Issue 94 • 25 August 1990 • 58p

WIN A PC SOUND SYSTEM plus software only in the **EXPRESS SUMMER GIVE-AWAY** Page 48

NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

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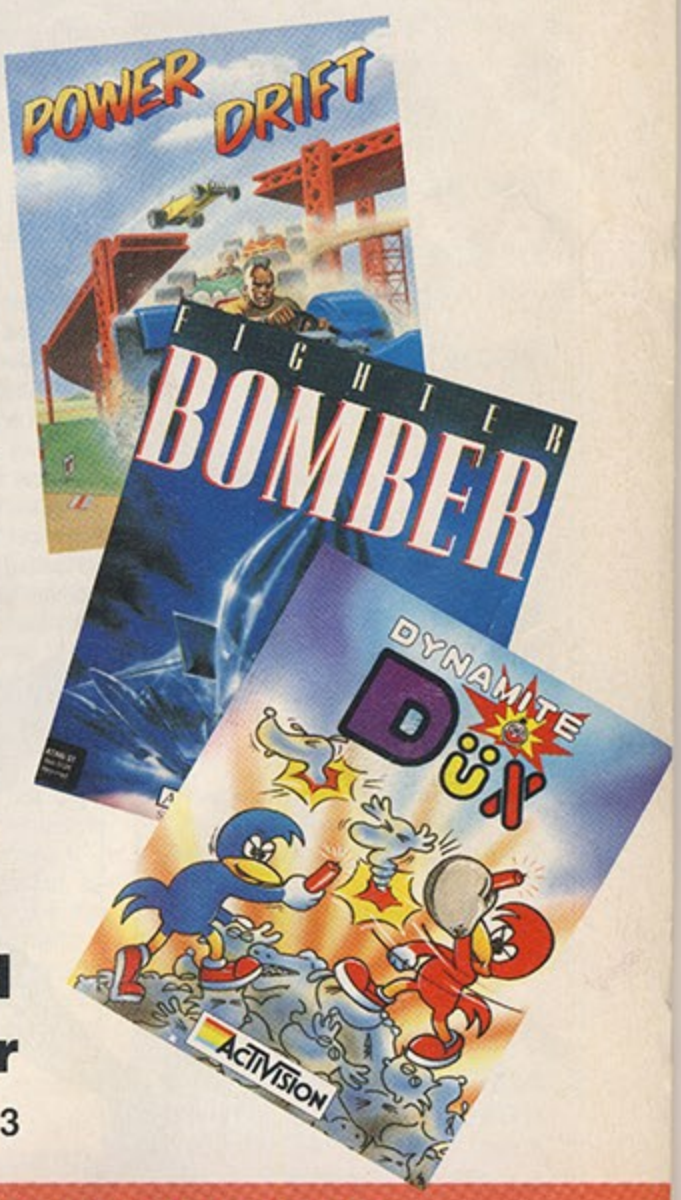
BARGAINS!
28 value-packed pages in
SHOPPING EXPRESS

LEARN HOW TO TURN YOUR AMIGA INTO AN ST

Now it's possible to make a Commodore run Atari software PAGE 53

GAMES GIANT SHUNS 16-BITS



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Learn to play piano – with a console!

The Miracle piano teaching system is a new hardware and software setup aimed at turning wireheads into Wagners.

The Miracle comes from The Software Toolworks and plugs in to a Nintendo console, and ST and Amiga versions will be released soon.

It comprises a 49-note keyboard which is velocity sensitive – the harder you hit a key, the louder the note – a foot pedal to control sustain, and you even get a pair of earphones thrown into the bargain.

The software used is said to be artificially intelligent in that it spots mistakes and concentrates on these while tutoring the user. Added to this is a tutorial game in the form of a shooting gallery – hit the right note and you pot a duck.

The Miracle is not expected to be released in the UK until the first quarter of 1991. It is currently priced in the United States at $299 for the hardware and software, and the ST and Amiga versions will cost $100 more.

For more information call distributor Mindscape on 0444 86545. ■

Pentagon sets budget for military virus research

VIRUS WAR LOOMS AS US FUNDS TESTS

Computer viruses may be used as weapons of war if a United States army contract comes to fruition.

Outside of army circles, the proposed action has been called "foolish" and has been accused of "spreading paranoia among allies".

One major problem is that, like chemical weapons, once unleashed the viruses would be 'free ranging' and could spread to civilian and allied equipment. With the possibility of virus mutation, and the already existing self-modifying viru[illegible] this could lead to [illegible]

Another of the main points of contention is the method by which the infections could be 'injected' into computer systems. Radio transmission has been suggested as a possible vehicle although this would break with non-program transmission, and would have to defy error correction techniques.

In February this year, the US army produced the Small Business Innovation Research Program (SBIR) within which a section called Program Solicitation 90.2 proposed a $50,000 feasibility study of military virus potential.

Surprisingly, with the known strength of American military computer research, the actual work is to be farmed out to commercial interests.

This action has been seen as important as the study itself. With a meagre $50,000 investment, Edward Wilding of the UK's *Virus Bulletin* sees Program Solicitation 90.2 as "a classic piece of disinformation designed to conceal the true extent of US military virus research."

Neither the Pentagon nor the Ministry of Defence was prepared to comment on the matter. ■

• Those unsavoury ne'er-do-wells, the Gremlins, are coming back to computers next month.

Elite is burning the midnight oil in an attempt to get Gremlins 2 – The New Batch, out for the end of September. The game is based on the hugely successful movie which grossed $2.5 million within three days of release. The New Batch will be launched onto all formats simultaneously. ■

Bruce is busted

A student has been convicted of computer trespass after attempting to infect three Sun Workstations with a virus. The virus which was used caused data loss and interfered with system start-ups.

Gary Barylak was sentenced to 200 hours community service after being caught inserting non-system disks into the computers in Melbourne, Australia.

His sentencing for computer crimes is the first to have occurred in Australia and came about after Barylak was followed by the systems administrator. Barylak is to be appeal the verdict.

Australia introduced strict computer crime laws last year to try and curb hacking which was rife. ■

• Massive scaling down at Activision UK • Home micros not in plans

ACTIVISION WILL BACK PCs AND CONSOLES FOR GAMES

By Colin Campbell

• *One of Activision' biggest hits,* R-Type, *with the firm's boss Rod Cousens (inset).*

Activision's parent company Mediagenic – one of the world's largest leisure software houses – has decided to stop publishing games for home computers.

The American company will now concentrate on PC and Nintendo products and will not be expending any resources on the ST, Amiga or 8-bit machines.

Mediagenic has all but closed down its UK subsidiary Activision. That firm was responsible for such hits as *Ghostbusters, R-Type, Super Hang-On* and, more recently, *Powerdrift*. It says the future is not with home computers such as the Amiga and ST but with games consoles and DOS machines.

Activision UK, which last week employed 50 people, will only be a two-person operation by next year. More than half of the employees had already left by the beginning of this week.

Insiders say there is a feeling of extreme bitterness at Activision's Reading headquarters, especially since the UK operation had been a success.

DISASTROUS

The Nintendo and PC as a games machine have failed to assert themselves this side of the Atlantic. However, both offer great potential in the US.

Following a disastrous financial year in the US, Mediagenic has been forced to pull back and protect its American interests. Assets in Reading such as computers and cars have been sold in order to raise much needed money.

Industry watchers are suggesting that Activision has become the 'sacrificial lamb' of Mediagenic's misdeeds. The company, while not spectacularly successful, has been trading profitably in Europe and its products are regarded highly by gamers.

But a series of poor moves and unfortunate events in the States have left Mediagenic in a sticky position:

• Mediagenic lost $19 million last year. Its performance has rarely been impressive since the middle of the 1980s.

• Infocom, its well known adventure game subsidiary, closed down this year. Infocom now exists only as a brand-name for PC games.

• Mediagenic recently lost $6 million in a drawn-out court case against MagnaVox for infringing copyright of a cartridge design in the early '80s.

• An attempt to break into the serious software market was not sucessful with Mediagenic making little headway with a series of utility programs.

• The company is up for sale but apparently offers have been thin on the ground. Only one company is thought to be interested and a deal is not likely for months.

In an official statement released last week, Mediagenic signalled its decision to "devote its resources to where it believes the market is going". As well as Nintendo and PC games, the firm will also be working on CD games although that technology is some months away from establishing itself. The dramatic changes at Activision were touched on briefly and described as a "restructuring".

Geoffrey Mulligan, vice-president of Mediagenic and president of Mediagenic International commented: "We firmly believe that consoles and DOS-based software are the long term global future of this industry and as such we are redefining our product strategy. We will be reducing development in Europe while continuing to prospect for and develop titles with global appeal."

Activison will continue releasing home computer software until the end of this year.

CONSOLIDATE

Mediagenic is a public company and its share price has not encouraged optimism among shareholders. The moves are thought to be those of a company which needs to consolidate its position in the US and find its feet again.

Programmers and other employees at Activision were told the news last Tuesday by long-standing UK boss Rod Cousens. He is understood to be less than happy with the way this has been handled by the Americans and rumour is rife that a resignation is not far away.

Cousens is generally regarded as one of the most charismatic figures in the industry and is an astute businessman.

Insiders say Cousens attempted to buy Activision but was thwarted by Mediagenic which wanted the operation, however small, to be under its control. Cousens was not available for comment last week. ■

Publishers back 16-bit

The news has not been greeted favourably this side of the Atlantic. Publishers throughout the UK were last week standing by the ST and Amiga saying that the 16-bit machines are a growing market.

Nick Alexander, boss of Virgin/Mastertronic (which distributes the Sega console) said: "The ST and the Amiga are really just beginning to blossom and they have a very long way to go. We're going to be increasing our commitment to the software business despite our considerable success with consoles. I think they're wrong to stop development here. Some of the best console stuff is coming out of Britain and Europe."

Gary Bracey, product development manager at Ocean commented: "The bottom line is that while there's an established base of users we'll be releasing games. There's no doubt that the console market is expanding but there's no reason why they can't co-exist with home computers"

At US Gold, boss Geoff Brown told *Express:* "We'll be releasing games for home computers for the foreseeable future. Just because Activision has given up the ghost doesn't mean the market isn't there. I think there's a danger that people can get too excited about this."

Gremlin managing director Ian Stewart was also confident about the ST's and Amiga's prospects. "Our commitment to the ST and Amiga is 100 per cent. We've got absolutely no intention of stopping production of 16-bit software."

The history of a computer games house

Mediagenic itself used to be called Activision. In the early 1980s it made huge amounts of money selling cartridges for Atari consoles. Then it scored a massive hit in home computers with the multi-million seller *Ghostbusters*. In 1988 it changed its international name to Mediagenic but the UK subsidiary is still called Activision.

UK boss Rod Cousens became involved in the industry through a strange route. Although he was originally a teacher he took a job as business manager of a small Southampton-based mail order outfit called Quicksilva.

Cousens turned the firm into a successful software house, bought the company and then sold it to Argus Press. He then set up Electric Dreams which, in turn, was bought by Activision. Cousens eventually became Activision's UK boss.

Struck down!

Electrical surges from lightning strikes could blow computer networks to pieces, and lightning conductors only heighten the problem.

This is one of the findings of The Lightning Centre, a branch of the UK Atomic Energy Authority which itself manufactures artificial lightning.

The Lightning Centre maintains that, while lightning conductors protect buildings, they offer no protection to the electronic equipment inside. They simply channel current down to earth and increase the 'electrical potential' of a building. This could then result in damaging electrical surges.

According to Roger Baldwin of the Centre, if a lightning strike finds its way into the building "it finds an easy path through network cables and will cripple all the network computers".

The Lightning Centre offers consultancy on this problem. For more information, contact 071-389 6503. ■

Desktop publishing under fire from American bill

CRIME DOESN'T PAY FOR DTP FORGERS

Last minute changes have been made to an American anti-counterfeiting bill which would have outlawed desktop publishing had it gone through unamended.

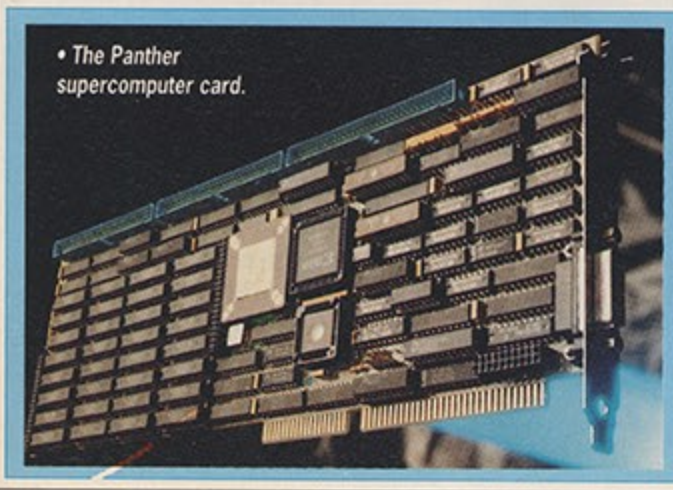
With the advances in colour laser printing and computer graphics making counterfeiting of stocks, bonds, cheque books and cash simple to carry out and difficult to detect, the US Treasury department apparently panicked when initially drafting the bill. It proposed that any device which could be used in counterfeiting should be outlawed.

Unauthorised ownership of printing plates is already illegal, and the idea was to extend this to cover equipment which could reproduce, copy or make facsimiles of sensitive or valuable documents such as dollar bills. Computer desktop publishing software, with its colour printing capabilities, was seen as being caught in this net.

• Have desktop publishing software, have Lear jet...

It appears that a little knowledge of computers combined with scaremongering about the quality of electronically produced forgeries lead to the overkill in the proposed bill.

The amended bill now outlaws devices which 'must be necessary' to counterfeiting. ■



• The Panther supercomputer card.

Supercomputer on a PC card

PCs can make make an overnight transformation into superfast supercomputers with a new add-on card called the Panther from Computer General.

The card can be fitted to any PC clone, and offers 33 million floating point operations per second (MFLOPS). This is estimated as being 100 times faster than a conventional PC. There is also support for 64Mb of memory. It comes with three 32Mb per second parallel expansion ports and two serial ports. It costs a measly £2,885. ■

Computer crash barrier

A computer-controlled system of 'crush' barriers is currently on test at Manchester United football club.

Over a year after the Hillsborough tragedy which saw the death of 95 fans due to an over-full stadium, GEC and Manchester United FC have combined to put sensor system through its paces.

The system makes use of sensor pads which are built into the Old Trafford terrace barriers. The sensors detect the pressure exterted on the barriers by the crowds. This information is then sent to the police computer. If the pressure builds to unreasonable levels, the police can move in, entrances can be closed off and exits freed to empty the ground. As well as being installed in the crash barriers themselves, sensors have also been installed in walls and stairwells.

This is the first such system to be installed in any of the country's football grounds. However, GEC does expect to see it used more widely for all types of open air stadia in the future. ■

• Shockwave, out soon on the 16-bits.

Shockwave hits

A new game from Digital Magic, *Shockwave*, is ready to hit the streets.

Shockwave features a 'blastermobile' which you fly around several locations in an attempt to save the world from alien invaders.

With 15 different weapons to choose from as well as the odd army you are, at least well armed. The game will be launched in the first week of September for 16-bits only. Price is unconfirmed.

Also available soon is *Escape from Colditz*, based on the board game of the same name and featuring 3D scrolling, and over 600 locations. You control four prisoners who can climb, dig or cheat their way to freedom. The game will be released in November on both 8- and 16-bit formats. ■

Sweet joy

The popular Jet Fighter joystick is to be released for the Sega Master System. The Jet Fighter resembles the head of some monstrous robotic insect, with several eyes and a nose. Aside from all that, it has six microswitches, four suction pads and it costs £14.95. For more information call Spectravideo on 091-900 0024. ■

Firm furious at 'terrible' News of the World report

SHAREWARE FURY AT CHILD PORN CHARGE

Mail-order outfit Shareware 1990s has reacted furiously to newspaper allegations that it has been peddling computer software which promotes child pornography.

The Stoke-on-Trent based company says it is contemplating legal action against the *News of the World* following an article headed 'We Expose Computer Kiddy Porn". The story alleged that the two-year-old company was selling a game called *Bad-Bad* which involved taking a 15-year-old girl from her family to "satisfy her for life".

The scenario of *Bad-Bad* – which sells for £4 – describes the parents of the girl as "enemies".

Shareware's joint boss Judith Lowe told *Express*: "It's just terrible what they've written. We'd never get involved in kiddy pornography."

She continued: "I showed *Bad-Bad* to my niece who us very prim and proper and she saw nothing wrong with it. It's just a maze game in which you try to elope with your girlfriend. In the game she's sixteen anyway."

Lowe says she has now stopped selling *Bad-Bad* and the other Shareware 1990 pornography disks. "It's just not worth the hassle. I know a lot of people sell this kind of material but it only made up about two per cent of our business."

NEWS OF THE WORLD INVESTIGATES

A CHILD-PORN home computer game involving a 15-year-old girl is being sold by a mail order firm.

Bad-Bad—which costs just £4—lets users play a 22-year-old pervert trying to elope with the youngster to 'satisfy her for life'.

And the rules list her **PARENTS** as the player's main 'enemies'.

Now leading anti child-porn MP Geoffrey Dickens has demanded

Perverts pay for sex game with girl of 15

• News of the World: *child-porn outrage*

But Tory MP Geoffrey Dickens has called for a test case to be brought against anyone selling pornographic software. He said: "To suggest that a child is snatched from their home is disgusting." The MP for Littleborough and Saddleworth also expressed fears that such material could be bought by youngsters "It would be easy for someone under 18 to send out a cheque or use dad's credit cards," he said. Lowe refutes this claiming that thorough checks are made before any software is posted, and that cash is always sent straight back.

She added: "I'm talking to my solicitor at the moment. The call I had from that reporter was the most obscene thing I've ever heard.

"You get a lot of hassle for selling this and there's not that much money in it. This whole thing is very upsetting."

• *'Smithy' in action.*

It's a bouncer

Robin Smith, the man they're calling the really quite good cricket player, has given his name to a new cricket sim from Challenge Software.

Robin Smith International Cricket is currently under development by the company, and will be available on all 8- and 16-bit formats. The launch is due for November. For more information, call Challenge Software on 081-443 1936.

REVAMPED TANDY TAKES ON Z88

• Tandy has launched an A4-sized laptop word processing machine with a retail tag of £249.

The WP-2 is the follow-up to its highly successful T102 word processing machine which has proved popular among journalists, teachers and other on-the-move professionals.

It features a Z-80 processor clocking at 5.5MHz and an 80-character by 8-line LCD display. The WP-2 has an internal 32K of RAM expandable to 64K. There's also a parallel interface, an RS-232 plus a cassette recorder interface.

Running time is about 12 hours on four AA batteries. It has an internal thesaurus and spelling checker and can be linked up to any PC compatible printer. At £249 it costs the same as Cambridge Computer's A4 Z88.

Vox unpop

Voice recognition systems are being introduced to keep track of Los Angeles gang members.

The $19,000 system entails a computer making random telephone calls to gang member in home custody. The criminals are asked to say their names and then repeat the names of several US states after the computer. Voice patterns are compared with tapes, and if they don't match up, the police are sent around to the house. Plans are afoot to obtain voice patterns of some 1,000 gang members.

China down

The Chinese government is to crack down on another minority. This time it's the native computer manufacturers.

Demand for Chinese-made computers has dropped dramatically over the last year. The reason for this is put down as lack of quality and high prices combined with a lack of foreign investment.

Further exacerbating the problem is the fact that some 20,000 computers have been sold at hiked prices. A government investigation is under way to track down and punish the culprits.

ST PC emulator upgrade

A new version of the software for Silica Systems ATonce 80286 PC emulator for the ST has been released.

Version 1.14 offers full 'protected mode' and will run with the new 1.44 Mb drives.

Protected mode means that an ATonce-equipped ST will be able to run software such as Windows 3, as well as other 286-specific software.

ATonce can run on STFMs, STEs and Mega STs and supports CGA, Hercules, Olivetti, and Toshiba T3100 video emulation. It also talks to the printer, serial and mouse ports.

The UK version of the software comes with a grey oval sticker with the words 'Official UK Version'. It costs £199 and is available nationwide. For more information, call Silica Systems on 081-309 1111.

'Gamers are the business future'

A report published this week for the Manpower Services Commission is calling on British industry to harness children's interest in computer games in order to prepare them for working with machines later in life.

The report suggests that this is the only way to make computers attractive to youngsters. A skills shortage among computer operators is one of the most serious personnel problems facing big business.

"It is up to British industry to harness youngsters' interest in computer games if it is to combat the skills shortages," argues the report.

Bring your favourite arcade machine home

Active Distribution has announced what promises to be the ultimate games console. The Powarcade is a full sized cabinet, similar to the type found in arcades, into which you fit a monitor and circuit boards containing true arcade games.

Whereas a cabinet and games to slot in them would usually cost you £1,000 or more, the Powarcade is just £300 for the cabinet with integral joystick and buttons, and £50 to £100 for each game-on-a-board, usually costing up to £500 each.

The idea is that this isn't just arcade quality, this is a real arcade game in your own home, and one that you can change each time you get bored with a particular game.

Among the games lined up for release are *Ghouls 'N' Ghosts*, *R-Type* and *Silkworm*, and other recent blockbusters. Add-ons to the system will allow you to play real versions of road racing games like *Out Run* and *Chase HQ*. The Powarcade is out mid September, and will be shown at the Computer Entertainment Show, where the unit will be on sale for the first time.

For further details call Active on 071-384-2701.

International profits dive but UK sales pick up

GOOD NEWS AND BAD FOR COMMODORE

Commodore has reported a dramatic downturn in profits for its last financial year. The California-based company's profit margin has dipped from $51.3 million to $1.5 million for the year ending June 30 1990.

However, sales have only dipped slightly. Commodore says its poor year has more to do with difficult trans-Atlantic exchange rates than with diminishing sales. Some 80 per cent of sales come from Europe.

Commodore UK is trumpeting a record year and, although no profit figures are available, sales are up from £43 million to £75 million. Sales of the Amiga and PC have also risen in France, Italy, Denmark, Holland and Germany.

Here, Commodore claims to have sold 165,000 Amigas in the 12 months preceding June 30th. In the previous year the firm recorded sales of 81,000. In 1988 2,500 Amiga 2000s were sold in the UK. Last year that figure was up to 12,000.

UK boss Steve Franklin said the strength of the Amiga as a machine was the most important factor.

And, surprisingly, Commodore is claiming that its PC Starter Pack has been a success. Many felt that low cost bundle offered very little, but the company says it has sold 17,000 since the launch earlier this year. PC market research company Romtec says Commodore now has a four per cent share of the PC market compared to a "negligible" figure in previous years.

• Amiga sales up in the UK.

IT'S BAD

• Badlands is coming out from the arcades and on to the home computer.

The coin-op conversion of the Tengen driving game will be released on both 8- and 16-bit machines by Domark in November. Badlands is one of the 'drive and deal death' games in which you make your way around eight courses, burning the usual rubber, avoiding falling power cables and oil slicks, and after all that, attempting to kill anyone who crosses your path. Gaining points also means that you can equip your car with more weapons, more shields and even turbo.

• Keep track of handy commands with Universal Templates.

One size fits all

A handy gadget to help anyone who uses more than one piece of software on their PC, Universal Templates fit over the keyboard and show details of keypresses.

