diagrams and an image grabber. But he says he's not all that clever with computers. "I'm in my fifties. In my day a pocket calculator was thought sophisticated."

Anyone with useful programming tips is welcome to call Dr Walsh on 0392 21995.

UK GAMES SCOOP EURO HONOURS

Tilt D'Or, Europe's biggest awards ceremony for computer games, took place last week with British companies getting a huge share of the prizes.

UK publishers US Gold, Anco, Psygnosis, System 3, Mirrorsoft, Virgin and Palace all had cause to celebrate at the Paris ceremony – even if their winning games weren't all written in Great Britain.

The awards are based around France's biggest selling games magazine *Tilt* and all the games are voted on by reviewers and journalists on the mag. Despite Britain's position as Europe's leader in computer games we have no ceremony as grand as *Tilt*'s – that's even televised.

• US Gold picked up the best arcade conversion for its successful version of Capcom's *Strider*.

• Anco's wonderful footie game *Kick Off* drew first place with Infogrames' well loved *Pro Tennis Tour* in the best sports game category.

• There were surprised gasps as both Ocean's *Batman* and Firebird's *Rik Dangerous* were beaten by US Gold's cutesy title *Skweek* for best action game. Ocean, for once, left an awards ceremony with no silverware.

• Those chaps at Virgin might consider themselves fortunate to have won best shoot-'em-up. *Silkworm* beat Mirrorsoft's highly acclaimed *Xenon II*.

• Mirrosoft picked up best flight simulator for *Falcon* (written by Spectrum Holobyte in the US) and best animation for *Interphase*.

• No surprises as Psygnosis' visually stunning *Shadow of the Beast* won the best graphics category.

• Palace's boss Pete Stone was pretty pleased with himself. He's signed up the rights to French company Delphin which picked up best sound and best adventure for graphic affair *Future Wars*.

• Beat-'em-ups are as popular as ever. System 3's manic *Last Ninja II* was voted best arcade action.

• The Americans were in the running too. MicroProse's *M1 Tank Platoon* was deemed the best simulation while Electronic Arts deservedly won best strategy game with *Populous*.

Shopping around

Christmas buyers looking for some great bargains would do well to jump on some form of transport and get themselves to this weekend's Computer Shopper Show in London.

It starts at Alexandra Palace tomorrow (Friday 24th) and runs through until 4pm on Sunday. Admission is £4 for adults and £3 for youngsters. Regular show goers shouldn't expect to lots of Comdex like new products – this one's for spending money with plenty of software and hardware suppliers touting for custom with competitive prices.

There will be about 200 companies showing their wares and it'll be a lot of fun. See ya there.

Organiser Database can be contacted on 0628 878888.

• *Catch the show preview on page 61.*

Dongles dangle again

By Andy Storer

One of the earliest forms of copy-protection, the dongle, has re-entered the fight against software piracy.

French company Microphar is manufacturing the small electronic keys that plug into a computer's parallel port and is hoping that software developers will include the short routine in program code needed to activate the protection.

For between £23 and £110 users will be able to use the device on any appropriate applications and will be able to make infinite numbers of back up copies.

One of the principle disdvantages of dongling is the necessisity of changing over the devices every time you change programs. Further information on 010 331 47382121.

Izzy Wizzy... let's get busy

At last. Sooty and Sweep are to appear in a computer game .

The two stars of the longest running television programme in the world will be transformed into a game by Alternative Software – already responsible for the silicon incarnations of *Postman Pat*, *Father Christmas* and *Count Duckula*.

In the game Sooty, Sweep and Sue get up to some mischief but have to clean up the house before their friend Matthew comes home. They also have to avoid some nasty creepy crawlies with the help of Sooty's wand and Sweep's water pistol. Wonderful stuff.

"It's a great licence and it appeals to all age groups," said Alternative's boss Roger Hulley. "I watched the programme as a boy and my kids watch it now. And all the people in between. It's amazing. Izzy Wizzy let's get busy."

It costs £2.99 and will be available on the Speccy, C64 and CPC. Expect to see 16-bit versions in the spring.

Meantime *Father Christmas* has hit the streets. Hulley claims that the game is his "biggest ship out ever". It costs £2.99 and all profits go to Children In Need. Alternative is planning a charity game every Christmas. Go out and buy *The Official Father Christmas* on the three eight-bit formats.

Chip off the old Amiga

By Jason Holborn

Many users who have recently bought themselves an A500 will be surprised to hear that their machines contain the new Commodore Enhanced Chip Set Agnus graphics chip, even though the machine seems identical to older A500s.

The new graphics chip provides the machine with double the standard amount of potential chip RAM, although A500s containing the new chip have been deliberately designed not to take advantage of this enhancement without the user having to pay Commodore's maintenance company, Granada, for the modification to be carried out. Many users aware of the chip's presence have bought RAM expansions to take advantage of this feature, only to find the machine refuses to use the extra capabilities of the new Agnus.

According to a spokesperson at Commodore, problems arise if a machine fitted with the new 'fatter' Agnus has only 512K. Once a user has upgraded their machine to a megabyte of more of memory, they must then send their machines to Granada and pay approximately £30 for the modification to be carried out.

The new machines have also been redesigned to include space for the addition of an extra 512K of RAM on the main board. However, when a well known third party hardware producer (who have requested to remain nameless) questioned Commodore about the possibility of producing upgrade kits, the company threatened to instruct Granada not to accept any machines for repair that contained the upgrade.

All machines with a serial number greater than 520000 contain the new enhanced graphics chip.

EXCLUSIVE: Major advance awaits programming

COMPUTER READING BREAKTHROUGH

By Gary Chambers

A semi retired mathematician has devised a revolutionary handwriting recognition system – but hasn't yet programmed it into a computer.

Dorset-based Mike Butterfield has been quietly working on the project for nearly 30 years. When he turns his findings into a computer program he stands to make millions of pounds.

The Department of Trade and Industry has already offered to fund the project with a £36,000 grant.

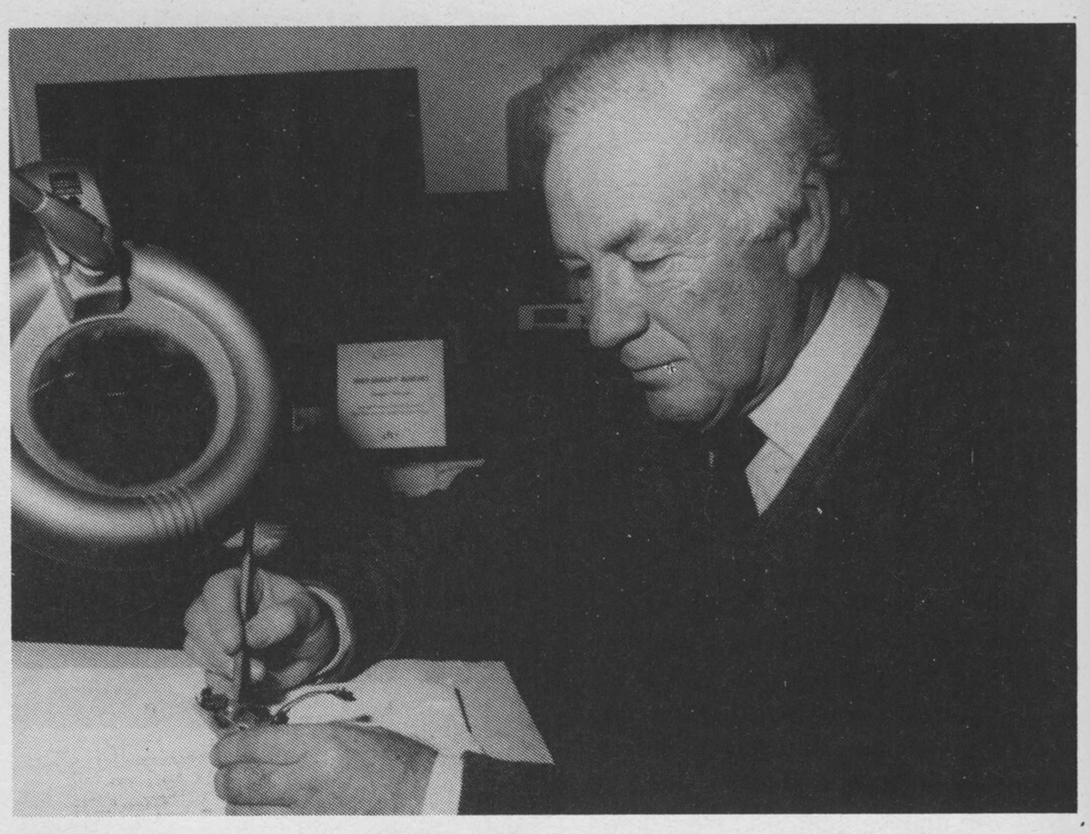
Computer manufacturers in the US and Japan have spent millions of dollars in an attempt to devise a way of making machines read everybody's handwriting. Despite extraordinary leaps forward this has not really been achieved. The Royal Mail already has a character reading system but that lacks efficiency. Butterfield claims he can improve it by 100 per cent.

Using a ruler, protractor and pencil, he has measured thousands of characters, compiling data on their geometric construction. Most character recognition systems use what Butterfield calls "verbal descriptions". For example, the letter H is described as two vertical lines connected with a parallel (the descriptions themselves are entirely mathematical, of course).

His system ignores geometric shapes and rest solely on the measurement of angles and lines. By using this method he has developed a scoring system which is claimed to be almost foolproof. The Royal Mail gave him a bundle of handwritten post codes too difficult for their machines to read, Butterfield measured the digits in the codes and identified the codes correctly every time.

Now, he has to turn his knowledge into a computer program. Using the grant he's bought a standard Panasonic scanner and a Zenith PC with which to program his findings.

Butterfield, 61, commented: "The amount of information you need to decipher cursive script is enormous. It's like programming someone to be a violinist." However, he says it'll be completed within a year.



• *Butterfield: mathematical genius*

ST animator down by 94%

An animation package for the Atari ST which was selling at £80 is suddenly available in the public domain for just three pounds duplication cost.

Aegis *Animator* had been sold by Aegis in the United States since it was launched in 1987. However, its author Jim Kent has since become disappointed with the program's financial performance under Aegis' guidance and has re-secured the rights to the package.

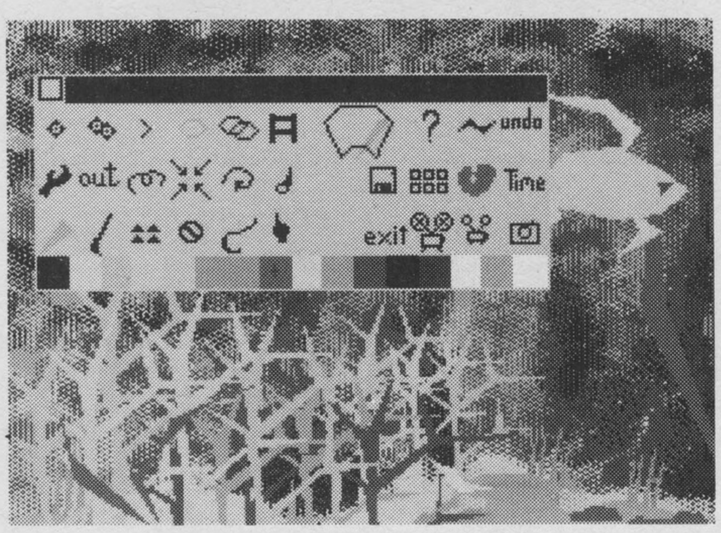
But instead of trying to sell it at its full price Kent has put it on the public domain.

Martyn Dryden of The South West Software Library told *Express*: "He was worried that people weren't able to get hold of the program, it wasn't being pushed through. He just realised that as PD it'll make him the same amount of money as a commercial program – nothing."

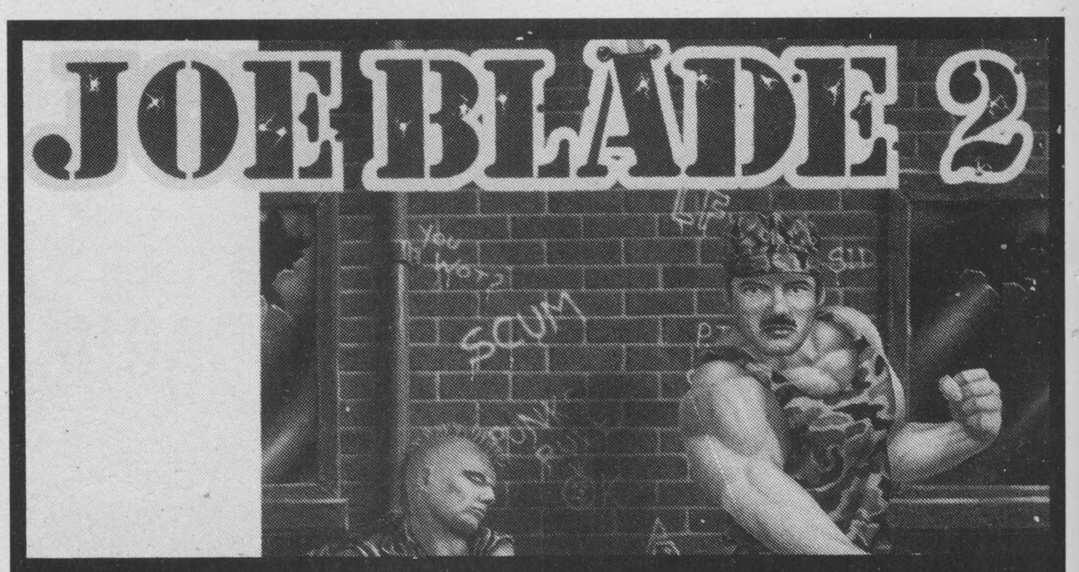
But is the program too old to make money now anyway? "Up to a point," said Dryden. "But that's true of any program."

The animator is now called *Ani-ST*. It can generate animation between two images drawn via the mouse – a process called tweening.

Ani-ST will be available all over the PD world any time now.



• **Ani-ST:** *animation power for the price of a disk*



Smash hits on the way

By Maff Evans

Interceptor has joined the growing number of software houses offering ST and Amiga owners low cost games.

A new label, Smash 16, will act as an umbrella to re-released and original games – all for under a fiver. Initial releases include *Joe Blade 1* and *2*, the highly acclaimed *Eagle's Nest*, light-cycle game *Extensor* and the strictly adults only *Hollywood Poker*.

For musically minded people another Smash 16 release is *Amiga Drum Studio*, which turns your computer into a fully fledged drum machine.

Simon Daniels, Smash 16's software co-ordinator, promises that the range of products will include excellent titles and no shoddy packaging. The first batch of 16 releases should be out now, all priced £4.99.

Tandon ad slapped

PC manufacturer Tandon has been hauled up by the Advertising Standards Authority for a confusing ad.

It said: "From now on, other computers under £1,000 are nothing but bad memories. Forget Mickey Mouse computers. And familiarise yourself with the latest production from Tandon, the PCA/12s1-20. It features a 20Mb hard disk, with the capacity to store an unbelievable 20 million characters (enough to make other computers at the same price look like amnesiacs).

A complainant questioned whether it was fair to suggest that 20Mb is an exceptional storage capacity since it's generally regarded as the minimum in hard disk sizes.

Tandon says it does not know of a manufacturer which offers that sort of PC with storage for such a low price. However, the ad did not provide any comparative data. The ASA upheld the complaint and have asked Tandon to delete its claims.

RACER LEAVES BIG NAMES STANDING

***Stunt Car Racer* has become the year's first non-licence game to reach number one in Gallup's all formats chart.**

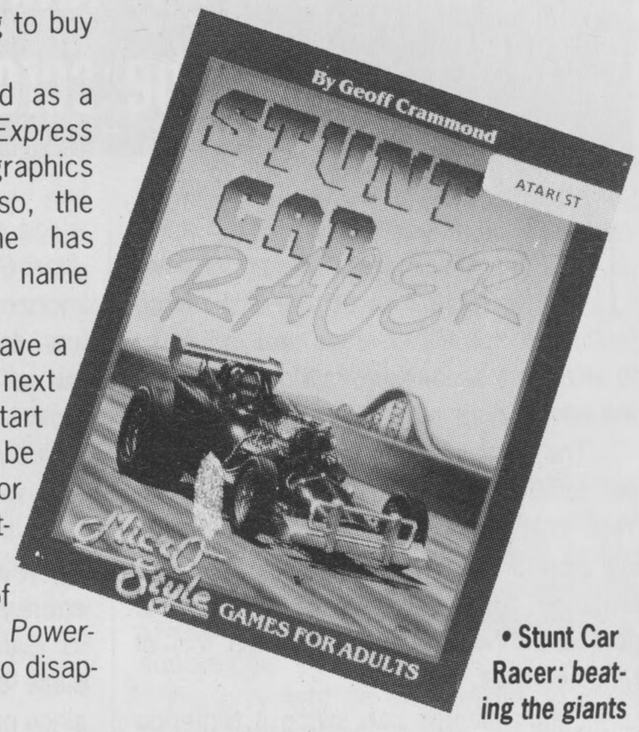
Its surprising appearance at the top of the charts has thrown the race for Christmas number one into confusion – many had expected Ocean's *Batman* to stay at the top until the new year. Publisher MicroProse was last week "over the moon" . "We're number one on the ST and C64 charts , number three on the Speccy and number six on the Amiga. And those last two were after just one day of sales,' offered a panting spokesman

"It's really great to get an original game to the top of the charts. In this day and age you really can't expect to beat the likes of *Batman* and *Robocop*. But it just show that people aren't just going to buy something because of the name."

The game – which was tipped as a potential Christmas giant killer in *Express* last week – boasts amazing 3D graphics and real driving excitement. Also, the exceptionalspeed of the game has prompted buyers to leave big name licences on the shelf.

Even so, *Stunt Car Racer* will have a job staying at the top. Over the next few weeks the trade expects to start selling to the "grannies". They'll be buying Christmas presents for young relatives and will be attracted to familiar names.

Thankfully, this year's crop of Christmas licences – *Chase HQ, Powerdrift, Batman et al* – aren't going to disappoint recipients.



• Stunt Car Racer: beating the giants

Acorn cares... and so does IBM

The winners of Acorn's competition to find the best healthcare software package for its Archimedes were announced last week.

There were two winning entries. The first, a real time quality control package for laboratory analysers, was written by Dr John Dixon of Dixon's Research . It allows doctors to keep up to the minute records of success rates in such areas as blood testing.

The other was submitted by Dr Hutch Curry of the Burden Neurological Institute in Bristol. That's a spectral analysis program for use in the operating theatre or during intensive care.

Acorn had arranged the challenge in order to prove the Archie's worth in the lucrative medical field. The winners were presented with an Acorn 420/1 by marketing chief Ian Laurence.

• Monster company IBM is considering doing some community work – an environment centre is planned for next year.

The firm would have to raise a staggering £14 million to build the Cambridge based centre. A meeting was planned with the Department of the Environment late last week to thrash through the details.

IBM would be able to donate some of its technical expertise. One of the aims of the centre will be to extrapolate various environmental changes and effects using predictive modelling based on seemingly insignificant figures and trends.

The hard disk truth

By Ben Feinbaum

Computers make people tell the truth according to researchers at Louisiana State University and the Georgia Institute of Technology.

In a job interview situation people are willing to stretch the truth when it's a personnel manager on the other side of the desk, but those being interviewed will not try and fool a computer.

Indeed, the main effect observed in the research is 'the Big Brother syndrome' - those interviewed are afraid that the computer is linked to a larger network powerful enough to verify answers proffered.

On the down side, researchers also warn that one group of subjects, interviewed for management trainee positions, felt resentment at being faced with a machine rather than a human.

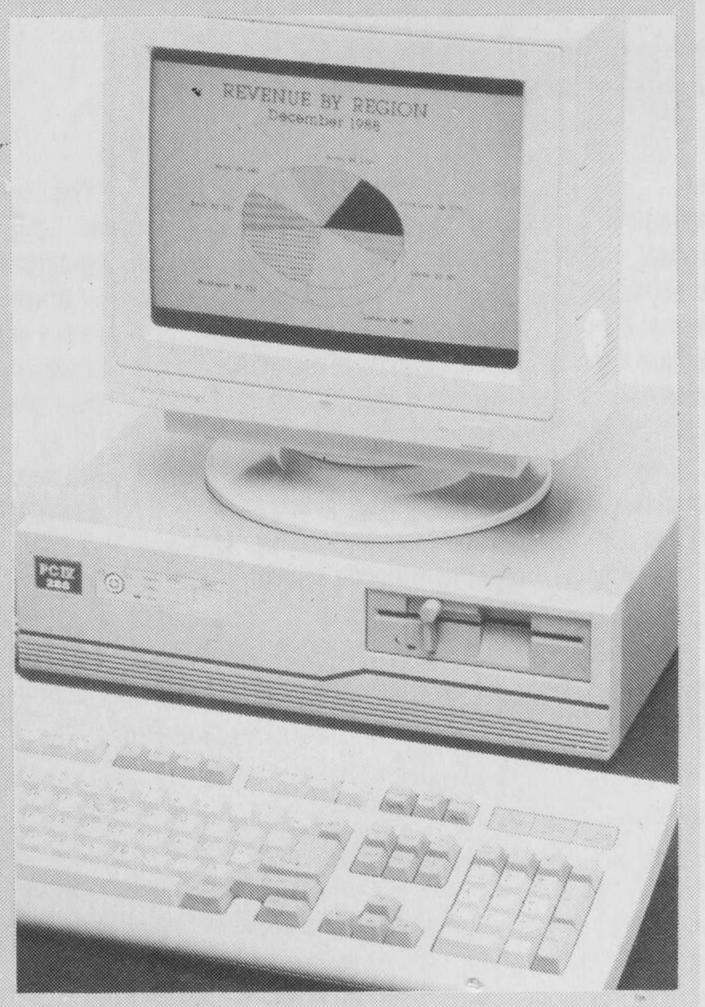
Opus learns new role

Opus, the successful budget PC producer is contemplating offering potential PC buyers a special education pack.

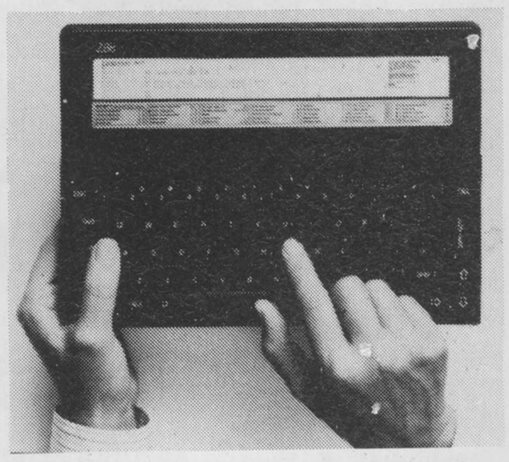
The firm is looking closely at the possibility of offering its Classmate PC with a bumper pack of education software packages. This is already proving a success for Commodore and its 'Class of the 90s' Amiga bundle.

The Opus pack will be sold through to education authorities as well as individuals looking to get some academic use out of an IBM compatible.

The Classmate itself currently retails at £799 for mono graphics and £1,099 with VGA. A spokesman for the firm preferred not to comment on the matter. But watch out for an announcement within the next two weeks.



• Opus PCs: back to school



• Z88: Cambridge link

Amiga link up

Amiga owners wanting to get up and running on the road will be pleased to hear Music Suite has announced a serial link for use with the popular Z88.

The curiously titled Z-88-Amiga link makes full use of the Amiga's Intuition to provide an easy interface for archiving Z88 files, converting Z88 files for word processing within *Protext* and *Scribble* and vice versa. In addition Z88 files can also be ported into *Superbase* and printer output sent to parallel printer. The Link costs £12.95 and is available from Music Suite on 0239 711343.

Crash course

Most people who buy a PC take it home and then realise they're not quite sure what to do with it.

With this in mind Scandinavian Systems has revised its popular book *PC Crash Course and Survival Kit*. It lays out all the rudiments and catalogues all manner of tips and tactics to get you through those sticky patches. Scandinavian says it's useful for people buying their first XT or professionals upgrading to a PS/2 or 386 machine. It costs £14.95 from 0926 314334.

COMMENT

The Tetris affair is bad news for games players: Nintendo control must be scrapped

Nintendo's defeat of Atari Games over the *Tetris* affair is bad news for console owners. For it undermines Atari Games' well laid plans to shake the Japanese firm's domination of the video games market.

The *Tetris* fight is a forerunner to a bigger scrap likely to be resolved in the New Year. That's a $100 million litigation revolving around Atari Games' attempts to sell Nintendo compatible games without the permission (which is always paid for) of Nintendo itself.

If Atari Games can swing it Nintendo has much to lose. Remember, Nintendo's profits last year exceeded the worldwide sales of all the computer games software houses put together.

RIGHTS ISSUE

The *Tetris* affair broke last spring when Atari Games and Nintendo both claimed to have secured the video game rights to the addictive (read money-spinning) building block game.

Atari Games' subsidiary Tengen had picked up the rights from British software house Mirrorsoft. That company had cleverly bought the game from a group of obscure Soviet programmers two years previously and has subsequently sold thousands of copies on every computer format all the way up to the Macintosh. To sell the video game rights to a company such as Atari Games was a logical way of coaxing more money out of the magical product.

However, Nintendo had, as they say, cut out the middle man. It swanned into the Soviet Union and bought up the video game rights. Atari Games got awful mad and, well, all hell let loose.

Nintendo could consider itself to be lucky. It had approached Soviet licensing agency ELORG for the handheld rights (for its Gameboy machine). *Tetris* is an ideal piece of software for a handheld and has since proved itself to be a winner.

During the negotiations it emerged that the video game rights (as opposed to computer game rights) had not been specifically included in the Mirrorsoft contract.

Nintendo had found a way to scupper one of Atari Games' unapproved games without having to wait for the larger $100 million case to be resolved.

Happy Nintendo now has complete control over *Tetris*. Every console copy sold in the US comes from Nintendo and it pockets a share of the spoils. The firm also has the rights for the game on the Sega and Atari consoles. Nintendo isn't in the habit of supporting rivals – all very cosy.

AGGRESSIVE STANCE

Nintendo in the US is made up of a small team of ultra-aggressive businessmen. These guys make Alan Sugar look like Sooty.

They were sent into the world's biggest market four years ago with a single aim – domination. By selling a neat games console for little profit the firm would establish a huge user base in just a few months.

The next step was to make sure that it had complete control over software. Those men would decide what games should come out and who should write them. They reasoned that it cuts out the danger of the market being flooded with dismal Nintendo games sourced from unapproved companies looking to make some swift greenbacks. Any such invasion, they said, would bring down the popular conception of the product as a quality piece of gear.

The context of this is that Nintendo makes its profits not from hardware sales but from the software sales which follow.

With 20 million consoles in American homes it's clear that a lot of money is going to be made. Nintendo reckons it has sold more than 100 million cartridges this year. They cost about $30 each. There's hardly any piracy. Most games sell more than a million copies.

FREE CHOICE

Its no surprise that these men like to keep everything under their jurisdiction. They're not interested in such concepts as giving every company the chance to leap on the bandwagon and they don't much care for the notion that consumers should get the chance to choose between the good, the bad and the ugly.

However, even if its position appears to be unassailable at the moment it has to come up with a convincing arguments in the lawcourts next year.

Americans are terribly keen on things like free trade. Monopolies are a bad thing and don't do much for the health of the nation. They aren't enormously keen on Japanese companies that take billions of dollars off American consumers (at the expense of the American companies which they work for).

In the literal sense Nintendo's practices are restrictive. Whether they are too restrictive for the Americans to stomach remains to be seen.

This argument that to "open the floodgates" would tarnish the product can't be tolerated. Of course there will be companies that put out trash and still make money from that.

But it's arrogant to suggest that only Nintendo is capable of supervising good games.

What if Commodore was to decide what games come out on the Amiga? *Populous* could have been deemed as too off the wall. And *Stunt Car Racer* might not have gone down too well . One of the arguments for software control is that it prevents too many similar games coming out at the same time. But in the computer games market we've loads of new driving games all of which will sell handsomely. We want loads of driving games, the software houses know we want loads of driving games and so we get loads of driving games.

There's also hundreds of projects going on for home computers. Some of those will be dazzling. It's free trade. It's great. Why not for the consoles?

Nintendo's exclusivity contract must be torn up. The firm produces some darned good games – but there's room for more. Atari Games is the only company with any chance of winning the exclusivity battle. The crunch comes in less than two months.

COLIN CAMPBELL

New Computer Express welcomes feedback from its readers. If you feel you have a valid and interesting contribution to make on any of the issues raised each week in Comment, write to us here at:

Express Mail
New Computer Express
Future Publishing
4 Queen Street
Bath BA1 1EJ

The more concise and to the point the letter, the better the chance of it being published.

We reserve the right to edit letters on grounds of length, good taste, and appalling grammar, and to add a sarcastic reply designed to make you feel about one inch high.

What is the licensee agreement?

It gives the manufacturer of a piece of hardware complete control over peripheral products for that machine – including software.

This means that publishers have to approach the manufacturer with a product and must gain permission to publish a game. The mechanics of producing the cartridges are then left to the manufacturer.

This can be maintained by keeping the "formula" of the cartridges a secret. It's the Coca Cola syndrome. No-one else can produce the cartridges because no-one knows how to.

Unfortunately, when there's millions at stake somebody is going to come up with a way of changing the status quo. And Atari Games with Tengen managed the feat.

Nintendo will often insist that if a software house publishes a game for its system then that game cannot appear on any other video format.

So if you want to buy a particular game you have to own the Nintendo system.

Nintendo Ten facts

• The company is 100 years old. It began by selling playing cards in Kyoto, Japan.
• It stormed into the electronics age in 1970 with the introduction of a handheld liquid crystal screen game.
• Nintendo has a 90 per cent share of the Japanese console market.
• Between autumn 1986 and the end of last year Americans bought 24.5 million Nintendo systems.
• *Super Mario Bros.* has sold 9.1 million units.
• Nintendo Power, the company's machine specific magazine, has one million subscribers.
• Technically, the Nintendo's innards are roughly equivalent to the Amstrad CPC's.
• The Nintendo has been America's biggest selling toy for the past two Christmas's.
• Nintendo owners make 50,000 "help" calls every week in the US. The company has 80 game counselers on hand to answer queries.
• It's estimated that by the end of this year 21 per cent of US households will have a Nintendo system.

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GETTING ANIMATED

After a couple of mentions of Autodesk's new animation package, *Animator*, I've finally got my hands on a copy and have started to explore its capabilities, which are many. To start with, it doesn't mess around with Amstrads or Hercules displays, which means it's 256 colour analogue VGA or nothing. It also takes around 1.3 Mbyte, so a hard disk is a good bet (though you can squeeze something out of it on floppies).

It starts by being just about the best drawing package yet seen on a PC. It offers all the standard PC Paintbrush facilities almost before it begins and then starts to delve into the world of ST or Amiga graphics with special brush types, pre-defined, fully-rotatable polygons and graded fills. Facilities like this begin to show what a powerful VGA-based PC can do.

Once you've started to master static graphics you can take your first faltering steps into animation by creating first and last images and having the program 'tween' them, that is, you can generate all the frames that fill the gaps. Aimed mainly at business graphics, there are a lot of aids to help build up interesting company charts and the like, though there's no reason why someone with some artistic flair couldn't produce entertainment animations as well.

Output can be played back within the PC or directed to a video. Images can also be captured from video, though you need extra hardware for both these activities. The foregoing are brief first impressions - you can read the full review in January's *PC PLUS*.

DIGITAL VS ANALOGUE VGA

In putting together a system which could run *Animator*, I had to borrow a VGA card. This I'm evaluating for a couple of weeks for a friendly importer. The card has two output sockets, both using small D-type connectors. The first is the standard nine pin EGA type socket, which my NEC Multisync plugged into with no problem.

This, as I came to realise soon after running *Animator*, is the digital output. It's in colour, 16 of them from a palette of 16. The colour the *Animator* tutorial describes as orange is duckegg blue (Aqua White if you've done any decorating recently). The graduated fills which are meant to be lots of shades of blue are a few shades of lots of colours and the highlighted options on the home menu are in white on yellow - a lovely combination!

