Issue 108 • 1 December 1990 • 70p

WIN Something Completely Different! PAGE 82

NEW COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA
A3000 price cut, A2000 upgrade and the first internal hard disk for the A500

ATARI
The 386 PC emulator for your ST is on its way

PC
The 386 SX laptop for less than £2000... **Plus**...Z88 link pack launched

MACINTOSH
The smartest scanner yet? **Plus**... Compatibility problems with new machines

THE FASTEST COMPUTER EVER MADE

The machine that makes the Cray obsolete – all its unbelievable specifications on page 7

HAND-HELDS HEAD-TO-HEAD

Sega's GameGear and NEC's PC Engine

Need a cheap PC? NINE emulators evaluated

PLUS 52 PAGES OF BARGAINS

HARD DISK DRIVES

What are they and do you really need one for your computer?

9 770957 064011 48

frontend

edited by Colin Campbell

LYNX DIPS

Atari has slashed the price of its handheld Lynx games machine by £50 to £130, slap bang in the middle of the year's prime selling season.

The move is being seen as proof that the firm overpriced its remarkable colour machine at launch, and that buyers are not prepared to pay £180 for a handheld games machine – no matter how good it may be.

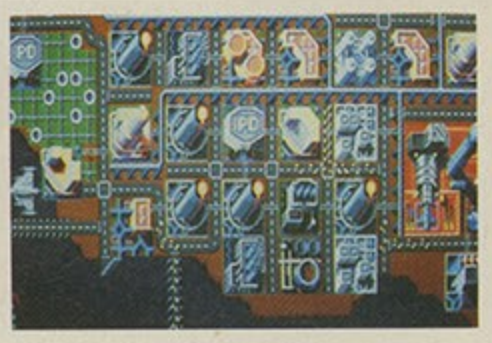
Atari is spending millions of pounds advertising the stereo pocket arcade system on television, and youngsters are clearly hooked by the machine's capabilities. But, in the current economic blizzard, parents are finding it difficult to justify the asking price – especially as a mono handheld from Nintendo costs less than half the price.

Atari privately feels it is promoting its superior product to the advantage of Nintendo.

The timing of the price cut is remarkable, even for unpredictable Atari. Pricing policy for the Christmas period is usually set in the summer, and deviancy is a rarity.

Clearly, youngsters who own Atari Lynx machines will find themselves popular in the playgrounds in the new term. Atari is hoping that its drastic manoeuvre will convince parents that the Lynx is a realistic Christmas treat. ■

Game hits town



Remember the incredibly addictive metropolis construction game *Sim City*? Now publisher Infogrammes is plotting to hook yet more people with a sequel, due to be launched late next year.

According to the firm's marketing manager Dominique Cor, *Sim City II* will be "more precise, powerful and colourful" than the original. The "completely new" title is being built by French development team Maxis.

Sim City allows you to build a city from scratch and organise leisure and transport facilities. The challenge, is to make the city attractive enough for inhabitants and profitable enough for business interests. ■

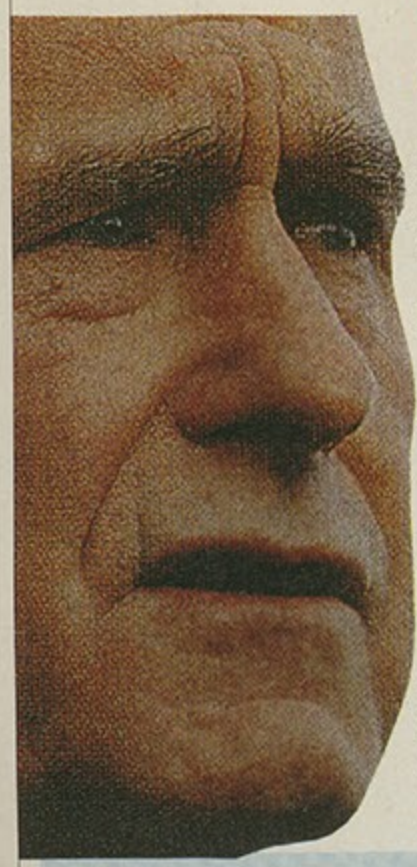
Sky high simulation

Would-be pilots with a PC can take to the simulated skies and learn flying skills on their computer, thanks to a new aircraft simulation package.

Bristol-based RC Simulation is preparing to launch a realistic flight program, with cockpit-style foot pedals and joystick, by mid-January.

To design the program the company drafted in an RAF pilot with 22 years of flying experience and it says the software could cut down flying time for learner pilots and give armchair users a taste of life at the flight control panel.

"It's more than just a game," said Bob Sidwick of RC Simulations. "The closest thing to it is simulation programs used by real pilots, but those have little entertainment value." ■



Bush chips in

Intel has received a National Medal of Technology from US president George Bush, for its work in the development of large scale integrated memories and microprocessors.

The Santa Clara based developer of the 386 and 486 chips was among eleven companies to receive the coveted awards.

Another computer related winner was Jack St Clair Kilby of Dallas, who made "significant improvements to the silicon thermal print head".

A Bush aide pontificated: "I join with all Americans in congratulating these people for their remarkable achievements which have so profoundly changed our world." ■

Computer cuts road deaths

While most areas of the country are continuing to experience an upturn in fatal traffic accidents, Suffolk has managed to reverse the trend.

The Suffolk Constabulary has enlisted a sophisticated computer analysis system which has helped reduce the road death rate by 24 per cent.

Suffolk police feed information of past accidents into the mainframe including day, place and time of crashes as well as the number of police in the area. The computer has picked out areas and crucial hours of the day when more patrols are needed.

This, in turn, has triggered a reduction in the incidence of drunk drivers, boy racers and other dangerous drivers. □

DVI as easy as ABC

This family of funky tunesters, once famous for mad afro hairstyles and happy 70s fun, have swapped groovy tunes such as ABC for emerging computer technology like DVI.

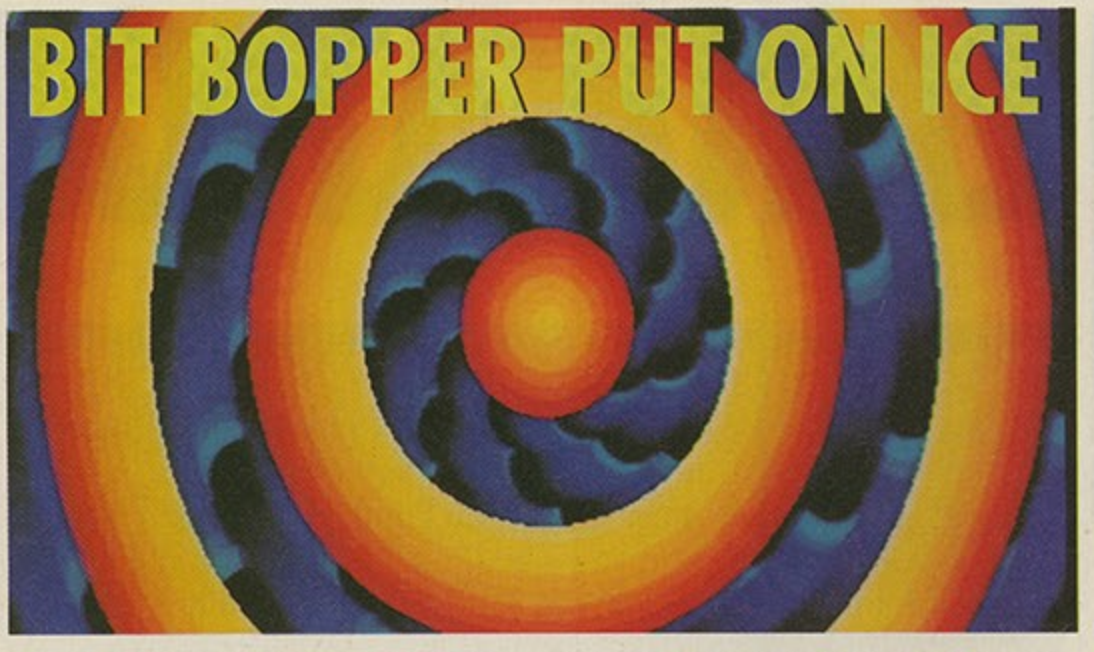
Through its high-tech company Young Minds, the Jackson family has announced a joint agreement with two Californian firms heavily involved in Digital Video Integration and interactive multimedia. Young Minds, UVC and MTT Vizions are embarking on a project to create Virtual Reality games and interactive music videos compatible with the Nintendo Power Glove.

Representatives of the famous family were at the recent Comdex Show in Las Vegas to announce the joint project, and to make enthusiastic noises about emerging technologies.

Randy, who is vice president of Young Minds, was there along with Jackie, Tito, mum and dad. He hasn't lost the knack for coming out with fab lines – he said: "We're talking about putting full video and sound on a CD, along with text and graphics. Multimedia is no longer a dream, it's a vision. A dream is a fantasy, a vision comes true." Tra-la-la...

The idea is to create a technology which will allow people to "walk into a music video" using the Power Glove and ubiquitous VR goggles. The scheme is at an early stage, although the triumverate says it has developed software and a digital chip which will make these capabilities affordable for the home. ■

BIT BOPPER PUT ON ICE



Home computer owners eagerly awaiting a 16-bit version of the *Bit Bopper* graphics sound-to-light system will be disappointed to learn that the project has been mothballed.

Tecnation, which developed the amazing top-end system, says it has neither the time nor the money to concentrate on a home computer version. The company says it has more crucial plans which require attention.

Bit Bopper is a £40,000 system which uses audio information to drive visual effects. In this way music is transferred into graphical or even real video images. It has already been used to great effect by bands such as Public Enemy, Soul II Soul and Mantronix in live events.

Tecnation had hoped to offer home users a cut-down version for about £50, but it now says that such a program would cost too much in development and marketing costs.

Boss Alex Blok is working on a mysterious new hardware system which he claims will be of greater importance to computing than the launch of the Apple Mac. He commented: "My ambition has been to work on this computer since I was at college in the 1970s. It's a machine that will change people's lives. I think the technology has finally arrived."

He said he could not possibly spend time on a program for home computers, but hoped a heavyweight company would step in and license the *Bit Bopper* technology. "It would have to be someone like Amstrad to market such a program effectively," he said. ■

Charity begins in homes

Owners of Acorn's Archimedes computer can help under-privileged youngsters get to grips with computers by buying a charity disk of neat Public Domain software launched this week.

The "Caring for Children" project is organised by Acorn employee Adrian Crichlow and Danny Williams from the Hawthorns Childrens Home in Cambridge.

They are hoping the proceeds will help kit out every kiddies home in East Anglia with an Archie.

It costs £5 and includes games and utilities written by Acorn employees in their spare time. There's a *Tetris* clone, a maze game, a ray traced Christmas backdrop, a text adventure, and loads of fun gadgets designed to put a smile on any child's face.

Adrian Crichlow told Express: "If we sell 2,500 programs then we can kit out 12 homes, and if it's a success we'll try and concentrate on a different area of the country next Christmas." Acorn will double whatever he raises.

Crichlow became involved because he runs a free computer tutorial for the Hawthorns kids. Most of the youngsters are not yet in foster schemes and are in the homes on a short-term basis.

Crichlow added: "Computers are good for children because it gives them a hobby and a distraction. It's something they can get involved in."

He said that the disk is well worth £5 of anyone's money. Send a cheque or postal order for £5 to The Christmas Disk Offer, PO Box 400, Cambridge. ■

Information through power

You may be wondering just what business this curious contraption has in these pages? It is in fact a high-rise six-pack CD-ROM device made specifically for information chomping computer networks.

If members of a multi-user computer set up need to access similar data simlultaneously even the storage capabilities of a single CD-ROM may not be enough. With this in mind Cumana has launched the CDS-436 which can be configured to run on a PC network.

It takes about a third of a second to find a piece of information kept on any one of the CDs – and you can play audio CDs as well. All this costs a trifling £3,000. Heavy-duty users can call Cumana on 0483 503121. ■

CONTENTS

FEATURES

Colour hand-helds
We test out two new portable gaming machines – page 14

Shopper Computer Show
What to expect at this not-to-be-missed annual event – page 74

Hard disks
How they can change your life – page 78

REVIEWS

Amiga emulates the ST
You too can have two machines – see page 80

EVERY WEEK

Games Week
New *Sim cities* and cheats for *Ninja Warrior* – page 70

Console Zone – page 72

Competition
Six lucky winners can watch their old fave – Monty Python – on video – page 82

News	**4-9**
Opinion	**10**
Letters	**12**

SHOPPING EXPRESS

Amiga	**18**	**Whole Wired World**	**35**
Archimedes	**19**	**Centrefold**	**38**
CPC	**20**	**Programming**	**47**
C64	**22**	**On-line**	**52**
PC	**23**	**Circuit City**	**50**
Spectrum	**24**	**PD Column**	**58**
ST	**25**	**Tech Tips**	**62**
Mac	**27**	**Questionnaire**	**67**

PC Ditto - The ST software emulator in action (snail-style)

EMULATION B

With the announcement of a 386SX PC emulator for the ST, it would appear IBM clone wars are all set to invade new territory - the ST and Amiga markets. Keith Pomfret ditches TOS and AmigaDos to explore the mass of MS-DOS being made available.

The idea of emulation isn't new. Many years ago the super computer mainframes of the large corporations fought wars with big blue IBM.

IBM established its own ponderous standard and forbade the addition of any software or peripherals that weren't its own. Before the lawsuits in the US, the only choice for the corporate computer user in the US was to stay with the up market high priced IBM upgrade path or go to alternative markets where smaller companies offered machines that could emulate IBM's ponderous and pedantic machinery.

Often the emulators were better specified than the machines they were copying and IBM fought tooth and nail through the courts to protect its monopoly.

After litigation came new laws and companies could make bolt-ons and upgrades for mainframes. This effectively killed the emulator market which went to sleep for thirty years to awake again in the late 1980s. Again the target was IBM, but this time the desktop replaced the air conditioned mainframe hall as the emulation arena.

The ST and the Amiga are well specified machines but with MS-DOS hogging the world serious software standard it was a case of even though you can beat 'em, you've still got to join 'em.

Every week we hear of a new emulator or upgrade for an existing emulator. It seems that everybody wants the power, games and graphics of the 68000 based machines with the ability to do serious PC things as well.

UP FOR GRABS

The cheapest solution is always the software emulator. A disk (or disks) contain programs which make the ST or Amiga behave like a PC. The two best known are PC-Ditto for the ST and Transformer for the Amiga. Both run slowly and are fine as a method of putting the MS-DOS prompt on the screen to show that it can be done. Anything faster than a real time snail simulator is liable to have them puffing and panting and even curling up their toes.