The templates are colour coded and work with software such as DOS, *Excel*, Lotus *1-2-3*, *WordPerfect*, *WordStar* and many others. Each template costs £4.99. For more information call 061-627 5314.

Taking stock on the Archimedes

There's some new software for the Archimedes and the A3000 and it's not to do with education.

Minerva Business Accounts comprises a set of individual modules which can be bought separately or used as an integrated suite.

The modules are Stock Management, Order Processing and Invoicing, Sales and Purchase Ledgers, and a Nominal Ledger. Functions included in the system are archiving of mailing lists, definable invoice layouts, full stock analysis and multiple statements.

Cost is £99 per module or £399 for the whole lot. The programs will run on any model of Archimedes.

Call Minerva Software on 0392 437756.

NEXT WEEK

WIN a copy of *Atomix*, the smash hit game, only in *Express*, on sale Thursday

The biggest MIDI instrument in the world!

Liverpool's Anglican Cathedral has joined the computer revolution with a purpose built electronically controlled console for its multi-thousand-pipe organ.

When the existing remote console drew its last breath, the cathedral's music department commissioned a new five keyboard portable affair with MIDI-like control and a 999 step patch editor.

This means that it is possible to program up to 999 changes of voice and step through them.

An organist perfoming a lengthy recital could set up the console with all the different combinations of organ voices needed for the different pieces and step through them with a single keypress.

As well as the versatility that this patch sequencing allows, it shows that it's only time before full MIDI sequencing can be built into traditional pipe organs and a recital by a famous organist can be played back on any parish church organ fitted with the necessary hardware.

• Liverpool Cathedral organ: the biggest MIDI instrument around.

Paradox solved

Paradox 3.5 is the most recent upgrade for Borland's relational database running on the PC.

Retaining all the feature which have made it one of the more successful such software systems on the market, the new varsion now comes with Structured Query Language (SQL) compatibility.

Launch is set for September 12, no price is as yet set. For more information call Borland on 0734 320022.

COMMENT

The ST emulator for the Amiga shows that someone has confidence in the future of serious software on the ST. Let's hope they are right...

The review of the Atari ST emulator should put a bit more fuel into the my-machine-is-better-than-yours fire. After all, so the theory goes, it's only possible to emulate a machine in software using a machine that is significantly more powerful. And although there is a hardware element to the ST emulator, it's tiny: only two common or garden ICs.

What's perhaps more interesting is that someone out there believes there is a market for the device, that there are Amiga owners just dying get their hands on ST software to take the place of the Amiga's inferior stuff.

Unfortunately for the manufacturer, those people don't exist. Whether its a desktop publishing program of a top-end sequencer, Amiga software easily matches the quality of the Atari versions, plus of course it's multi-tasking on the Amiga.

Where the ST does score is with its superb mono monitor and high resolution mode, but hardly anybody owns the equipment to use it, outside of a few Mega ST enthusiasts.

Perhaps if there was little new serious software coming out on the Amiga and lots on the ST then there might be a point to the emulator, but in fact it appears to be the other way around. A rough head count on new programs arriving in the *Express* office shows applications software dropping off at an alarming rate for the Atari, while the volume, if not the quality, of Amiga software continues to rise.

If this trend carries on the the ST owner's taunt of "The Amiga's only a games machine" may very quickly be thrown back in their faces.

Should this turn out to be more than a blip in Atari's upward curve it will become seriously worrying for the TT machines announced in the last few weeks. These machines were originally promised with a version of the Unix operating system which is the standard for computers costing more than a couple of thousand pounds. With Unix the TT would have access to thousands of professional programs.

The ST and TT are beginning to find themselves encroached on by machines with much larger user bases and much more applications software

However the TT has arrived, but Unix hasn't. The only software the TT can currently run is ST stuff, and there's not much of that of good enough quality to be worth paying out for a TT. Because ST software is written in 68000 machine code, it doesn't get the full benefit of the TTs 68030 processor anyway – in fact some reports claim that it's not much faster than a Mega ST with an accelerator card.

With the price of Macintoshes falling almost daily and the PC taking up the graphical interface challenge with Windows 3, the ST and TT are beginning to find themselves encroached on by machines with much larger user bases and much more applications software.

The bottom line is this: Atari has got to get serious software developers back into writing for its products, or the excellent hardware will simply gather dust in warehouses. ■

FROM The ARCHIVE

ONE YEAR AGO

AMSTRAD PRODUCTIVITY
Productivity at Amstrad soared to almost Japanese levels with each of the company's 1,424 employees being responsible for shifting £440,000 -worth of kit. In terms of profit, this meant that for each person employed, £112,640 of profit winged its way into the Brentwood coffers.

AMSTRAD RUMOURS
The rumours department in Brentwood suggested that Amstrad would give the PC200 a well deserved push. The push that came for this doomed machine however wasn't the road to fame but a gentle shove into obscurity.

STOP THIEF
Three employees of Western Digital in California were arrested and brought to book for relieving the company of $40 million worth of chips.

Western Digital warned that the chips had not passed quality control tests and warned the public about buying them on the grey market.

TURBO ARCHIE
The already fleet-of-foot Archimedes was made even faster with a hardware add-on from Aleph One that boosted the machines performance by 10 times.

The £600 device made the Archimedes competitive with £10,000 workstations and offered the ability to 'real-time' digitise as well as allowing effective multi-tasking of processor-intensive graphics development.

NAUGHTY WORDS
The Fu-Manchu PC virus embarrassed many companies by adding the statement "... is a ****" whenever the name of a state figure such as Margaret Thatcher, P W Botha or Kurt Waldheim was included in a document. The word included is unprintable (hence the asterisks) and in many cases wasn't spotted because instead of displaying the errant text, it was secreted in the printer buffer and only added to the printed document. This was the second time in as many months that this virus had reached epidemic proportions.

SICKO
Japanese game *Rape* was taken off sale in Japan after screams of protest. The game had you chasing a girl through a deserted park, scoring points for tearing clothes off the fleeing maiden.

The game was popular in Japan where violence intensive entertainment is the order of the day but was withdrawn after pressure from women's groups.

CHEEKY BLIGHTER
A New York computer company cashed in on IBM's nickname, Big Blue, after realising that IBM had never registered 'Big Blue' as a trading name.

The less than happy Big Big Blue asked the Little Big Blue to stop using the name and Little Big Blue obliged (for undisclosed reasons!)

WEATHER OR NOT?
British Aerospace announced a satellite weather system called Dartcom that was able to download satellite data about the weather. the £4,997 system included a one metre dish and receiver and could download weather images directly on to a PC.

The almost £5000 price tag looked expensive but until Dartcom arrived, the cheapest similar system was over £20,000.

TWO YEARS AGO

DON'T MENTION THE WAR
Former Amstrad suitor Schneider attempted to annex the UK for the fatherland with a secret distribution deal involving UK distributor Micro-Peripherals.

The deal proved so secret that at the time of its announcement by Schneider, Micro-Peripherals was strenuously denying its existence. Two years on, Teutonic towers and Liepzig laptops still have to make an impression on the UK market.

Sources: *New Computer Express*, *Computer Trade Weekly*

COMPUTER EXPRESS

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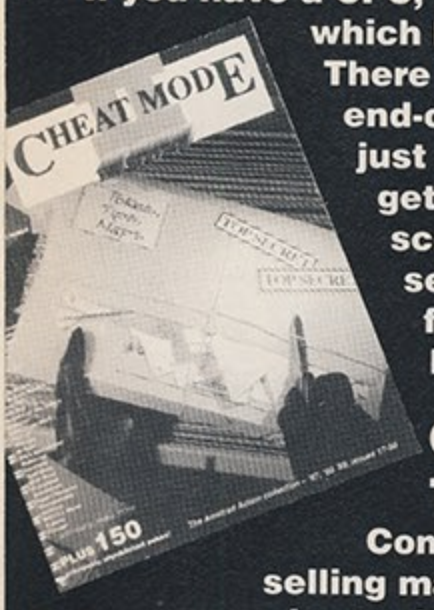

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CPC

DIY FRENZY

I just couldn't resist it. I hijacked this letter from *Amstrad Action*'s Forum section, where readers ask advice and offer help. This is from Victor Walton, of Bedford.

"The machine I am using was built from a couple of scrap 464s, and upgraded to a 6128 by inclusion of an internal memory upgrade. Recently I had the luck to purchase two 3-inch drives for just £5, and after building my own drive interface, I hooked them up and cased the whole thing in an old terminal case someone gave me. The monitor I am using was a damaged FST colour portable that I purchased for just £10 and, after a little work, this was also up and running. Finally, the DMP-2000 I am using cost me only £20 as a damaged unit and, after forking out about £6, this was added to my set up.

"I have been unemployed now for six months, and building this Amstrad up has kept me sane, and hasn't cost me a lot of money, either. After a recent tax rebate, and gentle persuasion to my missus, I purchased Romantic Robot's RODOS ROM and Insider software. Unfortunately, I do not own a ROM board, and I can't afford a commercial unit, so, after a few miserable attempts at connecting it up, I was advised by David Wild [of D W Software fame] to ask for help."

Well, Victor's Plight has been thrown open to *Amstrad Action* readers already. Are there any *Express* readers out there who can help? Maybe someone's got an old electric toothbrush or refridgerator Victor can convert? This man is either winding us up or he is some kind of genius. It's enough to make Heath Robinson turn in his grave.

If you can help, write to Victor at Flat 2, 21 Chaucer Road, Bedford, Beds MK40 2AJ. One thing's for sure – persistence and ingenuity like this should be rewarded.

AND NOW...

What do John Philip Sousa, Blaise Pascal and flying sheep have in common? What else, but *Monty Python's Flying Circusss...*?

The cult series of the '60s and '70s has now appeared as a computer game on all major formats, thanks to those extremely silly people at Virgin Mastertronic. And how can you make a game out of a programme like that? Beats me, I thought, loading the thing up and expecting to be hugely underwhelmed.

Which just shows how wrong you can be. The graphics are very funny indeed, the documentation is crammed with Python jokes and – most surprisingly – there really is a game in there waiting to be played, and not just an animated, interactive demo.

But first, the plot. You are cast as the unforgettable Mr D P Gumby, a character who goes around wearing wellington boots and a knotted hankie on his head. Mr Gumby is not smart. In fact, he has no brains whatsoever – a deficit which it's up to you to rectify. To do this you have to guide the pugnacious Gumby through a series of hazardous levels, shooting such horrible assailants as exploding cats, Keep Left signs and Eric-the-half-a-bees, all the while collecting oddments of food to keep you going and the occasional tin of Spam. Collect enough Spam and you secure a part of your missing brain and then head for the next level.

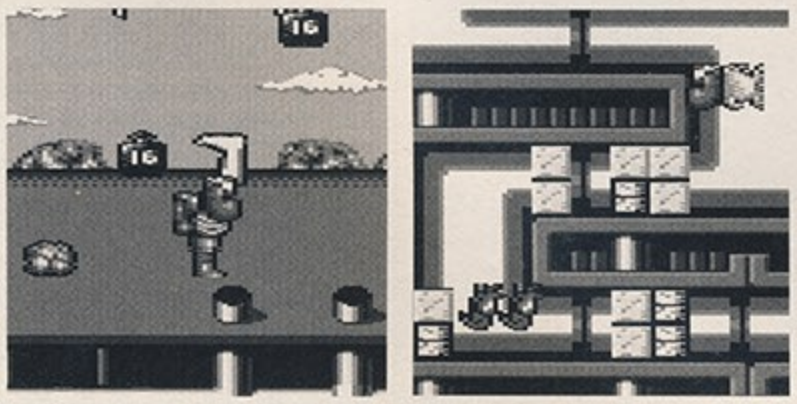
Level One starts with a brief above-ground sequence where Mr Gumby must run the gauntlet of half a dozen 16-ton weights and a little bush on legs which stops every time he stops. Then he's whisked underground, his head transplanted onto the body of a mackerel (though it could be a perch) and sent off collecting Spam, with only an endless arsenal of fish to throw at his opponents and the prospect of beans, eggs and cheese *en route* to keep him going.

You'll spend at least part of your time exploring the maze of underground passageways and undergoing some startling transformations in the process – at one point you find yourself transplanted onto a large, pink foot... And some of those Spam tins aren't so easy to get at, so a bit of brain power is needed too. It's not easy to concentrate when you're being attacked by wellingtons with rotor blades and flying pigs, not to mention the odd debacle with mad professors on unicycles (at least that's what they iook like).

It might all sound just too stupid to be any good, but once you've finished laughing you get to realise there's a serious bit of gameplay in there. Even level one's no pushover and, hilarious though your assailants might be, they're still pretty tough nuts.

A major feature of the game is still the *Python*-esque humour, though, and Virgin has done a truly remarkable job here. The only question remaining is how many people are old enough to remember *Python* on the TV? And if none of the characters mean anything to you, will it still be fun to play? Actually, it's a very good game in its own right – and it's just so, so daft that even the most poker-faced old misery would have trouble not laughing out loud at some points. The price is £9.99 on cassette, £14.99 on disk – and worth every penny.

Oh, and why exactly is Mr Gumby so keen to get hold of a brain? It's his lifelong dream, you see. He wants to become a chartered accountant.



• Mr Gumby runs the gauntlet of the 16-ton weights (left) , and the Spam collecting begins, and straight away the first dead parrots appear (right).

GALLUPING CODEMASTERS

Budget king Codemasters has been doing some research, using Gallup's software sales charts for reference. It seems, for example, that Codemasters sells more games that anyone else – 13.8 per cent of all leisure software sold, to be exact. Nearest competitor is Ocean's Hit Squad label with 7.7 per cent.

And there's more – 60 per cent of all leisure software sold is budget, and Codemasters produces 22.7 per cent of all the budget software on the market. Furthermore, in Gallup's Chartalk top 50, 12 games are by Codemasters.

The Gallup figures come from Monday-Friday sales in over 100 independent retailers, W H Smiths and Menzies. Some retail chains – including Boots and Woolies – don't take part, so the figure's aren't definitive. Also, mail order sales aren't taken into account. Nevertheless, Codemasters can almost sort of more or less claim to produce the most popular games in the UK! (In a way.)

IT'S A SNIP

Microsnips, up in the Wirral, has started a new club for its regular users whereby they can get "generous" discounts and bonuses. Membership is free and gets you a 10 per cent discount on software plus a free disk or tape with every order. And the first 50 people to join will get a special free gift...

If you want to find out more, give Microsnips a bell on 051-630 3013.

TWO TIPS

If you're having trouble winning the World Cup in US Gold's *Italy '90*, try hitting the F6 key in the middle of play. The ref then blows his whistle and you go straight into the penalty shoot-out. (Don't talk to me about penalty shoot-outs...!) Seems a bit daft in that you don't get to play the game you paid out for in the first place, but if you absolutely have to win you know what to do! (Cheat.)

Meanwhile, Asif Chaudhry of East Acton has a tip for Ocean's *Rainbow Islands*. If you collect the gems in the right order (Red, Orange, Green, Blue, Indigo and Violet) you get access to special secret rooms! I'll be damned.

Rod Lawton

YOUR FORMAT

MACHINE SPECIFIC COLUMN

• An extremely serious mid-level guardian in Monty Python on the CPC.

CPC 9
Spectrum 10
SAM Coupé 10
PCW 10
MSX 10
QL 11
BBC 11
Archimedes 11
C64 11

• Antago: *angel or devil?*

ST 12

• Extaste: *Amiga game of the week.*

Amiga 14
PC 16

SPECTRUM

LISTING TO PORT

Something that hasn't appeared in this column for absolutely ages is a listing, oh and a remotely humourous joke but I can't do much about that. Anyway because variety is the spice of life, and definitely not because it's summer and there's nothing to write about, heavens no, here's a lengthy but very useful program for Plus 2A and Plus 3 owners to frenziedly bash out. It's called GHOST, was mentioned in *Express* 92 and basically sorts out many of the incompatibility problems on the Plus 2A and Plus 3 by transforming your machine into a 48K in all but appearance.

This means many previously unloadable games and utilities will not work perfectly. It's very long so I'm afraid I've had to split it into three exciting episodes, the first this week, GHOST II – The Sequel next week and, you've guessed it, the thrilling concluding installment the column after that. There's sure to be a huge increase in *Express*' sales so place your order now! Before you get to grips with all those fiddly DATA bits say thank you to the author and kind supplier of the program – Miktor!

```
10 REM THE GHOST v 2 (c) MTW
'90
20 CLEAR 27999: LET T=0
30 FOR n=28000 TO 28192: READ
A: IF A <256 THEN POKE N,A:
LET T=T+A: NEXT N
40 IF T< >A THEN PRINT "ERROR
IN DATA": STOP
50 RANDOMIZE USR 4535
1000 DATA 243,62,20,1,253
1005 DATA 127,237,121,33,0
1010 DATA 0,17,0,192,1
1015 DATA 0,64,237,176,62
1020 DATA 5,1,253,31,237
1025 DATA 121,62,7,50,232
1030 DATA 5,33,207,109,17
1035 DATA 58,0,6,0,14
1040 DATA 19,237,176,17,82
1045 DATA 11,14,4,237,176
1050 DATA 17,73,19,14,4
```

GHOST part II continues from here next week!

GET KNITTED

Now here's some news which is sure to interest the thousands of Spectrum owing knitting fans out there. *Knitwear Designer* is a package of programs available for the Spectrum that make up a kind of DTP system for designing cardigans and things. The four packages available are *Classic Styles*, *Skirts*, *Tops* and *Cardigans* and the intriguingly named *Fashion Tops* and *Batwings* (Batwings!).

Knitting Spectrumers should contact Terry Mason at 15 Inishmoyne Green, Antrim, Northern Ireland BT41 4JZ and ask about all the technical stuff like tension swatch measurement features and provision for rib knitting.

TRIVIAL STUFF

B.G. Townsend of London has just sent me details of a Speccy related trivia league he's planning. It will work like a football league with divisions and trophies but all questions will come on tape for you to load up, puzzle over, annoy your family and friends by asking them before getting the answer completely wrong.

Sounds fun to me and the first game is free of charge. More details about how much the rest will cost from 105 Tintagel House, Salisbury Rd, Edmonton, London N9 9TF.

Send any comments, criticisms, recommendations or tips of a Spectrumesque nature to me, Robin Alway here at *New Computer Express*, 30 Monmouth St, Bath BA1 2AP. Enclose an SAE and wait a month or two for a genuine hand made reply.

Robin Alway

SAM COUPE

IN LOCO PARENTIS

As you read in *Express* a few weeks ago, SAM's parents, Alan Miles and Bruce Gordon, have set up a new company since the sad and tearful demise of MGT. SAM Computers Ltd is the simple but oh-so effective name (SAMCO for short) and its primary objective is to issue ROM, DOS and Spectrum Emulator updates (which you'll now have to pay for) and repair ill Coupés. They also hope to develop SAM software and hardware and generally further the cause, do their bit etc for the Coupé. You can receive full details about all their plans if you return your guarantee card to SAM Computers Ltd, 7 Cleveland Court, Uplands, Swansea SA2 ORG.

FANZINE MANIA

Good to see that despite the slightly dodgy position of the SAM at the moment, Coupé fanzines and user groups are going from strength to strength without stopping in between.

Turbo was the first SAM mag I saw, it's now a healthy six issues old and pledges continued support for our blue-footed chum. The £1 cover price gets you around 20-odd A4 pages of stuff with the contents of the latest issue boasting quite a few programs to type in, news, lots of short interviews, reviews and letters. There's also a rapidly expanding Turbo public domain library and it's well worth getting hold of a copy from 8 Healey, Lakeside, Tamworth, Staffs, B77 2RF

As well as Blighty-based used groups, a few Coupé owners across the water have extended the fraternal hand of friendship. Martin 'Butterfly' Van Spanje is Dutch, runs a Coupé/Spectrum fanzine and wants to hear from fellow SAMsters. Write to Studio Corner, Postbus 1126, 6469 BC Kerkrade, The Netherlands. (Don't mention the football either, will you.)

Robin Alway

PCW

FRED ARMY

Two photographers are on holiday in Spain. "A beautiful blind gypsy girl came up to me yesterday," says one, "with two crippled children, and asked me for money," "Poor thing'" says the other, "what did you give her?" "Well, it was sunny, so I gave her 1/125 at f11", he says.

Talking of donations, here's a program that supports a good cause. *BASIC Needs* is produced by Luxsoft of Cornwall for £9.95 on 0726 850820. On it you'll find a neat text editor *FRED* (FRiendly EDitor) which can handle up to 500 lines of BASIC.

Also included is a program to compare two BASIC programs and report the differences, a copy program that will check before overwriting an existing file of the name you specify, and a tracer that picks out your GOTOs and GOSUBs and so on in a program.

Documentation is, as with many homespun packages like this, very hit and miss, but it's very good value for BASIC programmers and £5 from each sale goes to the RNLI, so you can support a worthy cause too.

SEEING FRED

Coincidentally, FRED is one of the most widely used passwords in computer systems.

Why Fred? It's obvious if you look at a computer keyboard – Fred can be easily picked out by a one-fingered typist from the QWERTY and ASDFG lines.

FRED HOT

Even more coincidentally, Fred Denby of Leeds wonders if there is a way of adding a third drive to his 8512 (which already has an A and B drive) to use with *LocoScript*.

Yes there is (and it'll work in CP/M too.) Pinboard Computers of Baldock does either a 3.5-inch (£105) or 5.25-inch (£110) drive, enabling you to use those cheap and plentiful disks. You can't use all three at once – no C drive, I'm afraid!

They include special switches enabling your PCW to take the new drive as an alternative drive B. Pinboard is on 0462 894410 and will also sell you disks: £5 for 10 5.25-inch, and £9 for 10 3.5-inch – compare that to £20 for 10 normal PCW disks.

PIP PIP

More options you can put after a PIP command. Don't bother with [J] and [M] – they have no effect.

[I] Ignore.	Ignores :00 when transferring hex files.
[K] Kill.	Suppresses the list of file names on screen when carrying out lots of copies, eg; with PIP M:=A:*.*
[L] Lower.	Changes all capital letters (ABC) to lower case (abc) as it copies.
[N] Number.	Adds line numbers starting at 1 and increasing by 1 as the file is copied. You can add a number eg. [N4] which puts in four leading zeroes, i.e. 00001 instead of 1 and so on.

Rob Ainsley

MSX

NON-EVENT

Well, the August All Formats Computer show has been and gone, and although I found it impossible to attend this show due to personal reasons, my spies who did attend informed me regarding MSX the show was a complete non event, although this show was reasonably well attended by the public.

Before the event took place, I personally contacted several MSX retailers and clubs to enquire as to whether they would be attending this show, but it was virtually the same story from all of them. Summer holidays take such a toll on staff that most firms are too short handed in August to spare the time for such events. It really is a shame that many MSX users would make a journey to this event, only to find that they have wasted their time.

Surely if the SAM computer users (both of them) can find support at this show, the MSXer should have found support also. Let us hope that MSX Central's forthcoming show is better attended by the MSX retailer etc, as nobody likes to waste time and money on shows where they find nothing of interest. The MSX Central show, by the way, is to be held on Nov 11, in Allesley Village, Coventry. I will give more details on who is attending nearer the show.

KLAX ON

I mentioned in last week's article that Tenegen/Domark's *Klax* is now available, and sure enough, a review copy is now in my possession. The real review of this game will have to wait until next week, as I have only been able to give it a quick looking at due to the fact that it only arrived on my doorstep this morning.