• **Animator *simply hums along***

A HISTORY OF ERRORS

I have rapidly come to realise that I should have taken output from the analogue socket. The plug doesn't fit. *PC PLUS* is getting restless about screen shots for the review. I have an adapter from a Multisync GS (mono) in the bottom drawer of my desk - some lovely shades of green from this one. *PC PLUS* really does need those shots by Wednesday (I'm typing this hurriedly on Tuesday morning). The local dealer doesn't have an adapter in stock, though he can get one in a couple of days. I ring Lindy, a trade supplier, pretending to be in the trade. They can have one with me in a couple of days. I now know where the local dealer gets his.

Currently, I have located a replacement lead, analogue VGA to NEC Multisync, 20 miles away. Sue, my wife, happens to be in that very town this morning and promised she would ring to find out if she could pick one up for me. Assuming I get the lead by four this afternoon, I shall be able to grab the screens and send them through to *PC PLUS*, by modem, this evening. And they said it would all be beers and trips to Silicon Valley.

SCALED FONTS, ROYAL FONTS

If I was on the board of Adobe, the producers of the PostScript page description language (PDL), I think I'd be a bit worried.

For years Adobe has had a stranglehold on the DTP industry with the only PDL that supports fully scalable fonts. This one feature means bliss for system managers in electronic DTP and design studios, as they don't have to worry about handling tens of fonts in hundreds of sizes. It's all done for them within PostScript.

Adobe knew how useful this was and charged hefty licence fees to anyone who wanted to make use of it. In the first instance this was Apple, who incorporated it into all their LaserWriter printers. This made it a DTP industry standard and PCs getting into the same sphere adopted it too. PostScript laser printers are still nearly all priced at £3,000 or more because of it.

Earlier this year, Microsoft and Apple came to an agreement to stop paying hefty fees to Adobe and to develop their own scalable font PDL, with the scalable fonts referred to as Royal fonts. This at a stroke has the potential of cutting Adobe's jumbo royalties (perhaps that's where the Royal comes in) by a percentage approaching 50.

This at first sight looks like good news – cheaper laser printers for all – but the ere is a great danger of the two groups producing diverging and incompatible standards. then we'd be right back to square one.

The only light on the horizon, to quote two anachronisms, is that IBM have just decided to licence PostScript for their next laser printer. If IBM buck the tide and stick with Adobe, it may not matter what the rest of the world tries to do.

KYOCERA I.C. CARDS

I've recently been looking at a group of budget laser printers, all below £1500 at discount prices. The feature common to all of them is provision for scalable fonts which don't use PostScript. Of these, perhaps the most interesting is the Kyocera F800, which incorporates the company's own PDL, Prescribe. The interesting thing about Prescribe is that it's a complete programming language in itself, like PostScript, and can be written by anyone with a modicum of programming skill and a word processor. It understands English-like commands from any ASCII text file and acts upon them.

The printer also has the ability to read Prescribe programs from IC cards as well as from the PC. This means that once you've written a Prescribe macro for a particular graph or letterhead, you can save it on the IC card and call it from a document file each time you want to print it. There is quite a little market growing up, I hear, for third party Prescribe macros, written to your specification.

NEW, IMPROVED PC UPDATE

Well, the thousands of you who have campaigned for so long for an increase in the size of the PC Update column have finally been satisfied. The years of struggle and unending sacrifice have been worth it.

So what are we going to talk about - do you like the new laid back, involve the readership approach? - I'll try anything for a bit of feedback. Go on, spoil yourself, drop a line to *Express* at 4 Queen Street, Bath BA1 1EJ, marked for this column and fill it full of interesting tips, praise or pariah. I look forward to the next sack of mail.

SIMON WILLIAMS

PC PEEKETTES

NETWORKS

• Fancy a new way of networking a building without all those cables ? The Verran AC DataLink uses the wiring of your mains electricity supply to connect up printers, modems, plotters and PCs. The only drawback being that each device on the net will need a special unit costing £200. However if you work in something approaching spaghetti junction it may be woth giving Verran a call on 0256 816555.

FAX

• For £497 you can get delivery, installation and two year's warranty on a Brother Fax 150 desktop machine, from Action Computer Supplies on 0800 333333

PRINTERS

• Microsales on 0282 416677 is offering a year's warranty on all its dot-matrix printers

• If you own one of the new 400 DPI laser printers then Headway on 0252 333575 can help you out with its custom hi-res laser driver.

• The new £1400 Okilaser 400 laser printer is probably the cheapest LaserJet II compatible available. While a little sluggish - at only four pages a minute - at least it'll deliver very high quality text and graphics for half the price of what you'd normaily expect to pay for a Hewlett Packard compatible laser.

MONITORS

• Microvetic's spanking new 14-inch colour monitor - the VGA-Scan - is now available. More details on 0274 390011

CAD

• The £99 *TurboCAD 1.6* has been launched by Pink Software on 01 455 2117

• Control Systems' (084421 7445) hi-res CAD graphics controllers now operate with GEM, *Ventura* and Windows

• Release 2 of *AutoCAD AEC Architectural* is now out from Autodesk on 01 928 7868

USER INFORMATION

• The Business in Europe 1992 Expo taking place next April will feature a technology section. Details on 0603 629491

• A DataEase User Group has been set up in London - Call 0603 762806 for membership details

AMIGA

TAKING A TRIP

Something wonderful has happened, your Amiga is truly alive. No, it's not another virus, it's something potentially far more lethal to both computer and user... LlamaSoft's *Trip-A-Tron*. Yes folks, something truly wonderful has indeed happened - Jeff Minter has finally bowed to public pressure and produced an Amiga version of his wondrous light synthesizer.

According to the esteemed publication *Nature Of The Beast* (which is a magazine that Jeff produces when he feels like it), Jeff had been continuously hassled by Amiga owners to produce a version for their machine. After getting over the excitement of finally receiving his Konix development system, Jeff eventually decided that enough was enough and it was time to put Amiga owners out of his misery, and Amiga *Trip-A-Tron* was born.

The Amiga version looks identical to the ST original with only 16 colours on–screen at any one time (although the full 4,096 colour palette is used). The reason for this is that the Amiga version already runs slightly slower than the ST version, and therefore, adding an extra bitplane (or even using HAM mode!) would have slowed the program down still further.

Jeff hopes to have the program up and running and available for sale in time for the Commodore show. As soon as I receive my review copy, I'll update you on this wondrous piece of software.

GETTING DOWN TO BUSINESS

Software starved business users will be pleased to learn that the Amiga has finally gained itself a powerful accounting system worthy of the machine's obvious computing power.

Arena Accounts from Arena Technologies is a fully fledged accounting system that boasts the kind of accounting power previously only found in high end PC-based accounts systems such as *Sage* and *Pegasus* (that name brings back some bad memories!). However, unlike those programs, the system comes complete with sales/purchase ledgers and nominal ledgers at cost considerably less than its PC counterparts.

The program allows free format sales invoicing, flexible and comprehensive VAT reports, instant profit and loss, balance sheets and price list production (that's what the press release says anyway). Arena can be contacted on 0724 280222 – tell them AmigaBLIT sent you!

WHO'S A PRETTY BOY THEN?

After going through all the various magazines (especially *Express* and *Amiga Format* of course!), looking at all the various handy hints and tips sent in by readers, it reminded me of a little tip I once saw in a certain American Amiga magazine.

Mr X (that's what we'll call him anyway) had just bought himself a pet parrot, which he was trying to teach to talk. After many long hours of sitting in front of the cage repeating Who's a pretty boy then? Mr X eventually had an idea. Why not use the Amiga speech synthesizer capabilities to teach the bird to talk? And so Mr X set up his Amiga, wrote a quick AmigaBASIC program to make the Amiga say Who's a pretty boy? continuously and then left the poor parrot to suffer.

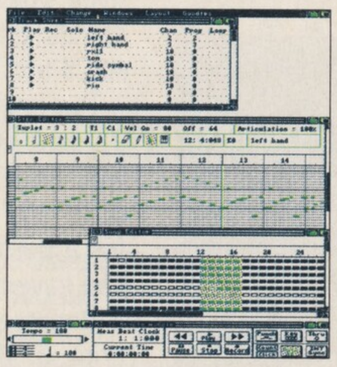
JASON HOLBORN

AMIGA MIDI PROGRAMMING

BLIT readers concerning MIDI and music software on the Amiga. When is Steinberg's *Amiga 2400* out? Where can I get an editor for my Korg M1? How do I record from two separate keyboards at the same time? Is it possible to write MIDI programs from AmigaBASIC?

It's a little difficult answering individual enquires, but I thought the enquiry about programming MIDI from AmigaBASIC would be of interest to many of you, so here goes:

As nearly every MIDI interface on the Amiga runs through the Amiga serial port, reading and writing MIDI data is a fairly straightforward thing to do. However, accessing MIDI channels isn't just a case of opening the serial port and away you go – the machines must be told



• You to can write MIDI applications on your Amiga

the baud rate at hardware level. The Amiga controls its baud rate using a 'divide-by-n' circuit between the clock generator and the device which provides the serial encoding/decoding. This is achieved by writing the value of 'n' into the hardware register SERPER, which is at address Hex DFF032 (dec 14676018). The value that we require for successful MIDI communication is 113.

To open the MIDI port for communication, the following basic lines are required at the start of your program:

```
OPEN "COM1:300,n,8,1" AS #1
   POKEW &H00DFF032,113
```

Reading and writing to the MIDI ports is then simply a case of using the AmigaBASIC INPUT$ and PRINT# commands. For example, to read a data byte from the MIDI port (MIDI data must always be read a byte at a time), you would use the command `MIDIEvent = INPUT$(1,#1)` where MIDIEvent holds the return value and #1 is the file handle that was declared when the serial port was first opened (as above). To write a byte back, just use the command `PRINT#1,MIDIEvent`. Simple eh!

AMOS

When the word came that the *Shoot-'Em-Up Construction Kit* (*SEUCK* to close friends) was to appear on the Amiga, much jubilation was heard about the 16 bit community. Unfortunately, the final product failed to live up to many people's expectations. Later, Mandarin released *STOS*, a tool to allow ST owners to construct their own games in a friendly environment, and by that I don't mean down the pub, I mean a simple BASIC style language. Now that the Amiga version has been announced, similar jubilation to that relating to *SEUCK* can be heard, but are Amiga owners set for another disappointment? Well I think I can safely say that they most certainly are NOT! I've seen some early demos produced on *AMOS* and read the provisional documentation, and I have to say I'm very impressed - and that's putting it mildly, since my literal reaction is unprintable! Just to whet your appetite, here are a few of the wonders that *AMOS* contains: full hardware and software sprite programming with up to 448 sprites on screen, ability to include HAM and *Deluxe Paint 3* screens, full hardware and software scrolling, access to the blitter and copper list, inclusion of external music scores (from Aegis *Sonix*, for example), full use of mouse within programs including use of the third button (as used on the Boing! mouse) and an extremely simple BASIC language with a superb text editor.

Maybe I'm being over enthusiastic, but I reckon that *AMOS* could be the most successful games-related product ever.

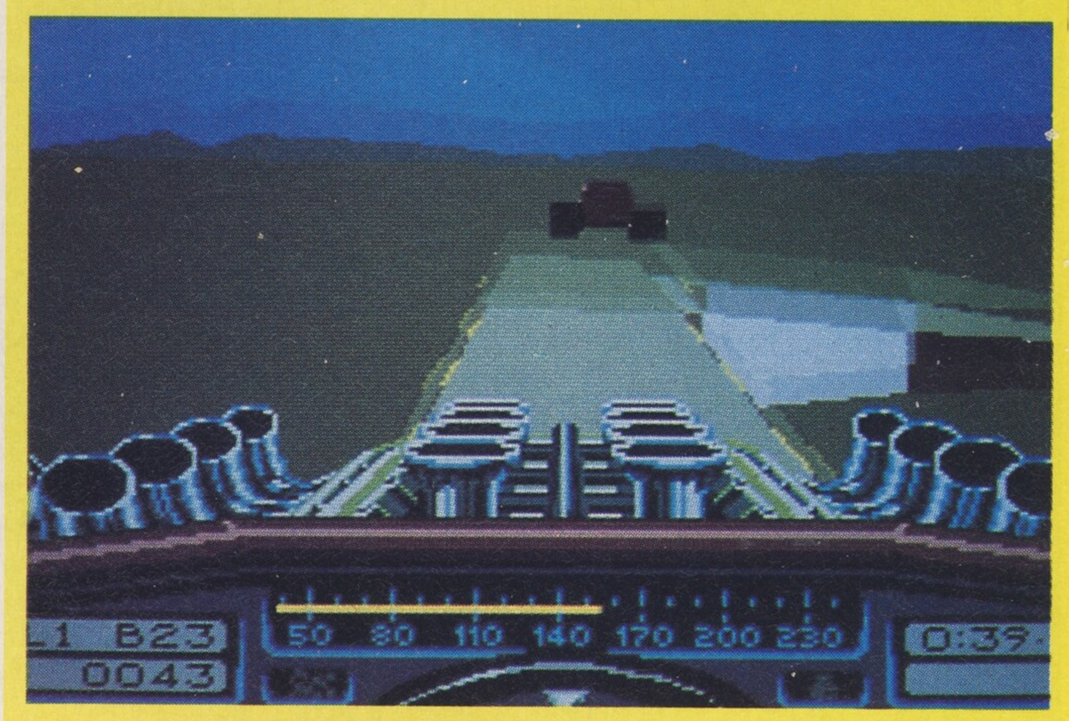
★ Blitzer...STUNT CAR RACER

Racing games appear to be the "in thing" at the moment, with several companies releasing their bid in the "belt around the tracks at silly speeds" stakes. Microprose's foray into this market is in the form of *Stunt Car Racer*.

Rather than the usual format of racing around trying to pass as many cars as possible before the time limit runs out, however, *Stunt Car Racer* pits you in a head to head struggle on a raised circuit. You must beat the other car in a three lap race and try to avoid sending your car over the edge of the track, as any harsh handling or collision results in your car being damaged. Too much damage and the car becomes a wreck, and you can't win a race with a wrecked car, can you?

The feeling of racing you get from playing *Stunt Car Racer* is incredible. The 3D graphics are some of the fastest and smoothest yet seen on an Amiga, and the graphics create a superbly realistic environment. So much so that you actually feel your stomach churn as you fly over the top of a hump! Another interesting feature of the game is the option of being able to link two machines together so that two humans can play each other - and doesn't that make for fierce competition? Not 'alf!

***Stunt Car Racer* has to be one of the most playable racing games ever to be released on the Amiga. So after being not too complementary about the C64 version, I can safely say that the 16 bit incarnation is a must.**



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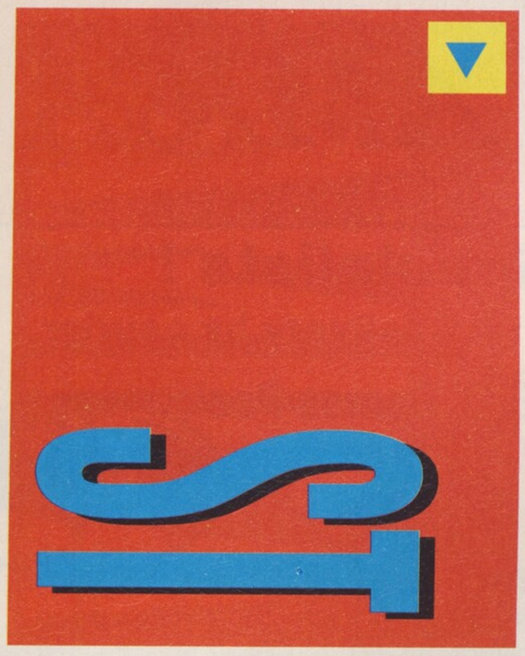


ATARI HOPE FOR ROYALTIES

In its usual "Hang on a bit... Erm, not just yet..." manner, Atari has finally got around to ARC, its brave new games world. Six new titles have been launched, and an estimated £50,000 spent. Don't ask what happened to the brave talk of £14.99, though, because the price of most games have drifted up to the most familiar £20 plus mark.

Atari says it will be aiming to release some 30 or 35 titles annually, once the project is in full swing. In the meantime another ten titles are due to appear in February.

Still on the games front, eight-bit budget baron CodeMasters' move into the big brave world of the ST begins, with titles covering a wide range, such as *Advanced Rugby Simulator* and, er, *Advanced Ski Simulator*. It seems that if you're selling to Speccy, Commodore 64 and CPC owners, all you need to do is bolt on those two magic words "Advanced" and "Simulator," and bingo!

I doubt that we ST owners are quite so gullible, and if a game stinks – as *Advanced Rugby Simulator* (or ARS for short) did on eight–bit – then we tend to be underwhelmed. Still, if the CPC version of *Treasure Island Dizzy* is anything to go by, the ST version could be rather more fun than you might expect, especially for the younger gamester. Oh damn, there goes what little remained of my cool rating!

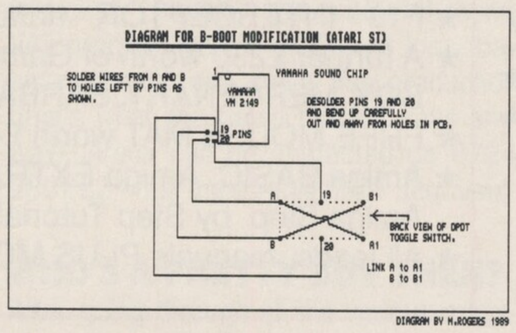
WHOOPS APOCALYPSE!

Hold it! Hang on! Stop! If you have a soldering iron in one hand and you're about to attempt the B-boot hardware modification I mentioned in this very column in issue 52, don't.

I've had a letter from that nice Mark Rogers, pointing out that the diagram as printed in this particularly noble organ was incorrect. He should know, because he followed it and it don't work.

Highly intelligent chap that he is, he simply added two extra wires (see enclosed diagram). "These two extra wires must be added as shown to the two pcb tracks," he wrote, "otherwise the circuit is not completed – simply bending the two sound chip pins up from the board leaves the tracks totally isolated if two wires are not taken back to the holes left by the pins."

Mark has, indeed, offered to help if you need more assistance. Give him a bell on 01– 868 6028.



• Booting from drive B, take two: all credit to Pinner's finest, Mark Rogers

A BLATANT PLUG

Issue five of *ST Format* is out everywhere this very day (Thursday 16th): don't miss it!

On the special format Cover Disk there's a fully playable demo of Ocean's gangsters simulation *Untouchables*, as well as heaps of other utilities, accessories, tutorial files and programs. "It's the 800K," says Disk Editor and part-time poet Dickie Monteiro, "that makes the *ST Format* Cover Disk what it is today!" Ouch.

Inside there's a bloomin' great 164 pages packed with games reviews, news, previews and ST info. It really is a jolly good bargain.

That was a Blatant Plug.

WARNING TO PIRATES!

If you keep a keen eye out on adverts in the computer press – this particularly noble organ included – you should be seeing a series of striking adverts warning against piracy. "Warning!" it proclaims. "If you are involved in software piracy then you are breaking the law." And it gives the 'phone number of The Federation Against Software Theft (01–240 6756) for you to pass on any information on piracy.

The advertisement campaign is organised by ELSPA, the grandly titled European Leisure Software Publishers Association, and space is being offered free by the magazines in which the adverts appear.

It does indeed seem that the days when you could feel quite safe passing around games to your mates are now over. That's just as well, for it's one of the reasons why games for the ST are priced so high, and why they're usually hedged around with copy protection and all the rest of it.

• Come in pirates, your time is up!

Yes, I know: some smart-arse is going to write in and point out that piracy only happens because prices are so high, and if only they were cheaper it wouldn't happen, etc. Same old story, and same usual nonsense. In fact piracy takes place because people think they can get away with it, and because they don't realize the harm they're doing. ST owners who wouldn't for a moment dream of nicking a packet of Smarties from the local newsagent quite happily pass on cracked versions of new games to their friends. But the fact is, software piracy is theft, and it follows that if you do it you are a thief.

PLAYING TIP

GEMINI WING

Here are the passwords to Virgin/Mastertronic's shoot-'em-up:

1. THESTART
2. EYEPAINT
3. WHATWALL
4. GOODNITE
5. SKULLDOG
6. BIGMOUTH
7. CREEPISH

from Andrew Speed, Bideford, Devon.

HAPPY BIRTHDAY TO THEM!

Good to see OASIS, the Organisation Against Sexism in Software founded by Sandra Vogel, is still going strong as it celebrates its first year, and indeed making confident noises about expanding.

Issue 006 (optimistic numbering, that!) contains an account by Glyn Kendall on converting *Alien Syndrome* from Sega coin-op to ST, a list of contact groups and publications on women and computing, and a perceptive article on "Sexism and the Editor" on influencing magazines against sexist assumptions and stereotyping. (Don't know what you think, but I reckon *NCE* doesn't do too badly in that respect, though of course there's always room for improvement.)

Join the cause – and subscribe to the six-issues-a-year mag – by writing to: Sandra Vogel, OASIS, 3 Alden Court, Stanley Rd, Wimbledon, London SW19 8RD, or by phoning 01 542 7261.

CHRISTMAS? BAH HUMBUG!

Don't miss this week's Computer Shopper Show at Ally Pally, folks. It's on from Friday (24th) to Sunday, and despite being billed as "the best Christmas shop you'll ever enter" (dreadful thought) it should still be worth attending. Make sure you pick up a map of the place when you go in.

It should be an excellent place to pick up bargains, both soft and hard. Among the dozens of ST-servicing exhibitors eagerly awaiting your entrance will be the Bath Computer Shack, Computer Manuals, Computer Store, Database Software, Digita International, Direct Disc International, Evesham Micros, Kempston Data and Silica Shop.

See you there!

SHOW BUSINESS II

And while we're on the subject of shows, the 16 Bit Computer Show takes place on January 12, 13 and 14 at the Royal Horticultural Halls. It's claimed that more than 90 companies will be attending, and some 20,000 visitors are expected. (Doesn't mean 20,000 will turn up, but you've got to aim high.)

Advance tickets at £2 can be reserved on 0726 68020.

STEVE CAREY

STunner...CYBERBALL

Imagine American Football played by 20 foot high robots weighing around 2000 pounds throwing a 350 pound steel ball. If you can manage it then you're partway towards the latest Domark arcade conversion *Cyberball*.

Set in the early 21st Century - a time that has seen a leap forward in robotic technology, the game puts you in control of such teams as the Los Angeles Assassins or the New York Enforcers. You can select from over 100 offensive and defensive plays to build your own tactical game, but be careful, picking the wrong tactics could be disasterous. You must also take care of your team's chances by doing things like replacing players that have almost been demolished - you can tell which ones they are by the smoke!

***Cyberball* should be released in January to coincide with the Superbowl, and will cost £19.99.**

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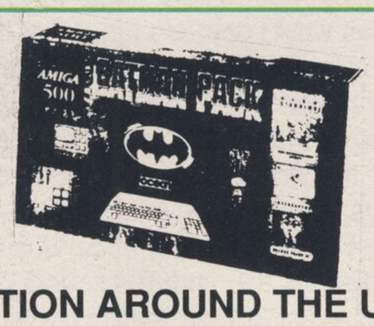

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SPECTRUM

CRYING IN THE RAIN

It's disappointing, tragic, heart breaking (generally not a very good thing) to see many companies exclude the spectrum from their future plans and instead concentrate on the ST and Amiga. Naturally, the Spectrum still figures heavily in the coin op/film/TV licences as you'd expect with a computer that still sells more than any other. The flow of innovative and original titles, however, has dwindled to a measly dribble. One particularly heart rending example of this is Hewson's latest line up of doubtlessly brilliant original games. I hope someone will correct me if i'm wrong, but not one appears to be available for the Speccy. I suppose the argument will be that these games are to multi–faceted, memory intensive and blooming complicated for our machine; that's what everyone said about *Carrier Command, Starglider II*, etc,etc and just how playable were the finished Speccy versions? Answer: Very playable indeed. In the end though, it's probably down to sales and how much more dosh can be gained from the nice expensive 16 bit versions, but I still reckon ignoring the Spectrum is a mistake, particularly with the advertising blitz planned by Amstrad for Christmas. Don't say I didnt warn you.

HEAR YE, HEAR YE

Does anyone know solutions to the following questions which come to me by way of an interested reader?

1) What printers for under £100 are spectrum compatible? Which ones will do screen dumps of graphics without distortion? which ones are good letter quality? How do printers connect to the spectrum?
2) How does the Spectrum ULA work and can it be replaced by LS TTL? How does the spectrum video display operate-Hardware and software?
3) Where can one buy hardware cheaply, not from component intermediates but from manufacturers and not spares but components such as printer mechanisms and the Spectrum ULA or MGT ASIC?
4) Is there a comprehensive list anywhere of software that has been written for spectrum? (serious as well as games)
5) What would every Spectrum owner agree as being the ideal upgrade for the Spectrum, so that it could be a good computer for business/scientific? (Disk drive/tape / I/O communications etc)

ANY SOLUTIONS?

If you're in possesion of answers to any of those let me know as soon as possible at the address below, for the good of spectrum owners everywhere.

A POKE'S WORTH

For his fine Pokes (boxed below) David will shortly be receiving a free piece of speccy software for his no doubt considerable troubles.

David has also got a mildly weird request to put to everyone. He's after ZX81 hardware of any description. "Joystick interfaces, Speech interfaces, I/O ports and especially the QS sound board would all be much appreciated and I will pay well for working hardware."

If you've got any ZX81 bits and pieces you're not using either as intended or otherwise, contact David at the following address: 47 Banks Road, Golcar, Huddersfield, West Yorkshire HD7 4RE.

WINDING IT UP

As usual I'm extremely keen to hear from anyone out there with information, tips or comments related to the spectrum. Ask the postman to heave it to Robin Alway, Spex, *New Computer Express*, 4 Queen Street BATH. BA1 1EJ.

ROBIN ALWAY

QUICK POKES

David Smith of West Yorkshire has already got one star appearance in spex under his belt and he's now taken over another huge chunk of the column with some of his pokes for a few slightly rusty but still very worthy Hewson classics. Most of the games that he's hacked are included on Hewson's Christmas compilation, so any accusation of them being past their poke by date are completely invalid.

```
10 REM Firelord Poke
20 PAPER 0: INK 0: BORDER 0: CLEAR 65535
30 FOR n=65368 TO 1e9: READ a
40 IF a<256 THEN POKE n,a :NEXT N
50 RANDOMIZE USR 65368
60 DATA 62, 255, 55, 221, 33,  39, 244, 17, 125, 2
70 DATA 205, 86, 5, 48, 243, 62, 255, 55, 221, 33, 0, 64
80 DATA 17, 87, 191, 205, 86, 5,175
90 DATA 50, 125, 155: REM Infinite trading
100 DATA 50, 205, 124 :REM lives
110 DATA 195, 79, 94, 999 :REM data end

5 REM Pyracurse poke
10 CLEAR 24799: LOAD "" CODE 23296
20 POKE 23325,201: RANDOMIZE USR 23299
30 POKE 33450,201: RANDOMIZE USR 29600

5 REM Nebuluos poke
10 FOR n+23296 TO 23302: READ a: POKE n,a:NEXT n
20 POKE 65102, 103: RANDOMIZE USR 64512
25 DATA 175, 50, 153, 128, 195, 0, 128
```

PCW

STAR TURN

I liked the astronomy feature in *Express* last week, but Stuart Anderton didn't mention the astronomy package for the PCW, *Star Track*.

It shows on your PCW screen the stars you see in the night sky, and can do this for any night of the year. It'll identify constellations or stars for you and is a great educational-cum-fun package.

The white screen of the 9512 is fine for white stars like Vega and black holes like Cygnus X-1 but not so good for Betelgeuse (very red) or its opposite number in Orion, Rigel (bluish). Similarly, the 8000's green screen can only cope accurately with one half of the orange-green pair g–Andromedae.

It costs just £14.95 from Discovery Software of 291 Cricklewood Lane, Childs Hill, London NW2.

STAR TURN 2

Astronomy and astrology are, of course, very different. Astronomy is a valid science; astrology is a load of old tosh, whereby the positions of the planets and stars (or rather, the apparent position of the stars, as the light has been travelling several million years to get here) control your destiny.

Still, there are certain astrology programs for the PCW which produce stunningly detailed prognoses based on your date of birth and the current date.

The company is Astrocalc and if you're into this utterly ridiculous nonsense, it has to be said that the programs are well put together and excellent value.

The beginner pack with booklet costs £12.95 though there are more expensive (£100+) professional quality programs available too. A variety of I Ching and Graphology analysis programs are on offer as well. For details phone 0442 51809.

RANDOM TIP

The snag with BASIC's RND function to generate random numbers is that the resulting numbers are not truly random. Every time you run a BASIC program which uses RND in it, you'll find the same sequence coming up time and again.

So every time you need a really random number, type

```
RANDOMIZE PEEK(64504!)
```

in the program. After this, the RND will return a more decent random number. For example

```
X=RND
```

sets X up to contain a random number.

DISK USTING

Some people who sent off for the *8000 Plus Tips Collection* were dismayed to find that the disk with tips examples had only one side, with the other containing various Sinclair Spectrum games!

The problem occurred at the disk copy labs, so if your disk has gibberish on one side, don't blame Future Publishing, but return your disk for a free replacement, freepost, to: The Disk Copy Labs Mucked It Up Not Future Publishing, Old Barn, Somerton, Somerset TA11 7PY.

BASIL PIGG

MSX

GAMES GALORE

There is still no shortage of games software on the MSX, in fact is is difficult to keep up to date with all the new releases. *Barbarian* by Melbourne House is now available in the UK; strangely this game has been available in Spain for over four months. Still, better late than never is what I say: lets hope that it is as good as the other recent Melbourne house releases.

A couple of recent releases that I've given the once over are *Joe Blade* by Players, and *Titanic* on US Golds KIXX lablel. Both are budget titles, *Joe Blade* priced at £1.99, and *Titanic* is £2.99. I tried *Joe Blade* first, and found a game that is obviously a Spectrum clone – you know – no colour. Still if the game is good enough, this should not matter too much. The game itself reminds me of *Jack The Nipper*.

The object of the game is to control Joe Blade, and using your semi-automatic gun, rescue six world leaders who have been taken hostage. As it says on the insert, you also have to activate six booby trapped explosive devices, and then you have 20 minutes to find and rescue the hostages. You will also find that scattered around the playing area are objects for you to use.

I found this game intriguing, and well worth the £1.99 asking price. In fact I have seen far worse full priced games.

Anyway, *Joe Blade* is so good, I'll hold the *Titanic* review for a better day.

FLOPPY DRIVING

It's been ages since we have seen MSX floppy disk drives for sale in the UK, well over a year in fact, but now, it seems, there are still enough MSX 1 users in this country to warrant companies importing these devices. After trying for ages to find a supplier of drives for the MSX 1, I now have the names of two companies who have these 3.5–inch drives in stock.

Firstly, Abbeysoft of Spalding informs me that it has Philips 3.5–inch MSX disk drives and interface in stock at £199.95 including p&p and vat. These drives are well made Double sided drives, which are 720K formated, and I beleive that they can be used on MSX 1 and 2 computers. Knowing the way Philips Computers are built, these drives should last. Phone: 0775 711714.

Secondly, MPT Computers of Wycombe Gardens, London, has a supply of 3.5–inch disk drivess for the MSX and it also has a limited number of Spectravideo double sided, double density disk drives for the MSX 1 computer at the very reasonable price of £120.00, plus vat. These drives, I'm assured, are supplied with interface, and are fully guaranteed, so if you wish to know more, phone 01 458 3310.

SHORTY

I asked for some short listings for this column, and a Mr John Davis from London duly replied with this one:

```
10 Screen 1: Keyoff:Colour 10,
1,1
20 If RND (1)>.5 Then Print
CHR$(203);Else Print CHR(204);
30 GOTO 20
```

KEITH NEAL

8 BITS

machine specific columns

BBC

PROCESSING WORDS

As a professional user of word processing programs, word processing is the one genre I can in all honesty consider myself fully qualified to comment upon. Yet I don't use all the facilities of even a simple program like *Wordwise Plus* 99 percent of the time. What I do need is convenience: features such as on screen word count, spell-checker, intuitive search and replace and good file exchange facilities. What I don't need are obscure macros, a strange screen display or strange formatting commands. Yet I find that the two major BBC word-processors *View* and *Wordwise Plus* fall down in several areas. Generally, *Word–wise Plus* makes an ideal text editor but has no onscreen formatting to port text across machines.