The more expensive and more elegant solution is through hardware. A board contains all the processing power of a PC with all its associated circuitry and mates this with the input and output of the ST or Amiga in order to run a pseudo PC at a realistic speed.

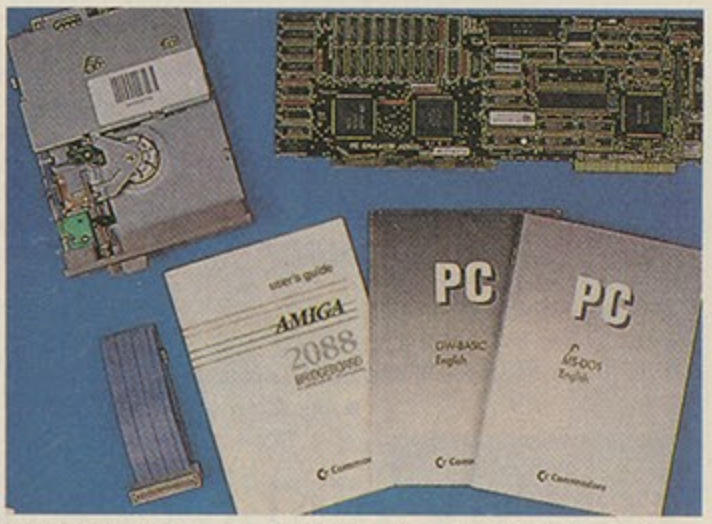
The ST plays host to PC Speed, an IBM PC/XT board, AT Speed from the same manufacturer based on a 286 AT processor and the Vortex AT once board, again a PC AT board.

In Amiga land there are two separate 'divisions' – those which fit into an expansion slot in the 2000 series and above and those designed to squeeze into an A500.

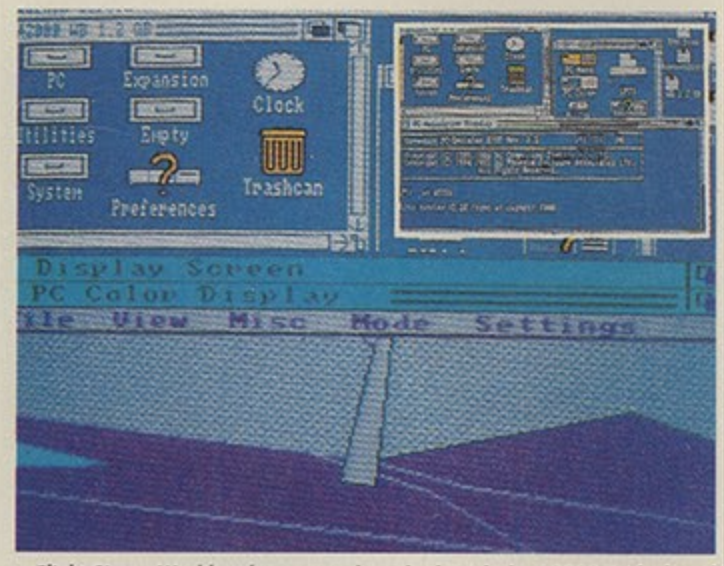
Commodore started the ball rolling with its A2086 bridgeboard. This is essentially a full PC on a card and fits comfortably into a slot in an Amiga 2000. It is based on the PC/XT and introduced a lot of people to machine emulation. An AT bridgeboard followed and relatively high speed PC processing was possible on the high end Amigas. The A500 grew its first hardware emulator when Bitcon announced the KCS Power PC Board to fit in the memory expansion slot underneath. Just announced is the Amiga A500 version of the AT Once from German hardware specialist Vortex.

EXPANSION

One of the desirable features gained from owning a PC is its



• A Bridge Too Near - The A2088 Commodore put in the Amiga 2000



• Flight Sim or Workbench - you can have both with the A8088 Bridgeboard

Setting the standard

The emulators are claimed to be either XT or AT emulators. The IBM XT was a 8086/88 based PC with a hard disk drive. The IBM/AT was the first 80286 based IBM and also had a hard disk drive. The extensive cloning of the IBM standard has caused the definitions to become blurred.

Currently, anything running an 8086/88 series chip is known as an XT clone and anything running an 80286 is known as an AT clone. This isn't strictly accurate as the XT and AT specification demand hard disk storage.

To complicate matters, there are several display options for a PC. There is a text only screen made up purely fom characters in the ASCII set and the IBM extended set. Graphics screens come in several manifestations, but for the purpose of emulation, there are three. CGA, EGA and VGA. Most emulators are CGA (Colour Graphics Adapter) which is a pretty blocky four colour mode, but some emulators are now aspiring to the prettier and multi-colour EGA (Enhanced Graphics Adapter).

The light shining from the end of the display tunnel is VGA (Video Graphics Array) with its high resolution and well specified palette. No one has done it yet but at least one manufacturer claims that it will be with us in 1991.

Software v Hardware

There are two kinds of emulator – those based purely on software and those based on hardware, but needing software to run. No-one has yet perfected a bolt on (or in) that does the job automatically.

Software emulators are essentially a program that reconfigures the machine to behave like a PC. Because they have to overlay MS-DOS on an existing operating system they are slow and prone to crashes. They can only ever run 'well behaved' software that remains within the MS-DOS specifications. This leaves out most games which address the PC direct, taking short cuts past the operating system. The single advantage to software emulators is that they're cheap.

Hardware emulators are a set of chips on a board which duplicate a PC in its entirety. All the PC jobs are done on the board and only the input/output is handled by the ST or Amiga.

Hardware emulators generally run a good quantity of software and as they have a PC processor on board they can fair whizz along. As they amount to a PC on a card, they are expensive. The cost can be anything from £200 to a princely £700 or so for some of the whizzier bridgeboards for the top end Amigas.

Emulation or duplication?

There must be a point when emulation stops and duplication begins. If you built the internals of an ST, Amiga, PC and Arch into a workstation it would be duplicating rather than emulating.

In the true sense, emulation should mean using the existing machine to replicate another. This definition has been stretched to include those 'emulation' boards that do all of the operating system work and leave the host machine only the interfacing jobs.

EXPLOSION

• An Amiga 500 with the KCS Power PC Board shows the unfriendlier face of MS-DOS

expansion capability. Cards can be placed in expansion slots in a matter of a couple of minutes by a non-technical person and the system can easily be built up to the required specification. When an emulator card is added to an ST or Amiga, it brings with it all the hardware features of the PC, but there is no facility to add PC expansion cards. This leaves the ST/Amiga PC person with a bare PC able to run PC software, but losing out on the expansion capabilities of the PC.

It is possible to get a PC emulator in an Amiga B2000 to address on-board PC cards, but this is currently the exception rather than the rule.

COST

When the cheapest PC came in at well over £1,000, the ability to turn a home computer into a fully functioning PC would have been a financially wise as well as desirable option.

With companies selling fully functional off-the-shelf PCs for under £300, the financial wisdom isn't a factor and indeed many would say that a cheap £300 PC with its expansion capabilities would be a better bet.

Even the existing Amiga or ST owner couldn't upgrade their own machine to full PC status for that price and even if they could, they wouldn't have the expansion capability of the PC. An added advantage would be that having a PC and an Amiga or ST would mean that it would be possible to run both machines simultaneously, thus increasing productivity.

The problem of transferring data and work from one machine to the other could be solved by about £4 worth of PD comms disks and a null modem cable costing less than a fiver to make. The cost of buying a bare A500 Amiga and the cheapest PC would come to around £800 including a colour monitor for the Amiga. The 520 STFM solution would come in at about £720.

THE VERDICT?

Software emulators offer a considerable saving over buying an extra PC, but are only really good to prove that your machine can produce the elusive DOS prompt. The cheapest £200 hardware emulator would beat the combined machine price by about £100 in both cases. Some of the expensive ones would make it a more expensive proposition to emulate than to buy the machine that is being emulated.

But if the prices seem way too high why not settle for just a PC/AT 102 keyboard?

While the ST and Amiga keyboards are a close match, they aren't renowned for being the most pleasant to type on. Third party manufacturers and software developers have awoken to this and there are already a couple of ways around the problem for the ST.

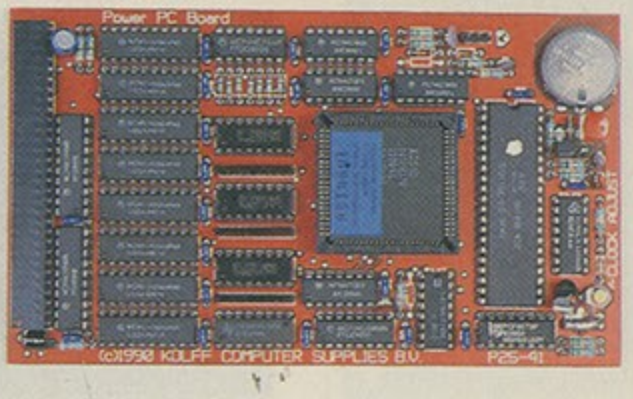
One solution is a software patch that allows a PC keyboard to be attached to the serial port of the ST. Dedicated PC keyboards for the ST and Amiga have been threatened but we haven't seen them yet.

It isn't only about cash though. There's a certain status attached to owning a computer with the power to do things hitherto only managed by other machines.

An Amiga running the PC version of *Autoroute* or an ST happily crunching numbers of a spreadsheet like *Lotus 1-2-3* is a desirable machine to own.

The mystique of persuading your machine to do something several miles above and beyond its brief is a situation that most serious ST and Amiga owners will aspire to.

In short, it's the current trend and, co-incidentally, it has practical uses too. Now there's a refreshing change! ■



• The KCS Power PC Board. An XT sits in the memory slot underneath

• Supercharger - a 286 AT emulator with a 386SX promised soon.

Other machines

Crazy as it may seem the 8-bit Beeb Master can do a passable imitation of a PC. The Master 512 is a board that attaches to the Master and does wonderful PC type things via the Beebs I/O ports. The Archimedes has a software PC emulator that chugs along at a reasonable gait and is happy to run software that keeps the MS/DOS operating system rules. Serious software poses no problem to it and it becomes surprisingly fast when running on an upgraded Archie that has the ARM3 processor. This makes it the only software emulator to approach hardware speed.

Macintosh owners with a large lump of memory to spare and the desire to ditch friendly icons for the austere CLI can go for Soft-PC.

The Future

Hardware emulators have shown that it's possible to put an entire PC on a card. This being the case, it shouldn't be too difficult to put any machine on to a card. There could be a situation in the future where you go to a computer dealer, buy a generic computer I/O box and slot in cards of the machine of your choice. You might, for example, start with a bare box and add a PC, hard drive and a Spectrum console box for the kids.

A compatibility interface could make null modems and media problems a thing of the past and as your system grew you would be able to mix and match different machines to suit your requirements.

It may sound a little far fetched now, but who believed in a hand-held super computer a year ago? That arrived this year with the promise of a pocket mainframe by mid 1991.

Amiga Emulators

SOFTWARE ONLY :

The Transformer
Not widely available, slow and prone to crashes.
Performance ★

HARDWARE :

KCS Power PC Board.
This XT emulator slots straight into the memory expansion slot under an A500. Only the current version will support hard drives.
Performance ★★★

AT Once Amiga.
An AT on a board - it requires the machine to be opened up but twenty minutes should see the job done. An Amiga 2000 version due in 1991.
Performance ★★★★

A8088 Bridgeboard.
This was the one that started it all. The first XT board for an Amiga 2000. Won't run on an A500
Performance ★★★

Bridgeboard
The logical progression from the XT bridgeboard, this 80286 based AT board brought the Amiga 2000s into the serious PC processing world.
Performance ★★★★

ST Emulators

SOFTWARE ONLY :

PC Ditto.
A PC on a disk but like the Amiga Transformer, a little weak in the speed department.
Performance ★

HARDWARE

PC Speed
An XT hardware mod running much the same as a regulation IBM XT
Performance ★★

AT Speed
The big brother to the PC Speed with the power of a 286 based machine.
Performance ★★★

AT Once ST
This was the first AT Once board from German developer Vortex and offers quick 286 processing via an ST
Performance ★★★★

Australia wants you

Thinking of skipping off for a new life Down Under? It seems that the Aussies are more than keen for computer literates and computing professionals to leave blustery old Britain for the challenge of Oz.

The Australian Department of Immigration says the intake of computer professionals has risen by 71.4 per cent since 1986. Ten per cent of professionals who emigrate to Australia are involved in the computer industry.

The Department of Training and Education in Sydney has placed computer professionals at the top of its list of desirable workers.

Special scanner

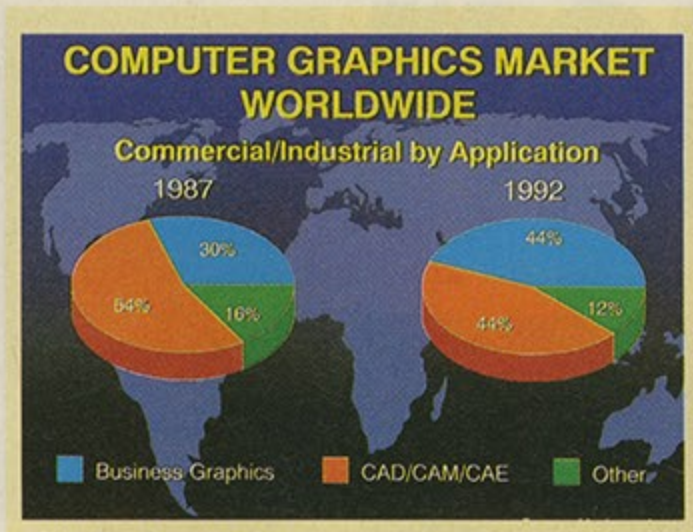
Typist: fast reader

Caere Corporation has launched its revolutionary 'Typist' Macintosh hand scanner in the UK. It's been a big hit in the US already and the press over here are already going bonkers.

The warm reception is mainly due to its ability to scan text into a document at the rate of 500 words per minute. That text can then be edited in the normal fashion.

"It sets a new standard for speed, ease-of-use, practicality and versality," enthused Caree's Larry Miller. "And its £600 price makes page recognition affordable for the first time."

It uses optical character recognition technology to read text regardless of the font style or the number of columns on a page. It scans at two inches per second which Caree claims is twice as fast as the competition. Call distributor Computers Unlimited on 081-200 8282.



• Pixie: *turns figures into pictures*

Fun with figures

A Windows based graphical charting program has been launched which publisher BIT UK claims is "the most intuitive graphics application in Britain'.

***Pixie 2.01*, which retails at £239, allows users to represent any figures in a variety of chart forms. BIT says it's simple to use, produces pretty graphs, and is compatible with popular spreadsheets.**

Call 0420 83811.