Briefly, what I can tell you is that the game is priced £9.99, is supplied on tape, should be available from your MSX stockist now, and has great music and addictive gameplay. I know that the last statement is true, because I only meant to play the game for a couple of minutes, but half an hour later the wife was threatening to wrap one MSX 2 computer around my neck.

LOYALTY

Why is it that MSX still manages to survive, even in the U.K. where it really is a minority format? I know that MSX users are a loyal bunch, and even hang on to their MSX computer when they have upgraded to 16 bit machines.

I believe that the reason MSX still manages to hold a strong following is because the machines are easy to use, have a good BASIC built in, are easily expanded, and are very reliable. It is easy to see why Japan still supports MSX strongly, as at least four companies produce MSX 2+ computers for their home market, but why does MSX still exist in Europe, where even Philips have pulled the plug on MSX?

The reason that MSX still has a hold in countries like Holland and Germany is because they are an enthusiast's computer, and are more than just a games machine or work station; for those who like to dabble in electronics the MSX range of computers are probably the easiest to work with.

Keith Neal

C64

KEEP ON SPINNING

Have you ever bought one of those disk drive head cleaning kits, and then wondered how to follow the instructions and activate the drive for 30 seconds while the cleaning disk does its stuff? Surprisingly enough, many of the kits just don't tell you how to do this, but here's how. This short program will keep the drive spinning for you:

```
10 TI$="000000"
20 OPEN 15,8,15
30 PRINT #15,"I"
40  IF  VAL(TI$)=9  THEN  CLOSE
15: END
50 GOTO 30
```

This repeatedly initialises the drive until sufficient time has passed.

KEEP ON JOINING

It's always nice to know that there are people about who will support the C64 until the end of its days, hopefully many moons away. If a club can support the PET and the VIC, I'm sure they can manage with the C64! Remembering those Halcyon times before the C appeared in ICPUG, Jack Cohen will tell you that the Independent Commodore Products Users Groups (the P stood for PET before the change of name) is something that every C64 owner should join, and he's quite right, too. Vast amounts of public domain software, a very useful newsletter, and much more, all for a pittance. For further details you can write to Jack at PO Box 1309, London N3 2UT.

KEEP ON READING

I'm always keen to support new fanzines, even ones with names like *Tequila Mockingbird*, which sounds rather like a song from the early days of The Eagles to me. This fanzine intends covering all aspects of interactive fiction (they used to be called adventure games...), although the emphasis seems to be more on the programming side than anything else. But, reviews will appear, and for further details about this newcomer to the fanzine world write to Alister Thomas at the Old Schoolhouse, Inveresk, Musselburgh, East Lothian.

KEEP ON POKEING

Back to a few POKEs that don't need cartridges that can plonk you back into a game without a SYS number. First one in is a SYSy, as they say. To start cheating on *Road Runner*, you'll have to POKE 43241,36:SYS 4126. To do the same on *Tanium*, you'll have to POKE 52255,174:SYS 16384.

KEEP ON SOLVING

Level 9's *Lancelot* has had a few people scratching their heads from the look of things, and in particular the puzzle about getting all the knights winched up from the lower dungeon to the top. I'm sure you'll get the hang of things if I tell you that you start with Ecotr, get in cage, wait 10, then go to Camelot.

Pete Gerrard

QL

ALL FORMATS SHOW

I've just been speaking to Bruce Everiss, organiser of the All Formats show that took place recently at the New Horticultural Hall, Westminster.

Although I used to go to Mike Johnston's Microfairs, held at the same venue, I've never attended on of Bruce's shows. I've heard the Microfairs described a a car boot sale without the cars, and the All Formats Show appears to be very similar.

A feature of the recent shows has been a 'QL village', with many of the suppliers of QL hardware and software attending, together with QUANTA, the QL Users Group.

Incidentally, QUANTA broke its previous record for the number of punters who signed up which must mean something.

I've had a word with one or people about the show, and the response was quite favourable, apart from a view, that the entry charge was too high — about twice as much as the old Microfairs used to.

NEWS FROM MIRACLE

Being in York recently, and having an hour or so to spare, I paid Miracle Systems, well known for its Trump Card memory expansion/disk interface and hard disk system, a visit.

A couple of years ago, Miracle designed a MIDI (Musical Instrument Digital Interface) unit for the QL. It is an intelligent interface, with its own Z80 microprocessor, enabling the QL user to control similarly equipped keyboard instruments, synthesisers, and the like. For one reason or another, Miracle never put much effort into marketing the interface, and I don't believe very many were sold.

Miracle has now decided that there is a market for the device, and will be pushing it much more actively.

I was hoping to see Miracle's 68020 32-bit upgrade. However, the prototype board (it hasn't been put into production yet), was on loan to Qview, so that it could sort out some compatibility problems that have arisen, when running Qview's Minerva QDOS replacement on the 68020-equipped QL.

One of the problems is associated with networking, the 68020 is a lot faster than the standard 68008, and the networking routines don't work properly with the much higher speed rated processor.

Are you wondering how one can replace the 8-bit 68008 by the 32-bit 68020, without completely redesigning the whole machine?

The 68020 has 'dynamic bus sizing', which means that the memory/peripheral interface can be switched between 8-, 16-, and 32-bits.

The 68020 add-on can therefore use an 8-bit interface when it 'talks to' the standard QL hardware, switching to a 32-bit interface when it needs to communicate with its own 32-bit memory – up to 4 gigabytes, in theory!

John Torofex

BBC

DIARY DATES

September 7-9 are dates every Acorn enthusiast should mark down in their diary, because those are the days of the *Acorn User* Show. Held this year at the disgusting New Horticultural Halls in parking no-go area Westminster, as opposed to the beautifully clean Alexandra Palace, attendance is still a 'must'. The reason for the change of venue was simple, a clash of dates meant that Ally Pally was not available.

The new date confers two advantages for the hardened attendee, cooler weather, and no spotty teenagers cluttering up the place because they will be at school (ha ha!). The show itself should hold no great surprises for us Beeb types though. I certainly don't expect Acorn to cease selling the Master 128, simply because that machine has been successful over the last year. On the other hand, I don't expect there to be much in the way of new software for it either.

YOU BETTER YOU BETT

Unlike *Acorn User*, which is an ad-hoc affair by show standards, BETT (British Education, Training & Technology) is serious, professional, and organised well in advance.

As a testament to this professionalism, I have already received a press release about the 1991 show. And who else could it be from, but the tireless Clare Graves at ESM. Interestingly, ESM will have new titles for the Beeb at BETT '91.

Andrew Brown

ARCHIMEDES

68000 BOARD

As often happens in this business, the closer you get to the source of a story, the less exciting it appears. Tracking down the Mac emulator rumour has lead to another hardware producer, based in Scotland, who is not yet ready to be credited with such a beasty. No name, no pack drill.

He's currently prototyping a TV quality video board which might do some of the fancy things a Quantel Paintbox can do, but for less than £1,000. He did admit to having worked on a 68000 board for the Arc, but on paper, so far. To do the deed, he intended to produce a 'tube' interface for the machine, so that a number of processors could be connected on, à la BBC micro. Having put those two bits of hardware to bed, he was going to leave it to someone else to change the 68000 into an ST, Amiga or Mac.

Work on this board won't recommence until Christmas, so don't hold your breath. I'm not convinced, though, that there aren't others working on the Mac idea.

PC OR NOT PC

More interesting is another rumour about a major player in the Arc business who might just have squeezed an ARM chipset, four meg of RAM and the necessary ports onto a full length PC expansion card. Sound like Acorn's Springboard card? Well yes, except for the fact that it runs RISCOS and allows a standard VGA-type monitor to be used for Arc as well as PC output. Floppy disks would be shared between processors and each could have a hard disk partition.

The idea is that anyone with a PC could add Arc capabilities to the machine, while still having a single box on the desk. This would be particularly useful in the corporate environment, where 'Thou shalt buy PCs' is writ is stone.

Price estimates are in excess of £2,000 and a release date is not available yet. Nor is it known if the ARM could be used as a graphics processor, when the PC is in PC mode.

BIGGER TEXT SCREEN

A partial answer to my query about displaying text files to the screen was published in *BEEBUG* magazine this month – another example of synchronicity. The following Set Alias command:

```
*Set Alias$@RunType_FFF
Echo|<22>|<0>|<14>|MTYPE %0
```

automatically loads !Edit whenever a text file is double-clicked for reading.

It's only a partial solution, though as the window is opened to its default size, rather than being full width. More importantly, on a 1Mb Arc, there may not be room to load !Edit every time you want to read a documentation file.

What's needed is a way of expanding the text read window normally displayed when you double-click on a text file, and introducing a screen-by-screen paging system.

There are several text readers which can be added to the Arc, but the need to read ASCII files is so basic that it really ought to have been incorporated into the original operating system.

ARCHWAY

After an inordinately long gestation, it seems that the fourth generation language (4GL) Archway is likely to be released in September.

For those who don't know, the program aims to take much of the grind out of new Arc applications, by providing pre-written routines for WIMP-handling, database work and multi-media graphics.

The new version of the program will include direct graphics support for *Edit*, *Paint*, *Draw*, *Euclid* and *Mogul* files and can handle music from *Maestro* files. Several pre-defined shells will be provided with the package, including one designed for database work.

This uses B+ tree indexed datafiles and has facilities for data merging with text files.

The complete package will come on four disks with a 400-page ring-bound manual. The package will run on a 1Mb machine with a single floppy, though as usually the more memory you have the easier life becomes.

Archway 4GL comes from Simtron on 0342 328188 and will cost £99.95 including VAT and p&p.

Bertrum Carrot

ST

AMPLE SAMPLES

I understand that 2-Bit Systems, well regarded for its excellent Pro-12 sampler, is currently working on a 16-bit version that will, so we're promised, completely blow the opposition out of the water.

That mightn't be too hard, since there ain't none to speak of, but if the finished sampler lives up to what 2-Bit is saying about the project then we could be in for a treat.

There will in fact be two configurations, one being a professional sampler capable of producing studio-quality results, including true stereo sampling and real-time hard disk sampling and editing.

Still, if you can't afford the £600 asking price (which is nonetheless remarkably cheap considering what's on offer), there's always the second 'home studio' version, expected to cost about £350 and offering mono 16-bit input/output as well as all the editing facilities found in Pro-12.

Contact 2-Bit Systems on 0582 457348 for more details.

BAD NEWS FOR ATARI

And you thought you had money problems. In the first quarter of 1989 Atari's net income was $3.3 million on turnover of $88.8 million. This year in the same quarter turnover was $85.5 million – with net income down to $1.5 million.

The blame, though, is being laid by Atari on its poor games console sales: the ST, it's said, is doing fine. And Atari is still insisting that the Lynx hand-held is going to do monster business this Christmas.

BEGINNER'S GUIDE TO ASSEMBLER

Pete Davies of Dorking writes to ask whether there's a book on assembly language programming I could recommend for beginners in the subject (such as himself, I assume). Since books on the subject appear to go in and out of print faster than the latest copy of *Viz*, this neatly gives me the opportunity to mention a new book-plus-disk guide that sounds just what your after, Pete.

The Beginner's Guide to Assembler, produced by zzSoft, which gave the world probably the best cheap DTP package for the ST, *EZ Text Plus*, is intended for both the beginner and intermediate ST programmer.

The disk contains a text editor with integrated symbolic assembler, symbolic debugger and a resource construction kit for the easy construction of menus and dialog boxes. It also has documentation on XBIOS, BIOS, GEMDOS, system variables and GEM libraries.

All the programming examples are included both in the book and on disk as source code, executable files and resources (if any). Just one click with the mouse pointer and the source code is assembled – another and the assembled program can be run.

The book assumes no knowledge of assembler and works with numerous examples. Topics covered include starting out with assembler; 68000 addressing modes; address and data registers; define constant and space directives; loading a Degas file... the list seems endless.

The book-plus-disk is expected to sell for under £20, though a final price had not been fixed at the time of going to press. Mr Davies and anyone else keen to progress beyond 'mere' BASIC and suchlike could always give Roger Pearson a call on 0422 845528.

FULL SPEED AHEAD

Full Circle Technologies has announced the 80286 version of PC Speed, AT Speed. With an Intel 80286 chip and a Norton factor of 6.7 (that's 6.7 times the speed of a PC XT running at 4.77Mhz), it easily outstrips its well-established predecessor.

Installed for a 'reasonable' but unspecified price by Full Circle, AT Speed costs £269. Call 0622 677173 for more details or to order.

SYNTHWORKS FOR SY77...

Steinberg has announced the release of *Synthworks*, an editor/librarian for the new and highly-acclaimed Yamaha SY77 £2,000 synthesiser. Price has not yet been announced, but if you can afford two grand for a synth I don't suppose you need to worry too much about that, do you?

Millionaires and such may get one of their servants to call Evenlode Soundworks on 0993 898484....

...AND AN SY22 FOR YOU!

Meanwhile, back in the real world is the SY77's younger brother, which costs just £800. How much?! I hear you exclaim, but fret not, for you can win one of these delicious beasts in the October issue of *Express*' sister publication *ST Format* in what is cunningly billed as the simplest competition of all time. Worth £2.95 of anyone's money, I'd have thought.

October's *ST Format* hits the streets on Thursday September 14.

ST SHALL TALK UNTO ST

Cheap and powerful they may be, but one thing STs benefit from greatly is the opportunity to get together and share resources. Now schools, businesses and other power users can share printers and communicate with each other's machines directly, using a new network system that has just hit the UK, distributed here by Ladbroke Computing International.

The Lantech high-speed network (see news, *Express* 93) enables access to floppy, hard and RAM disks and Centronics printers, using co-ax cable and units plugged into the cartridge port of the ST. The network's data transfer rate is quoted at 10 megabits per second and STs can be anything up to 200 feet apart.

If a 'node' ST has access to partition C of a server's hard drive then it autoboots from that partition, so that you can automatically load accessories available on the server's boot partition.

The price for the Lantech LAN starter kit is £374.99, with add-on kits costing £179.99 from Ladbroke (0772 203166).

MORE BALLS FROM CONTRIVER

From a modest start Contriver seems to have raced into first position in the new announcements stakes – and certainly, when it comes to mice and related items, there's no-one to beat it.

Most recent is the Contrack Ball, which sells for £35 from Contriver on 0280 822803.

And, as if that weren't enough, Contriver has also introduced a 10,000,000 click guarantee on all of its mice, which must be one of the dumbest ideas since the company started issuing press releases of its mice being interfered with by a cat (oh very original).

I mean, is it likely that anyone is going to claim on such a guarantee? "Dear Contriver, last night my mouse packed in, and I've only had 7,687,459 clicks out of it. Please send me a new one."

SERVICE REPORT

Thank you to all those who've sent in letters recommending companies dealing in ST hardware and software that have served them well – and warning about ones that don't. All are read, so continue to send them in. A further selection will be published soon.

By the way, it's worth remembering a few golden rules when you have to complain. First, always gather all the information you can and have it with you when you call: the numbers of any cheques cashed, order numbers, dates of orders placed and goods received, copies of letters you've sent and any been sent and so on.

Always get the full name of anyone you speak to, and thereafter demand to speak to that person, you'll get much further much faster. Also, take brief notes of what's said on each occasion so if you do get into any arguments you have something to refer back to.

Even better is to avoid such problems. Ask friends for recommendations of well-established companies they've discovered treat their customers well, and when you find one you trust, stick with it.

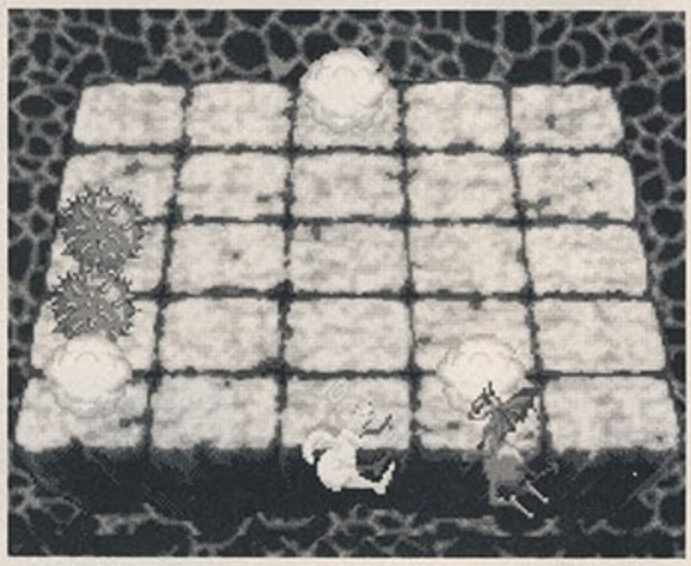
Finally, remember that after sales service and prompt and courteous responses to enquiries all come out of profits. So don't always assume that by saving a few pence or a few quid by going for the very cheapest deal is necessarily going to be the best strategy.

Steve Carey

ANTAGO

ST GAME of the WEEK

Art of Dreams • £19.95



With hosts of original games appearing from all the software houses, your average computer game has become a nightmare to get to grips with. Not only do the majority come on two disks but they also comprise a hefty manual, sophisticated protection systems and even the odd keyboard overlay. With all this to digest, it's hardly surprising you spend months just working out how to progress past the first screen.

***Antago* is a simple board game which turns its back on all the razzmatazz and goes back to the old philosophy that computer games should be easy to learn and fun to play.**

The game centres around that eternal battle between good and evil. In this case, evil is represented by the devil (you) and good is represented by an angel (played either by the computer or a friend). The game is played on a 5 x 5 square chess board and each player takes it in turns to place a counter on the board. The devil places spikey red balls while the angel uses white clouds. The objective is to place a line of five counters across the board either vertically, horizontally or diagonally.

Unfortunately, you can't simply drop counters anywhere you like on the board. Instead, you're limited to placing them around the edges of the board. To get them into the centre you need to place them on squares already occupied. The counter currently on that square moves inwards one square, making space for your new counter.

This method of play means you can block your opponent's moves by placing counters in his way and pushing him off the board. The only stipulation is that you cannot push your opponent's last counter from the board.

There are 10 levels of difficulty for the computer opponent, ranging from very easy to maddeningly difficult. It's also possible to select boards which already have counters positioned on them, making the game even more tricky. As you win matches (defined as the best of the three) different types of boards are presented to maintain your interest. Some amusing sound effects and cutesy-style graphics add to the atmosphere.

Different levels of play mean you can start off dropping counters haphazardly around the board and end up working out clever strategies to win. *Antago* is over priced considering the simplicity of the concept but it's enormously absorbing and certain to give you hours of pleasure.

Mark Higham

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Competition Pro 5000 Joystick	£13.95	Box of 10	£13.95
Competition Pro with Autofire	£14.95	Memorex Disk Box	
Konix Speedking Joystick	£11.95	For 40 3.5" Disks	£8.95
Red Mouse Mat with Amiga logo	£5.95	Amiga 1/2 Meg Expansion	£99.95
Plain blue Mouse Mat	£4.95	Control Centre Atari or Amiga	£44.95

Naksha Mouse for ST, Amiga or PC £29.95

Contriver Amiga and ST Mouse with FREE Holder and Mouse Pad £20.95

PRINTERS

Star LC10 including interface lead for ST/Amiga	£169.00
Star LC10 colour including interface lead for ST/Amiga	£219.00
Star LC24-10 24 pin including lead for ST/Amiga	£249.00
Citizen 120D + NLQ including interface lead for ST/Amiga	£139.00
Citizen Swift 24 pin letter quality including lead for ST/Amiga	£309.00
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AMIGA

PASSPORT TO MUSIC

Passport's *Master Tracks Pro* was indeed an impressive product, but at just under £300, it was kept firmly out of reach of the people who really wanted it – the average home users. Now, almost six months after the release of *Master Tracks*, Passport has released a new sequencer designed specifically with the amateur in mind.

Trax is a new budget sequencer that bears an uncanny resemblance to its big brother, *Master Tracks*. Sporting 64 tracks of real time MIDI recording, *Trax* boasts an impressive specification. It features extensive on-screen editing tools similar to the bar editor to be found within Microlllusions' *Music-X* sequencer. Not only that, but *Trax* features the same song arrangement system from *Master Tracks*, making it an ideal alternative to that other great budget sequencer, *Music-X Junior*.

Trax is available for £85 from MCM, which can be contacted on 071-724 4104.

2 CHIPS FOR 500

According to sources in the United States, Spirit Technologies is developing a card for the A500 that will effectively knock the amount of chip RAM up to a massive two megabytes when used in conjunction with the new ECS Agnus.

Whether this will require alterations to the existing A500 is unclear, as sources close to Commodore recently revealed that although both the 2000 and 500 are now fitted as standard with the ECS Agnus, Commodore has deliberately restricted the amount of chip RAM that the A500 can access. If Commodore decides to actually launch the much talked about A600 (a 1Mb A500 with ECS and OS version 2), the Spirit card could become hot property for chip RAM intensive applications.

PD EXTRAVAGANZA

The general state of public domain software on the dear old Amiga is certainly something to be proud of – no other machine even comes close when it comes to true quality in PD. Look hard and you'll find a mass of quality software for all tastes. Whether you're a hardened games freak, or a serious techie type, the PD libraries have something to offer you.

Thanks to those nice chaps at George Thomson Services, I've been browsing through a few new releases at the ever growing range of PD available from GTS and other good suppliers. All disks detailed below are available from George Thomson Services which is available on the other end of 077082 234. Anyway, here's a quick look at what GTS now have to offer.

HOME MANAGEMENT – Pulling together a decent collection of serious applications software can be a rather expensive affair – for starters, you can expect to pay at least £100 for a decent word processor, then of course you're going to need a spreadsheet, a spell checker, and the list continues.

The *Home Management* pack is a two disk collection that contains a large number of PD programs designed specifically for the average home office.

CATALOGUE WORKSHOP – Need a database? Well, buy yourself this collection of two disks and you'll have several to choose from. Most are specialist database systems designed for particular applications, but at least one is fully configurable to suit the needs of just about any home user who needs to manage large amounts of information. While none are *SuperBase* killers, the *Catalogue Workshop* is a real bargain at its present £5.99 asking price. Highly recommended.

MINI GAMES PACK – Games players will love this collection of games containing the very best that the PD libraries have to offer. There are such classics as *Frogger*, *China Challenge* (a mah-jong game), *Ping Pong* and *Drip*, a *Super Painter*-type game that both looks and plays like anything you could buy commercially. For £5.99, the *Mini Games Pack* provides a cheap way of keeping gameplayers happy.

LIFE IN THE FAST LANE

If you thought the A3000 was fast, then be prepared for a few surprises. GVP – producer of hard drives, accelerator cards and RAM boards for a number of years – is rumoured to be working on an '030-based card for the A2000 that offers computing performance double that of a top of the range, 25MHz A3000.

No news yet about when GVP plans to launch this 50MHz 'supercard', but, fingers crossed, we can expect to see it by the end of the year.

On the subject of processor cards, RCS Management Systems of Canada has launched the first 68040-based accelerator card for the A2000. The card runs at 25MHz and features (as standard) both a maths co-processor and a built-in MMU. According to RCS, the card performs floating point calculations more than 10 times faster than a 68882 maths coprocessor (as used on the 25MHz 3000). RCS claims that the card runs even faster than an 486-based PC.

SUPER LITTLE SUPRA

Amiga 500 power users will be pleased to hear about the new Supra Drive 500X.

The SCSI-based drive features data transfer rates up to 34 times faster than convention floppy drives.

