Issue 77 • 28 April 1990

ONLY 58p

NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- Bundle for under-11s
- Nordic cartridge
- CharityWare launch

ST

- MIDI 'brain machine'
- Theme Park Mystery
- ...and a mystery prize

PC

- NeXT OS for the PC
- LocoScript at last
- LHX Attack Chopper

PD SOFTWARE

- WP for your CPC
- Music for the Mac

SPECTRUM

- Hyperlane shoot-up

BBC•C64•ARC
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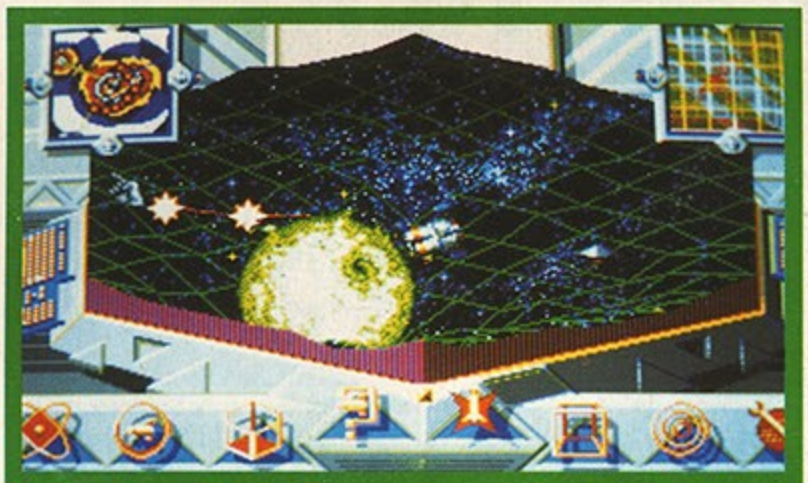


Gravity: is this the Amiga's weirdest game yet? See review page 12

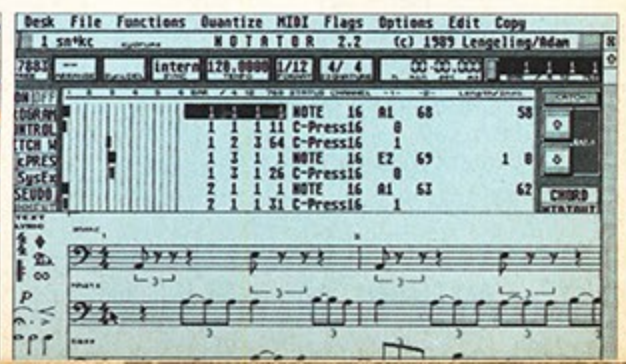
Read Shopping Express, the bumper 32-page guide – best for price and best for advice

CBM PLANS NEW AMIGA

Under development: top secret high-end Amiga portable

page 3

page 52



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CONTENTS

GET EDUCATED 50
The top teaching titles on test

MUSICAL STAR 52
ST sampling and sequencing surveyed

NEWS 2
Five pages hot from the presses

COMMENT/ARCHIVE 8
From past to present

THE PD COLUMN 44
The best of the public domain surveyed

TECH TIPS 56
The manual from Uncle

LETTERS 60
Soap box city

SHOPPING EXPRESS

BUYERS' GUIDE: MODEMS, PORTABLES & PRINTERS 19
Blow-by-blow guide to essential peripherals

READER ADS 30
Hundreds of second-hand bargains

FOR SALE 34
The cheapest dealers in the UK

EXPRESS JOBS 38
Jobs? We got 'em

FREE ADS FORM 46
Place your ad – free

YOUR MACHINE

AMSTRAD CPC 9
BBC MICRO 9
SPECTRUM 10
SAM COUPE 10
AMSTRAD PCW 10
MSX 10
SINCLAIR QL 11
ATARI XE 11
ARCHIMEDES 11
COMMODORE 64 11
AMIGA 12
PC COMPATIBLES 14
ATARI ST 16

Full-colour Gamegear out in Japan in September

SEGA'S HAND-HELD IN UK NEXT YEAR

As first predicted in *Express* (issue 35), Sega is to launch a colour hand-held games machine based on its original games console.

The Sega Gamegear will be released in Japan this September with a UK launch pencilled in for mid-1991. A price of $130 has been set in the US – some $20 cheaper than Atari's colour Lynx. The UK price is likely to reflect that.

Gamegear features a 3.2-inch LCD colour screen displaying 32 colours from a palette of 4,096. At the centre of the machine is an 8-bit Z80A processor. It runs on six batteries which will lastfor three hours.

Gamegear measures 103 millimetres long, 210mm wide and 38mm thick. As was expected, it will resemble the kidney shaped game controllers of the 16-bit Sega Megadrive with a thumb-controlled joypad.

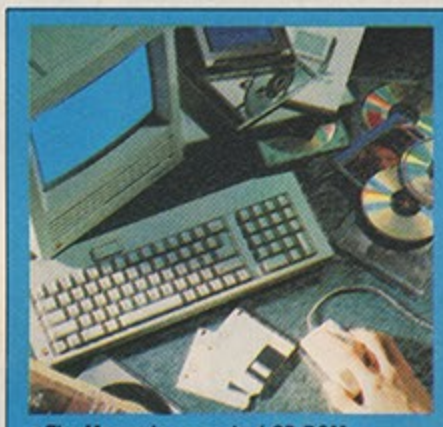
• An artist's impression of the Gamegear.

Sega has ambitious plans for the Gamegear. The firm claims it will sell one million units within the first year.

Games lined up include puzzlers such as *Columns* and *Dengo* as well as *Super Monaco Grand Prix*. They will cost about £20 each.

It is not yet known if the hand-held will be compatible with the wide range of Sega games already available, but it is thought unlikely that this will be able to be achieved.

Despite the machine's impressive technical specification, Sega will have problems catching up with the runaway success of Nintendo's black-and-white Gameboy. That is reported to have sold nearly 4 million units since its launch a year ago. ■



• The Mac gains a packed CD-ROM.

Bulging CD

A CD-ROM disk from Quantum Leap Technologies is claimed to be the largest CD-ROM collection ever produced.

The disk, with 2,570 art files, 931 games 828 *HyperCard* stacks, 1,260 demos, 1,180 sound files, 1,453 music files and over 1,000 utilities totals over 719Mb of information. Quantum Leap collected the files from user groups and bulletin boards and is selling it to Apple Macintosh owners in the US for $99. (Newsbytes) ■

Hanover attendance figures up

The recent Hanover CeBit – Europe's largest computer show – attracted a record 560,000 visitors over the 10 days it lasted.

That's nearly 50,000 more than last year's event. In comparison, Britain's premier computer event, this week's *Which Computer?* Show in Birmingham, is likely to attract around 150,000 visitors.

Next year's Hanover Messe will be held at between March 13 and March 20 and the Germans will be partnered by Hong Kong. The USA partnered them in last month's show. ■

Apricot sold to Mitsubishi

Apricot, the long-established British manufacturer of personal computers, has sold off its hardware division to Japanese giant Mitsubishi.

The division was bought for £39 million – some £22.6 million more than its estimated worth. Mitsubishi has gained a manufacturing plant in Scotland, research and development facilities, a sales and marketing set-up and the Australian subsidiary. The firm will also have gained the high profile Apricot name.

Apricot's remaining operations, centering on software and support, will be renamed ACT.

Other companies which had been involved in discussions with Apricot included Commodore (*Express* 70).

For the year ending March 31 1989 Apricot made profits of £2.5 million. ■

Coin-op converted from home micro game!

A home computer game looks set reverse the usual trend and blast its way into the arcades as MicroProse's *F-15 Strike Eagle* takes off on a mission to empty the pockets of would-be pilots.

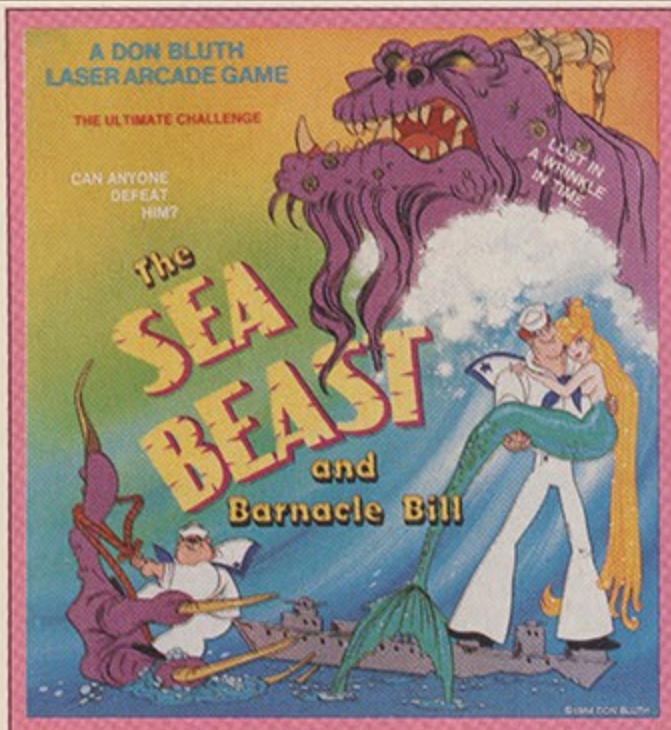
The popular flight simulator cum shoot-'em-up, which MicroProse says offers "instant gratification", has been captured, put in a cabinet and consigned to coin-op land.

The arcade version contains some stunning 3D graphics – the animation techniques used draw filled polygons incredibly fast to give a sense of perspective.

Chuck Grempler, MicroProse's engineering director, claims that *F-15* can generate 60,000 polygons per second and regenerate itself at 30 frames a second.

Already a success on most computer formats, *F-15* is expected on this side of the Atlantic in the autumn. ■

• F15 Strike Eagle: *coining it.*



• Sea Beast: *interactive laser excitement.*

Latest lasers from Space Ace ace

The company that brought you ace arcade faves *Dragon's Lair* and *Space Ace*, Sullivan Bluth Interactive, will be releasing a new 50Mb Laserdisc game this autumn.

The Sea Beast and Barnacle Bill will feature static backgrounds, produced using traditional animation techniques, and computer generated foregrounds. The intention is to allow gameplayers full interactive control over the animated aquatic characters.

Meanwhile, the company's digital Disney, top-animator Don Bluth, envisages a film version of *Dragon's Lair* to follow his latest movie *All Dogs go to Heaven* and his next efforts *Rock-A-Doodle* and *A Troll in New York*.

The good news for home gamesters is that all future film releases will make it to most machine formats, and the company envisages fully interactive cartoons in the home within three to five years providing a market "eventually as big as the film market".

Given the company's interest in CD-ROM and secret negotiations with Philips to use its Compact Disc interactive (CDI) system this claim could ring true as Sullivan Bluth gears up towards producing 10 computer cartoon products a year. ■

High-end machine will revolutionise multimedia

PORTABLE AMIGA IN THE WINGS AT CBM

Commodore's top-secret high-end Amiga portable may yet be on the market for this autumn's peak sales period, although a spring 1991 launch now appears more likely.

Technicians at the firm's Californian research and development centre have been working on the project for two years now, in parallel with the CD-based games machine variously known as the Amiga Baby, the AC-DC and the Black Beauty.

Many technical and marketing options are still under consideration for the portable, and even at this late stage Commodore is understood to be still unsure that the launch is viable.

One of the research team's headaches has been the question of powering the machine. The Amiga contains five dedicated chips, each of which draws a comparatively high level of current. Although Commodore has a foot in the door with power-efficient alternative technology developers, the company is said not to be pursuing these possibilities yet.

Also, although including the Workbench on ROM would be a feasible answer to the irritant of frequent disk-swapping, because the perceived market niche for a portable Amiga lies with high-end users a hard disk is regarded as virtually essential, and this will be even more of a power guzzler.

For these reasons battery life on a laptop Amiga would almost certainly be too short for serious use, and it seems likely that the decision has been taken to make the machine a mains-only model.

LUGGABLE

While this means that the machine will not be pitched as an on-the move solution, but rather as a 'luggable' which can easily be moved from one site to another, most of the tasks for which a portable Amiga may be needed should be within easy reach of mains electricity.

A variety of considerations leave little option on the machine's display type. Because much of the Amiga's attraction lies in its graphical capabilities, an LCD screen will have been ruled out.

While Commodore would certainly like to launch a top-end colour portable, the price of technology in this area remains prohibitively high at present, and a VGA-quality mono gas plasma display is considered the only sensible option.

This will not, of course, stop the machine from actually performing its tasks in colour. Television, video and multimedia users are unlikely to be put off by a mono display, and will almost always be able to view the end results of their work on external colour monitors anyway.

MIDI

Already into a relatively high price bracket, Commodore is not expected to skimp on other aspects of the machine, and it is believed that a built-in MIDI interface will be included, with further expansion slots available.

Apple has already successfully pitched this growing market with its innovative Macintosh portable, while Atari is also happy with sales of its ST portable, the Stacy.

As yet no price has been fixed, but it is thought unlikely that the Amiga portable will be sold for less than £2,000. The Mac portable costs £4,500.

As well as Commodore's own Amiga portable, German company Gigatron has been working on a similar project. Gigatron's machine is close to completion, but negotiations between the two companies are now on hold. ■

Commodore keeps quiet

Commodore is not prepared to discuss its portable at all, and officially does not even admit that the project exists, although it is standard policy not to speak about products until they have been launched.

Indeed the company will not yet comment on its new education bundle (see page 7) and right up to the eve of this week's *Which Computer?* Show it refused to divulge any information on the Amiga 3000, unveiled this Tuesday.

Pre-show rumours about the A3000 were of not one but two workstations (16MHz and 25MHz) with 2Mb of RAM switchable between a new AmigaDOS and Unix 5.4, and retailing somewhere around the £6,000 bracket.

Official details in *Express* next week, on sale Thursday. ■

Loco PC out at last

***LocoScript* for the PC will be in the shops at the end of this week. PC owners have been waiting for the program to arrive since publisher Locomotive announced it last September.**

LocoScript PC contains mail merge, database and programming facilities and has the ability to import files from other word processors. A serial cable will be available for upgraders to transfer their PCW files to the PC. Cost is £125 or £99 for PCW upgraders.

More information from Locomotive on 0306 740606. ■

Shortage of workers hits

A countrywide shortage of 20,000 computer workers looks set to increase by at least 13,000 per year, says the National Economic Development Council.

The jobs up for grabs aren't the high tech glamour jobs but the more mundane work in maintenance and data processing. These functions can take up to 70 per cent of a data centre's resources.

To make matters worse the 'demographic time bomb' will make skills shortages appear worse because of the predicted changes in the pattern of the working population.

The National Computing Centre (NCC), a body charged with promoting best practice in data processing, suggests that there are plenty of people who want to work if given the chance. ■

Big Green? not just yet

IBM is cleaning up its poor record in environmental matters. The world's biggest company has announced a 53 per cent reduction in the emission of harmful chlorofluorocarbons (CFCs) into the atmosphere from its major manufacturing plant in California.

The factory in San Jose was flagged as one of America's worst polluters in 1988 with a CFC emission of 500,000lb. In 1989 that had been reduced to 237,000lb.

A large volume of CFCs had been used to wash disk drive parts during manufacture, but the new method uses less hazardous water-based products.

"This reduction in CFC emissions is the result of a plant-wide effort on many fronts," said the factory's environmental programs manager June Anderson. "The greatest reduction was made possible by the use of more efficient cleaners."

Even so, the company admits it is still releasing a high amount of methyl chloroform which is used to make magnetic recording heads. However, at present there is no suitable alternative. ■

• *New from Hewson:* Nebulus 2 *(left) and* Scavenger *(above).*

Nebulus returns

Fans of Hewson's original tower climbing shoot-'em up game *Nebulus* can look forward to a new version.

Nebulus 2 features the same frog-like character working its way through 16 levels of towers and baddies. It will be available for the ST and Amiga. Also expected soon is *Scavenger*, a multi-level game. ■

Borland aims at 1-2-3 users

Borland is offering users of rival spreadsheets a cheap upgrade to Borland *Quattro Pro*.

For £99.95 Borland will upgrade users of Lotus *1-2-3* versions 2 and 3, *Supercalc* versions 4 and 5, *Symphony* and PC *Excel*.

In a similar way to WordPerfect's offer on *PlanPerfect* last year, the initiative challenges the tradition of software users 'marrying' themselves to a supplier.

It's usual for publishers to offer cheap upgrades to existing users thus scotching any realistic notion of changing package. The high cost of a completely new package forces users to remain with the upgrades of their old product, even if they are dissatisfied with it. ■

The world of CD-ROM

Mindscape is to launch a CD-ROM version of its PC program *World Atlas*.

The disk will cost £99 and is an enhanced version of the floppy program recently launched. It incorporates more colour graphics of maps from around the globe, as well as highlighting data on population, economics and politics. It will be out in three weeks.

For more details call 044486 545. ■

AIDS BB

A Californian bulletin board has opened a free AIDS information section for victims of the disease.

Fog City On-Line Information Service includes an on-screen book called *Surviving and Thriving with AIDS* contained on a 7Mb hard disk.

There is also an international section where users can leave messages and information related to the condition. ■

£599 PC clone pits Dutch firm against Amstrad

PHILIPS UNVEILS ITS NEW LINE-UP OF PCS

Philips has launched a new range of laptops and desktops for the serious home user as well as the office.

The complementary PCD (desktop) and PCL (laptop) ranges come with Microsoft *Works*, an integrated software package. Also included is the game *Indiana Jones and the Last Crusade*.

The desktop series starts with an entry-level single drive 10MHz XT for £599, and includes 286 and 386 colour and mono VGA models. A mouse is included with the package.

All the desktop machines feature a small footprint and a 'designer' fascia.

The PCL 101 is an XT single floppy laptop with a footprint smaller than a sheet of A4 and a thickness of about an inch. It weighs slightly under five pounds but the price tag of £1,199 makes it something of a heavyweight for the home purchaser.

It has a backlit mono CGA LCD screen and a power thrifty 80C86 CMOS processor.

Other laptops are the 80C286-based PCL 203 and 204 with 20Mb and 40Mb drives at £2,399 and £2,799. The 203 and 204 have backlit mono VGA screens with 16 grey scales measuring 224mm by 98mm.

Included with all machines is an instant call-out maintenance package and Philips is offering in home or office training free until September.

Contact Philips on 01-689 2166. ■

• *The designer look for the new Philips PC.*

Defender adventure is back

A follow up to the highly-acclaimed *Defender of the Crown* is to be launched by Electronic Arts.

***Defender of Rome* gives you, a young officer, the chance to build and defend ancient Rome against the unwashed hordes. Whether to quash the barbarians by diplomacy or sending in the legions is just one of the options in a game which Electronic Arts claims features strategy and role-playing scenarios coupled with "cinematic animation".**

***Defender of Rome* has been written by Kellyn Beeck who was responsible for *Defender of the Crown*. It will be launched for the PC in six weeks at £24.99.** ■

• Defender of Rome: *battle it out.*

Chablis and chips

Computers that can learn could be choosing the wines of the future.

Neural networks currently being developed could be used to test the various qualities of wines.

Work at Edinburgh University has been helped along by an injection of government cash for artificial intelligence (AI) research.This funding could bring the robot *maître d'* one step closer.

By repeated trial of samples the computer could build up a nose and palate. It could learn to distinguish between wines identified for it, and as the amount of alcoholic data increased could take a knowledgeable guess at an unknown sample. ■

Taiwanese factory caught with stolen software

ATARI'S FURY AT PC PIRACY CHARGE

Atari has been charged with software copyright infringement by the Business Software Alliance following a police raid on the company's Taiwan factory.

The police found allegedly pirated copies of Ashton Tate's *dBase III* and Lotus' *1-2-3* PC software. The police raid was instigated by the Business Software Alliance of which both Ashton Tate and Lotus are key members.

The BSA says it has every intention of stamping out piracy in Taiwan. Premises of The Pacific Wire and Cable Company of Taipei were also raided and software was seized. Taiwanese law provides for statutory damages of 500 times the retail value of the programs.

Atari has responded to the charge forcefully. In a published statement president Sam Tramiel said: "Atari has a long standing corporate policy against the copying of software and does not permit unauthorised duplicates of software to be used for corporate functions or any other purposes. PCs are allowed at the Taiwan plant for employee's personal use. The Atari Taiwan Manufacturing Corp plant uses an IBM 360 mainframe computer and MAPICS software along with Atari ST computers and software for operations and engineering.

• *Jack Tramiel: furious.*

"While we support the ideals of the BSA in its endeavor to stop piracy we believe that they are misdirected and have blown this matter completely out of proportion and have failed to fully investigate the facts or meet with Atari. We are investigating the matter at this moment and will take such actions as are appropriate but we believe that if duplicates were found in the plant, they were the result of individual employees who did so for their own personal use on their own computers and clearly without authorisation."

Such is the internal fury at the charges that Atari's man of war Jack Tramiel has spoken out. "It is highly unfortunate that time and effort are wasted on such a matter when billions of dollars of revenue are being robbed from American companies each year by mass producers of pirate software," he said. "Each year Atari loses millions of dollar in revenue due to pirate video game producers in Taiwan who manufacture exact duplicates of Atari equipment and sell them the world over, yet that is not the issue they choose to investigate or take a stand against." ■

ST goes to the head

Two Dutch computer users have developed an Atari ST-based 'brain machine'.

Such devices recently hit the news with the introduction of the MC² at the CES Show in Las Vegas (*Express* 67). The systems work by relaxing the user into a state of peace by altering brain waves into alpha and theta categories. This is said to allow the user greater concentration, relaxation and creativity.

The new Brain Wave Lab software/hardware combination allows the use to control both the visual stimulator and the audio information via the program's edit screen.

Inventor Jim Waffer explained: "My friend wrote the program and I worked on the hardware which includes a pair of glasses which are plugged into the printer port. With the program you can control the orange LED in each eye and adjust the sensitivity and speed.

"Sound comes from the audio output of the ST monitor and you can use standard cassette tapes with the system if you can tune in with the original timing. Then you just control the sequencing of the frequencies."

Besides being Atari-based it is also the first brain wave synthesiser to work with MIDI, so you can hook up any MIDI device or instrument with it.

It should be launched in a few months at a retail price of £100. ■

The 'ultimate' football game

If you can't afford a ticket to Italy in June Grand Slam can give you the next best thing. *England: The Ultimate Football Game* is an 3D football simulation that takes you through the World Cup and other tournaments.

You control one player and the computer controls the rest. You can change players, and foul play can lead to bookings.

In between the action and games is management mode, where you can take a breather and make changes to the squad.

8-bit cassettes will cost £9.99, disks £14.99 and ST and Amiga versions £19.99. ■

Konix plans new joysticks

Konix is planning to launch a series of new peripherals and joysticks later this year.

The firm last week took time off from working on its long awaited Multi System console to predict that it will have sold one million joysticks by the end of this year. The firm says its joysticks are more popular than ever with 50,000 sold already this year.

Managing director Peter Puresevic said £1 million had been spent on research and development over the past 12 months. While some of this money has gone to the console, some has been saved over for joystick developments. ■

• *Some of the Konix range.*

Nintendo shoots 'em up

Nintendo's promise to smash the software pirates was backed up by US Customs agents when they arrested four people in North Carolina for dealing in counterfeit games cartridges worth $60,000.

Nintendo investigators worked for weeks with customs agents to track down and seize the 'multiple game' cartridges. The operation involved spy cameras and elaborate recording equipment. Some $10,000 in marked money was used to tempt and finally trap the alleged counterfeiters.

The cartridges each contained up to 40 games and required an adapter to allow them to run. ■

COMPUTER SYSTEM BRINGS NEWSPAPERS TO THE BLIND

Blind people will soon be able to 'read' the national newspapers thanks to a new computer service. The Digital Daily Newspaper will give blind people the news on the day that it happens.

At present they have to either wait for weekly extracts on a cassette tape or ask a sighted friend to read the paper to them.

The new system will let them skim through a paper and choose what they read in the same way as a sighted person reads a printed paper. It will be broadcast through speech synthesis or Braille display.

The trial scheme is organised by the Royal National Institute for the Blind. It transmits text from *The Guardian* via television signals to a computer in the blind person's home.

In the trial scheme, the text from *The Guardian* is split into five sections: home, foreign and financial news, features and sport.