WITH THE POWER

What then of *Wordpower* which has been heavily promoted as a shareware word processor of late? It's fast, has an 80 column display which reformats as you type and works on everything from a Model B to Master 128. It's configurable by the user, has several bolt–on modules, and, what's more, you can try it for virtually nothing. On the down side text space is limited, and only 40 column mode is possible for unexpanded Model B owners. The full program which includes a ROM, largely overcomes these problems obviously, but there is still no integrated spell checker, and file export is limited to saving and spooling text. The word count is displayed all the time, however, and tells you how much space you have left in words. I also liked the protection against hitting BREAK or CTRL–BREAK. My advice would be: if you own a plain Model B and *Wordwise*, then don't bother, otherwise it's well worth a look especially for *View* owners.

PLANTING ACORNS ABROAD

Don't be surprised if the Acorn specific mags soon carry one of those 'Acorn has sold XYZ machines to country ABC' type press releases. I was talking to a very military–sounding gentleman recently whose company handles import/export to African countries. Apparently the Nigerian government is considering putting Acorn machines into it's schools. Now while the Archimedes was mentioned by name, you can bet that quite a few Masters will be in there as well.

FATHER BBC

So you are not going to get stuck this year. No last minute shopping on the way to your nephew Edward's house. Get him a computer! Since you cannot, perhaps cannot, afford a new one, get a second-hander. Here's a couple of extra tips for those discriminating purchasers of used machines. The display may seem bad and fade from time to time, but don't despair, check the following items instead. The lead may have been pulled out so often the connections have worked loose. Likewise, the connectors on both computer and monitor might be suspect. Such things are easily fixed. The video ULA chip (the one with a big fin on it) may be wobbly try pressing firmly on it. The UHF modulator may be shot, but if you plan to use a mono, or RGB monitor, this is not important.

ANDREW BROWN

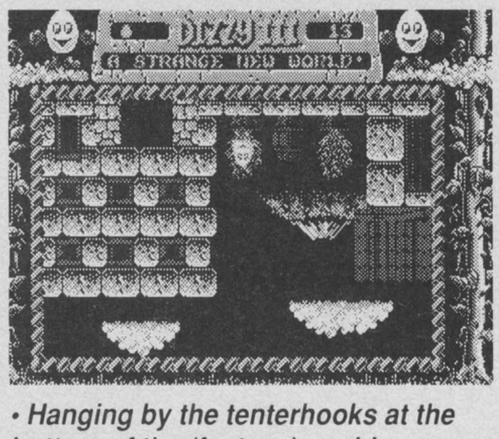
CPC

IN A SPIN

The Dizzy series has been one of Codemasters' greatest successes. Our egg-featured friend first saw the light of day a couple of years ago as a budget Spectrum port.

In the original *Dizzy* you controlled your rotund pal in a puzzle-solving arcade adventure that didn't exactly break new ground in gameplay but sold in billions (well, thousands anyway) due to its combination of cuteness and simple playability, together with an offbeat kind of humour. *Treasure Island Dizzy* was the even cuter etc successor.

Now comes *Dizzy 3 – Fantasy World Dizzy*. In it, you have to guide Dizzy through numerous screens full of puzzles, nasties and collectable items in a bid to save your girlfriend Daisy from the evil wizard. The latest Dizzy epic differs from predecessors in giving you three lives instead of one (you'll need them!) and characters such as Denzil the Dude and Dylan the Hippie, who you can have conversations with. If it sounds just too cute, you're in for a pleasant surprise. And at £2.99, you can't go far wrong, can you?



• Hanging by the tenterhooks at the bottom of the (fantasy) world

MID–FLOW

Hackit is the name of a new widget from Siren Software. Costing £34.99, it plugs into the back of your CPC and stops applications mid-flow and lets you examine all those nadgery bits of machine code. Look out for the definitive assessment, coming soon.

LOAN ARRANGERS?

Here's a heartfelt plea from young Simon Aling of Thornton Heath, Surrey:

"Why are computer prices so high? Do manufacturers think that we are loaded with money? By using the term 'we' I mean youngsters under the age of 16 or those too young to earn an income.

"The only way that people my age (13) have obtained computers is either by receiving them as presents or by saving up enough money for a deposit and then giving it to their parents to buy it on HP. But whatever the circumstances, pocket money being what it is, many youngsters can't afford to carry on buying games.

"So I propose this. Someone with the fincances to do it could start a small business so that youngsters like myself can hire games at reasonable prices.

"You can hire almost anything these days, so why not computer games?

It's not quite that simple. If the world were full of honest folk, then software hiring might be the ideal solution for people who can't afford games. The trouble is, as far as the manufacturers are concerned, lending out games would be as good as giving people the chance to copy them and avoid having to pay for them in the shops. Most games have some form of copy protection, but there's usually a way round it if you're determined enough and you know what you're doing.

And suppose you could hire games – how much do you think it would cost? It currently costs around £2 to hire a video, and that's only overnight! You'd want to be able to play a game for a lot longer than that.

As for games being expensive, I agree. At £10 for a full-price game, £15 for the disk version, they take quite a bit of saving up for. But then there are lots of good budget games about for only £2.99 – see this week's comments about *Fantasy World Dizzy* – and once you've paid your money they're yours for good.

LOOK – NO WIRES!

Well, almost. The Verran AC Datalink is a natty little device which lets you link up machines and/or peripherals via the mains, of all things.

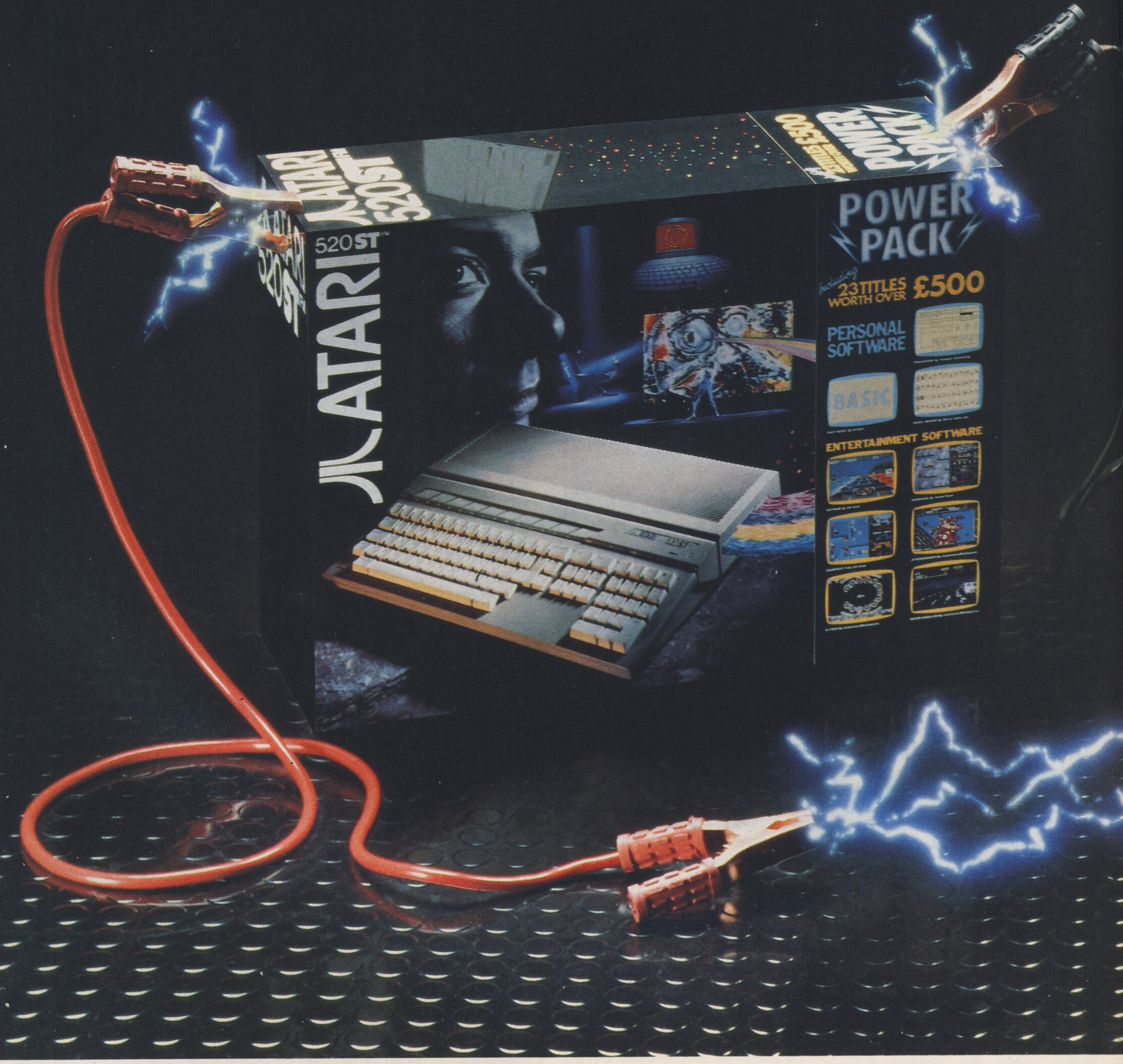
Described by the makers as a 'highly intelligent mains plug', the Datalink contains its own chips and software and sends your data through the mains in a stream of packets containing control information and data. Interference is ruled out by continuous condition and error-checking. Several link-ups can be arranged in one building, since the device can be set up for different 'addresses'. You can even set up security codes to prevent eavesdropping. The only problem is the price – £175. According to my calculations, you could get approximately 346.22m of serial cabling for that. Rich CPC owners can find out more on 01 353 2320.

ROD LAWTON

LICENCE TO CHEAT

Poker fiend Mike Wong wades in this week, with a tape poke to give Bond freaks anything from infinite energy to immortality, depending on the stage.

```
1 'LICENCE TO KILL
2 '
3 'TAPE VERSION
4 'lifted from MIKE WONGS
5 'disc cheat in AA 50
6 '(I'm not proud)
7 '
10 DATA 21,FA,AC,36,C3,23
20 DATA 36,20,23,36,BE,C3
30 DATA 00,AC,21,7F,41,36
40 DATA 8F,21,CC,41,36,B3
50 DATA 21,2C,42,36,F9,C3
60 DATA 05,40,C4,14,AC,3E
70 DATA A7,32,E5,E6,AF,32
80 DATA F4,E4,32,EE,E7,32
90 DATA F0,EB,32,7E,DD,32
100 DATA 02,DA,32,44,DF,32
110 DATA 7D,E4,FB,C9
120 y=0:MEMORY &3000
130 FOR x=&BE00 TO &BE3F
140 READ a$:a=VAL("&"+a$)
150 POKE x,a:y=y+a:NEXT
160 IF y<>&1EBC THEN 190
170 LOAD""
180 CALL &BE0E
190 PRINT"data error!"
```



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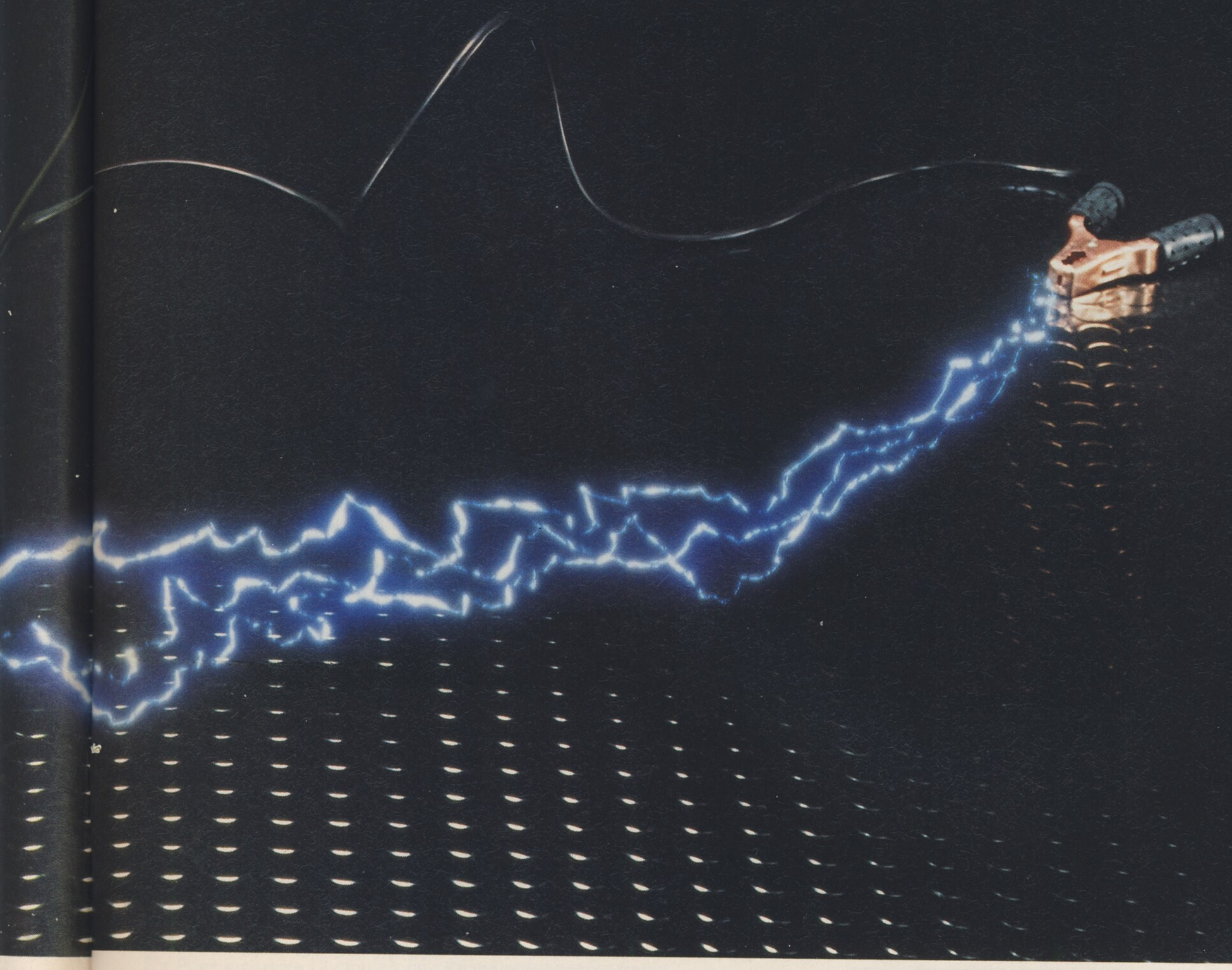

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8 BITS

QL

IT'S IN THE PUBLIC DOMAIN

I've just received from the PD library distributing the public domain Amiga QL emulator mentioned recently by Jason Holborn in his Amiga Blit column.

The emulator was written by Rainer Kowallik of West Berlin and comes on three disks: one AmigaDOS disk containing the emulator, and two QDOS disks. Rainer's motivation for performing this feat is interesting – he likes the QL and considered building himself a high–performance QL clone using a full 16 – bit 68000. After realising this would be something of a difficulty, Rainier decided to take the easy way out (!), and produce a software clone of the QL, based on the Amiga.

Rainer first disassembled the QL ROMs, and then reassembled the source code, using the Sinclair/GST Macro Assembler, modifying the I/O for the different Amiga hardware. He also modified the disk software. Screen–handling uses the Amiga blitter, for speed. All QL devices are supported (apart from Microdrives and Network, of course).

The emulator uses QJump's disk driver software, which is a bit naughty. I've spoken to Tony Tebby of QJump about this, and he didn't seem too concerned, probably because everyone using the emulator would already have the QJump software incorporated in their QL disk interface.

Similarly, I don't suppose Amstrad will be jumping up and down about the modified QL firmware, as any users will already have a QL.

While actually having a copy of the emulator for your own use is probably legal, (if you already have a QL with disks), distributing it might infringe someone's copyright.

GROWLING GRIZZLY

This is a new BBS for QL users, recently set up by Colin Adams. The number is 0772 28975 and you can talk to it with V21 (300/300), V22 (1200/1200), V23 (1200/75) and V22bis (2400/2400) modems.

The BBS is part of FIDONET, so you can communicate with other FIDONET users worldwide, if you wish. There is a message area, International QL Echo, that is accessed by BBSs in Holland, Sweden and Belgium. Why "Growling Grizzly"? This I couldn't tell you, because, honestly I haven't a clue!

MINIX

The aforementioned Colin Adams was responsible for the QL Minix implementation mentioned last week, according to Ralph Allen, who has set up a Minix marketing operation.

Minix is not in the public domain, as I indicated incorrecly, but is in fact owned by the conglomerate Prentice-Hall. Presumably Prentice–Hall purchased the rights from the original author, Andy Tanenbaum. But then, that is simply presumption. Minix is quite cheap, however, at £85 from Ralph Allen. So, all in all, Minix is well worth a look.

JOHN TOROFEX

ATARI

DISK DELIGHT

People complain about the shortage of software for the Atari eight–bit machines. But like the IBM PC, Atari ST etc., the XL/XE computers have a public domain software scene containing hundreds of good programs, all free and many rivaling commercial quality.

Page 6 Publishing (PO Box 54, Stafford ST16 1DR offers a library full of games, utilities, breath-taking demos (some copied from hackneyed ST demos seen in a thousand computer stores), and some very unusual little programs.

TAKE TO THE SKY

Have you launched a paper aeroplane into the wide blue yonder only to watch it plummet to the deep blue carpet? Take heart (and take disk #DS26) because contained therein is a program that prints out paper aeroplanes on Epson compatible printers, complete with logos. If you don't like the designs on offer you can create your own with the built-in drawing program.

Aficionados of the skies just for you there's disk #93, packed full of astronomy-orientated programs such as *Moon Tracker* a utility which plots the position of the Sun and Moon at any time of day. Next comes *Stargaze*, and astronomy quiz, *Planetrom*, showing the positions of various constellations and many more. Write to Page 6 Publishing for details.

EDMUND BLAKE.

C64

WANT TO KNOW A SECRET?

There seems to be some confusion over Official Secrets, that fine body of people whose aim in life is to provide Commodore 64 owners (and others) with remarkably cheap software and hardware.

Let's clear up the chaos. For the sum of £5 you can join Special Reserve, enabling you to buy the cheap goodies. Pay a total sum of £22 and as well as the opportunity to save pounds you will receive the bi-monthly magazine *Confidential*, all about "thought-provoking games". For your extra money you also get the adventure game *Myth* from Magnetic Scrolls, and this excellent game is only available here. You also get a copy of *Gnome Ranger* (or an alternative if you already own it), a helpline service, and a chance to enter competitions. All this lot consititutes Official Secrets.

So, if you want to buy *Zork 1* for £4.49, or *Scapeghost* for £7.99, then write to either Special Reserve or Official Secrets at PO Box 847, Harlow, Essex CM21 9PH. I've just spotted *3D Pool* on disk for the C64 at £8.49. Where's that cheque book.

TANKS FOR THE MEMORY

Hopefully *Omega* will not be the last game from Origin, distributed over here by Microprose. It's a tank simulator, and after reading the near-300 page Engineer's Handbook and wondering which of the two disks to put in first, you find that you have to design your tank. You also have to program the tank into battle. If you can't program then don't panic, Origin comes to your aid. Indeed, if you want to learn to program then this seems a great way of going about it. After doing all this you can then send your trusty tank into battle, and whether your programming leaves it artificially intelligent or artificially stupid, it's all still tremendous fun. Look our for this one when it hits your shops.

PETE GERRARD

COLOURFUL LANGUAGE

The colourful Basic programming language, that is. Following last week's one liner, if you remove the final GOTO 10 statement from that line, add a line 20 and 30 like:

```
20 A$="(all the colours)" (where(all the colours) would be CTRL and 1, CTRL and 2, up
to CTRL and 8, followed by CBM Logo key and 1, CBM Logo key and 2, up to 8 again)
30 Print Mid$ (A$, INT(RND(1)*16+1), 1);"(RVS,SP,OFF,CL)";:GOTO 10
```

and then our little program becomes colourful. No help in *The Real Ghostbusters* I know, but if you press the space bar after dying and leave the tape running instead of rewinding it, the next level will load in and the C64 will treat it as if it were level 1.

ARCHIMEDES

STRANGE DAYS

Interesting main story in *Express* the other week, huh? The thought of an ARM 3-based A3000 is pretty heady stuff, but spare a thought about the likely market for such a machine. At £1500, it isn't going to sell to the speed freak who would like to boast the fastest micro on the block (unless the block's in Docklands). Its aimed at the specialist university research user who needs computing muscle for 'really difficult sums'.

This being the case, what's the point of putting it in an A3000 case, with its limited internal expansion and need for external hard drive? Much better to bring out another model in the 400 series, or a new 300 series machine in the original three-box configuration.

ANOTHER LOOK

While we're second–guessing Acorn, the games machine would seem to be a clear winner, if it could be brought out at the right price. The Archie chip-set is pretty much the computer. If you look at the circuit board of the A3000 you'll see there are very few extraneous chips on the board. Couple the chips up to a Meg of memory, add an RGB socket (or a modulator at a pinch) and you have the basis of the ideal games machine. You could probably get away without RiscOS, too, using a simpler, single-tasking environment (not Arthur, though, please). The prospect is exciting, but whether Acorn will bite the bullet is another question. Amstrad could do it!

THANKS FOR THE MEMORY

I received my upgraded PC Emulator disk from Acorn the other day (I wrote about it a few weeks back) and looked forward to getting the promised 520K or so for MS-DOS. The instructions in the manual file said to reduce Screensize to 10K, Fontsize, Spritesize and RAMsize to 0K and to press [Ctrl][RESET] to copy the settings to non-volatile RAM.

What it neglects to say is that the Desktop takes 80K for its graphics display, no matter the setting of the screensize, so going into MS-DOS from the Desktop will still only give you about 470K. What you also need to do is run the !Configure program from the Applications Disk 1 and set the system to autoboot. Then when you start with a copy of the PC Emulator disk in the boot drive you can go straight into MS-DOS with 540672 bytes total memory (on a 1Mbyte machine).

BY THE WAY

Nice though it is to see the Archie mentioned in TechTips, and delirious though Uncle TechTips no doubt was to receive half a page of tips, how about you sending some to your favourite vegetable? I'd be happy to receive feedback on items in this column, or to pass on any useful hints to others.

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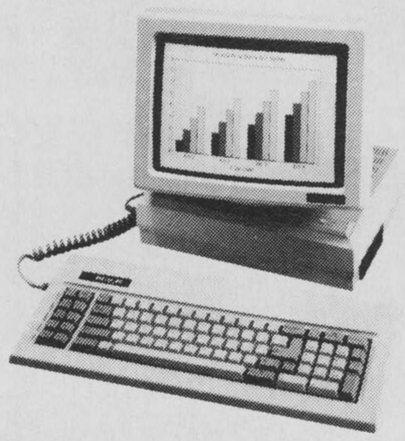

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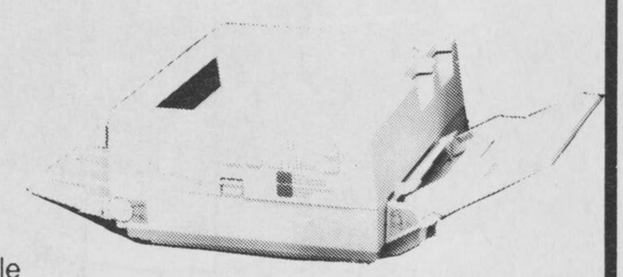

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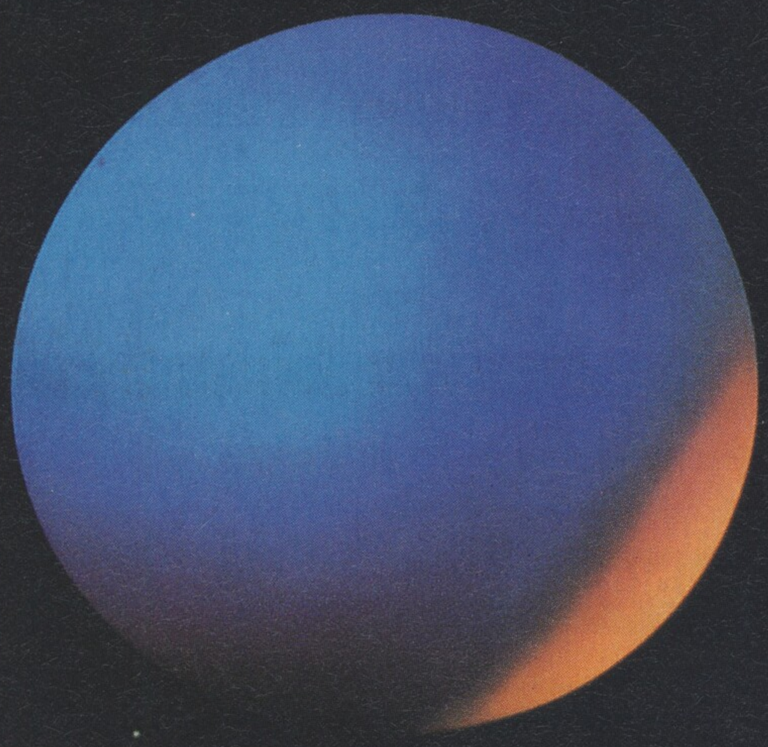
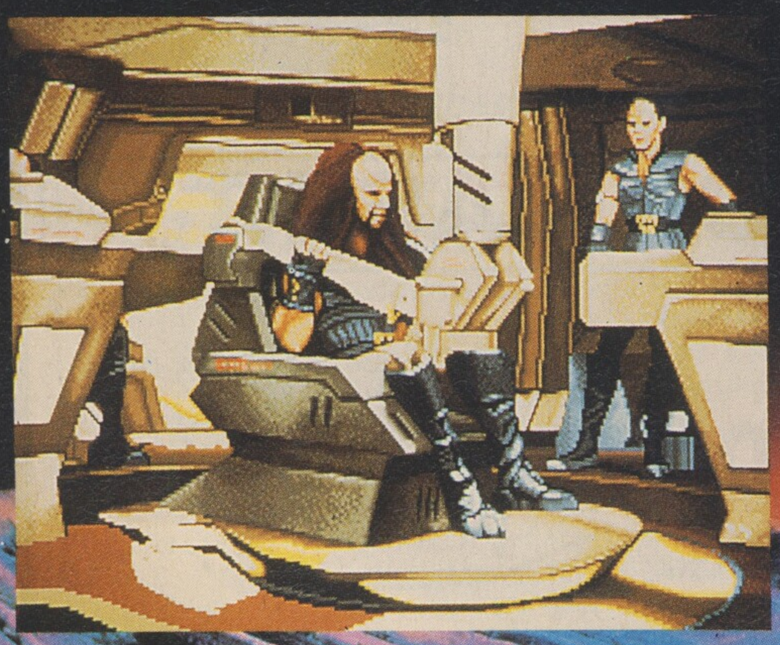
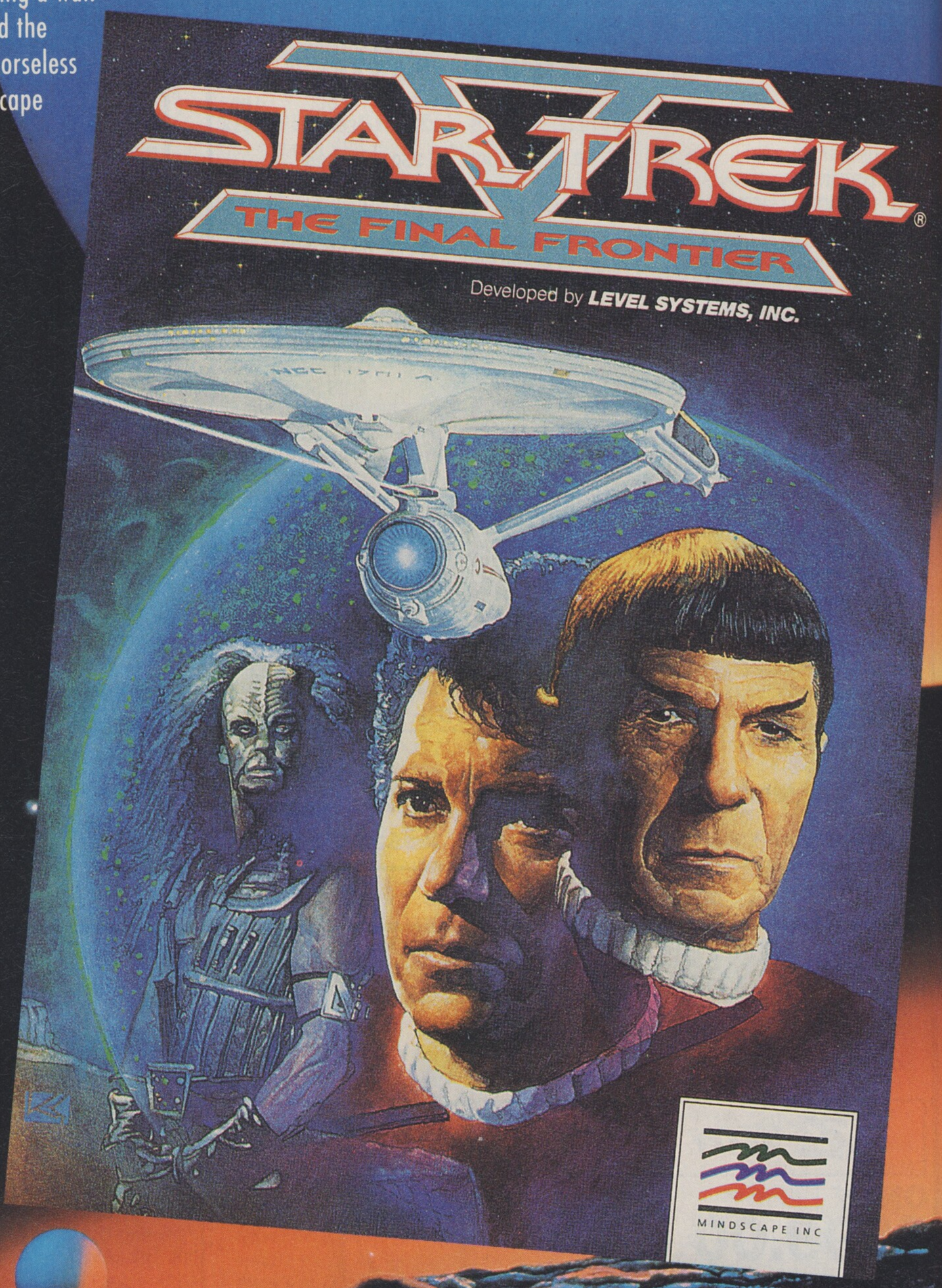


Actual IBM screen





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BEST SHOPPING EXPRESS

- Bargains
- Advice
- Prices
- Offers
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The *weekly* computer market place for people *serious* about buying

● THIS WEEK'S BUYERS' GUIDE

50 PC ESSENTIALS

The best buys revealed! ● Word processors ● Spreadsheets ● Accounts ● Databases ● DTP ● Programming ● Utilities

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- ✯ MS-DOS vers. 4.01 & GW-Basic
- ✯ Microsoft Windows
- ✯ Full Set of Manuals & Documentation

Rated 5 stars by N.C.E. Issue 43

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40Mb 30Ms Complete System MONO £599
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● The vouchers are not limited to specific items - you can save on *any* purchase from one of the participating advertisers.

● Most of our advertisers are taking part in this scheme – just look for this sign.

● Remember. By using this scheme you will almost *always* be able to buy goods cheaper from New Computer Express than anywhere else.

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1.Express vouchers can be used to obtain discounts on purchases of goods advertised in this issue of *New Computer Express*, **provided** that they are bought directly from an advertiser taking part in the scheme. The vouchers are valid only for those advertisements which say *"We accept Express vouchers"*.
2. Each voucher entitles you to a discount at the voucher's face value, **provided** that your overall order level is **higher** than the figure indicated on the back of the voucher.
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4. The order including the voucher must be received by the advertiser before the closing date printed on the voucher.
5. You must fill in the details on the voucher.