Japs get tough with hackers

An upsurge in the Japanese computer crime rates have led to calls for harsh new penalties to be enforced against hackers.

If the Japan Information Processing Development Association gets its way, hackers will face sentences of up to one year's hard labour.

The IPDA is urging the Japanese Government to crack down on hackers who are wrecking computer networks just for fun. It wants to maintain "social faith" in the country's massive computer system.

The creation of computer viruses would also carry similar punishment as hacking.

A spokeswoman for the Japanese Embassy in London said that hard labour in Japan is "pretty tame" adding: "You know we're not talking about Siberia."

• *At a glance help from CDL*

Commanding strokes

Anyone who has invested in a complex piece of software knows how long it can take to master all the commands and keystrokes required to get the most out of a program.

Help is at hand from Woking based CDL which has launched a new series of help cards for programs such as Lotus *Agenda*, Microsoft *Works 2.0*, *Paradox 3.0*, *Quattro Pro 1.0*, *WordPerfect 5.1* and *XYWrite III Plus*. .

Depending on the sophistication of the program being supported, the Keyboard Guidecard System provides one or two cards per product containing all the application's commands and keystrokes. There's also a blank DIY card for you to fill in as you explore an unsupported program.

Prices for the Guidecards start at £7.99. Call 0483 756813.

Intel trounces the Japanese as it l

200,000 THAN TH

A computer capable of previously unthinkable speed, power and storage has been launched by Intel. The Delta System is based on a total of 528 i860 processors working concurrently to provide a peak speed of 32 billion floating point operations every second.

It beats the record held by the NCube 2 Scalar supercomputer for the past 18 months (*Express* 35) and, according to Intel, it provides twice the performance of Cray's top-end machine at "one tenth the price".

But Delta is merely a prototype for a monster of a machine which will effectively be nearly 2,000 times faster than the NCube 2. Due to be launched in the summer, the Sigma will consist of at least 2,048 processors and will be able to handle an astonishing 150 billion floating operations per second, or 100,000 million instructions per second (MIPS). The NCube runs at 60 million MIPS while a home computer, such as the Amiga or ST, can barely deliver one MIP.

It boasts a memory of 64 gigabytes, which equates to 64,000 Mb. There's also a storage capacity 0.5 terabytes available in what can loosely be described as a 500,000Mb hard disk.

In order to get a grip on what these figures mean, we compared the tech specs to those featured in various home computers.

SPEED

The i860 chips are extremely powerful as single units, but they are relatively inexpensive. It's possible to buy one as a booster chip for a cheap IBM compatible. A games console based on one of these chips would blow away anything in existence.

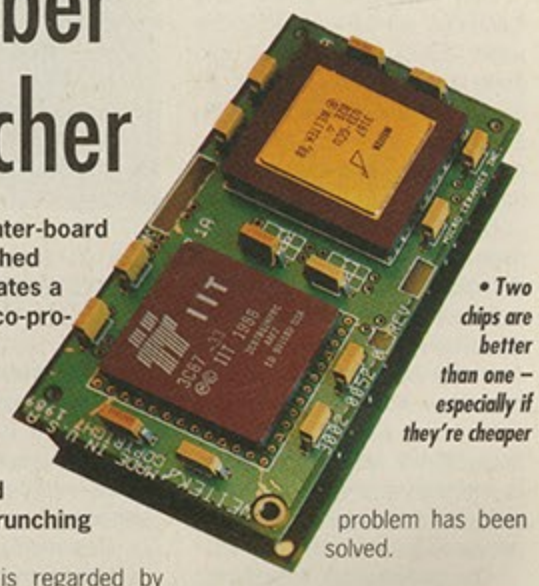
But the Sigma operates by linking all the chips up to 'work together'. Since Intel unveiled the first parallel supercomputer in 1985, concurrent supercomputers have overtaken traditional machines in speed and market share.

Compare the astronomical operating speed of 100,000 MIPS to the Amiga's 0.5 MIP mathematical power.

The Sigma is 200,000 times faster than an Amiga. If you laid 200,000 Amigas end to end they would reach from London to Cambridge. Put it another way, in Amiga terms, the Sigma would

Number cruncher

A Weitek daughter-board has been launched which incorporates a normal maths co-processor and the Weitek Abacus 3167 chip. It's being aimed at power PC users who need total number crunching ability.



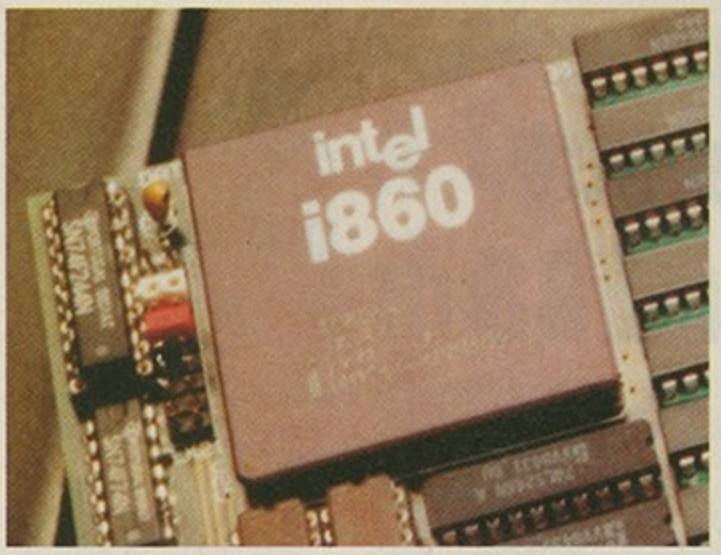
• *Two chips are better than one – especially if they're cheaper*

The Abacus is regarded by many as the best number cruncher for 386 PCs, but it doesn't support all software packages. However, with the extra coprocessor on board this problem has been solved.

The basic package costs £550 – £250 less than the cost of the items bought separately. Weitek reckons the daughter board will

e as it launches the most powerful super computer ever

0 TIMES FASTER THE AMIGA 500



• 2,048 of these, all working in unison, make up the speed of the most advanced computer yet devised.

cover an area four times the size of Wembley stadium.

It could randomly generate fractal landscapes quickly enough to fly a 2,400 mph military flight simulator through it. So the landscape is created faster than the aircraft is moving.

If, in the game *Stunt Car Racer* the featured vehicle runs at 70 miles per hour, it would clock up 14,000,000 mph on the Sigma. Theoretically, your stunt car could zip around the circumference of the earth 300 times in half an hour. That is about one fiftieth of the speed of light.

MEMORY

With 64,000 Megabytes of RAM on board the Sigma is the equivalent to a quarter of a million Amstrad PCWs. Stacked on top of each other the machines would reach 48 miles into space – about eight and a half times the height of Mount Everest. It could run 150,000 different word processors simultaneously, or hold 500 million copies of *The Satanic Verses* as document files.

STORAGE

The 500,000Mb hard disk has the same storage capacity as 20,000 average hard drive PCs. That amount of kit would cost you £10 million (plus VAT).

Using Intel's own digital video compression techniques, the hard disk could store 555 Hollywood movies – enough to keep you in front a screen for an entire month.

PRICE

The processors alone are worth £28 million – the property value of a medium sized housing estate in Milton Keynes. However, as Intel manufactures all components itself, the price, which will be arranged on a made-to-measure basis, will be considerably cheaper.

Intel will be selling its machines to universities, governmental institutions, military installations and space exploration agencies.

They will be working on complex climatological modelling, satellite manoeuvring calculations and geological analysis.

The firm is confidently predicting that processing power will continue to double every year until the end of the decade.

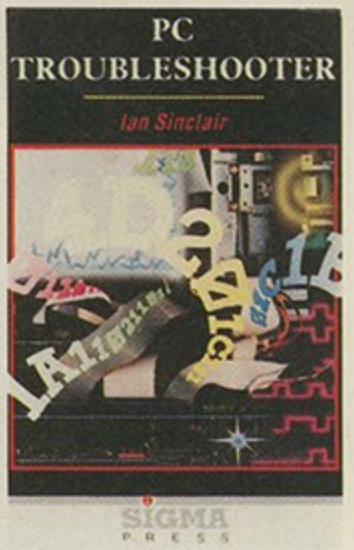
MANDELBROT TEST

Readers of the original NCube story will remember our comparison between that machine's time to calculate the Mandelbrot equation – only a tenth of a second, compared to the six minutes for an Archimedes and 12 hours for a BBC.

To give a further idea of the Sigma's unbelievable speed, the machine could calculate over 1,600 Mandelbrot sets while the NCube was calculating one.

US BACK ON TOP

The recent war between supercomputer manufacturers had been slipping away from the Americans – towards the Japanese who had been drawing on established American technology. The latest innovations puts America back at the forefront of this leading edge technological market. ■



• Help at hand

Looking for trouble

PCs are contrary at the best of times, and it's all too easy for even experienced MS-DOSers to find themselves baffled by faults, quirks and glitches.

If you want to get the upper hand over your IBM compatible it might be a good idea to check out Ian Sinclair's latest guide PC *Troubleshooter*.

Publisher Sigma Press reckons the book will help neluigered PC owners sort out any dificulties. It costs £12.95. Call 0243 770216. ■

Return of the virus buster

Yet another virus-busting software package has been launched. This time it's *PC Immunise II* which, we are told, will handle all breeds of virus past present and future.

Sceptics should note that various techie magazines have been making enthusiastic noises about SA Software's latest. So if the thought of being hit by a virus has you reaching for a clean pair of trousers, call 081-998 2351. It costs £39.95. ■

That Condor feeling

Atari ST owners are to be offered the chance to turn their machine into a 386sx PC.

The Condor SC Plus 386sx upgrade is just the latest emulator for the ST. But it offers full 386 compatibility by sharing the ST's ports. Reading based Condor claims the box will accept any expansion cards such as VGA, FAX or interface boards.

No prices have been fixed yet. Call 0734 810066. ■

CD ROM goes back to school

The entire 'A' level music syllabus will be brought to the computer screen with a product which aims to revolutionise music education.

US company Warner New Media's Auto Notes series is recording each piece of music covered by the UK 'A' level syllabus onto CD ROM discs. An interactive computer display will analyse the music, explain techniques and themes and allow the user to question, add comments, notes or lesson plans.

"There is a massive educational market for this product. Music is to become a core curriculum subject from the age of eleven," says UK distributor 2001 director Chris West.

"Tutors and educational establishments will find they need more material in order to cover the subject. The Auto Note series will educate from 11+ level."

Clwyd LEA is to provide the CD ROM discs to all schools in the area with access to a CD player. Advisory Teacher for Information Technology, Tudor Morris, says the product is vital to the future of music education.

"I see this being used not just for music but for the entire school. It provides an instant and easily accessible source of information allowing distance learning and a library resource.

"I have demonstrated the product which is running at the Educational College in Bryestyn to around 15 teachers. All have realised its importance and significance for the future." ■

This is the first published screenshot of Domark's eagerly awaited 3D Construction Kit, due for launch in April.

It's been designed around the versatile *Freescape 2* environment utilised successfully in games such as Castle Master. But this program will allow you to build your own environment, be it a computer representation of the neighbourhood or a futuristic colony on Neptune.

After creating your own little world you can set about populating it, or even animating characters and objects. Domark is calling it "Lego blocks for adults" and, a little extravagantly, "your own Virtual Reality".

It's going to be launched on the ST, Amiga, PC, C64, Spectrum and CPC. If it's as good as we're being led to believe, it'll be one of the software events of 1991. ■

Ringing Robocop

• *Hello everybody, I'm the future of law enforcement.*

Veteran games publisher Gremlin Graphics has gone on-line with a new interactive telephone games based on metallic crime fighter *Robocop 2*.

Gremlin is calling its pay-as-you-play scheme an "interactive radio play" with plenty of villains and crooks for you to destroy. You play by making coded commands into the mouthpiece; for instance in one situation the number two will make Robocop fire a warning shot and approach on foot. The are scores to clock up, energy to save and all that kind of stuff.

It kicks off on December 14th and the number is 0898 345678. Calls are charged at a not inconsiderable rate of 33p per minute cheap rate and 44p per minute at other times – dearer than your average game. ■

Commodore looks again at its mid-range

CBM RETHIN

The future of the Amiga 3000 and A2000 were under considerable scrutiny last week as the Commodore Christmas Show ended.

Commodore has confirmed that it will be relaunching its mid-range Amiga 2000 next month, but says changes will be kept to a minimum.

And it has hinted that the A3000 will be substantially cut in price by the spring.

• Amiga 2000: It had been hoped that the machine would be upgraded to become a 'budget Amiga 3000', but the firm says it will only be offering the A2000 with a 40Mb hard disk as standard.

Prices currently start at £1,200, and that is likely to rise a few hundred pounds.

A Commodore spokesman offered: "We want to reposition the A2000 as an audio and graphics workstation, but the technical specifications will stay the same. We're not going to be changing the processor but we might throw in some software."

Many had predicted that the new generation A2000 would come with the 68020 processor instead of the slower 68000, as well as the Enhanced Chip Set featured in the impressive top-end Amiga 3000.

Commodore's unimaginative "repositioning" is bound to rankle with Amiga watchers, who had been hoping for something special.

• Amiga 3000: In the US, Commodore has announced that its A3000 with Unix will cost $4,000, about $1,000 less than a standard

NIBBLES

- If you think continental driving couldn't get any worse, you've a shock in store. A driving school in France has adapted Tengen's popular arcade hit *Hard Drivin'* to help people learning to drive.
- The Royal National Institute for the Blind has won the Social Benefit award in the British Computer Society's annual award, for its on-line *Guardian* newspaper service. The system allows the visually impaired to receive *The Guardian* onto a PC, where it can be printed in Braille.
- Don't forget the Windows Show due to be held at Olympia in London from Tuesday February 12th to Thursday the 14th. With the PC industry going Windows mad, you can be sure of a software feast.
- Next September's Consumer Electronics Show will be switched from grotty Earls Court to the much more acceptable Earls Court II venue.
- *Vector Championship Run* (a car racing game) is the first title to be launched on Zeppelin Games' new Impulze label. It's out on the ST and Amiga and costs £24.99.
- Budget games publisher CodeMasters has been blowing its own trumpet – not for the first time. Last week the firm were bragging about taking the top three positions in the Gallup top ten. *Guardian Angel*, *Quattro Adventure* and *Quattro Combat* topped the charts for one week. *Express* would like to point out they still owe us a tenner for the bet on the Christmas No.1.
- Art Systems will this week release a £195 CAD (computer-aided design) program for the PC. *The Boss* allows users to view, plot and manage *AutoCAD* drawings even when *AutoCAD* is not loaded on the system.