The files from the newspaper are sent to AirCall Teletext using the packet switchstream network and the data is broadcast in the TV signal like teletext. A decoder on the TV aerial detects the start of the signal and captures the separate files and relays them to the blind person's terminal.

With the computer fixed to a speech synthesiser or a Braille display, the blind person can read or hear the newspaper. It is possible to search the newspaper for up to 10 keywords. This only takes four minutes.

Now that the trial is a success, the system is being released later this year for around £200. More from RNIB on 01-388 1266. ■

Travel by micro

Thanks to new computers, travellers will soon be able to buy seats on chartered flights without going to a travel agents.

Seven new 'hole in the wall' machines are to be installed in locations around the country by Birmingham-based Holidays Now.

Users simply have to punch in details of their travel requirements and slot in their credit card. It is hoped that the machines will eventually be available all over the country. ■

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COMMODORE AMIGA

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Amstrad LQ5000 24pin/136col/288cps/P	£378
Citizen 180E 120cps/80col/P	£205
Citizen MSP15E 160cps/136col/P	£256
Citizen Prodot9X 300cps/80col/P	£391
Citizen Prodot24 200cps/24pin/S&P	£499
Citizen Swift24 194cps/24pin/80col/P	£347
Star LC10 80col/125cps/P	£169
Star LC10C Colour/80col/125cps/P	£206
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The Atari LYNX is a fully portable handheld colour games machine and features include:- 16 COLOURS FROM A PALLETTE OF 4096, 3.5" COLOUR BACKLIT SCREEN, PLUG-IN SOFTWARE, JOYPAD, POWERFUL SOUND EFFECTS, 4 CHANNEL SOUND.
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Computer verdict on unfit drivers

You come out of a party after a pint or several, stagger into your car, turn the key and it refuses to start. The car has decided that you're unfit to drive and no cajoling will persuade it to start. A good job as well.

US companies have developed computer video devices that can evaluate performance levels, and if alertness drops below a preset level, the ignition is automatically disabled.

When a driver gets into his car, he will have a task such as twiddling knobs to keep a wandering pointer in the middle of a screen.

A similar system is installed in the bus depot at the Old Trolley Firm, San Diego, California. Bus drivers have a simple 30-second video game to complete before they're allowed to take a bus out.

When a young driver failed the test on two consecutive days, enquiries revealed that he was suffering from stress as his engagement had been broken off. ■

NeXT in line for the PC

The NeXT machine's stunning graphical user interface, NeXTStep (see *Express* 69), will soon be available for your PC.

IBM has announced that NeXTStep will soon be out for PS/2 personal computers running AIX, which is IBM's version of the Unix operating system.

The NeXTStep interface will bring a truly Macintosh-like screen to the PC for the first time, without fear of legal action. The NeXTStep system allows the user to control the machine with the mouse, in the same way as the ST's GEM or the Amiga's Workbench, but is much more sophisticated

AIX Unix isn't compatible with NeXT Unix (known as Mach) so NeXT programs will need to be recompiled to run on IBMs and vice versa. No price or availability yet, but watch this space. ■

Enter the Dragon

Another Dragon show has been organised proving that the popular 8-bit will not lie down and die.

The time and the place? 21 April in Ossett Town Hall, near Wakefield in West Yorkshire. Doors are open 10am to 3pm and admission is £1 or 50p for children.

User groups, Dragon producers and clubs will attend. Anyone wanting to know more should contact organiser Robert Preston on 0656 880965. ■

New Amiga bundle for primary school children

COMMODORE GOES FOR THE YOUNG ONES

Commodore is planning to launch a special Amiga bundle aimed specifically at the under-11 age group.

The new bundle will feature leading software packages which have already proved popular among children. All will have educational themes designed to attract parents.

The decision follows the apparent success of the Class of the '90s educational bundle launched last September. Commodore feels this option is too sophisticated for younger chiildren and is therefore searching for an alternative.

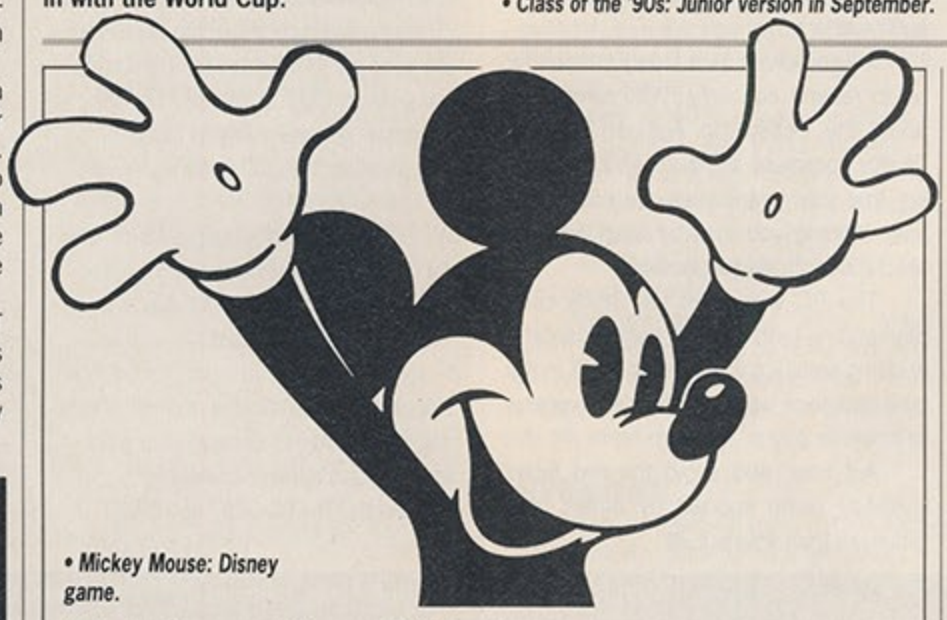
Insiders say it is in direct response to a number of calls from parents looking to buy a computer for their children. In the past Commodore has been forced to admit that the Amiga as it stands is not necessarilly the best all-in-one option for young schoolchildren.

However, the Junior Class of the '90s will put the company in a position to pitch to parents. The price of the bundle will be the same as the original education package – £499.

Commodore's education chief Peter Talbot preferred not to comment on his plans, but said such a bundle had been discussed and would be arriving later this year. ■

• Commodore is also planning a C64 bundle with a footballing theme to tie in with the World Cup.

• Class of the '90s: Junior version in September.



• Mickey Mouse: Disney game.

Taking the Mickey

The Disney cartoon greats are being digitised and will have their own computer label from September.

Disney Software is releasing eight titles featuring famous cartoon characters. The emphasis will be on education, but there will also be some games.

The label will cover all the major computer formats and there may even be console versions. With a large world-wide audience, Disney is planning different products for the market requirements

Disney spokesman Joan Lauback refused to be drawn on product details but confirmed that Disney is looking at the requirements of the UK market to fit its demands. ■

Computer snoop fined

Melbourne computer operator Alexander Belkin has become the first Australian to be convicted under new computer trespass laws.

Belkin was fined A$750 for copying the code of an accounting system. The system, owned by his employer GNA Computing, was valued at $1.5 million.

Magistrate Heather Spooner rejected defence claims that criminal intent should be proved. The legislation was introduced to curb 'intellectual voyeurism', she said. ■ (Newsbytes)

Good guide

Hot from the presses this week is the *1990 Good Software Guide*. This guide to PC software covers all areas including accounts, word processing and statistics. It costs £19.95 for the paperback.

More information from publisher Absolute Research on 0923 56043. ■

COMMENT

Commodore targets the youngsters, but is the Amiga the right thing for 8-year-olds? Meanwhile Atari comes under fire for using pirated software...

Commodore's proposed initiative of bundling the Amiga with education software for the under-11s provides food for thought.

There is a strand of opinion which sees the targeting of the parents of young children as being on the borderline of emotional intimidation. Certain door-to-door sellers of encyclopaedias know all too well the relative ease with which their products can be thrust at new families by playing on parents' fears about what they perceive as the declining quality of the education system (and this applies whatever political party is in government).

Why lash out £500 at this stage, say proponents of this viewpoint, when you can keep the little darlings happy with a much cheaper Speccy and a Peter Beardsley PVC football?

POSITIVE

A more positive (though perhaps no less cynical) view is that the kids will be whingeing about wanting one of those computers advertised on TV in the three-month period leading up to every Christmas and birthday after the age of 11 anyway. Why not get buying the thing over and done with at an earlier stage?

That way, you have use of the machine now, you can take the opportunity while the offspring are at a more malleable age of stressing the less frivolous side of having a computer in the home, and perhaps train your children into the idea that mummy is prepared to buy educationally useful software, but if little Jimmy and Jenny want to zap bogies they can save up for the games out of their pocket money.

It would be nice to think that Commodore has identified a real need among both parents and kids, and that the bundle, when eventually launched, will prove the existence of the market through a high percentage of delighted buyers. Only time, as ever, will tell. Meanwhile, readers with views on the subject are welcome to air them in Express Mail.

WHOOPS ATARI

What is one to make of Atari's Far Eastern outpost of empire being busted for software piracy?

For one thing, you may take the squeals of the company's top brass with a pinch of proverbial salt. These are the same hollow howls of rage of the motorist nicked for obstruction who demands to know why the police are not doing something more useful like arresting burglars. Pointing the finger elsewhere does not nullify the offence you have been caught at.

We would not suggest for a moment that Atari's higher echelons had even the slightest knowledge of the alleged piracy, let alone contrived in it, but the case does serve as a salutary reminder that it is a firm's management who ultimately carry the can for their wayward staff in such matters.

It also serves as a timely chance for us to remind concerned UK companies about the Federation Against Software Theft's corporate self-audit kit for checking that your employees are not potentially landing you in it by stacking their machines with illegal goodies.

The PC version of the SPA's complementary (and indeed complimentary) auditing software is due in at FAST in the next couple of weeks, with a Mac version to follow in July or August.

Act now, and avoid the red faces currently being sported by others less fortunate than yourself. ■

FROM The ARCHIVE

ONE YEAR AGO

MP Emma Nicholson told *Express* of her plans to outlaw hacking and outlined the stiff penalties she wanted to impose. "I have suggested that a bad case of hacking should carry a 10 year jail sentence," she said. Little comfort for the 13 people arrested in the last couple of weeks for computer crime.

THIS WEEK
NEWS
Anti-hacking MP warns of stiff pena
HACKERS FACE TEN YI
PRISON STRETCH
Ripping

CRL launched its tasteless horror game, *Jack the Ripper*. The Ripper game was a text/graphic adventure 'enhanced ' by digitised screens of mutilated and dead women. Instead of standing back in amazement, the media uproar about this tasteless tribute was a yawn.

Alan Sugar lost £37 million in one day when the stock market kicked Amstrad in the infrastucture to the tune of £120m. Alan Sugar looked a little pensive but like all true entrepreneurs has weathered the storm.

A survey by market analysts Intelligent Electronics/Dataquest said that the computer-buying trend in the UK was on the increase with figures for 1988 up 50 per cent on 1987. A total of 778,000 personal computers sold in 1988 compared to 552,350 in 1987.

US Gold announced a budget 16-bit label for ST, Amiga and PC. The label, called Klassix, blasted off with *Out Run* and *World Class Leaderboard*.

Information Technologies, a small Silicon Valley company, challenged chip giant Intel with two number crunching processors. The IIC-2C87 and IIT387 were fully compatible with the Intel 80287 and 80387. No war followed and both companies still have their appropriately sized niche.

TWO YEARS AGO

Remember the long hot summer of 1988? Atari's crew were rolling up their sleeves and tempting us out of the sun with the ST Summer Pack. The £399 STFM was bundled with £413.94 worth of software and closely followed Atari's £100 price rise. The rise was caused by the shortage of DRAM chips and their consequent escalation in price.

High Street chain Curry's dropped 'leisure' computers for the summer claiming that poor summer sales made the computer market seasonal. Computers would be back in autumn they said.

A disk transfer utility from Amstrad called *Linkmaster* became the knight in shining armour to those PC owners suffering with double disk drive standards. *Linkmaster* was a package for transferring software from the 3.5-inch discs of a PPC to the 5.25-inch discs of a PC 1512/1640.

FIVE YEARS AGO

Private detective Bill Dolightly saved Pegasus Software £8,000 by investigating unscrupulous dealers who had been counterfeiting demo tapes and selling trade samples.

TEN YEARS AGO

Computer artist Tom Longson who won a fellowship to the US said of a Computer Art Society: "To label an activity as computer art is as nonsensical as setting up a society for oil painting art."

Sources: New Computer Express, MicroScope, Computer Trade Weekly

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CPC

LEARNING SOMETHING NEW

Even though Acorn's trusty (rusty) old BBC is still top dog in the educational market, the CPC is gaining strength as an educational machine. Latest newcomer on the scene is Prisma Software, with its new *Learn to Read with Prof* packages.

Prisma has actually been producing educational software for the CPC since 1984, but until now the company has sold only to schools. Now, though, it aims to reach a wider audience.

Learn to Read with Prof is slightly different to run-of-the-mill educational packages, as the software forms only part of a learning schedule which includes audio tapes and books – the CPC goes multimedia! *The Prof* range actually encompasses 12 different packs. There are four parts, with three levels to each.

For example, Part 1, Level 1 is called Prof Plays a New Game, and is aimed at 4 to 9 year-olds. In it, children listen first to a story on an audio tape which introduces characters and ideas, then play a series of games on the CPC which teaches them how to recognise and spell lots of new words.

After that, there are five books to read, all containing words taught by the computer. The tape, software and books are all included for the asking price of £19.99, and the packs will be available in certain High Street shops such as Boots.

If you want to find out more you can write to Prisma at Prisma House, PO Box 211, Chester CH1 3NJ, or call 0244 326244.

PUBLIC ANNOUNCEMENT

"Dear, nice, kind Mr Lawton (Sir)" this letter starts, "I feel it is time for me to beg." OK, Mr Alan Scully of Glasgow, beg away...

"I run a cassette-based PD library for the Amstrad CPC. I have wrote to (*sic*) *New Computer Express* with over 10 classified adverts and I have not had a mention yet.

"You are my last chance. I have over 140 programs in my library, and add about 20 a month, but nobody knows I exist (except for the 100 or so readers of *Print-Out* fanzine). Please, please, please give me a mention in your CPC column in *Express*.

"One of the good points about my PD library is that software is supplied on cassette. You have already mentioned BASIC Plus by David Wild, previously only available on disk.

"Well, now it is in my PD library – so cassette users have access to it too. I also have *Pedit*, *Clock*, *Pilot CPC*, Hacker's BASIC, *Forms Library*, *Graphics Library* and more from David Wild's PD range available on cassette for the first time.

"Add to this loads of games, applications software (including a database, an assembler and more), serious software, programming tools, educational software, AI software, graphics programs and a mega-cheap, giveaway price (from as little as 25p + SAE + cassette per selection).

"Interested readers can get a current stock list by sending an SAE or can receive a starter pack for only 25p, an SAE and a blank cassette. The address is CPD, 119 Laurel Drive, Greenhills, East Kilbride, Glasgow G75 9JG.

"Please give me a mention – would it help if I got down on my knees? Yours grovellingly with admiration and respect etc, etc, etc."

Ee lad, yer'll go far.

SPRING SURPRISE!

Spring and summer are the traditionally quiet times for the software industry. I mean, once all the Christmas latecomers are out of the way, the whole show grinds to a halt until the end of the year again. Isn't that right?

It's right if you've got your head stuck in the sand. On the other hand, anyone who went to the European Computer Trade Show would have got quite a different impression.

For example, apart from all the World Cup sims heading our way, Ocean has landed some hot arcade licences. *Shadow Warriors*, for example, was real big in the arcades last year, and is set to make its debut on the CPC soon, while the ultimate beat-'em-up – *The Champ* – is on its way from Linel.

The Champ even has the official backing of the WBC! Domark's *Klax* – a souped-up *Tetris* with knobs on – is also now imminent, but for outdoor types, French company Simarils' *Windsurf Willy* (I've heard of Sunburned Willy, but that's another story) should be in the shops about the same time as the suntan oil.

Activision is busy too, with more releases than you could shake a stick at, and Accolade is on the verge of turning out *The Cycles*, a high-powered motorcycle racing sim. The list just goes on and on. Roll on summer!

CHEATING BONANZA

The moment inveterate cheaters have been waiting for draws near. It's true – *Cheat Mode II – The Revenge* is, even as we speak, rolling off the Future Publishing presses.

The *crème de la crème* of *Amstrad Action*'s Cheat Mode section for the past three years has been levered, pushed and otherwise crammed into a bulging 130-page volume of pokes, tips, hints, listings and passwords. And all yours for a mere £9.99! To get the full story and an order form, check out the next current issue of *Amstrad Action*.

Me? Oh, I've already got my advance copy. Rank, you know, hath its little privileges.

EAGLE CHEAT

Sick of getting trashed in that golden oldie Into the *Eagles Nest*? I know I am. Which is why these little cheats from Ben Owen, Dan Irving, Andy Price and Peter Tilcock are so handy.

For example, typing DAS CHT into the high score table gives you infinite energy. And to get map mode, all you have to do is type DAS MAP.

Best of all in my humble opinion is typing DAS NME, which lets you play without enemies. Trouble is, I still get trashed. But, then you didn't want to know about me, did you?

Rod Lawton

BBC

ROLLING

"Let the Good times roll..." was one of the most famous advertising slogans of the 70s. Used to refer to Kawasaki motorcycles, it conjured up images of freedom and power there for the taking.

Could Acorn now be in a position to re-use that slogan? The signs are favourable – profitability has returned to stay, prices are low and it seems that the company has, at last, got its marketing act together.

Latest news is the signing of a distribution agreement with a company called ZCL.

You will almost certainly have never heard of the good people, but ZCL has just made PLC status and it supports a network of a thousand dealers already. The company also supplies machines to many High Street retailers – so over the next year public visibility of Acorn machines is bound to grow.

Further, Acorn is attempting to broaden its sales appeal, and break out from being classified as the computer of the educational market.

COMMAND RUBBISH

*MOVE was described to me recently as the 'worst documented command for the Master 128 ever'.

To put you out of your misery, it gives you the ability to copy files from one filing system to another; cassette to disc, ADFS, Econet and so on.

All you get given on page 195 of the *Welcome Guide* is just that, plus a single example. This is hopeless, considering that *MOVE could save your bacon if you know how to use it.

Normally, I would use the commands in the excellent *ADU* (*Advanced Disk Utilities* ROM) for this task, but in this case it was unavailable, so I was stuck with *MOVE.

I found out that you need to preselect both destination and source. For example, to copy from DFS on drive 0 to ADFS on drive 1 you should perform the following operations:-

•1 Change to ADFS, insert the destination ADFS disk in drive 1 and *MOUNT.

•2 Return to DFS with *DISC (not CTRL-BREAK) and insert the disk containing the files to be copied into drive 0.

•3 Then type the string `*MOVE-DISC-EXFILE-ADFS-NEWFILE`

You will see that *MOVE really needs two disk drives to work properly. Certainly I got no response when I tried to specify both source and destination on the same drive.

HYBRIDISE

Just when I'd given up on it, Hybrid Technology finally came up with the goods in the shape of a Music 5000 Universal system.

Or rather not, because the Universal software isn't finished yet, so what I got was the standard 5000 system.

However, I was really pleased to see the unit, which is, as advertised, a solidly-made piece of kit. I won't yet pass comment on the system as a whole in this mini-preview, but I will say that it has a protection system sitting in the software, which is very strange, especially given the hardware-based nature of the Music 5000.

Andrew Brown

YOUR FORMAT

CPC 9
BBC 9
Spectrum 10
SAM Coupé 10
PCW 10
MSX 10
QL 11
Atari XE 11
Archimedes 11
C64 11
Amiga 12
PC 14
ST 16

SPECTRUM

IT'S ENIGMATIC

The talented programmers behind the much acclaimed magnetic magazine *Enigma* have decided to turn their hex loaders, machine code dissemblers and other similarly complicated technical things I know nothing about, to a game. And a rather spiffing one it is too.

Hyperlane is a horizontally-scrolling shoot-'em-up which is straightforward in that it scrolls horizontally and expects you to shoot countless swirling, weaving swarms of aliens.

In keeping with tradition, your craft starts out weak, slow and Reliant-Robin-like but by successfully downing all the aliens in each wave, you can upgrade your weapons and get the space ship equivalents of furry dice and go-faster stripes on your side.

What *Hyperlane* lacks in originality it makes up for with compulsive gameplay, fine looking graphics, an excellent soundtrack and, best of all, absolutely huge red and yellow explosions that splatter the screen when anything is hit.

It's easily as well programmed and presented as a good professional budget game, but more addictive than most and, if you're after an uninhibited shoot-'em-up where the holds aren't in the least bit barred, this is well worth the £2.99 price of admission.

Copies of *Hyperlane* are available, mail-order only, from ESD, 15 Westfield Road, Inverurie, Aberdeenshire AB5 9YR. Oh yes, and it's fully-compatible with all Speccys and the Coupé.

MORE FANZ

It's good to see the Spectrum fanzine has undergone a bit of revival recently with quite a few new publications rolling off the photocopier/cassette recorder aimed specifically at we Speccy owners.

The latest independent title I've been sent devotes itself entirely to the Plus 3-owning community. Coming on 3-inch disk rather than paper or cassette-teit it is called *Crusade*.

Included in Issue One, among the usual mix of reviews, news, previews and tips, is a feature on computers in schools, a programming section, a trivia game and database to catalogue your software collection.

Presentation is a bit uninspired and there are a few annoying delays you don't expect from a disk-based mag, as well as loads of spelling mistakes, but all in all it's a promising first issue. It is also good value at £3.50. Contact Jade Software, 17 Dudley Crescent, Illingworth, Halifax HX2 8LD.

IN A NUMBER

Here's a number that looks like it should be in every Speccy modem owner's little black book: 0226 340425 (24 hours).

This series of digits is what you dial to get through to the Phantom Viewdata bulletin board which, according to its sysop Keith Burton, includes a Spectrum section called Boom at absolutely no extra charge.

This on-line fanzine is written and tirelessly updated by Jason Harrison and Antony Purvis, and it offers free programs for you to download among as well as lots of other stuff.

Unfortunately, I'm too old fashioned and too poor to own a modem, but please don't let that spoil your fun.

POKE A DOT

Here's another poke from that generous-spirited Miktor.

To get infinite lives in Codemaster's *Prince Clumsy* simply do the following: 1) Enter the listing, 2) Save it to tape if you think you'll need its help again in the future, 3) Type Run and 4) Start your tape from the beginning. Not forgetting 5) Say 'Thank you very much' to the wonderful, but horribly-named Miktor.

```
10  REM PRINCE CLUMSY INFINITE LIVES
20  CLEAR 25000: LOAD "" CODE
30  RANDOMIZE USR 55296
40  POKE 47062,55
50  RANDOMIZE USR 43918
```

Robin Alway

SAM COUPE

COMPETITION

The overwhelmingly-abundant generosity shown by MGT recently with its £20,000 prize offering for the best Coupé software (see *Express* 71 for full details), has inspired me towards an urge to give things away.

Luckily it's not giving away on the same scale as MGT, but here's a competition for you to enter anyway.

To win a mystery piece of Coupé software (ie I haven't got a clue what it's going to be yet) just answer this rather easy question: Who was it that wrote SAM's BASIC?

Once you've finished laughing at the simplicity of that question, scribble the answer down and send it to me at the address below.

Closing date is four weeks from the day this issue goes on sale – that is, May 24.

FARMING THE PATCH

Tips and feedback of a Coupé-esque nature are made to feel very welcome at the address below, so if you've discovered any useful game or programming pokes or just general SAM-using wrinkles, send them in my direction without delay. Bountiful(ish) software prizes could be your reward.

I'm also keen to plug Coupé fanzines, user groups, public domain libraries and other worthwhile enterprises. Finally, software houses who want to keep the legion of SAM users informed with updates on Coupé-compatible software, should send everything to me immediately. Heave your letters to: Robin Alway, *Express*, 30 Monmouth Street, Bath BA1 1EJ. Handcrafted replies are available in return for an SAE and lots of patience.

Robin Alway

PCW

FUTURE SHOCK

Predicting the future is tricky. Many believe that Nostradamus prophesied that the world will end in 1999, though this is only an interpretation.

He never gave any dates for his predictions, saying that true followers don't need to know the dates anyway. On the other hand, many people say the world actually ended on May 4, 1979, but that we were too busy to notice.