THE SHOPPING EXPRESS GUIDE TO PC ESSENTIALS

The PC has an enormous range of software available for it, but the choice can be bewildering. Read on to disscover the Shopping Express guide to 50 indispensible programs

There's probably more software for the PC than for all other machines put together, so a comprehensive list is clearly impossible. Choosing 'the best' fifty programs is impossible too – it depends on what you want your PC to do. But here's the *Express* list of the 50 programs we think should be at the top of your shopping list. Word processors, home accounts, spreadsheets, programming utilities... the list goes on and on. We've cut down our categories to include software that you can't afford to be without, at home or at work; the essential PC software.

We give what we consider to be the all-round best program or programs in each section, together with a brief description of each, and a few highlights and drawbacks. There's also the availability details, though as ever, check the mail order ads in Shopping Express first. You're sure to find some excellent discounts available.

WORD PROCESSORS

● PROTEXT V4

£100 • Arnor • 0733 68909

For sheer text and file handling Protext stands out. It's fast, flexible and full of features; good spell checker and mail merge facilities so powerful you can write program-like text and file handling routines. For writers and journos this is a must.

▲ Fast
▲ Spell checker
▲ Powerful mail merger
▲ Powerful macros
▲ Loads of extras – calculator, word counter etc
▲ Two file editing

▼ No real graphics capability
▼ Not good at handling complex layouts

VALUE FOR MONEY ★★★★★

● TASWORD

£50 • Tasman Software • 0532 438301

Superb value and fast. A few odd limitations but an excellent basic word processor. TasSpell, the spell checker, also available, along with TasRes, the memory resident version of the processor.

▲ Memory resident and fast
▲ Easy to customise
▲ DOS shell macros
▲ Word count, notepad features etc

▼ Clumsy text insertion
▼ Some limitations – find and replace won't accept spaces, blocks must be whole lines etc

VALUE FOR MONEY ★★★★★

● CELEBRITY

£80 • Software Paradise • 0222 887521

A well designed word processor with a lot of extras and plenty of appeal for the first time user. It doesn't show the compromises usual with beginner's packages.

▲ Good clear command structure
▲ Calculator, calendar, DOS manager etc
▲ Thesaurus and spell checker
▲ Up to four text windows

▼ Thesaurus US and a bit slow
▼ Window dimensions fixed

VALUE FOR MONEY ★★★★

● MULTIWRITER 2

£115 • NewStar Software • 0245 265017

A very powerful package that includes many features usually found only on really expensive word processors. WordStar dot commands can be included directly in a document so this may be ideal for WordStar diehards. Lots of extras – author's utilities and a filing program, for example.

▲ WordStar compatible
▲ Good menu and context sensitive help
▲ Extras: contents and index generator etc
▲ Filer utility

▼ Filer awkward to use

VALUE FOR MONEY ★★★★

● BORLAND SPRINT

£199.95 • Borland • 0734 320022

A hugely powerful word processor – certainly worth looking at if you need the complete works. Breathtakingly fast with an autosave feature that means even if the power goes your document has been saved exactly as it was at that moment. Comes with front ends that make it look like WordStar, WordPerfect, MultiMate or Microsoft Word if you're used to those packages. A bit complicated to use though and modelled on C, which doesn't help.

▲ User interfaces for WordStar etc
▲ Thesaurus and check-as-you-type spell checker
▲ Cross-referencing
▲ Very powerful indexing facilities
▲ Laser and PostScript support

▼ Very complex to use – only get it if you really need all the power
▼ Still a few little bugettes

VALUE FOR MONEY ★★★★★

● MICROSOFT WORD

£395 • Microsoft • 0734 500741

Another of the heavyweights. Packed with every feature you can imagine, but you're paying for it. Easy and intuitive to use for such a high-powered package – ideas outliners, contents/ indexing and footnotes, very good graphics facilities – and of course it runs under windows and OS/2.

▲ All the heavyweight features:thesaurus, spell checker, author utilities
▲ Ideas outliner
▲ Good graphics import facilities
▲ Runs with windows and OS/2
▲ Easy to use

▼ Very pricey
▼ Need a powerful machine – slow unless you have a 286 or 386

● WORD PERFECT

£250 • Sentinel • 0932 231164

Supposedly the biggest selling word processor on the PCs. A huge program with everything you could ever need: thesaurus, spell checker, two column text, footnote and index generation, automatic date insertion, end notes, mathematical symbols etc etc etc. Frankly though a disappointment for the huge price; only any use if you're already committed to the program because of training – or if you can get it on expenses.

▲ Everything you could ever need in a word processor
▲ Exemplary manual
▲ Available on minis, mainframes as well as micros

▼ Vastly expensive
▼ Some very complex keystrokes for functions – must be learned by rote

VALUE FOR MONEY ★★★

● CHIWRITER

£92 • Shareware Marketing • 0297 24088

The word processor for scientists. Originally a shareware product, this word processor lets you design and use predesigned fonts for scientific use. Can cope with any mathematical symbols – even the most complex integrals for example. The most impressive WYSIWYG you'll ever see! Might be worth hanging on a couple of months for the PC version of LocoScript though, which will no doubt outperform Chiwriter for less money.

▲ Handles any maths – integrals, complex set theory symbols etc
▲ Does foreign characters too
▲ Footnotes and font designer

▼ Limited as a word processor: no mail merge, word count only after spell check
▼ Only one document at once
▼ Hidden extra costs for hi-res or screen

VALUE FOR MONEY ★★★

● TOPCOPY PLUS

£109 • Innova Software • 0453 835379

Big brother of Topcopy – a very powerful and well-featured word processor. Verging on the 'big league'. Very fast – memory resident – and keeps everything reformatted as you go. Multi document

DATAPLEX

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Access

VISA

AMIGA HARDWARE

Amiga 500 Complete £279
Amiga 500 + TV modulator £289
Amiga 500 + Batman Pack & 10 Star Pack , Photon Paint £345.00

NEW BATMAN PACK £317

New from Amiga
Includes: TV modulator, 3.5" Disk Drive with Amiga DOS Kickstart, Workbench and the very first software also includes Batman The Movie game, F18 Inceptor, Paint 2, New Zealand Story, + Free mouse mat.

AMIGA ACCESSORIES

Amiga A501 RAM pack + Clock (original)	£110
Amiga joystick	£8
TV Modulator	£15
Phillips CM8833 colour monitor	£199
Phillips BM7502 12" green monitor	£79
Phillips BM7522 12" amber monitor	£89
Amiga To Philips cable	£8

AMIGA DRIVE

1 Meg 3.5" external	£68
1 Meg 3.5" internal	£63
1 Meg 5.25" external	£99

ATARI COMPUTERS

520 STFM Explorer Pack	£234
520 STFM Power Pack	£309
1040 STFM Professional Pack	£379
SM124 mono monitor	£99
CS1224 colour monitor	£229

ATARI DRIVES

1 Meg 3.5 external	£68
1 Meg 5.25 external	£99
1 Meg 3.5 internal	£63

STAR PRINTERS

Star LC10 mono	£135
Star LC10 colour	£168
Star 2410	£225
Star LC15 9 Pin 136 column	£264
Star LC2415 24 Pin	£328

EPSON

Epson LX400	£139
Epson LQ550	£255

Many More Epsom In Stock. Please call for prices.

PANASONIC

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Panasonic 1081	£125
KXP 1124	£239
KXP 1180	£144

CITIZEN PRINTERS

Citizen 120D	£115
Citizen 180E	£127
Swift 24	£255
Colour upgrade for Swift	£42

MANNESMAN TALLY

Mannesman MT 81 Dot Matrix	£110
Mannesman Sheetfeeder	£62
Mannesman Serial Interface	£49

REPAIRS FOR AMIGA AND ATARI

handling together with the speed of operation makes it ideal for people who shunt text around a lot. good spell check and mail merge too.

▲ Memory resident
▲ Can import text from defined areas of underlying screens
▲ Auto reformats but still fast
▲ Three files on screen at once, handles up to six documents
▲ Spell checker and mail merge
▲ Very fast

▼ One or two useful commands missed (eg. swop letters)
▼ No auto backup of files

VALUE FOR MONEY ★★★★

● GALAXY

PD (ie. free) • Advantage/ PDSL • 0242 224340/ 0892 663298
One of many public domain word processors that resembles WordStar. Doesn't compete with ones you pay a hundred quid for, but for the price of a disk you get a usable program ideal for occasional use.

▲ Menus
▲ Spell checker
▲ For the price of a disk!

▼ Restricted power – best for occasional user

SPREADSHEETS

Probably one of the primary uses for PCs, the spreadsheet is the staple of the small business user and some of the best around are available for the PC.

●VP PLANNER PLUS

£172 • Paperback Software • 0245 265017
Fully featured, Lotus 123 compatible spreadsheet generally held to be the ultimate in PC spreadsheet programs. There's support for a mouse as well as multi-dimensional financial modelling.

▲ Comprehensive
▲ Complex modelling can be achieved
▲ Reasonably priced (there's a cut-down £115 version too)

▼ Difficult to learn
▼ Hard drive and printer required

● LUCID 3-D

£91 • PCSG Inc./Software Paradise • 0222 887521
Cheap spreadsheet from PCSG lacking graphics but with the ability to perform most of the necessary functions. There's no 'minimum hardware' requirement and it's cheap. Also features 3-Dimensional
linking of cells from different spreadsheets.

▲ Cheap
▲ Linking of seperate spreadsheets
▲ No minimum hardware requirement

▼ No graphics

● THE TWIN

£67 • Mosaic Software • 0604 830496
Cheap 'n' cheerful spreadsheet that is the younger sibling of the outrageously named Legend: Twin Level III. The Twin is an almost exact copy of Lotus 123 at a fraction of the cost of that eponymous program. Well worth 67 quid.

▲ Cheap
▲ All of the features of Lotus 123
▲ Powerful graphics

● LEGEND: TWIN LEVEL III

£207 • Mosaic Software • 0604 830496
The spreadsheet that sounds like an adventure game. Burrow deep into the powerful Lotus 123-like features such as 3-dimensional cell linking, graphics and database functions.

▲ 123 features provided
▲ 3-D cell linking
▲ Powerfull

▼ Not for the spreadsheet novice

● PC-CALC PLUS

£57 • Shareware Marketing • 0297 24088
Cheap basic shareware spreadsheet that is nonetheless good quality. All necessary spreadsheet functions implemented. You can get a version of this spreadsheet complete with – cut-down – manual for five quid from PC user groups. Full documentation will require registration with Shareware Marketing and the handinf over of the full price.

▲ Cheap, cheap, cheap
▲ Easy to learn
▲ Available from user groups

▼ Basic

DATABASES

Everyone needs a database. From business use such as motor car parts, baked beans stocks and can opener suppliers to home uses such as stamp and record collections and train number cataloguing.

● DBASE IV

£595 • Ashton-Tate • 01-5699768
The database that's got it all. Spawned a huge range of clones for many other machines. Complex and all reaching, dBase is a database-specific programming language that allows you to build filing programs tailor-made.

▲ Complex
▲ Can be tailored to suit individual needs
▲ Industry standard

▼ Expensive
▼ Not for beginners

● DBXL 1.2 (DIAMOND RELEASE)

£115 • Software Paradise • 0222 887521
dBase clone featuring all the abilities of the original with a better text editor, variable arrays and user defined functions at an affordable price.

▲ Cheap
▲ Very powerful

▼ Difficult to master
▼ Not for beginners

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Turbo Outrun	£13.95		
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Kenny Dalglish	£12.95		
Moonwalker	£13.95		
Ghouls N Ghosts	£13.95		
Paul Gascoign	£15.95		
Liverpool FC	£12.95		

ATARI

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£99.99

INC VAT + DELIVERY

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Star LC10 II Mono	£209.95
Star LC10 Colour	£229.95
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Star LC24/10	£259.95
Star LC24/15	£429.95
Star FR10	£384.95
Star FR15	£499.95
Colour Upgrade FR Range	£34.95
Star XB24/10	£499.95
Star XB24/15	£659.95
Colour Upgrade XB Range	£34.95

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1 x Colour Ribbon	£5.20
5 x Colour Ribbons	£24.95
10 x Colour Ribbons	£47.95

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Epson FX1050	£514.95
Epson EX800	£539.95
Epson EX1000	£699.95
Epson LQ500	£344.95
Epson LQ850	£564.95
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AKHTER **£139.95** AKHTER

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Steinberg Cubase	£349.95 (RRP£500.00)
Steinberg Pro 24 VerIII	£214.95 (RRP£300.00)
Hybrid Arts EZ Track Plus	£49.95 (RRP£59.95)
Dr.T KCS 1.7MPE	£159.95 (RRP£199.95)

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Access

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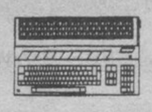
CTC SYSTEMS



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Access
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● TAS PLUS

£120.75 • Megatech • 01 874 6511

Powerful database that allows you to spread a database over many files. It's programmable, relatively easy to use and cheap.

▲ Fully featured
▲ Easy to use
▲ Cheap

● HYPERPAD

£114 • Software Paradise • 0222 887521

Apple Macintosh users have long had the opportunity to use the definitive associative database handling of Hypercard based on the concept stacks of interconnected cards each containing various data, programs etc., all accesible via a serious of icon 'buttons'. And now, at last, this power is available to the humble PC user with Software paradise's Hyperpad. All the features of the original system are here.

▲ Comprehensive
▲ Easy to use
▲ Moderately priced

▼ Setting up may confuse absolute beginners

COMMUNICATIONS

Got a yen to communicate with your fellow PCers? Need to transfer data around the planet? Maybe you want to connect several computers together to maximise your peripherals?

● THE $25 NETWORK

£25 • EQ Consultants • 0334 84248

Networks abound at the moment but you'd be hard pushed to find one that would set you back less than several hundred pounds, before, that is, the release of The $25 Network from EQ Consultants. For the tiny figure of 25 quid (EQ alas, hold no stock in exchange rates) you can join two PCs in perfect harmony, to have and to hold, from this day on...

▲ Amazingly cheap
▲ Everything you need (except a cheap null modem cable)
▲ Easy to use

● CALLBOX

£171.35 • Callbox Ltd • 0600 4478

A program which takes control of your telephone allowing you to perform all manner of snazzy dialing functions, nember recalls, auto calls etc. All this for only one hundred and seventy one pounds, wow!

▲ Cheaper than equivalent hardware (i.e. telephone)

▼ Breath-takingly expensive
▼ Only for those without the energy to dial a number

● LINK MASTER

£19.95 • Amstrad Software • 0277 230222

Billed as the 'complete kit for file transfer between two PCs' thereby implying a hard/software cast of thousands, Link Master is a cable and bit of software for £20 that allows you to transfer files between two PCs. Why not just use floppy disks? Or, perhaps that would be asking just a little too much (perhaps it wouldn't)

▲ Cheap
▲ Easy to use

▼ Superfluous
▼ Unecessary (unless you have machines with wildly differing drive formats

● PROCOMM PLUS

£59 • Shareware Marketing • 0297 24088

Fully-featured genral purpose communications program for use with modems. The program supports the industry-standard Hayes command language and seven file transfer protocols. There's an earlier version known as Procomm which can be had from the same supplier for a few quid.

▲ Reasonably cheap 'n' cheerful
▲ Hayes compatible
▲ Plenty of file transfer options

ACCOUNTING

The serious side of the PC. And let's face it, if you've spent the enormous sums necessary to buy the compuyer system, your going to need to save money somewhere.

● MICROSYSTEMS

£454 • Multisoft • 0420 85572

Very powerful accounting package emanating from well-known accounts software writers Multisoft. Menu driven programs ensure ease of use and give access to virtually every possible accounts function necessary. There's some extremely good help screens too in case you should encounter difficulties.

▲ Menu driven
▲ Fully featured
▲ Easy to use

▼ Too expensive for the home or small business user

● A-B-C

£299 • A-B-C Systems • 01 661 0488

Quality accounting package that has the distinction of sporting a word processor, database and spreadsheet as well as the accounting module. All the features of a professional accounts application are built into A-B-C as well as good after sales service and help from A-B-C Systems.

▲ Built-in word processor, spreadsheet and database
▲ After sales service
▲ Can be used on single disk systems

▼ A little expensive for home users

● PENNYWISE

£50 • Buzzz Software • 0865 56083

Simple to use, affordable accounts analysis software for the home and small business user.

▲ Cheap
▲ Easy to use

▼ Lacking in features
▼ Only for the smallest of business users

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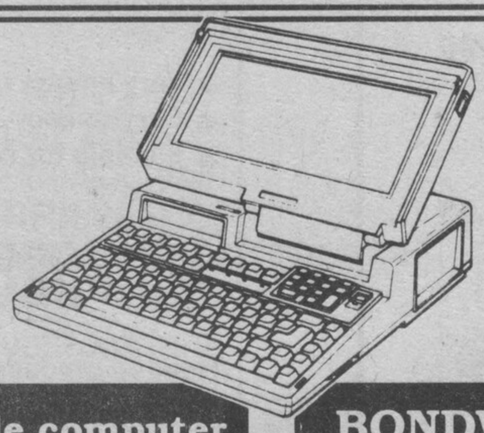

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Pro8TH	8088	20mb	720kb	1mb	1685	**1245**
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1040 ST-FM with 1024K RAM, internal power supply, 1 MB DS drive, mouse and modulator, plus: £439.90
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SUPER PACK

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ULTIMATE PACK

1040 ST-FM with 1024K RAM, internal power supply, 1 MB DS drive, mouse and modulator, plus: £425.99
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MUSIC PACK

1040 ST-FM with 1024K RAM, internal power supply, 1 MB DS drive, mouse and modulator, plus: £528.99
Steinburg Pro 12 Sequencer or MIDI Drummer

AMIGA 500 PACKS: (inc VAT)

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inc Modulator, 24 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, Joystick, plus 10 additional individually packaged games from the following list:
Custodian, Roger Rabbit, Power Play, Mercenary, No Excuses, Thundercats, Znapse, Nebulous, Buggy Boy, Star Ray, Photon Paint £349.00
Also with 8833 monitor £549.00

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inc. Modulator, 24 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus:
BATMAN the Caped Crusader, Interceptor, New Zealand Story Deluxe Paint II £349.00
Also with 8833 monitor £549.99

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AMIGA B2000, Mouse, Wkbench, Basic, Utilities, Manuals	£769
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As above, but with AT BRIDGE BOARD and 20MB AUTOB HD	£1994
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Amiga B2000 prices are EX VAT

● CASH TRADER PLUS

£171 • IT Marketing • 08045 6566

For cash traders everywhere, the package that gives you everything necessary to facilitate easy wheeling and dealing. Why waste valuable brain cells computing exchange rates?

▲ Full of features
▲ Easy to use
▲ Cheap (if you're already making flipping great wadges of cash playing the market)

▼ Not cheap if you're a home dabbler

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Calling small business persons everywhere. Tired with spending all day on your feet then all evening poring over barely intelligible ledgers, payroll files etc.? Worry no more, your problems are at an end. Retailers provides everything the busy moneymaker needs to wring even more time (and therefore profits) from there small holding.

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▲ Feature packed
▲ Reasonably priced

▼ You need to have a semblance of understanding of basic accounting before beind able to use to the full

● TAXCALC

£19.95 • Consumers Association • 0800 252100

Cheap personal tax planner which has some very good built-in help screens and the printout of which you can send directly to the Inland Revenue.

▲ Very cheap
▲ Easy to use
▲ Suitable for beginners

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● FREEDOM OF PRESS

£431.25 • Ctrl-Alt-Deli • 0908 662759

A fully-featured DTP package that allows you to use any cheap dot matrix printer to reproduce PostScript documents. Powerful and moderately easy to use.

▲ Uses ordinary cheap dot matrix printers
▲ Lots of features

▼ Beyond the budget of the average home user

● NEWSMASTER II

£70 • MGA Microsystems • 0233 83571

Straightforward, unpretentious little desk top publisher, prviding most of the features necessary to produce newsletters, propoganda pamphlets, communist diatribes etc.

▲ Cheap
▲ Clip art library
▲ Can import graphics

● FINESSE 2

£171 • Logi UK • 0925 413501

GEM-based, Ventura lookalike providing many of the abilities of the original for a fraction of the price.

▲ GEM/3 included
▲ Sensibly priced
▲ Good graphics import

▼ You must have a mouse

● TIMEWORKS DTP

£129 • Electric Distribution • 0480 496789

Another desk top publisher with slightly more than a passing resemblance to industry-favourite Ventura. Lots of features, can use standard dot matrix printers and has a copy of GEM/3 included.

▲ GEM/3 included
▲ Powerful
▲ Reasonably priced

● VALUETIME RANGE

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The valuetime range provides you with the necessary tools to produce signs, banners greetings card etc., for a very reasonable price. Results can printed on a standard dot matrix machine. The packages are Signs and Banners, Greetings Cards, Calendars and Stationery.

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▲ Good results can be obtained

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Don't buy commercial applications programs, write your own...

● ZORTECH C V3.00

£57.44 • Zortech • 01 316 7777

Professional quality C compiler from well-known language producer Zortech. The package is cheap yet fully-featured. Very fast.

▲ Fast
▲ Cheap
▲ Widely available

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dBase clone at a fraction of the price of the original program. This is not for beginners but fortunately there is a small planet's worth of dBase text books on he shelves of your favourite bookstore. What are you waiting for?

▲ Very cheap
▲ Powerful

▼ Not for beginners
▼ Some minor bugs in first version

● QUICKBASIC

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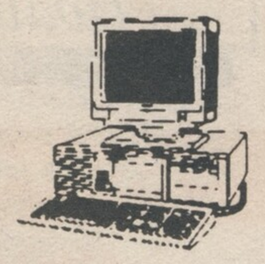

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AT286-10 640K S/D	799	1099
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AT386-16 1MB HD40	1549	
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AT386-20 4MB HD40 VGA		2559
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SCHNEIDER

MODEL	MON	COL	EGA
EURO PC	349	489	
EURO AT 512K S/D	675	805	890
EURO AT 512K D/D	765	895	980
EURO AT 1MB S/D	761	891	976
EURO AT 1MB D/D	851	981	1066
EURO AT 512K H/D	975	1105	1190
EURO AT 1MB H/D	1061	1191	1276
Schneider Accessories			
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All Schneider PC's & AT's include Microsoft Works, Dos & Manuals + 12 Months on-site-warranty

COMMODORE

MODEL	MON	COL	EGA
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PC10 III-D/D 640K	497	621	746
PC10 Bundles inc Framework,mouse & MPS1230 Printer			
PC10- D/D	740	896	1013
PC10- HD40MB	896	1013	1130
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PC40 -40MB 1MB	1291	1462	
PC40 + TAPE	1559	1759	

Includes 12 months on-site-warranty

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AMSTRAD + Phone	PPC512D	467
AMSTRAD + Phone	PPC640S	445
AMSTRAD + Phone	PPC640D	552
SHARP	4602	863
SHARP	4641	1463
SHARP	5541	2330
SHARP	7221	1699
SUPERSPORT	D/D	977
SUPERSPORT 286	20MB	2237
SUPERSPORT286	40MB	2657
TURBOSPORT 386	40MB	2797
AKHTER 286-3200	20MB	1695
SCHNEIDER	PC7640	1418
SAMSUNG S5200	32MB-AT	1693
VICTOR V286P	30MB	2499

AMSTRAD

MODEL	MON	COL	EGA	
PCW8256	310			
PCW8512	395			
PCW9512	424			
PC1512SD	360	437		
PC1512DD	437	513		
PC1640SD	451	536	621	
PC1640DD	512	597	682	
PC1640HD	682	768	853	
	Mono	Col	12"	14"
PC1286SD	750	835	920	1005
PC1386SD	1180	1265	1351	1436
PC2086SD + SOFT	531	617	702	787
PC2086DD + SOFT	595	680	765	851
PC2086HD + SOFT	765	851	936	1021
PC2286DD	851	936	1021	1106
PC2286HD	1021	1106	1191	1276
PC2386HD	1702	1787	1872	1957

All Genuine Models Not upgraded in any way

HYUNDAI

Note. Base units only. Monitors are Seperate

Model	Mono	Col	Ega	Vga
SUPER 16-TE PC/XT 640K 10Mhz Metal Case				
Super 16-TE S/D	361	361	455	511
Super 16-TE D/D	430	430	524	580
Super 16-TE HD30	561	561	655	711
286C 8/10MHZ 512K RAM				
286 S/D	749	749	749	859
286 HD30	949	949	949	1059
386SX 8/16 Mhz 1MB RAM				
386 S/D	959	959	959	1069
386 HD30	1159	1159	1159	1269
386C 8/20Mhz No Wait States 1MB Ram Vga				
386C S/D	1279	1279	1279	1279
386C HD40	1599	1599	1599	1599

SAMSUNG

MODEL	Mono	Cga	Ega
All the following Systems are without Monitors. Please refer to monitor box			
PC/XT			
SPC3000/1 S/D	405	405	
SPC3000/2 D/D	473	474	
SPC3000/3 HD20	677	677	
AT80286 10Mhz			
MFC6000/1 S/D	812	812	
MFC6000/2 S/D	1015	1015	
SPC6500/3 HD20	1151	1151	
AT80286 12Mhz 1MB VGA			
SPC6512/1 S/D	1015	1015	
SPC6512/3 HD20	1219	1219	
SPC6512/4 HD40	1354	1354	
AT80386 20Mhz 2MB EGA			
S800 D/D	1693	1693	1693

All Samsung Computers include 12 months on-site-maintenance

MITAC

MODEL	MON	COL	EGA
MITAC 88 512K	586		
MITAC 88 20MBHD	790		1102
MITAC 1000L PS/2	730	930	VGA'S
MITAC 1000L PS/2	963	1163	VGA'S
MITAC 286SL HD20	1030	1209	1332
MITAC 286SL HD42	1163	1342	1465
MITAC 286V HD42	1463	1663	VGA'S
MITAC 286V HD102	1930	2130	VGA'S
MITAC 286VEHD42	1596	1796	VGA'S
MITAC 286VEHD102	2063	2263	VGA'S
MITAC 386 HD42	2330	2568	VGA'S
MITAC 386 HD102	2796	3130	VGA'S

All MITAC Systems come complete with 12 Months on-site-warranty

VICTOR

MODEL	MON	COL	EGA	VGA
VPCIIC S/D	949	1149	1399	1449
VPCIIC D/D	1099	1299	1549	1599
VPCIIC HD30	1499	1699	1949	1999
V286C S/D	999	-	1299	1499
V286C D/D	1499	-	1799	1999
V286C HD30	1999	-	2299	2499
V286C HD50	2199	-	2499	2699
V286A HD30	2099	-	2549	2599
V286A HD50	2299	-	2749	2799
V286S HD50	2499	-	2949	2999
V286S HD70	2699	-	3149	3199
V386S HD50	3299	-	3749	3799
V386S HD70	3699	-	4149	4199
V386S HD110	3899	-	4349	4399
V386S HD230	5299	-	5749	5799
V386T HD70	5999	-	6449	6499
V386T HD230	7699	-	8149	8199
30MB ADD-PAK	399			

MONITORS

MAKE	12" Mon	14" Mon	14" Cga	14" Ega	Mono Vga	Colour Vga	Mult Sync	
PHILIPS	7502	7713	8833	9093	7749	9609	-	-
	£63	£89	£199	£296	£116	£296	-	-
	7513	-	9043	9043	-	9809	-	-
	£77	-	£261	£261	-	£374	-	-
	7913	-	9053	9053	-	-	-	-
	£81	-	£296	£296	-	-	-	-
SAMSUNG	2573	4573	-	4531	2611	4531	4551	
	£76	£85	-	£299	£85	£299	£397	-
AMSTRAD	12MD	-	14CD		12HRCD	14HRCD	-	-
	£119	-	£199	-	£294	£383	-	-
AKHTER	ACL12G	ACL14G	VISION	ACL-E	-ACL-VM	ACL-V	ACL-M	-
	£60	£85	£199	£259	£110	£289	£355	-
HITACHI	-	-	-	-	-	480AUTO	-	-
	-	-	-	-	-	£358	-	-

Notice: All Samsung Monitors come with 12 Months on-site-maintenance

ATARI & AMIGA

MODEL	PRICE
ATARI 520ST-FM + Power pack	309
AMIGA 500 + BATMAN pack	318
1MB External Diskdrive Amiga	63
1MB External Diskdrive Atari	71
42Mb External Harddisk both	399
Amiga to Scart Monitor Cable	7.69
Atari to Scart Monitor Cable	7.69
Amiga Dustcovers	4.95
Competition Pro Extra Joystick	10.59
Philips CM8833 Colour/Stereo	199
Atari SM124 Highres Mono	115

BIT'S & PIECES

Model	PRICE
Akhter Modem V21-V22-V22Bis-V23	119
Acco -In line 64K Buffer Par	95
Logitech serial mouse + software	73
20Mb Hardcard 2yr warranty	189
30Mb Hardcard 2yr Warranty	195
5.25" 1.2Mb Floppy Drive	59
3.5" 720K Floppy Drive	59
3.5" 1.44Mb Floppy Drive	69
102 Key Keyboards PC/AT	55
512K to 640K Memory Upgrade	29
Mouse Matts	4
80 col Printer Muffler	49
132 Col Printer Muffler	53
80 col desktop printer stand	28
132 col desktop printer stand	32
Screen Filters	Call
Electric A4 Copy Holder	94

NOVEL NETWORKS

NETWARE 386 V3.0	4020
NETWARE SFT V2.15	2596
NETWARE ADVANCED V2.15	1660
NETWARE ELS LEV II V2.15	864
NETWARE ELS LEV I V2.0A	338
NE 1000 ETHERNET CARD	185
NE 2000 ETHERNET CARD	286
NE/2 ETHERNET CARD	286
NE 1000 COMPATABLE	139
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COMMS PRODUCTS	CALL
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XTRIEVE FILE MANAGEMENT	CALL
REPORT GENERATORS	CALL
XQL DATABASE MANAGEMENT	CALL
UPGRADES	CALL

POPULAR SOFTWARE

Aldus Pagemaker V3	450
Xerox Ventura V2	520
dB Publisher	275
3B2 DTP	452
Timeworks DTP	79
Framework III	325
Paradox 3	357
Supercalc 5	238
Smart System V3.1	350
Sage Sterling Bookeeper	64
Sage Sterling Payroll2	129
Sage Sterling Job Costing	129
Sage Sterling Accountant	162
Sage Sterling Accountant +	259
Sage Sterling Fin Controller	324
Sage Payslips-£28, Statement-£28	
Sage Invoices 2part-£33,3-£47,4-£62	

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dBase IV	320
Lotus 123 V3.0	259
Symphony V2.0	370
Wordstar Prof V5.0	199
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Sidekick Plus	78
Office Works	185
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Flight Simulator v3.0	29
Crosstalk MKIV	88
Crosstalk XVI	69
Junior Word	29
Junior Multiplan	29
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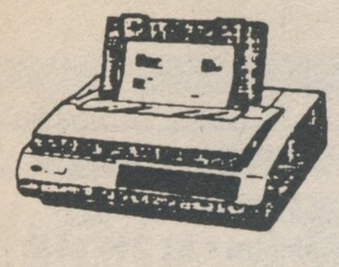

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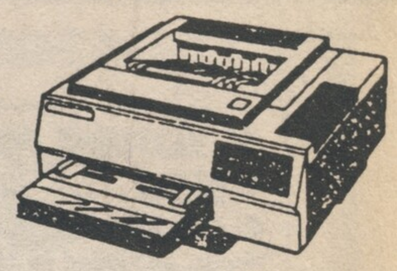

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STAR LC10-Colour	144/36	159
STAR LC15	180/45	249
STAR FR10 *	300/76	289
STAR FR15 *	300/56	379
24 PIN DOT MATRIX		
STAR LC24-10	200/67	189
STAR LC24-15	200/67	319
STAR XB24-10 *	240/80	375
STAR XB24-15 *	240/80	495
LASER PRINTERS		
STAR LASER 8 *	8PPM	1198
STAR LASER 8DB *	D/BIN	1685

* = Includes On-Site-Maintenance

PANASONIC

MODEL	SPEED	PRICE
9 PIN DOT MATRIX		
KXP 1081	144/28	118
KXP 1180	192/36	144
KXP 1592	216/45	249
KXP 1595	288/65	309
24 PIN DOT MATRIX		
KXP 1124	192/63	220
KXP 1540	288/65	400
LASER PRINTERS		
KXP 4450 *	11PPM	1269