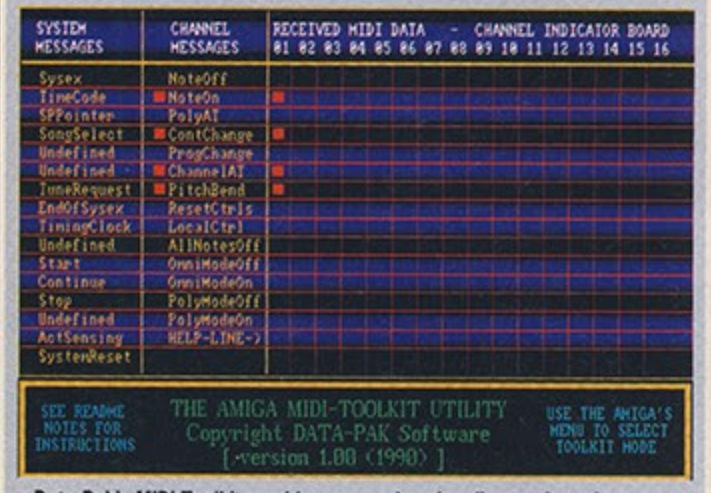
Just like Commodore's own A590 drive, the 500XP has space for extra RAM. However, with the 500XP, there's no need to ever buy another RAM board – the 500XP can hold up to 8Mb of RAM.

Jason Holborn

MUSIC BARGAIN

Data-Pak Software is a new name within the Amiga industry, but its arrival is sure to be of interest to all Amiga owners who use their Amigas for musical applications. Its first product, the *MIDI Toolkit*, is a comprehensive MIDI diagnostics system that offers real time analysis of incoming MIDI data, graphical display of the amount of MIDI data flowing through a MIDI network, lead checking and even even a facility to check standard MIDI file analysis.

Sounds impressive. But what price for this program? £100? £50? Nope, how does £9.99 sound to you? Yes folks, budget MIDI software has arrived. For more, give Data-Pak a bell on 0702 542229.



• Data-Pak's *MIDI Toolkit* provides comprehensive diagnostic tools.

EXTASE

AMIGA GAME of the WEEK

Virgin/Mastertronic • £19.99

Far off into the future, the science of creating robots will far surpass the 'copy-cat' automatons that exist today. Robots will not only be built to carry out mundane manual tasks, but will be created as humanoid android companions, capable of intelligent conversation, independent thought and able to express various human emotions.

In *Extase*, you are a scientist in charge of activating and testing various areas of a female robot's 'brain'. You must build and charge a circuit to allow pulses of energy from a power board to simultaneously activate a set number of terminals attached to the robot's head. To build the circuit, you must use power pulses to create transistors, which can be fitted into sockets around the circuit. Before a pulse can reach its goal however, the correct path must be primed by running a cursor along the wires and all the junction switches must be correctly set to allow the pulse to pass through.

Unfortunately, due to the feedback of emotions from the droid's brain, irregular energy surges cause sparks to appear in the circuits, which can destroy transistors and pulses. One blast of the cursor destroys them, but you have to be quick, since the game is played against a rival scientist, so you must activate the brain before he can send his pulses to their targets.

Once an area of the brain has been activated, you can move onto the next, and more complex, section, containing more intricate wiring and a greater number of sparks to battle.

This may all sound rather strange, but anyone who remembers *Purple Saturn Day* – and particularly the brain-duel section – will have no trouble grasping the point of the game. But even if you can't remember that far back, don't worry! *Extase* is harder to explain than it is to play. Building circuits and battling sparks may not sound that exciting, but the game is extremely compulsive and quite frantic at times. The superb facial animation of the robot, coupled with the incredibly atmospheric music exude a very futuristic, cerebral feel, drawing you into the world of cybernetic research.

If you think that electronic experimentation is just for boffins, then try *Extase* – you'll be surprised.

Maff Evans

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EGA	PHILIPS	CM 9053	14"	249
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PC

MOVES AT MICROSOFT

One listing in the *PC Yearbook* which may soon be out of date is the address of Microsoft UK. The company is moving office, not to some swanky new block *à la* AutoDesk (see *Express* 93), but to a £37 million custom-built office and distribution complex, no less. The building which the UK arm of the $1 billion turnover company is to erect will include a fully-fitted gymnasium – lucky lot.

The press release which brought Microsoft's plans to my attention continues 'Microsoft Corporation (NASDAQ "MSFT") develops, markets and supports a wide range of software...'. I thought I'd come across most PC industry acronyms, but I'm afraid (NASDAQ "MSFT") defeats me. A game to the best suggestion received by September 10.

PC YEAR BOOK

It's common practice for magazine publishers to post-date issues of their magazines. The October issue is likely to appear in early to mid September. This is because of the perceived currency of the magazine. It'll be sitting on the newsagent's shelf for a month until the next issue appears and should continue to be bought until mid-October. If the magazine were to be dated September, the argument goes, nobody would buy it in October, because it would be last month's issue.

Why am I revealing state secrets of the magazine publishers? Because I've just received details of the *PC Year Book for 1991*. This is a noble effort of just such a publisher to compile a list of all products and companies involved in the PC business this side of the Atlantic. And a very useful reference it is, too, if you or your company can afford the asking price of £60.

My only problem with the idea is that by releasing it in August 1990, some of the information will be out of date before it even becomes current, and certainly by the end of 1991. What's good for the monthly, looks distinctly dubious on an annual publication. It must work for them, though, and if you want a copy, contact Directories Booksales on 071-439 4242.

A TO Z OF DIRECTORIES

An interesting, if rather frustrating, problem occurred the other day on the *PC Plus* SuperDisk. For some while, I've been using the command `CD ..\` in the controlling batch file on the disk. This was in the mistaken belief that it shifted DOS to the directory from which the batch file was run – its relative root directory, if you like. In fact it seems to be an unsupported structure within MS-DOS and one which 4DOS and possible DR-DOS don't like. I'll revert to the more normal `CD \` in future.

Why should I want to move to the calling directory? Well, some users of the SuperDisk like to copy the complete contents and directory structure into a directory of a hard disk and run all the programs from there. If `CD \` commands are used, DOS moves to the root directory, rather than the directory from which the SuperDisk was called.

While on about directory shorthand, there are several abbreviations which are little used but could make life easier. Say you're in a directory \WP\DOC\LETTERS:

Typing `CD ..` takes you to \WP\DOC

Typing `CD ..\..` takes you to \WP

Typing `CD ..\REPORTS` takes you \WP\DOC\REPORTS

Typing `CD ..\..\..` takes you to the root, though `CD \` is quicker

Also the abbreviation '.' refers to the current directory, in the same way that '..' refers to the parent of the current directory. So you can type `COPY . B:` to copy the contents of the current directory to drive B or `DEL .` to delete it. It's simpler than using *.*.

There's also a difference between `COPY *.* B:` and `COPY *.* B:\`, of course. If you last left drive B from any directory other than the root, `COPY *.* B:` will transfer all the files from the current directory to the directory you left. Adding the '\' to the command forces the copy to the root of B:, without affecting the path on B:. When you return to drive B, you'll be in the directory you left, not the root.

Is that all clear?

WHICH WHICH SHOW?

It seems a lot of PC companies have had their fingers burnt by the timing of this year's *Which Computer?* Show and are reluctant to repeat the process next year. So far, up to a dozen of the big name standholders, including Epson, NEC and Commodore, have decided to do other things next spring.

You can see their point of view. Apart from the razzmatazz of shows and the opportunity to launch new kit, the main purpose for companies taking stand room is to sell goods or at least take signatures on order forms. Its the signatures of corporate buyers that hold the Big Bucks and the vagaries of the tax year that mean those bucks are spent by the beginning of April.

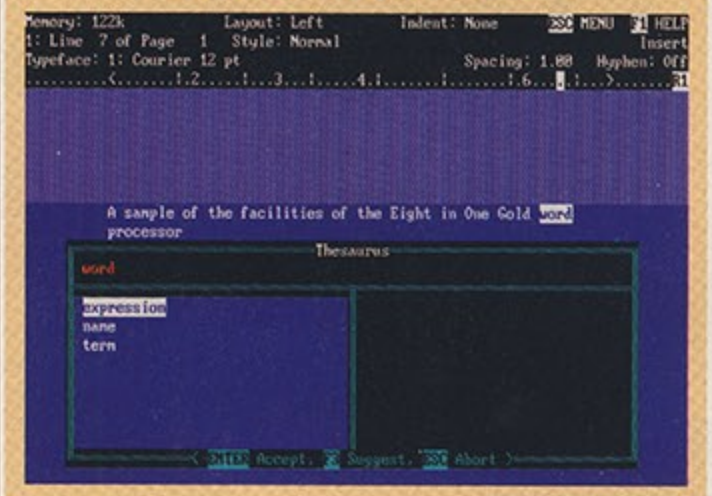
Unless the *Which Computer?* Show can be repositioned earlier in the year, it's hard to see it being the success it has been before.

SOUNDING OFF

Probably the worst feature of the PC is its loudspeaker. The plaintive beep you get when you switch on is about as good a sound as you'll get – although some brave attempts have been made at improving matters. But if you want decent sound you need an expansion card – to help you choose three are reviewed on page 50.

Simon Williams

GOING FOR GOLD



Logotron is due to release a new version of its *Eight-in-One* integrated package in mid September. *Eight-in-One Gold* is a direct competitor for the likes of Microsoft *Works*, but from the pre-release copy I've recently been evaluating, it seems to offer a lot more.

The eight integrated modules are:

- Word Processor – which offers automatic reformatting, font support and a WYSIWYG preview mode. There's also an integrated thesaurus.
- Spelling Checker – integrated with the word processor, this utility uses a 100,000 word list and can be extended with your own words.
- Spreadsheet – providing up to 4,500 cells and able to read Lotus *1-2-3* files. It offers 22 mathematical, seven financial and seven logical functions and directly links to the graphics module.
- Graphics – can be imported from PCX format files, though only business-style graphs can be drawn within the package. Graphs can be imported into the word processor, though.
- Database – a flat-file card-index type database with file capacity limited only by disk space. Records can be shipped into the word processor, graphics module or spreadsheet.
- Outliner – this is one of those report definers and handy note keepers which can be collapsed down to headings or expanded to show all the details beneath.
- Desktop Organiser – provides useful facilities like calendar, 'to do' list, label printer, world clock, address list and memo pad.
- Communications – a complete modem controller which can upload and download material as well as working with BBs.

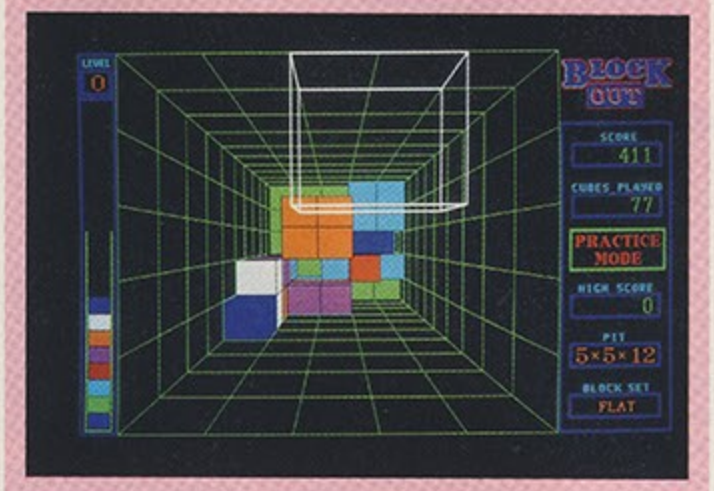
The programs work well, provide a common interface and retain current data as you switch between them. You can copy information to a memory clipboard and transfer it to the next modules from there.

It's interesting that *Eight in One Gold* started life as the 1295 series at £12.95. The full version is now nearly 10 times that, but is probably 10 times as useful, too. Longman Logotron is on 0223 323656.

BLOCK OUT

PC GAME of the WEEK

Rainbow Arts • £19.99



While fans of *Tetris* wait for Alexey Pajitnov's three-dimensional sequel, *Welltris*, it is inevitable that other variations should appear. *Block Out* claims inspiration from the Soma Cube, a topological oddity invented by the Danish mathematician Peit Hein, however its German programmers have come up with something that sounds even more like a 3D translation of *Tetris* than *Welltris* itself.

Tetris involves rotating two dimensional shapes as they slowly drop down the screen so that they interlock with those already at the bottom, the shapes being made up of three or four squares linked in various ways. If you manage to completely fill a layer it disappears and the whole lot moves down one line, giving you more time to think. Fail to complete a layer and the shapes at the bottom simply accumulate, reaching up towards you until there is no room at all, and you loose the round.

Block Out twists this round so you are looking down a four-sided well. The shapes become blocks made up of one to five linked cubes, and the controls become more complex because you can move each block in four directions instead of just left or right, and rotate round three axes rather than just one. Nevertheless the overall aim is still to completely fill each layer so it disappears, and the whole accumulated mass drops a level lower.

Block Out uses the highest 640 by 480 resolution on a VGA display, colouring each layer differently and depicting the current block, slowly drifting down the well, as a white wire frame so you can make out what is happening. You can change the dimensions of the well, or play with just a basic, flat or full set of shapes, this last comprising over 40 intricate blocks.

All in all almost as frustrating as *Tetris* itself.

Matt Nicholson

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The ST is a remarkable machine – blessed with an excellent range and variety of both serious and leisure software. And all at a price that's a giveaway for such a powerful, 16-bit beast. Its different resolutions allow it to support everything from precision DTP to multi-colour artistic extravaganzas.

The Express Guide to ST essentials takes you through the best products available in the wide world of ST software: the word processors that can handle everything from business letters to a complex cross-referenced thesis; the databases to keep those club or customer records; spreadsheets that solve those financial crises; music packages that make the ST the choice of the professional muso; games that take over your life; graphics packages that make you machine a desktop publishing tool. Now read on...

WORD PROCESSORS

● 1ST WORD PLUS
Electric Distribution
0480 496789
£79.95

Enhanced version of *1st Word*, the word processor bundle with the ST, this version is much meatier, can handle *Degas* graphics and comes complete with spell checker, mail merge and multi-column printing

▲ Fast and efficient
▲ Good display

▼ No short cuts to tedious keyboard sequences

● WORD WRITER
Electric Distribution
0480 496789
£79.95

Excellent text handling on a fast WYSIWYG word processor with built-in spell checker, thesaurus, outliner and mail merger. Only problem is with layouts - more than one in a document and things get a little hairy!

▲ Lots of great features
▲ Useful outliner included

▼ Layouts restricted

● PROTEXT
Arnor
0733 68909
£99.95

Easily the fast ST word processor – not surprising since it dispenses entirely with GEM – and stands out as fast keyboard driven text processor. Full of features it zips along at an unsurpassed rate

▲ Powerful macros, spell checker and mail merge
▲ Calculator, word count, memory editor

▼ Command driven
▼ No menus
▼ Restricted WYSIWYG

● THAT'S WRITE!
Cavendish
071-323 4761
£129

Another powerful non-GEM word processor featuring excellent layout control along with a font designer and screen grabber. Also includes useful functions such as auto indexing, contents generation and hyphen control

▲ Brilliant print-out results
▲ Powerful macro system

▼ No spell check or mail merge

● WORDUP
HB Marketing
0895 444433
£ 59.95

Almost qualifies as a DTP package as it includes graphic import, auto text flow around graphics and loads of different type sizes and styles. Excellent for producing stylish documents

▲ Good control over layout
▲ Quasi-DTP capabilities

▼ No spell checker
▼ Can only print its own fonts

SPREADSHEETS

● K-SPREAD 3
Kuma
07357 4335
£24.95

Good entry level spreadsheet which is fully compatible with other programs in the 'K' suite. A powerful Lotus-look-alike using GEM to provide a workspace of 256 columns by 8,192 rows. Many features such as text handling, arithmetic functions make it an excellent all-round business program

▲ Comprehensive low-cost package
▲ Lotus style capability
▲ Good manual

● DIGICALC
Digita International
0395 45059
£39.95

An easy to use spreadsheet which dispenses with GEM to provide a keystroke driven workspace full of popular facilities. 512 columns by 52 rows are supported plus the usual range of numeric functions

▲ Fast recalculation
▲ Holds full sheet entirely in memory
▲ User defined macros available

▼ No graphics
▼ No GEM
▼ No comparison functions

● VIP PROFESSIONAL
VIP Technologies
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A GEM version of VIP on the PC, supporting 8,192 x 256 cells and following the Lotus *1-2-3* industry standard. Fast editing and simple database functions complement a full range of features including keyboard macros

▲ Lotus controls
▲ Acts a simple database
▲ Graphic output

▼ Slow on large spreads

ACCOUNTING

● FINANCIAL CONTROLLER
Sagesoft
091-284 7077
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Comprehensive accounting package that includes all the features you're ever likely to want. Integrated sales, purchase and nominal ledgers, stock control and printed reports are supported as is auto invoicing.

▲ Fully comprehensive, powerful package
▲ Good manual

▼ Needs a hard disk

➤

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▲ Good features for the price
▲ Flexible with many features

DATABASES

● SUPERBASE PROFESSIONAL
Precision
081-330 7166
£249.99

The ultimate ST relational database management package. Features videotape recorder style push-button controls to navigate a complex yet easy to use extravaganza which includes text processor, form editor and a built-in programming language boasting over 200 command words

▲ Easy to use and extremely powerful
▲ Infinite field size and number of records

● DATA MANAGER PROFESSIONAL
Timeworks
0954 80318
£ 69.95

A full-featured professional-grade data management tool which can be used with GEM's pull-down menus or directly from the keyboard. Relational operators allow powerful data searches among its maximum file length of 32,000 records and as this is RAM-based, *DMP* can sort at 100 records a second.

▲ Exceptionally easy to use
▲ Impressive report facilities

▼ Manual needs a better index

DESKTOP PUBLISHING

● TIMEWORKS DTP
GST/Timeworks
0954 81991
£129

One of the first medium priced DTP packages, GEM based and compatible with the wide range of Bitstream Fontware. A frame based system incorporating master templates, paragraph styles, page guides and automatic text wrap-around graphics. *Timeworks* also includes a a good range of drawing facilities and is able to handle documents up to 999 pages.

▲ Excellent DTP at budget price
▲ Imports wide range of text and pictures

● FLEET STREET EDITOR
Mirrorsoft
071-928 1454
£184

A GEM style package, Bitstream font compatible, but generally slower to use than real GEM DTPs. Both text and Graphics can be manipulated on the same screen and overlap each other. A wide selection of clip art is supplied but the working document has to be reloaded before insertion.

▲ Good clip art selection
▲ Wide file format supported

▼ No automatic reflowing of text
▼ Relatively slow and unfriendly

● PUBLISHING PARTNER
Clik ST
0753 682 988
£ 159.99

Excellent GEM -based page make-up system, with multiple-on screen pages, impressive range of fonts and text sizes and facility to import different ST graphics formats. Also includes a range of drawing tools and variable magnification. Fast screen updates and high quality printer output

▲ Comprehensive and fast
▲ Excellent value

● SIGNUM 2
Signa
0252 874406
£184

Billed as a document processor, Signum allows text to be placed and adjusted to accuracies of up to 1/90th of an inch as well as imported graphics and technical fonts and symbols. Dot-matrix and laser printers are supported.

▲ Fast screen updates and response
▲ Compatible with Signa's scanners, digitisers and Mac emulators

▼ Price

GRAPHICS

● CYBER PAINT
Electric Distribution
0480 496666
£69.95

Breathtaking bitmapped animation and graphics package from American Antic. This program features some incredible effects including tweening (changing one object to another a line at a time) and very powerful animation functions. Rivals the Amiga and is highly recommended.

▲ Very powerful animation
▲ Stunning effects
▲ Cheap

● DEGAS ELITE
Electronic Arts
0753 46546
£24.95

Like *Digipaint* for the Amiga, *Degas Elite* was one of the first painting programs for the Atari and it's still one of the best. You can have eight word screens at once, cut and paste between any of them and there are plenty of powerful functions such as zoom, block handling.

▲ 8 screens available
▲ Powerful block handling

▼ Lacking in features ➤

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Painting package featuring (as its name suggests) 512 colours. The program is simple to use and effective. There's some very powerful functions too in the form of anti aliasing and gradient fill.

▲ Lots of colours
▲ Easy to use

▼ A little expensive

● ADVANCED ART STUDIO

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▲ Lots of fills
▲ Powerful manipulation tools

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● CREATOR

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0462 480000
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Rapidly becoming the most widely used of sequencers it has excellent editing and arranging features. Although not cheap, if you are serious about music then this is the one to go for. It can be expanded with hardware to control up to 64 instruments independently

▲ Excellent facilities
▲ MIDI file compatibility
▲ Will also adapt to video sync
▲ Good editing

▼ Handbook can be hard to get to grips with
▼ Expensive if you are not serious

● TRACK 24

Comus/Soundbits
021-733 2063
£75

Well priced budget sequencer with more features than you would expect, rivaling software twice its price. Compatible with their more up-market sequencers and scoring packages.

▲ Cheap
▲ Good sequencing facilities including mixdown
▲ MIDI File

▼ Editing is peculiar

● STEINBERG PRO 24

Evenlode
099389 8484
£285

The has been the industry standard for many upon many years. The soon-to-be-available Amiga version should prove as interesting as the versions previously released on other machine specs. They are pushing their new program 'Cubase' at present, but one should not neglect this easy to use and very popular program. Make sure you get at least version 3 though.

▲ Easy to use
▲ Established program
▲ Easy editing

▼ Price

● VIRTUOSO

The Digital Muse/Audio Software
071-586 3445
£225

A new all British program having its first outing this year. Initial reactions are favourable and it has many things in its favour. It has all the features that are available on much more expensive packages and still remains quite easy and friendly to use.

▲ Very fast – thanks to re-writing of screen management
▲ Very accurate
▲ Can perform disk operations while still running
▲ Many excellent features

▼ New and therefore untested in the general market
▼ Price

● SUPER CONDUCTOR

Microdeal
0726 68020
£49.95

Very popular little sequencer that will also control the ST sound chip. Well thought out, especially in the song arrange section. Can also cope with the fine details of MIDI including systems exclusive editing.

▲ Suitable for beginner
▲ Easy arrange section
▲ Well documented
▲ Controls internal sound chip
▲ Good if you want to control MIDI via data

▼ Editing not too easy
▼ Quantize limited

● EZ TRACK PLUS

Syndromic Music
081-444 9126
£49.95

Reasonable sequencer that is fairly easy to use. Compatible with other Hybrid Arts programs that also boast a multi program environment. Limited on quantizing but not bad for the money. Editing in data only but good for organising songs.

▲ Good price
▲ Easy to use

▲ Compatible with Hybrid Arts EZ Score
▼ Limited on editing and quantizing

● REPLAY 4

Microdeal
0726 68020
£59.95

One of the first sampling packages now in its fourth version. Earlier versions available on public domain as sample players only. MIDI well looked after.

▲ Editing very easy
▲ Samples sound very clean
▲ Tried and tested program

▼ The ST is not the best sample player.

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1992 The Official Journal of the European Communities Volume 33

Council Directive of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment

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Based on the incredibly successful 1040 STFM, the 1040 STE itself goes beyond the limits of its predecessor.

The 'E', by the way, stands for 'Enhanced'. But once you've discovered its amazing array of features, you may consider 'Enhanced' to be the understatement of the decade.

Perhaps the most outstanding feature of the 1040 STE is its graphics. Its palette contains over 4000 colours (all right, 4096 to be exact).

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To complete the picture, it is able to 'phase-lock' its video output to an external video source, permitting direct linking to a Genlocking device.