Anyway, Mr J Hewins of Surrey asks me what I think of 'money-making' prediction software such as horse racing and pools programs.

Well, as you'd expect, there's nothing magic about the programs: all they do is a lot of number crunching for you, working out (usually quite accurately) whether or not something is a good bet based on past performance.

Particularly for horse racing programs, this entails a lot of data input. You may spend an hour typing in form details for a race, only to be told that none of the horses are worth a bet on this occasion, on balance!

I think these programs are best viewed as an aid to the professional, or as a bit of fun – but don't expect to recoup the outlay on the program without some investment of time and money.

Intraset does a pools predictor, *Poolsmaster*, for £19.95. I tried this in its previous incarnation of *Pools Predictor* and found it easy to use and certainly much more accurate than a pin, though I didn't win anything in the month trial period! Intraset also does a horse racing program, *Coursemaster*, for £19.95. Reach them on 02572 76800.

DOUBLE VISION I

You can get a double underlining effect in *LocoScript* by using the = signs and a bit of cunning.

Before the headline put `[+] LP 8 [ENTER]`. Type the headline and [RETURN]. Then type as many = signs as letters in the headline. End the line with `[+] LS 0 [ENTER] [RETURN]`.

Make the next line start with `[+] P 17 [ENTER]`, then a space, then [.] P. Then type as many = signs as in the headline, less one. Finish with `[-] LS [-] LP [RETURN]` and carry on as normal.

DOUBLE VISION II

In *Protext* you can get double underlining as follows. Type the headline, underlined as normal, but before it put the command `>OC 27,65,3` (as a line on its own). Make the next line the stored command `>OC 27,50`. Make the next line consist of underlined spaces to the width of the headline. Then go ahead and carry on as normal.

BOOK LOOK

Two new beginners' books on *LocoScript* are just out, and first impressions are good.

They're both what-to-do and what-to-press guides which should be invaluable even to the complete beginner. *Your Friendly Amstrad* (8256, 8512) is £9.95 and *Learning to Love Your Amstrad* (9512) is £10.95.

Both books are from that perennial favourite known as Pandor House. Reach the good people on 01-979 3060.

Rob Ainsley

MSX

MORE THAN SOFT

K-Soft Computers is a company that seems very keen on supporting the MSX user, this assumption being based on the amount of mail that I receive from the good people there.

Not only does it have a selection of Konix joysticks for sale, the K-Soft list also includes an MSX Mouse for £36.25 and a Sony Data Recorder for £24.99. If the photo of the mouse is anything to go by, it looks a well-made contraption.

Do remember, though, if you purchase a mouse, you need software that is compatible with this type of input device, eg *The Cheese Graphics* software from NEOS.

Two items that might be of interest to those who are already using a mouse are a mouse pad for £5.85 and a device called a Magic Stage, which is a platform that fits over your keyboard and makes a firm, flat surface for your mouse to operate on.

In my opinion mouse pads are worth every penny because they are easy to keep clean, and in the two years I have owned my NEOS mouse I have not yet had to clean the ball.

You can contact K-Soft at 1 Stanley Road, Retford, Notts DN22 7AE. Do not forget the SAE.

LETTER RESPONSE

I had a letter from Ian Steels of Westwood, Peterborough, and he asks why, when he sees adverts in magazines, no mention is made of a version for the MSX user, but a few weeks later an MSX version might be released.

This has happened with games from Ocean, Grandlsam, Melbourne House, etc. Are the companies ashamed of admitting that they support the MSX?

The reason for this anonymity is, I think, mainly because these games are really produced for export, and are only released here because the costs have been re-couped from continental sales.

Also some companies are very cagey about what is to be released in case it never happens, as is the case with Anco's *Rally Cross Challenge*, which was advertised, coded and never found release.

There is some good news for Ian, though as he also asks if *Space Harrier* is to be released on the MSX format, and I can inform him, and everyone else, that it should be available any time now.

The last item Ian asks about is what the expansion port on his Sanyo is for. I presume he means the cartridge slot, and can only further assume that he obviously hasn't used cartridge- based software on his machine, because this is where you stick it.

This port is extremely versatile in that virtually all types of peripherals can be interfaced here: ROM, RAM, modems, digitisers, MIDI interfaces and, even, Yamaha's SFG01/05 synth cartridge can be slotted in using a simple adapter.

This is also the place in which you would slot your disk interface if you purchased an MSX disk drive.

Hopefully Ian will now realise that he is under-using his computer, and he will now rush out to find out more from his local shop.

Keith Neal

C64

MODERN TECHNOLOGY

Newcomers to the world of computing and teletext might like to turn to Channel 4's 4-Tel service and check out page 568. This is usually updated every day, and contains five or six pages of computer news and information.

Obviously it isn't all about the Commodore 64, but there's quite often a mention for our friendly computer. This is in marked contrast to the BBC's Ceefax service, which doesn't seem to know what a computer is, and is so slow at finding anything, that one can't help but wonder if it's all being driven by a ZX81, in BASIC.

CRYSTAL UNICORN

What have Status Quo, The Blitter End, Gorgon's Crystal and Pegasus got in common? They were all potential names for Crystal Unicorn, an interesting computer club whose magazine is known as *Crystal News*.

It would appear that a liking for Jeff Minter is the order of the day (and why not, as BN might say), as well as a fondness for things hip and cool.

All that notwithstanding, the magazine is a goldmine of news and views, facts and figures, public domain disks, repair services, hints and tips, and just about anything connected with the Commodore 64/128 and, it must be said, the Amiga. Details for joining the club don't appear to be mentioned anywhere, but, as there is so much to read, it would be easy to miss them.

However, I can tell you that the editor of the magazine is one Dave E Mason, who can be found at Ethorpe Hotel, Gerrards Cross, Buckinghamshire SL9 8HY, so send him an SAE for further information and he'll oblige.

WHO ME? CHEAT? AS IF!

Herewith is a collection of little cheats culled from the aforementioned *Crystal Unicorn*, to give you some idea of its worth. None require cartridges, POKEs, or SYS calls, just great ingenuity on the part of the people who discovered them.

On *Indiana Jones and the Last Crusade* (again) hold down Fish and press 1-4 for the level. On *Nemesis*, hold down Shift and press Space five times to activate cheat mode.

On *Arkanoid II*, type Cheetah on the high score table for infinite lives. On *Netherworld*, press 24E to finish a level. On *Fernandez Must Die*, type Spinynorman for infinite lives. And last, but certainly not least, on *BMX Kidz* type Vivaldi followed by A to F to select your level. I told you there was some good stuff in that magazine!

DISK ADVENTURE

Three disks, each containing three text adventures for the Commodore 64, are now available from J A Lockerby, at 44 Hyde Place, Aylesham, Canterbury, Kent CT3 3AL. The disks cost £4.50 each, and are all conversions of Spectrum adventures that Jack originally wrote for the Spectrum.

Pete Gerrard

QL

MAXWELL MAKES MOVE

Mega-tycoon Robert Maxwell has bought all the computer-related titles, including *Sinclair QL World*, from Focus Investments, which went into receivership a few weeks ago.

Maxwell nearly got involved with the QL once before, when it was announced that he was purchasing Sinclair Research. The deal fell through and Sinclair was eventually taken over by those people at Amstrad.

I hope that *Sinclair QL World* will continue to be published. Anything that helps to keep up interest in the QL has to be a good thing.

NEW FROM DILWYN JONES

Dilwyn Jones, author of the popular *Page Designer* program sold by Sector Software, has branched out on his own with three new titles: *BASIC Reporter*, *Wordscheck* and *Vision Mixer*. I'll be reviewing them in this column, commencing with *Wordscheck*.

Wordscheck counts the number of words in a text file (a *Quill* document file or an ASCII file). Small files are loaded into memory for speed, and large files are dealt with on disk, which obviously slows things down considerably.

When the file has been processed, the results can be displayed on the screen, output to a file, or sent to a printer. Output can be sorted, if required, in word order. Output options can be selected, so that only words longer than six characters are included, or words occurring more than a total of five times.

Wordscheck was written in SuperBASIC, compiled with Turbo, was very easy to use, and had good error trapping. Documentation is in the form of a *Quill* file. I found the program somewhat slow with largish files, even though they were processed in memory.

Once the list of words has been generated, and sent to a file, it can be used to produce indices, vocabularies and the like. Simple BASIC programs could be used for further analyses.

Wordscheck is a rather specialised utility, but many people could find a use for it, and it is excellent value at £6. Available from Dilwyn Jones Computing, 41 Bro Emrys, Tal-y-Bont, Bangor, Gwynedd LL57 3YT.

Jones is looking for authors with programs of their own, or who might also be interested in developing some of his ideas.

NEW BULLETIN BOARDS

Ron Dunnett of Braintree, Essex, has set up QUBBE (QL Users Bulleting Board in Essex). This is a 24-hour viewdata-type (1200/75) BBS on 0376 47852 and uses the ring-back system.

In Bristol, Dave Fullerton has set up QBUG, a 24-hour BBS running on a QL with a 40Mb Miracle hard disk. The number is 0272 666187.

Special interest sections include areas for Quanta, adventures, and the Bristol users group.

John Torofex

XE

AUTOMATED MAILING

Do you run a stamp club, sports team or computer society? Do you keep lists of members on disk to which you must periodically send subscription reminders, fanzines and other mail? Then *Mailing List* is for you.

There's nothing worse than being faced with a list of 60 club members when its time to send out the subs reminder letters. Each name and address must be typed into the circular letter you've prepared using *AtariWriter*, bunged into an envelope, stamped and posted. But what if you could prepare just one letter containing a wildcard name field and have the names and address automatically lifted off your database and inserted into the letter?

Such a system would be heaven sent, wouldn't it? Well, *Mailing List* performs all of these actions and more.

Inform the program of the whereabouts of your addresses and names and it will use the information along with a word processor to produce circular letters quickly and easily.

Mailing List also features its own list maker so can use the program as a simple database storing menus, Christmas card lists, records, tapes and so on. Data can be sorted alphabetically or numerically and the program can use a variety of different printers including dot-matrix and daisywheel machines.

Perfect for those with busy clubs to run, *Mailing List* costs just £9.95 and can be had from Silica Shop (01-580 4839) and other good 8-bit suppliers.

Edmund Blake

ARCHIMEDES

ACORN PRICE CUTS

What a good move on Acorn's part to cut prices, though *Express*'s assessment that an A3000 is now only £100 more than an ST 1040 is a bit optimistic. The ST 1040 price of £499 includes a heap of free software and VAT. The A3000 price includes no bundled applications – though a case could be made for *!Draw*, *!Paint* and *!Edit* – and no VAT.

Nonetheless, let's not be churlish about this. It will give the low-end market a well-needed boost and should increase the popularity of the Arc as a home machine considerably.

There are signs on the software front that the market is on the upturn, too. Although we've yet to see any of the big league games companies releasing Arc versions, there are some solid business products now available for the Arc. Price reductions on the 400 series should do still more to encourage development in this area.

IMPRESSION POINTS

Chris Eason seems to have ego problems (Express Mail, 75). Yes, there was a time when I could quote every *FX number on the BBC and its action, but in the end I grew out of it.

The Arc tries to dispense with that kind of in-depth knowledge and I'd take a bet that many of the things I'm still learning about the machine, other readers are, too.

As to Chris's comments about *Impression*, I made no suggestion about the longwindedness of its style sheets – its use of single-aspect styles is indeed less cumbersome than some, but still not handy enough for quick, one-off documents, where you just want to enlarge a line of text or italicise it.

The whole idea behind RISCOS is to be able to run two or more applications at the same time.

With an *Impression* document open, you'll find it very hard to run, say *!Draw*, alongside it on a 1Mb Arc. Without that facility, you might as well be running on, say, an ST, as you you'll have to exit the DTP to load up any other application.

With 2Mb or more, you can switch between the two and manipulate a graphic ready for direct import into the *Impression* document.

Impression is a good DTP, as I believe came out from the review, and it's certainly more usable than Acorn's own package.

However, it's not reasonable to say you can use it for serious work on a 1Mb Arc, if you want to make use of the multi-tasking aspects of the machine, that is.

TOROFEX REPLY

At the risk of self-indulgence – columnist to columnist – John Torofex is obviously feeling the pinch if he needs to fill his QL column in *Express* with digs at other machines – the Arc in this case.

I will try to be brief in response. The ARM chipset is being second-sourced by Sanyo, who is developing machines of its own using the chipset, and there are at least two California hardware companies producing specialist graphics processor cards with the ARM.

That's at least three more companies than are currently using the 68008 processor.

There may currently be more applications for the QL than the Arc – though I doubt it – but I'm certain that there will be more available for the Arc eight years after its release than there are now for the QL. So there.

MAC EMULATOR?

Various rumours are floating around about a possible Mac emulator for the Arc. Sound good?

The device would be a hardware-based emulation, possibly running through a specialist 'tube' podule, giving the Arc the facility to run in cahoots with another processor housed on what would be a separate card.

If this proves possible, there's no reason why Mac applications couldn't be multi-tasked with Arc ones. And wouldn't that be fine?

Additionally, the possibility of a 68000 series second processor could open up a lot of sales.

Apart from the problems of obtaining Mac ROMs to run it with, the chance to run Mac software on the Arc would increase the machine's penetration into several niche markets.

And how about an Amiga emulator on the same processor board? And how about a QL emulator?

Bertrum Carrot

AMIGA

GOLD DISK LATEST

Gold Disk, that Canadian purveyor of desktop productivity software for the Amiga, is soon to unleash several new products onto the largely unsuspecting, but potentially grateful Amiga public.

First up is *ShowMaker*, a powerful multimedia presentation generator that lets anyone build continuous, self-running presentations incorporating internally- or externally-produced text, images, computer graphics, animations, music, video and audio (sounds impressive so far).

Due to the Amiga's growing dominance of the low end multimedia market, *ShowMaker* was designed to allow any Amiga user to visualise and construct 'shows' containing both Amiga and external source material.

ShowMaker lets you use your Amiga to manipulate and establish communication with literally any external device you want – ranging from Laserdisc players to MIDI keyboards. *ShowMaker* will also preview and print storyboards and/or queue sheets of your presentation.

Furthermore, *ShowMaker* comes with a special facility that gives you very accurate control of a presentation's timing, therefore allowing you to synchronise video and audio.

Also due for release soon from Gold Disk is the *Outline Fonts* package, which consists of over 35 professional AGFA/Compugraphic outline fonts for use within Gold Disk's desktop publishing packages, *Professional Page*, *PageSetter II* and *ProDraw* (version 1 and 2).

If rumours prove correct, the new release of the Amiga operating system will include direct support for Compugraphic fonts, thereby extending their currently limited use.

CARTRIDGES ARE GO!

Thanks to those nice chaps at the Software Business, I've just been able to lay my hands on the first of many utility cartridges soon to appear on the Amiga. Within the next couple of months, you can expect the Amiga marketplace to be flooded with these little beauties.

The Nordic Cartridge is a powerful little widget that plugs into the expansion slot along the left hand side of the Amiga 500. The board can also be used with both the A1000 and A2000, although fitting becomes more involved.

Unlike other devices, the Nordic cartridge is completely hardware-based, thereby avoiding the hassles of having to load driver software from disk. With the Nordic cartridge, just plug it in, switch it on and you're up an running immediately.

'It'll be out of date in no time', I hear you shout. Not so, as the Danish producers intend making regular upgrades which will consist of replacement ROMs.

Its many features include a powerful program freezer that will allow you to break into just about any game with a press of a button. Once inside, you can examine the innards of your Amiga with the Nordic Cartridge's power machine code monitor. Areas of memory can be disassembled, lines changed, memory dumped and much more besides. With just a single command, you can modify any of the custom chip registers in your Amiga with ease.

Ever fancied giving your games that professional look by half inchin' graphics from commercial software? If so, then the Nordic Cartridge could be just what you've been looking for.

By manipulating bitplane pointers, screens can be ripped (*illegally, mind you – Ed*) from virtually any program and saved out to disk as an IFF compatible picture file. Once they're safely saved to disk, load up *DPaint* and edit them to your heart's content.

Sampling freaks will love Nordic's sample ripper. Just press the button on the cartridge, select the appropriate function key and you're into the sample ripper module. From here you can scan chip memory for any samples and then save them out to disk for further editing within packages such as *AudioMaster II*.

Other features include a training mode option (which can be used to slow down games), cheat mode search utility, slide show maker and memory packer. For more info, contact the Software Business on 0480 495605.

SNIPPETS...

• Now that the famous Amiga A1500 kit has finally started shipping, Checkmate Digital is hard at work on a range of earth-shattering new products for the world's best machine – the Amiga. I've been sworn to secrecy on most, but I can exclusive reveal that one of the projects currently being worked on is a 16-bit sound sampler card for use within the A1500 and B2000.

This little wonder isn't due for quite a long time, so don't go phoning the busy chaps at Checkmate for a while yet. Rest assured that I'll keep you informed about any future developments.

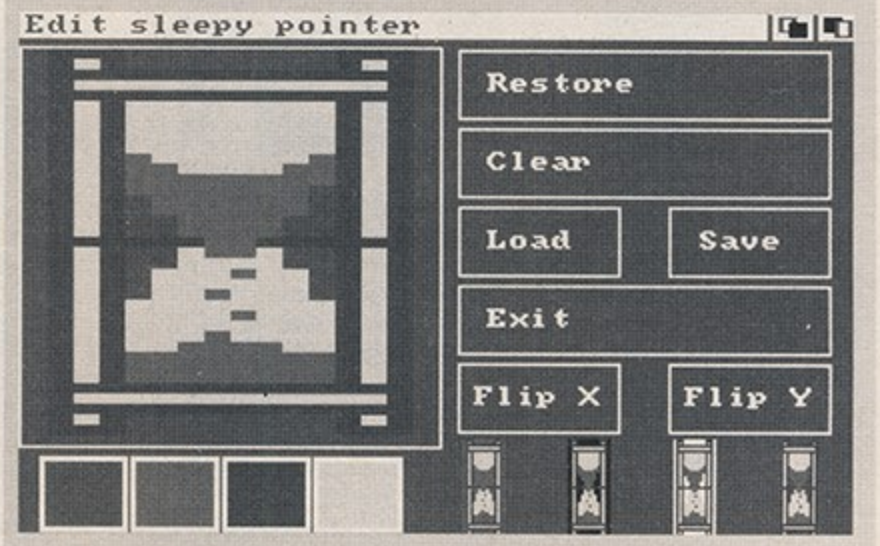
• Look out in next week's *Express* for a full review of both Microdeal's long awaited Amiga *Quartet* and Solid State Leasure's Amiga budget 68020 card, the 20-CARD.

Jason Holborn

SHARE AND ENJOY

PD software is one of the real bargains within the massive computer industry. For nothing more than the price of a disk, you can have almost a full megabyte of what is often near-commercial quality software.

Branching off from what was initially a damned good idea, PD authors have come up with several different variations on the theme including the infamous shareware. The theory behind shareware was simple – you obtained the disk from the normal PD sources and if the program proved to be useful, then you were morally obliged to send a donation to the author to encourage them to develop more software. Of course human nature being what it is, shareware never really proved to be much of a success in this country.



Working on the theory of shareware comes charityware, a new idea from computer journalist and programmer, Mark Smiddy. Under the new system, instead of sending a donation to the programmer (Mark's rich enough already), you are requested to send a donation to your favourite charity.

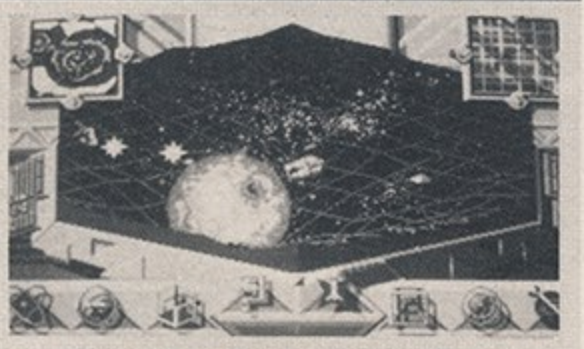
Mark, who writes for several Amiga journals (including our sister magazine, *Amiga Format*), has released *Sleepy*, the first title to appear under the CharityWare system.

Version 3 of *Sleepy* allows Amiga users to redesign the Workbench 'snooze' bubble. The new pointer – which can be up to three times the height of the original – has its own set of colours and can be animated with up to 20 images.

It is compatible with most Amiga applications including *Devpac*, *Analyze*, *Organise* and *Deluxe Paint*. Although the system is supplied with a versatile editor, the IFF-compatible image files can be created in most Amiga art packages.

AMIGA GAME of the WEEK

GRAVITY



Mirrorsoft • £24.95

Not content with releasing the strange 3D game *Interphase*, Mirrorsoft has come up with an even weirder product. *Gravity* is set far off in the 24th Century, in a time when science has discovered a way of using black holes to travel between distant stars. (I told you it was weird.)

Colonists and exploration teams travel around the depths of space by turning uninhabited planets into black holes, some with permission and some without. You play an adventurer who's task it is to colonise planets and hassle 'Outies' (rogue colonists) that cause any trouble.

The game is played through a series of control screens, the main view being a 3D isometric representation of space. The grid shows relative movement of all the objects in local space, the slopes indicating the magnetic pull around your ship.

You control one of a fleet of eight ships in a series of missions, including exploration trips, terraforming (making planets habitable) and military sorties.

The Outies cause a few problems, but you have a set of drones which can be programmed to take on and deal with rogue craft.

This may seem a little complicated, but it isn't – it's extremely complicated! The game's plot is very involved and will take a lot of planning and thought before any significant goals are reached, but instead of turning the player away in despair, the depth of the game draws you further into this believable and complex futuristic environment.

The graphics are superbly designed, looking both classy and functional (a rare feat) and go to heighten the atmosphere of an involved space mission.

If you like simple blasting games, then don't bother. If on the other hand you like the old grey matter to be stretched, then give *Gravity* a whirl.

Maff Evans

PLAYING TIP

FIGHTER BOMBER

Enter your pilot's name as BUCKAROO and you will be able to select any of the missions. Also, pressing D skips sections of the mission without the need to refuel.
Steve van Haeht, Antwerp, Belgium

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PORTEX CONVERSION

If you have a *Portex* database holding your name and address list, and if you have any London numbers on that list, you will doubtless be interested in a utility to sort out the new STD code changes. As you're probably aware, the 01 London codes are being changed to 071 and 081 for inner and outer London respectively. The *Portex* utility goes through any comma or carriage return delimited data file and automatically converts 01 numbers to their new, more directed, equivalents.

If you have a lot of address data then the £29.95 inclusive price tag will seem a small price to pay to get this work done. Ring Showerings Publishing Ltd on 01-922 8821 for more details.

HOTSHOT GRAPHICS 1.7

The Ctrl Alt Deli, that purveyor of all things intriguing in the PC utilities world, dropped me a copy of *Hotshot Graphics* 1.7 this week. *Hotshot*, for those who don't already know, is quite simply the best screen grabber and manipulation utility on the market. It will grab any text or graphics screen and save it in any of seven of the most popular file formats, including PCX, IMG and encapsulated PostScript.

It will also print out the screens to a 300DPI laser or PostScript device and includes a full editing program so you can tidy up or annotate the screens you capture. It takes up only 25K of spare RAM and can manipulate images even on a basic 512K PC.

The latest version, 1.7, copes with Windows and Presentation Manager and can capture screens to the clipboard for later import to other applications, or for loading into the main graphics program. Not cheap at £206.95, it's still without equal among screen grabbers. CAD is on 0908 662759.

WAFERS IN THE NEC

According to the trade weekly *MicroScope*, Anamartic, the research company part-owned by Sir Clive Sinclair, is not the only one working towards solid state storage on semiconductor wafers. The Japanese company NEC is said to be about to announce a range of PCs with wafer-scale hard disks at the *Which Computer?* Show later this month.

The drives apparently take the form of several wafers mounted one above the other, with the 20Mb unit fitting into a half-height drive slot. Capacities range up to 120Mb.

The drives will retain data for two to three weeks and have typical access times of 0.6ms, a whole heap faster than a physical hard drive. The problem, at least initially, is price.

The units won't be cheap and will therefore be restricted to special purposes for some while yet. Still, we may see a future Amstrad machine with this kind of storage. Anamartic's hard drive is likely to be a full-height device, though similar in concept to the NEC drive.