Cambridge seeks out micro owners for Z88

Cambridge Computer reckons desktop owners will be splashing out next year for one of its A4 sized Z88 machines.

The firm has just launched three new Z88 packs designed for three different sets of users.

• The Link-PC Pack allows Z88 buyers to connect to any IBM compatible and transfer files from one to the other either in ASCII or a selected software form. This is bound to appeal to PC owners who want a light portable for simple tasks such as word-processing.

As well as the machine the pack contains a 128K expansion pack, PC link software and cable, mains adapter and carry case and an extra 32K RAM pack and 32K EPROM. Batteries are included. It costs £269.

• The Link-Mac Pack is exactly the same as above, but is compatible with Apple's machine. The Apple connection has added an extra £30 to the above price.

• For first time users unworried by compatibility concerns there's the All-In-One Pack which features the machine with original built in software including word processor, spreadsheet and database.

BBC BASIC has been thrown in for the benefit of schools or beginners and there are all the extra RAM packs, carrying case and batteries. The pack costs £249.

Cambridge Computer's Roger Flack enthused: "The Z88 is a hot product and it's still outstripping sales forecasts." ■

• *Z88 pack: versatile computing.*

Big little drive from Japan

Mitsubishi, the world's largest manufacturer of floppy disk drives, has launched a 3.5-inch floppy drive for use in laptops and portables which can store a huge 2Mb of data on a disk.

The MF355S is a mere 17mm in height and 130mm deep and it weighs just 240 grammes. Mitsubishi says the device is not just thin, but also rugged. It can stand a 70G shock rate (70 times the force of gravity) and, according to the firm is "ideal for rough treatment".

The Japanese giant reckons manufacturers of portables will be queuing up to include the drive in forthcoming machines. It can read and write PC 3.5-inch disks. ■

• *Tough and tiny: Mitsubishi's driving for portables.*

IBM kits out college

IBM has donated nearly $1 million worth of computer equipment to a Canadian University, which needs the hardware for research into anything from the control of rabies to creating models of the human heart.

Queen's University in Ontario will be using PS/2 machines as well as a central RISC-based mini computer. One plan is to analyse the flight paths of airplanes which drop baits containing a vaccine to control the spread of rabies among foxes.

IBM Canada has been donating kit to universities for the past eight years. Big Blue, pragmatic as ever, says it's important to invest in education in order to aid the development of a well-trained work force. ■

Grand Finale

A cracking games compilation is due to be launched by Elite – but it marks the end of an era for the publisher.

Gamers have been tucking into Elite compilations for years, but now the firm says it wants to concentrate on developing new products. The last compendium, appropriately called *Finale*, features driving game *Overlander*, boy-on-bicycle classic *Paperboy*, *Ghosts 'n' Goblins* and arcade conversion *Space Harrier*. The PC version replaces *Overlander* with old thumper *Frank Bruno's Boxing*.

Finale marks Elite's 19th bargain bundle in the past two years; it should be in the shops next week on the ST, Amiga and PC for £24.95. ■

Amiga 2000 'graphics workstation'

KS AMIGAS

A3000. Naturally, this has sparked off speculation that the normal A3000 prices will be slashed – a Unix licence alone is costing Commodore a few hundred dollars for every machine.

An April launch date for the Unix machine has been pencilled in by Commodore UK, and some form of A3000 price cut will almost certainly be announced. If US pricing is followed, it will cost £2,000 here – the Amiga 3000 costs £3,000.

• Meanwhile, an internal hard drive for the Amiga 500 is to be launched into the UK. Bedford-based Power Computing says its hard disk is the first of its kind. A retail tag of £599 is being predicted when it arrives next year. ■

• See the Commodore show report, below right

• Amiga 2000: changes due.

Dredd delayed

Virgin Games has delayed the launch of its *Judge Dredd* game until the new year.

The *2000AD* lawmaker was to be launched last week, but Virgin reckons there are too many games on the shelves this Christmas already. However, a spokeswoman said there had been a few minor technical problems which had hampered progress.

The game follows the exploits of the futuristic lawman in his fight against the perps. Screenshots show a regular-looking platform beat-'em-up, but Virgin is confident that the final version of the game will be anything but ordinary.

Versions are expected for the Amiga, ST and PC when the game eventually surfaces early on next year. ■

• Judge Dredd: late comer to avoid the Christmas rush.

• Opus Laptop: 386 on the move.

Opus goes portable

Opus, one of Britain's few independent hardware manufacturers, has launched a £2,000 386SX portable.

The Opus Laptop has a clock speed of 16MHz with 1Mb of RAM expandable to 4Mb on the motherboard. It also features AT compatible 16-bit expansion slots.

Opus has slapped in a VGA chip to support a 640 x 480 10-inch plasma screen displaying 25 lines x 80 characters. It comes with a 3.5-inch floppy disk drive and a 40Mb hard disk.

It weighs 9kg, sports two serial ports and one parallel port. Call 0293 821444 for more information. ■

AT in an Amiga

A 286 emulator for the Amiga has been launched by Silica Systems.

The Vortex ATonce-Amiga, which costs £249, is claimed to be the first emulator for the Amiga capable of multi-tasking. It will also address all the RAM in a machine — not just the standard 1Mb. Card adapters for the Amiga 1500, 2000 and 3000 are expected soon after Christmas offering the possibility of video and memory expansion.

The £249 price includes a copy of MS-DOS, although if you already own the operating system the price is only £199. ■

A London gathering of the Commodore clans

This year's Commodore Christmas Show was the sixteenth of its kind in consecutive years, *writes Sean Masterson.*

Since 16 years ago the company was known for its high powered programmable calculators, having previously been somewhat less renowned for making typewriters, you have to acknowledge that Commodore has come a long way.

The fascination with these annual Novotel affairs was justified by one of the dealers who was going through his own annual ritual, that of box shifting. He observed that unlike the expensive Olympia and Earl's Court venues, razzmatazz is absent from CBM's Christmas bash. What you get instead, he claimed, is an unusual situation where those who are there as visitors have one thing in common – the fact that Commodore computers play a significant part in their lives.

Old timers ICPUG would have agreed. The ultimate user group for all things Commodore has been making its presence felt for years at these shows and this year they turned out with high morale and membership. However, they're no longer the only visibly active Commodore users. The heavyweight fanzine *Just Amiga Monthly* (*JAM*), edited by former *Amiga Computing* editor Jeff Walker, dug in on the upper floor with its own stand and soon found itself under siege by users at large.

Commodore itself was as aware of fresh blood as any of the user groups. Whereas the latter followed the usual course of friendly membership recruitment, Big C itself hit the mark with an arcade at the end of the lower exhibition hall, filled with Amigas and C64GS machines. As numbers of visitors rose steadily through the morning, this enclosure seemed at least as popular as the bar.

Apart from the top end MIDI technology being flaunted on Roland's stand, there was little in the way of new hardware. Commodore's stand was lined with new Amiga A1500s but attracting as much attention were the TV screens which were running Commodore's two new television advertisements. Commodore is now running these in major ITV regions, on Sky and BSB and in cinemas across the country. The campaign will run until December 22nd and, along with its newsprint element, will cost Commodore £5 million.

Steve Franklin, Commodore's UK boss, said that the ad agency had been briefed to produce adverts that would reinforce the company's brand name image, rather than endorse specific products.

He said the one thing he admired about Alan Sugar was that the Amstrad boss had already achieved this aim. His only other statement, that Commodore that week had sold its half-millionth Amiga in the UK, went unheard on the exhibition floors.

The users busily scouring the stands and parting with cash at a healthy rate wouldn't have cared if CBM had only sold half a dozen. ■

• Sally Ann Matthews (pictured) who plays Jenny Bradley, the quintessential Northern lass in Coronation Street, is apparently a bit of a whizz at video games. She turned up at the opening of retail chain Leisurestore's tenth branch a couple of weeks ago, and proceeded to thrash all the gamers on top Sega games. It turns out that she's been playing Sega games for years and likes nothing better than a good shoot-'em-up. ■

NIBBLES

- Polaroid and Lotus have teamed up to produce slide making equipment. Lotus supplies the software, while Polaroid will be taking care of the sexy hardware.
- First Byte in the US has launched a new version of its *Monologue*, a memory resident PC utility which can read back word processing documents, spreadsheets or e-mail out loud.
- Capitalism update: Mediagenic (Activision's parent company) has announced a drop in sales of 50 per cent for the past year. The firm sold $8.7 million worth of kit. Meanwhile Commodore has announced profits of $7 million for the three months ending September 30th. That compares to a loss of $6.5 million for the same period last year. Sales stand at £200 million – mostly in Europe.
- The tabloids have always had a strict code on how to deal with computer game stories. They either feature brattish programmers with fast cars, or deranged youngsters perverted by interactive violence. No surprise then that the *News of the World* seized upon a story detailing gangs of kids in the US who apparently fight each other on a "my game is better than yours" basis. The story, headlined 'Nintendo empties out the schools' warned that kids in Britain could "get hooked".
- Commodore has become the first hardware manufacturer to join games software trade body ELSPA. The firm says it needs to work closely with software publishers, and the publishers are glad to have a manufacturer on their side.
- A 16MHz 286 PC has been launched by Acer. It comes with 1Mb, a 40Mb hard disk and a mono monitor. It costs £999. Call 081-569 2978.

THE WEEK IN VIEW

Andrew Whittaker, organiser of Compute for Charity and freelance games programmer, challenges TV alarmists to look at the brighter and social side of computing.

Yet again another alarmist programme hits the airwaves. I refer not to some armchair analysts predictions of war in the Gulf, but to the recently screened *Oprah Winfrey Show* which chose to attack the Nintendo games console with tales of dangerous addiction.

Only this weekend *The News of the World* ran a story on the violent games for the console alerting parents to the dangers (while using *Mario Bros* as an illustration, which is rather like banning Postman Pat over parcel bomb fears!)

I wish for once the television programme makers would highlight the benefits of the computing hobby. One only has to visit my local computer club to see the cross section of life that is brought under one roof with a computing catalyst. From 11-year-old games players to the elderly gentleman learning programming, from the handicapped to the ablebodied. Were it not for computers these people would never have met. Conversation often strays away from computers where a wealth of people's life experiences presents itself. Who said computing kills conversation?

I have also been very lucky in being able to present computers to the handicapped. An Amiga system has transformed the life of a local severely handicapped youth. While other sections of the community look upon him with pity, the local computing community has welcome him to the fold with open arms, being more interested in his computing skills than his handicap .The lad in question has now decided to dedicate his life to working with computers, not because of some sinister addiction, but because he has found an area of life where he belongs and is welcome.

While other industries tend to distance themselves from the buying public, the personal computer industry builds no walls between supplier and purchaser. Many local computer stores throughout this country often seem like social clubs as genuine friendships build up between customers and staff.

From my own personal perspective I have been able to make friends all over the world because of the common computing bond, not only with other programmers but with other people taking their first tentative steps into the world of computing. Not many of us can say we have not made friends from computing be it to us a hobby, trade or both.

So come on television programme makers, show the positive benefits of computing for once and let people know we are all proud to be members of the world's largest social club. ■

Express Access

Hey! Get in touch with us! *Express* is always on the look out for news leads and tip-offs – and we'll pay you for passing them on too!

Also, if you have any burning ideas for features or surveys then drop us a line – remember, we cover every aspect of computing.

You can contact us directly on :
Voice : 0225 442244
Fax : 0225 446019
(All news leads and tip offs will be treated in strictest confidence)

Or you can leave E-Mail for us on :
CIX @ astorer
GOLD @ 84:TXT152
COMPUSERVE @ 100012, 1075
PRESTEL @ P McDonald

NEW COMPUTER EXPRESS

EDITOR • Andy Storer
DEPUTY EDITOR • Stuart Anderton
NEWS EDITOR • Colin Campbell
TECHNICAL EDITOR • Keith Pomfret
STAFF WRITER • Tim Smith
EDITORIAL ASSISTANT • Dave Golder
PRODUCTION EDITOR • Julie Tolley
ART EDITOR • Amanda Cook
ART ASSISTANT • Matthew Williams
CONTRIBUTORS:
Steve Carey • Robin Alway • Jason Holborn • Rod Lawton • Hadyn Fitz-Williams • Mark Higham • Adam Waring Richard Frederick • Sean Masterson Ken Coumarin • Steve Gold • Mary Branscombe
ASSISTANT PUBLISHER • Jane Richardson
CIRCULATION DIRECTOR • Sue Hartley
ADVERTISEMENT MANAGER • Helen Kirkhope
AD EXECUTIVES:
Phil Davenport • Tim Partridge • Cheryl Beesley • Jason Spice
AD PRODUCTION • Tracy O'Donnell
AD TYPESETTING • Terry Turner
PUBLISHER • Graeme Kidd

ABC audited circulation
January-June 1990:
21,251 copies per week

We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below.

While every care is taken in the preparation of *New Computer Express*, Future Publishing cannot be held responsible for the consequences of any errors that may occur.

© Future Publishing Ltd • 30 Monmouth Street, Bath BA1 2BW •
Tel: 0225 442244 • Fax: 0225 446019 •
Subscriptions: The Old Barn, Somerton, Somerset
Tel :0458 74011

• Printed by Redwood Press, Melksham, Wilts
• Distributed in UK and Eire by MMC Ltd (0483 211222). Rest of world by Comag (0895 444055)

COMING NEXT THURSDAY

The Xmas Cracker
Which machine represents the best value for money this Yuletide?

Amiga PCs
Just how good is the latest 286 PC emulator?

Sample Sequencers
Two new music packages for the ST put to test

PLUS
- Hot news
- Front End
- Games Week
- The Console Zone
- Whole Wired World
- Centrefold
- Tech Tips
- Circuit City
- Express On-line
- Express Mail
- The PD Column
- Programming
- Columns for: Amiga, Arc, CPC, C64, Macintosh,PC, Spectrum and ST

AND

Your chance to win £1000 worth of subscriptions to the Compuserve on-line network

AT YOUR NEWSAGENT ON THE 6th

ATARI ST and AMIGA

Sixteen Bit Superdeals from the Sixteen Bit Specialists!

CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier.

NEW!!

520STE Power Pack
£349.00
Inc. VAT and Next Day Delivery

See our main advert in the Christmas Supplement

Power Pack includes:
- ★ 520STE 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ Over £550 worth of games software, including OutRun, Gauntlet 2, R-Type, Space Harrier, Super HangOn and 16 more Top Games
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE
- ★ First BASIC and First Music Utility Software
- ★ FREE JOYSTICK AND FREE MOUSE MAT WORTH £4.95
- ★ All leads, manuals PLUS MOUSE and free mains plug!