The 1040 won't just have your eyes swivelling in their sockets. Your eardrums will also take a pounding from the 8-bit PCM stereo sound.

The new PCM (Pulse Coded Modulation) sound system's two chips allow the 1040 STE to replay high-quality sampled sounds, in stereo, without burdening the CPU. Or, for even more of an earblasting, just add a couple of RCA output jacks and power the sounds through your own stereo.

Of course we mustn't forget memory. One megabyte of RAM comes as standard. If that's not enough, the 1040 STE provides four SIMM sockets. Simply plug in some SIMM (Single In-line Memory Module) boards and boost the RAM up to four megabytes.

To help you handle all this technology, we've added even more: a Blitter chip, capable of shifting data at high speeds independent of the CPU, and a new version of TOS.

The TOS 1.6 (operating system) has an enhanced file selector with drive-change buttons, improved desktop with file move, MS-DOS compatible disk formatting, and better application installation and auto-booting facilities.

As you'd expect, there's a huge range of peripherals including hard disks, floppy disks, laser printers, colour monitors and even Megafile 44, Atari's unique 44-megabyte removable hard disk.

As well as all this hardware, there are hundreds of software programmes for the 1040 STE - we're even throwing in the ST-Series Productivity and Leisure bundles free.

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With adaptors, up to six people can use the 1040 at one time. Just in case it's too much for one person to handle.

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ATARI

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NEW - 520 STFM DISCOVERY PACK

Good quality, good value package based around the 520STFM computer including 512K RAM, 1Mb Drive and built-in TV modulator. Also supplied is:

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Excellent starter package, including the very latest 1040STE machine with 1Mb RAM, 1Mb Drive, plus the following extras:

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£339.00 Including VAT and delivery

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All Amstrad Products include 12 Months On-Site Maintenance

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2086 CD	564.35 649.00	651.30 749.00	825.22 949.00
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CREATE YOUR OWN HARD DISK CONFIGURATION FOR ANY 1512/1640/2086 MODEL!
Using a Western Digital Filecard, which includes XTree and SpeedRead software, we can upgrade the PC for you before despatch. Using the 'SD' column of the price table, simply add £225.00 inc.VAT for a 21Mb configuration, £239.00 for a 32Mb configuration, or £279.00 for a 41Mb configuration.

upgrades / accessories

PC1512 memory upgrade to 640K	£39.95	Enhancer 101 replacement keyboard	£74.95
Maths Co-processor 8087-2	£109.00	3.5" drive (720K) for SD models	£79.95
NEC V30 (8086 replacement)	£24.95	PC2000 series compatible 5.25" (360K) external drive	£84.95
Archive XL 40Mb Ext. tape streamer	£379.00	Genius GM6000 Mouse package	£34.95
Amstrad Modem Card V21/23	£99.00	Konix Joystick & Controller Card	£28.95
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Low price External 3.5" Floppy Drive (720K), suits any Amstrad PC 1512/1640 inc. Double Drive and Hard Disk models, uses no expansion slots £99.95

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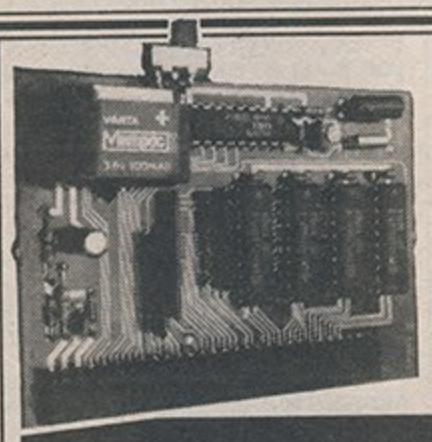

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- Fantastic hand-held portable 16-bit video games machine
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- Multiplayer Competitions possible using COMLYNX cable (supplied) to connect with other Atari Lynx systems
- Free California Games (multiplayer) game card supplied!
- Uses 6 x AA batteries (not supplied) or AC adapter (supplied)

ONLY £159.00 including VAT and delivery

Game Cards now available :

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Gauntlet III	£22.95
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SPECIAL DEALS

All A500 Packages also include the following : Karate Kid II, Leatherneck, Battle Squadron, Jaws, Defcon 5, High Steel, Wordwright (w processor), Nigel Mansell's Grand Prix, Better Dead than Alien, Super Huey, Goldrunner, Night Walk

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Only £379.00

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RAM upgrades fitted free when bought with A590.

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With its dedicated monitor input, this model combines the advantages of a high quality medium resolution monitor with the convenience of remote control Teletext TV - at an excellent low price !

- ✔ Suits ST or Amiga (cable supplied)
- ✔ Teletext facilities; on screen graphics
- ✔ Full infra-red remote control
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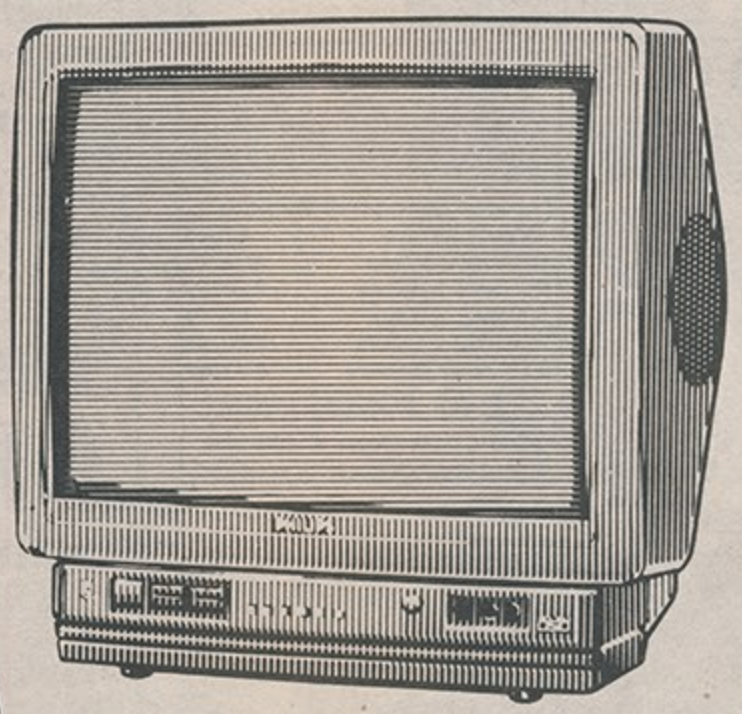

£269.00
Includes VAT, delivery and computer connection lead

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FREE with all ABC-286 machines : Logotron '8-in-1 Professional' inc. W/Processor, Database, Spreadsheet, Graphics, etc.

- ☆ 80286 Processor with 8 Mhz clock speed
- ☆ 640K RAM standard, expandable to 1 Mb
- ☆ 3 AT / XT compatible Expansion slots
- ☆ 1 RS232 Serial and 1 Parallel ports
- ☆ Disk controller supports 2 floppy & 2 hard drives
- ☆ One 3.5" (1.44Mb) floppy drive and a 30Mb hard disk drive fitted as standard
- ☆ Socket for 80287-8 Maths Co-Processor
- ☆ Video graphics adapter supports EGA, CGA, MDA and Hercules, with digital video port
- ☆ 102-key DIN spec. AT-Protocol keyboard
- ☆ Supplied with MS-DOS 3.3 and GW-BASIC

ABC-286 S.D./30Mb without monitor	**£ 803.85**
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Optional 5.25" 1.2Mb internally fitted floppy drive available	**£119.00**

Prices Include VAT/Delivery

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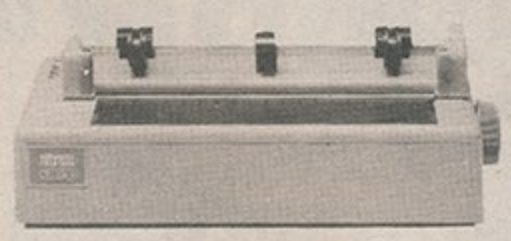

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- ○ Standard Centronics Parallel interface
- ○ Friction and Tractor feed
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Cut sheet feeder available for only £79.95
Prices include VAT, delivery and 12 months on-site maintenance!

olivetti PCS 86/286

FREE With All Models :
- ✔ 12 Months On-Site Maintenance
- ✔ PS2-compatible Mouse with software
- ✔ Logotron 'Eight-In-One' Integrated Package
- ✔ 'Top 10 Solid Gold' Games package

FREE WITH EVERY PCS286 : OLIVETTI DM100S 9-PIN PRINTER ! or, if you prefer, £129.95 inc.VAT allowance on another printer of your choice.

	SD	DD	SD 20MB	SD 40MB
PCS86 MONO	549.00 631.35	649.00 746.35	849.00 976.35	N/A N/A
PCS86 COLOUR	699.00 803.85	799.00 918.85	999.00 1148.85	N/A N/A
PCS286 MONO	N/A N/A	949.00 1091.35	1049.00 1206.35	1149.00 1321.35
PCS286 COLOUR	N/A N/A	1099.00 1263.85	1199.00 1378.85	1299.00 1493.85

- ◆ 101/102 key AT-layout PS/2 compatible keyboard (Mini-DIN)
- ◆ 1 x RS232 Serial interface and 1 x Centronics Parallel interface
- ◆ VGA compatible (OVC) display controller fitted standard
- ◆ VGA monitors: 14" Colour / 12" Mono. (dot pitch 0.39mm)
- ◆ Socket for Optional Maths Co-Processor
- ◆ Hard Drive versions: 20Mb (27ms access time) / 40Mb (29ms)

Logotron 'Eight-In-One' package includes Wordprocessor, Database, Spreadsheet, Graphics etc.
'Top 10 Solid Gold' games pack includes Arcade, Adventure, Creativity, Simulation & Strategy titles.

PCS 86
- ◆ NEC-V30 microprocessor 10Mhz clock speed, 0 wait states
- ◆ 640K RAM standard, upgradeable to 2.5Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 720K formatted capacity
- ◆ 3 Full size XT-compatible 8-bit expansion slots

PCS 286
- ◆ Intel 80286 microprocessor 12MHz clock speed, 1 wait states
- ◆ 1Mb RAM standard, upgradeable to 4Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
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Atari Lynx Games Machine (with free California Games card) only £158.00 inclusive

Lynx Game Cards		Lynx Game Cards	
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CITIZEN Swift 24

SWIFT 24 ACCESSORIES

Colour Upgrade Kit £34.95
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Colour Ribbons (ea.) £13.95

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* 192 cps draft
* 64 cps LQ
* Epson LQ compatible
* IBM compatible
* Nec P6+ character set
* 5 resident LQ fonts
* 80 column
* Tractor feed
* Single sheet feed
* Parallel interface
* Supplied with lead
* 7 Colour option available extra
* Beats LC24/10 !!
* RRP £447.35

£310.00

INC VAT AND DELIVERY

Panasonic KXP1124

* 80 col,24 pin printer
* 160 cps, 53 cps NLQ at 10cpi
* 192 cps, 63 cps NLQ at 12cpi
* Adjustable push/pull tractors
* Front,rear and bottom feed
* 10,12,15,17,20cpi + proportional
* Front panel control
* 2 draft, 5 NLQ fonts standard
* Paper Parking
* A4 Landscape and Portrait
* Epson LQ/IBM Pro compatible

£255.00

Inc VAT and delivery

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Smart Parallel Interface	£38.00
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10 x Black Ribbons	£32.95
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10 x Colour Ribbons	£47.95

LC10 PRINTERS

Star LC10 Mono £169.00
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All printer prices include cable, vat and delivery

ATARI ST PERIPHERALS

Atari SM124 Mono Monitor	£99.99
Atari Megafile 30 Hard Disk	£449.95
Atari Megafile 60 Hard Disk	£619.95
Atari SLM804 Laser Printer	£1115.00
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Atari SLM804 Replacement Drum	£159.99
Philips 8833 Stereo Colour Monitor	£259.95
Cumana 1 MB External Drive	£89.95
Roctec 1 MB External Drive	£75.00
Microtime External Clock Card	£24.95
ST Monitor Switch Box	£14.95
STE Stereo scart lead	£12.99
STFM scart lead	£9.95
Metacomco ST Basic Language	£7.95
Replacement internal STFM/E PSU	£99.95
Trakball (Mouse/Joystick)	£24.95
Joystick/Mouse extension lead	£4.75
Replacement ST Mouse cable	£3.75
Parallel Printer Lead	£5.95
14 Pin Din Plug (ST disk drive)	£2.25
14 Pin Din Socket (ST disk drive)	£2.95
13 Pin Din Plug (ST Monitor)	£1.95

AMIGA ACCESSORIES

512K Ram Upgrade with clock	£49.95
A590 20Mb Hard Disk Drive	£379.95
Philips 8833 Stereo colour monitor	£259.95
Cumana External Amiga Drive	£75.00
Vidi Amiga Video Digitiser	£99.99
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Photon Paint Version 1	£9.95
Photon Paint Version 2	£39.95
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Tenstar Games Pack	£34.99

NEED A NEW MOUSE ?

Contriver Replacement Mouse
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Naksha Replacement Mouse
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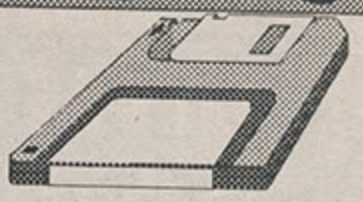
Commodore 1352 Mouse
£34.49 (fits Amiga or Commodore PC)

BLANK DISKS

All of our blank disks are guaranteed and supplied with labels. Our 3.5" Unbranded disks are either KAO or Sony. All Sony Branded disks are boxed and supplied with labels (all Sony 5.25" disks are supplied with write protect tabs). All disk prices include vat and delivery.



QUANTITY	10	20	30	50	100	200	250	300
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UNBRANDED 3.5" HD	14.95	27.95	39.95	59.99	115.00	225.00	279.95	330.00
SONY BRANDED 3.5" HDD	27.50	53.00	77.00	120.00	235.00	460.00	570.00	680.00
UNBRANDED 5.25" 360K	3.25	6.25	9.25	14.95	27.50	52.50	65.00	77.50
SONY BRANDED 5.25" 2D	7.95	15.50	22.50	36.99	69.99	135.00	165.00	189.99
SONY BRANDED 5.25" HDD	12.99	24.99	34.99	56.99	99.99	195.00	235.00	275.00

ST MIDI

LATEST and ORIGINAL versions !!

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ATARI STE

520STE 512K RAM	£329.00
520STE 1MB RAM	£359.00
520STE 2MB RAM	£469.00
520STE 4MB RAM	£599.00

All STE computers come with 3 software titles :

First Basic, Music Maker and Organiser.

All STE computers are checked prior to despatch and all prices include VAT and 3 working day delivery by courier.

ATARI STFM POWER PACK

* Atari 520STFM computer
* 20 top selling games (Afterburner, R-Type, Gauntlet 2, Super Hang On, Space Harrier, Star Glider, Overlander, Super Huey, Pac Mania, Nebulus, Eliminator, Predator, Xenon, Bombuzal, Bomb Jack, Double Dragon, Black Lamp, Out Run, Star Goose and Star Ray)
* Mouse, Joystick and instructions

ALL THIS FOR ONLY

£299.00

Including vat and 72hr delivery

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THE PD COLUMN

There is a lot of software out there available for the price of a disk. This week Adam Waring turns his attention to games, and some of the amusements you can find for the ST, CPC and Amiga.

Feeling adventurous? Do you like walking around corridors for hours on end without getting anywhere? Having every request met with the response "I can't do that." Or walking into a room with the message "I am in a room. There is a rope here." But when you type 'Get Rope' it replies "I don't see a rope?".

Some love adventures, they find the satisfaction of solving puzzles laid by the writers immensely satisfying. Others find them tedious, hampered by the lack of action that these sort of games suffer from. Whatever your particular feelings about adventures, they are certainly a part of the PD scene.

CPC

If you're a CPC owning adventure fan, Scull PD may have a disk that you'll find interesting.

It's offering five adventures on one disk. All have been written on Gilsoft's adventure creator, but they promise to be quite different. Unfortunately none include graphics – they're text only. Still, some prefer them that way. They're all littered with spelling mistakes, but adventures wouldn't be the same without them, would they?

Doomlords is a trilogy. That is, there's three parts to it. You have to complete the first part before you're allowed to access subsequent sections of the game.

You play the part of Golovin, a tribesman who's been given a quest. The chief's daughter has gone missing, and you've been elected to go get her back. A task that will almost certainly lead to your doom.

The game starts with Golovin sitting miserably in his hut. Waiting there brooding doesn't seem to do much good, so it's time for a bit of exploring. On my first attempt I found the Big Chief's hut. Reasoning that if I killed him I wouldn't have to go on this rotten quest for his rotten daughter, I made an attempt on his life. That clearly wasn't the way to progress in this adventure.

I thought that maybe I'd be better off trying something else. After all, starting with a trilogy is jumping in at the deep end a bit. Next, I tried *Firestone*.

The player takes the role of Sid, who apparently has to save the world, but doesn't know why. The game starts once again in the character's abode. Again there is nothing to do but go outside and look around.

After wandering around a bit, I came across a woman in a car. Having nothing better to do, I climbed in, when she promptly killed me. Ah well, just shows, you should never accept lifts from strangers.

These, along with three other adventures come on Disk 19, available from Scull PD.

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ST

Being awakened one night was clearly bad news for Tark, for he's not going to be able go downstairs and have a bowl of cornflakes like he usually does. The problem is he's been awakened by someone who's dead. Not only that, they also expect him to go off on some half-baked quest to save the world from impending doom caused by the loss of its poets (or something like that). Consequently, he's been transformed to a spirit form wandering the astral plane.

Tark, in case you didn't guess, is an adventure for your ST. It comes from Goodman PD, which will let you have a copy if you ask nicely for disk 438.

As usual with these things, I didn't actually manage to get anywhere without being killed on my first few faltering steps. From what I saw before my untimely demise though, it was going to be a very big adventure indeed. It takes long enough just to read each room description. There are no graphics in *Tark*, but plenty of text, and enough atmosphere to more than make up for the lack of visual excitement.

AMIGA

Like playing games, but adventures aren't your thing? Amiganuts has a diskful of rather silly games that may be right up your street. Disk 460 is the title concerned, and there are eight games just waiting to be played.

You must have owned a train set sometime in your youth. Remember, linking all the bits of track together, and after building your masterpiece watching the little tin train go round and round in circles.

Well now you can re-create those golden days. *Train* is a train set simulator. You start by laying down the tracks. You can use straights, bends, points and cross-overs. The latter is excellent for re-creating your favourite train crashes.

You have a whole screen-full to lay down the lines. Tracks can be as complex as you like, with loads of points all over the place. Once you've assembled the track, it's time to place your 00-scale double bogie 4-2-4 configuration loco on the line. In this version you have not one, but two trains to keep an eye on, increasing the scope for crashes even more.

Both trains are controlled independently, something you can't do on real train sets. As your trains pick up speed, you've got to keep an eye on the points, if they're set the wrong way then your train will come to a lurching halt when it reaches it. Collisions, unfortunately are not spectacular. If the two trains meet each other then they just stop.

Roll on is one of those games that is very simple in concept, put becomes mind-bendingly infuriating after a short space of time. The idea is dead simple. There are a selection of rocks that need to be pushed over some corresponding holes. The whole game is played in a variety of mazes that get more and more complicated.

You can move your little man around with the joystick. When he walks into a rock, he pushes it. More often than not into a corner where it gets stuck. You have to carefully figure out a path before get yourself into too much of a mess.

It's full of brain-scratching puzzles that you just have to keep playing until you solve them. They start off easily, but soon become more and more complicated until they seem impossible – but there always is a way.

Tron puts you on a light cycle, in a battle to the last. You're up against five other riders, two of which can be a couple of chums you've brought along to join in the fun. As you move around the screen, a trail is left behind. Collision with the trail, or any of the blocks already on screen spells instant doom.

This type of game has been around for years, on every model of computer ever made. Still, it's as fun to play as it ever was, especially against human adversaries. ■

WHERE TO GO

Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-On-Trent ST3 1SW. Telephone 0782 335650. Goodman supplies Atari ST and STE public domain of every description. Most of its disks can be yours for £2.50.

Scull PD, 119 Laurel Drive, Greenhills, East Kilbride, Glasgow G75 9JG. Fast growing PD library for the dear old CPC. Send an SAE, blank C15 tape plus 50p or blank disk and a quid, and a whole batch of PD proggies will be yours.

Amiganuts, 169 Dale Valley Road, Hollybrook, Southampton SO1 6QX. Telephone 0703 785680. Nuts about your Amiga? Then call Amiganuts – a library that caters for the Amiga, and the Amiga only. Top quality PD at rock bottom prices. Disks start at just one and a half quid.

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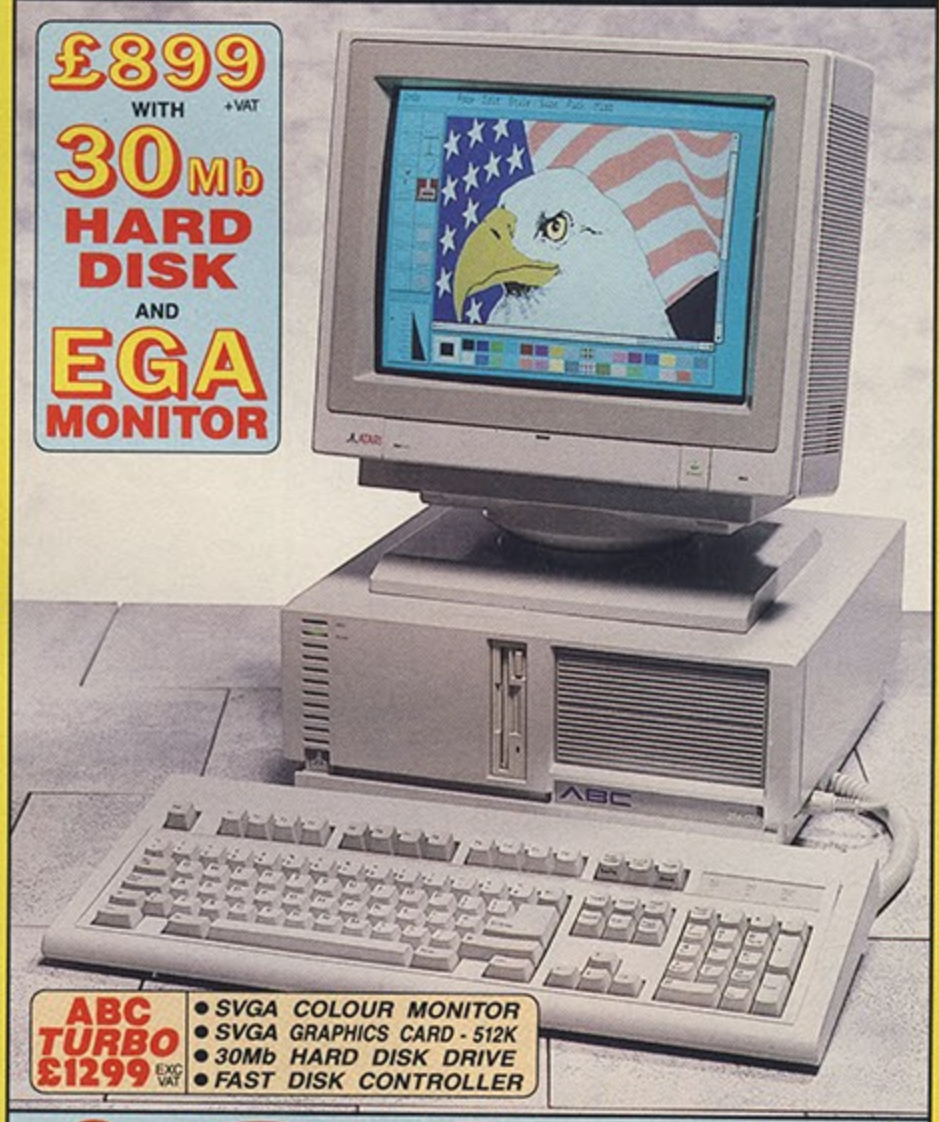

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THE NEW

Steinberg's Pro-24 sequencer has been the benchmark against which all others are measured on the ST, and now it is out on the Amiga. Jason Holborn plugged in his keyboards...