ON-SITE-MAINTENANCE

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CITIZEN

MODEL	SPEED	PRICE
9 PIN DOT MATRIX		
120D PAR	120/25	102
120D SER	120/25	119
180E PAR	175/30	123
180E SER	175/30	149
MSP15E	160/40	164
MSP40	240/40	199
MSP 45	240.40	239
MSP 50	300/60	285
MSP 55	300/60	399
24 PIN DOT MATRIX		
HQP 40	200/65	259
SWIFT 24	160/60	245
LASER PRINTERS		
OVERTURE 106	6PPM	930
OVERTURE 112	12PPM	1289

EPSON

MAKE	SPEED	PRICE
LX 400	180/30	130
LX 850	240/48	178
FX 850	264/54	351
FX 1050	240/48	293
EX 800	300/60	402
EX 1000	300/60	530
DFX5000	533/400	1087
LQ 400	180/60	189
LQ 550	180/60	255
LQ 850	264/88	394
LQ 1050	264/88	543
LQ 860	290/88	499
LQ 1060	290/88	639
LQ 2550	400/133	831
TLQ4800	250/83	1437
SQ 850	600/198	575
SQ 2550	600/198	863

2 metre IBM Parallel Printer Cable 6.00 each

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MODEL	SPEED	PRICE
THINK JET		254
QUIET JET		334
QUIET JET +		398
DESK JET		434
DESK JET +		519
PAINT JET		644
RUGGED WRITER		849
LASER PRINTERS		
LASER JET IIP	4PPM	879
LASER JET II	8PPM	1248
LASER JET IID	8PPM	1879

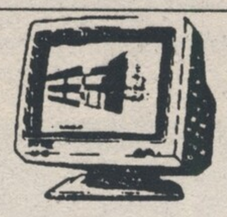
All HP's include On-Site-Maintenance

OLIVETTI

MODEL	SPEED	PRICE
DM100SPR	200/30	123
DM105SPR Colour	200/30	154
DM282	240/40	216
DM282S	240/40	245
DM292S 136 col	240/40	307
DM250	240/60	402
DM250L 136 col	240/60	458
DM400 136 col	400/100	867
DM704 136 col	400/100	1053
DM309	360/66	269
DM309L 136 col	360/66	356
LASER PRINTERS		
PG 306 *	6PPM	899
PG 208 *	8PPM	1199
PG 303* Postscript	8PPM	2595

CANON

MODEL		PRICE
CANON LBP4	4PPM	895
CANON LBP8 III	8PPM	1390
CANON LBP8 IIIT	Dual Bin	1815
CANON LBP8 IIIR	Duplex	1923
CANON BJ-130	220/110	539
CANON IX-12 Image Scanner		374
CANON IX-12F Image Scanner		752
CANON IX-31F Scanner Int/face		113
CANON OCR Software		304



MORE LASERS

MODEL		PRICE
EPSON GQ5000	6PPM	1119
MT905	6PPM	889
SHARP JX-9300	6PPM	1063
KYOCERA F1000	10PPM	1459
KYOCERA F1200	10PPM	2369
KYOCERA F2200S	10PPM	2569
KYOCERA P2000	10PPM	3969
BROTHER HL-8e	8PPM	1369
BROTHER HL-8D	8PPM	2189
BROTHER HL-8PS	8PPM	2524
BROTHER HL-8QS	8PPM	2929

LASER TONERS
Canon SX Toner £59, Panasonic £32
MT905 £24, Epson GQ3500/5000 £16
Kyocera 2pack £69 Citizen £22

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MODEL		PRICE
PLOTTERS		
Hitachi 681-A4/A3	400mm/sec	559
Hitachi 673-A4/A3	400mm/sec	699
Hitachi 674 A1/A4	400mm/sec	2699
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Hitachi from 11"x12"to44"x60"		CALL
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Stockist for Pentel		
HITACHI MONITORS		
CM1686A1 16"1024x768 50Khz		1199
CM1686A3 16"1280x1024 64Khz		1299
Hi-Scan 20" VGA 1280x1024		1724
CM2086A3 20"1280x1024 64Khz		1783
ULTRA 21" 1280x1024 64Khz		1895

BARGIN BASEMENT

MODEL	SPEC	PRICE
9 PIN DOT MATRIX PRINTERS		
MT81 10"	120/25	£ 99
Hyundai-910 10"	216/37	£128
Hyundai-920 15"	216/37	£199
ACL 135 10"	135/27	£119
ACL 480 10"	480/55	£299
ACL 700 15"	480/55	£399
18 PIN DOT MATRIX PRINTERS		
Hyundai 1810 10"	240/100	£229
Hyundai 1820 15"	240/100	£299

CONSUMABLES

PAPER	
11"x9.5" 2000 sheet 1 part	14.00
11"x9.5" 1000 sheet Letter Qual	10.00
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3M 3.5" SS/DD 135 TPI	9.95
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LC24-15	£4.50	
FR10/15	£6.00	£12.00
XB24-10/15	£6.00	£12.00
CITIZEN		
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MSP15/45/55	£6.50	£17.50
HQP40	£7.50	£18.00
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● TURBO PASCAL V5.00

£115 • Borland UK • 0734 320022

Known and loved by all, this is the Pascal compiler. It's fast, fully-featured has good editing facilities and is easy to get to grips with. Perhaps a little expensive.

▲ Powerful
▲ Good editor
▲ Can used on single drive systems

▼ A little overpriced

GAMES

Not formerly associated with games playing, the drop in the price of the average PC compatible has set off a chain reaction amongst leisure software writers eager to cash in on a new market.

● 688 ATTACK SUB

£29.99 • Electronic Arts • 0753 46465

Send a mass of Eastern Bloc seafaring metal to Davy Jones'locker. Alternatively, take command of Soviet Russia's latest submarine and go fascist hunting. Either way, this game provides everything necessary for superior submarine simulation. Ahoy m'heartys.

▲ Wonderful graphics
▲ Complex
▲ Quality gameplay

▼ VGA necessary for best display
▼ Expensive

● FLIGHT SIMULATOR 3

£52 • MicroSoft • 0734 500741

The latest in a long line of definitive flight simulators from MicroSoft for the PC and its compatibles. This program has it all for those looking for quality simulation rather than blood 'n' guts. Expensive, but then the best always costs more. Invest a few quid here.

▲ Super graphics
▲ All controls found in a real aircraft are simulated
▲ Lots of places to fly around, through, up and over.

▼ Expensive

● ELITE

£24.95 • Firebird Software • 0666 504326

Originally for the BBC micro and now available to discerning PC game players evberywhere. Improved graphics and speed but a similar plot (nothing wrong with that I hear you shout!).

▲ Old faithful too good to be missed
▲ Wonderful graphics
▲ Fast

▼ Expensive (the eternal PC games criticism)

● F-19 STEALTH FIGHTER

£39.95 • MicroProse • 0666 504326

Another flight simulator but this one pits you fairly and squarely against an attacking enemy bent on destruction. Good graphics and good fighting action make this a superior offering.

▲ Complex
▲ Good graphics

▼ Expensive
▼ A little boring in the early stages

● INFOCOM ADVENTURES

£24.99 to £34.99 • Infocom/Mediagenic • 0734 311666

Here they are. The definitive text adventures from Infocom. Renowned by by those who like to grub about in haunted houses, caves etc., the world over. Good plots and lots of puzzles to solve.

▲ Complex plots
▲ Intelligent dialogue
▲ Excellent input parsing

▼ Far too expensive

● UNIVERSAL MILITARY SIMULATOR

£24.95 • Rainbird • 01 240 8838

The package that lets you simulate everything from a petty squabble to a full-scale conflict. Excite yourself to fevered pitch with every battle throughtout personkind's history.

▲ Complex situations can be simulated
▲ Any and every altercation from the dawn of time can be played to its (un)natural conclusion

● TETRIS

£19.95 • Mirrorsoft • 01 928 1454

Tetris is a simple but highly addictive game in which you have to arrange into lines a series of tumbling coloured blocks into to clear screens and amass points. Defying categorisation the game has the added novelty of emanating from the USSR.

▲ Unique

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A500 Bat Pack + Software Pack

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Philips CM8833 Monitor - £223.00

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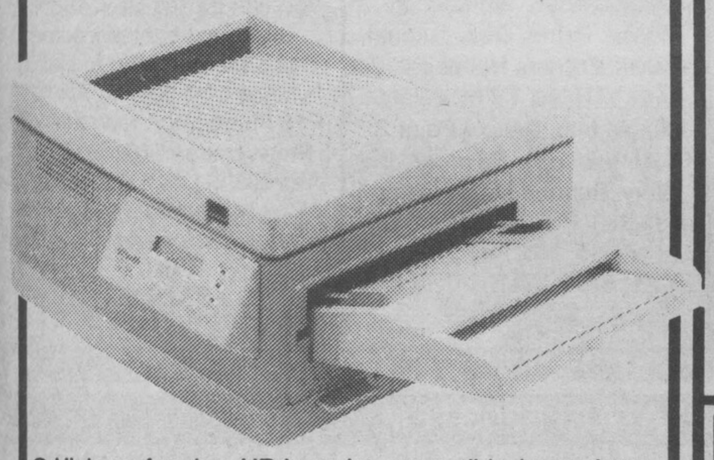

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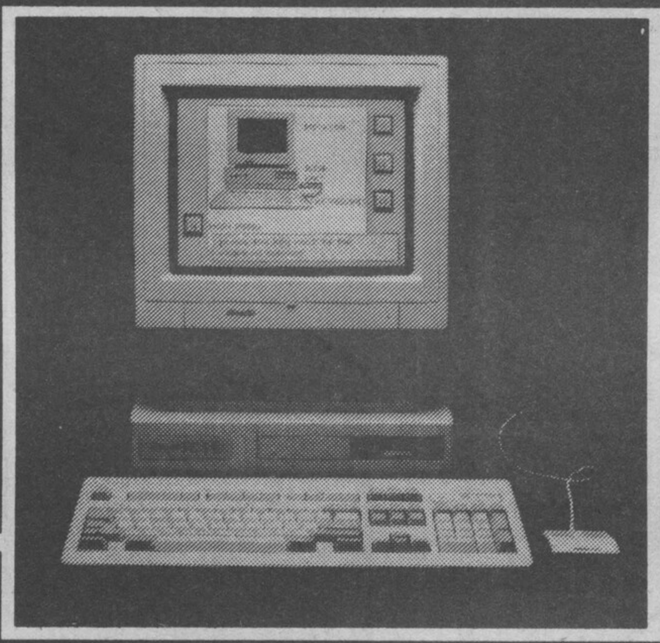

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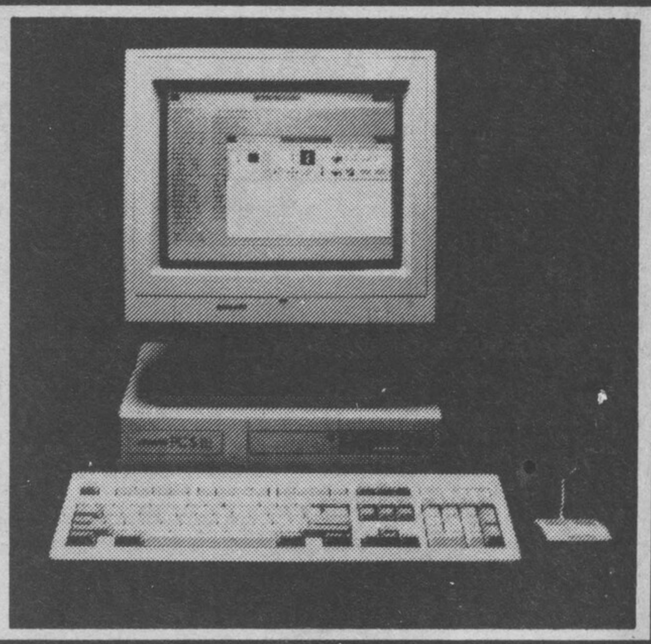

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TO all Pascal programmers: If you have any problems or just want to write something. Send me a letter and I will try to help you! To: Sioe-Lin Kwik, Richmond College, Queensroad, Richmond, Surrey, TW10 6JP.

HELP WANTED

HELP! Can anyone tell me how to use and convert text files from a PC (PPC512) to a Mac (SE20) Any help or advice please ring Jon (0472) 347196.

WANTED contacts for 19 year old female disk user also lessons in programming my C64. I'll also buy most adventure games. Steph; 56, Laurel Park, Harrow Weald, Middx. HA3 GAU.

HELP needed on Zork 2 and 3. Reward given. Contact J. Henwood Arbour Hill House, Lincoln Hill Road, Ross on Wye HR9 7TH.

C64 Contacts wanted 'on disk'. I also want a Database and help in programming my C64. Good prices paid for adventures Steph: 186, Eastern Ave, NTH: K'Thorpe, N'Pton NN2 7AT.

HOW can I move the Knight in Zork Zero so that I can get Haro Hat? Amiga version. Gary. 36 Gollands, Brixham, Devon. TQ5 8JX.

DOES anyone know where I can get a ISO Pascal Compiler for The Amiga Please contact Dave Thomson, 2 Edward Ave, Bowburn, Durham DH6 5EB.

OKIMATE 20 users wanted for advice and tips contact Rod 2 Stanks Approach, Leeds 14 LS14 5PH Yorkshire.

COMPUTER courses. Anyone know of any college doing City & Guilds 714 programming by correspondence. Please write to Robert Moss 223 Ringwood Road, Poole, Dorset. BH12 3LH.

COMPLETE novice. Please help me choose books on programming also help with workbench and extras my Amiga is a 1.3 version. J. Abey 4, Strathmore Close, Hucknall, NOTTM, NG15 6HF.

I am a complete beginner I own an Atari ST how do I boot up Fast Basic? Any help appreciated write to : Ron Plant, 9 Crescent Place, Tenbury Wells Worc's.

HELP! I've just bought an Amiga and would like details of Demos Shareware. Just about anything really! (Hi Girv!) Write to: David Ewing, 45 Tildarg Street, Belfast N.Ireland BT6 8NJ.

HELP with Batman (The First 3D Version) any maps and tips would be very much appreciated. Thanks a lot. Matthew Leach, 8 Green End Ave, Earby, Colne, Lancs, BB8 6NT.

CAN anyone help me get started with 68000 Assembler for the ST completely stuck! Have Depac Freebase from ST Format any help appreciated. J. Lord 62 Denison Road, Selby N. Yorkshire YO8 8AQ.

COULD someone explain in words of one syllable what is the difference between Amstrad PC2286, PC2086, PC2386 apart from Speed? Alx Alexander, 11 Station Road, Midville, Boston Lincs 0205 84319.

MIMI 802 disk required. Accidentally formatted mine (Stupid) anybody out there who can

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help, I would be grateful Phone John 0737 823498.

NEED help on Amstrad version short circuit. Have reached computer interface. Don't know what to find or where to use laser or jump facility is anyone out there. Help!!!! Simon 16 Stuart Gdns, Temple Herdewyke. L/SPA Warks CV33 Ouce.

AMIGA Start-up Sequence problem. Can't merge 1.3 Work Bench with original JH0 Janus handler Start-up sequencer. Shell Icon doesn't respond as shell. Please help Michael 6 York Road, Felixstone Suffolk IP11 7HX.

HOW do you play Master Sound samples STOS using all three sound channels? Write to: Steve Sharples, Goit Stock House Lane, Harden, Bingley, West Yorks. BD16 IDF.

LIFE/CAREER planning enthusiasts seek people of vision to promote synergy Tel 01-6038292.

M/FACE pokes for elite on Amstrad 464 ring (0254) 673700 evenings only ask for John.

ST: please could someone help me program a Picture Neochrome Loader that plays an Innovated Software Sample Sequence at the same time - will pay. Contact Rob, 7 Powis Grove, Kenilworth, Warks.

MY Dr Genius programme disk no.2 has got corrupted. Anyone help out by recopying this disk for me? I'll provide disk and pay postage. Call Gilli on 01 720 3383.

CPC version of Elite. How does the Cloaking Device work? Call Brian and Robert Watson on 0353 777006 after 6.30pm.

URGENT help needed for Speccy game - Hacker Two. Please send any tips and maps etc to:- Wai Tong Chai, 16 Portobello Road, Portobello, Wakefield, West Yorkshire, WF2 7JJ.

SOMEONE Who has digitising facilities, I'm on the Amiga and I need someone to digitise me some pictures for a small cost. Tel: PC on Worthing (0903) 691909.

HACKING Deflektor tape to disc, also Operation Wolf and Renegade. Write to Chris, 6 Frank St, Great Horton, Bradford.

SUPERBRAIN Q.D. Can anyone obtain for me, wiring diagrams PSU and monitor especially needed. Will pay all expenses. Write to, 19 Saintfield Rd, Belfast, BT8 4AF or Tel: 0232 642687.

AMIGA owner with Swift 24 printer, spent hours trying to get then running, but can only us it on typewriter mode. New to comp's, any help phone (0530) 72564.

AMIGA educational progs wanted, age 6-10. Write to: Andrew, Welland House, Welland Buildings, Caerphilly, Mid Glamorgan. Hi to Chris!

DOES anybody use a spectrum 128+2 (tape), VTX 5000 modem and hush printer? I need someone to help me adapt my editor program, so it will print Prestel frames. Tel: 0249 443977.

PERSONAL

FREE Enterprise send out Giga-Greets to: Chaos, Dazza, Equinoxe, Steve, Mark, Stefano, Darren, Leon, Eugene, Zofo, Steve-Leg, Crysis, Quartex & others. Contact us... Tel:0705 589116.

SERIOUS Spectrum +3 with multiface 3 user wishes to contact other +3 multiface 3 users to exchange pokes, info, tips etc. Martin, 18 Brocklesby Close, Gainsborough, Lincs, DN21 1TT.

ATARI 520 owner wants contacts: into games, adventures, demos. Also give tips on Space Quest II C III. Write to: A. Sandle, 18 Anchor Rd, Clacton-on-Sea, Essex, CO15 1HP.

ARE there any Amiga owners in Suffolk? If so, contact me. Send disks, lists or just a Hello to Steve, 12 Ashwell Rd, Bury St. Edmunds.

ST contacts wanted for swaps, send your lists, no matter how small to: David White, 59 Jewel Road, Walthamstow, London, E17. Hi to Andy.

AMIGA contacts wanted to swap hints and programs on programming the Amigas hardware, Copper, Blitter, etc. Write to Keith, 52 ST Mary's Rd, Weybridge Surrey. KT13 9PZ Hello Mum!!!

CONTACTS wanted to swap cheats + games for CPC 464 100% reply, tel: Strabane N. Ireland 882129.

HELLO to Pirate er....Jamie. Message from Jamie: "Hello to Gib - Gob, Timo, Stuart D, Stuart B, Toby, Simon C and Death to L***** Dove!!!"

AMIGA contacts wanted! 100% reply. Scribe or scrawl to Andy, 10 Ceredig Court, LLanyrafon, Cwmbrian, Gwent, NP44 8SA. The Boomtown Rats Live on, Cos I'm In The Mood To Mambo!

RELAX - greets to you all! From the Crystal Unicorn!!! The news is out!! Thanx for the call. See you at the show all in the System send Greets.

PC contacts wanted write to: B. Guy 17, Hawthorne Road, Bickley Kent BR1 2HN.

HUGH has been declared a total and utter wally by the East Dyfed Itec, Eddie is a cool dude say all the girls in the northern hemisphere, Pascal is ****.

DEAN the ZX-81 Lamer requires help with his RAM pack. And other hardware, phone 061 236 2754. Trans info welcome.

ST contact looking for other ST users reply always Guaranteed write to: 34 Uplands Drive, Bookmans Park Herts. AL9 6TP. Oh yes the greetings Hi to Chi-ho, Jake, Tina, 52.

AMIGA PD contacts wanted to exchange any memory. Norman Jordan 63 Fleetwood Road, Norbreck, Blackpool FY51SB.

AMIGA contacts wanted, send your lists to me no matter how small! Andy Stevens 108 Woodhouse Road Leytonstone E11 3NA. Prestel MBX: 01 113 8474. Hi to Paul, J.T., Fingers, Nic + Gord.

HAPPY birthday on Nov 25th to Lorraine "Sooty". Thanks for the prezzie on my birthday! By the way, Don't go to Germany!!! Love you loads Arron "The Wunderbar".

OTHER

I'M a student on a computer degree, and I wish to get an Industrial Placement in Computer Graphics Environment. Anyone interested? Please contact Greg on 01 546 2938 for more details.

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VIRUS! There is a virus going round some big PD services. I don't know it's name but it plays a very soft tune after a reset!

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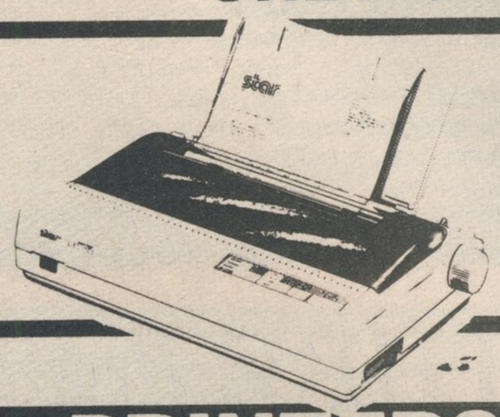

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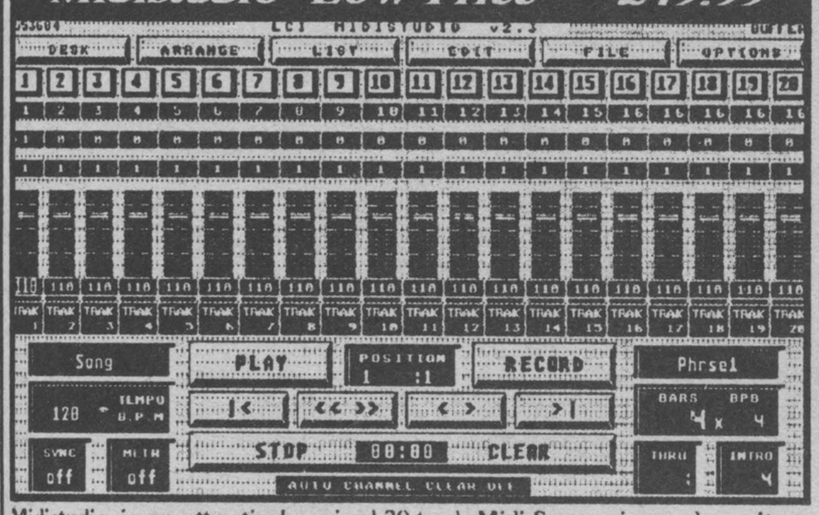

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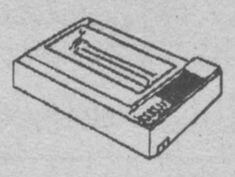

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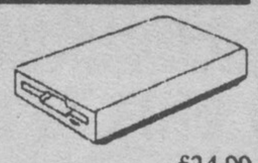

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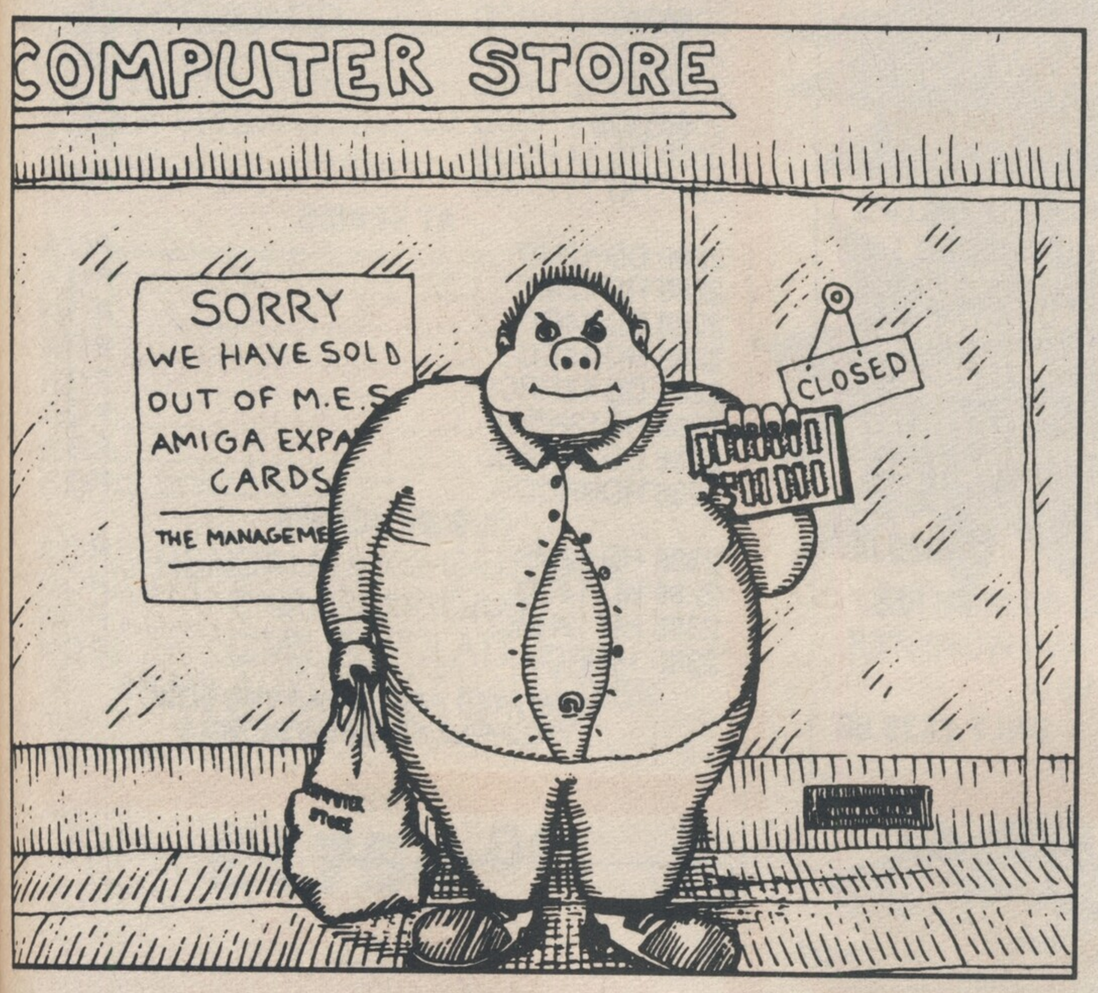

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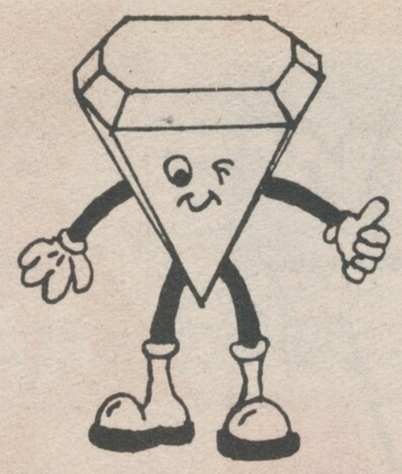

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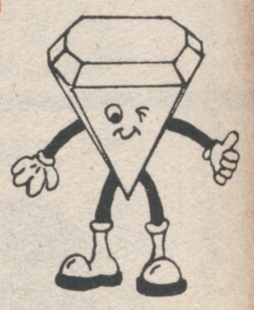

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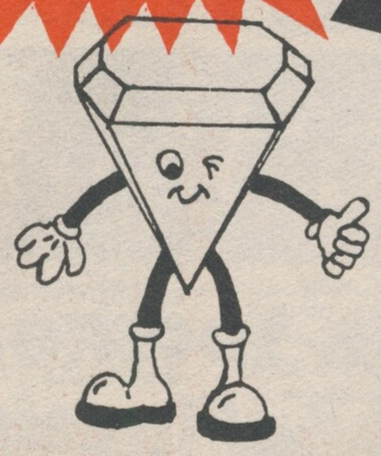

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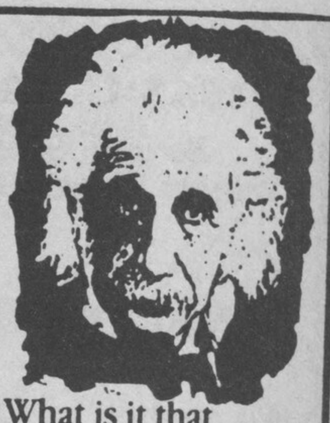

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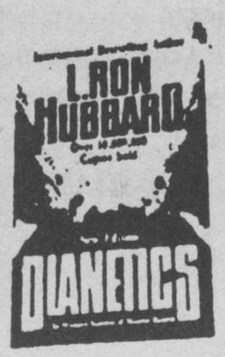

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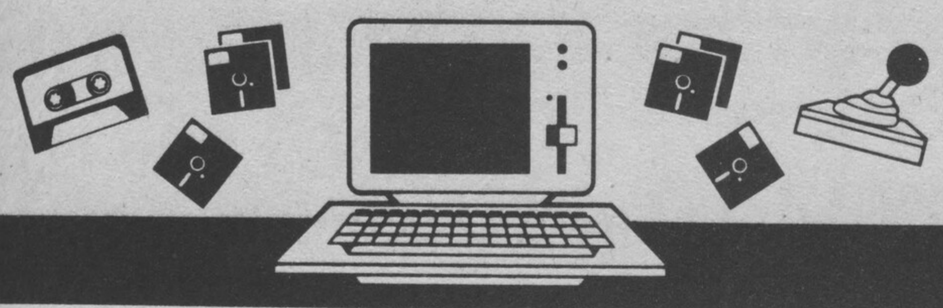

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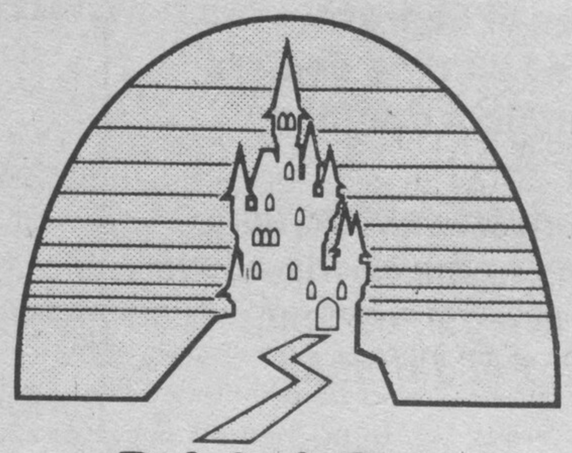

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SPECTRUM SOFTWARE

	Disk	Tape
Chase HQ (Ocean)	£9.45	£6.45
Operation Thunderbolt (Ocean)	£9.45	£6.35
Laser Squad (Blade)	£9.45	£6.45
Beach Volley (Ocean)	£9.45	£6.45
Dragon Spirit (Domark)	£8.45	£6.45
Mr. Heli (Firebird)	£9.45	£6.45
Xenophobe (Micro Style)	£9.45	£6.45
Quarterback (Virgin)	£9.45	£6.45
Altered Beast (Activision)	--.--	£6.45
Super Quintet (Infogrames)	£9.45	£6.45
Purple Saturn Day (Exxos)	£9.45	£6.45
Chuck Yeager's Advanced Flight Sim (E/A)	£9.45	--.--
Rainbow Island (Firebird)	£9.45	£6.45
Risk (Leisure Genius)	£9.45	£6.45
Passing Shot (Image Works)	£8.45	£6.45
Batman: The Movie (Ocean)	£9.45	£6.35
Shinobi (Virgin)	£9.45	£6.45
Dynamite Dux (Activision)	£9.45	£6.45
Bloodwych (Image Works)	£8.45	£6.45
Cabal (Ocean)	£9.45	£6.35

AMSTRAD CPC SOFTWARE

	Disk	Tape
Ghostbusters II (Activision)	£9.45	£6.45
Shinobi (Virgin)	£9.45	£6.45
Dynamite Dux (Activision)	£9.45	£6.45
Power Drift (Activision)	£9.45	£6.45
Cabal (Ocean)	£9.45	£6.45
Batman: The Movie (Ocean)	£8.45	£6.45
Chase HQ (Ocean)	£8.45	£6.45
Laser Squad (Blade)	£9.45	£6.45
Beach Volley (Ocean)	£9.45	£6.45
Altered Beast (Activision)	£8.45	£6.45
Ballistix (Psyclapse)	£9.45	£6.45
Eye of Horus (Logotron)	£9.45	£6.45
Rainbow Island (Firebird)	£9.45	£6.45
Operation Neptune (Infogrames)	£9.45	£6.45
Weird Dreams	£9.45	£6.45
Mr. Heli (Firebird)	£9.45	£6.45
Carrier Command (Rainbird)	£9.45	£6.45
Quarterback (Virgin)	£9.45	£6.45
Bangkok Knights (Activision)	£9.45	£6.45
Super Quintet (Infogrames)	£9.45	£6.45

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> **technology** (tek 'n-o-lo'ji) the practice of any or all of the applied science that have practical value and/or industrial use: technical method(s) in a particular field of industry.
> **xenon technology** **(zen'on tek'n-o-l-lo'-ji) the best definition.**

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SHOPPING SPREE

Express previews the first Computer Shopper Show and muses over the last minute market place for those stocking filler pieces of kit

Alexandra Palace, London, is the venue for the first Computer Shopper Show running from November 24th to 26th where over £1 million worth of special offers and discounts will be available from the 200 assorted exhibitors.