PSION'S DYNABOOK

Around 10 years ago an idea was put forward for a portable computer the size of the average book. The machine was to have a high-resolution graphics display, be light enough to carry around and have sufficient memory to support a WIMP-type graphics operating system. It would also be capable of running it for 10s of hours on re-chargeable batteries.

It's interesting to see how far we have come towards what was then a true machine of dreams. The latest A4 size machines from Compaq, NEC, Toshiba and Zenith are the right sort of size, have considerable processing power and readable graphic screens. They have levelled out at about 6lb, which is portable, though still a bit on the heavy side.

The one area where they still have some way to go is in power consumption, and the battery technology to keep them going for a reasonable time on one charge. The latest machines still have a typical battery life of under 10 hours. Wafer scale technology (as mentioned above) could bring down this consumption, but perhaps the best compromise to date is the flash EPROM system used on the Psion Mobile computers.

This technology takes very little power and combined with the use of removable EPROM cards for 'disk' storage, gives a time between charges of over 60 hours.

At this sort of rate, you really do have the beginnings of a true Dynabook. The machine is still not considered in the same breath as the US or Japanese machines, which is surely a shame. It's one example of British technology going where others can't at present, and for less than half the cost of the big names.

Simon Williams

XEROX VS APPLE vs MICROSOFT/HP

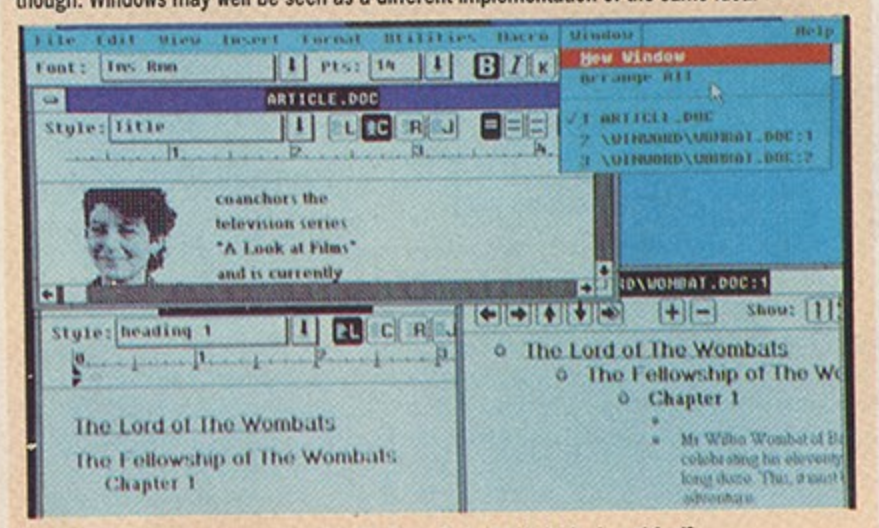
The continuing saga of the 'look and feel' of PC screen displays took another turn last month when a judge in California threw out all but one of Xerox's claims to copyright infringement by Apple. Xerox's story went that Apple's Steve Jobs saw a copy of *Small Talk* running in Xerox's Palo Alto Research Center in 1979 and based many aspects of the Mac user interface on what he saw.

Apple never denied that *Small Talk* had influenced the design of the Mac interface, but claimed that the implementation of the idea was fundamentally different from the original Xerox one. This is what the judge seems to have agreed with, though Xerox is still likely to appeal – then, what else is new.

If implementations of an idea are the things you can copyright, you would think that Apple's claim against Microsoft and Hewlett Packard would be lost for the same reason. This case is subtly different, though.

Microsoft had a licence from Apple to use some aspects of the Mac interface in Windows (and HP's New Wave, which is based on Windows). What Apple is claiming is that the two companies copied more elements of the interface than the licence covered. Apple lost that case in 1988, on all counts except the 'look and feel' of the interface and whether it was possible to copyright that.

The look and feel case has still to be decided – on it hangs the future of Windows. It would seem quite likely that the same argument will apply to this case as to the Xerox one, though. Windows may well be seen as a different implementation of the same idea.

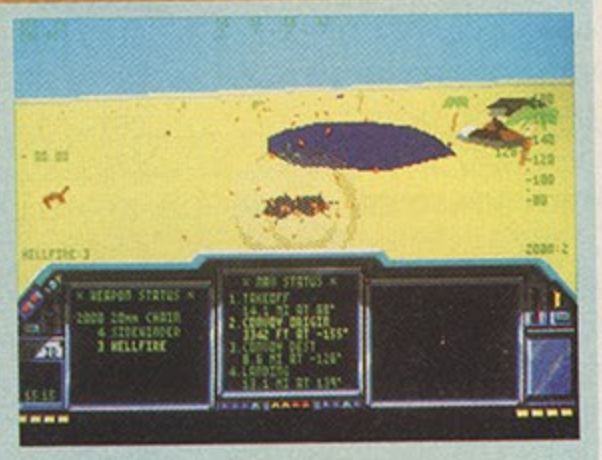


• All sorts of applications run under Windows, but what is its look and feel?

PC GAME of the WEEK

LHX ATTACK CHOPPER

Electronic Arts • £39.99



The chopper in question – the Light Helicopter Experimental – is an idealised scout and attack helicopter the US Army is supposed to be secretly developing. So, in much the same vein as Microprose with *F19 Stealth Fighter*, Electronic Arts has released a simulation for a machine that doesn't exist yet, but which I'm sure the US Army would be only to pleased to add to its catalogue.

Thankfully *LHX*, the game, also simulates three existing choppers: the AH-64A Apache, the Sikorsky Black Hawk and the V-22 Osprey. These are rather more challenging simply because they are not perfect, which means you have to fly within their limitations.

The action takes place in Libya, Germany or Vietnam, the three parts of the world most likely to give god-fearing Americans nightmares (although Central America might have been more appropriate these days). Vietnam seems a little out of date, but in each case a scenario has been developed that allows for a few nice cosy skirmishes without an international incident.

These allow for 12 different missions ranging from 'truck convoy', which involves destroying a convoy somewhere on the road, to 'POW rescue', where you've got to drop down into a heavily defended camp. All are fairly challenging and can be played against five levels of enemy competence – enough to keep you busy for a long time.

From a couple of thousand feet the landscapes seem rather sparse compared to a MicroProse simulator, but drop down to 150 feet – where these helicopters perform best – and there is plently of low-level detail. In addition to enemy aircraft there are hills, huts, houses, trees, tanks, missile launchers and much else.

LHX is well thought out and good fun, provided you don't mind the gung-ho mentality behind it all. The various choppers are highly vulnerable too, which makes it all the more challenging.

Matt Nicholson

YOU CAD, SIR

Ctrl Alt Deli's latest catalogue is a well-produced 72-page A4 production, full of the unusual kind of goody CAD is known for. In here are details of *Freedom of Press*, the *Fontasy* laser font compiler, *SoftKicker* in all its guises and the *Optiks* file translation utility. The UK-produced clip-art is particularly interesting and £50 for 250 bitmapped images or £80 for their vector equivalents seems very reasonable.

What has happened to the illustration for *FastLock*, though? Nigel Grant, the man behind CAD and normally such a polite guy, has included a blatantly sexist image in the ad for this hard disk protection device. What a picture of a pair of fishnet-stockinged female legs with a chain round them has to do with a security program for the PC is beyond me. This is, in my opinion at least, a nasty one, Nigel.

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COMPETITION TIME

I don't know whether you take an active interest in pop music at all. If you do you'll already know that Rebel M.C., or 'Reb' as he likes to be known to his nearest and dearest, has a rather optimistic tune entitled *Better World* that's allegedly the dance sensation that's sweeping the nation – but not Aylesbury.

Among numerous requests for world peace and for the fighting to cease, and recommendations that what the world needs now, apparently, is love sweet love, no not just for some but for everyone, and exhortations for us to 'get down', Reb suddenly tells us to "Wait, while I reset the Atari."

Judging by the video that accompanies this cheerful little number, however, Reb would be hard-pushed to find the keyboard, let alone the reset button.

What I want you good people to do is to come up with an ST Top 10. This can contain references to STs, or even to the games machine they call the Amiga (be as rude as you like).

There's a special mystery prize (translation: haven't the foggiest, but it'll be good) on offer for the best contribution. Send your ST Top 10 to: Steve Carey's ST Top 10, *Express*, 30 Monmouth St, Bath BA1 2AP.

MUSICAL CHEERS

And while we're on the subject (translation: tenuous link coming) of STs and music, did you know that Atari computers were used to produce the soundtrack for *Born on the Fourth of July*? Or that Madonna, and groups Milli Vanilli, Fleetwood Mac and Kraftwerk are all enthusiastic Stacy users?

Still, if you reckon that's impressive, just wait till you hear what Fleetwood Mac's Mick Fleetwood (hence, I suppose, the name) has been investing in recently. Apparently the aged drum-thumper sank a considerable amount of dollars in something called the Hotz MIDI Translator, invented by Jimmy Hotz (hence, I suppose, the name).

It's a bizarre device with 106 force-sensitive pads that can be attached to the body! Each pad plays a different note or chord and can be formatted according to the user's needs. As a learning tool it's said to be terrific, since it won't let you play a wrong note, shifting the note grid underneath the sensors as the performer plays.

Fleetwood has been quoted as saying that this "completely new instrument will revolutionise people's access to making music."

Since it's currently being bundled with the Stacy laptop in the States at $7,995, however, it is likely that the revolution will have to start without most of us coming along.

STACY ON SALE

The new ST laptop Stacy is now becoming fully available in the States – $2,499 gets you a Stacy 2, featuring 2Mb of RAM and a 40Mb hard drive, while $2,899 buys the 4Mb RAM version.

TACK CORNER

Remember the free condoms? The free Easter eggs? Well, latest completely gratuitous stunt from those tacky wacky funsters at Paradise Computers, is an offer of a free *How To Play* book with every order over £5.

So, if you are a) ordering PD and b) interested in learning how to play badminton, bridge, tennis, soccer or cricket, then simply write in for your free copy of the latest Paradise PD catalogue from Paradise Computers, 9 Westfield Crescent, Brighton, Sussex BN1 8JB. Tell 'em I sent you.

CHARITY COMPILATION

An imaginative scheme has been announced to aid a pilot nursery scheme threatened with closure due to lack of funds. Paul Bocij of the Spectrum Unemployed User Group tells me that the group has plans to produce a new software compilation to mark its fifth anniversary. He claims that the compilation, Microcare '90, is the first charity software venture to be attempted by private individuals.

Despite the group's name, the compilation is to be ST only and will be released as 'licenseware,' available from public domain libraries for about £3. Paul is interested in hearing from anyone interested in donating programs to the venture: contributors will get full credits on both software and documentation. The deadline is June 30th, with the compilation released on 5th November.

More details: Micro Care 90, 19 Moore St, Normanton, Derby DE3 6SN, or call 0332 367642.

HOW TO MAKE GAMES

Sigma has published a new guide to creating games using Mandarin's STOS games creator.

Written by Stephen Hill, who wrote the original STOS manual, the book goes from absolute basics of game planning through to animation, scrolling, sound and 3D graphics techniques and assembly language programming.

"It's a well known fact," the book's first line reads, "that the journey of a thousand miles begins with just a single step." Well, quite.

The 280-page paperback *Game Maker's Manual – Atari ST and STOS BASIC* costs £11.95 (ISBN 1-85058-158-4) and is available from all good bookshops or direct from Sigma Press, 1 South Oak Lane, Wilmslow, Cheshire SK9 6AR.

Steve Carey

SON OF 120D

Citizen Europe, which gave a grateful world the 120D, has announced its replacement. The older model, which is said by Citizen to have been Europe's best-selling 9-pin printer for four years (sales in Europe: 600,000, with 110,000 of them in the UK), is being overtaken by the 120D+.

The new model includes two NLQ (that's Near Letter Quality to you and me) fonts, Citizen Courier and Citizen Display, selectable from the control panel, as well as a full IBM emulation in NLQ previously only available in draft. The £230 printer, which has a full two year warranty, is manufactured at Citizen's Scunthorpe factory. More details on 0895 72621.

• The new printer from Citizen Europe.

I'D LIKE TO THANK...

The Bournemouth and Poole Atari User Group produces *8:16*, a bi-monthly 'Alternative Atari Newsletter' (which includes Atari 8-bit stuff: hence the title). The latest issue contains the BaPAUG annual awards.

My mention of this fact is in no way connected with the winner of the Best Magazine category (*ST Format*). So there.

Other 'ST Best' awards include Software to *Kick Off*; Software House to Mandarin, Public Domain Software to *Ani-ST*; Serious Software Supplier to GFA; Programmers to The Bitmaps; Wargame Sim to *Borodino*; and Serious Software to STOS.

Awards not to be proud of include Worst Computer Show to The PC Show and Biggest Disappointment to Atari at Atari Shows.

Each issue of *8:16* costs 95p. Contact Colin Hunt of the Bournemouth and Poole Atari User Group, c/o 248 Wimborne Rd, Oakdale, Poole, Dorset BH15 3EF.

• Down Dorset-way User Group newsletter with all Atari delights.

ST GAME of the WEEK

THEME PARK MYSTERY

Mirrorsoft • £24.95

At the end of last year Ocean released *Batman* and *The Untouchables*. Both were made up of a series of levels which were really separate games thrown into one. *Theme Park Mystery* is in a similar vein, being made up of four different levels.

***Theme Park Mystery* is a mixture of arcade and adventure sections, spanning Yesterday Land, Dream Land, Dragon Land and Future Land. The objective of the game is to find your own way through, so there are very few clues in the manual. However, you can obtain clues by returning to level one and meeting Zoltar, a major influence in the game.**

It's set in a haunted theme park and your objective is to solve the mystery of the ghost, and make the park habitable (and profitable) again. In level one you face three arcade machines. You don't need to play them all to proceed but to progress onto the next level you need to find a railway ticket and then catch the train to level two.

The railway ticket can only be obtained from Zoltar (in the first arcade machine) but to get him to offer it, you first need to give him a token, obtained by playing the other machines.

You then advance into a horizontally-scrolling platform level. Here, you need to find the sleeping potion if you're to progress, but there are other objects which must also be picked up ready for when you reach the end of the next level.

Level three takes you into Dream Land – a surreal animated adventure played on a chess board. The graphics in this level are very strange, ranging from weird lips to origami birds. You need to pick up two demons in this land and collect keys to pass onto the next – but it's not easy.

You have to buy time in Dream Land by collecting tokens from the first land. If you run out of time you must go back to Yesterday Land and earn more for yourself.

The final level is Future Land which is a straightforward shoot-'em-up section. Here you must blast everything that moves and collect the floating balls.

***Theme Park* is an unusual type of game, made exciting by some competent visuals and some brilliant sound effects. Since the levels are all inter-related, you're forced to go back through them for clues and extra time.**

Consequently, you feel it's a very complete and rounded game and once you start working your way through the challenges, you soon find it's one of the most engrossing adventures you've played.

Mark Higham

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The DOLAN COMPUTER range are unbeatable on specification and price.

THE SHOPPING EXPRESS BUYERS' GUIDE TO PRINTERS, MODEMS & PORTABLES

The first peripheral most people buy is a printer – a word processor is pretty useless without one! Here we present the Express guide to dot-matrix printers, together with some advice on portables and modems

PRINTERS

Every computer owner needs a printer. From the largest corporate business to the smallest home user the time will come when you need more than what's shown on screen, you'll need hard copy.

● AMSTRAD DMP4000

0279 454555
£349
9-pin • 200cps draft 50cps NLQ • 8K buffer • Epson compatible

Bottom of the usable range Amstrad printer, which is unsophisticated, provides only adequate printing quality and which is expensive when compared with similarly-specified machines from other manufacturers. The device is both Epson and IBM compatible.

Power ★★★

Value for money ★★

● AMSTRAD LQ3500

0279 454555
£349
24-pin • 160cps draft 54cps NLQ • 8K buffer • Epson compatible

Amstrad's weird and wonderful pricing structure has ensured that this 24-pin printer offering roughly similar specifications to the DMP400 but a vastly improved print quality is the same price – and you can find good discount deals. 160cps draft speed for a 24-pin dot matrix machine is outrageously slow and the 8K buffer doesn't excite thrills of desire.

Power ★★

Value for money ★★★

● AMSTRAD LQ5000

0279 454555
£449
24-pin • 288cps draft 96cps NLQ • 8K buffer • Epson compatible

One of the best from the Amstrad stable. Featuring reasonable print speeds, a wide carriage and built in tractor feed as standard, the machine is worthy of consideration by small business persons.

Power ★★★★

Value for money ★★★

● BROTHER 1109

061-330 6531
£195
9-pin • 100cps draft 20cps NLQ • No buffer • Epson compatible

Expensive, underspecified printer from well-known manufacturer Brother who really needs to try harder. Almost £200 for a printer which doesn't have a printer buffer indeed!

Power ★

Value for money ★

● BULL COMPUPRINT 4/20

01-568 9191
From £440
9-pin • 200cps draft 40cps NLQ • 7K buffer • Not Epson compatible

Available in a choice of carriage widths and optional serial or parallel interface, the Bull machine is an incredibly expensive, deathly ordinary dot matrix with little to recommend it. Unless you're a corporate buyer with the name Bull indelibly marked on your purchasing order forms, look elsewhere....

Power ★★★

Value for money ★

● CITIZEN HQP-40

0895 72621
£499
24-pin • 200cps draft 66cps NLQ • No buffer • Epson compatible

Citizen have been in the printer business for a number of years and although some of the company's early machines were a little strange, the latest printers are worthy of consideration. The HQP-40 is a fairly expensive, but well made 24-pin printer – but the lack of print buffer should be noted.

Power ★★★

Value for money ★★

● EPSON LX-850

0442 61144
£279
9-pin • 180cps draft 30cps NLQ • 3K buffer

Bottom of the range Epson 9-pin machine featuring two NLQ fonts, only moderate print quality but the great name Epson on the panel.

Power ★

Value for money ★

● EPSON EX-800

0442 61144
£629
9-pin • 300cps draft 60cps NLQ • 8K buffer

Epson is *the* name in the printer world. The company whose printer control codes have been adopted as an unofficial standard by almost all other manufacturers. The company's printers are well made, available everywhere and supported by all software. However, the popularity of Epson has ensured the price of the machines has remained inflated when compared with similarly-specified machines from other manufacturers. The EX-800 is fast, and of high quality construction. A optional colour adapter is available.

Power ★★★★

Value for money ★★★

● EPSON LQ550

0442 61144
£399
24-pin • 150cps draft 50cps NLQ • No buffer

Uninspiring 24-pin mid-range printer from Epson. Four built-in letter-quality fonts, friction and tractor paper handling and good quality printing.

Power ★★★

Value for money ★★★

● EPSON FX850

0442 61144
£459
9-pin • 264cps draft 54cps NLQ • 8K buffer

Fast but fairly expensive 9-pin machine featuring innovative cut sheet and fan fold paper handling, quality printing, and fast draft mode.

Power ★★★★

Value for money ★★★

● EPSON EX1000

0442 61144
£829
9-pin • 300cps draft 60cps NLQ • 8K buffer

One of the top of the range Epson 9-pin machines which has a fast draft printing mode, but has a tendency to lose the paper feed after 20 or 30 sheets have been processed. First choice for professional programmers needing listings.

Power ★★★★

Value for money ★★★

● EPSON DFX5000

0442 61144
£1,699
9-pin • 533cps draft 96cps NLQ • 3K buffer

➤

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129 Bath Road,
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AMIGA HARDWARE

Amiga 500 + Batman Pack & 5 games, joystick £345.00
New Amiga Flight of Fantasy Pack - £317.00

AMIGA BATMAN PACK £317

New from Amiga
Includes: TV modulator, 3.5" Disk Drive with Amiga DOS Kickstart, Workbench and Batman The Movie game, F18 Inceptor, Paint 2, New Zealand Story.

AMIGA ACCESSORIES

Inc. database, spreadsheet, WP, music, art & design, logo and BBC emulator.

Amiga Class of the 90's.....£439
Amiga A501 RAM pack + Clock (original).....£85
Amiga joystick £10
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 DRIVES

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

ATARI COMPUTERS

520 STFM Discovery Pack £248
520 STE Power Pack.....£325
1040 STE.....£378
1040 STE Power Pack £385

SCANNERS

Atari Scanner.....£169
Amiga Scanner £169

MOUSE

Naksha mouse.....£39

STAR PRINTERS

Star LC10 mono.....£135
Star LC10 II mono £159
Star LC10 colour.....£168
Star LC2410 .....£219
Star LC15 9 Pin 136 column.....£264
Star LC2415 24 Pin £328

PANASONIC

Unbeatable Prices!

Panasonic 1081 .....£125
KXP 1124 .....£219
KXP 1180 .....£144

CITIZEN PRINTERS

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

MANNESMAN TALLY

Mannesman MT 81 Dot Matrix.....£115
Mannesman Sheetfeeder.....£62
Mannesman Serial Interface £49

REPAIRS FOR AMIGA AND ATARI

If you want a mega-fast printer this is your baby. At 533 characters per second in draft, this machine is the fastest of the Epson range. 96 characters in NLQ mode is fairly racing along too!

Power ★★★★★

Value for money ★

● IBM PROPRINTER III

01 747 0747
£442
9-pin • 320cps draft 65cps NLQ • 32K buffer

Fast, and with a huge print buffer and reasonable price tag (when compared with similar machines from Epson and Amstrad) the IBM is the first choice for the corporate buyer.

Power ★★★★

Value for money ★★★★

● IBM QUIETWRITER III

01-747 0747
£1,139
274cps draft 171cps NLQ • No buffer

Calling migraine sufferers everywhere! The Quietwriter III from IBM relies on thermal technology to provide whisper quiet operation at at a fast printing speed.

Power ★★★

Value for money ★★★

● MICRO PERIPHERALS MP165+

0706 217799
£198
9-pin • 190cps draft 32cps NLQ • No buffer • Epson compatible

Bottom of usable range Micro Peripherals printer which provides reasonable print quality and speed at a moderate price. Many dealers offer large discounts.

Power ★★

Value for money ★★★★

● MICRO PERIPHERALS MP200+

0706 217799
£299
pin • 240cps draft 40cps NLQ • buffer • Epson compatible

Fast, moderately priced printer which can accept a range of plug-in font cards ensuring the versatility of the printer. Good deals to be had.

Power ★★★

Value for money ★★★

● OLIVETTI DM250

0908 374900
£649
24-pin 180cps draft 60cps NLQ 24K buffer Epson compatible

Good quality printer from erstwhile typewriter manufacturer Olivetti. This device features a large print buffer and moderate printing speed. However, the price tag is just a little on the large side.

Power ★★

Value for money ★★

● OLIVETTI DM100/105

0908 374900
From £235
9-pin • 120cps draft 25cps NLQ • 7K buffer • Epson compatible

Unpretentious little matrix machine from Olivetti which can also be had in a colour version (DM105).

Power ★★

Value for money ★★

● PANASONIC KXP1081

0344 853915
£219
9-pin • 180cps draft 24cps NLQ • 1K buffer Epson compatible

Very popular do matrix printer from well-known manufacturer Panasonic. Reasonably specified, fully Epson compatible and available discounted at a price which will take your breath away this machine is the first choice for prospective printer purchasers with limited budgets.

Power ★★★

Value for money ★★★★★

● STAR LC10

0494 471111
£199 (mono), £259 (colour)
9-pin • 144cps draft 36cps NLQ • 4K buffer • Epson compatible

Like the Panasonic KXP1081, the LC10 from Star is a very popular, highly desirable dot matrix, featuring good specifications, full Epson compatibility and a colour option all at a breath-takingly small (discounted) price.

Power ★★

Value for money ★★★★★

PORTABLE COMPUTERS

There's never been a better time to buy a portable computer. Advances in technology, the breaching of the PC compatibles market by Amstrad and the price wars of the major manufacturers have all ensured that you can buy a pocket or laptop computer with processing power which previously would have occupied a room...