Steinberg's name has been made by producing top-class MIDI sequencers which are used by professionals. There are those who claim that the ST's domination in the music field has less to do with the built-in MIDI ports than the quality of Steinberg software. Now the company has tuned its attention to the Amiga.

The Amiga version of *Pro-24* has certainly taken its time to materialise – Steinberg promised the program to Amiga musicians for a February release, but problems have plagued the company during its development. Now, almost six months later, Steinberg's UK distributor Evenlode Soundworks has unleashed the package on an expectant Amiga public. Does the program live up to expectations, or is it a case of too little too late?

Amiga *Pro-24* features the same high quality of packaging that we've come to expect from Steinberg. Contained within the box folder is a single program disk, backed up by a comprehensive ring-bound manual. Considering Steinberg blamed the long delay of *Pro-24* on problems developing a suitable disk protection scheme, it comes as a real surprise that the program disk isn't actually protected at all (perhaps it gave up trying). Instead, Steinberg has opted for the same protection system that it uses with its ST products – the infamous dongle. The Amiga dongle plugs into the second joystick port and (like all dongles) tends to get lost very easily if you don't keep the thing safe.

When Steinberg originally designed *Pro-24*, its aim was to develop a program that corresponded as closely as possible to the operation of a real 24-track tape machine. Just like a 24-track, *Pro-24* uses the now familiar tape transport controls for the main operation of the sequencer. There are buttons for Record, Stop, Play, Rewind, Fast Forward and Pause – all pretty standard stuff these days. Compared to the ST version of *Pro-24*, Amiga *Pro-24* is considerably more icon-based. The main sequencer screen is packed with icons which provide easy access to many of *Pro-24*'s functions that were previously to be found within pull-down menus. As a result, operation of *Pro-24* becomes somewhat smoother.

COMPREHENSIVE OPTIONS

Recording options are fairly comprehensive, although thankfully not bewildering. *Pro-24* offers three recording modes – Normal, Mix and Auto mode. In normal mode, the previous recording is erased by each new recording. If you use Mix mode, you are able to 'layer' sequence data onto a single track, and Auto mode starts recording as soon as you touch the keyboard and turns it off again as soon as you stop.

Using a comprehensive system of sub-tracks, it is possible to record from up to eight keyboards simultaneously. During recording, *Pro-24* allows you to channel specific MIDI channels to particular tracks, therefore allowing a multiple-channel sequence to be automatically split and placed into individual tracks – very handy indeed if you're bringing sequences across from another sequencer system.

However, when recording complex sequences *Pro-24* has a habit of causing notes to hang, which can often leave you with a continuous tone which can only be stopped by turning off the offending instrument. *Music-X* also suffered from this, but a system reset

W KING OF AMIGA MUSIC

could be generated by simply tapping the escape key.

Once you've recorded a sequence, the next step is to tidy it up – after all, how many of us can play a sequence in perfect time? *Pro-24* offers extensive editing tools which allow recorded sequences to be cleaned up in no time. Many are unique to *Pro-24* including Remove Empties (erases empty patterns), Delete Doubles (deletes any double events produced when using Mix Mode recording), Pattern Mix (merges two patterns) and MIDI Split (splits up a track containing multi-MIDI-channel performance data). Like every other sequencer under the sun *Pro-24* also offers extensive quantisation facilities, which allow timing errors within a sequence to be corrected.

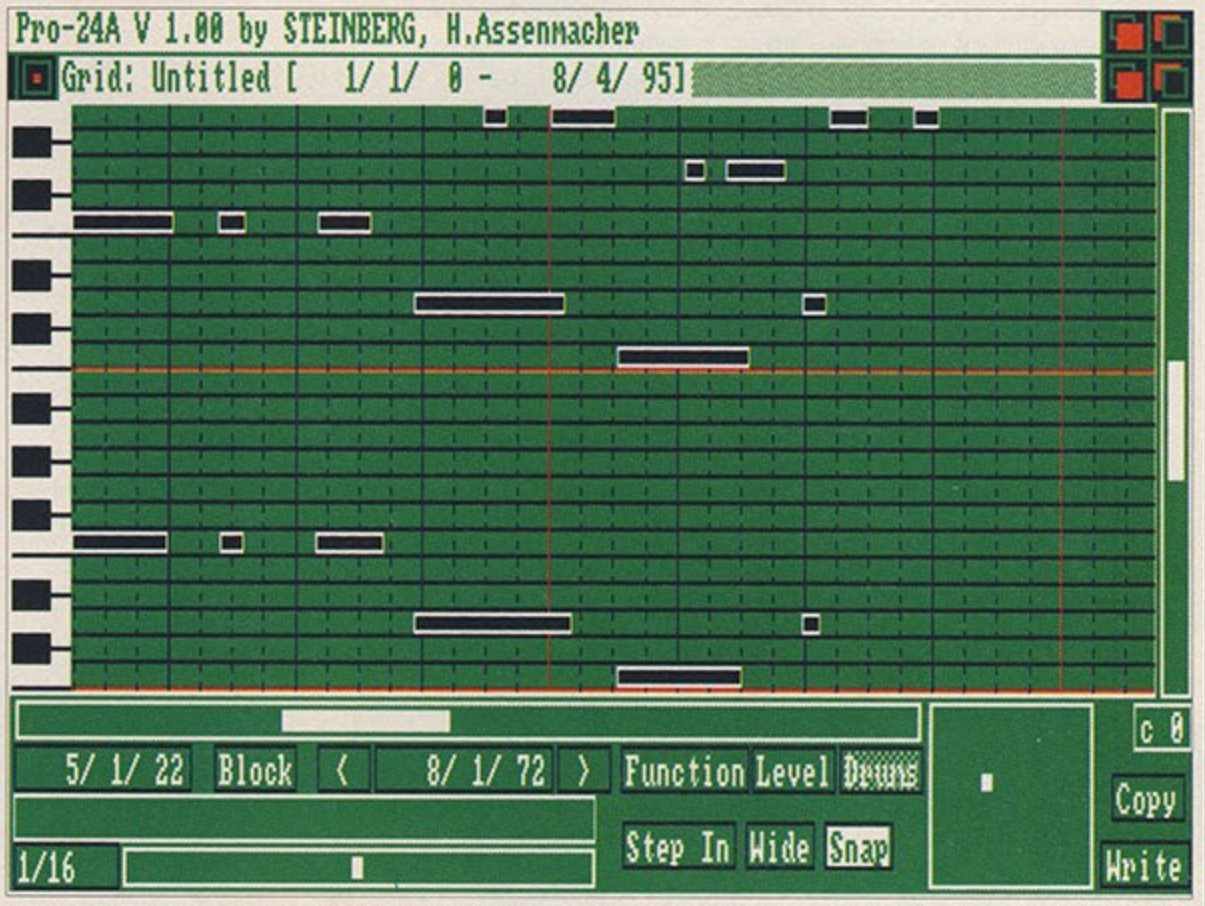
VISUAL EDITING

For more visual editing, *Pro-24* offers a *Music-X*-like Grid Editor which displays notes as lines of varying lengths – the length of each line depending on the duration of the specific note. Notes can be added, and existing notes modified. An extra level window allows you to edit MIDI controllers such as pitch bend, channel pressure and note velocity using a *MasterTracks*-like graphical display.

For percussion parts, *Pro-24* features a unique Drum Editor which, although similar to the Grid Editor, allows complex drum patterns to be composed. This screen alone sets *Pro-24* apart from many of its competitors – even *Music-X* doesn't offer drum editing.

One of the most powerful aspects of *Pro-24* is the Logical Editor, which manipulates music data using mathematical operations. The Logical Editor is complex and rather hard going, but it is perhaps the most powerful editing function that *Pro-24* has to offer. Experimentation is definitely the key here.

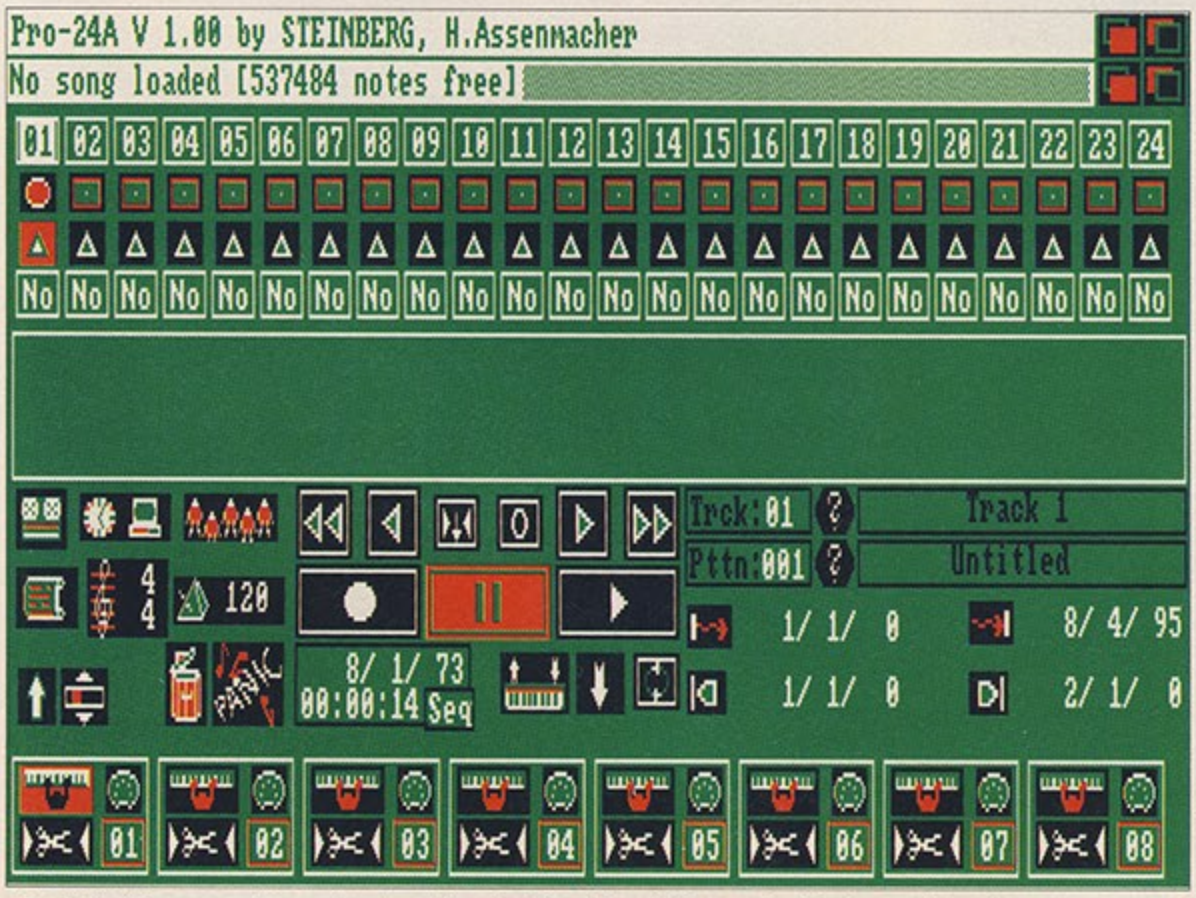
For the purists among you, *Pro-24* will also display sequences in a more conventional score format.



• *The Grid Editor represents notes as lines, varying in length acccording to their duration. The vertical keyboard shows which note is which. Editing the notes is a simple as clicking the mouse.*

Unfortunately, the scoring function is for display purposes only – if you want to edit the sequence as a score, then you're going to have to buy yourself a package such as Dr.T's *Copyist*.

Songs are constructing by building up a reference track using *Pro-24*'s Arrange mode. The reference track contains nothing more than cue points for the patterns that are used to build up your song.



• *Pro-24's editing screen is more icon-based than the ST version, which can make it look very cluttered.*

Also worth a mention is *Pro-24*'s range of extras. These include a powerful MIDI Sound Mixer which allows you to control the volume levels of all 16 MIDI channels (using MIDI controller 7). For synth owners, *Pro-24* also includes a System Exclusive filer that allows Sys-Ex dumps to be stored on Amiga disks. The strangest of all these extras is a MIDI echo generator that (as the name suggests) will echo notes.

Pro-24 is indeed an impressive system, but it does tend to show its age. With the impending release of *Music-X* 2, which Microillusions promises will include many enhancements over the original (including real time score editing, drum pattern editing and increased support for such areas as SMPTE), the choice between *Pro-24* and the rest of the competition will no longer be so clear cut.

However, *Pro-24* definitely delivers the goods – the program is a studio-proven system used by professionals that will more than adequately handle your musical requirements. ■

Pro-24 costs £285.95 from Evenlode Soundworks on 0993 898484. It works on an A500 or 2000, with 1Mb of memory recommended.

ADVANTAGES

- Powerful sequence editing tools.
- Fully multi-tasking.
- Supports SMPTE, MTC and internal timing.

DRAWBACKS

- Rather unfriendly at first.
- Score display rather limited.

WIN a sound system!

The average PC is the all-dancing, all-acting, all-playing but not all-singing machine in the computer world. Now, for the serious business user this is no problem – after all you don't want ear-tingling sound while you play *PGA Tour Golf* or *Search for the King*, just two of the many games which support the AdLib sound card, do you?

Oh, you do? Well if you win the AdLib sound card with *Music Championship* and *Song Album* software in this week's *Express* competition, such aural pleasure can be yours.

The AdLib card can play up to 11 sounds at any one time (which is seven more than the Beatles and eleven more than Bonnie Langford) and reproduce them through an external speaker, headphones or your stereo. On top of this there is a wide range of other software add-ons which can be bought for your sound card. Software houses which support the card include Lucasfilm (*Indiana Jones and the Last Crusade*), Electronic Arts (*Populous, Ski or Die*), Mindscape (*Fiendish Freddie's Big Top O' Fun*) and many more.

Before you turn to page 48 to read Keith Pomfret's review of the card, here are a few of the his comments:

"Perhaps the best known and most versatile of the sound boards...", "...works with many things from a sequencer to games...", "...AdLib is probably the most useful and easy to utilise sound card."

The card, which is available from Compusoft (phone 0734 351789), costs £105 in the shops, while *Music Championship* and the *Song Album* would set you back £35.

Music Championship is a software-based competition which makes full use of the AdLib's facilities. You are played a tune, the next time it is played something will have changed – you have to spot the difference.

The Song Album is an addition to *Jukebox,* which accompanies the sound card itself. *Jukebox* is playback software for your favourite tunes, 16 of which you will find on *The Song Album.*

To win the AdLib sound card all you have to do is read through the issue of *Express* which you have in your hands – unless you're reading it over somebody's shoulder, in which case you don't qualify, and the person over who's shoulder you are peeking will now biff you one, so buy your own – back to the subject in hand; all you need do is read through the issue and pick out the following phrase: BEAT POET.

It might be in an advertisement or it might be in the editorial copy. Wherever it is, it's your task to track it down, corner it and then fill in the form below. By the way, the first time that someone wrote in and told us that the word of the week was on the competition page itself, it was amusing, but that was a year ago.

Once you have found the phrase all you have to do is fill in the form below and send it off to: AdLib Competition, *New Computer Express,* Beauford Court, 30 Monmouth Street, Bath, Avon, BA1 2BW. You could stick it on the back of an exotic postcard and cheer up the office. Entries should be received no later than Monday September 10 1990. ■

WINNERS

The Hisoft competition disproved a popular myth; that C programming only appeals to solitary fellows with personality problems, but we never thought that anyway. There were 64s of entries (a little hex joke there).
The two winners of the Lattice C package are:
Mr A Hylton, Haringey, London; M Mackay, Wavetree, Liverpool.

The five winners of the C interpreter are:
Steven Stewart, Stramillis, Belfast; Martin Hughes, Epsom, Surrey; J S Heaney, Hamilton, Lanark; K W Carr, Rhyl, Clwyd; Mark Rawcliffe, Cleveleys, Lancs.

They will all be receiving their winning copies through the post in the next couple of weeks.

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AdLib™

PCW BEATER?

Panasonic new all-in-one word processor is aimed fair and square at the people so sucessfully catered for by the PCW. Tim Smith asks if the Japanese have produced a winner...

•The KX-W1510: cheap at half the price, expensive as it is.

In to the ring steps another Amstrad beater. This time it's not Sugar's PCs which find themselves in the fight; this time it's the PCW. Panasonic, which makes the drives for the Amstrad, has come up with the £700 KX-W1510 word processor.

For the price you get a squat, silver and black box with built-in monitor, a bolted-on daisywheel printer, and a small keyboard with a pleasantly firm clicky feel.

The KX-W1510 comes with all the word processing facilities you could ever desire. Its monitor gives black text on white in excellent resolution, and its printer bangs out the words as quietly as you could hope, bearing in mind that you can't get away from it. If you don't like writing in Courier, which is the supplied wheel, additional wheels are available at £14.50 each – a wheel for the £499 PCW 9512 will set you back £4.50.

All the facilities are held in ROM which means that all you need do to get up and word processing is to switch the machine on. Once the main menu is reached the following are available to you: mail merge, spell checking (the dictionary contains 61,000 words with an additional 120 for the user dictionary), a thesaurus containing 42,000 words, an address list, and a utility called Auto Column Plus which, unsurprisingly, creates columns of text. All of these can be accessed from keyboard hot keys.

The keyboard might seem daunting even for an experienced Harrier pilot. It has more writing on it than the average subway wall. At first the thought of having to press Code keys plus shift plus letter keys in order to move from one end of a line to another is mind bending. After a few minutes use however, the keypresses become second nature and you're creating text with the speed of a beat poet after 20 cups of coffee.

The only unfortunate thing is that the Panasonic can't keep up with you – once you have started to insert codes and create columns the initial speedy feel is lost.

This is doubly so if you decide to have the spelling checker on-line while you are writing. One of the great advantages of word processing over conventional typing is the fact that you can merrily type away and then go back and spelling check – the Panasonic checks while you write and beeps when it finds a word which it doesn't like.

A bleeping machine is a matter of taste, more worrying is the fact that machine will quite happily 'save' text to disk when no disk is present in the drive. It will do this with no error messages, no bleeps, and, as soon as you switch the machine off, with no back-ups either.

All in all Panasonic has produced a reasonable word processor at an unreasonable price – with entry-level Macintoshes coming in at £999 and PCWs going for under £500, the £700 price tag for the KX-W1510 is absurd. It looks as if the PCW can rest easy. ■

Panasonic UK is on 0344 853551.

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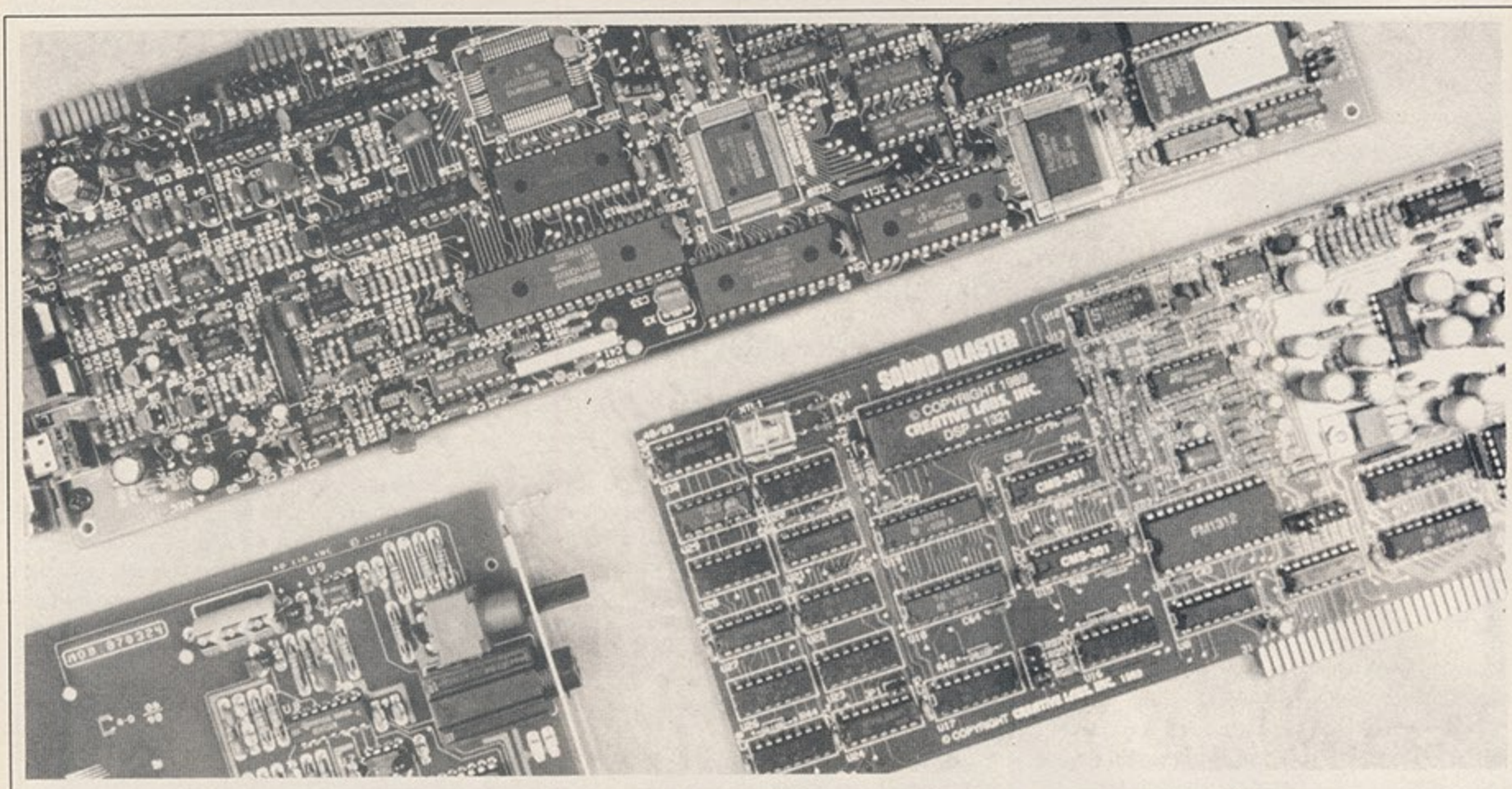


SOUNDING BOARDS

If you find your PC games are lacking a certain something – sound – then the answer is a sound card. Keith Pomfret tried three...

A VGA screen, fast 120Mb hard drive and 486 processor may cause a few raised eyebrows in the office, but when the kid next door drags in his £400 Amiga and blows your hi-fi away with stereo sampled sound you have to do something fast.

When IBM knocked the tech-spec together for the PC, sound was last on the priorities list. A tidgy little beeper announced to the world if the PC was upset, and no amount of cajoling would persuade it to do more than that.