520STFM DISCOVERY PACK
£279.00

NEW

NEW! fantastic value for money pack includes:
- ★ 520 STFM 512K memory keyboard with built in 1 megabyte double sided disk drive and TV modulator
- ★ Game Pack including OUTRUN, SPACE HARRIER, CARRIER COMMAND and BOMB JACK
- ★ UTILITY PROGRAMMES inc STOS GAME CREATOR, NEOCHROME painting package and FIRST BASIC programming language
- ★ ST tutorial programme and 'DISCOVER YOUR ST' beginners guide to the ST computer
- ★ PLUS MOUSE, MOUSE MAT, MANUALS, ALL LEADS, METACOMCO BASIC AND MAINS PLUG!

1040STE BUSINESS PACK
£449.00

- ★ Includes the new 1 megabyte 1040STE keyboard plus over £200 worth of business software including K-WORD wordprocessing software, K-CALC spread sheet and K-DATA Database software Also includes Metacomco BASIC, Mouse Pad, all Leads, Manuals and Mouse.

MEGA 1 BUSINESS Pack
£529.00

Features:
- ★ Separate Keyboard and System Unit
- ★ Inc. all software supplied with 1040 STE Business Pack
- ★ Blitter chip installed for faster graphics

Inc SM124 Mono Monitor.....£628.00

ACCESSORIES

Quickshot II Turbo Joystick.....£9.95	Branded Memorex 3.5" DSDD Disks
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
Colour Version of Swift 24 pin £349.00

NEW!

AMIGA A500 SCREEN GEMS PACK featuring the exclusive new DIGISTAR pack!
£399.00
Inc. VAT and Next Day Delivery

See our main advert in the Christmas Supplement

SCREEN GEMS PACK includes:
- ★ Amiga A500 512K Keyboard with built-in 1 Megabyte double sided disk drive.
- ★ Free TV modulator worth £24.99 allowing you to use the Amiga with a normal TV.
- ★ Amazing 4096 colour graphics and incredible Digital Stereo sound!
- ★ Deluxe Paint II painting package worth £70!
- ★ Outstanding new Shadow of the Beast II game with breathtaking graphics!
- ★ New Days of Thunder game based on the Stock Car racing film.
- ★ Back to the Future II game based on the film!
- ★ Night Breed adventure game
- ★ Amiga Basic, Amiga EXTRAS 1.3, Workbench 1.3 & Step by Step Tutorial

...and the incredible exclusive DIGISTAR pack including:
10 blank disks and disk box, high quality mouse pad, joystick - PLUS £224.50 worth of extra games software comprising:

TITLE	SOFTWARE HOUSE	CATEGORY OF GAME	RRP
DATASTORM	VISIONARY DESIGN	ARCADE Space action fighting game	£19.95
DUNGEON QUEST	GAINSTAR	GRAPHIC ADVENTURE Exploration adventure with graphics	£24.95
E-MOTION	US GOLD	ARCADE Ball based puzzle game	£19.95
GRAND MONSTER SLAM	RAINBOW ARTS	SPORT SIMULATIONS Football contest using animated monsters	£19.95
KID GLOVES	MILLENIUM	ARCADE Action adventure hack and slash game	£24.95
POWERPLAY	ARCANA	BOARD AND STRATEGY Graphical quiz game	£19.95
RVF HONDA	MICROSTYLE	ADVANCED SIMULATION Motorbike simulation	£24.95
SHUFFLEPUCK CAFE	DOMARK	ARCADE High tech air hockey game	£19.95
SOCCER	MICROPROSE	SPORTS SIMULATION Realistic soccer simulation game	£24.95
TOWER OF BABEL	FIREBIRD	ADVANCED SIMULATION Interactive strategy game with 3D graphics	£24.95

AMIGA 2000
IBM PC AND AMIGA COMPATIBLE
TWO COMPUTERS FOR THE PRICE OF ONE!
£1349 (Inc VAT and next day delivery)
(£1173.04 exc. VAT)

FEATURES:
- ★ Separate keyboard & System Unit
- ★ 1 Megabyte RAM - expandable
- ★ Built-in 3.5 Disk Drive loads Amiga Software
- ★ Built-in 5.25 Disk Drive loads IBM Software
- ★ Built-in 20MB Hard Drive stores IBM & Amiga Software
- ★ 4096 Colours & Digital Stereo Sound
- ★ Runs IBM software with built-in XT Bridgeboard
- ★ IBM and Amiga Expansion Slots

EXTERNAL DISK DRIVES

Cumana 1 Megabyte Atari or Amiga £89.95
NEC 1 Megabyte Atari or Amiga £79.95
Atari SF314 1 Megabyte.....£139.00
Amiga A1010 1 Megabyte £99.95
Atari Megafile 30 Hard Disk.....£439.00
New! Commodore A590 20 meg hard disk.....£369.00
A590 Hard Disk + Memory Upgrade installed .....Phone

MONITORS

Commodore Amiga A1084 stereo Monitor inc lead £259.00
Atari SC1224 Colour Monitor inc lead.....£259.00
Atari SM124 Mono Monitor including lead.....£119.00
Philips CM8833 stereo colour monitor inc. lead for ST or Amiga £249.00

24 HOUR CREDIT CARD HOTLINE ☎ 0908 378008

To order either call the orderline above with your Credit Card details OR make a cheque or P.O. payable to:
Digicom Computer Services Ltd and send it with your order to the address below. Showroom open at the address below Mon-Sat 10.00am - 6.00pm.

DIGICOM

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES, MK2 2AZ.

All prices include VAT and delivery by courier

Licensed Credit Brokers * *Written quotations available on request APR 34.5% Variable.*

ACCESS VISA

EXPRESS MAIL

With your host Haydn – the man with the fivers to give away

Write and tell HFW what you think about anything under the Sun! Reach him 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.

■ Crossed Lines!

While looking through my old issues of *Express*, I noticed an article about phone phreakers and how they have been ripping off British Telecom. Well, I have just received my quarterly bill, and not surprisingly, feel the need to tell you how BT have been ripping off the British Public.

The cost of one unit of phone time is now, and has been for many years, 5.06p. Therefore, phone charges have remained at the same level for many years, right? Wrong. BT have been sneakily reducing the amount of phone time you get per unit. For example, one year ago, a local call during the cheap rate period would have units of six minutes in length – now you get four minutes. This means that a 30-minute local call to a bulletin board, or indeed your grandmother, would have cost you 25p, whereas it now costs 40p. This is particularly naughty, as Parliament did rule that BT couldn't raise charges for a few years.

You may have seen BTs new advert, informing us how fair it is for them to charge 43.5p for a call to Directory Enquiries. They say they will make it up to us by reducing phone charges by 6%. They forgot to tell us that they have just increased them by 50%.

Owen Reynolds, Penarth, South Glamorgan

Well you've certainly got a BT in your bonnet, haven't you Owen? Shame you haven't quite got your facts right.

For a start, BT reduced the cost of one unit of phone time (including VAT) from 5.75p to 5.06p in 1986. And a local call, cheap rate has 5.5 minute units, not 6 minutes as you say.

True, you will be spending more on your local calls at cheap rate – a year ago, that 30-minute call to a BBS would have cost you 27.59p, but it will now cost you 37.59 pee. But the local cheap rate calls are only one part of the service that BT provides – charges for standard and peak rate calls remain unchanged.

That bit about Parliament making rulings is just not correct, either Owen. Between 1986 and September 1989 BT took a voluntary price freeze, and is now regulated by OFTEL which prohibits BT from raising its main prices by more than increases in the Retail Price Index (RPI). Currently a 'RPI minus 4.5' limit is being applied – which means that the maximum BT could put its prices up after the June 1989-June 1990 rise in inflation of 9.8% is 5.3%. And this 'RPI minus 4.5' formula will hold true until 1993.

And while being charged 43.5p to ask BT for a number so that you can dial it and pay them some more money for a call does seem well iffy at first glance, BT's line on the matter is quite solid. Apparently, half of BT's customers never use Directory Enquiries, and three-quarters 'hardly ever' use the service. Some people, however, abuse the service – telemarketing companies, for instance. Some of them make as many as 100,000 calls to Directory Enquiries in a week – just so they can telephone you, get you out of the bath and try to sell you double glazing. I don't see why my dear old Mum who has got all the phone numbers she is ever going to use written safely in her diary should have to fork out for these telemarketing chappies. Do you?

Oh, and before you ask – I haven't got any shares in British Telecom – I just like to see fairness and accuracy.

H F-W

■ Infantile Whingeing

After many months of infantile whingeing, it seemed that the 'My Computer Is Better Than Yours' debate had finally been relegated to the corner of the school playground where it belonged. (Too right –H F-W)

How thoughtful then, of C J Morris

■ Shed some light on Spectrum

Could you please shed some light on to what exactly is happening to the Spectrum +3?

A while ago I read in *Express* that production of the +3 has been discontinued. Then I read in the Spectrum column of an inferior monthly magazine that all Amstrad is doing is not promoting the machine this Christmas. If the latter is the case, then it appears to me that Amstrad have perpetrated the rumour about the +3's demise so as to dispose of the +2A's they may have.

As to the 'My Computer Is Better Than Yours Debate' (Aaargh! - H F-W) **I own both a Spectrum +3 and an Amiga. As I write, the latter machine has lain unused for nearly a month. And the +3 has been used quite frequently - the reasons are twofold:**

1) COST OF SOFTWARE. A full price game on the 8-bit usually cost between £10 and £15. On 16-bit, the usual cost is £25, with prices sometimes a lot higher. Although 16-bit games are usually a lot prettier, I find I sometimes gain more pleasure out of their more playable 8-bit counterparts.

2) EASE OF USE. When it comes to serious work, I find the admitted primitive +3 environment more useable that Workbench (or MS Dos for that matter). I admit, however, that this is a matter of personal preference - and I might be a bit biased, having owned a Spectrum in some form since late 1984.

When it comes down to it, the best machine is not necessarily the one with the best specifications, but the one that offers you the most in terms of useability at an affordable price.

One final point. Tell Tim 'Centrefold' Smith that he is a 'Sega'. Regular *Express* readers will remember the meaning of this Italian word from the letters page weeks ago!

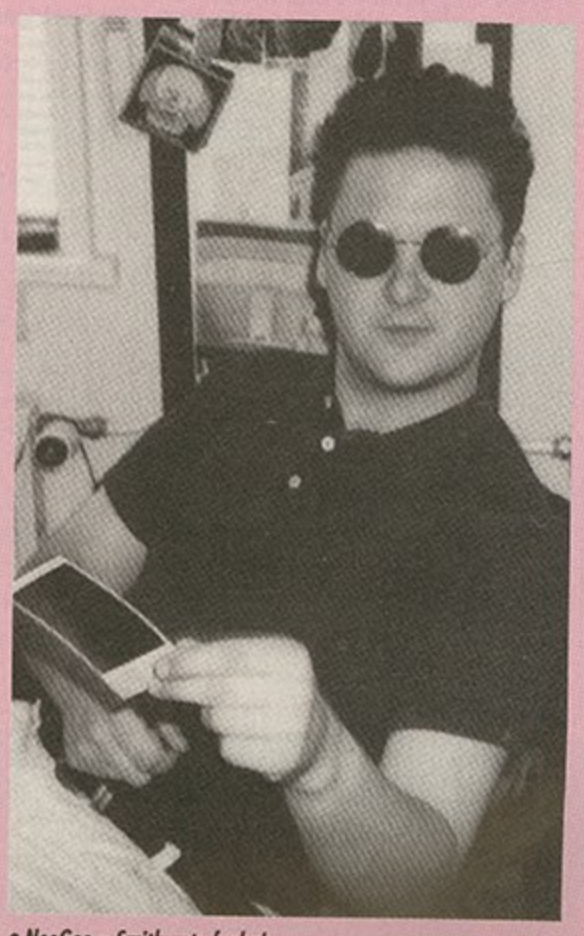
Ian Inman, Stanley, Co Durham

Sadly Ian, that 'inferior monthly magazine' has got it wrong. Spectrum +3s have not been built for a few months now, and High Street retailers are no longer getting new supplies. The +3 is an ex machine...

I too have owned a Spectrum since late 1984, and despite the charms of my IIfx and Amiga, I still find myself returning to my rubber-keyed friend from time to time. There are some real classic games for beastie – and as you say, many of the new releases offer plenty of gameplay without the pretty frills of squillions of colours on the screen at one time that 16-bit machines can offer.

Finally, since his recent holiday to America Tim 'Smith' Smith is no longer a 'Sega'. He's more of a funky NeoGeo sort of a dude (or so he tells us). Judge for yourself... and have a fiver for finally giving me the chance to use this picture, which I have been hoarding for weeks.

H F-W



• NeoGeo – Smith gets funky!

(*Express* 106) to find a new approach - the 'My Computer Journalist Is Better Than Yours' debate. No doubt, this drivel will go on for months, so here's my contribution to get the ball rolling.

In the first place it is generally accepted as good humour to poke fun at the owners of rival pieces of hardware. Most owners are proud of their machines and will rubbish others in much the same way as car owners do. Of course, you always find that certain machines attract people with an inferiority complex who need reassurance that they have made the right choice.

As an ST owner, I'm not going to fall into the trap of defending the machine. It doesn't need it. Instead I'll just say that I previously owned both an ST and an Amiga and I read the computer journals of both extensively. It was my experience that there was far more deriding of the ST in Amiga magazines that vice-versa. It even spilled over into Amiga software. Try putting an ST or PC disk into Cyclone to back it up and you get messages like 'there's a nasty taste in my drive!'

So, CJ, if you really are that pale and sensitive you can't take a joke, why not sit in a corner with a security blanket and a copy of *Amiga Format* and don't risk anyone poking fun at your precious baby.
Paul Bates, Derby

But is Steve Carey better that your computer journalist, or not? That is a question that only the Steve Carey Fan Club is truly qualified to answer. **H F-W**

■ Greedy Lady?

Though I can't prove it by taking a photo, I'm sure I can win your competition for the most computers. I love them, so I have the following: ZX81, Spectrum; Spectrum +; Spectrum 128; QL; Z88; Electron; BBC A; BBC Master; Amstrad PC1640; NEC Starlet; Victor Vicki; Atari XE - a total of 13. Then I have an Atari games console, a Psion Organiser, three music keyboards, four monitors and three printers.

I intend to sell most of them when I get round to it, as they're taking over the house.
Mrs Barbara Prowse (Age 49+), London

Clearly, you are a woman after Brian Douglas' heart... But, I'm sorry Mrs P - no photo, no fiver. You can just imagine the reams of letters I'd receive listing computer after computer if I started giving away dosh without empirical proof!

My next correspondent has a slightly different tale to tell about computer ownership... **H F-W**

■ The Kiss Of Death!