➤

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AMSTRAD

MODEL	MON	COL	EGA	
PCW8256	318			
PCW8512	399			
PCW9512	424			
PC1512SD	364	438		
PC1512DD	438	514		
PC1512HD	559	636		
PC1640SD	458	544	628	
PC1640DD	518	597	682	
PC1640HD	688	778	858	
SOFT-INC MON		COL	12"	14"
PC2086SD	538	618	699	786
PC2086DD	598	679	768	849
PC2086HD	765	851	936	1021
On-Site-Warranty £30 for above				
Below inc Maintenance				
PC1286SD	750	835	920	1005
PC2286DD	851	936	1021	1106
PC2286HD	1021	1106	1191	1276
PC1386SD	1180	1265	1351	1436
PC2386HD	1702	1787	1872	1957

OLIVETTI

The new Olivetti PCS Range offers unbeatable performance at an incredibley low price. We feel that the PCS range offers you the customer a better deal than is presently on offer from any other manufacturer. 8086 compatable running at 10Mhz, 640K ram expandable to 2.5Mb on motherboard 3 full size slots and on-site-warranty makes this the deal of the 90's

MODEL	MON	COL
PCS86SD	562	719
PCS86DD	630	803
PCS86HD	803	976
PCS286DD	889	1062
PCS286HD20	990	1149
PCS286HD40	1062	1235

All PCS have VGA Monitors

COMMODORE

NEW STARTER PACK RANGE				
			MON	COL
MODEL	MON	COL	VGA	VGA
PC10SD	485	625	645	725
PC10DD	535	665	685	775
PC20HD	685	795	855	945
AT80286 12MHZ EGA				
PC30HD20	995	1155	-	-
PC40HD40			1240	1399
AT80386 16MHZ 1MB RAM				
PC50HD40			1729	1892
PC50HD100			2025	2215
AT80386 25MHZ 2MB RAM				
PC60HD80			3380	3541
PC60HD200			4082	4243

All Commodores come with 12 Months on site warranty

3.5" 720K Drives-PC10/20	64
5.25" 1.2Mb Drive-PC30	64

HYUNDAI

MODEL	MON	COL	EGA	VGA
SUPER16-TE 640K 10MHZ				
XT-S/D	399	549	699	759
XT-D/D	469	609	759	819
XT-HD20	599	749	899	959
XT-HD30	619	769	919	979
SUPER 286X 1MB 12MHZ				
AT286X-SD	599	775	849	899
AT286X-HD	799	975	1049	1099
SUPER 386S 1MB 16MHZ VGA				
AT386SX	995	1129	SD16Mhz	
AT386C	1241	1410	SD20Mhz	
PORTABLE				
LT3 AT 1MB RAM 20MB			1399	

SHARP

PORTABLES	
4602 DUAL DISK XT	829
4641 40MB XT	1419
5541 40MB AT VGA	2269

AKHTER

MODEL	MON	COL	VGM	VGC
PC/XT				
MINI-PC	479	625	S/D	
MINI-PC	538	684	D/D	
MINI-PC	740	899	H/D	
AT286-12SD			926	1099
AT286-12HD40			1207	1385
AT286-16SD			1020	1198
AT286-16HD40			1299	1479
AT386-16SD			1085	1263
AT386-16HD40			1366	1545
AT386-20SD			1320	1498
AT386-20HD40			1599	1779
AT386-25SD			1695	1873
AT386-25HD40			1975	2154
AT386-25HD100 *			2538	2716
AT386-25HD200 *			2895	3091
AT386-25HD300 *			3382	3560

"*" = Floor Standing
All above include On-Site-Maint

STAR

MODEL	SPEED	PRICE
9 PIN DOT MATRIX		
LC10	144/36	122
LC10-II	180/50	148
LC10-Colour	144/36	159
LC15	180/45	249
FR10	300/76	* 282
FR15	300/76	* 376
24PIN DOT MATRIX		
LC24-10	200/67	194
LC24-15	200/67	318
XB24-10	240/80	* 368
XB24-15	240/80	* 494
LASER 8	8PPM	*1179
LASER 8 D	8PPM	*1599
STARSCRIPT	8PPM	*1797

RIBBONS	MONO	COLOUR
LC10	3.50	5.50
LC24-10/15	4.50	
FR/XB10/15	6.00	12.00
SHEETFEEDERS		CALL

PANASONIC

MODEL	SPEED	PRICE
9 PIN DOT MATRIX		
KXP1081	144/28	119
KXP1180	192/36	139
24 PIN DOT MATRIX		
KXP1124	192/63	219
KXP1624	288/65	362
KXP1695		362
KXP1654		CALL
LASER PRINTERS		
KXP4450i	11PPM	*1239

ACCESSORIES	RIBBONS	S/FEED
KXP1081	5.80	
KXP1180	5.80	70
KXP1592	5.80	161
KXP1595	5.80	161
KXP1124	5.80	80
KXP1540	6.90	161

CITIZEN

MODEL	SPEED	PRICE
9 PIN DOT MATRIX		
120D PAR	120/25	107
120D SER	120/25	124
180E PAR	173/30	128
180E SER	173/30	154
PRODOT 9	300/45	267
PRODOT 9X	300/45	CALL
PRODOT 24	240/60	CALL
SWIFT 24 PIN	160/60	239

BARGINS

MT81	120/25	104
ACL135	135/27	119
HY910 10"	216/37	135
HY920 15"	216/37	199

H P

MODEL	PRICE
THINKJET	* 254
QUITEJET	* 344
QUITEJET +	* 406
DESKJET	* 419
DESKJET +	* 509
PAINTJET	* 644
RUGGED WRITER	* 875
HP LASERS	
LASERJET IIP	* 809
LASERJET II	*1199
LASERJET IID	*1857
JUST RELEASED	
LASERJET SERIES III	CALL

EPSON

MODEL	SPEED	PRICE
LX400	180/30	130
LX850	240/48	199
FX850	264/54	329
FX1050	240/48	393
EX800	300/60	459
EX1000	300/60	599
DFX5000	533/400	1139
LQ400	180/60	209
LQ550	180/60	279
LQ850	264/88	445
LQ860	290/88	499
LQ1050	264/88	589
LQ1060	290/88	639
LQ2550	400/133	899
TLQ4800	250/83	1499
SQ850	600/198	499
SQ2550	600/198	863
GQ5000	LASER	* 859

PRINTERS = * INCLUDE ON-SITE-MAINTENANCE

A1 PLOTTER

HITACHI 674-DR
Floor standing A4/A1 4 pen plotter, HP7580B compatable
128K buffed RS232 interface
re-plot facility, Auto pen capping
Zoom-up/down facility
400mm/sec 0.025 resolution
61 built-in character sets
LCD menu driven display
12 Months on-site-replacement
optional 1MB buffer upgrade

£2999

A3 PLOTTER

HITACHI 681-XA
Desk top A4/A3 4 pen plotter
HP7475A compatable
400mm/sec speed
RS232/Parallel Interface
19 Built in character sets
8K buffer
0.025" resolution
Soft pen landing (Quiet)
Weight = 6.5Kg

£599

CANON

MODEL		PRICE
LASERS		
LBP4	4PPM	* 849
LBP8-III	8PPM	*1347
LBP8-IIIT	8PPM	*1739
LBP8-IIIR	8PPM	*1849
SCANNERS		
IX-12 ROLLERBED		374
IX-12F FLATBED		665
IX-31F INTERFACE		99
OCR SOFTWARE		304
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32MB HARDCARD 40MS		199
AMIGA 2ND DRIVE 3.5"		65
ATARI 2ND DRIVE 3.5"		73
AMIGA/ATARI 42MB H/D		399

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SUPERCALC 5	238

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CROSSTALK XVI	69
DATATALK	80
MIRROR III (UK)	130
MODEMS	
AMSTRAD MC2400 INT	139
AKHTER 2400 AUTO INT	129

DTP/GRAPHS

TIMEWORKS	73
BYLINE	126
db PUBLISHER	275
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GEM DTP V2	233
GEM SCAN V1.1	67
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GEM PRESENTATION V3.1	267
GRAPH WRITER	265
HARVARD GRAPHICS V2.1	217
SIGN MASTER	95

UTILITIES

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IZE	195
MACE UTILS	53
MAGELLAN	69
NETWORKER PLUS	155
MENUGEN	40
METRO	55
NORTON UTILITIES	45
NORTON ADVANCED	67
NORTON COMMANDER	69
NORTON EDITOR	35
OFFICE WORKS	185
OVERDRIVE	41
PC TOOLS DELUXE V5.5	84
REFEREE	37
SIDEKICK PLUS	78
SIDEKICK	36
SUPERKEY	36
ULTRALOCK	128
XTREE V2	32
XTREE PRO	60

LANGUAGES

BASIC COMPILER V6	146
C COMPILER V5.1	202
COBOL COMPILER V3	358
FORTRAN COMPILER V5	202
MACRO ASSEMBLER V5.1	75
PASCAL COMPILER V4	137
QUICK BASIC V4.5	49
QUICK PASCAL	49
SORT V1.01	98
TURBO ASSEM-DEBUG	78
TURBO BASIC	36
TURBO BASIC DB TOOLS	36
TURBO BASIC ED-TOOLS	36
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TURBO PASCAL ED T/BOX	36
TURBO PASCAL GAMES	36
TURBO PASCAL GR/TBOX	36
TURBO PROLOG	60
TURBO PROLOG T/BOX	36

INTEGRATED

ABILITY	59
ABILITY PLUS	115
FIRST FRAMEWORK	56
FRAMEWORK III	325
LOGISTIX	115
OPEN ACCESS II PLUS	357
PFS FIRST CHOICE	76
SMART SYSTEM V3.1	350
SMARTWARE II SYSTEM	348
SYMPHONY V2	370
WORKS V1	94

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COMMODORE PC20 STARTER PACK

Mono	£679
CGA	£799
VGA Mono	£859
VGA Colour	£959

Including 12 months ON-SITE warranty

OPUS

The Classmate Plus
Inc. 9 Pin Seikosha dot matrix printer

Mono	£779
VGA	£1059

	MONO	VGA
Opus III HD 30Mb	£899	£1299
Opus AT (386) 40Mb	£1699	£1999
Opus 7 60Mb	£2699	£2999

OLIVETTI

PCS86	MONO	VGA
Single Drive	£589	£769
20Mb	£879	£1059
PCS286		
20Mb	£1059	£1259
40Mb	£1149	£1299
PORTABLES	**EGA**	**VGA**
M211 20Mb	£2049	£2199
M211 40Mb	£2349	£2499

ZENITH PORTABLE PC

Zenith Supersport 286, 20Mb	£1999
Zenith Supersport 286, 40Mb	£2499
Zenith Supersport 386SX, 40Mb	£3399
Zenith Supersport 386SX, 100Mb	£3599
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Hewlett-Packard Laserjet IIP, 4PPM laser	£999
Hewlett-Packard Deskjet Plus, 300dpi inkjet	£649
Juki 7100, 24 Pin dot matrix	£399
Panasonic KXP1124, 24 Pin dot matrix	£250
Panasonic KXP1540, 24 Pin, 136 col	£449
Panasonic KSP1180, 9 Pin, 80 col	£179
Qume WP, 300dpi LCS, 6PPM	£815
Qume CrystalPrint II, 300dpi LCS, 6PPM	£1150

The items listed here represent a small proportion of the goods we sell. Please call for a quotation on any goods not listed. All prices subject to change without notice. All offers subject to availability. Government official orders accepted.
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● AMSTRAD PPC512

0279 454555
£499
8086 CPU • LCD CGA screen • 512K RAM • Single/twin floppy drive(s)

Amstrad has a finger in every pie and the portable PC compatible market is no exception. The entry level machine is the PPC512, featuring a full sized keyboard, but poor screen, not much memory and not much else to recommend it. Look elsewhere...

Power ★★

Value for money ★★

● AMSTRAD PPC640

0279 454555
£799
8086 CPU • LCD CGA screen • 640K RAM • Double drives • Internal V21, V22, V22bis, V23 modem

When first launched, the media recommended the machine as being worth the price for the built-in modem alone. Although quite large and not very pretty, the Amstrad is nonetheless a very usable portable computer at a fantastically low price. Very worthy of your consideration and money.

Power ★★★★★

Value for money ★★★★★

● BULL PC AP-L

0422 212781
From £1,395
80286 CPU • 1Mb RAM • 20/40Mb hard drive

Fast, comparatively lightweight portable from Bull, featuring a megabyte of RAM and choice of hard drives. Screen display reasonable.

Power ★★★

Value for money ★★★

● COMPAQ PORTABLE II

01-940 8860
From £2,395
80286 CPU • 640K RAM • 20Mb hard drive • 360K floppy

Expensive, under-specified, portable from a dealer with a reputation for high quality and matching high prices. Compaq machines are rugged, but demand fat wallets.

Power ★★★

Value for money ★★

● COMPAQ PORTABLE III

01-940 8860
From £2,995
80386 CPU • 640K RAM • 20/40Mb hard drive • 1.2Mb floppy

Mid range Compaq 386-based portable featuring a choice of drives but lacking sufficient RAM for a machine of these specifications – why cut corners? Reasonable screen display and rugged construction.

Power ★★★★

Value for money ★★

● COMPAQ PORTABLE 386

01 940 8860
From £4,695
80386 CPU • 1Mb RAM • 40/100Mb hard drive 1.2Mb floppy

Top of the range Compaq portable with an optional 100Mb hard drive for those seeking power computing with a capital P. Also featuring a 1.2Mb floppy and a full megabyte of RAM.

Power ★★★★

Value for money ★★★★

● COMTECH TECHNOLOGY 286LT

0964 615100
From £1,995
80286 CPU • 1Mb RAM • 32Mb hard drive • 1.44Mb floppy

Portable from Comtech UK with the unusual distinction of having a gas plasma rather than LCD display. Plenty of features such as high density 3.5-inch drive and 32Mb hard drive ensure the desirability of this machine.

Power ★★★★

Value for money ★★★

● EPSON PC AX

0442 61144
£2,749
80286 CPU • 640K RAM • 20Mb hard drive

Very popular and well made portable from printer manufacturer Epson. The PC AX features a paper white monitor and is light and very portable.

Power ★★★

Value for money ★★★

● EPSON FD

0442 61144
£1,199
V30 CPU • 640K RAM • Single/twin floppies

One of the cheaper Epson portables but still with a heavy price tag this machine features a fast V30 central processor and is available with a choice of floppy drives (also available in a hard drive 'HD' version).

Power ★★

Value for money ★★

➤

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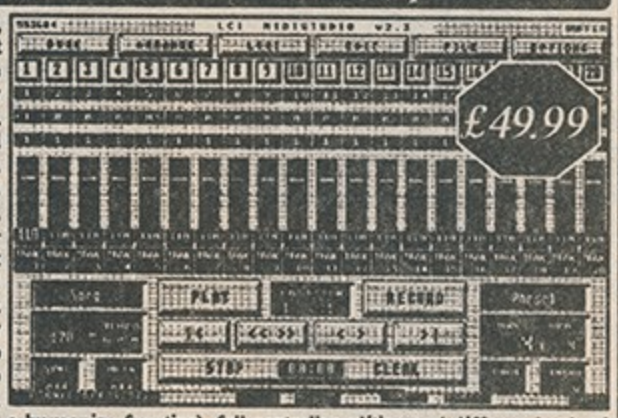
Midistudio 20 track ST Midi sequencer



Midistudio is an attractively priced, 20 track Midi Sequencing package. It can record up to 682 bars per phrase (pattern) on up to 100 phrases. Any phrase can be placed on any track. Tracks can be soloed and muted and tracks and phrases can be named. Program numbers can be displayed in a variety of ways including 0-127, 1-128, in banks from a11-b88 or a01-b64. The Desk features sliders to set relative volumes on each track and you can even do a mix on the fly. Midistudio also has a clock to display the length of the last playback. Step time note edit functions are available including copy, split, merge, append, transpose, velocity editing (including a humanize function), full controller editing and different levels of quantizing. Midistudio works in medium and hi res. Demo disk £3.99. Now compatible with STE.

Midistudio Master. 30+ new features £129.99

IMG scanner Scan at up to 1000 Dpi

The IMG scanner is a realistic, low cost scanner which can offer high quality graphics digitising for a tenth of the cost of other scanners. This simple unit plugs into the cartridge port of the ST and accepts scanned information via optical cables which fix easily to the head of any Epson compatible dot matrix printer. The software allows grey scales to be replaced with colours, 4 in medium resolution and 16 in low resolution and offers scanning resolutions of 75, 150, 216, 300, 360 and 1000 dots per inch horizontally. Best results are achieved with photocopies. Greater than screen resolution images are saved in IMG file format and can be edited with any compatible art package. Screen resolution images can be saved in Raw data, Degas or Neochrome formats and edited with compatible art packages.

Low resolution demonstration disk £3.99

Best Selling Printers

Star LC-10.	140/36cps	£ 169.99 *
Star LC-10 Mk II.	180/45cps	£ 189.99 *
Star LC-10 Colour.	7 colour	£ 209.99 *
Citizen 120D.	120cps	£ 134.99 *
Star LC-24/10.	170/57cps	£ 239.99 *
Citizen Swift.	192/64cps	£ 319.99 *

Star Professional Series Printers

Star FR-10.	9 pin, 300cps draft, 76cps NLQ.	£ 527.99 *
Star FR-15.	15" carraiage version.	£ 688.99 *
Star XB-24/10.	24 pin, 80 cps SLQ, LQ.	£ 688.99 *
Star XB-24/15.	15" carriage version.	£ 907.99 *
Colour upgrade for Star XB & FR range.		£ 39.99
Star Laser Printer 8, 1 Mb RAM.		£ 2287.35
Star Laser Printer 8DB, Double bin version.		£ 2977.35
Atari SLM804 Laser with 90 days on site warranty.		£ 1099.99

* All these printers come complete with Centronics cable which is compatible with ST, Amiga and PC's(phone for others). All printers are top quality products for the UK.

ST & Amiga Disk Drives

Why pay pennies less for an inferior drive when you can get quality Cumana drives at these remarkable prices.

Cumana 3.5" CSA 354.	(ST)	£84.99
Cumana 1Mb, internal.	(ST)	£69.99
Please note, ST's case requires modification for this internal drive.		
A/B boot switch, fitted.	(ST)	£24.99
Cumana 3.5" CAX 354, disable switch etc.	(Amiga)	£69.99

Monitors & Peripherals

Atari SM124 Mono	£109.99 *	Joysticks from	£ 4.99
Atari SC1224 Colour	£279.99 *	Portfolio add-on's from	£ 39.99
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		Amiga modulator	£ 19.99
		Hawk scanner	£ 1249.99

* Deduct £10 if bought with computer, Scart cable included

ST & Amiga Hard Drives

Megafile 30 *	(ST)	£399 .99
Supra 30	(ST)	£474.99
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Vortex 40Mb	(Amiga)	£499 .99

* While stocks last

Ladbroke Computing Hard drives

We have a range of high quality ST hard drives at affordable prices. All have a minimum specification of: full metal case with push button on/off switch mounted on front, 60 watt PSU, Autopark mechanism and external, push button DMA device No. selection. The controller is low power and full SCSI. The software allows up to 14 GEM partitions.

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Phone for Larger capacity drives.

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512K STM RAM Upgrade, fitted.	£ 74.99 *	512K STE SIMM's, SIP's	£ 49.99 *
512K populated ST board, fitted.	£ 109.99	512K populated ST board, kit.	£ 99.99
2Mb populated ST board, fitted	£ 224.99 *	2Mb populated ST board, kit	£ 199.99 *
2Mb STE SIMM's, SIP's, Kit.	£ 239.99 *	4Mb STE SIMM's, SIP's, Kit.	£ 489.99 *
STFM Blitter chip,fitted	£ 49.99 *	STFM Blitter chip, kit	£ 39.99 *
512K unpopulated Amiga board	£ 24.99	512K populated Amiga board	£ 64.99
512K unpopulated Amiga board+clock	£ 34.99	512K populated Amiga board+clock	£ 74.99

* Please check configuration before ordering. Our Atari trained engineers can repair all hardware, including Amigas, in minimum time at competetive prices. Fitting prices quoted for machines not previously tampered with. All upgrades and repairs carry our 3 months parts and labour guarantee.

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- Network up to 32 ST's.
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SGSnet Starter kit	£ 149.95	Spectre GCR	£ 284.99
SGSnet add-on kit	£ 99.95	128K Mac ROMs	phone

Entertainment packs

520 STE	£369.99
520 STFM Discovery pack	£279.99
Atari LYNX	£169.99
1040 STE	£459.99
520 STE upgraded to 1Mb	£439.99
Amiga Batman pack	£369.99
Amiga Flight of Fantasy	£379.99
Amiga Batman + pack	£399.99

Games for the Lynx: Electrocop, Blue Lightning, Gates of Zendocon, Chips challenge. £29.99 each.

All upgraded STE's include Hyper pack which includes Hyper Paint art package, Hyper draw vector drawing package, Borodino strategy game and Metacomco Basic.

Batman + pack includes A500 Batman pack, mouse mat, joystick and the Tenstar games pack with Photon paint.

Quality 3.5" Disks

Quantity	Unbranded Loose	Unbranded Boxed	Sony Branded Boxed
10	£6.99	£7.99	£9.99
100	£64.99	£74.99	£89.99

All disks are Sony, Maxcell or Kao and carry an unconditional lifetime guarantee. Please add 60p P&P for each pack of ten disks.

Connectors & Dustcovers

ST Centronics lead	£14.99	Monitor covers from	£4.99
Atari DIY Monitor lead	£5.99	LC-10 printer cover	£7.99
Pair of Midi leads	£7.99	Hard drive cover	£4.99
Amiga Scart with sound	£14.99	ST cover	£3.99
ST Scart	£14.99	Amiga A500 cover	£3.99
8 bit Printer interface	£29.99	Mega 2 cover	£7.99
Atari DMA cable	£15.99	Disk drive cover	£2.99

Disk boxes from £4.99. Phone for care kits.

Business & DTP Systems

Mega ST1 + SM124	£	599.99
2Mb upgraded 520STE	£	549.99
4Mb upgraded 520STE	£	749.99
Portfolio (pocket PC)	£	224.99
Atari PC4 (80286)	£	1349.99
Atari PC5 (80386)	£	2069.99
DTP Mega 2 pack	£	1674.99
DTP Mega 4 pack	£	1999.99
A4 Flat bed scanner	£	449.99

This high quality 200dpi flat bed scanner is also a thermal printer and photocopier. It can scan high resolution images in up to 16 grey scales. Software runs on Amiga and ST (ST software includes editor) and requires 1Mb of memory. This is probably the most cost effective piece of office equipment you could own. Centronics cable included.

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Power ★★★

Value for money ★★★★

● OLIVETTI M15

0908 374900
From £1,105
80C88 CPU • 512K RAM • 20Mb hard drive

The Olivetti range of much coveted portables are well constructed, rugged and compare favourably with the price of machines from rival manufacturers. Unfortunately, this machine suffers from having only 512K of RAM which simply isn't enough for today's quality software.

Power ★★

Value for money ★★

● SCHNEIDER PORTABLE AT

0604 766572
£1,995
80286 CPU • 640K RAM • 20Mb hard drive

Recently suffering much criticism over its Euro PC, Schneider is nonetheless a manufacturer of reasonable quality, cheap computers. The Portable AT is fully specified and follows the Schneider tradition of small prices.

Power ★★★★

Value for money ★★★★

● SMT SUPER GOLF

01-785 2411
From £3,499
80286 CPU • 640K RAM • 40/100Mb hard drive

Portable or a German car? This machines shares a name and a level of construction hard to find elsewhere. Featuring an optional 100Mb hard drive, the Super Golf is a worthy of power user consideration.

Power ★★★★

Value for money ★★★

● TANDY 1400FD

0922 710000
£995
V20 CPU • 768K RAM • Twin floppies

A portable computer with a price tag unmatched outside the Amstrad stable, the 1400LT has a CGA-compatible LCD screen and can be plugged into a colour monitor via its built-in port.

Power ★★★

Value for money ★★★★★

● TANDY 102

0922 710000
£299
80C85 CPU • 24K RAM * Optional disk drive

The journalist's choice. Not PC compatible but very compact, very light and with good word processing software built in, this computer should be considered by those needing to prepare documents on the move. There's even a built in modem so you can transfer files while at airports, train stations, in hotel rooms etc.

Power ★★

Value for money ★★★★

● TOSHIBA T1600

0932 841600
£3,195
80C286 CPU • 1Mb RAM • 20Mb hard drive

Mid range Toshiba 286 featuring a CMOS low power CPU, hard drive and memory expandable to five megabytes. Rugged construction and good quality screen display.