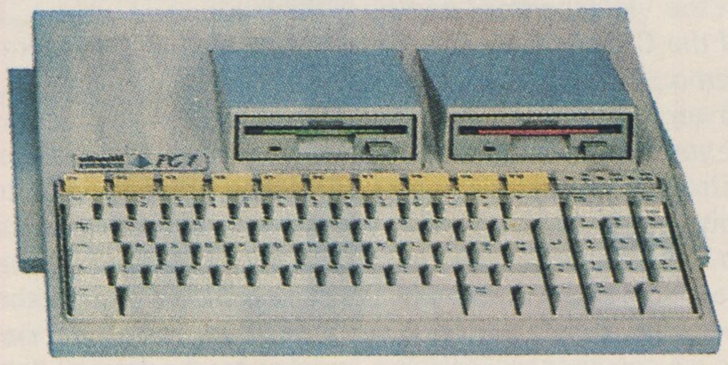
The event is designed to replace the Amstrad, Atari Christmas, Electron and BBC computer shows, and has a Sinclair Microfair running within it. But it's main attraction will undoubtedly prove to be that of a marketplace for punters hunting for Christmas bargains as the line-up shows few surprises with most of the year's major announcements and launches surfacing at the Earl's Court PC Show last September. As such, the exhibitors list is geared more towards the peripheral buying public with items like surge protective devices and ribbon re-inkers looking to top the average shopping list.

BARGAIN BUCKET

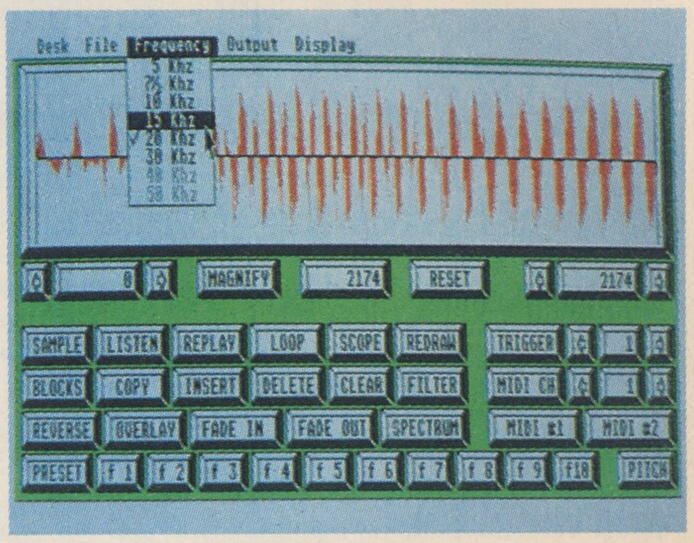
But if truth be known, how many people go to shows to buy their main pieces of kit? - it's slashed reductions we're after and it's the small retailer who's stand attracts most attention at any show. Everything from the new Thingi 2 - the upgrade to that award-winning copy holder which now features a 'special gravity clip' to Kador - a company which among other things will be giving details of its courses on re-charging laser cartridges. Those among you looking for bottom-line bargains might care to check out Commonside Hardware on stand J7 which is selling surplus kit and Aladdin on B6 who are offering PC compatible bankcrupt stock computers for as little as £50.

However there are some 68 launches planned for all machines so if you're after a little interest to spice up your bargain hunting it might be worth a visit.

There will also be a Small Business Advisory Centre on hand providing free expert advice. Admission is £4 for adults and £3 for children under 16. More info from Database on 0625 879970.●



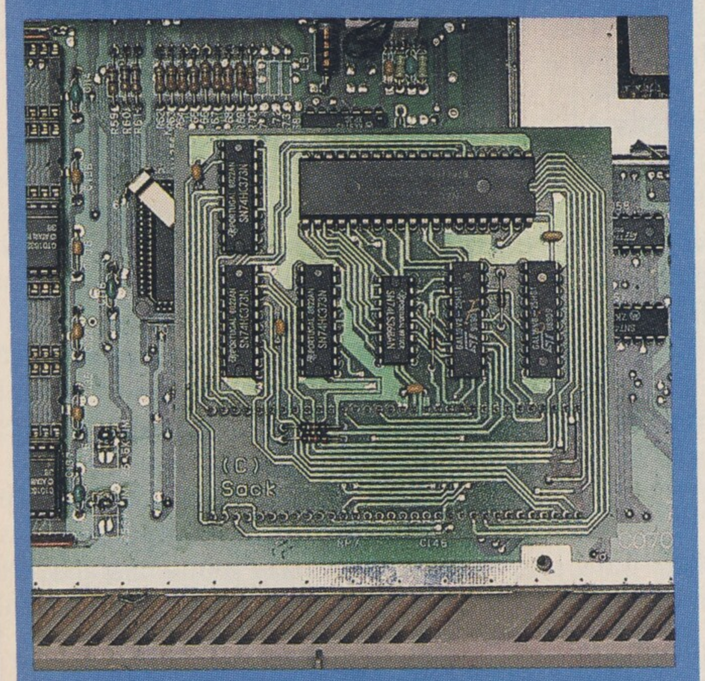
• What a shopper's show should be all about? The twin drive £299 Olivetti PC1 with monitor being sold by Evesham Micros on stand H16 is about the cheapest PC you're ever likely to come across - apart form the bankrupt stock models you'll find on stand B6!



• The popular Replay sampler - now available on the PC and Archimedes from Audio Visual Research who'll be on stand G13.

ATARI ST – 25 NEW RELEASES

• Condor Computers will launch Supercharger - a PC emulator board with 512K RAM costing £299. This is the same board that's to featured in Condor's multi-format machine - the Troika - which was hoped to appear at the show but has now been put back to early next year. Troika will also include a built-in Mac emulator board and provide full compatibility between all three machines for £2,500.
• Digita International on stand B1A will be releasing *DGBase*- a low-cost relational database for the ST priced at only £50. Also new for the ST is a *Cashbook Controller* and *Perfect Touch*, a typing tutor.
• Mandarin will be showcasing several new additions to its *STOS* family. On offer will be *Games Galore*- a selection of *STOS* games, and *STOS Musician* - a music package with 100 tunes. Both will cost £19.95



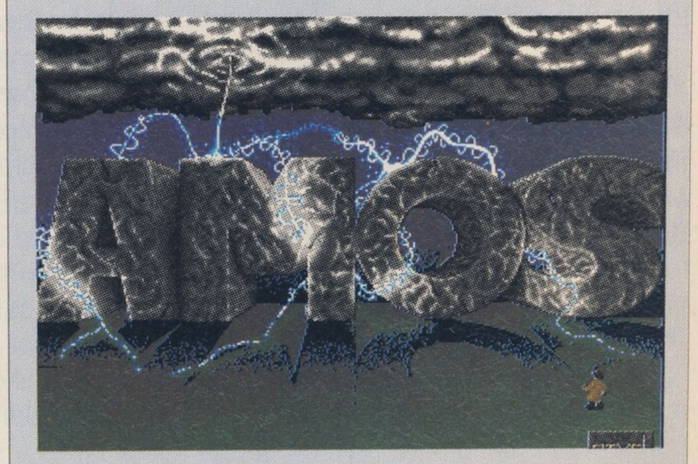
• The much acclaimed PC Speed emulator board for the ST will be on sale for £379 but for £299 you can get your hands on Supercharger, another ST PC board that has a Norton rating of 4, is Microsoft mouse compatible, and supports a hard drive.

ACORN ARCHIMEDES – 12 NEW RELEASES

• Beebug will be unveiling its Scavenger - a 400 DPI professional scanner designed to enable photos and drawings to be incorporated in DTP work. Both hand-held and A4 width versions are available priced at £200 and £400 respectively.
• Minerva will be launching *MultiStore*, a new database for £299. It's a relational, card based package, allowing multi-window linking and boasts two second access to any card regardless of database size.
• Archimedes *Replay*, the acclaimed sound sampler, originally for the ST, from Audio Visual Research can be found on stand G13

COMMODORE AMIGA – 15 NEW RELEASES

• Jeff Minter's audio visual extravaganza, *TripaTron* , previously ony available on the ST will make its debut on the Amiga at Llamasoft's stand.
• Vidi-Amiga the realtime digitiser from Rombo will be on sale for the first time for £99. Review versions of Vidi-Amiga have received an excellent response – see our sister mag *Amiga Format* for a full review



• AMOS, the Amiga's answer to STOS on the ST will make its debut at the show. It's a fully structured games development package allowing access to all the Amiga's utilities and featuring a number of free games for only £49.95

PC AND COMPATIBLES – 19 NEW RELEASES

• IBM *Replay* from Audio Visual Research on stand G13
• On stand E4, Creative Technology will be showing an upgraded version of its popular DTP Package, *Micro Design 2*
• Minerva will be launching *Nova*, a personal organiser designed for use on multi-user systems. Features include central and individual diaries, internal message transfer, meetings planner and internal bulletin board.
• Paperback will be showing the latest upgrade to its popular spreadsheet, *VP Planner Plus 3D* as well as a new route finder system - *PC Navigator*. Together with the *Open Door Travel Organiser and Hotel Guide* this provides a full UK business and leisure travel package.
• Supertech's A4 Handy Scanner will be on offer - this allows scanned text to be spell-checked against a 100,000 word

GAMES

• Mission will be showing *Dominion* for the ST, PC and Amiga. This £24.99 space simulation is set in our solar system and is somewhat revolutionary in so far as it allows eight players and computers to be linked together.
• B Bytes is to launch two new ST games - *Billy Bounce* and *Jump Jack*, both costing around a fiver.
• Fourth Dimension's *Arcade Soccer* and *UIM* arcade games for the Archimedes range will be unveiled on stand K14
• A compilation games pack for the Archimedes will be launched by Cambridge International. For a mere £79.95 you'll get the likes of *Orion, Quazar, White Magic, Holed Out* and *Pac Mania*.
• Hewson is the only main games software house to be repesented. It'll be showcasing *Onslaught* for the ST and Amiga - a 16 bit version of the eight-bit classic arcade adventure

TECH TIPS

Personal computer problems? Express's Agony column has the answer. Write in strictest confidence to Uncle Techtip. The best tips win a freebie – so don't forget to tell us your address and machine

HELP! Taking a GuLP

I recently purchased a Centronics GLP MKII and I am trying to obtain a tractor-feed unit for it. Do you know anywhere that would sell me one?
Is there a decent COBOL for the ST? If so, who and where?
I. J. Slamon, Chelmsford, Essex.

Unfortunately, the last Centronics printer spares dealer I knew (March Hill Computer Supplies, Wolverhampton) closed their doors a year or two ago and I'm afraid I know of no others (anyone out there able to help?).

HiSoft (The Old School, Greenfield, Bedford MK45 4DE. Tel:0525 713716) market Nevada COBOL. The package is based around the popular CP/M COBOL and comes with the ED80 program editor. To run Nevada COBOL successfully you'll need the public domain CP/M emulator available from (among others) Page 6 Publishing, PO Box 54, Stafford. Tel: 0785 213928. HiSoft Nevada COBOL costs £39.95.

HELP! PD File

I have some questions about public domain software.
1. Is it possible to record some music off public domain disk intros, demos or even samples? I thought I could make a tape and sell it to people who have not (or even have) an Amiga. Would it break some copyright laws?
2. Are all of the *Amiga Format* and *ST Format* cover disk programs and demos public domain? I thought they might be because some PD companies have the *Interceptor* demo, *Defender of the Crown* demo and the *Xenon 2* demo. Can I include them all in my PD service?
3.When will you have a regular public domain review? Every fortnight would be quite good
Timo Newton-Syms, Chalfont, Bucks.

1. No! Public domain may be free but the author retains the copyright. All that s/he has said is that anyone may have a copy free, not anyone may chop bits out then sell it to others. Forget the whole idea.
2. No they are not. The reader programs are the copyright of the authors and the *Formats* pay a royalty to include them. The games demos are owned by the games companies – they may well be happy to let you have them but check with the magazine first. Oh, and *Defender of the Crown* and *Interceptor* have never been on *Format* disks.
3. The Editor is considering your proposal for a public domain column. Sounds like a good idea. Perhaps if several more readers express an opinion...

HELP! PC ST

I have an Atari 520 ST machine and would like to buy a *PC Ditto*. Could you please tell me:
1. Whether it is a program that one puts in the drive or do I need to do some soldering?
2. Would it make my Atari ST520 IBM compatible?
3. Do I need to use a 5.25-inch disk drive?
4. What are the drawbacks?
5. Which *PC Ditto* is the best?
6. What is the price?
7. Anything I could buy to familiarise myself before buying?
I Salonia, Eltham, London.

PC Ditto is software package. You do not need to solder anything to your ST, but merely insert the utility disk into your drive and boot it. Due to some very clever programming, *PC Ditto* negates the need for expensive processor and other hardware add-ons and emulates the 8088.
2. Yes. *PC Ditto* transforms your ST into genuine PC compatible.
3. You do not need to have a 5.25 inch drive in order to make use of *PC Ditto* as most IBM-PC software comes on 3.5-inch disks as well as the ubiquitous 5.25-inch variety. However, adding a 5.25-inch drive will give you access to every program ever written for the PC. 5.25-inch drives for the Atari ST cost around £100 and are available from a variety of dealers including those who advertise in *Express* (Evesham Micros is a particularly well known and reliable supplier).
4. Because *Ditto* relies entirely on software algorithms to emulate the PC it is much slower than the traditional add-on hardware modules. This isn't a problem when using programs such as word processors but is very obvious in spreadsheets, databases and games. Also, because the code for *Ditto* is held in memory you lose some of the ST's RAM.
5. There is (to my knowledge) only one version of *PC Ditto* on the market. A planned hardware-based *Ditto* has been announced and is shortly to be made available.
6. Around £69 depending from whom you purchase.
7. *PC Ditto* has been around for a long time and reviews of the software appeared in magazines many issues ago. You might like to obtain a text detailing MS-DOS from your local library. In this way, you will be able to find you way around the PC command line interface (not easy if you've only used GEM in the past)

HELP! Big drive

I have seen a kit advertised to upgrade the old Atari ST's half a megabyte internal disk drive to one megabyte. What I would like to know is how easy is it to fit – bearing in mind I can just about manage to change a fuse in a household plug!
T. Bennet, Wimborne, Dorset.

Many ST (and other) computer owners would like to upgrade their machines but find the prospect of opening up the computer, plugging and unplugging hither and thither somewhat daunting. Fortunately, it's not quite the case for worry you seem to think. Go ahead. Buy the drive and fit it yourself. It's a simple matter of undoing a half dozen screws in the bottom of the ST's case, removing the inner metal shield, unplugging the old drive, plugging the new one in its place then reversing the dismantling procedure. Simple, huh?

TIP In the STARs

With reference to R. C. Crawford's letter in *Express* issue 52. Are you quite sure that your advice concerning his Star LC-10C printer is the most appropriate? Is this Commodore specific version of the Star LC-10 really so designed that it can only accept commercially produced interfaces?

It could well be possible to ask Star to reveal data on the design of the LC-10C input connections so the Mr Crawford could build an interface. This would provide some hassle, but should cost less cash than a standard commercial PCW interface, if it were even available, and would allow the retaining of the desired colour printing capability and the use of a printer with his Commodore eight-bit machine.

If R. C. Crawford is happy with this arrangement, or at least more happy than with your suggestion of forking out more money in order to buy a brand new printer, it could well not be very difficult to construct a suitable interface. If he does not have access to the electronics equipment necessary for this, I would be happy to liaise with him in this matter. I have been attending an electronics course for the last few months and have access to all the equipment which would be needed for this work.

I would consider the assembly work a fair swap for information on how an LC-10 works with a PCW as if I manage to find the money for it, I wish to buy a colour printer myself.
J. Vickers, 19 Central Parade, Herne Bay, Kent CT6 5HX.

Have you ever tried to extract electronic information (or any other information for that matter) from a major computer and consumer electronics manufacturer, J. Vickers? I think you might be somewhat surprised at the response if you did. I have countless letters from disappointed punters who can't glean even the most simple information about the products they own, from the suppliers.

Thank you for the offer of help though, and I'm sure R. C. Crawford is putting pen to paper at this very moment to take advantage of your good Samaritan act.

TIP Amy emulation

A friend of mine has just passed me a copy of *New Computer Express* and in it I have read several comments about a program called

Bug of the week

I own Arnor's *Protext* which I find very good. However, I've discovered an interesting bug which your readers might like to hear about.

If you use [Alt]-D to insert the system date, you're provided with the correct date. But if you use the spell checker then [Alt]-D again you're given yesterday's date!

Arnor blames the Amiga's Workbench, but that doesn't explain to me why the difference in dates comes about.
A. H. Foster, Basset, Southampton.

• With a flick of the wrist, Amy68 will transform this simple ST into an Amiga!

AMY68 – an Amiga emulator.

My shareware group Softcom are hoping to have this program available in the UK public domain libraries. The program is currently only available in the United States as its author, Tim Mayhen, is based with Arnonal Designs Inc. This company has produced many of the commercially available emulators available in this country.

I have spoken to Tim on several occasions and he has agreed to supply copies of the AMY68 so that we may distribute them in the UK public domain libraries. The program will sell for around £115 inclusive of VAT *(forgive me for asking but when did the last public domain program anyone bought cost 115 quid?- Uncle TT)* Unfortunately, due to copyright restrictions, the UK version of AMY68 will not come with a copy of AmigaDOS. Users will have to buy the original copy separately. The version of AMY68 we hope to have available by Christmas 1989 will include the latest additions including 'Graphic-X' and 'Dma-68'.

AMY68 is now the most powerful, fully-featured Amiga emulator *(the only Amiga emulator? – Unc)* available for the ST.

Matthew Alders, London.

HELP! Which printer?

I own a Spectrum +3 and a Multiface 3. I hope that Santa will bring me a printer for Christmas and as you know, Santa doesn't always know much about computers *(witness the thousands of poor kids who end up with end-of-line eight-bits every year – Uncle TT)*, never mind printers. So I decided to get him some advice from someone who does know *(but you decided to write to me instead – Unc)*.

I will use the printer for some word processing with *Tasword 2* and some other basic word processing programs. I will also be using it to print out listings from the computer and a few other things. I will be really only using it for my basic needs as a beginner.

Please could you tell me what printer Santa should buy for me and how much it will cost? What will I be able to do with it and what won't I be able to do with it? Do I need connections to put it into the back of my computer? I would like it to be a good quality printer but not cost Santa too much.

Keith Campbell, Belfast, Northern Ireland.

There are two printers on the market at the moment which are incredibly popular among home users and which are both excellent value for money.

The Star LC-10 is a colour printer costing around £160 (examine the deals offered by advertisers in *Express*) which allows you to print letters, graphics etc., in several colours, has good print quality,readily available replacement print ribbons and connects directly to the ports at the back of your machine.

If £160 is a little more than Santa can afford (cheapskate) then have a look at the Panasonic KXP1081. Costing around £100, the printer offers fast print speeds, quality printing and is widely available. It will also connect directly to your computer.

HELP! Archie and Amy

I would like to transfer graphics and sound samples back and forth between an Archimedes 410/1 and an Amiga 500 via a serial link. It's not just ASCII files so PC emulator to PC emulator won't work. I figure I'll be using the necessary comms software but I can't figure out the suitable lead and they're not exactly offered for sale in the computing press. So would it be possible for you to publish a details of a null modem lead? I don't suppose you know of any PD disk readers for this facility? They're probably aren't any due to the widely varying disk formats used.

And for Amiga specifically: is the A500 bus comparable with the A2000's co-processor slot or 86 pin slots? Are any connections omitted? This basically leads on to whether an expansion box for connection to the A500's bus connector providing A2000 slots, will replicate the A2000's exactly.

Glen Baugh, Shepperton, Middlesex.

You need to construct a lead with the following connections using two 25-way 'D' type connectors: pin 2 to pin 3, pin 3 to pin 2 and pins 7 tied together. Locate some PD comms software for the Amiga (George Thompson Services are a good source of public domain utilities. Call them on 0770 82234, The library has many comms programs all suitable for your purposes). Connect the two machines, fire up the software, select file transfer using Xmodem, and away – as they say – you go!

Attempting to connect A2000-compatible peripherals to an A500 via the latter's bus will result in many frustrating and wasted hours – and hard cash. Shelve the plan, it's a dodo.

HELP! Console capers

I am hoping to purchase a games console in the very near future. I have narrowed down my choice to a PC Engine and a Sega Megadrive. Which one of these is technically supreme? And which has the best long term prospects?

Y. Tsang, Slough, Berkshire.

The PC Engine is probably the more technically sophisticated of the two machines. However, the Sega Megadrive is here now, there are hundreds of games available, a dedicated magazine (our sister publication *S*) devoted to all aspects of play with the Sega and it's cheaper.

Buy the Sega Megadrive and spend many happy hours etc...

HELP! Money moans

Having just bought my first copy of *Express* I feel I must write to you regarding the price of an Amiga *(no dear, this is* Express*, a magazine, right? Not Commodore – Uncle TT)*.

At the moment I own a Commodore 64C an am intending to upgrade to an Amiga. Unfortunately, there is so much variability in price (excluding the VAT) that I cannot decide where to obtain one.

I only wish to use it for games and paint programs. Where can I find such an offer with these only?

Pisces, Yorkshire.

Your best course of action is to rummage around in the advertising section of our sister publication *Amiga Format* (on sale at all good newsstands) wherein you'll discover a veritable Aladdin's cave of cut price Amiga computer stores touting for your business.

I'm sure you'll understand that I can't be seen to recommend one cheap company over another.●

TIP Superbase fix

A while ago I wrote in with some bugs in *Superbase Pro*. I'd got around one of them, but the other had me baffled. Well now I've worked that one out too and for everyone who has waited with bated breath *(will you both stand up – Uncle Techtip)*, here's the solution.

The problem is with user defined menus. If the user selects *Superbase* info... from the Desktop menu the program freezes up. This is because there is no routine in your program for handling it, and the Menu command doesn't allow access to the Desk menu. So if you have no access, how can you get around it?

The answer lies in the routine which returns the menu and item selected, Menu On. To use this, two integer variables (say title% and item%) are set up in which the value of any menu item is returned; the first variable returns the menu title, and the second the item selected. Both these variables are at first initialised to zero and then a WHILE loop is used to check for any change, as used in the manual's example (that is, as used in the README file's example). This gives the following code:

```
MENU ON title%, item%
WHILE title%=0
WEND
ON title% GOSUB
    menu1, menu2,
    menu3, etc...
```

This is wrong and was the reason for all the trouble. Although title% is set to zero in the first place, *Superbase* recognises the difference between title% equalling zero and nothing having been selected and title% equalling zero and the Desk menu having been selected. This means that if title% still equals zero coming out of a WHILE loop, the Desk menu has been selected. More than this, the only time it sends a message for the Desk menu is if *Superbase* info... is selected; it lets accessories do their own thing. So if a menu is chosen and title% equals zero, *Superbase* info... has been selected.

All seems well, but there is another problem. The `ON x% GOSUB p1, p2, p3...` starts from one. That is, if x% equals one it will go to subroutine p1. If x% equals two, it will go to p2 and so on. Zero is missed out. If x% equals zero, *Superbase* doesn't bother going anywhere! Fortunately, there is a very easy solution to this problem, just add one to x%. Now it will start doing what you want. The new menu selection loop should look like this:

```
MENU ON title%, item%
WHILE title% = 0 AND
    item% = 0
WEND
title% = title% + 1
ON title% GOSUB
    deskmenu, menu1,
    menu2, menu3,
    etc...
```

Note the change in the WHILE loop. And that's it.

Ian McColl, Sheffield, South Yorkshire.

THE POWER OF GRAPHICS

Alexandra Palace was the venue for the 1989 Graphics Show. Brian Larkman was there...

CG89, the computer graphics industry's showcase, now has a perfect new setting in the vast splendour of Alexandra Palace, north London's prestige show venue. As usual the space was filled mostly with anonymous grey boxes displaying content-free images. But amongst all the machinery rendered boring by its telephone number prices stood a few familiar names displaying products that those of with home micros can actually afford. Most of them were running, predictably, on Amigas in one of the Commodore booths though one or two surprises could be found elsewhere in the halls. There was no sign of any Atari or Acorn products despite their pretensions towards the low end graphics area.

16,000,000 RAINBOW COLOURS

One of the greatest surprises of the show was the 24 bit frame buffer previewed for the first time in public by the Amiga Centre Scotland (ACS). 24 bit colour has become the definite flavour of the month in Macintosh circles but so far only the expensive (£6,000) Vista board, operating via a PC bridgeboard in an A2000, has been able to display 16 million (2^{24} equals 16,777,216 – hence 24 bit) colours on an Amiga screen. ACS has now a fully functioning prototype board driven directly by the Amiga capable of displaying all those shades at a resolution of 900x600 – and the price is likely to be well below £1,000.

The board was developed originally – using an Oric Atmos – by three young designers based in Oxford. Jan Jones, Andrew Moss and Alan Tucker. They built the first running Amiga version in mid August this year and contacted Martin Lowe at ACS towards the end of September. He has funded the current version, which has 3Mb available, allowing full double buffering of images.

At present, few Amiga products provide 24-bit colour but the list is growing. The NewTek DigiView digitiser has always provided 21-bit RGB files, and Byte by Byte's *Sculpt* series can render in 24 bits. *Caligari* and *Optiks* will also now display 24-bit images and the new Sharp JX100 colour scanner, mentioned below, scans at 18 bits per pixel. Microillusions is also reportedly preparing a screen painting package suitable for Hi-Tensions eight-bit Amigraphex colour board (also visible for the first time at the show). All these could be displaying images in full colour, even on a standard Amiga monitor using the ACS board. Nevertheless the arrival of the Apple 32-bit QuickDraw standard and the rapid growth of 16 million colour Macintosh systems is fast leaving behind the Amiga in the colour stakes. The ACS board could go some way to putting the Amiga back into contention – if Commodore wishes it.

Sadly this seems less likely as a result of a silly disagreement at the show between ACS and Commodore over several ACS staff on the stand not wearing suits. Midway through Wednesday Martin Lowe moved his equipment and staff onto a hastily prepared stand elsewhere in the hall. This sort of squabble can only damage the prospects of both companies – and the Amiga.

REAL THINGS

The 'instant' animation power of *Deluxe Paint III* for the Amiga has encouraged third party developers to start offering animated clip-art. RGB Studios was demonstrating *Real Things – horses*, the first in a line of realistic 'animation kits'.

Dan Silva's innovative 'animbrushes' are so simple that once an animated sequence has been captured, anyone can paint it onto the screen, constructing detailed choreographies with ease. *Horses* is based on the work of the late Cecille Trew. Her drawings of animals in motion are ready-made for animation and the kit provides accurate animbrushes of horses walking, cantering, galloping and jumping as well as more conventional pictures and brushes of the sequences that went to make them up.

The *Real Things* series is available from RGB Studios, tel. 082581 2666, or Digipro, tel 0703 703030.

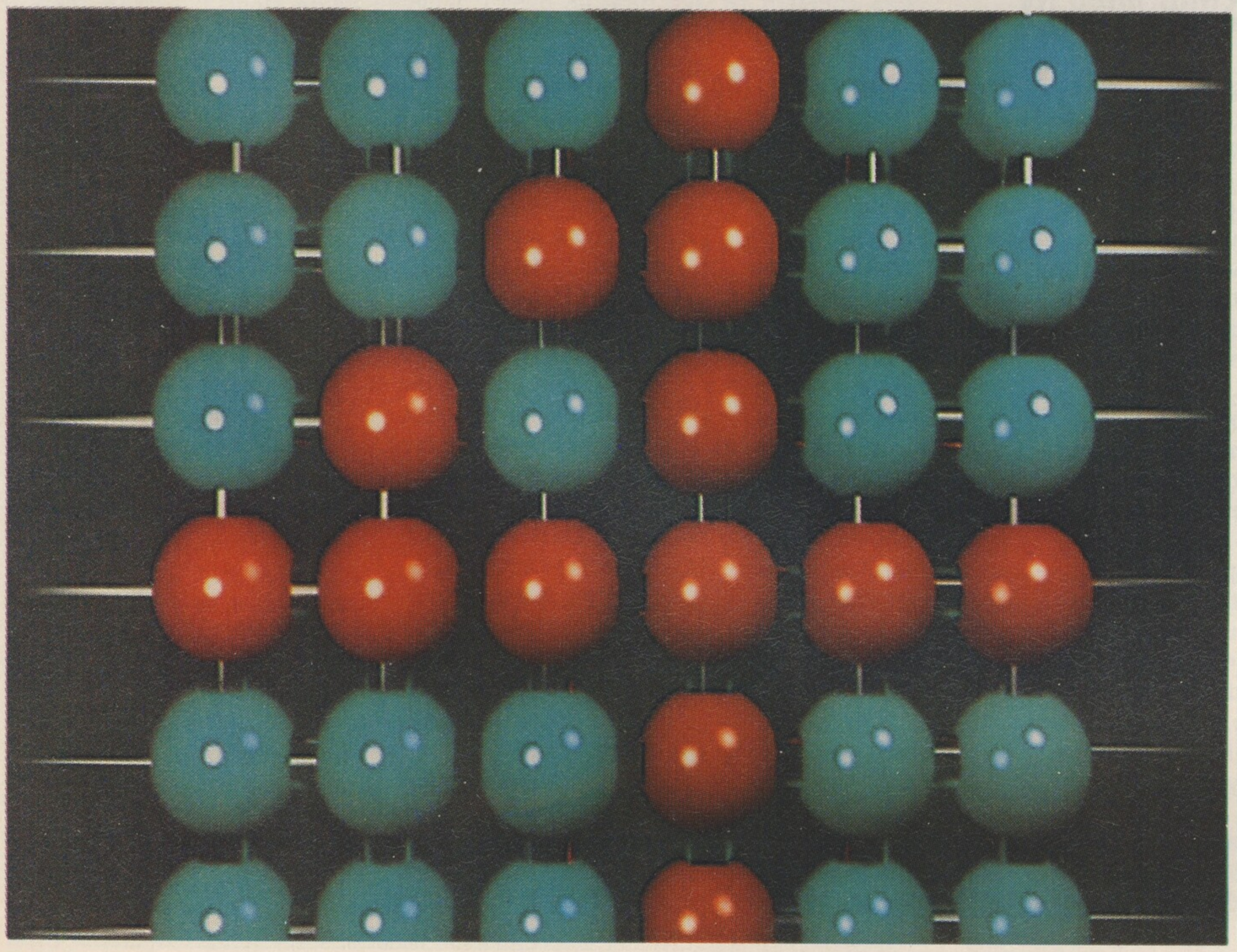
AUTODESK GETS ANIMATED

Judged by its products Autodesk, the developer of *AutoCAD* (the best selling industry standard CAD package) has always seemed a rather staid and solid company. It was a bit of a surprise therefore to see it issuing a glamourous desktop video product, *Animator.*

Running on standard IBM 286- and 386-based PCs with a high-res colour VGA display, *Animator* provides a wide range of animation and titling features. These will allow professional production and post-production facilities superior to virtually all other PC-based systems and rivalling those provided by the Amiga and the Macintosh.

The features include a simple WIMP-type interface, TV-style optical animation effects (flips, spins, twirls, etc.), cel animation with inbetweening and page flipping, polymorphic transformations, colour cycling and, of course, comprehensive painting and drawing tools.