Don't worry, this isn't going to be another moan at you for dropping the Oxbridge 12K-four-shades-of-grey micro column. Having said that, I was a regular buyer – like, every week since launch – mainly on the strength of your QL column. But I agree, that a couple of paragraphs telling me of things I knew about for weeks already was not inspiring. Losing the column didn't place a great dent in my weekly reading.

Despite the above comments, I must confess to being the archetypal collector of all defunct machines. I own a number of micros which were bought for their undoubted technical excellence at the time, but the very fact of me buying them seems to have been the kiss of death.

I bought an Oric-1, then the Atmos (twice) in preference to the Spectrum, which had less memory. I bought a QL because it was so advanced (and it still is), and a bought a Z88 because of its portability and software. I also bought one of the few SAM Coupés to be sold by MGT before its demise.

As you will see, none of my choices have turned out to be mass-market success stories - but I like them, and still use them all regularly. I promise not to buy an ST or an Amiga and jinx them, providing enough owners send me a pound to make sure I don't!
Alistair MacDougall, Kilsyth, Glasgow

I feel a splash of generosity coming on. Not to you, mind Alistair, but to all the ST and Amiga owners out there who don't want to see their kit go the way of the Oric. Here's a fiver, on account...

H F-W

■ Pipped With Apple

What's all this tosh about the Apple logos of Apple Corps, the record company, and Apple Computer? (*Express* 105 - H F-W) Has anybody seen the Apple Corps logo? It's a Granny Smith cut in two and viewed from the cut side, while Apple Computer's logo is a multicoloured affair with a little bite out of it, viewed from the side. If they are similar, then I'm a DRAM chip!

Just because Apple Computer have started doing MIDI kit doesn't affect Apple Corps at all – they're just being pig-headed! Go back to your studios.

Then the subject of computer shows on TV came up on the letters page. I don't know how accurate Tim Gowen was when he said that Micro Live had loads of viewers when it was scrapped, but it seems to me that the reason why there are no computer shows is that television companies just can't strike upon an acceptable format.

The sort of TV programme I would create would be aimed at the popular end of the market (much as *Express* is, no offence intended) with news, hardware and software reviews and features. It would be presented in a manner similar to *Tomorrow's World*, or *Top Gear*. Of course, if the BBC screened such a show, they would have to be careful not to take *Tomorrow's World's* material...
Simon Daniels, Long Buckby, Northants

Ugh! What a horrible idea, cutting Tim Smith's granny in half and using her as a logo.

Anyone else out there got any comments to make on why we see so little of computers on the TV screen?

H F-W

■ Sexist Crap?

It was commendable of Rod Lawton to take up the issue of women in the computer industry, but there were numerous flaws in his article which made him come across as an utter prat.

He reasons that the scarcity of female programmers in the industry is because the males dominate, and because it's the computing industry, the males are sexis and bigoted – and later he insinuates, wankers.

That's bull.

One of the reasons why there are so few women is because of the stereotype that Lawton perpetuates in his article. I doubt if many women, having read the article, would consider programming as a career – unless they were nymphomaniacs or to prove that they are better than a male.

Modern times dictate that sexism and racism will not be tolerated. And there are the appropriate authorities to back you up if ever you fall victim to either. Modern times also allow equal rights. Job stereotypes are less and less now, and with a little help, anybody can be anyone they want to be. (I'd like to be the Duke of Westminster, please - H F-W).

And that is the crux of the matter. Very few females have ever wanted to be programmers or to play games to the extent that males play games. It is not due to the industry being sexist or bigoted like Rod Lawton says, but due to the many things boys and girls like to do. They choose to do those things as a vocation later in life.

This is not sexism on the part of the industry, but a result of the general sexist stereotypes that exist. If someone dedicates time and effort to produce a product for the benefit or enjoyment of others, does it matter if it's a male or a female?

Education does teach children that they are open to do anything with their lives. But media articles that slur male programmers as obsessed computer addicts do nothing for males nor females who wish to enter or are already in the industry.

Next time Lawton wants to impress women (and the pseudo-macho photo didn't help matters), tell him to go jump off a very tall building.
Samantha Clements

Strong words indeed, Samantha. I don't think Rod has ever been called an 'utter bottom' before! (Read Darconville's Cat by Theroux if you don't believe that 'prat' means buttocks.) But you are completely right about Rod being 'pseudo-macho' – with biceps like his, he has no other choice...

It is rather strange how few women are attracted to the computer industry – especially as the person who is credited with inventing programming, Ada Lovelace, was a female.

But far be it from me to pontificate as to the whys and wherefores. Let's hear from some more female readers on the subject. **H F-W**

MAIL SHORTS

■ Arabian MSX

I recently received a letter from an MSX user in Saudi Arabia requesting information about software. Sadly, I am unable to help as our products are aimed at the Acorn Archimedes market. Perhaps you could help, Hadyn?
Vince Hudd, Soft Rock Software, Bristol

Pleased to oblige - here's that letter.**H F-W**

I am facing a problem in finding clubs and magazines for the MSX - if you could kindly recommend some addresses in this matter I'd be glad. My computer is an MSX2. Thank you.
Saleh S Al-Nasser, PO Box 1830, Riyadh 11441, Saudi Arabia

■ More Praise

The company Hunmanby Computer Supplies is absolutely brilliant. If all mail order companies were as curteous, quick and friendly as HCS is, then there wouldn't be the kind of mistrust about mail order companies as there is from the general public.

I am in no way connected with this company – just a satisfied customer.
Dave Palmer, Jarrow, South Tyneside

Will these personal recommendations ever end? **H F-W**

■ Quick Shot

Please shoot your competitions Editor. In your 'C' competition, where copies of Lattice C and HiSoft's C interpreter were up for grabs, I was listed as one of the winners. So where is it?
Steven Stewart, Stranmillis, Belfast

On it's way to you, according to Tim 'Smith' Smith, our competitions editor. (How come this week's letters page has been taken over by Tim Smith references? Maybe his ego is really taking over the office...) **H F-W**

■ Happy Man

My ST is briliant. I'd have to be one mega DTP freak before I need more. I truly hope you Amiga owners feel the same way about your machines. Way back in the Seventies I used to operate an ICL mainframe with 128K (words) and an ITT teletype for a keyboard. That was brilliant – then!

I wouldn't mind betting that an Amiga or ST could do just about everything that ICL could do, and probably quicker, too. Please, no more MCIBTYC. You are ALL right – your computer is the best computer for you. Isn't it?
Mike Rhind, Pontardawe, Swansea

It certainly is. No man (or woman) could want more than a Mac IIfx. **H F-W**

YOU'VE GOT
GAME IN YOU

Hand-held consoles have been round for years, but they have always been limited. For a start they would only play one game – a bit tedious after a while. Another major problem was their display: the tiny black-and-white LCD left a lot to be desired for serious gameplay.

Last year Nintendo made the first move to set things right with the Gameboy. This machine featured plug-in cartridges allowing you to swap games easily. Unfortunately it still had a black and white screen (albeit a sharp and clear one) so games lacked a certain something. Nevertheless the Gameboy has been a smash hit.

Then came Atari with the Lynx. This revolutionary hand-held featured the same tiny colour LCD screen which has featured in pocket TVs like the Sony Watchman. The demand for the Lynx was so great that when it first went on sale in a couple of stores in New York and Chicago they sold out within hours.

Since then Atari has very much had the hand-held market to itself. Despite rumours, the gaming giants of Nintendo, Sega and NEC remained curiously quiet. Then rumours began to circulate of new hand-helds; machines based on the already successful technology of consoles like the Sega Master System and PC Engine. Preview models began to be shown at the major American consumer electronics fairs, stirring up a lot of interest (and front page stories in *Express*).

As we move into December, these new colour machines are beginning to appear, unofficially imported into this country. We have got hold of a Sega GameGear and NEC's hand-held PC Engine, and have given them a thorough playing with. We would have given the same treatment to the Atari Lynx, but Atari has yet to give us an evaluation machine!

SAME DIFFERENCE

Despite their obvious differences in the looks department, the two machines are extremely similar in operation. The LCD screens are the same 3-inch devices, both feature the now obligatory rocker joypad on the left to fit snugly under your thumb, and the two fire buttons are arranged diagonally to the right hand side. Both feature volume and brightness controls on the side and allow 3.5mm headphones to be plugged in to save your companions' sanity. The GameGear is slightly heavier at 600 grammes to the PC Engine's 450 grammes, but both are light enough to be comfortably carried around.

Both machines offer a cable link system to let you attach several consoles together to indulge in multi-player action. The GameGear can link two machines, while the Engine can join four players. These links are particularly good for racing-type games, where your opponent appears on the screen.

TV tuner. With the tuner in place you'll be able to pick up your favourite TV programmes between bouts of alien bashing. The PC Engine version will cost about £50 and attaches to the right hand side of the machine. It offers the usual colour and contrast controls. The Sega tuner screws on to the back of the GameGear and operates in much the same manner.

requiring six AA pencil batteries to operate. Battery life is limited to a couple of hours in both cases.

similar; both use an 8-bit chip, but they are linked up to dedicated video silicon which controls the LCD screen so their performance is better than you might expect.

PORTABLE PC ENGINE

The portable Engine is made of tough grey plastic. It has a recessed 2.6 inch screen with a speaker sitting centrally below it. The unit weighs around a pound and measures 185 x 109 x 45mm.

It has the standard joypad to the left with buttons one and two diagonally to the right. Below them are turbo option sliders and select/run buttons. The left side houses volume and brightness controls, ear jack and mains input, the right side the tuner input jacks. The power on/off is on top of the unit whilst cards slide in to a recessed back panel.

Hidden to the front is a 'comlink' jack which allows up to four players to play simultaneously.

The unit has a good solid feel and is stable even in the middle of a good thrash. The picture is good, but with detailed games like *Alien Crush* (a pinball sim) you do lose detail because of the small screen size. The sound is excellent – the speaker can blast away the six channel music and effects with great gusto.

A key advantage of the hand-held PC Engine, which goes a long way to making up for its high price, is the fact that you can use standard PC Engine games cartridges. Thus anyone who already has an Engine can save a fortune in software costs.

PC Engine games are expensive (£30 or more is not uncommon), but they are good, and the ability to play the same game on the move and on your home console is not to be sneezed at. Dozens of titles are available in PC Engine format already.

T THE WHOLE OUR HANDS

Colour hand-helds are the future of portable gaming. We look at two new machines all set to give Atari's Lynx a run for its money.

However when it comes to screen specifications there is no comparison; the PC Engine wins hands down. For instance in the colours department the PC Engine has two modes; a 320 x 224 pixels resolution mode with 256 colours, and a lower resolution 312 x 238 set-up with a huge 512 colours on screen – that's comfortably more than STs, Amigas and VGA PCs can handle from a device less than five inches across! The GameGear on the other hand offers the same number of colours as its carpet-bound parent the Master System – 16 chosen from a possible 4,096. In the GameGear's favour is its screen resolution, with 480 x 146 pixels.

HEAD TO HEAD

	GameGear	PC Engine
Graphics	★★	★★★★
Sound	★★★	★★★★
Features	★★★★	★★★★
Games availability	★★	★★★
Value for money	★★★★	★★★

COST EFFECTIVE

Grey imports of both machines will soon be reaching the shops; outlets like Cybertech and Active Consoles will be offering the GameGear for around £180 and the PC Engine will follow shortly.

In Japan the PC Engine sells for just over twice the cost of the GameGear – 45,000¥ to 19,800¥. The British launch of the GameGear is due in the spring, and although Virgin Mastertronic is reticent about the pricing it is rumoured that it will come in at around £100.

It is unlikely that the hand-held PC Engine will be officially launched in this country – its been three years since the console version was first sold and NEC is still not interested in bring it to these shores. The US and Japanese versions of the machine are slightly different and will not run games from the other version, so be careful when buying grey imported machines and games that they match.

It seems likely then that there will be a premium to pay if you want to get hold of a PC Engine. Equally it seems that it will be worth paying; the PC Engine is an amazing piece of game playing technology. ■

THE SEGA GAMEGEAR

The GameGear is dark grey with a black central window containing the 3-inch LCD screen, with a speaker on the left-hand side. It is slightly heavier than the PC Engine, measuring 103 x 210 x 40 mm.

The joypad is located rather high and to the left of the screen, with the start button and two fire buttons on the right. The top panel contains the volume control, headphone jack, on/off switch, power adapter socket and a connector for linking two machines. The screen brightness control is on the right hand side.

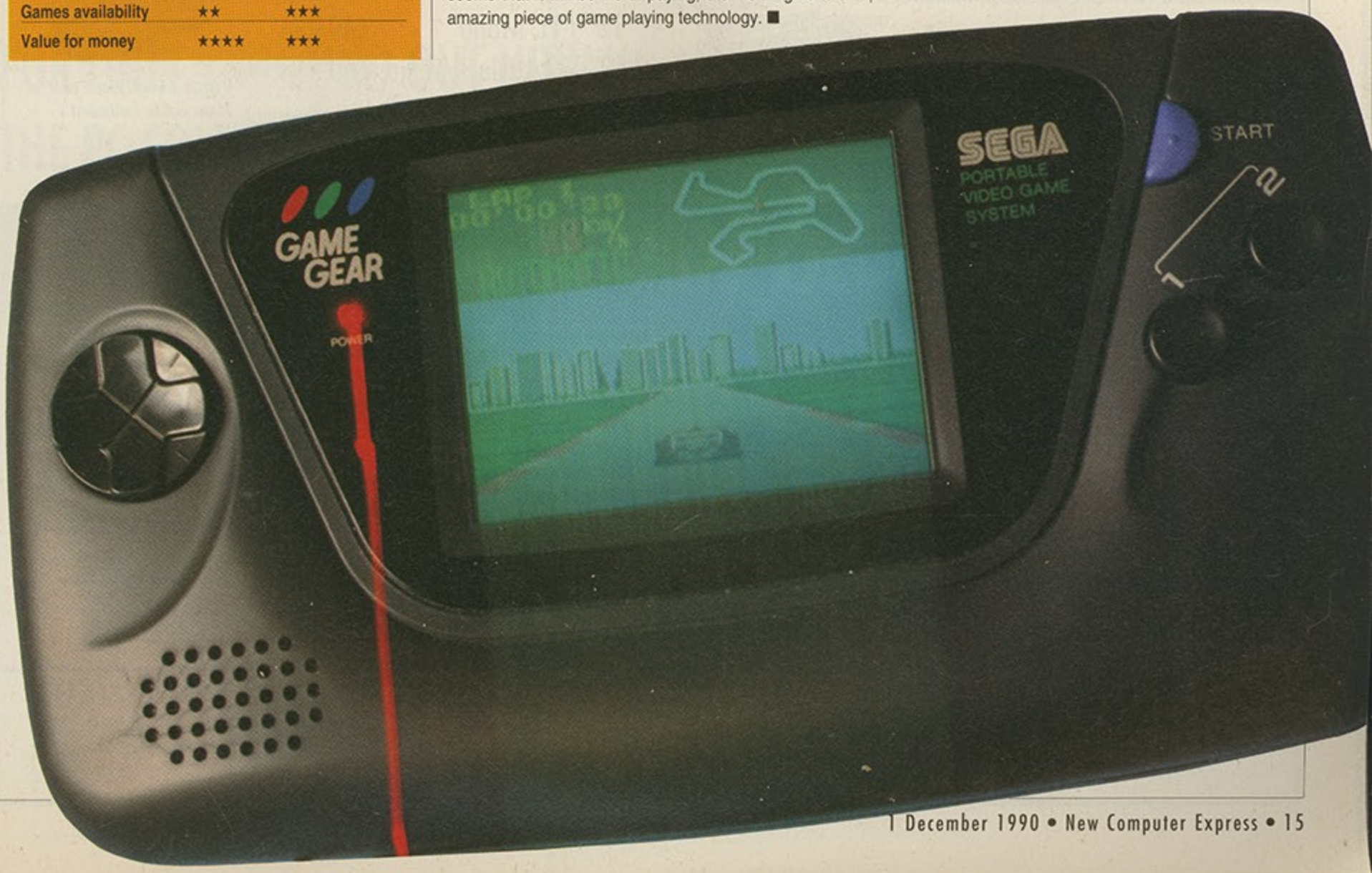
To get the best view on the screen you have to hold the machine at a pronounced angle, but the joypad and buttons have been positioned so they sit naturally when you are using them.