Power ★★★★

Value for money ★★★

● TOSHIBA T5200

0932 841600
From £4,995
80386 CPU • 2Mb RAM • 40/100Mb hard drive

Top of the range Toshiba 386-based portable. Memory is expandable to an enormous eight megabytes, there's a 100Mb hard drive option, 2Mb RAM as standard and two expansion slots.

Power ★★★★★

Value for money ★★★★

● TOSHIBA T1000

0932 841600
£795
80C88 CPU • 512K RAM • Floppy drive

Entry-level portable PC. 512K RAM as standard expandable to 1.2 megabytes (if you can afford the DRAMs). The machine has the unusual distinction of having MS-DOS contained on ROM rather than booted from floppy.

Power ★

Value for money ★★★★

● VICTOR V286P

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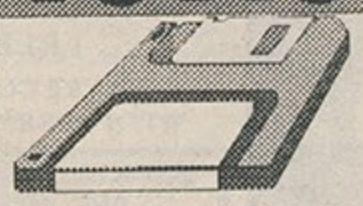

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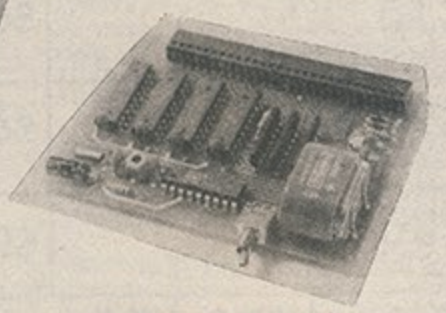

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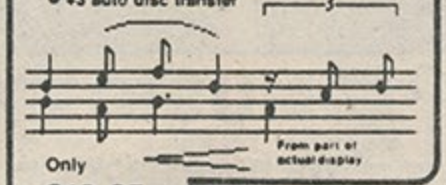

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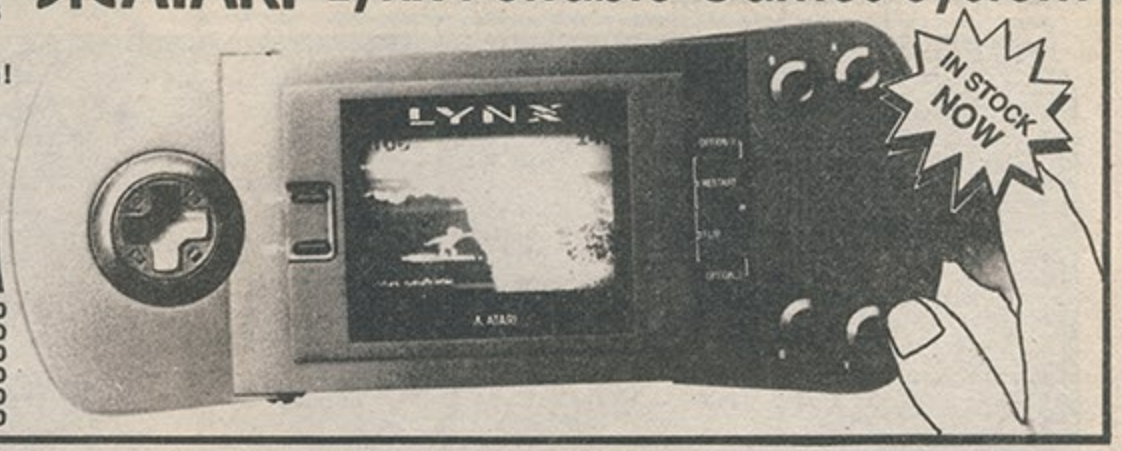

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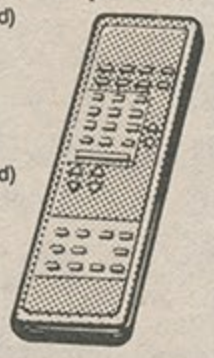

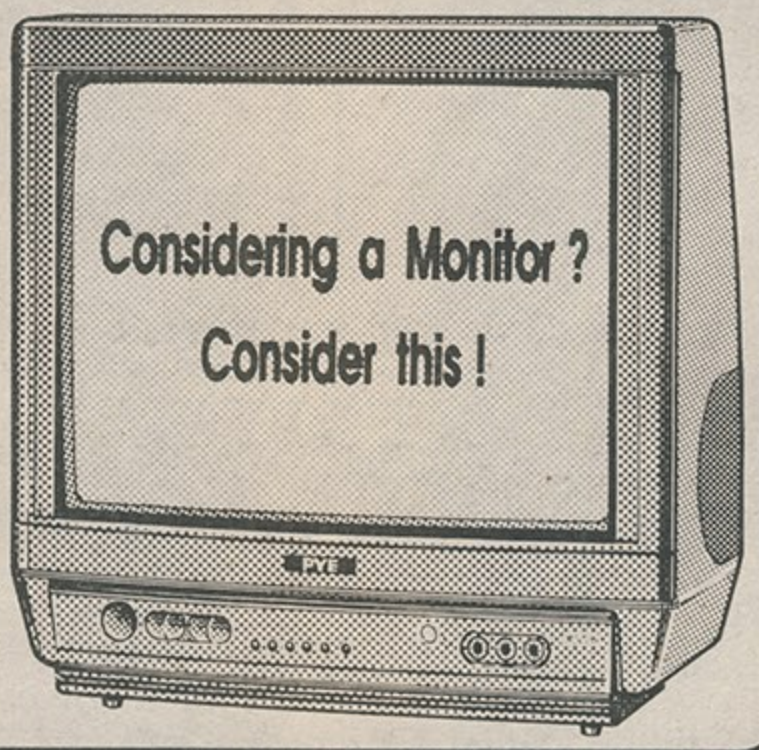

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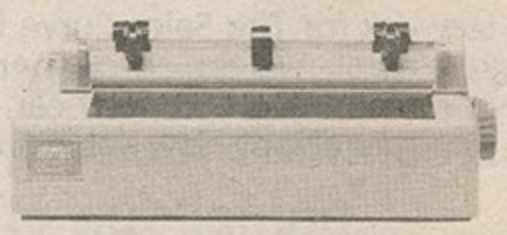

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THE PD COLUMN

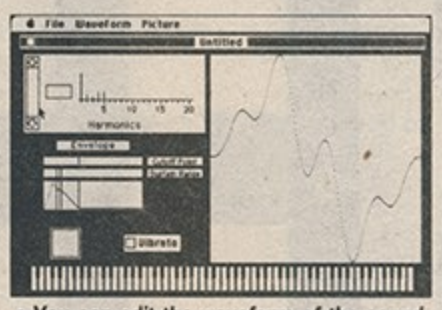
There is a lot of software out there available for the price of a disk. Our weekly column by Jerry Glenwright explores the world of the public domain.

We begin on a musical note this week, with a quite unbelievable music playing and composing program for the Apple Mac appropriately called *Concertware*. The program enables users to write and play musical compositions and to design and implement new musical instruments Although the commercial *Concertware* offering is not in the public domain, there is an excellent evaluation copy which can be distributed freely.

The program comes in three modules – Player, Writer and Instrument Maker. Player, as its name suggests, takes pre-composed musical pieces and plays them back via the analogue to digital converter in the Mac. You choose a piece from the standard file selector, a window opens displaying a musical staff and the music begins.

The window also contains information about the composer, the piece itself (the year of composition and so on) and depicts which instruments are being used to perform it. As each note is played, the staff moves from right to left, so you can chart the progress of the piece as it is played (helpful for those attempting to get to grips with the arcane world of musical notation). At any point in the proceedings you can stop the performance, increase or decrease the tempo, change the instruments (choosing from an impressive range), repeat any bar or the whole thing right from the start. The quality of sound is truly excellent and instruments really do sound just as they should – even the strings!

Writer enables budding composers to construct anything from simple tunes to complex orchestral works by pointing at a staff and clicking with the mouse. All musical notation is available and as each note, rest, bar sign and the like is added the staff scrolls from left to right making it easy to see where you are and simplifying composition. You can stop and play the piece at any time, or edit previously created masterpieces (throw a few sharps and flats into Rachmaninoff's Prelude in G minor just to see what happens). And when you're tired of writing music, you can design new and fantastic instruments using Instrument



• You can edit the waveform of the sound you are working on.

Maker which offers envelope shaping and computing from unscaled – and scaled – harmonics. If harmonics and envelopes are a little beyond you, simply draw a waveform on screen with a 'pencil' controlled by the mouse and the program will interpret your drawing as the output from a musical instrument.

Accompanying the program modules are two folders containing a small planet's worth of tunes and instruments covering all fields so there's plenty to keep you going. For anyone vaguely interested in dabbling with music, *Concertware* is a must.

COMMODORE AMIGA

One of the most powerful features of the Amiga is its ability to multi-task, but try getting the machine to perform this function and unless you're a computer whizz-kid, you'll be trying for a very long time. And what's the second biggest moan concerning the Amiga? Workbench, right? Machines such as the Atari ST have replacement 'front-ends', why not the Amiga? Jazzbench from Nova Software is just that, a powerful replacement for the Workbench which transforms your Amiga like no other system-level program.

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For all those whose ambition is to create a quality broadsheet rival to *The Guardian* and *The Independent*, *Proscript* provides multi-column text editing and printing so newspaper effects are easy to achieve. The program supports Epson and compatible printers or you can enter the necessary control characters for your own printer. Justification, kerning, leading, proportionally spaced text and 17 fonts are just some of the features. It comes with full printed documentation to save you from wading through reams of doc files on disk. An excellent program. ■

WHERE TO GO...

Many PD libraries advertise in Shopping Express, but these are also worth a look.

ATARI ST

• Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent ST3 1SW. The Goodman library is one of the best, with all the latest PD always in stock - and Mike Goodman is a friendly guy, always willing to chat!

• Page 6, PO Box 54, Stafford ST16 1DR. Page was one of the first PD libraries and ranks with the best. The company also stocks a wide range of Atari 8-bit PD (reviewed in the coming weeks) and publishes *New Atari User* magazine.

CP/M

• The CP/M User Group, 72 Mill Road, Hawley, Kent DA2 7RZ. Help, advice and more PD then you can shake a stick at.

COMMODORE AMIGA

• George Thompson Associates, Dippen, Brodick, Aran,Scotland KA27 8RN. GTA stock a variety of products for Commodore's baby and have an excellent PD library.

• Softville PD Service, Unit 5, Stratfield Park, Elettra Avenue, Waterlooville, Hampshire PO7 7XN. A comprehensive library which also stocks ST and PC PD too.

AMSTRAD CPC

• Wacci UK, 9 South Close, Twickenham TW2 5JE. Bung a couple quid in the post for a latest copy of the *Wacci* fanzine (a very good read...) plus comprehensive lists of PD.

• DW Software, 62 Lascelles Avenue, Withernsea, North Humberside HU19 2EB. The source of Desk and many other remarkable PD programs all written by DW himself!

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• Public Domain Software Library, Winscombe House, Beacon Road, Crowborough, Sussex TN6 1UL. The first in the UK.

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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.

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WHY SILICA SHOP?

Before you decide when to buy your new Atari ST 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 and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST 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 with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

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

SCHOOL'S OUT FOR SOF

The home computer has always been touted as an educational machine, but where do you look for decent software. Keith Pomfret has a few suggestions to make...

The market place is already bulging with software aiming to educate your offspring, so we set up the *Express* blackboard, donned mortar board and gown, and went back to school.

Educational software written for schools isn't suitable for home use. As well as functioning best in a structured institutional environment, it is looked on as an imposition by the kids, as if they had been told to do extra homework.

To catch and hold the young mind, software must be creative and able to stimulate without being too repetitive. At the same time it must have a specific teaching or test target. This may be a simple literacy or numeracy test for primary school aged children, a language tutor for secondary students or even a course aimed at A-level and beyond.

The watchword is interest. If it is dull, repetitive and boring, the mind will soon wander and the task will lose its value.

Many educational programs take advantage of a child's (or adult's) willingness to play games and embed the task in an interesting game scenario. A good example of this is *Giant Killer* by Topologika, which is described as a maths adventure. It takes the form of an adventure game with problems and tasks of an arithmetical nature.

STIMULATING

Stimulating the imagination as well as promoting creativity and encouraging problem solving makes this kind of program a good entry to educational computing.

The BBC B was traditionally the educational computer in the UK with schools flocking to buy it on a generous discount. Parents bought the BBC for home use, and a large software base was soon established.

After a slow start, other machines attracted the educational software writers and there is a good range of educational material available across all ages and all of the popular micros.

Some of the original educational programs were slow, dull, colourless creations, written in BASIC and with all the allure of a Lada. Parents bought these purely on their educational tag and after a couple of screens full they were consigned to the dusty shelf where they are today.

Thankfully, we have more and better choice now, and it is the norm for parents to spell out their requirements before parting with cash.

In a shop, this is easy. Let the kids try the programs out before you buy. If your kids get bored in the shop, you know to avoid it.

A lot of educational software is sold by mail order as well. Although you can't try before you buy, a call to the software house is a good indication of the quality to expect. In the main, we have found educational publishers to be dedicated academic people with a genuine interest in the development of future generations.

To give you a taste of what's available, we looked at some of the more well known educational programs available for the micro for children and students. We've picked out those of particular merit, but it isn't an exhaustive or comprehensive list. There are many good programs waiting to be tried.

Remember to try them in the shop. A firm insistence that you try before leaving will pay dividends. If on the phone to a mail order supplier, have a list of your requirements. After you have found a program that fills these, ask what else it can do. Don't settle for a sketchy description.

PROGRAMS FOR YOUNG CHILDREN

GENERAL

• PC PLAYTIME 2
Age range 4-8 • PC
A range of subject matter from arithmetic, graphs and writing to art and games.
From G&M on 061-449 0027

• WHALE DATABASE/WHALE GAMES
Primary upwards • BBC, Archimedes, Nimbus
Even the green issues are finding there way into educational software. These two programs catalogue details about the threatened species and combine them with the National Curriculum database skill requirements.
From Topologika on 0487 831153

LITERACY

• LEARN TO READ WITH THE PROF
Age range 4-9 • All formats
The Prof series aims to cover all the main areas of word learning in a graded course. Each part is divided into three levels and there are four parts. In the read scenario, the parts are reading, spelling, writing and reasoning. Books with illustrations and a listen-along cassette are included.
From Prisma on 0244 326244

• CAESAR'S TRAVELS
Age range 3-9 • C64, Spectrum, CPC
Problem solving for youngsters as Caesar sets out on his travels. Very popular with parents and children alike.
From Mirrorsoft on 0460 57152

• TOPS AND TAILS
Age range 4-6 • BBC, Spectrum, Electron
A snakes-and-ladders game aimed at teaching young children about beginnings and endings of words.
From Macmillan on 0460 57152

• SPELLING
Age range 5 and over • ST, Amiga
Basic spelling tests using lists that can be preset by the teacher or parent. Good for children who have difficulty with particular words.
From public domain libraries

MATHS

• JUNGLE MATHS & ASTRO MATHS
Age range 5-13 • BBC, Spectrum
Jungle Maths will appeal to the grisly-minded youngster with its cross-the-jungle scenario. Failure is death. Success is rewarded. *Astro Maths* has a shoot the spaceship game as a reward.
From Scisoft on 0460 57152

• PRIMARY MATHS COURSE
Age range 5-11 • BBC, CPC, PC, ST
24 programs and tests to take beginners up to secondary school level. Animated graphics.
From LCL on 046057152

• Hooray for Henrietta: *unlikely scenario.*

• HOORAY FOR HENRIETTA
Age range 5 and above • PC, Spectrum
A program aimed at the younger child where the problem solving is deliberately linked to a scenario that involves a parrot trying to stop a wedding. Very good picture/problem course.
From Scetlander on 041-357 1659

FTWARE

Two distinct areas emerge in home education. The first is the formal academic curriculum with subjects such as maths, English, history, various languages and sciences. These tend to follow the needs of the National Curriculum and be targeted at specific courses or exams. Programs covering these areas are the most difficult to use in a home environment because they bear a close resemblance to traditional schoolwork. It would be a very conscientious pupil who rushed to a task that resembled school.

These programs are useful for children who wish to augment their schoolwork or get experience at a subject that they need to improve on, but may require more parental stimulation before they take the place of entertainment software.

At the younger end, they tend to be graphic and picturesque with happy faces and smiling rewards. A good formal program will take note of the performance and adjust itself as it goes along. It will always present an attainable goal but still require an effort.

Informal educational packages can come in many guises. They all have one thing in common though – problem solving or learning is tied up in a sugar coating. The exercise may take the form of a task or game that is enjoyable to play while gently stimulating the brain.

Although this type of program rarely follows a formal curriculum, they can be of more help because the enjoyment in using them makes it easier to keep the child's attention. ■

MACHINE SPECIFICS

More and more machines are being bundled with learning and applications software in a bid to promote the serious user base in home computing. Last autumn, Commodore brought us its Class of the '90s pack based on an Amiga. Acorn's spring offering was The Learning Curve, an A3000-centred bundle. These aren't low-cost options but you do get a good machine for your money.

The Learning Curve pack contains a BBC A3000 computer and applications for writing text, drawing pictures and making music.

A word processor, *First Word Plus* is included with a 70,000-word English spelling checker. There is the *PC Emulator* to let you run the range of PC software, and the package is completed by *Genesis*, an integrated suite of programs including a personal organiser and phonebook.

Information files are included on subjects as diverse as green issues, recipes and the solar system. A database of composers plays a snippet of the composer's work, as well as providing screen based information.

To tie it all together a video cassette narrated by Fred Harris (of the now defunct *Micro Live*) will explain what the system can do, as well as providing ideas and inspiration for projects. A cheque for £799 will buy the pack, but Acorn have left the choice of printer and monitor to the individual. This could mean a £1,000 plus bill to get started.

Commodore's Class of the '90s pack was aimed at the classroom when announced in the autumn, but Commodore UK says that half of the enquiries come from parents who want it for home use.

Included are an A500 Amiga; Amiga Logo, which is a simple programming language designed for young children; a BBC emulator which allows a lot of software designed for the BBC to run on the Amiga; *Superbase Personal*, a database and card filing program; *Maxiplan*, a spreadsheet; Dr T's *MRS*, a MIDI studio; a MIDI interface and *Publisher's Choice*. *Publisher's Choice* is a suite of applications that includes a word processor and *PageSetter* 1.2, a desktop publishing package.

Curiously, Commodore have left out monitor and printer as well, and the £573.85 price tag will creep close to four figures when they are added.

LOOKING ABROAD

As well as our own market, it is worth looking overseas to see what other countries provide for their children.

In France the educational market is very strong, with a proliferation of titles for all available machines. The French take education very seriously, and it's a pity that the language difference precludes us from dipping into their rich source of supply.

Further afield in the US, education takes an important role with over 40 per cent of listed home software companies producing home educational packages.

The global trend is toward education, and with more schools buying computers it is only time before every home has computer literate children willing to use this valuable equipment to do more than kill aliens.

PROGRAMS OLDER CHILDREN AND STUDENTS

MATHS

• UNTRIVIA
Various ages • BBC, Nimbus, Archimedes
Catch up with your maths. This is the second in the National Curriculum catch-up series and contains the facility to put together your own quizzes as well as answering the set ones. Quiz disks are available for maths for ages 8-11, 12-14, and 15-plus, and science quizzes are in preparation.
From Topologika on 0733 244682

• MICRO MATHS
Age range 8-adult • All formats
24 programs for self tuition or revision. Starts with simple building-block maths such as averages and builds up to O-level with more advanced topics such as differential calculus.
From LCL on 0460 57152

• BETTER MATHS
Age range 12-16 • Amstrad CPC, PCW, BBC, C64
A fully comprehensive maths course taking into account curriculum needs. One of a series of courses from School Software in Limerick.
From School Software on 010-353 61 27994

LITERACY

• PUNCTUATE!
Age range 8-adult • BBC, Nimbus, Archimedes, PC
The first 'Catch up with the National Curriculum' program. A story is displayed with certain punctuation missing. The student has to replace the punctuation using clues where necessary. Speed can be set from untimed to whirlwind, making it as relevant to students with learning difficulties as to high-flyers.
From Topologika on 0733 244682

• MICRO ENGLISH
Age range 14-16 • All formats
24 self tuition or revision programs leading to an ordinary level pass. Audio tape included. From elementary spelling to figures of speech.
From LCL on 0460 57152

• WORDPOWER
Various ages • BBC, C64, Spectrum
A collection of spelling games covering synonyms, opposites, similes, and collectives. Two speeds, sound effects and scoreboard.
From Sulis on 0460 57152

LANGUAGES

• MODERN LANGUAGE SERIES
Age range 11 plus • All formats

The Spanish Tutor, *The French Mistress*, *The Italian Tutor*, *The German Master*, and *The Welsh Tutor* all follow the same format, allowing learning, self-check, test and edit. They are designed to teach the languages in the most useful way to the student while maintaining a strong structure. Each subject is divided into A and B sections with B being the continuation and progression.
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GENERAL

• YES CHANCELLOR
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Various ages • All 8 bits and PC
There are two quizzes, one is for junior and the other is for secondary students. They are general-knowledge based. The factfiles cover a multitude of subjects including first aid, history, science and geography, and range from six years to adult.
From Kosmos on 0460 57152

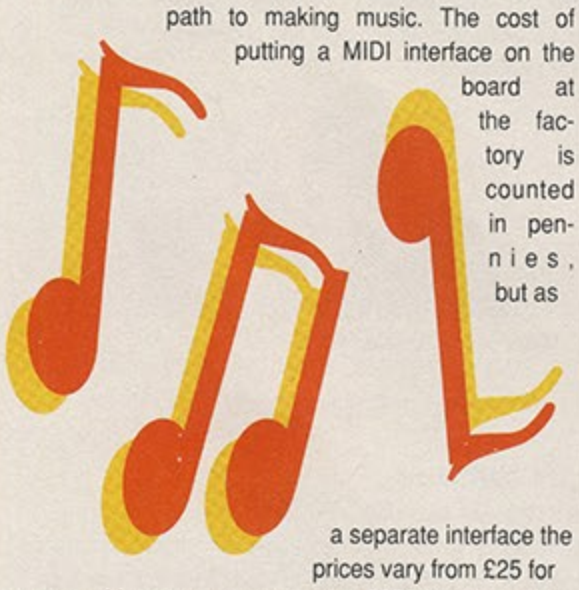
MUSIC AND THE ATARI ST

This week our music series turns its attention to the Atari ST – a machine that has traditionally been the leader in things musical. Jon Bates surveys the software on offer.

Until the introduction of the STE, the ST had one of the worst internal sound chips – an accolade it shared with several other computers as we shall see in the next few weeks. Although there are several programs around that use the internal chip to create sounds, in the main they are of novelty value only, and more often than not found in the public domain end of the world.

Like many other computers, the ST is able to convert stored sound samples back to sound, although no-one would claim that the ST is the ultimate sampling machine. There are bolt-on samplers, as we shall see, for the ST.

As a stand-alone music machine then, the ST is not precisely the bee's knees. However Tramiel and Co know a thing or two about marketing and so it was, and still is, the only mainstream computer to incorporate built-in MIDI ports. The advantage of this is that for the home user it means there is one less expense on the path to making music. The cost of putting a MIDI interface on the board at the factory is counted in pennies, but as



a separate interface the prices vary from £25 for some machines to a wallet-stinging £250 for others. It also means that there can be no incompatibility worries; all ST MIDI software is bound to run since the interface is built-in.

BUZZWORDS

The buzzwords for the cognoscente are again 'universal editors' and 'multiple environments'. Universal editors are synth editors that can be configured for any synth – provided you know your way around the systems-exclusive MIDI codes or can buy a template that works. Multiple environments are those where several programs can co-exist and be called to the fore as required. If the programs are from the same stable or there has been some friendly agreement between software developers, then it is likely that alterations made in real time may well be noted in the other programs. Even if this is not the case, the additional software will hang around as a desk accessory.

All this talk of interactive software assumes that you have lots of memory (and cash) to spare and we all know that this is not always the case! Let's start at the bottom end with starter packages that require no extra equipment. Unless stated, the software will run on all models of ST.

STARTERS

No extra equipment means that music can be entered from the QWERTY keyboard and the sounds are those created internally. Two packages fit the bill nicely, and oddly enough they are both in Dr T's family.