All this for £199 plus VAT. Contact Autodesk on 01-928 1393



***• Rendering is the technique used to give realistic relfections in shiny objects. It requires vast amounts of computing power (and time) to do properly, especially if 16,000,000 sahdes are used, as in the picture on the left from* Sculpt Animate 4D**

• *Stills from RGB Studios'* Real Things – Horses *animation done with* Deluxe Paint II

PHOTOREALISTIC PARIS

Much of the top-end professional computer graphic imagery on display at the show was infested with the usual demonic whirling of plastic toys. One of the animated films on display however, Paris 1789 produced by Thomson Digital Images, had a richness of imagination and sheer fluidity reminiscent of Disney in its heyday. Commissioned by the French government to celebrate the bicentenary, it recreated the flavour of the disturbed metropolis during the French Revolution.

The scenes portrayed are lovingly observed, obsessively detailed and textured. A sail-barge moves up river in a drifting fog, with a sickly sun reflected of the queasily rippling texture-mapped current. A hot air balloon sails above on a tangential arc. A desk is covered with leather-bound books, dry and crackling parchment maps, feathered quills, and gleaming ink bottles, all revealed in full textural detail.

TDI in association with Ex Machina and the Institute National de l'Audiovisuel used its state of the art modelling, rendering and animation system *Explore 2* running on RISC-based IRIS 4D workstations. Paris 1789 was runner up at the 1989 Computer Graphics Film Festival. It gives a brief foretaste of an entertaining future for us all.

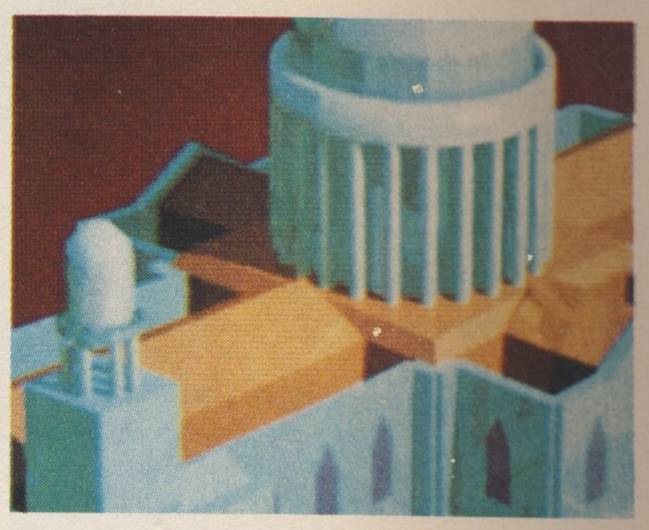
Thomson Digital Image Ltd is on 0242 227600.

A BIT OF COLOUR

All of the references to bits of colour can be rather confusing but it's all quite simple really. Each extra bit per pixel doubles the number of colours that it can display. thus an eight-bit card can display 256 colours (2*2*2*2*2*2*2*2 or 2^8). 24-bit cards can display more than 16 million colours (2^{24}=16,777,216).

• *These pawns were drawn using* Caligari *in 32,000 colours and output with the Amiga Centre Scotland's frame buffer. You'll have to wait a while yet though before your Amiga produces images like this AND plays a decent game of chess*

• *The apple above was produced using* Sculpt-Animate 4D *and rendered in 24-bit colour giving 16 million shades*



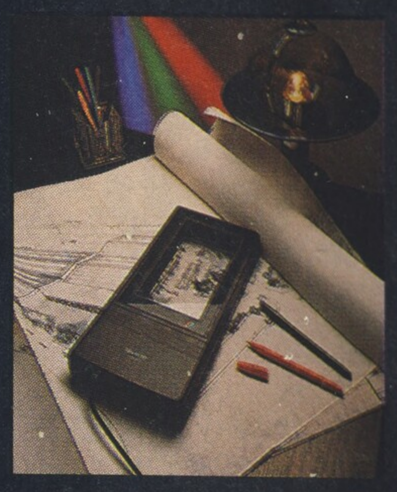
• *The latest graphic arts packages allow realistic shading to be generated simply by defining the light source's position*

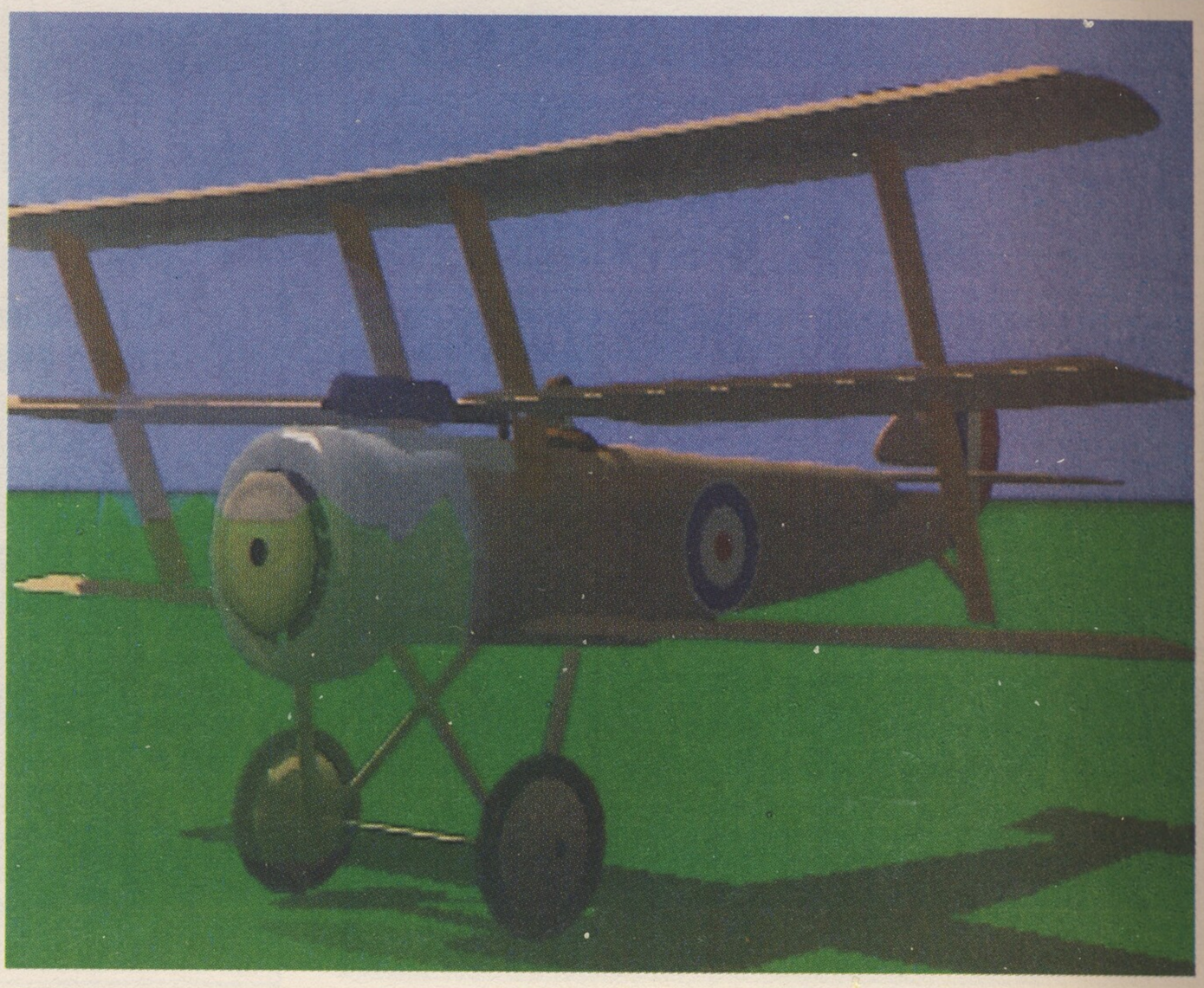
HAND SCAN IN COLOUR

Later this month Sharp will begin to distribute its JX100 Colour Hand Scanner for the Amiga. ASDG, developers of the ScanLab interface for Canon scanners, had the Sharp scanner operating with its ScanLab software in one of the Commodore booths.

Unlike most hand scanners the JX100 is placed over the original artwork so that a moving scan bar within it can make the three passes required for RGB information. 200DPI scans at 18 bits per pixel (262,000) colours can be made over an area of four inches by six inches. The software can then operate on the RGB files in a number of ways and process the image to produce an .IFF image in any of the Amiga's modes. Support will be provided for the forthcoming Amigraphex graphics cards. The JX100 will connect directly to the Amiga's serial port, transferring data at 10,000 bytes per second. It costs £695 including VAT and software.

For more details telephone 0923 817548.





ARCHI-MIDIS

Could the Archimedes be the musician's choice for the 1990s? Acorn certainly think it should be. James Santer investigates.

The music industry has become an all important market in the eyes of today's top computer manufacturers. Both Atari and Apple have been pushing their ST and Mac machines as musical micros for several years now, and rival Commodore has recently realised the potential of the Amiga as a valuable tool within the modern recording studio. Now Acorn too, with its powerful range of RISC-based Archimedes machines, sees the music industry as an all-important vertical market.

While everyone else has been sitting back putting the Archimedes down as a impressive, but expensively priced 'no-hoper', Acorn, in conjunction with leading Acorn dealer, West Wiltshire Micros, organised an Archimedes music seminar which was held earlier this month at the Royal School, Bath (the home city of *New Computer Express*). While the seminar featured an obvious bias towards the teaching of music in schools, there was plenty to interest for musicians of all levels. Representing third party software producers were ElectroMusic Research and Minerva Software (producers of the Archie *Atelier* paint system).

After a brief introduction and overview of the Archimedes from Steve White of Acorn, the seminar was quickly handed over to Mike Beecher of ElectroMusic Research. During his time within the music industry, Mike has worked with such big names as Jean Michel Jarre, Ultravox and Tangerine Dream (remember them?). Between the continual stabs at Commodore and Atari, Mike demonstrated EMR's own *Arpeggio Music* system, as well as providing a general overview of the Archimedes' musical capabilities.

EMR's *Arpeggio* system currently consists of series of nine programs, all of which are geared towards the production of music using either the Archimedes' internal sound hardware, or external MIDI devices such as samplers, synths and drum machines.

For those of you who can't afford to take out a second mortgage for racks of MIDI gear, EMR demonstrated *SoundSynth*, a very clever program that allows you to create internal Archimedes sounds using various synthesis techniques. Sounds can be built up from either existing samples (grabbed using EMR's Sampler 8 board or Clares' *Armadeus*), by overlaying harmonics onto a basic sound wave form, or even by simply drawing the waveform you require with the mouse.

The heart of *Arpeggio* is EMR's *Studio 24* system, which is a complete 24 track MIDI sequencer. The system comes in a number of different configurations, ranging from the base program, *Studio 24*, through to *Studio 24 Plus* and *MegaStudio*.

The *Studio 24* series provides all of the tools that you'd expect from a sequencer. Sequences can be recorded in real time from up to four simultaneous MIDI inputs (using EMR's MIDI 4 board), and then edited either as MIDI events, graphic blocks (*à la* Amiga *Music-X*) or in score format. With *Studio 24 Plus*, you can even record straight onto the stave, with what you play appearing on screen in notation form.

EMR also produce a SMPTE expansion card which, when used in conjunction with *Studio 24 Plus* and a suitable genlock card, can transform the Archimedes into a complete post-production system for adding music and sound effects to video.

Sequencers are all very handy for MIDI equipped musicians, but when you want to share you creations with the world, printed notation is required. To do this, Mike demonstrated *ScoreWriter PMS*. *ScoreWriter* is a professional-quality music typesetting program that produces scores for output to any standard PostScript-compatible device. With a £500 price tag and PostScript only output, ScoreWriter certainly isn't aimed at the amateur musician.

For budding musicians with special needs, EMR demonstrated *Handi-Music*, a unique music composition program designed for use by disabled people. The program allows simple melodies to be created under the control of a single switch connected to the user port.

The Archimedes certainly looks set to make a name for itself within the music industry. Already musicians are reaching the limits of the Atari system and looking elsewhere for a more powerful alternative. The combination of powerful video hardware (such as the BitBopper) and powerful MIDI software such as Studio 24 and puts Acorn in a very strong position indeed.●

Contacts: Acorn (0223) 245200; ElectroMusic Research (0702) 335747; Minerva Software (0392) 437756; West Wiltshire Micros (0225) 762759

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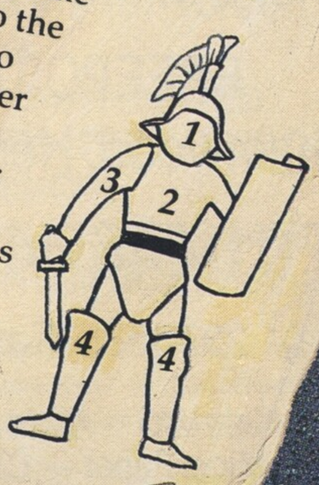

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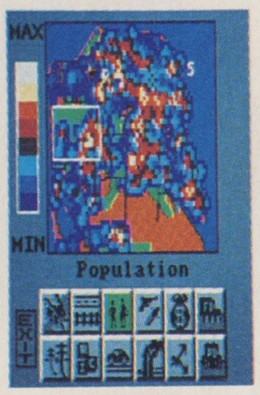
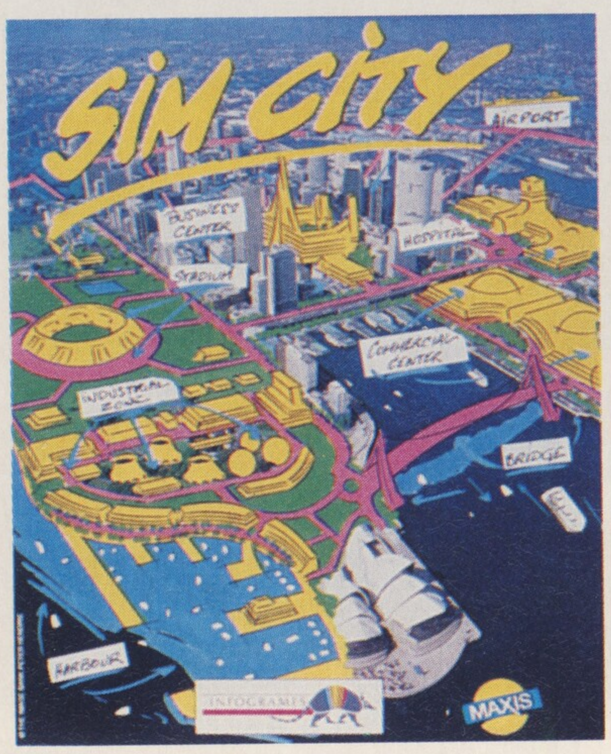
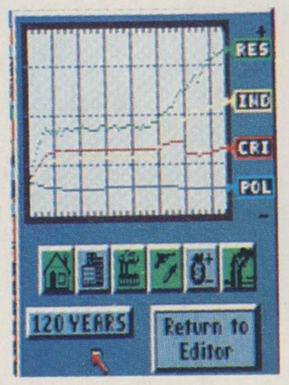


SIM CITY

What you should know about the game of the year.





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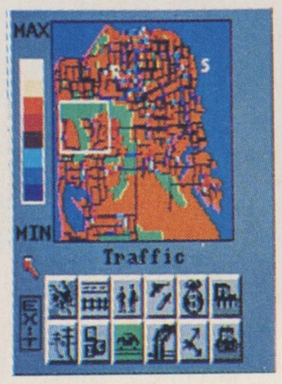

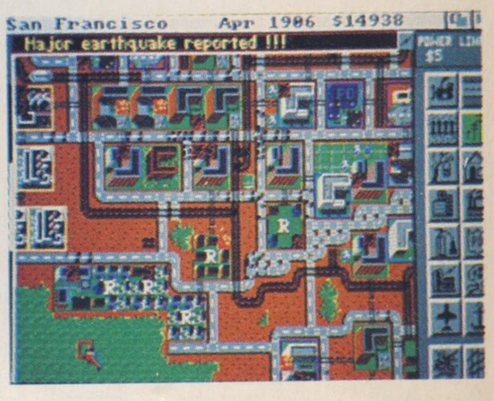

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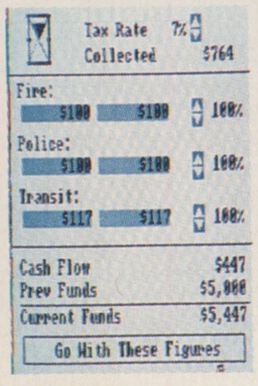

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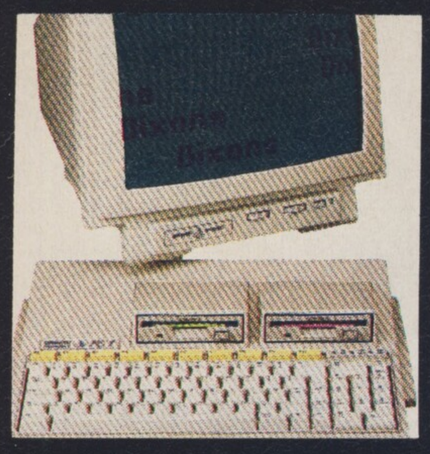

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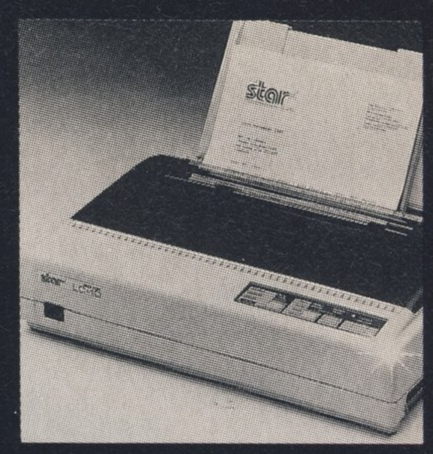

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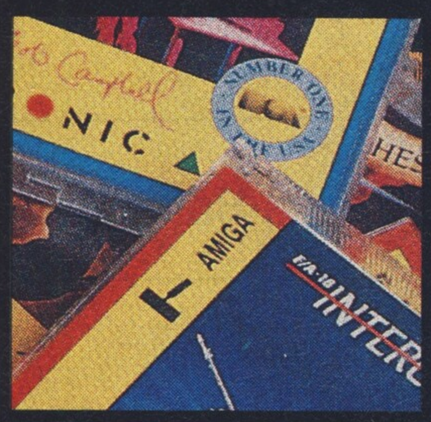

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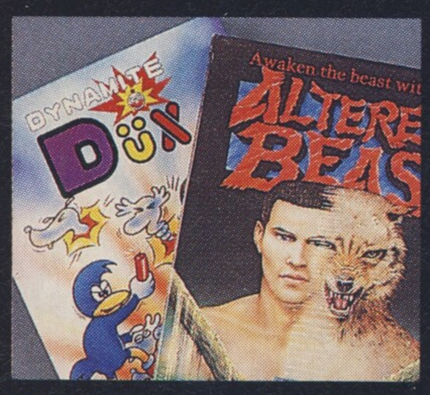

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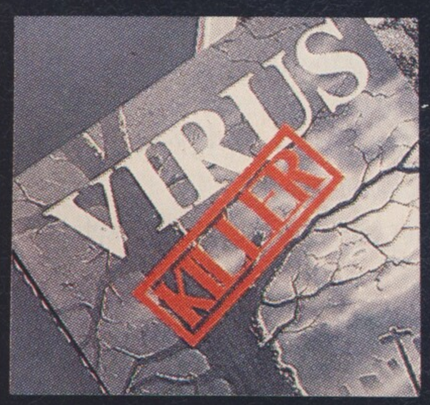

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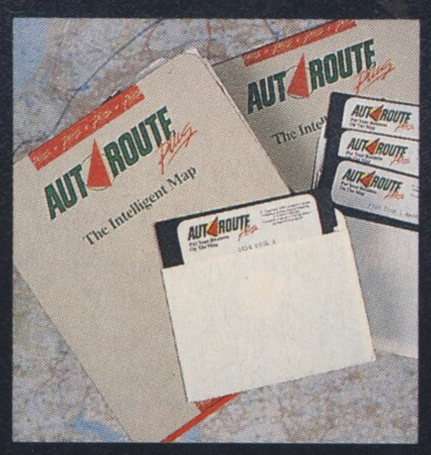
All you have to do is answer 30 simple questions between now and December 8th. To enter, you need the card that came on the cover of this issue of Express. Questions 11-20 will be in next week's Express, and 21-30 in the week after that.

■ 4 FAIRY TALE GAMES • *Adventurers haven't been left out. Get in cahoots with the goblins. VALUE: £120*

■ 10 LANCASTER • *Lots of good reviews welcomed this bombing extravaganza from CRL. Tally ho. VALUE: £200.*



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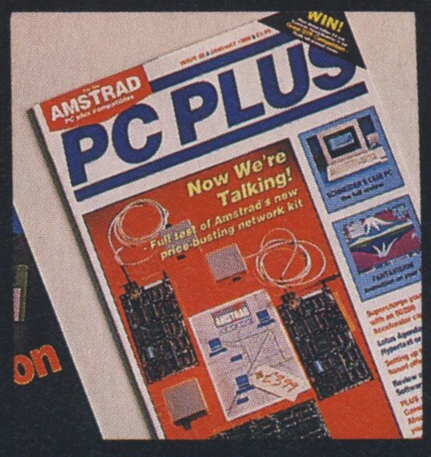
■ 2 MICRONET SUBS • *Log on to the UK's leading on-line telecommunications service and get a free modem too. VALUE: £550*

■ 10 KENNY DALGLISH • *No competition would be complete without a footie game – try this one from Impressions. VALUE: £200*

■ TWO MUSIC-X AND TWOI PHOTON PAINT • Sound and colour for your Amiga from Microillusions. VALUE: £500.

■ 10 ASTERIX • *Great licence for Christmas, the Gaul comes to computing from France's Coktel Vision. VALUE: £250*

■ FIVE QUARTET • *Music for the ST from Microdeal, a well received Gem-based composition program. VALUE: £250*



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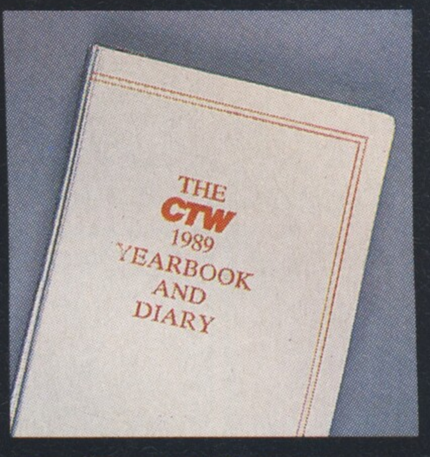

■ 20 CTW YEARBOOKS. *Get on top of the industry. This book from trade paper CTW is invaluable. VALUE: £400*

QUESTIONS

1 The 'Amiga Batpack', offered as a prize by mail order company Westoning, consists of a brand new Commodore Amiga A500 plus which game?
A *Batman The Movie*
B *Graham Gooch Test Cricket*
C *Dracula*

2 NEC is the company behind the PC Engine Plus, offered by Mention and Active Sales and Marketing with five games in this competition. What does NEC stand for?
A Nice Expensive Con sole
B National Electric Corporation
C Nearly Electric Computers

3 The SAM Coupé, offered by Miles Gordon Technology, can run programs designed for which computer?
A NCube 2
B Cray XMP3
C Sinclair Spectrum

4 Five of Atari's Lynx handheld games machines are up for grabs. What is a lynx?
A A furry cat-like animal
B A seaside golf course
C Shirt cuff fasteners

5 Sega's Super System is being given away with three games. The Sega company is based in which country?
A Virgin Islands (UK)
B Japan
C The Gilbert & Ellis Islands (Kiribati)

6 An Amiga monitor plus 25 games is being given by US Gold. What does 'amiga' mean in Spanish?
A A hair shirt used for penance
B A type of flat sausage
C Girlfriend

7 US Gold is also giving 15 Christmas compilations. On what day is Christmas celebrated in the Republic of Ireland?
A December 25th
B December 27th
C April 17th

8 15 CD compilations are coming from Codemasters. What does CD stand for?
A Coded Digits
B Compact Disk
C Computer Data

9 Electronic Arts is giving loads of games. In an atom, what is an electron's charge?
A £15 per hour
B Gross indecency
C Negative

10 What is the literal meaning of the MGM motto 'Ars gratia artis'?
A Art for art's sake
B Be thankful for artists' bottoms
C A verbal contract's not worth the paper it's written on

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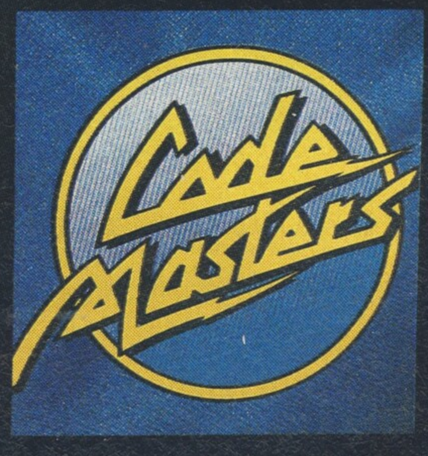

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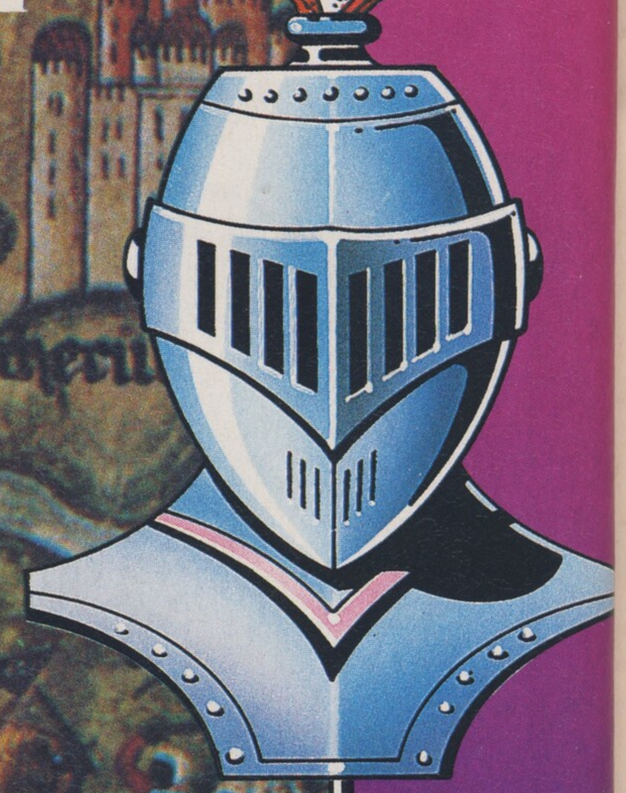

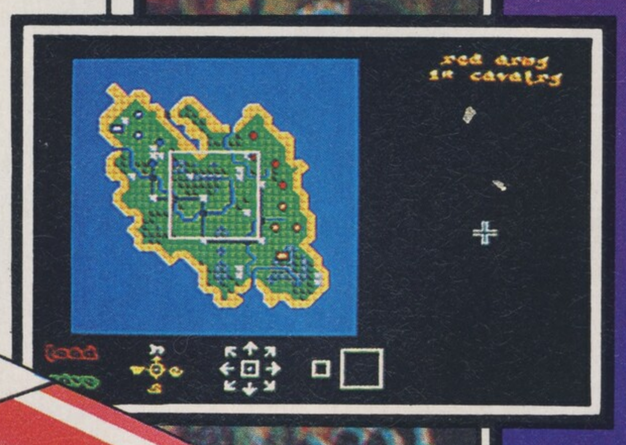

Frames

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Screen shots from various systems.

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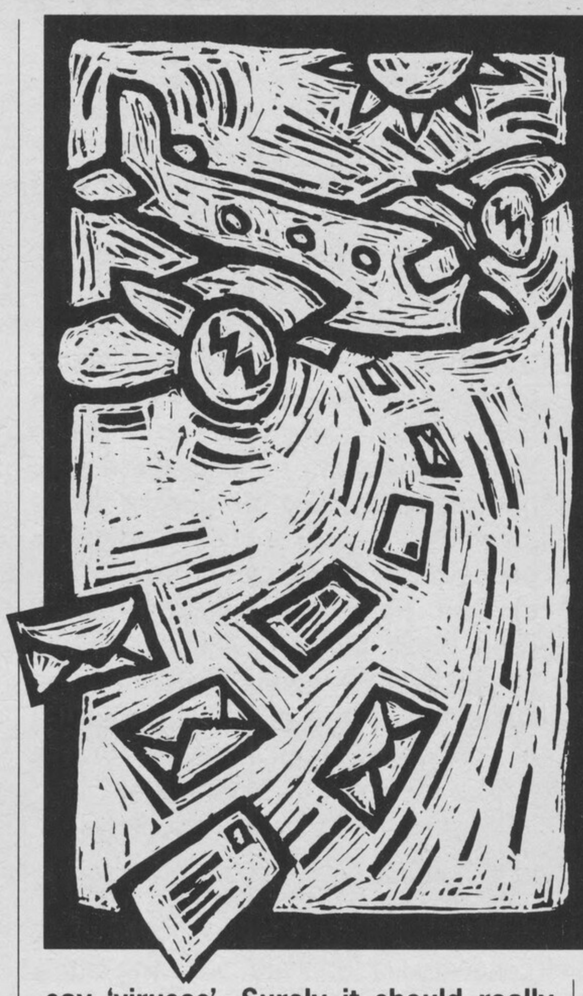

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Sorry, no personal replies, even with an SAE. We're too busy writing *Express*!

EMP yarn

Yes indeed, EMP (electromagnetic pulse from a nuclear bomb) would zap computers, and in theory fly-by-wire aircraft such as the F16 would probably fall out of the sky in case of a nuclear war.

But the Mig 25 Foxbat is said to use valve based technology throughout! Therefore one way of surviving a nuclear war would be to be in a Foxbat, at the right time, at the right place (not too close to a nuclear explosion, or a bunch of enemy fighters, though one can guard against the latter by removing the red stars on the wings and replacing them with dove symbols). What you do after landing on a radioactive planet is simply another matter.

This leads on to a useful computing survival hint, simply replace each chip in your micro with a few hundred valves. Make sure you buy a case about the size of an average living room to accommodate you upgraded computer. STFM and A500 users, this is a brilliant way of transforming you micro into a three box, PC-like system.

Sinclair PC200 users, take note, Amstrad has already equipped your micro as such, so there's no need for any modification whatsoever.
Ahmad Alam, Old Trafford, Manchester

Did you hear about the nuclear bomb that fell on the warehouse where they store the PC200s and did over £50 of damage? Well, it seems there was a nuclear bomb that...

Pedant's Point

(strictly not a point but a finite area)
I think you keep getting the plural of viruses wrong. You always seem to say 'viruses'. Surely it should really be 'viri'?
David Stockley, Walsall

Virus is a Latin word meaning 'slime, filth' and its plural in that language is indeed *viri* (as the noun is second declension but, uniquely, neuter). However the new OED gives viruses as the English plural, though it makes no mention of virus in the computer sense.

Dutch courage

I finally obtained (via Future Publishing) a couple of issues of *New Computer Express* (I can't get it here!) and I must say that I am impressed. It's a great non-computerslagging (ST vs Gameboy etc.) weekly magazine. I wonder what the subscription prices are as nothing was mentioned in the magazine.

I was surprised with the letter in issue 50 about the Amiga emulator for the ST. I know it's a program for fun, not to replace the Amiga. I also know (and have) a PD ZX81-Emulator for the ST! It's just like the good ol' days: mono graphics, no sound, superb BASIC, and outrageous arcade-conversions of *PacMan* and *Donkey Kong*.

No seriously, it's fun to play around with it. All the multi-functional keys are there too, together with an on-line help key that displays the ZX81 keyboard layout to show you where to find the BASIC commands. You can also have an 1K, 16K or 48K(!) ZX81. There are commercial QL, PC and Mac (hardware based) emulators for the ST as well, all running faster than the originals!
Jay Lee, Capelle a/d yssel, The Netherlands

You can subscribe by sending £56 for a year to *Express* Subs, The Old Barn, Somerton, Somerset TA11 7PY (the same price for all countries in the EC). See you at the shop in Amsterdam that sells space cakes just over the bridge from the station...