The screen is not sharp and rapid motion becomes blurred. On a racing game like *Super Monaco Grand Prix* this is actually an advantage as the smearing of the background as you twist and turn gives the illusion of extremely smooth scrolling. With a shoot-'em-up though it might be difficult to see the targets clearly.

The sound on the GameGear is reminiscent of a CPC or ST – not brilliant, but passable. It features three stereo channels and a noise channel.

Unfortunately the GameGear cannot use standard Master System games. At the moment only three titles are in circulation – *Super Monaco Grand Prix, Pengo* (the classic block sliding game) and *Columns*, a sort of Tetris clone. Games cost around £15 in Japan.

Although games are limited at the moment, a company with Sega's muscle will soon ensure that there is plenty to be had. Already promised are titles like *Wonderboy, Pro Baseball* and *Dragon Crystal.*



UK HOME COMPUTERS

PC/XT FOR UNDER £300

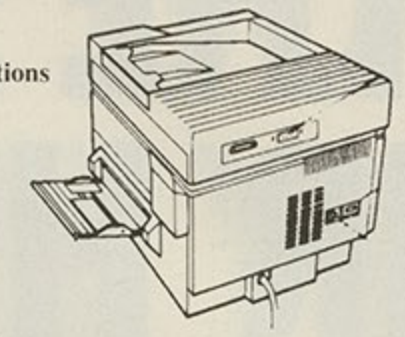
8088 Processor @ 8 MHz, Serial & Parallel Port. 8087 Socket.
1/2 Mb On-Board RAM (Expandable)
1X360k 5.25" FDD (Space for second)
Mono/Colour Graphics Card
2 Conventional Expansion Slots
Space for Internal Hard Disk Drive
MS-DOS 3.3 & GW-BASIC 3.2
102 Key Keyboard made by EPSON
12" Mono Monitor (New/Ex-Display)

Ideal for Christmas

£299.95p inc. VAT & Carriage

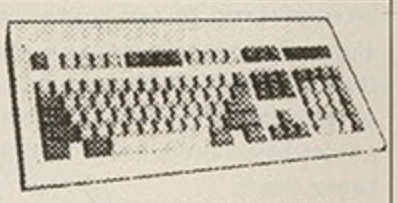
CITIZEN LASER PRINTER

10 Pages per Minute
1/2 Mb On-Board Memory
Epson FX/ Proprinter & Diablo Emulations
Parallel & Serial Interface
300X300 dots per inch
Landscape & Portrait Printing
Toner Cartridges from £18.00p
12 Month On-Site Warranty
Model:- Overture 110 +



£804.95p inc. VAT & Carriage

PC XT/AT KEYBOARDS



102-key keyboard made by EPSON. Full UK Spec. with 5 pin connector. Adjustable feet allow an elevated typing position. Self-sensing between XT or AT operation. Normally retailing at over £100.00p

£39.95p

Postage & Packing £4.05p

"WINDOWS"

Microsoft's WINDOWS 286, Ver 2.1. Full manuals, 5.25" disks. Brand New & unregistered. Currently selling for approximately £55.00p plus VAT.

£29.95p plus £3.05p Postage

WINDOWS 386 Ver. 2.1

£49.95p plus £3.05 Postage

"FIRST FRAMEWORK"

Made by ASHTON-TATE. A Complete integrated package for the Amstrad PC 1512 or PC Compatibles. The package consists of a word-processor, database, spreadsheet, & graphics programs. System requirements are 2 5.25" disk drives & a minimum of 360k RAM. MS-DOS 2.0 or higher. This package is all that you would expect from a company like ASHTON-TATE.

£24.95p
inc. VAT & Postage

SAMSUNG PC/XT's

Model SPC 3000. 512k RAM (Expandable), Full-Size Keyboard, MS-DOS 3.2 & GW-BASIC. 4.77/8 MHz Clock Speed. Battery Back-Up. 5.25" Disk Drives, Hercules Display Card, RS232 & Parallel Ports, 8087 Co-Processor Socket, 90 Watt switched Power Supply, 4 Expansion Slots. Small Foot-Print. FREE Ex-Display Mono Monitor.

Single Disk Drive (512k)	£419.95p
Double Disk Drive(512k)	£449.95p
Single Disk Drive, 20 Mb Hard Disk Drive (640k RAM)	£589.95p

inc. VAT & Carriage

EX-DISPLAY MONITORS

Made by SAMSUNG. Condition as new. Tested prior to despatch. These monitors have generally had less than 10 hours use.

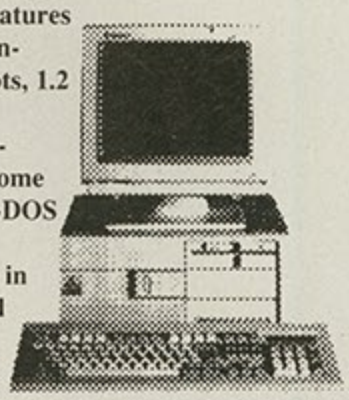
14" EGA	£149.95p
12" TTL Mono	£49.95p
12" VGA Black/White	£69.95p

Tilt & Swivel Base and Data cable included

The above prices include VAT, but please add £10.00p per monitor for overnight carriage.

PC/AT 286-OFFER 1

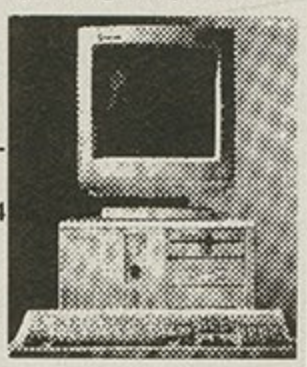
Made by SAMSUNG. Model MFC 6000/1. Usual selling price around £800.00p plus VAT. Features include 80286 processor @ 10MHz. 1Mb On-Board RAM (Expandable), 6 Expansion Slots, 1.2 Mb 5.25" High Density Floppy Disk Drive, (Room for 2 additional drives), 102 key keyboard, battery back-up, Hercules/Monochrome graphics Card, Serial & Parallel Ports, MS-DOS 3.2 & GW-BASIC. Ideal computer for the enthusiast who wants to add to their system in their own time. This item is very limited and cannot be repeated.



£499.95p This price includes VAT, but please add carriage £10.00p. (Note:- This offer doesn't include a monitor.)

PC/AT 286-OFFER 2

Made by SAMSUNG. Model SPC 6512, currently selling everywhere at £1150.00p plus VAT. Features include 80286 processor @ 12MHz, 1Mb On-Board RAM (Expandable), Twin High Density Floppy Disk Drives, (1X5.25" & 1X3.5"), 102 key UK Keyboard, Maths co-processor socket, 3X16 bit expansion slots, 2X8 bit expansion slots, Hard disk controller, Battery Back-Up, Optima/1024 VGA Graphics Card, MS-DOS 3.3, GW-BASIC, & Ex-Display 12" Samsung VGA Black/White Monitor. This machine is very powerful & well-specified. Again, limited stock so order early.



£699.95p inc. VAT & Carriage

VISA/ACCESS orders welcome. Prices subject to change without notice. All transactions are subject to our standard conditions of Sale, available upon request. Personal callers welcome by appointment. All prices include VAT. All goods Brand New unless expressly stated otherwise

UK HOME COMPUTERS
82 CHURCHWARD AVENUE,
SWINDON,WILTS, SN2 1NH.
0793 695034

Feeling Rough? Then get yourself Smooth

FOR ONLY £80! FIND OUT HOW IN THE PC COLUMN ON PAGE 23

SHOPPING EXPRESS

THE VALUE-PACKED GUIDE TO YOUR MACHINE AND MORE

CONTENTS

AMIGA 18
The Germans are coming

ARCHIMEDES 19
Flying around on the screen

CPC 20
Which is the best driving game?

C64 22
Write the caption and win a prize!

PC 23
The painless way to smoother screen fonts

Spectrum 24
Assembling on the SAM

ST 25
PC emulator prices slashed

Macintosh 27
All kinds of compatibility problems

Whole Wired World 35
Steve Gold at large

Centrefold 38
He's back. From America. Tim Smith. Read on.

Programming 47
The latest chapter in the programming story

Circuit City 50
Plug in on the move with a battery-to-mains adapter

Express On-line 52
The weekly bulletin board and user group guide

Express Extra 55
Second-hand prices guide

The PD Column 58
The best in free software

Tech Tips 62
More sound advice from The Big K

Getting to know you 67
Reply to our questionnaire and win a hundred notes

FREE! Reader Ads Order Form

PLEASE TICK THE CATEGORY YOU WANT YOUR AD TO GO IN:

- ☐ HELP OFFERED
- ☐ SERVICES
- ☐ ANNOUNCEMENTS
- ☐ GOODS WANTED
- ☐ VIRUS WARNING
- ☐ MINI-TIPS
- ☐ BUGS DISCOVERED
- ☐ FOR SALE
- ☐ EVENTS
- ☐ PERSONAL

NAME _____ TEL: _____

ADDRESS _____

WRITE YOUR FREE AD HERE USING ONE BOX PER WORD IN BLOCK CAPITALS.

Send your reader ads to:
SHOPPING EXPRESS READER ADS,
30 MONMOUTH STREET, BATH BA1 2BW

Terms and conditions

- Sorry, NO trade ads. All reader ads must be from private individuals
- We cannot vouch for the quality of goods and/or services offered in this section. all ads are accepted in good faith.
- We reserve the right to amend or refuse reader ads at our discretion
- No pirated software may be sold through these columns. Any reader being offered non-originals should contact us
- We cannot guarantee that reader ads will appear in particular issues of Express
- The following declaration should be signed:

My advertisement conforms to the terms above and is legal, decent, honest and truthful

Signed _____

286
12 MHZ
ONLY £675.00

PRICE INCLUDES

40 Meg Hard Disk
Mono VGA Monitor
VGA Card (for above)
102 Key Keyboard
1 Serial / 1 Parallel Port
1 Meg RAM on board
Dos 3.3 & GW - Basic
1.2 Meg 5¼ floppy drive

ADD-ON OPTIONS (please Add)

VGA Colour Monitor	£200
Super VGA Colour Monitor	£250
1.44 Meg 3.5" Floppy Drive	£50
A4 Handy Scanner	£125
A4 Mouse	£30
Microsoft Windows 286	£45

(All prices exclude VAT & Delivery)

269 Bury New Rd. Whitefield
Manchester M25 6QQ
Tel. 061-766 3417
Fax. 061-767 9510

We also supply a full range of computer Accessories and Peripherals
CALLERS WELCOME
9am-9pm 6 DAYS A WEEK!

DOUBLE M COMPUTING

Amiga

THE GERMANS ARE COMING!

Germany was once the stronghold of Atari, but the Germans have finally started to see the error of their ways. Maxon Computer GmbH is a German company that has been producing products for the Amiga for a fair old time now, and the contents of its latest catalogue are quite stunning.

Amiga Pascal programmers have been patiently waiting years for a decent Pascal compiler, and at last Maxon have come up with the goods. Its Kick-Pascal system is a fully integrated programming environment that allows you to write, compile and run your Pascal programs from within a nice friendly editor – not unlike the approach adopted by HiSoft's successful BASIC system.

Kick-Pascal offers full support for the Pascal standard, but also offers complete support for the Amiga's own unique capabilities. Applications programmers are at last offered an alternative to the acceptable standards (C and Assembler) with a programming language that even fully addresses both 2.0 and ECS. Even if you don't possess an in-depth knowledge of the Amiga ROM Kernel, Kick-Pascal includes many in-built functions for such tasks as opening screens and windows,managing input etc. Kick-Pascal costs 189DM.

Amiga assemblers have always been the subject of dubious naming – Argonaut set the challenge with its ArgAsm system, but Maxon has beaten them with its latest release, Kick-Ass.

Just like Kick-Pascal, Kick-Ass offers a fully integrated programming environment that gives fully access to a powerful text editor, monitor, debugger, tracer and linker from within a nice friendly front-end. Never again will have have to enter meaningless command line arguments to get things moving.

Users of Kuma's hideous *K-Seka* will be pleased to know that not only is Kick-Ass *Devpac* compatible, but it will also accept *K-Seka* source files without modification. The assembler includes full optimisation options, coding sectioning (chip, data, bss) and even automatic syntax checking after each line is entered. Kick-Ass costs 89DM.

Finally, it looks like Inovatronics's acclaimed *Power Windows* has finally met it's match. *RCT* (*Requester Construction Tool*) is a powerful Intuition source code generator that will allow you to generate attractive Intuition displays without a minimal amount of hassle. The results can then be saved in a multitude of different languages including assembler, C, AmigaBASIC and even GFA-BASIC. RCTcosts 129DM.

For information concerning these products and more, get out your German phrase book and phone Maxon on 010 49 61 9648 1811.

BOOKS FOR 2.0

None of us actually have it (apart from those lucky enough to own a 3000), but already the book publishers have started pushing their new books covering the new release of the Amiga's operating system. Thanks to those ever so nice people at Adamsoft, I've just received copies of two publications – *Amiga Printers Inside & Out* and *AmigaDOS Inside & Out*.