Music Recording Studio and *Tiger Cub* are both starter packages that follow the traditional lines of sequencing in terms of screen presentation; that is, the screen looks a little bit like a tape recorder. Both have well established sections that deal with quantisation – the rounding up of notes that are slightly out of time. Editing is a little more tricky for the beginner with *MRS* as you are presented with a list of numeric data.

Tiger Cub, on the other hand, uses a neat form of graphic notation with a very fast editing feature, especially when it comes to editing MIDI controllers, volume, pitch bend, modulation and tempo changes. Both programs are fully MIDI compatible when and if you decide to upgrade your system with external sound generating equipment.

Tiger Cub also has a routine that breathes life into the extra sound chip found on the STE, so owners of the STE will benefit quite a lot. If this applies to you, then check that the version of *Tiger Cub* that you buy does support the STE sound chip, as early versions didn't.

MIDI SEQUENCING

To do this you are going have to have an external MIDI-equipped instrument. Having lashed out on that, where do you start for software? At present there are probably more sequencing packages about for the ST than any other computer, so you have a wide choice. What I've gone for here is ease of use for the beginner coupled with good results.

The public domain has two sequencing packages worth a mention. They are generally known as the *Waddington* sequencer and the *Cosh* sequencer after the surnames of their respective authors. The *Cosh* is quite a bit more refined and this may lead to some confusion in your first encounter with it. But it is a very good sequencer with great editing facilities and full MIDI support. For the price it is ridiculously good value.

Coming in at a very low price is the *Super Conductor* MIDI sequencer from Microdeal which will record and play back 16 separate tracks. Again, this scores highly since it uses graphic display for showing how the small blocks of your tune can be chained together.

It has basic quantise features, but is clever enough to record exclusive data relevant to the sound that the synthesiser makes, so that you can be sure of the same sounds every time you use the program. It does support the internal ST voice chip but the manner in which the sounds are manipulated is not the most sophisticated in the world. It makes for a low-cost entry-level program with a fair amount of potential, although the editing of individual parts is a bit fiddly as you have to deal with strings of numbers for each note. Apart from that, copying sections is very easy and simple to do.

Still under the magical £100 figure are two more pieces of software. *Sequencer One* is a nice easy package to use, although it is totally MIDI with no internal voice support. Thirty-two tracks can be operated simultaneously with visual track naming and manipulation. Small patterns can be earmarked as blocks and moved around, and there is a cue list for the blocks on the main screen. Editing individual notes is a little time consuming, but is actually a lot easier than the stream of numeric data encountered in other programs.

The other contender is *Track 24*. As the name implies it has 24 tracks for you to play with and record on. However it is able to record chords on one of those tracks in step-time by typing in the name and type of chord. Manipulation of marked blocks of music is not as

NOT A LOT OF PEOPLE KNOW THAT...

...in Europe the ST is considered the music making computer above the Mac and PC.

...schools in France and Germany are kitted out with STs and there is a wealth of teach-yourself ST music software across the continent.

...classical music lovers can get tapes and MIDI disks of works by Mozart, Bach, Beethoven and Handel authentically realised on the ST and a sampler from DMA. Phone 01-624 8774 for more details.

...*Trackman* and *MIDIman* were designed and programmed by John Hollis who in a previous incarnation was joint owner of a certain rather large games software house.

good as the others but you can do a real-time mixdown which can include tempo changes. Editing uses traditional music notation, and is slightly peculiar since you can only see one line at any one time; if you have chords on one track it will only let you see one note at a time. MIDI is well looked after though, and is straightforward to use.

There is one program that comes in under £100 that is slightly different to those mentioned above. *FM Melody Maker* is a hardware and software package. The hardware has a store of FM sounds and the software lets you program them up into tunes. What happens is that it turn the ST into a sort of portable keyboard.

You write in the chords and melody line, pick an accompaniment style and away the program goes, chugging away merrily with bass line, backing chords and drums. You can alter the balance between these and change the sounds if you wish. Thrown in for good measure is a very simple (and I mean simple) one-shot MIDI recorder plus a drum pattern programmer – the latter two have no relevance to the rest of the program whatsoever.

The good news is that you can use this hardware with the new *EZ Track* sequencer to have a complete workstation for music – although to speed matters up a separate keyboard to input music would still be a good idea. Price for the all-in package should still be under the £100 mark.

OVER THE TON

Between £100 and £200 we have *Prodigy, Trackman, Studio 24, Big Band, Mastertracks Pro* and *KCS* – a very difficult choice as all the programs have both merits and problems. *Studio 24* and *Big Band* are overgrown versions of *Track 24. Big Band* has some quite smart auto-arranging features which add extra harmony lines to yours. It can even create melody lines!

Prodigy is a 32-track cut-down version of *Virtuoso* which has some very fast features; pianola style editing, advanced quantise and more. It takes little bit of getting used to but the promised add-ons like scoring packages and GEM compatibility (*Prodigy* uses its own environment) make it seem a contender.

Trackman, now in its second version, is very much a musician-led program: that is to say that it is simple and instinctive to use but it has many advanced features should you choose to call them in. It is certainly the most advanced program in this price bracket and it has a stable mate in the form of *MIDIman* – of which more later.

KCS and *Mastertracks Pro* are very good programs but take a back seat to the competition for various reasons, generally speaking to do with the architecture of both programs.

OVER £200

And now the expensive bit. For the sort of money we are talking here I think we can assume that you are serious about music. *KCS Level 2, Creator, Notator, Cubase, Pro 24, Virtuoso*; the names roll off the tongue like so many pound coins down a well. Here I think it does get to be a subjective choice, depending on the way you are working.

Creator and *Notator* (the scoring version of *Creator*) are exceptional programs provided you can get through the manual. *KCS Level 2* is very powerful but has a non-graphical editing environment. *Cubase* is extremely powerful and appears to multi-task, but even the demonstrators say that it isn't straightforward. *Pro 24* is now close to retirement age and is probably a good bet on the second-hand market. *Virtuoso* has

updates around the corner, is extremely fast and pretty logical to use, but I do have reservations about the note editing and block chaining functions which don't seem all that obvious.

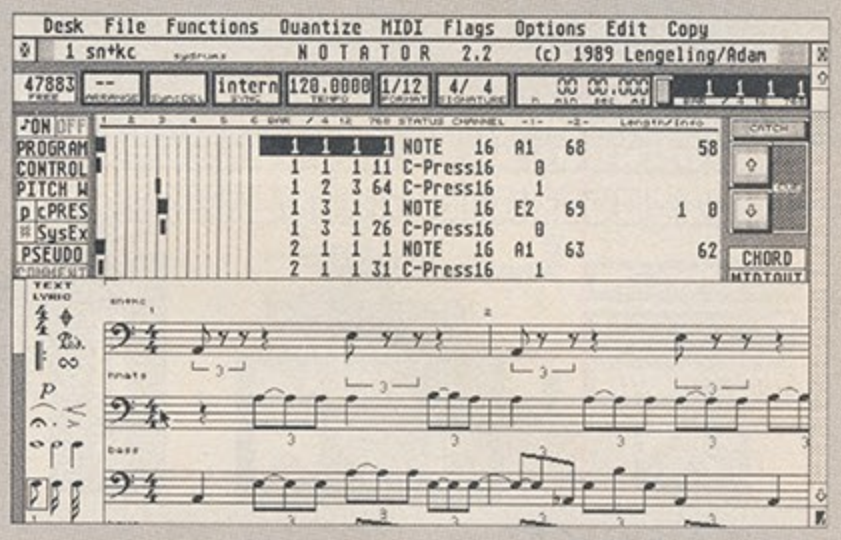
As I said, it gets to be a matter of personal taste. None of these support the internal voices and most of them will require a 1040 with high-resolution mono monitor. They all have solutions to the multiple program co-existence problem.

Virtuoso will have the hardest job as it leaves GEM for its own environment and you have to suspend operations while you return to GEM. Dr T and Steinberg have their own little lands of fun called MPE and MROS respectively, while C-Lab has Softlink. However I have heard that Dr T and C-Lab are opening their hearts up to one another; the concept is that their programs will talk to one another while co-existing.

SAMPLERS

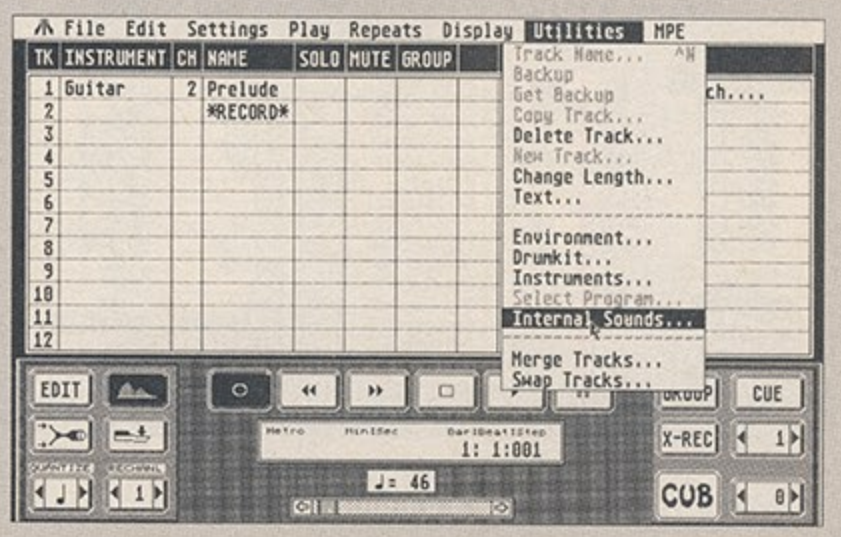
Everyone likes to mess about with a sampler. If you haven't then you have missed out the fun of remixing your very own James Brown record. As studio quality samplers that employ the ST to merely oversee their business come in with a severe four-figure price tag, I have restricted us to the simple fun-time sampler.

The best known are the numerous versions of

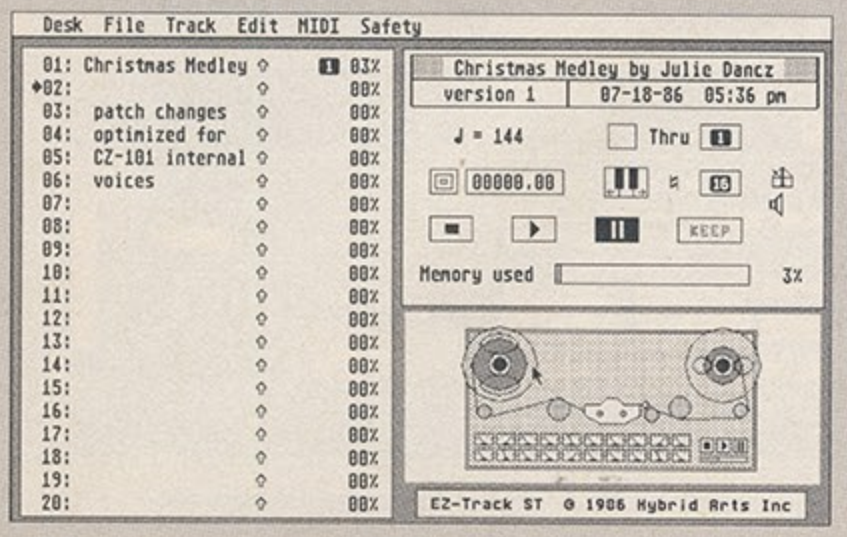


• *Full score editing in* Notator.

• *Notator's main screen: expensive but professional.*



• *Internal sounds are available when you use* Tiger Cub.



• EZ Track; *now adapted for use with* FM Melody Maker.

Replay. Now in its 5th edition, known as Replay Pro, this is still a good machine to get to grips with. It has some MIDI specifications, although sadly you need to trigger the samples from an external keyboard or sequencer to use them as part of a piece of music.

VOICING SOFTWARE

It would be an extremely time consuming task if I were even to pick the best of programs for individual synthesisers, let alone all of them. The list for the ST is endless. The move, however, is towards the universal programmer and librarian. There are a few for the ST and the ones worth a look at are *MIDIman, GenEdit, X-oR,* and *Chameleon.* Here's how they break down.

MIDIman is the partner and desktop accessory of *Trackman.* They will interact when working together, but *MIDIman,* like all the universal software mentioned above, will hang around as a desk accessory. *GenEdit* has a prodigious number of templates which enable it to cover many instruments and effects units. The same is true of *X-oR. Chameleon* as yet is only a librarian and not a voice editor but this is under development.

The key to all these are the templates (sometimes called profiles). This is the part of the program that configures the software for a particular synth. If a little bit of programming is not beyond you then sorting our your own templates shouldn't be too much trouble. Of course you will need the full MIDI specifications in order to do this, and even then there are problems – like the many occasions when the book doesn't match up to the synthesiser.

If you only have one synth or tone module at present you may think that a universal programmer is an unnecessary expense. It won't be when you add a few more machines to the pile and realise the expense of owning individual programming software for each and every synthesiser. ■

BEST BUY

UNDER £100
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OVER £100
Trackman

OVER £200
Creator

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Track 24 • £75 • 021-733 2063
Studio 24 • £120 • 021-733 2063
Big Band • £175 • 021-733 2063
EZ Track • £POA • 01-883 1335
FM Melody Maker • £69.95 • 01-883 1335
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KCS • £209 • 01-724 4104
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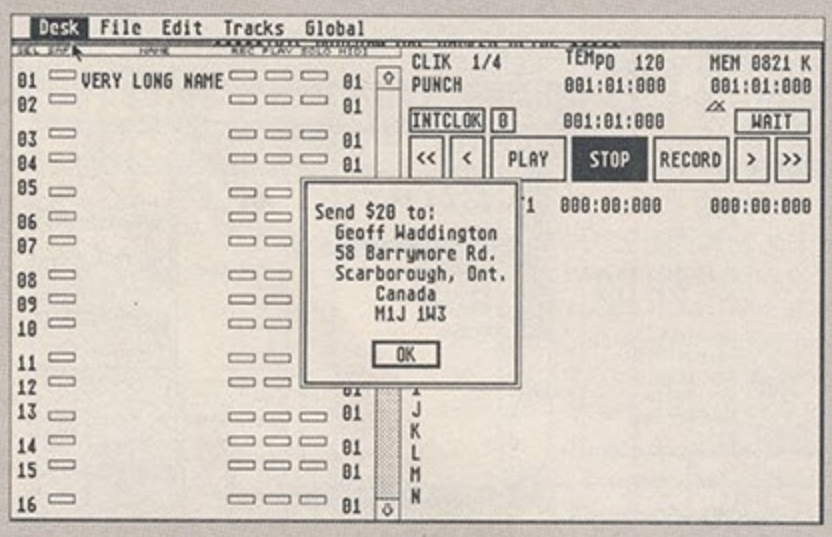
Creator • £299 • 0462 480000
Notator • £499 • 0462 480000
Replay Pro • £120 • 0726 68020
Cubase • £550 • 099389 228
Pro 24 • £150 • 099389 228
Virtuoso • £299 • 01-586 3445
MIDIman • £89 • 0256 477222
GenEdit • £99 • 01-883 1335
X-oR • £139 • 01-724 4104
Chameleon • £89 • 0761 32610

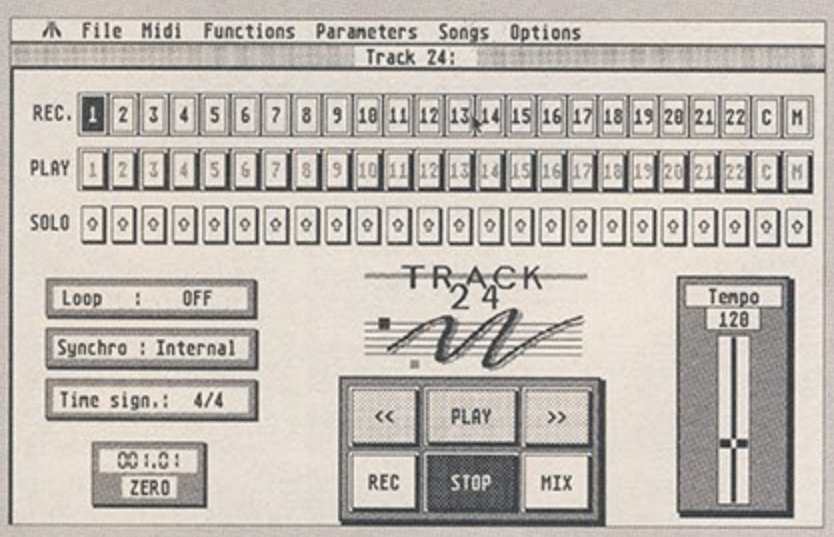
NEXT WEEK

Next week the PC is hoisted on the testbench. Any points or queries you have please write to me at *New Computer Express*, Future Publishing, Beauford Court, 30 Monmouth Street, Bath BA1 2AP, before May 4 as then I can be sure of answering you in print. Mark all letters for my attention.

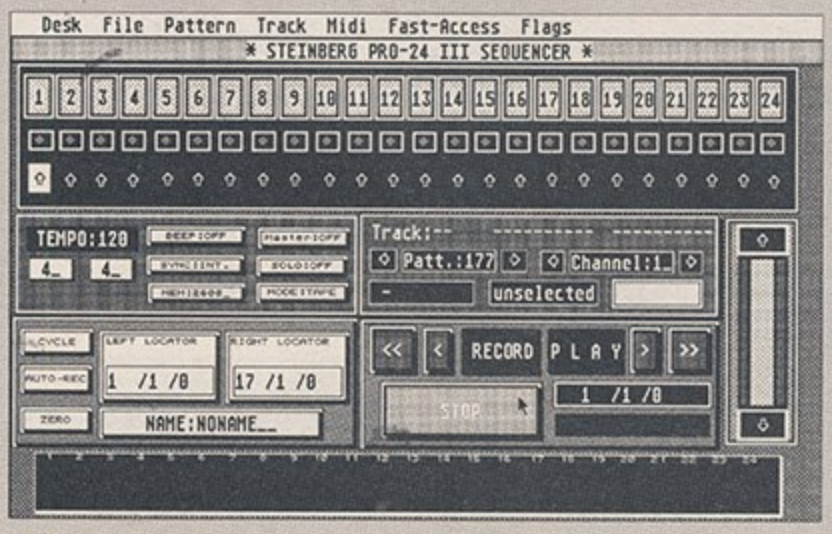
All the programs mentioned above have been or will be reviewed and considered in full in our sister magazine *ST Format.*



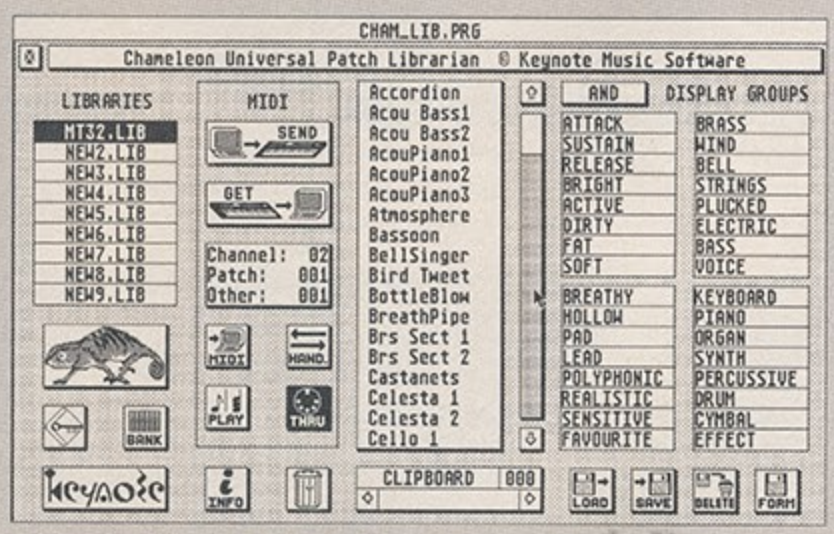
• *The Waddington PD sequencer.*



• *Track 24; easy to use and understand.*



• *The familiar face of Pro 24 – the face that launched a thousand hits!*



• *Chameleon is a patch editor which works with many different synths.*

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TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Uncle Tech Tip, he'll see you right. Send your sorry stories to Uncle TT, 30 Monmouth Street, Bath BA1 2AP. There's a prize for the most pitiful tale

HELP! Screen crazy

Why do some games – especially the cheaper ones – cause the screen of my EGA PC to go berserk with lots of distortion or lots of squiggly lines? I find this especially confusing as I thought the Amstrad ECD was supposed to configure itself to most of the other graphics types (except VGA or higher), but I can't imagine that the games like *Breakout* were written only for VGA machines.

Now for a tip. If a hard disk drive makes horrible clunking noises when it is being read from or written to, it may be that some of the files have become non-contiguous, that is spread all over the disk drive. To cure this use *PC Tools' Compress* (I think that the *Norton Utilities* contain something similar) or if you don't have a copy of these, copy all of the files including the system files to whatever you copy files to (floppies or tape or even video), use the MS-DOS `FORMAT` command, then copy the files back again.

My hard card got so noisy I thought there was something wrong with it, but after using *PC Tools' Compress*, which took a couple of hours to run, it is now silent.
Ray Thomas, Bedminster, Bristol.

A lot of public domain programs – particularly games – rely upon undocumented calls to the operating system and little tricks and wrinkles not necessarily supported by all machines. The Amstrad range, more than any other PC compatibles, have their own way of doing things, and I think that it may be that the machine simply isn't responding correctly to directives from the software. Don't worry, this won't damage the machine, it simply means that some PD software won't run properly (as you've discovered the hard way).

HELP! Reading matters

Why are beginners' BASIC publications so hard to find? Is it because there are no beginners out there anymore?

I've been dabbling with and using computers since 1984 and I thought it was about time I learned to program. So I went out and bought GFA BASIC version 3 and started to read.

This however, is definitely not a tutorial for the beginner, so I got hold of a book by Ian Sinclair *(man of a thousand manuals – Uncle TT)* called *Program in GFA BASIC*. It's a good book I'll admit, but it's also a very rare one.

Why is it that books to learn from are becoming so difficult to find? If I want to learn to program in C, 68000 or Pascal, then almost every publication I've ever looked at assumes some knowledge of programming.

Why do they also assume some knowledge of mathematics or algebra? I'm not thick, but maths is not my strong point, I'll admit. So if you know different to the above or know where I can get hold of some good aids to learning then I would be delighted to know. Also, if anyone is in the Basildon area who's already programming in GFA BASIC or any other language and wouldn't mind helping me out, please help me.
Steve Dixon, 46 Brendon, Basildon, Essex SS15 5XJ.

A sorry tale, but one which I'm not entirely convinced by. After almost a decade the home computer industry can probably boast more introductory textbooks than all the other hobby areas put together.

The prolific Mr Sinclair alone must be responsible for a largish rainforest's worth detailing anything and everything (is 'Ian Sinclair' a collective pen name for a bunch of writers reluctant to use their own monikers, or does this workaholic scribbler really exist?).

If you really want to be treated as a complete beginner, then I suggest you cut along to a branch of Tandys wherein you'll discover a wealth of American text books, replete with 'helpful' cartoon characters and all of which assume absolutely no knowledge on your part save a basic understanding of breathing and generally staying alive.

But seriously, it *can* be difficult to assimilate the information in some books, but there are several ➤

HELP! Making the choice now that good old Speccy's bitten the dust

I have owned a Spectrum Plus 3 for five years now and I enjoy playing games on it. Over the years I have built up quite an impressive games collection, but alas my trusty old companion finally succumbed to my enthusiastic key tapping and conked out on me.

Time for an upgrade I thought, so I considered these various options:

1. Buy a brand new Spectrum Plus 3
2. Buy the SAM Coupé
3. Buy an Atari ST

After several hours of pondering I eliminated option 1. The Coupé seems to be the favourite at the moment because of the lower price and the compatibility with my old Spectrum. However, after reading an article in your magazine about a new Atari ST bundle called the Discovery Pack, I wondered whether or not it is worth upgrading to a 16-bit machine. I would be very grateful you could help me to make a choice.
Colin Moors, Ealing, South London.

• Upgrading from a Speccy? Go for the SAM.

There is of course one more possibility. You could have the broken Spectrum repaired by one of the many competent service centres based around the country (several such centres exist in and around London and can be found by reading through Shopping Express) and carry on using your original machine.