Flush with success

Congratulations on you first anniversary issue (or was it a post-April 1st issue?). I read it in the loo and laughed so much my wife thought I had swallowed the Harpic and gone clean round the bend. I can hardly wait for the second anniversary issue.
Victor Chudley, Windsor

Hit the flaw

I think the *Express* voucher discount is a good idea but there seems to be a flaw in this service. While buying some kit (£320 worth) with my Visa by phone from Evesham Micros who advertise with *Express* and accept vouchers I was told that it does not apply to phone orders. I think this should be mentioned on your voucher page and is a sure case for the European Court. I rest my case.
Paul Trainer, Oakwood, Leeds

I suppose the problem is that it's impossible to get the vouchers to Evesham Micros over the phone because however tightly you roll them up they won't fit in the new phone sockets.

No use trying the European Court of Human Rights – they don't accept Express vouchers over the phone either.

Drinking to Excess

I thought *New Computer Excess* was very funny. The Excess Mail was good but didn't you get the letter editor's comments wrong? I mean they were not much different to the ones in the actual mail section...
AH Foster, Bassett, Southampton

Thanks. We had a great laugh doing it, but unfortunately the planning meeting

Disappointments: an employer replies

As a software publisher I have read with interest the correspondence headed Disappointments in Programming in issues 51 and 53.

Being a programmer is so different from running a software house that it is often difficult to see things in perspective, for example, it is very easy to get the idea that owning a software house is a licence to print money. There may have been a time in 1983 when this was the case, but it certainly isn't true today, and most of the people who made money in 1983 lost everything and more in 1984/85. I would guess that of around 300 software publishers in 1983 less than 10 per cent are still in business today, the rest having gone into liquidation, been taken over (much the same thing), or merely packed up.

Even today the life expectancy of a new-born software company is probably less than two years; many people who start up software houses are better at writing programs than they are at running a business - and sometimes it is the other way round.

New companies tend to be founded on optimism - let's face it, if you weren't optimistic (a) you wouldn't start up in business and (b) nobody would want to deal with you. I am sure that most of the time the people running these companies actually believe the projections and promises that they make - at the time. If you want to play safe, only deal with well-established software houses, preferable one that is a member of ELSPA, the European Leisure Software Publishers Association. I can't speak for other member software houses, but we at Audiogenic have a policy of paying programmers, artists, musicians and development houses at the earliest possible opportunity - often before the money is technically due under the terms of the contract.

Unfortunately, just as there are software houses which behave unprofessionally, so there are programmers who fail to come up with the goods on time - if at all. This can happen when dealing with well established development companies. There are, I'm sorry to say far more mediocre unprofessional programmers around than there are good, professional programmers. This is not intended as a criticism of programmers in general - after all, how many footballers ever get to play for England?

One reason that freelance programmers have a hard time is that they try to do everything themselves. Nowadays expectations are so high that it is not realistic to expect one person to be an expert game designer, programmer, artist and musician - stick to what you are good at and leave the rest to those who can do it better than you. A good design lies at the heart of all successful games, yet there are very few programmers who are half as good at games designs as they are at programming. Audiogenic rarely take on unsolicited submissions because although most are competently programmed, they are either badly designed, or merely a clone of a recent hit. It is difficult to come up with games that are both original and fun to play, but believe me, that's what the public wants.

One final piece of advice for anyone starting out as a freelance programmer - get hold of a copy of a book called *Success in Software* by Richard Hanson of Superior Software. Published in 1987 it is now a little out of date, but it's the best guide I've come across for a newcomer.
Peter Calver, MD, Audiogenic Software

was unavoidably held in a public house. This meant our annual *Excess* budget was blown in one session – which is why there won't be another till next year.

Tempest control

I wrote to you on 27 October (copy enclosed) about my son's unfortunate experience with Tempest Computers in response to their advertisement in *Express* 33. Can you take this up with them? Alternatively can he claim under the Mail Order Protection Scheme? Or should I contact the Advertising Standards Authority?
MG Miller, Sheffield

Hmm. We've had no other complaints about the company. I'm afraid we can't chase them up ourselves as we no longer deal with them, and as *Express* is not a member of the Mail Order Protection Scheme it seems your only recourse is to the Small Claims court. Sorry we can't be of more help.

Thanks all

You were kind enough to let me take advantage of the free 'Reader Ads' and I have seen my 30 words in the last three issues under 'Help Wanted'.

This is to say a big thank you to you, the two persons in particular who did help me and the several others who have offered their help.

It must be very gratifying to you to know that you are able to help so many people through the columns of your excellent weekly.

So if you will - please print: 'John Sables says thank you to Chris of Bath, Julian of Bradford and those others who have taken the trouble to telephone me'.

And by the way: I agree that Evesham Micros are very good. I know from experience.
John P Sables, Barnstaple, Devon

Happy to. John Sables says thank you to... oh, you already have.

Rubber bullets

We are currently running an offer where we are giving away free condoms with orders over £4, so we decided to advertise in your sales section with a small box to begin with. This was fine until we sent in the details to go into this advert, we obviously wanted the words 'free condom' to feature in it, but we were told by you ads department that 'condom' cannot be printed because young children read you publication and so it was not suitable.

This in principle is fine, but three points contradict this:

a) Four weeks ago in the 'snippets' news section we were mentioned and the words 'free condoms' were used there – surely young children saw this?

b) In this letters page there are sometimes letters or replies that contain language that most people would deem unsuitable for 'young people', yet you are happy to print that. "Utter crap" was one reply you've given before, and some people might say that the phrase "slagging off" was more misleading to young children than 'condom'.

c) And finally, if the government (God bless Maggie!) think it's quite acceptable for young children to be subjected to the disturbing traumas of 'condoms' then why do Future Publishing think it's unsuitable?
Neil Slater, Paradise Computers, Brighton

There's nothing wrong with the word 'condom', just as there is nothing wrong with lots of good old English anatomic four-letter monosyllables – in context, that is. To use them as cheap eye-catchers for an ad campaign would be going too far, hence our reluctance to feature the word 'condom' in large letters as an advert. What is appropriate in a letter reply may not be in an advert; I can legitimately use the word 'condom' here an eleventh time, because I'm doing so for artistic rather than commercial effect. It's a fine line, but I stand firmly on this side, which happens to be the right one. Anyway, that's enough outrageous free publicity for Paradise Computers. And if some people would say that 'slagging off' was more 'misleading' than the word 'condom' (12 times), all I can say is, they'd be talking utter wibble.

ST vs Amiga

I don't know if I should buy an Atari 520ST-FM or a Commodore Amiga 500. Which do you think is the best buy? And which one would keep its value most? And which one has the most software written for it?
David Russell, Derry, Ireland

The answers are Amiga, ST, ST, Amiga, but not necessarily in that order.

Seriously, I think the following points are generally agreed:

a) Either machine is a very good buy, especially with the amazing discounts and bundles currently offered, and each will keep its value equally.

b) The ST is probably better as a 'techie' machine – it has more emulators and programming software than the Amiga.

c) Amiga is better for games and graphics, having better graphics and much better sound capabilities than the ST.

d) Persuade someone to buy you one for Christmas and you're laughing.

Appealing idea

Charitable organisations in Yate need computer/word processor with letter quality print.

To help us present a professional image when applying to trusts, businesses etc. we desperately need to produce good quality letters. A word processor would make what is now laborious and time consuming a quick and easy task.

If you can help us could you please contact Lin Gillians Co-ordinator, Yate Sodbury &District Community Transport, 100 Station Road, Yate, Bristol. Tel: 0454 316448 (Chipping Sodbury).
Lin Gillians, Chipping Sodbury, Avon

Anyone out there help? And if you do get fixed up, Lin, perhaps you could let us know how you get on?

Pricing policy

Your readers seem silent on the issue of eight-bit software prices. If £20-25 is exorbitant for a 16 bit game, surely £10-15 for an eight-bit game is the con of the century.

Perhaps the problem is the better price/ performance ratio of modern hardware. As the power of the popular home machines increases, so will the cost of software compared to the cost of the machine. No doubt a machine with the power of a Cray will cost a few hundred pounds in a few years time, but the software will cost tens of thousands of pounds. Users will have to deny themselves hardware they can afford because of software they can't. Perhaps that is the answer to 'expensive' software today as well?
Mike Fenn, Norwich

Ah, but the way inflation is going, we'll be earning £1,000,000 a week by then.

SAM things to ponder

After reading a letter in *ACE* magazine (in a newsagent - I wouldn't actually buy it), a writer living in dreamland said that his ideal computer would have a 32-bit processor, co-processors, blitter chips and multi-multi-channel sound. I suppose it will have graphics better than real life too.

Let me give my specifications for a realistic (ie cheap) ideal home computer.

Firstly, it would have to be eight bit. This is mainly because I don't think that the 16 bits can really do anything better, bar speed. I'm not saying that we should stick to the 'ancient' eight bits; what I'm saying is that 16-bits should be a gradual evolution as opposed to the revolution it has been.

Let's choose a common processor, say the Z80. Immensely popular and still surviving. Being an already used chip, the machine should emulate a successful home computer so there is a large base of software on launch.

Add some enhanced graphics and better sound (not state-of-the-art but really good) plus 80 column mode for those odd bits of serious use, and you'll get a powerful all-round machine. Incorporate a fast and friendly BASIC on the ROM so that users cannot excuse not learning a language, and voila! a perfect computer.

To top it up, have the company pledge continuous support and total upgradability with a friendly customer care policy.

Yup, a great proposal ..... wait a minute ... MGT have ripped off my idea! SAM Coupé? What a stupid name. And they have thought of everything. Even MIDI and networking!

Arrrgggh! Where's my lawyer? More importantly, what's MGT's phone number?
Ton Voon, London

MGT's phone number is 0792 791100 and a SAM Coupé will cost from £170.

Your lawyer will be in the phone book and his advice will cost you a great deal more than £170.

If I were you I'd stick with the SAM Coupé. It's much better value.

Like many other Spectrum owners I have been waiting with bated breath for the release of MGT's Coupé and at long last the brochure and order form have arrived. Reading through the brochure with great excitement and my hand itching to fill the order form out I started to look at the prices a little more carefully.

Alas, things are not quite as they at first seemed. During telephone calls to MGT on another matter they had enthused over the Coupé comparing it with the Atari 520STFM (the display may well be but the reviews will prove or disprove whether the performance is!) but when I started to add up the prices...

Coupé + one disc drive = £249.90.

256K Add-on memory = £39.95.

Parallel Printer interface = £29.95

...making a total of £319.80 including VAT and delivery. The ST can now be purchased to the same specifications for £260 including VAT and delivery, a difference of nearly £60. Even the original target price of under £150 for the entry model has gone by the board, and that is now £169.95.

So, greatly disappointed I have decided that Father Christmas will be delivering a new ST to this address next month. I wish the Coupé every success however as there is a desperate need for a good Spectrum compatible replacement.
Geoff Hockney, Seaford, East Sussex

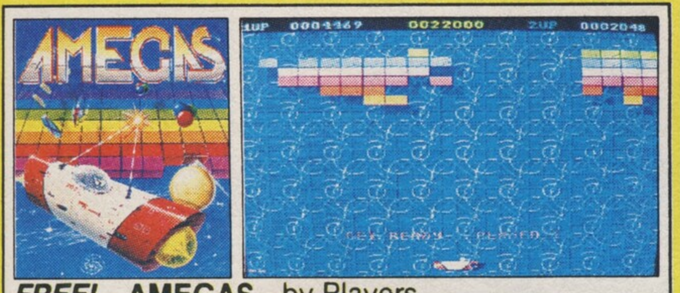
As a company that believes passionately in communicating with out customers, we at MGT were disappointed to read two recent letters to *Express* from readers complaining that they had not received information on the SAM Coupé. In the meantime we had sent SAM brochures to 6,500 customers and the two readers mentioned have now received the required SAM info.

It took some time to create an accurate, fun and above all, informative brochure and we think we've achieved that! Anyone who hasn't received one can ring our customer care department on 0792 791100. Also, our SAM Coupé hotline (0792 791275) keeps all our customers up-to-date on a weekly basis, with the latest SAM information available 24 hours a day.

We would also like to take this opportunity to slap *Express*'s wrists for stating that SAM is already available. MGT has never said this and for those interested, early December will see the first Coupés being shipped. But thanks for the coverage anyway.
Alan Miles, Miles Gordon Technology Plc, Swansea

Good. Well, that's quite enough gratuitous free advertising for the SAM Coupé.

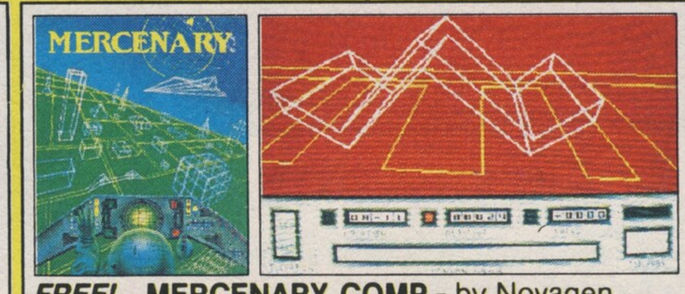
FREE! TENSTAR PACK WORTH OVER £229!



FREE! - AMEGAS - by Players

FREE! - INSANITY FIGHT - by Microdeal

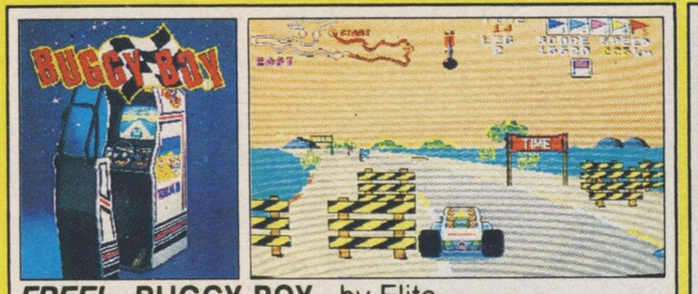
FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen

FREE! - BARBARIAN, ULT WARRIOR - by Palace

FREE! - TERRORPODS - by Psygnosis



FREE! - BUGGY BOY - by Elite

FREE! - THUNDERCATS - by Elite

FREE! - IKARI WARRIORS - by Elite

FREE! - WIZBALL - by Ocean

Commodore AMIGA

£346.95 +VAT = £399

INCLUDES FREE UK DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers. E&OE.

WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you:

THE FULL STOCK RANGE: The largest range of Amiga related peripherals, accessories, books and software in the UK.

AFTER SALES SUPPORT: The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

FREE NEWSLETTERS: Mailed direct to your home as soon as we print them, featuring offers and latest releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped to Silica Shop customers within the UK mainland.

PRICE MATCH PROMISE: We will normally match our competitors offers on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

PHOTON PAINT PACK

A500 Computer	£399.99
TV Modulator	£24.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£724.43
LESS DISCOUNT:	£325.43
PACK PRICE INC VAT:	**£399**

1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£999.43
LESS DISCOUNT:	£350.43
PACK PRICE INC VAT:	**£649**

FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least!), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

FREE TENSTAR PACK

When you buy your Amiga 500 from Silica Shop, we want to make sure you get the best deal possible. That is why we are giving away the TENSTAR GAMES PACK worth nearly £230, absolutely FREE with every A500 purchased from us. The TenStar Games Pack includes ten titles for the A500, each individually packaged in its own casing with instructions.

Amegas	£14.95
Art Of Chess	£24.95
Barbarian, Ult Warrior	£19.95
Buggy Boy	£24.95
Ikari Warriors	£24.95
Insanity Fight	£24.95
Mercenary Comp	£19.95
Terrorpods	£24.95
Thundercats	£24.95
Wizball	£24.95
	£229.50

TOTAL RRP: £229.50 INC VAT

DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

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LONDON **01-580 4000**
52 Tottenham Court Road, London, W1P OBA
OPEN: *MON-SAT 9.30am - 6.00pm* ***LATE NIGHT:*** *NONE*

LONDON **01-629 1234 ext 3914**
Selfridges (1st floor), Oxford Street, London, W1A 1AB
OPEN: *MON-SAT 9am - 6.00pm* ***LATE NIGHT:*** *THURSDAY 9am - 8pm*

To: Silica Shop Ltd, Dept NCE 1189 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

.....

.....

..... Postcode: .....

Dept NCE 1189

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

EXPRESS LISTINGS

The program listings page with a difference: we admit they don't actually work even if you do type them in right

TEN NEWS STORIES
you'll be reading about this time next year (and the next, and the next...)

10 ST console '12 months away'
20 Super Amiga to be launched
30 Amiga console rumours
40 PC prices coming down
50 Budget 16-bit games on the way?
60 Kids addicted to Nazi horror games
70 Computer fraud in the City shock
80 Elite II 'out soon'
90 Hacking crackdown planned
100 Konix console 'in shops soon'

TEN REASONS
you give your parents for buying a computer when really you want it to play games on and the bits you don't tell them

10 It'll help me at school...
...because my mates will be jealous of my Amiga
20 There are a lot of educational programs...
...teaching you how to play poker for items of clothing
30 Computer literacy is a valuable tool when job-searching...
...because it gives you something to fill those long afternoons of unemployment if you live north of Watford
40 I can learn how to program...
...*STOS, AMOS,* and *Personal Adventure Writer*
50 You can earn lots of money in computing...
...by working as a hardware or advertising salesman and not a programmer
60 We have computers at school...
...but they're all BBCs
70 I can write all my essays and do my projects on it...
...and so tell you that's what I'm doing in my bedroom when in fact I'm playing Batman
80 I can use this good population growth simulator for my biology project...
...called *Populous*
90 It's a good investment...
...which is another way of saying, can I have £500?
100 It could be useful to me in my job...
...if I become a games reviewer, which as I got 14% in my English mock GCSE is extremely unlikely

TEN DREADFUL PROGRAMS

10 Kwasimodo (Amiga)
Probably the worst Amiga game of all time. Looked like a port from a 16K Spectrum, but without the gameplay
20 Disk 15 (ST)
Possibly the worst ST games product ever. £15 for hangman and noughts and crosses – games you get better and cheaper in PD. The first game to be rated by *Express* with no stars and one gravestone instead
30 WordStar Release 4 (PCW9512)
Cost £194.35 and yet couldn't print a £ sign out – unlike *LocoScript,* free with the machine, which can print a £ on any printer in the world
40 Classic Invaders (Amiga)
£14.95 for... good ol' Space Invaders. You could have written better in 25K of BASIC
50 Fleet Street Editor (CPC)
The £40 desktop publisher was months late, compared badly to the opposition, and was BTF (reviewing slang for 'rather bugged')
60 E-Type (PCW)
Pointless typewriter emulator that cost £25. *LocoScript,* bundled free with the PCWs, has a better typewriter emulator built in
70 Photon Paint Expansion Kit (Amiga)
£50 bought you... digitised pictures of wood and marble surfaces. A sort of precursor of the Landscape Channel on Satellite TV
80 Ant (QL)
Appalling PC emulator that very nearly worked with some programs
90 Pecan Pascal (PCW)
Impossibly clumsy Pascal compiler which turned even a single command into a 700K 'library file'. Most PCWs only have a 180K disk drive
100 Rape
The Japanese game in which you accrued points by chasing young women across a car park, ripping off their clothes and sexually assaulting them, was banned in Japan this year after an outcry from feminists. Surely the sickest game of all time

TEN FILMS
that feature computers, most of them evil ones

10 2001: A Space Odyssey
HAL, based on the letters preceding IBM in the alphabet, was the first computer film star
20 War Games
Disney film that saw teenage kid hacking into NATO war computers and nearly started WWIII; incredibly his cheapo home micro had a built-in graphics emulation mode for the war supercomputers
30 Tron
Another Disney effort where the hero teleports inside a chip and finds the characters in the games actually exist inside
40 Oxford Blues
Thicko yankie's mate hacks into Oxford University's Admissions Computer and gets him in, where he goes on to win the Boat Race single handed. The *Express* editor was an extra
50 The Forbin Project
The US and USSR war computers link up, decide that humans are not fit to run the world, and kill the lot of them
60 Dark Star
Computer controlled bomb thinks it's God and blows up its mother spaceship in this classic satire
70 Never Say Never Again
James Bond takes on the evil genius at a World Domination shoot-'em-up – and wins
80 Superman III
Richard Pryor invents the world's best computer to beat Superman, but Truth Justice and Freedom triumph
90 Licence to Kill
Another Bond film that revolves around precious data on disk which was somehow never backed up; you even glimpse Masterfile running on a PC
100 Terminator
Computer decides that humans are not fit to survive so invents 'Terminators', humanoid robots, to kill them all

NEXT WEEK

PSION ON THE DOTTED LINE
First hands-on test of the latest laptop PC-compatibles from Psion

PC ON THE ST
How to change your ST into a IBM-clone at a flick of a switch

GIRLS, GIRLS, GIRLS
Why are there so few women in computers and what do the ones who've made it have to say?

PLUS

- Micros north of the border: the Scottish computer show
- Music software and hardware guide
- A column for your machine

WITH

- Tech tips' sound advice
- Computing's best soapbox – the letters pages
- Six pages of the latest news

AND

Part two of our stunning Christmas competition

Out next Thursday

520ST-FM SUPER PACK

The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The Pack includes a 520ST-FM with ½Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

1Mb DISK DRIVE
£450 OF SOFTWARE

ARCADE GAMES

Arkanoid II	Imagine	**£19.95**
Beyond The Ice Palace	Elite	**£19.95**
Black Lamp	Firebird	**£19.95**
Buggy Boy	Elite	**£19.95**
Chopper X	Mastertronic	**£9.99**
Ikari Warriors	Elite	**£14.95**
Marble Madness	Electronic Arts	**£24.95**
Quadralien	Logotron	**£19.95**
Ranarama	Hewson Consultants	**£19.95**
Return To Genesis	Firebird	**£19.95**
Roadwars	Melbourne House	**£19.95**
Starquake	Mandarin	**£19.95**
Test Drive	Electronic Arts	**£24.95**
Thrust	Firebird	**£9.95**
Thundercats	Elite	**£19.95**
Wizball	Ocean	**£19.95**
Xenon	Melbourne House	**£19.95**
Zynaps	Hewson Consultants	**£19.99**

SPORTS SIMULATIONS

Eddie Edwards Super Ski	Elite	**£19.95**
Seconds Out	Tynesoft	**£19.95**
Summer Olympiad '88	Tynesoft	**£19.95**

PRODUCTIVITY SOFTWARE

Organiser	Triangle Publishing	**£49.95**

JOYSTICK

Atari CX40 Joystick	Atari Corp	**£4.99**

FREE ATARI BUNDLE VALUE: £458.97

£399
INCLUDING VAT

With SM124 mono monitor: £498 INC VAT
With SC1224 colour monitor: £698 INC VAT

ATARI ST
ST COMPUTERS

The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer, whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below.

All prices correct at the time of going to press. E&OE.

520ST-FM EXPLORER PACK
WITH BUILT-IN 1Mb DISK DRIVE

The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

£260
ONLY £2.51 PER WEEK
RETURN COUPON FOR DETAILS
+VAT= £299

+ SM124 mono monitor: £398 INC VAT
+ SC1224 colour monitor: £598 INC VAT

1040ST-FM PROFESSIONAL PACK

NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for further information.

£499
INCLUDING VAT

With SM124 mono monitor: ..... £598 INC VAT
With SC1224 colour monitor: ... £798 INC VAT

ATARI 1040ST-FM	(Computer)	**£499.99**
VIP PROFESSIONAL	(Spreadsheet)	**£149.95**
MICROSOFT WRITE	(Word Processor)	**£149.95**
SUPERBASE PERSONAL	(Database)	**£59.95**
BASIC DISK & MANUAL	(Language)	**£24.98**
	NORMAL RRP:	**£884.82**
	LESS DISCOUNT:	-£385.82
	PROFESSIONAL PACK PRICE:	**£499.00**

2Mb & 4Mb MEGA ST

The MEGA ST computers are styled as as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both Free Of Charge. Return the coupon for further details.

2Mb MEGA ST
£899 INC VAT
+mono monitor = £998
+colour monitor = £1198

4Mb MEGA ST
£1199 INC VAT
+mono monitor = £1298
+colour monitor = £1498

DTP PageStream £149 +VAT =£171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

- **TEXT-FLOW AROUND GRAPHICS**
- **ROTATION OF TEXT & GRAPHICS**
- **SLANT OR TWIST ANY OBJECT**
- **POSTSCRIPT COMPATIBLE**
- **TAG FUNCTION**
- **AUTO/MANUAL KERNING & HYPHENATION**
- **GROUPING OF OBJECTS**

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SILICA STARTER KIT: Worth over £200, FREE with every Atari ST computer bought from Silica.

PROFESSIONAL PACK: Free business software with 1040ST-FM and MEGA ST's bought from Silica.

DEDICATED SERVICING: 7 full-time Atari trained staff with years of experience on Atari servicing.

THE FULL STOCK RANGE: All of your Atari requirements from one place.

AFTER SALES SUPPORT: The staff at Silica are dedicated to help you get the best from your ST.

FREE CATALOGUES: Mailed direct to your home as soon as we print them, featuring offers as well as all of the new releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped within the UK mainland.

PRICE MATCH PROMISE: We will match competitors on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Atari technical experts always at your service.

FREE SILICA STARTER KIT WORTH OVER £200

WITH EVERY ST - RETURN COUPON FOR DETAILS

ALL PRICES QUOTED INCLUDE FREE UK DELIVERY

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OPEN: *MON-SAT 9.30am - 6.00pm* ***LATE NIGHT:*** *NONE*

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PLEASE SEND FREE LITERATURE ON THE ATARI ST

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Address: .....

.....

.....

..... Postcode: ..... Dept NCE 1189

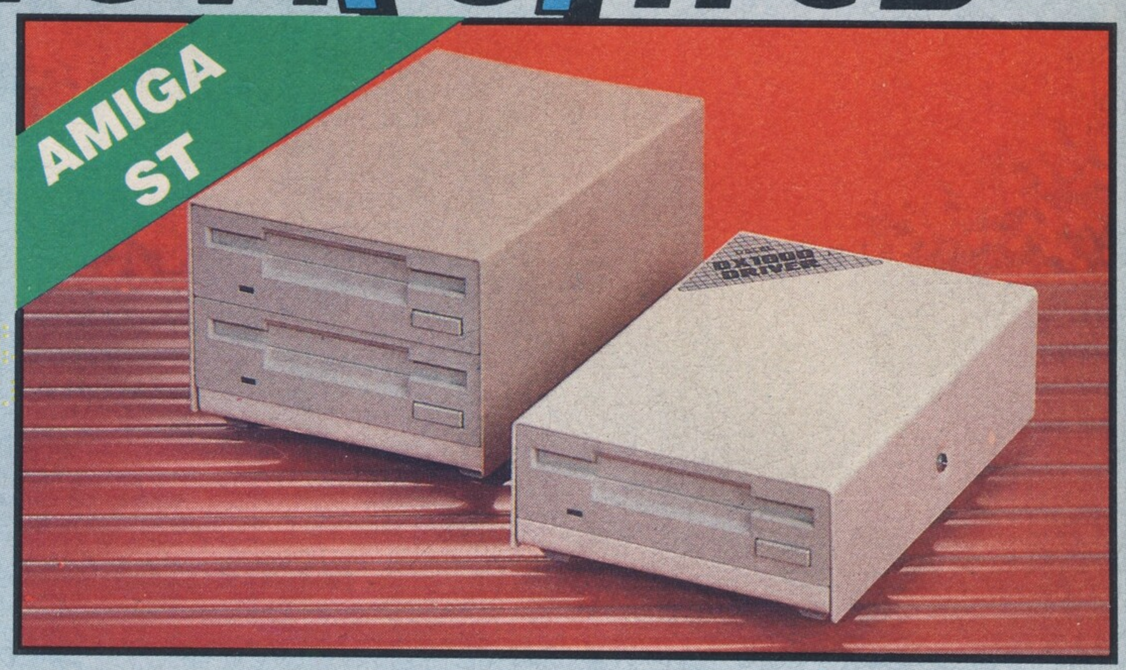
Do you already own a computer
If so, which one do you own? ..... DTP ☐

DATEL ELECTRONICS

EXTERNAL 3.5" DISK DRIVE

- Slimline extra low profile unit - only 6" long!
- Top quality drive mechanism. Fully compatible.
- Throughport allows daisy-chaining other drives (Amiga only).
- A superbly styled case finished in computer colours.
- 1 meg unformatted capacity.
- Good length cable for positioning on your desk etc.

AMIGA VERSION SINGLE DRIVE
ONLY £74.99
ST VERSION
ONLY £89.99 WITH FREE OCP ART STUDIO



AMIGA ONLY **TWIN DISK DRIVE ONLY £129.99**

ADD £5 FOR COURIER DELIVERY IF REQUIRED

MICRO MIDI

- A simple low price MIDI Interface for the A500.
- All the features found on more expensive units. Fully compatible.
- MIDI In - MIDI Out - MIDI Thru.

ONLY £24.99

MIDI CABLE - 3 Metre Length
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You won't be able to send this off until you've answered all the questions. This issue of Express, 55, has questions 1-10. Questions 11-20 will be in issue 56 and questions 21-30 in issue 57.

WEEK 1	WEEK 2	WEEK 3
1.....	11.....	21.....
2.....	12.....	22.....
3.....	13.....	23.....
4.....	14.....	24.....
5.....	15.....	25.....
6.....	16.....	26.....
7.....	17.....	27.....
8.....	18.....	28.....
9.....	19.....	29.....
10.....	20.....	30.....

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For three weeks, beginning this issue, Express is printing a set of thirty questions – ten each week. You'll find this week's questions, and details of some of the goodies on offer, on pages 52-53.

● Keep this card – it's your official entry form. Record your answers over the three weeks and when you've got all thirty, stick a stamp on, and send it off to us. We'll be drawing the prize winners at random from the all-correct answers we've received by Christmas day – so hurry!

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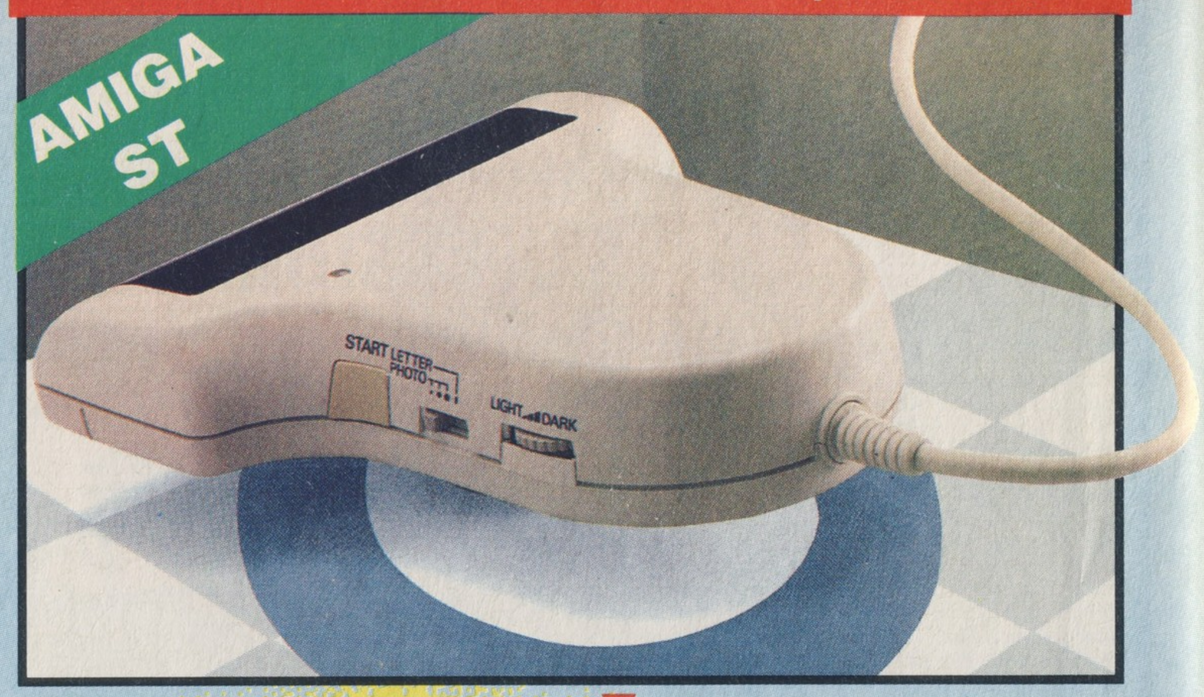

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