Fortunately, the PC's expansion slots let you add any sound system you like, and there are several sound cards which can transform your squeaking clone into a musical machine. We tried out three of the top brands – the Roland LAPC1, the AdLib and the Sound Blaster. All of the systems that we tried required a PC or true clone and at least 256k of free memory.

SYNTHESISER ON A CARD

A sound card is essentially a synthesiser on a PC expansion card. Some are rudimentary, being based on similar chips to arcade machines and 8-bit micros. Others are more complex, with digitally controlled oscillators, complex high, low and band pass filters and digitally controlled amplifiers which allow them to emulate a multi-tymbral synthesiser.

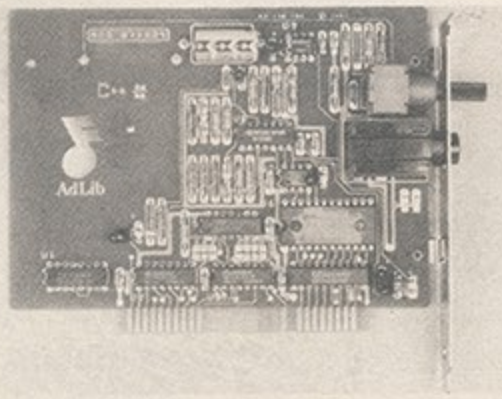
Sound cards have two main uses – to enhance the sound of a game, and to provide musical entertainment and utilities. Many current games come configured to take advantage of the more popular sound cards. Each has carved its own niche, although they do similar jobs and at times their tasks overlap. Recent Sierra games can be configured to run from all three cards. This gave a perfect way of comparing the quality and performance of the individual cards. Card-specific software also gave an indication of the capabilities of each contender.

To take advantage of the sound cards, you need to connect them to an amplifier. Although it's possible to trail wires round the room to your hi-fi, I found that it was quite possible to build a PC sound system for £50.

A cheap Tandy stereo amplifier (about £20 in the sale) and a pair of uncomplicated end of range speakers (£30) gave my PC a dedicated sound system and saved the family from the electronic cacophony that ensued.

ADLIB

Perhaps best known and the most versatile of the sound boards is the AdLib card. This simple synthesiser on a card is augmented by a wide range of third party and purpose-written software, and the AdLib card works with many things from a sequencer to a game. The card is a compact half-card size and on the business end, there's a volume control and 1/4 inch headphone jack socket to take a cable to your amplifier.



• The AdLib is the card best supported by games software.

While not exactly state of the art in terms of pure synthesis, the AdLib gains its versatility from the vast array of bolt-on goodies that can be added. The card comes with a *Jukebox* program that has some 17 tunes to choose from. It will run in MGA, CGA, and EGA modes. When it is installed, a picture of a jukebox appears on the screen; this is a fair rendition of a 50s chrome and Perspex special with a list of available tunes on the front.

The mouse or pointer picks up your choice and whether it's an aria by Bach, a march by Souza or a haunting blues number, the sound leaps out of your speakers. The sound quality is similar to a cheap polyphonic keyboard but with the multi-tymbral ability to play several instruments at once including percussion, a full 'band' sound is possible.

The strength of the AdLib system is that as well as being well supported by games publishers – currently, software support is provided by Taito, Sierra, MicroProse, Lucasfilm, Epyx, and Electronic Arts among others – there are many add-on modules that allow the user to adapt the system for everything from playing tunes to programming and utilising the full MIDI implementation to control other instruments.

A good starting point is the AdLib Personal Computer Music System. This includes the card, *Jukebox*, a visual composer (music editor) and *Composition Project*, a step-by-step guide to creating computer music.

All of the modules are available separately at prices ranging from £7 to £70. A MIDI supplement allows the visual composer to output to a MIDI interface, allowing the use of MIDI keyboards as well. An

instrument maker program allows you to build sounds for the AdLib card and these can be played back from program, keyboard or an external MIDI keyboard via a MIDI interface.

Music Championship is a competition that pits your ears against a computer quiz. A short melody is played twice. The second time something has changed. It's up to you to identify the changes. It can be set to change one or more things such as time, octave or key and as your skill improves it can be made progressively harder, changing several parameters.

Pop Tunes is a module which can be run at the same time as other programs. Once set up, other programs can be run and the tunes menu called using a hot key combination. Albums of song tunes are available to load into the *Jukebox* and a programmer's manual opens up the secrets of AdLib to anyone wanting to incorporate the card into their home grown software.

All in all AdLib is more than a sound card. There's a full development system available with many peripherals. Despite some of the sounds being a bit dated, AdLib is probably the most useful and easy to utilise PC sound card.

SOUND BLASTER

The Sound Blaster is the grown-up big brother of the Game Blaster, a card that set out to add substantial sound to PC games. As well as sound, this board offers a joystick port, and the possibility of MIDI control.

It is a three quarter sized card and has volume control, joystick as well as sound outputs. Like the AdLib, fitting is as simple as pushing it into a vacant slot and running the software but it benefits best from third party rather than the supplied software.

Sound Blaster offers full software compatibility with the AdLib card, but its sound isn't as rich and lacks the tonal quality. As an experiment, all of the Ad Lib software was tried with the Sound Blaster and although it worked, quality was lost in the transition.

There is software available for the Sound Blaster from C/MS. A pop up music program allows your PC to play music while running another program in the foreground. Various classical and popular tune albums present a tacky profile, and for the height of bad taste for the brain dead there's even an animated Christmas greetings program. "Send a Christmas floppy disk" gushes the blurb... no thanks!

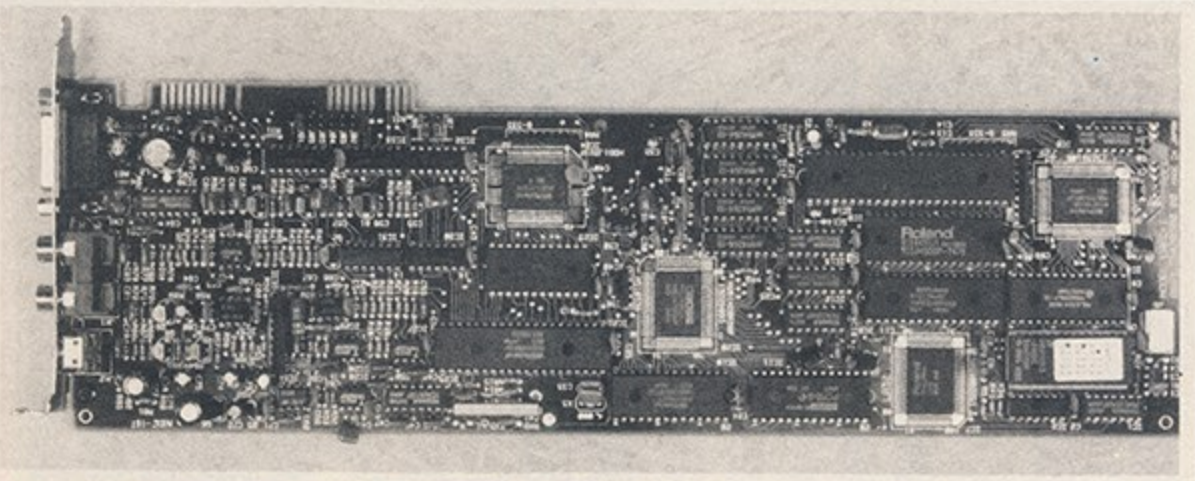
On a more serious note, the *Presenter* allows you to synchronise presentations with music, and a composing module allows you to compose on your word processor.

An auto bass chord rhythm compiler completes a series of programs that are reasonable in principle but nothing short of quirky in practice. Further modules allow instrument definition and jukebox programs to run.

The machine's MIDI implementation is by means of adding an extra interface to the joystick port, so you'd be best off buying a dedicated MIDI board if that's what you're after.

The AdLib software compatibility is the single feature that saves the Game Blaster from mediocrity – by utilising the mass of available quality software, it remains a contender

The Sound Blaster will probably suit gamesters and arcade addicts with its joystick port. Indeed, it produces sounds that wouldn't be out of place in a busy arcade. The software written specifically for the Sound Blaster is adequate for the job, but third-party software is better.



• A real synthesiser on a card, if it's sound quality you are after the Roland LAPC1 is your best choice.

ROLAND LAPC1

There are no compromises in the LAPC1. It is a complete multi-tymbral synthesiser on a PC card. All the features of the Roland MT-32 digital sound module are included and the sound is transmitted in stereo to the amplifier. For tonal quality and purity the Roland cannot be beaten, but the full-size card requires a full-length slot not found in every PC.

The MT-32 architecture of the LAPC1 means that as well as being able to provide a realistic rendition of many instruments, a spatial effect is possible. A full percussion section demonstrates this with different drums, cymbals and percussive effects being placed not just left and right but in any position between. Thus the bass drum is in the middle but a roll around the tom-toms and snare drum takes the sound gradually from left to right as if you were stood in front of the kit.

This coupled with the ability to play parts from several different voices simultaneously means that say three notes could be assigned to a piano, one to a bass guitar, a couple to the strings and so on.

A full band sound with true spatial stereo means that the LAPC1 is the best sounding board, but then comes the drawback. While Sierra and several other software houses configure their current games to take advantage of it, it can only be truly appreciated as part of a MIDI studio.

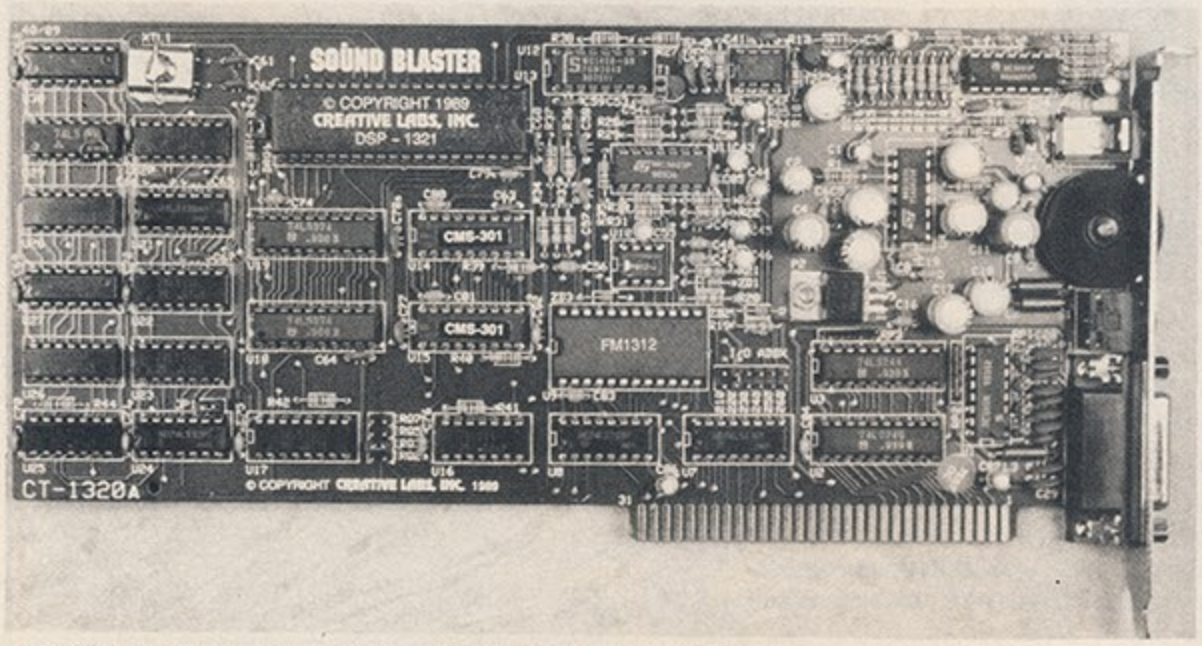
It uses the same MIDI implementation as the MT-32 that it is base on and a PC running MIDI software can show it off to the best benefit. An optional MIDI interface makes it the first link in the MIDI chain and opens up the possibilities of the PC as the centre of a music studio as well as providing sound for games.

WHICH ONE?

A game player with no interest in anything other than enhancing the sound to Amiga levels might be satisfied with the Sound Blaster. As well as its ability as a sound enhancement unit and joystick card, it can utilise the software and enhancements of the AdLib card although it doesn't do this with the either elegance or quality of the real thing.

The buyer wanting to take music by the horns and build a true MIDI studio that offers enhanced game sound, a true multi-tymbral stereo polyphonic synthesiser and the possibility of building up to a system worthy of a professional musician should buy the LAPC1. It's an industry-standard synthesiser on a card, supported by software developers and MIDI systems, and with a true MIDI interface available for £80 it is the semi-pro musician's answer to the sound card question.

But for those of us who lie between the musician and the gamester, the answer has to be the affordable and expandable AdLib card. The features and software availability of the AdLib make it a useful acquisition for someone wanting to increase the PC's sound potential and have a system that will expand in any direction they wish to take. ■



• The Sound Blaster emulates tha AdLib and has a joystick port, but it's expensive.

HOW THEY COMPARE

	Sound Quality	Ease of use	Value
LAPC1	★★★★★	★★★	★★★

Cost: £379 from Roland
Contact: 081-568 1247

Sound Blaster	★★	★★	★

Cost: £207 from DLL
Contact: 0983 864674

Ad Lib	★★★★	★★★★	★★★★★

Cost: £105 from Compusoft
Contact: 0734 351789

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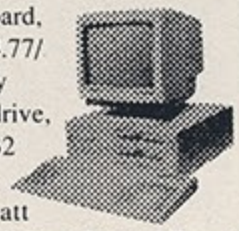

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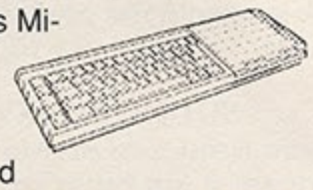

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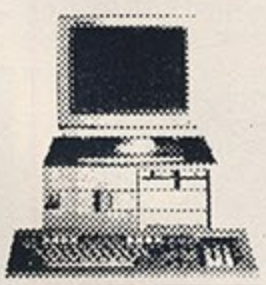

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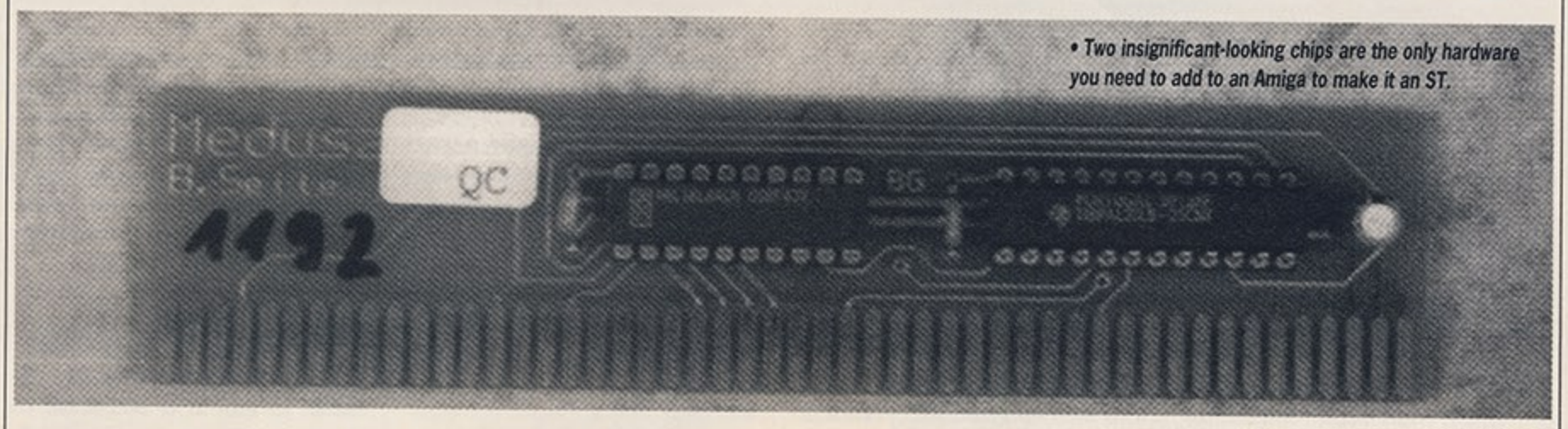

• *Two insignificant-looking chips are the only hardware you need to add to an Amiga to make it an ST.*

We've seen the PC and Mac emulators which transform the Amiga into a different machine, but Jason Holborn has found a new widget to beat them all – an Atari ST emulator!

Since its announcement earlier this year, Medusa's Atari ST Emulator has been greeted with something of a mixed response among Amiga owners; some have welcomed it with open arms, while others just ask 'What's the point?' After all, surely there's not a great deal that you can do with an ST that couldn't be done equally well on an Amiga?

For anyone who has used both machines, the answer is simple – music, DTP and that lovely high resolution mode. The Amiga can arguably match the Atari ST where DTP software is concerned, but when you start talking MIDI, no other machine even comes close. Even with the recent arrival of quality music software for the Amiga (such as *Pro-24* – reviewed on page 46), Atari music software still stands head and shoulders above anything the Amiga has to offer.

But then again, the Atari isn't perfect either – if a machine provided the power of the Atari's music software with the versatility that the Amiga so obviously offers for video work, then that machine would almost certainly sell like hot cakes. Previously, this would have entailed buying both machines, but with the release of Medusa's ST Emulator, the Amiga could suddenly become hot property among musicians, perhaps even stealing sales right from under Atari's nose!

Medusa's emulator is a software and hardware package that can be used on an Amiga 500 or 2000 with a megabyte or more of memory. What you get for your money is a tiny PCB that fits to the Amiga, complete with two disks containing the emulation software and and an ST format disk containing several utilities.

TINY BOARD

The first thing you'll notice about the emulator hardware is its size – or lack of it. The card itself is minute, consisting of little more than two small chips, it would be all too easy to lose the emulator under a pile of disks. According to Medusa, the card itself handles nothing more than I/O – all the clever stuff is handled more than adequately by the Amiga hardware and some clever emulation software.

Fitting the card is a simple process. The 2000 version fits internally in one of the 2000's 100-pin slots. For 500 owners, fitting is still less involved – just plug it in to the expansion slot and that's it.

ADVANTAGES

- **Fits internally on the 2000.**
- **Use Amiga hard and floppy drives as ST drives.**
- **Highly compatible.**
- **Uses all Amiga memory.**

DRAWBACKS

- **A second-hand ST can be bought for the same price!**
- **Requires access to an ST to download TOS.**
- **Does not multi-task.**
- **Will not run most games.**

Like all emulators, the Medusa card isn't a simple plug in and go affair. Before you can start enjoying the pleasures of Uncle Jack's baby, you'll have to get your hands on a real ST. On the Atari format disk that comes with the emulator package there's a nifty utility called 'GETTOS' which dumps the Atari ROM to disk as a binary file (which itself amounts to almost 200K). I'm not sure how legal this approach is, but Medusa doesn't seem to have run into problems with Atari (yet), so we'll just have to take its word for it. In theory, this should allow the emulator to emulate anything from the very first ST machines (which came with TOS on disk) to Stacys and STEs boasting Rainbow TOS version 1.6. Even though the Amiga hardware could handle all the extra features of the STE, the emulator unfortunately doesn't support them.

BETTER THAN THE ATARI

Due to restrictions in the ST's memory management unit, it's only possible for a real ST to access a total of 4 megabytes (Atari only allowed a 22-bit address bus – the 68000 can actually handle up to 16Mb using a 24-bit bus). Surprisingly, Medusa has improved upon the real McCoy allowing the emulator to address the entire Amiga memory map – a total of nine megabytes!

Unlike a real Atari, all three of the Atari's screen modes can be displayed on a standard Amiga colour monitor. Both medium and low resolution are as good, if not better, than a real Atari, but the mono mode does tend to suffer somewhat from the old interlace hop. Obviously, if you're lucky enough to have a 2000 fitted with Microway's Flicker Fixer card, this screen mode suddenly becomes considerably more usable. Surprisingly, the emulator doesn't support the new Enhanced Chip Set, which is a great shame and definitely needs to be rectified.

According to Medusa, the emulator runs at about 90-95 per cent of the speed of a real Atari – which isn't bad at all when you consider that the Amiga itself runs 10 per cent slower than an ST! Once the system is fired up, the emulator will happily read and write Atari format disks using the standard Amiga drives. For hard disk users, you can even set up an Atari format partition, allowing you easy access to a vast range of Atari applications software. The one big disappointment is the lack of multi-tasking support – it would have been nice if you could have run both Atari software and Amiga software concurrently (like the Amiga bridgeboard and Vortex's ATonce card).

WITHOUT A HITCH

The most important consideration of any emulator is obviously how well it emulates. Surprisingly, the Medusa card seems to run the vast majority of Atari applications software without a hitch – packages such as *Calamus, Protext* and GFA BASIC ran without problems. Due to disk protection schemes and blatant 'metal bashing', the vast majority of Atari games software almost certainly won't work – so don't buy the Medusa card expecting to be able to play your friend's collection of Atari games!

The Medusa card certainly achieves what it sets out to do. It is easy to install and manages to run a very high percentage of Atari software at an impressive speed. The only real problem with it is the price – for £180, you could easily pick up a second hand Atari if you ploughed through the classified sections of magazines such as *Express*. However, if you need to use both an Amiga and Atari, then the Medusa card provides a simple (and space saving) solution. ■

The ST Emulator costs £180 and is manufactured by Medusa on 010 49 2330 801132.

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 Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

HELP! Amiga questions

I have owned a Commodore Amiga 500 for only four months and I am quite pleased with it. However, I do have a few queries.

1) When using *Kindwords* V2.0, the Amiga sometimes crashes. This occurs especially when I use the Find option on Find and Replace. Also, sometimes when I use the Tab key, the screen flickers. Could the problems be due to a fault in the computer itself or the software I am using?

2) My second problem concerns programs using just text (not *Kindwords* or any other text-editor), the text runs into each other and is unreadable. Again, could this be due to a fault in the computer?

3) I am using the Amiga on my television/monitor through its composite plug using the built-in composite port on the Amiga. Now and then, a pop goes through the speaker. Yet again could you tell me if it is the computer at fault?

I hope you will be able to help me with any of my questions as it may help me in making my Amiga work the way I want it to.

Philip Chung, Cheltenham, Glos

I tried with the office copy of *Kindwords* and was unable to duplicate the problems that you have. Go through the following checklist removing anything that appears on the list. If you still have a snap, crackling and popping Amiga go and politely ask the dealer that you bought the machine from to give it a good dose of looking at.

1. Have you a small brother (or father) running a train set on the same ring main.

2. Is there something else nearby that could contribute to dirty spiky electricity such as: a fridge, freezer, air conditioning, lift, escalator, 5,000-Watt argon laser, spin drier, central heating pump, Van Der Graaf generator or other source of static electricity, trolleybus depot next door, electricity pylon nearby or nuclear power station in the basement

3. Are all your plugs and connections firm? A plug on the floor near a foot can cause the problems that you describe.

HELP! PC Gamester

I have recently bought a 386 PC and I am now tired of just playing games. I have suffered a creative urge and now wish to start writing games.

Are there any high level programming languages, or utilities, that will assist me producing games/adventures? Such as STOS/AMOS and *STAC*? Even books would help.