Spectrum repairs are incredible cheap due to the vast availability of spares. And why are you rejecting the purchase of another Spectrum out of hand? Remember, it's a Spectrum that has given you so much computing pleasure over the years, and good though the SAM Coupé is, a compatible machine will never be able to run all of the software which makes up your collection.

OK. You don't want another Spectrum and the choice is restricted to either the SAM Coupé or the Atari ST.

The former has recently been released after several years development and is a quality machine offering a degree of Spectrum compatibility as well as plenty of peripherals, such as disk drives, at reasonable prices. The SAM is the subject of much interest at the moment and our very own Robin Alway now devotes one of the Your Format columns to the machine.

Atari's ST is also a quality machine with a small planet's worth of excellent games and serious software, but it is considerable more expensive than the SAM and buying an Atari would instantly reduce your prized collection of software to trash.

Buy the SAM. You'll continue to be able to use existing Spectrum software, buy new programs at cheaper prices than the 16-bit machines and the initial outlay for the purchase of the machine will be considerably less than that required for Atari's machine.

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publishers producing inexpensive and worthy little tomes detailing the various programming languages.

Try thumbing through any of the Bernard Babani range (*Learning to Program in C* by Noel Kantaris priced £4.95 is but one example). These books are couched in any easy-to-understand dialogue and priced just right for the beginner. They're available from almost all good book stores.

And no doubt a storm of letters will issue from your letter box the moment this copy of *Express* hits the streets, from kindly Basildon-based Techtippers eager to help.

HELP! More on manuals

After owning a fairly basic Walters PC compatible for almost two years, I would now like to upgrade the machine to take advantage of some of the excellent PC peripherals I've heard are available.

The Walters has eight expansion slots so there's no end of possibilities, but the problem is, I'm stuck for ideas! Is there a good book that would help me to choose some new peripherals to upgrade my PC compatible?

Andrew Petal, Kingsbridge, Devon.

The PC Upgrade Handbook by Clive Smith was published just for you. This readable manual contains chapters on adding memory, speed enhancements, video adapters, hard disks and hard cards, tape streamers, CD-ROMs, data transfer devices and so on.

Each chapter contains information about buying, connecting and the possibilities for further expansion. Areas such as drive and display operation are fully examined and explained.

Published by the Sigma Press, the book (ISBN 1-85058-118-5) costs £9.95 and is available from the ubiquitous 'good book store'.

HELP! Long Centronics

I am anxious to connect an long extension cord, about four metres in all, to enable me to re-site my printer on the other end of a right-angled desk.

I sent for such with all the pins connected Centronics to Centronics, but it wouldn't work, which has me baffled!

Logically, if all the pins are connected the ones on the interface which needed to communicate with the ones on the printer would do so and the others that needn't, wouldn't, or is this not the case? Either way, it didn't work! Can you assist in advising me the correct wiring for such an extension so that I could get it made, or as to whether it would be more sensible to get an I/O lead made to a suitable length, or would this invite data corruption?

I would appreciate your advice as I am extremely anxious to tidy up my computer room. The set up is an Atari 130XE, twin 1050 disk drives, a Graphics A-T Interface and an Epson LX800 printer.

Dave Richardson, Walsall, West Midlands.

A Centronics through lead would need the following connections in order to work correctly: 1 to 9 connected 1 to 9 at each plug,11 to 11, and 18 to 25 connected to 18 to 25 at each plug.

This would work essentially as an extension of your Graphics A-T Centronics outlet. Although wrongly connected pins may be the source of the problems with your lead, it's probably that the length between your computer and printer is simply too long.

Parallel signals tend to become very weak after travelling a relatively short distance (when compared with signals across a serial cable), and your parallel cable simply isn't transmitting a sufficiently powerful signal to emerge at the output end.

It's a well-known problem – parallel systems simply weren't designed to operate over any distance. There are a number of printers on the market that operate from the serial port to overcome just this problem.

If it really is important to site your printer so far away from the computer, try using an extension I/O cable, connecting the Centronics printer adapter to that and a short conventional parallel printer cable to the interface.

I can't guarantee this somewhat 'bodged' set-up will work, but if it's that important to you, it may be worth a try – good luck! ■

HELP! Another Techtipper in an Apricot jam

I have owned a 1040STFM for a year now and am very pleased with it, though I can hardly claim to be computer literate – hence the following list of questions. The other day I was given a slightly antiquated-looking machine with the words "I think there's something wrong with it, but you may be able to fix it. Good luck!"

The machine turned out to be an Apricot F2 with twin 3.5-inch floppy drives, a small (approximately eight-inch) monochrome monitor, a battery operated keyboard, two infra-red mice, various manuals and some software including a word processing package called *GEM Write* and even a paint package. Unfortunately the manuals give very little technical information or specifications. I use my Atari ST at home for an increasing amount of word processing work and I would like to know the following:

1. Is the Apricot PC compatible? The manuals were published in 1985, so would it run more up-to-date PC software?

2. Is it fast enough to run modern software at an acceptable speed?

3. Ideally, I would like to use the machine at work for word processing, as I understand my ST can read and write PC floppy disks. Is this correct?

4. How large is the Apricot's RAM and does it run single- or double-sided disks?

5. Supposing I have an appropriate lead made, will the machine support some of the better quality, larger monochrome monitors for PCs? The manual implies that the machine can display up to 16 colours depending upon the software. What kind of picture quality could I expect if I connected it to my Atari SC1224?

6. Although I will not use the machine near any other infra-red reliant hardware, are there any companies that still manufacture 'light-pipes' for the mice and keyboard?

7. There are cables emanating from the computer, keyboard and monitor which I presume connect to a power supply. The trouble is that they all end in loops fastened with a soft metal band and as far I can see, the wires are multipie strands of silvery metal quite unlike what I am used to putting into a plug. What are they?

8. Because of the number of files I am creating as a result of my word processing activities, my floppy disk space is being eaten up and I am saving my pennies for a hard disk drive. In you opinion, would I be better off junking the Apricot and putting the money saved towards a hard drive, spending x-amount of cash getting it in working order and using it as an accessory at work, or selling it if any sort of market exists?

9. Last and probably more stupid, I own a Star LC-10 printer and despite wrestling with the manual, I cannot get it to print a document in near letter quality mode which includes italics. It either prints everything in italics or completely ignores italics and prints ordinary characters. I appreciate that you may not be familiar with such a modest device, but if you know how I can solve this (I actually managed it once but cannot remember how!) please print the answer in words my technophobic great-aunt could understand.

James Woolley, London.

1. The Apricot computer is not PC compatible. The machine runs a hybrid version of MS-DOS, and may even run one or two well-behaved PC packages, but on the whole, an attempt to get it to work with PC software will result in frustration. The Apricot machines constituted a British assault on the 'serious' end of the small computer market dominated by IBM and its clones. It's fair to say that the company failed miserably due to constructing a range of incompatible machines that had silly additions such as LCD displays built into the keyboard in an attempt to create a selling point (rather than simply making them PC compatible and cleanly constructed).

2. What modern software? If you mean PC software then refer to the answer above. If you mean modern Apricot-specific software, I think you'd probably experience great difficulty in finding any!

3. The Atari ST can indeed read and write PC floppies quite happily as the two use – almost – the same disk format (the PC writes an extra drive-type identification byte to a disk during formatting). However, as the Apricot uses its own peculiar formatting routines, the two machines cannot interchange disks.

4. RAM can be anything from 256K to 512K although I suspect the F2 has 512K. The machine uses floppies of 800K capacity.

5. With some tinkering, it should be possible to get the Apricot to drive a PC monitor. It can't, however, be used with the ST's SC1224. Picture quality? No picture!

6. I'm loathe to answer a question with a question, but what in hell is a light pipe?

7. Why do you presume the cables are intended to be connected to power sources? Probably the most likely source of accurate information about the cables is the previous owner.

They must at some time have had the machine in an operating condition. From your description I find it impossible to suggest what they might be, but would hesitate to connect them to the mains.

8. Do *not* spend any money on the Apricot. You already have an excellent computer (the ST) which, judging by the quality of your letter, is perfectly adequate for your word processing needs. Money spent on a junked old Apricot will be money thrown down the drain.

As a curiosity for those interested in such things, the Apricot may fetch a few pounds, but I suspect you may be using it as a plaything for younger relatives on visits or as an attractive and unusually play-house for small rodents.

9. You might have told me about the commands which your trying to use now to perform the operation. I can't advise you if I don't know what you're doing wrong. If you're using the correct printer driver, then I'd suggest that you issue an NLQ command at the beginning of any document and control codes to italicise particular words as and when needed. That ought to do the trick.

If you still can't achieve the effect, try switching the printer into near letter quality mode via the front panel and simply issuing italicise commands in the document.

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This week's replies written by Martyn Lester.

Direct action

On reading Shopping Express this afternoon and counting the 'Amiga contacts wanted' adverts, it occurred to me that even if FAST can't be bothered to prosecute these people, surely they could form a committee to go round, duff them up and nick all their disks. I feel this would go some way towards dealing with the problem of piracy.
PS Is it true that Uncle Techtip used to play keyboards for Spandau Ballet?
A Programmer

The 'duff up and nick 'em' committee wouldn't be of any use with pirates because where there's no sense, there's no feeling. I'm sure the chaps at FAST are making copious notes from the contacts pages and waiting for the right moment.

Uncle Techtip used to play spoons for the Accrington Stanley Ballet. Then, until we converted him from analogue to digital, he was a Series 3 modular Moog synthesiser and a practice platform for peripatetic trainee hairdressers.

Slow on the uptake

Like your correspondent, G C Watson (*Express* 72), I was unimpressed by Dolan's response to requests for more information on the Dolan XT. (I must say, though, that after a second phone-call I received information within a couple of days.)

The information I eventually got was fairly economical – what does the thing look like for example? Also its DOS proves (on further enquiry) to be DR-DOS, rather than the more usual MS-DOS or PC-DOS. Will this limit the amount of software I can use with the machine?

As a computer beginner, just considering buying my first computer, I feel I want to know more before parting with my cash. Any chance of an article on the Dolan XT?
Ms E Thomas, Bulwell, Nottingham

Poll tax comes first

You surmised (*Express* 72) that I was a bit unhappy that Dolan had failed to answer my sales query about its PCs with commercial promptness.

I can report that I have since had a reply with a near-disarming double edge. "Sorry," says the words-lady, "the delay was due to our being busied with filling in poll tax forms." I may resent their rating me lower than their poll tax, but I am consoled that they seem equally behind hand with Caesar. They don't play favourites, these Dolans.

Mind you, it could have been totally disarming had the answer been "Too busy waving banners at the demos." One would have been tempted to lodge a standing order.

From the information in their reply, it seems I could have had a 40Mb hard disk instead of 20Mb for around £150 less than the cost of the Commodore.

I will certainly be keeping Dolan in mind when I go AT, although everything about them is wrapped in conditional tenses. How will I know next year when it is timely to approach them?

It may not be the poll tax distracting them then. But what if they are pulled into some national leek harvesting drive? What if the Welsh rugby selectors have turned to them for salvation?

I was not unhappy at Dolan individually. Its just that the natural perversity of things prevails so often in the computing world. Since I bought my Commodore, Digicom have brought out their version of the pack about £165 cheaper. Me, I have my Commodore and I like it and the year's on-site care.

You report the legal recognition of Computer Elbow. Steam typists don't get it since they vary arm position by belting the carriage return and twiddling the platten wheel. I won't get it either. I can get more hand flourishes into spearing the numerical pad with my left index than Simon Rattle conducting a less than lyrical passage from Stockhausen. Maybe I can sell my method to Mavis Beacon as a typing-cum-aerobics program to end them all. Then AT, here I come.
G C Watson, Croydon, Surrey

Computer lore rule one: Whatever you buy, there will be a cheaper/better/prettier/faster one out within the week and the supplier that you wish you'd gone to will be the one that you couldn't contact.

Rattle and Stockhausen? More like Russ Conway and *Sidesaddle*. ➤

Oops upside your head, and other meaningless statements...

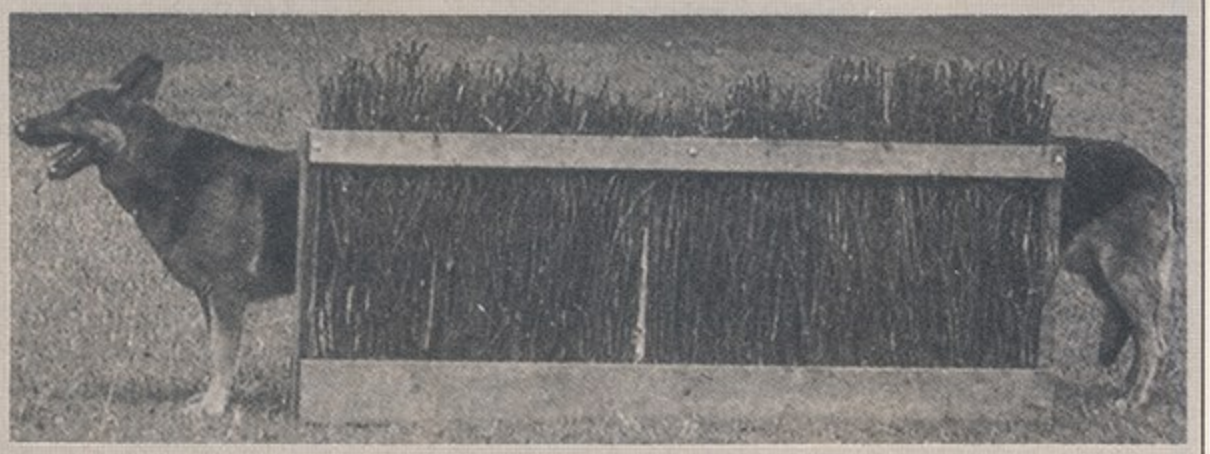
Ever since I got my first 3.5-inch disks, I have always stored them with that little metallic part facing downwards, whereas my friend has his disks with the metallic bits facing upwards. Is there a correct method of storing them, or is one of us storing them upside down?

To make my contribution to 'My dog has more fleas than yours' debate, you may, if you wish, replace STE with your own computer.

My STE has more fleas than your Nintendo because the ST is more suitable as a business machine.

My STE has more fleas than your IBM MS-DOS PC because the ST is more suitable as a games machine.

Enough of that, I have brought in a photo to really show you that my dog has more fleas than yours.
Andrei Ellman, Amsterdam, Holland



• If you understand any of this letter you're a better person than me.

Here at *Express* we don't seem to have any boxes for keeping our floppies in (I suppose it is one way for Future to keep the cover price down to 58p) and consequently I 'store' mine by placing one flat on the desk and piling all of the others on top of it in a rather pleasant pyramidal arrangement.

Beyond this I do not think it wise to offer any opinion on the correct way up for storing floppies, as this seems to have all the makings of an utterly futile 'my way up is better than yours' debate.

If you and your friend are seriously concerned that one of you is pulling a flanker, the way to establish strategic parity is surely for both of you to store your disks in alternating orientation, ie if the first disk has the metal upwards then the second should have it downwards and so on.

This way, each of you will be 50 per cent right and 50 per cent wrong simultaneously.

Again, if this takes all the fun out of life, you could keep your disks all the same way up in a carrying pouch and then haul that around by slinging it into your bag at random, not knowing whether you have got it the right or wrong way up until you arrive at your destination.

Regarding the fleas debate, Keith 'Heavy Fettle' Pomfret tells me that the Acorn Atom had more than all the others put together.

I can't pretend that I understand what on earth the pair of you are on about.

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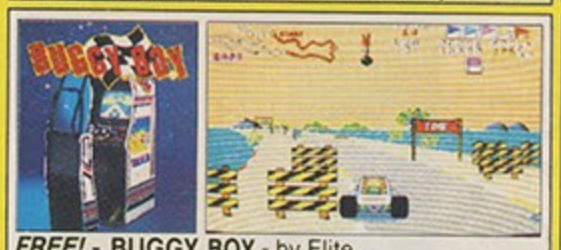

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Do you already own a computer
If so, which one do you own? .....

DR-DOS will run all DOS programs quite happily, and yes it really is time that Dolan sent their latest kit for us to prod around. We'll keep working on it.

I reckon I'll keep clear of the poll tax debate, as snotty phone calls from Iolo Davidson can be a real drag when you are sitting here of a morning nursing a first-rate hangover, but I reckon its safe to say that the Welsh rugby selectors will need to appeal to a higher authority than Dolan for comfort in their hour of need.

Another planet

Does Peter Gerrard read the mag that he writes for and do *Express* read articles before printing them? I am referring to issue 75's C64 section (should be bigger) where he tells of a company called Xenon Technology, where several games can be had for the reasonable sum of £6.45.

This firm went bust weeks ago, and this was splashed over your pages bigger than a hedgehog on the M1 and, to make matters worse, you print a letter referring to Xenon's collapse. Well done M D Clayton. Apart from another brill mag, the April Fool's jokes were very good.

Just one last thing, can we have a hedgehog column so they can read *Express* instead of playing on the M1?
C E Vickers, Middlesbrough, Cleveland.

I am writing to you in the hope that this letter will stop Commodore 64 owners parting with their hard-earned cash by sending it to Xenon Technology which was wound up earlier this year.

Unfortunately, I was sorry to see that in *Express* 75, the Commodore 64 bit of the page carried a section saying that some of the most popular games were available from Xenon Technology at a very low price indeed. I only hope that the people that were tempted by this offer read the rest of the magazine, especially the letter entitled 'The garden fence', instead of rushing for their chequebooks the minute they read the section.

Also, on the theme of money, I was interested in Colin Stone's letter 'Spoilt rotten' (*Express* 73), about the law on VAT. Reading the present issue, yet again, reveals adverts displaying the immortal words 'VAT not included'.

In the interests of the consumer, I think these companies should be referred to the ASA or similar organisation who should deal with them accordingly.
Christian Hewison, Ryde, Isle of Wight

You are both quite correct. Do not send a penny to Xenon, as you will be wasting your time.

I think Pete Gerrard must have been on a package tour of the planet Zanussi at the time of the firm's collapse. In order to put him straight, we are attempting to contact him by sitting around a table and each placing one finger on an inverted wine glass.

The production editor, assistant production editor and myself all read Pete's article before it went to press, and we are standing in a circle soundly chastising each other with barbed wire for not spotting the error.

Although the hedgehog is unique as a two-dimensional insectivore, I do not think this justifies a column. Next it will be the duck-billed platypus, and then who knows where it will end?

On advertisements, we have contacted both the Advertising Standards Authority and our local Trading Standards Office for guidance on this matter. As far as we can tell, provided that the ads do say clearly and legibly that VAT has to be added then they are legal. Both ASA and TSO did say, though, that they would prefer to see the whole VAT-inclusive price shown in a consumer magazine, and I cannot personally see what advertisers think they have to gain from the exercise.

Twilight zone

I read K Simpon's letter in *Express* 69 with keen interest and, since I am a short-story writer specialising in such speculative thinking, also with familiarity.

In fact, I'd like to focus his logic. It appears to me, as it appeared to him, that the possibilities of science-fiction are diminishing, as all the great and the small ideas since the advent of the genre have been written and invented. It therefore follows that the pool of ideas will eventually dry and grow stagnant.

In an analysis of history, it also follows that science-fiction, which has always remained one step ahead of reality, will continue to do so. The vice of expendable dreams and recorded thoughts is beginning to close in. This is the result of what one can term the 'circle of progress'. That circle can be defined as a continuous flux between imagination and achievement, and soon there may be no more imagination.

There is another result which I would like to clarify. The result of what Mr Simpson called the 'personal worlds' of every man is leading us, initially, to less and less communication socially and, ultimately, social catalepsy.

How about a spot of theorising? The question is who wants room? Present life is almost fully automated – work, rest and play. Since the power of electronics, radionics, avionics and photo-electronics, and all the might of positronics, thermionics, atomics and the great right hand of kinetic force, is acting out all the essentials since the dawn of man, we are left with only the workings of all our thought. Surely the ultimate state of affairs.

And what the hell did evolution give us our fingers for anyway?

For pressing buttons, that's what.
M A Bates, Winchmore Hill, North London

All the great and small ideas written and invented? I think not. Firstly, all that has been written has clearly not yet been invented. Speech recognition and artificial intelligence advances between them have yet to land in every home the computer that holds a rational conversation with you. Nor has the invented become the implemented – the officeless society predicted as imminent almost 15 years ago has yet to arrive.

On the writing side, I grant you that technological advance has accelerated to such an extent that sci-fi authors are harder pressed than they used to be to stay ahead of the game, but the job remains to extrapolate science fact and muse on what should be achievable and has yet to be achieved.

Your fear is that there is a limit to imagination. Time will surely prove your anxieties unfounded. ■

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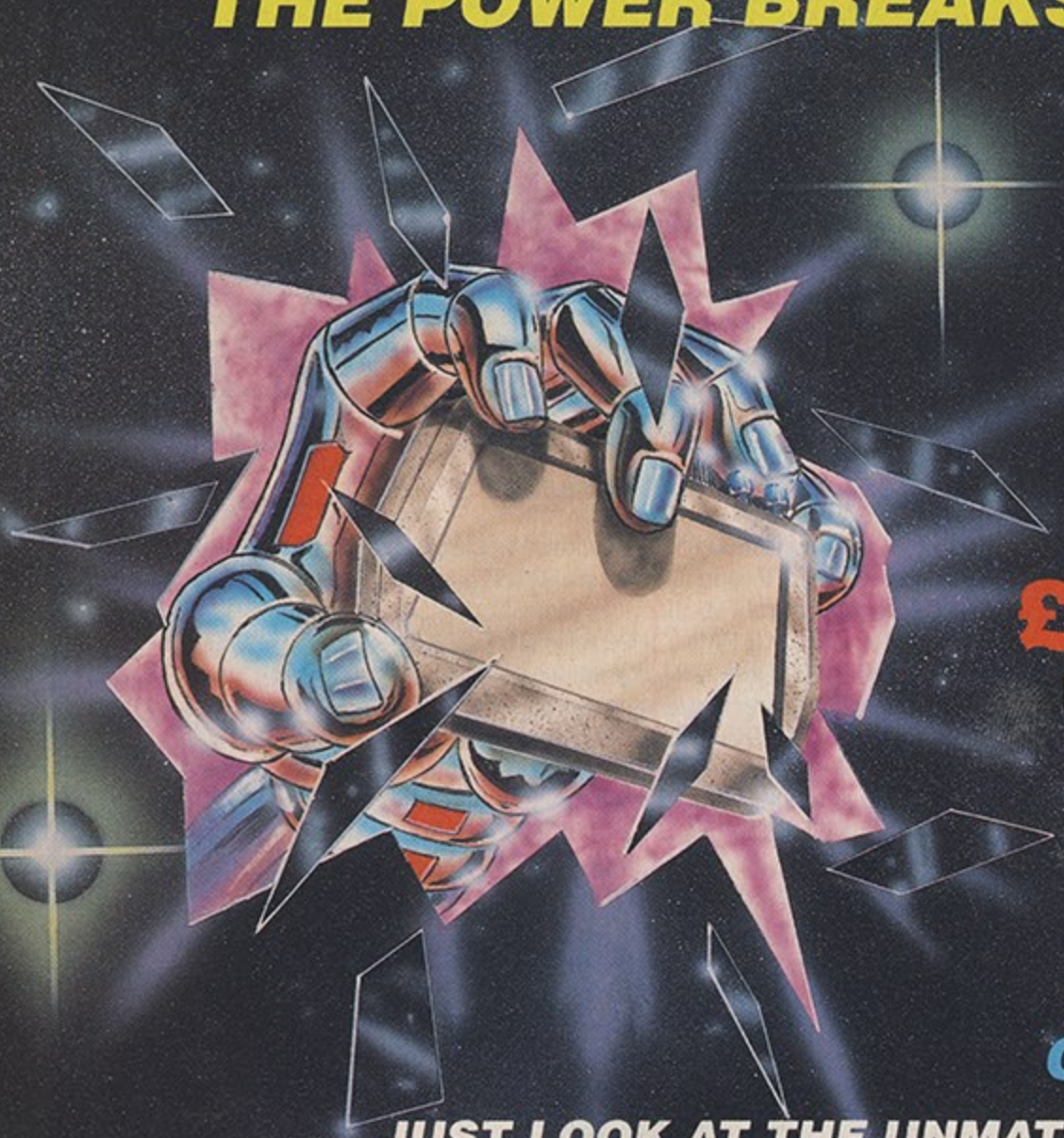

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