A K Tanablan, Gravesend

No software house would admit to an integrated games playing environment for the PC along the lines of AMOS or STOS. The closest the PC seems to come to being a games creation engine is with adventure creation programs available in the public domain

If giving the troll the eggs, murdering Gollum and shafting the Balrogs isn't your cup of hemlock, I'm afraid the only real answer is good old assembly language. This black art requires a lot of effort, at least seven gallons of midnight oil and has all the user friendliness of a BR Travel Centre. High-level languages such as BASIC, C, and Pascal may allow you to put together some fairly clever little progettes but for that session exterminating a life-form, flying a jet sim or doing anything that requires fifth gear programming, nothing short of assembler will do..

THANKS! BTM's back

I'm here again...who? Well, it's that guy called 'BTM', who wrote a while back asking for some help, and a nice man called 'Mark Meany' replied. You said to write with my address, and you would forward a disk to me – thanks a lot. I've already written to Mark, and despite using Libraries to code anything, he seems like he might be a good guy.

Thanks for publishing my last letter and humouring us Amiga coders!

OK, here's my address:

BTM, 18 Palm Grove, Whitby, Ellesmere Port L66 2PU.

You have my permission to forward any letters asking for coding help to me as well, as I'm always glad to help anyone out.

BTM (Bob the Miner), Ellesmere Port

Even as you read this, you should have received the disk and be busy using the code therein. Good luck with your bits, bytes nibbles and things that go C9 in the night. When you said 'Bob the Miner' we weren't sure whether it was a name or an instruction and our editorial assistant is currently touring collieries with a barrel to see if it's feasible. Now can we have a bottle of that Ellesmere Port you mentioned for the *Express* regimental dinner?

M'AIDER! Prog please

Would any of your staff know of a disk suitable for Atari ST or BBC B that will give French to English word equivalents?

P. Randall-Nason, Battle, East Sussex

It sounds as if you want a dictionary/database with search facilities that will translate English to French. We don't know of one but I'm sure if there is one out there someone will let us know about it. The alternative is to get a French/English dictionary, a copy of *Protext* and put on your best typing fingers.

The search facilities in a powerful word processor like *Protext* (or any other of that ilk) will make the producing of the program that you want as simple as typing the data in. So there you have it. A simple but long and boring task, unless someone's already done it ...

TIP! For the brave

Reference J. Reid's query about connecting a video monitor to a Spectrum. (issue 85).

I have been doing this for many years and providing a person is confident to open up their machine and use a soldering iron composite video (but not RGB) can be obtained very simply.

The easiest case is to take video via a 470µF capacitor from the modulator video input.

The second and better way is to add a simple emitter follower which uses less than six components. Plenty room in a Spectrum Plus, but not a lot of room in a rubber key one for it. This is again connected to the modulator video and +5V inputs.

M. Perry, Kidderminster

For those enthusiasts like yourself with a

HELP! If you have a complaint about software

There is a bug with the third player on *Kick Off* 2. However, Anco say this will not be in the expanded version. I had bought an adapter before I found this out. Should I pay the £3.50 to get an upgrade (I range Anco and they said it would be £3.50) or will the expanded version be so slow there will be no playability? Or will the bug be rectified and a new unexpanded version be released? Please help.

Martin Calladine, Goring-on-Thames

The Sale of Goods Act dictates that a product must be fit for the purpose that it was intended for. If there is a genuine bug in the program and it doesn't do something that you were led to believe it would by the advertising or by contact with the company who published it you have cause for complaint.

If that is the case, you should be refunded in full or offered a replacement that does what it should.

Recent conversations with publisher Anco have confirmed that certain features were deliberately excluded from the game and that the version including them would run slower and lose gameplay at the expense of a couple of unnecessary (its words) extras.

You are not alone in feeling hard done by – turn to the letters pages to find a fellow purchaser of *Kick Off* who is none too hapy.

steady hand on a soldering iron and a good grasp of what does what, the project that you describe is a simple one. However the majority of computer owners don't have the knowledge and abilities that you describe and have to be led gently to the world of computer welding.

May I humbly suggest that you follow up your excellent ideas with diagrams and step by step instructions in order that the great unwashed may be initiated into the temple of the wirehead.

HELP! Pampers

Help! I haven't been so confused since I made the change from nappies to trainer pants. I own a CBM 64 and I would like to purchase a printer to accompany it. Nothing confusing about that I hear you say. I want it for word processing (letters, reports etc). I would also prefer a 24-pin one for better quality. To help me in my quest for literary success I rang several dealers for help and advice. However, different dealers have said:

1. I can only use a Star LC-10 colour printer.

2. Any 24-pin Epson-compatible printer is OK to use.

3. 24-pin printers cannot be used with a CBM 64.

4. A 24-pin printer can be used with an appropriate interface.

I'm sure there were at least 1097 other solutions but my 1K memory couldn't cope with them. Please tell me:

1. Can I use a 24-pin printer?

2. If so, which one?

3. Do I need an interface or will a cable suffice?

Please help me, I can't face nappies again.

Trevor Hawkings, Thamesmead, London

1 Yes
2 Any
3 An interface available from Datel will do the trick.

WARNING! No replies

Recently I wrote to you about a small problem concerning an IBM PC and a MT printer, connecting the two etc. Unfortunately in my excitement in conversing with someone knowledgeable in this field I forgot to include a SAE for the return of the said information.

I hope you will still be able to help me in this matter.

S J Starke, Hertford

Just for the record (again), we don't reply personally to Tech Tips letters (or any other correspondence) except by special dispensation from the publisher. We get over 30 million letters a week and there are only 168 hours in that week. For those disgruntled people wondering where their stamped envelopes go, I'm planning on saving them until Christmas and firing them off to a worthy cause.

If your letter hasn't been answered in the column, it's a reflection on Tech Tips' popularity, not on the quality of the letter. Keep on trying!

TIP! The final cut

I was reading your last issue (91) with great interest, it had a letter sent in by a Mr Kennet. In the letter, Mr Kennet unfairly criticised the Atari (400/800/XL/E) -bit range.

(500 words sliced out)

"He has no right to slag off Atari 8-bits because he has no foundations to base his criticism on, and anyway ...

(Get on with it, man! Another 500 words removed)

This letter/essay was typed and printed/edited on Atari 8 bit equipment that is an Atari 130XE, Atari 1027 LQ printer and Atari BASIC 1978/9

Now here's the program I wrote the letter with:

```
10 DIM NAME$(32000): INPUT NAME$:
LPRINT NAME$:POKE 82,0
999 RUN
```

Please do ask me to explain how the program works, I only wrote it, so, it works OK.

Mr Carmel Andrews, London

1,300 words reduced to under 200 without losing any of the meat. Long letters are boring. Short sharp concise letters are epic. Thanks for the mini prog. I'm sure some of our 16/32-bit users will be stunned by its simplicity.

TIP! Engine driver

Here is a tip for all you 'hot' PC Engine owners. When buying a PC Engine, make sure it comes with a TV booster which plugs into the back of the machine (PAL version). If not, the Engine is internally modified to accept the UK's PAL format, and that is the cause of overheating inside. My PC Engine actually came with a TV booster, and will not work without it. If you would like a TV booster, then try writing to:

Micromedia Sales and Marketing Ltd
Whistleberry Industrial Estate
Blantyre
Glasgow G72 OTH

or telephone on 0698 822055, and they may be able to order one for you. The 'hot' PC Engine should not be the fault of the adapter as I have not got a genuine adapter. I hope this will be of use to a few people.

P Clarbull, Exmouth

Hot stuff for the engine driver. If you decide to add anything unofficial to any computer, you risk warranty problems and/or safety problems. Be sure to check with the manufacturer and supplier that the modification you want to make is kosher.

HELP! Chip shop

I read with interest Brian H Neary's letter concerning upgrading his Atari ST to 1 megabyte (*Express* 92).

I have an Amiga A500 with the new Agnus chip, this means that I can have 1 meg chip RAM internally. There are spaces on the motherboard for the RAM, and I am competent to fit them. My problem is that I don't know what resistors should be fitted. Does anybody out there know what values should be used? I would imagine that the most likely people to know would be Granada or FMG engineers.

Oh, and well done. Tech Tips is the most interesting few pages in the whole magazine. Thank you for your time.

M Flanz, Peterborough

We hadn't tackled this project before so we approached Pat MacDonald, Tech Editor of sister magazine, *Amiga Format*. He said: "I wouldn't advise someone to attempt soldering on the motherboard, but if they are happy to risk their computer to the vagaries of home soldering, the parts they need are 10nF capacitors."

So there it is. Don't try it unless you're sure you can do it or you could be saving up for another Amiga.

HELP! Turbo Amiga?

I am not new to computing, having worked on Sun and countless PCs, but I am relatively new to the Amiga. ("Get to the point," you're saying). Well ages and ages ago, I heard a rumour that it is possible to change the Amiga from 68000 to 68010 by just simply removing the old and putting in the new. Is this true or has someone being telling huge porkies?

If this is true, what advantages does the 68010 have over 68000? I've heard loads about 68000, 68020 and 68030 but nothing about 68010, that's why I'm asking.

S Pugh, Leeds

The instruction set of the 68010 isn't 100 per cent compatible with the 68000, so an Amiga with a 68010 in will run most but not all software.

In terms of speed increase a figure of around ten per cent speed increase is a reasonable average to expect from a 68010-fitted Amiga. The clever chaps reckon that the sensible thing to do is save up more cash and fit a much more powerful 68020 or 68030 board.

TIP! Spectrum secrets

In response to your secret key functions for 128K Speccys in issue 91, here are some more. These originally appeared in October '86. Remember Simon Goodwin? These functions were originally to be used by the keypad from Sinclair as I recall, these are easier to use as they don't use the graphics mode.

EDITING FUNCTIONS	KEYS
Beginning of next word	Extend symbol shift J
Beginning of previous word	Extend I
Up ten lines	Extend P
Down ten lines	Symbol shift I
Start of line	Extend symbol shift Z
End of line	Extend M
First line	Extend N
Last line	Extend T
Swap between screen areas	Extend symbol shift 8
Delete word to the left	Extend E
Delete word to the right	Extend W
Delete to start of line	Extend K
Delete to end of line	Extend J

Colin Nevin, Galurag, Ireland

We do indeed remember Simon Goodwin, guru of all things Spectrum. Simon still remains a willing source of help, knowledge and anecdotes about that strange little beast that burst forth from its rubber mat, only to be clothed in Alan Sugar's plastic.

TIP! AMOS helplines

Here are a couple of tips for AMOS users:

1 Sometimes, LIMIT MOUSE may not work as it should, if the command is issued straight after opening a screen , for example:

```
SCREEN OPEN 0, 320,200,16,LOWRES
LIMIT MOUSE
```

The reason is that, like many AMOS commands, SCREEN OPEN is effected using interrupts, leaving the program to continue at leisure. The screen is not fully opened by the time LIMIT MOUSE looks for the screen boundaries, and thus it gets the wrong info, causing the mouse to 'stop' at strange places.

The solution is to put a 'WAIT VBL' command between opening the screen and the mouse command. WAIT VBL can help in other similar 'multi-tasking' type problems.

2 You can't send CHR$(0) to the printer using LPRINT. However, it is possible to send it by opening a port to the parallel device (eg. `OPEN PORT 1, ("PAR:)` `PRINT#1,CHR$(0)`)and this enables you to send any codes (for graphics etc) to the parallel printer. LPRINT uses the PRT: device, so you cannot use PRINT#1 and LPRINT in the same program! Hope this is of some help.

Mr J Tullin, Tyne and Wear

EXPRESS MAiL

Write and tell us what you think about anything under the Sun! Reach us at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW.* Sorry, no personal replies, even with an SAE, as we're too busy writing the magazine. Replies this week by Keith Pomfret.

Who is this Kennet?

In reply to Harvey Kennet's letter in the August 4 copy of *New Computer Express*, isn't it about time he and many other 16-bit users realised that their machines have had their day, the birth of 32-bits has already happened.

So why don't you throw away your silly out-of-date toy and get a proper computer. My Archimedes A3000 will outperform your miserly little ST by about 10 to one.

The reason you don't is probably the same reason most 8-bit owners don't upgrade, simply money.

Most users built up considerable software bases which are extremely expensive to replace, especially as software for 'more powerful' computers also costs more. I would bet money that you are the kind of person who likes to sit here watching demos just to convince yourself that you made a good choice when you bought your computer.

Mr D Hill, Preston

Still angry

I must disagree with Mr Kennet (*Express* 91). 8-bit machines can be useful, despite being old fashioned.

Recently at a flea market I bought four Oric Atmos computers for £10. One was working with a manual and the other three were sold as spares. The three non-working machines appear just to require some missing chips to be replaced. If I can get the non-working ones repaired, one will eventually be used to control a scanner radio and the second will be used with a radio teletype machine. The third machine will be left at a holiday caravan to keep two young children amused with any games software that I can pick up at flea markets and car boot sales.

The fourth machine will be used by me to write programs for the other machines. Lack of software is no problem as I have been writing programs in BASIC and 6502 machine code for several years.

Please notice, Mr Kennet that in the proposed uses of the 8-bit machines have not attempted to compete with 16-bit systems. They have tried to supply a solution as cheaply as possible.

There are thousands of people who learned to program on 8-bit machines in the early Eighties and there are many second-hand 8-bit systems coming on to the market at silly prices. If a cheap 8-bit machine is capable of doing the job, why use an expensive 16-bit system?

Mr R W Crisp, Leeds

A fine whine

I am sick of seeing letters from C64 owners whining on about how their column is too small. I would be grateful if there was a column for the Atari XE at all! Will there be another XE column in the future? ➤

Why getting a smart card might not be so smart after all...

I read your articles and editorial on smart cards in your magazine with interest (11 August). However, there is one aspect of smart cards that the pieces overlooked.

Cash is public property, whether it is brass Maggies or new fivers with Frankie Howerd on the back. The Bank of England, the manufacturer of most (hello Scotland) of our cash is a national institution. We own the cash in our pockets, but in the "cashless society" of science fiction, who will own the chip cards? More importantly, who will own the information on the chip card?

A credit card might have your name on it, but you are reliant on a bank for this icon of the Eighties. And be sure that the bank doesn't provide this service for free, it does it for the percentage it takes from you and the shopkeeper. So it will be with the chip card. The banks are very interested in chip cards – it would be a good little earner for them.

But what about the person without a bank account, who can't afford to pay the tenner or so that a smart card costs? ("Can you spare a few credits for a cup of tea, mister?") In the cashless society we will have to pay for the privilege of using money.

Then there is the subject of privacy. A chip card often contains your name, signature, date of birth, maybe a digitised photograph, and even medical information. One use the card has already been put to, in a small chain of stores in the States, is to record each and very purchase you make. Direct marketing companies would just love to get that information into their bulging databases. Imagine how much information they could work out from what you've bought – consider that next time you're at the checkout of W H Smith with a copy of *Viz*.

• Smart cards by the dozen; but should you end up paying for the right to use cash?

Call me old-fashioned, but the idea of all my money being controlled by private companies is deeply disturbing. They are not even controlled by democracy, whatever that is.

So gasp with amazement at what those clever Japanese have done with the microchip now (well, the French actually), but try to think about the human consequences of the technology your very decent magazine writes about.

Mark Sanders, Brighton

My main worry is that the so called 'smart' cards may turn out to be dumb enough to make mistakes. It isn't so long since a bank refused point blank to believe that a chap had been unable to make withdrawal using his hole-in-the-wall card and debited his account despite proof that he had been in Armenia at the time.

If banks are so trusting of their wall cards, imagine their stonewall approach to the suggestion that a true smart card could have gone loopy.

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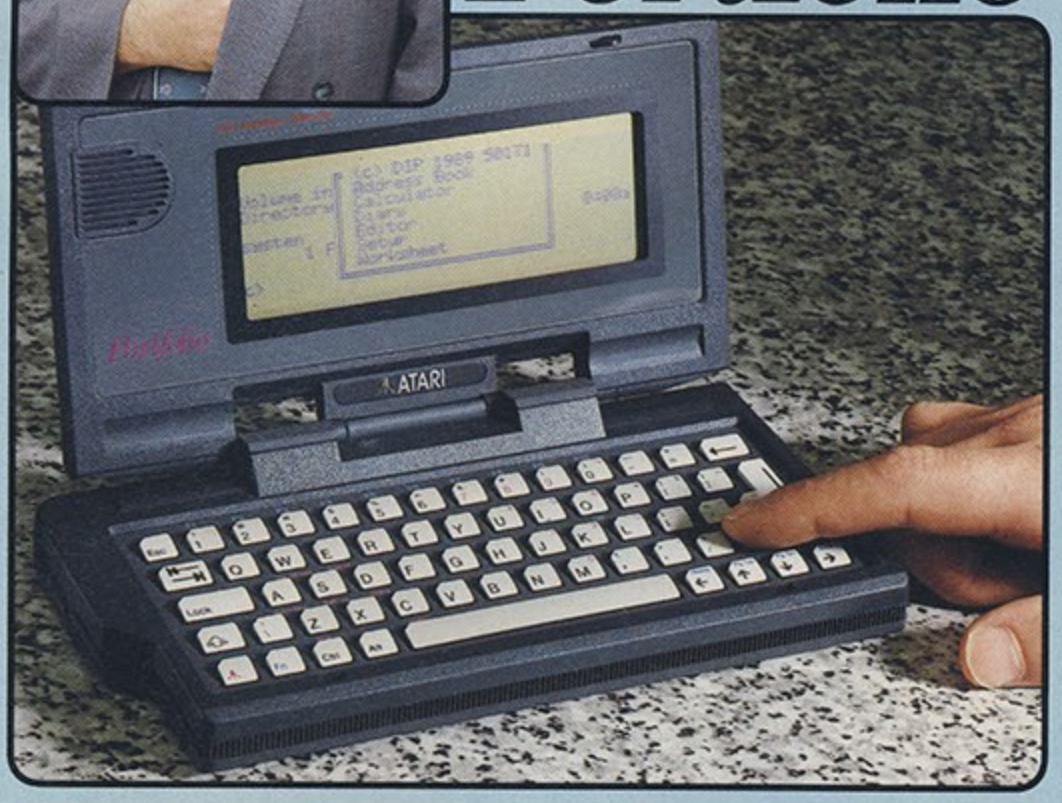

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- ★ ***Keyboard:*** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ ***Character Set:*** Extended IBM ASCII (255 characters).
- ★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ ***Display:*** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
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TEXT PROCESSOR

The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

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For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.

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Your answer decides whether I continue to buy this magazine.

I disagree with Mr Kennet (*Express* 91) – his attitude sucks. There is life in the 8-bits yet – Amstrad obviously thinks so!) The Atari XE is an excellent machine for the first time buyer who does not want to spend too much. The XE is a delight to program, and in my opinion, is far superior to the C64 'calculator'.
Brian John, Stock-on-Trent

No one's column is too small; it isn't the size but what you do with it. I'd rather have a concise column full of interesting up-to-the-minute news than some long whining whinging thing that takes a yard to describe an inch.

Unfortunately, we don't expect to see the Atari XE column returning to the pages of *Express;* there just aren't enough XEers out there to make it commercially worthwhile. Sorry, but the bank manager wins again.

Everyone and their pet dog seems to disagree with Harvey Kennet and if the sackloads of hate mail arriving at *Express* are anything to go by, we'll have to book him a suite at the Salman Rushdie retirement home for recluses and offensive sods.

Action stations

Congratulations on not calling the new Commodore magazine "Commodore Action". What an insult. I wonder if it will be as good as *AA*? Or will it be as boring as *Amstrad Monthly Wibble*. Or can there be someone like Emma Broadley to liven things up! She was good for a good argument in *AA*.
Mr S Hector, Barnstaple

And that's not all she was good for. She could mend a water pump, pull a pint of best and at her last postcard (from Africa) she was hang-gliding from the nuclear plant at Coburg as a protest.

The good news is that Emma's younger sister, Anne-Marie looks like taking up the family quill, and in a couple of years could be writing full time

End game

Being a reader of *Express* since the second issue (the first issue sold out before I could get a copy!) I think it's about time someone wrote to put a stop to the "my machine's better than yours" debate.

Specifications do not make a good machine. If that were the case, we may all be using Lynx 96K machines. (Sorry, showing my age!)

I personally have an MSX, Atari 8-bit and ST computers, and I'm happy with them and I hope that everybody else is happy with their machines. Now, perhaps we can see some other subjects on the Express Mail page.
Mr R Berry, Nottingham

Specifications do make a good machine, but being good isn't necessarily the same as being popular. The Archimedes for example can put any other home micro to shame and in its A3000 manifestation can eat Amigas for breakfast.

Any Amiga owner who disagrees is blinkered. However, the Amiga is a much more popular machine and currently stomps all over the Archie in terms of peripherals and software, although this looks set to change.

Kick Off rumpus

I am writing with reference to the letter by Richard Green in *Express* 92 about a game that did not have all the features mentioned in adverts and on the packaging. Surely this is a clear case of a breach of the Trade Descriptions Act. So maybe, as Richard has had no luck with either the retailer or the publisher, he should contact the Trading Standards Officer.
Mr G Murray, Southampton

So he should, and we look forward to hearing from anyone who has resolved their differences by bringing in the big guns.

It certainly appears that a number of our readers are extremely dischuffed with Anco over its *Kick Off* advertising and packaging.

I expect this is one that will run and run. ■

NEXT WEEK

HACKING: WILL THEY GET AWAY WITH IT?
A special investigation including interviews with police and hackers

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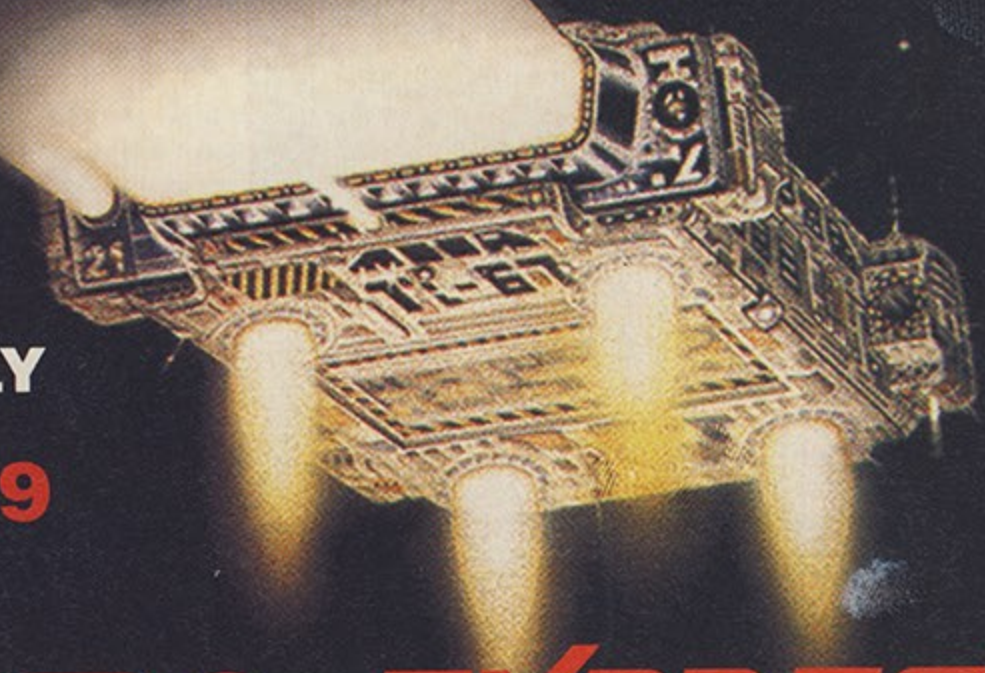

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