Printers have always been a source of much frustration for first time users, so Abacus's latest is sure to receive a warm welcome. It covers the basics beginning with how printers work,setting up a printer using dip switches and plugging everything in.Then it's on to actually installing the printer on your system. The book details both the current 1.3 preference settings and even the new Workbench 2.0 Preferences (which is vastly different), how to copy across printer drivers. It also offers a number of extra tricks and tips which are supplied on a free diskette which is bundled with every copy (no, you don't have to pay extra!). For printer owners, this is a must.

Next up is *AmigaDOS Inside & Out* which has been revised once again to cover the new commands within Workbench 2.0. In truth, there aren't actually that many new commands, but 2.0 does provide many enhancements over the current command set. The book documents all these changes, plus an in-depth guide to Ed and Edit. There's also a guide to writing your own AmigaDOS Shell commands using C, customising your StartUp-Sequence and a nice techie section on tasks and taskhandling, devices etc. All good clean fun for boffins everywhere.

For more details about these books and more, give AdamSoft a call on 0706 524304. It'll be pleased to fill you in.

HARD DRIVIN' ON THE A1000

I've had quite a few people contact me regarding a tip published within *Express'* sister publication *Amiga Format*.

The tip claims that the A590 hard drive (which was designed for use on the A500) can be plugged in and used on an A1000 without need of any form of interfacing. Most seemed naturally rather sceptical, but the truth is that this is entirely correct – the A1000 can indeed use the A590, and many other peripherals that run through the expansion bus.

It's a little known fact that the A1000 and A500 expansion buses are virtually identical. The only difference between them is that the A500 has an extra 7MHz clock signal that isn't present on the A1000. In reality though, very few A500 peripherals actually seem to use this extra line, so compatibility is high.

In truth, the only major difference is the orientation of the connector itself. Whilst the A500's bus resides on the left hand side of the machine, the A1000 has its expansion bus hidden away on the right hand side.

This basically means that any peripherals designed for the A500 must be plugged in reversed – in the case of A590, the front panel faces

backwards, the rear SCSI connector faces forward etc.

You will also need to support any A500 devices by placing something like a book underneath it (the A1000 connector is higher than its A500 counterpart).

A word of warning, though. Be careful when plugging devices such as the A590 into your A1000 – the connector must be pushed in as far as it will go or the drive will fail to be recognised. I had quite a lot of fun trying to get an A590 to work on my A1000, just because I hadn't lined up the connectors correctly.

If you've got an A1000 and you're after a hard drive, then my advice is to buy yourself an A590. Just like the A500, you can also add RAM to your system by inserting RAM chips inside the A590. At current discounting, the drive can be picked up for as little as £250- which is hundreds of pounds cheaper than even the cheapest dedicated A1000 drive!

Hard drives aren't the only devices that can be used with the A1000. I've been using an A500 'Mini-Megs' 2Mb RAM expansion on my A1000 for the past couple of months now (kindly donated to me by George Thomson Services), and it has performed faultlessly.

Indeed, I can quickly disconnect the card from my A1000 and then plug it straight into an A500 in a matter of seconds – now that's what I call connectability!

Jason Holborn

Archimedes

IZZY WIZZY LET'S GET SCSI

Technomatic is about to take delivery of the first batch of its new SCSI boards. These little beasts behave in much the same way as all the other SCSI boards currently available, but do so with the latest three-chip technology and, according to Technomatic, faster than any of the competition. For the £179 price tag, you also get full Acorn compatibility and, of course most importantly, an extra icon on your icon bar.

I must apologise for referring to a 'SCSI interface' last week, I do know what the 'I' stands for really! While talking about Technomatic, I might as well mention the new version of the *TechnoSCAN* software. For a shade over 20 notes, you get a pretty little ROM (complete with snazzy silver writing) and a disk with a new !Scanner application on it. Users of the the old version will have no trouble at all getting to grips with the new one. New features include a set-up menu allowing the size of the scan (width and height) to be altered as well as the image resolution – true 400 dpi monochrome scanning is now supported as well as 8- and 16- level grey scale.

A time out can be set to switch the scanner's LEDs off if the scanner is inactive. This protects the LEDs and prolongs their life. An option is provided for rotating scans, but you still cannot scan horizontally. The save sprite menu has been improved, allowing the sprite name to be altered as well as the filename. There is still no support for scanning multiple images and saving them in one file, they must be transferred into !Paint to do this. A Print menu has been added to dump scans to a printer without the need of transferring to !Paint. All version 1's features are still available – scan zooming, clipping and rescaling but all have had that extra tweak to make this a worthy sequel.

FLYING IN A BLUE DREAM

The 4th Dimension's rival to *Interdictor* has finally arrived and is well worth the wait. *Interdictor II* may well be a 'full force model' and 'a near perfect simulation' but until it looks as if you are actually flying, i.e. until the landscape looks realistic with real contours, you can see out of your plane in any direction and watch your flaps moving and they make lorries that don't drive across the lake, I'm afraid that all this realism is rather lost.

Full marks to the Simis team for their dedication to producing an accurate game, not many for producing a fun and interesting game. Enter, please, *Chock's Away*. Here, the reverse is true, you control your tiger moth biplane with up, down, left, right, faster and slower. Rudder? What rudder?

But that isn't really important, *Chock's Away* is actually fun. You can play with two players (the screen is split into two views), you can view the game from outside your plane, there are three maps, a flight recorder, a practice mode, a dogfight mode and, most importantly, 20 missions that can be played solo or with 2 players.

In true *Aviator* style you have an inverted 'T' gunsight, you can fly between the rugby posts and the plane even settles backwards onto its rear wheel after landing. The explosions are pretty and the smoke clouds convincing.

What's wrong with it? Well, a few things, the shadow is always plotted at sea level unless you are actually on the ground, so it suddenly jumps when you touch down on the aircraft carrier. The perspective goes rather 'violent' sometimes when you are close to objects, the front end is rather inferior, having the seemingly obligatory 4th Dimension character definitions, varying mouse speeds, peculiar non-standardised menus and the occasional annoying screen flash.

The only major criticism is that it is rather on the slow side sometimes. Oh well, perhaps an ARM 3 or A540 isn't that expensive after all.

In the end though all these are unimportant, *Chock's Away* is a fun game. £25 well spent.My final comment for Clares would be: keep trying. I can see there is something in *Interdictor II*, perhaps if Simis

COMPUTER LAB

HARDWARE

Amiga Flight of Fantasy Pack ..£349.00
Amiga Screen Gems Pack £349.00
Amiga Class of the 90's Pack .£499.00
Amiga 2000.please ring for best prices
Amiga 3000 please ring for best prices

Discovery Pack 520STFM.....£269.00
Power Pack 520STE £359.00
1040 packs from.....£434.00
Lynx.....£159.00

Please ring for best discounts on hardware and software - the very best games machines in the world today!

SEGA MEGADRIVE
Megadrive £149.00
Software all at discounted prices, please ring for details.

PUBLIC DOMAIN DISKS
ST PROGRAMMERS DISK; Assemblers, C Compilers, Modulator 2, Compiler, C Tutorial, Lisp, Logo and Gem programmers guide.

We have an extensive range of public domain and shareware programs. Please ring for details of our Amiga and ST Libraries.

SEVEN DISK SPECIALS ONLY £10.95

AMIGA DEMO PACK 4 - All of the best latest demos. Pack changes all the time but never has same demos twice.

AMIGA BUSINESS PACK - Spreadsheet, Wordprocessor, Database, Journal, N.A.G., Inventory.

AMIGA UTILITY PACK 2 - Virus killers, Copiers, Disk Managers, Rippers, Bootcopiers. Plus loads more.

AMIGA PROGRAMMERS PACK - C compilers, Assemblers, Source Codes, Pascal, LISP, C manual etc.

ST GAMES - Azarian, Othello, Queboid, Breaknoid, Wheel, Football, Monopoly, Rocm, Invaders,Tennis, Bermuda Race 2.

ST BUSINESS - Spreadsheet, Database, Inventory, Fincalc, Stocks, Shares, Double Sentry, ST Writer Elite 3.

BLANK DISKS
3.5" QUALITY DISKS £12.00 FOR 30
FULLY GUARANTEED DSDD 100% CERTIFIED

ORDER BY PHONE (0602) 673674 or (0602) 673672
Delivery - Please add £6.50 courier delivery for orders over £100 Add £2.00 p&p for orders under £100.
ALL PRICES INCLUDE VAT

PROMPT DELIVERY
85a MANSFIELD RD, DAYBROOK, NOTTINGHAM, NG5 6BH.

24 HOUR ORDERLINE TELEPHONE: NOTTM. (0602) 673674/673672

Christmas comes but once a year so please buy all your discs from here

3 1/2" DS/DD Inc. Labels

BULK BUYERS
50 3 1/2 DS/DD.....£19
100 3 1/2 DS/DD.....£34
150 3 1/2 DS/DD.....£49
200 3 1/2 DS/DD.....£63
400 3 1/2 DS/DD.....£122
500 .....£Call
1000.....£Call
Price includes VAT & P&P

DISK + BOXES
50 Disks + 80 Box.....£22
100 Disks + 80 Box.....£37
150 Disks + 80 Box.....£52
200 Disks + 80 Box.....£67
400 Disks + 2 80 boxes£130
500 Disks.....£Call
Price includes VAT & P&P

5 1/4 DS/DD 20p
5 1/4 DS/HD 38p

SONY BULK 42p

3 1/2 DS/HD 68p

POSSO 150 CAP BOXES £15

We are at the Computer Shopper Show - Stand G16

SONY BRANDED 74p

★ ALL DISKS CERTIFIED 100% ERROR FREE ★

FOR GUARANTEED 3 DAY DELIVERY ADD £3.50 P&P. ADD £9.00 FOR NEXT DAY

AMIGAS
SCREEN GEMS.....£353
Screen Gems & Astra Games Pack.....£385
CLASS OF 90'S.....£510
FIRST STEPS.....£510
DUST COVER.....£5
1/2 MEG Upgrade.....£32
1/2 MEG + Clock.....£37
Cumana Drive.....£66
Power Drive.....£55
1 1/2 MEG Upgrade.....£90
Mouse Mat.....£2.50
Zipstick.....£11
Cheetah 125+.....£8

ATARIS
DISCOVERY.....£259
TURBO PACK.....£350
1040 STE.....£420
PORTFOLIO.....£210
CUMANA DRIVE.....£68
DUST COVER.....£5

STAR LC-200 PRINTER £215

CALL OR SEND CHEQUES TO B.C.S LTD
349 DITCHLING ROAD, BRIGHTON BN1 6JJ
Tel: 0273 506269 - 0831 279084 7 days. 24 hours.

POST EXPRESS

FREE 2 YEAR WARRANTY WITH ALL COMPUTERS BELOW!

AMIGA 500 SCREEN GEMS PACK
Amiga 500 ..... £399.99
Days of Thunder £24.95
Shadow of the Beast £24.95
Back To The Future II £24.95
Knight Breed £24.95
Deluxe Paint II £49.95
AND MORE! Total RRP
Over £600 ..... **£364 OUR PRICE**

AMIGA 500 BATMAN PACK
Amiga 500 ..... £399.99
Deluxe Paint II £49.95
Interceptor £24.95
The New Zealand Story £24.95
Batman The Movie £24.95
AND MORE! Total RRP
£524 ..... **£364 OUR PRICE**

AMIGA 500 FLIGHT OF FANTASY
Amiga 500 ..... £399.99
Deluxe Paint II £49.95
F29 Retaliator £24.95
Rainbow Islands £24.95
Robot Monsters £24.95
AND MORE! Total RRP
£519.79 ..... **£364 OUR PRICE**

AMIGA 500 CLASS OF THE 90's PACK
Amiga 500 1024K RAM £399.99
Educational software £400.00
Upon registration each purchaser will receive a file containing:- Over 200 pages of advice, guidance and worksheets relating to the National Curriculum and lots more!
Total RRP
£1054.48 ..... **£529 OUR PRICE**

ATARI 520STE SUPER POWER PACK
Atari STE £399.99
ENTERTAINMENT/PRODUCTIVITY S/W
Afterburner, Buggy Boy, Double Dragon, Gauntlet II, Outrun, Pacmania, Predator, R-Type, Space Harrier, Super Hang-On, Xenon, Black Lamp, Bomb Jack, Bombuzal, Eliminator, Mousetrap, Nebulus, Star Goose, Star Ray, First Basic, Music Maker, Personal Organiser. AND PLENTY MORE!
Total RRP £1009.94 .... **£364 OUR PRICE**

ATARI 1040 STE SUPER POWER PACK
Atari 1040 STE £499.99
Arkanoid II, Ice Palace, Black Lamp, Buggy Boy, Chopper X, Eddie Edwards Ski, Ikari Warriors, Marble Madness, Quadralien, Ranarama, Return to Genesis, Road Wars, Seconds Out, Starquake, Olympics, Test Drive, Thrust, Thunder Cats, Wizball, Xenon, Zynaps, Personal Organiser and much more!
Total RRP £953.97 ..... **£444 OUR PRICE**

ATARI 1040 STE HOME/BUSINESS PACK
Atari 1040 STE £499.99
Wordprocessor £49.95
Database £49.95
Spreadsheet £59.95
Business Graphics £39.95
First Basic £49.99
S.T.A.C. £39.95
Hyper Paint £24.99
Prince £24.95
AND PLENTY MORE!
Total RRP £839.71 ..... **£449 OUR PRICE**

Atari Lynx + software £179.95
Sega M-Drive 16 bit £174.95
Sega Master System £74.95
C64 Night Moves Pack £149.95
C64 Mindbenders Pack £149.95
C64 Games System £98.95
Amstrad Games System £98.95

AMSTRAD WORDPROCESSORS
PCW8256 ..... £424.95
PCW8512 ..... £534.95
PCW 9512 ..... £564.95
Amstrad PC1512 mono + s/w £449.95
PC1512 colour + s/w £564.95

All prices include VAT & Delivery. All computers are genuine UK specification. All computers include a FREE HOLIDAY PACK. Proprietor: Mark A. Cameron.
Please make cheques/PO's etc payable to POST EXPRESS
Hillcrest House, Suite 3, 49a Vicarage Road, London, E10 5EF.
Telephone: 081 518 7494 9am - 11pm
Phone or write for your free catalogue
Access VISA

converted one of their real flight simulators (as shown on *Tomorrow's World* a month ago) we'd be able to show the rest of the world what the Archie is made of.

GAMES SNIPPETS

Wonderland is now scheduled for a January release at the latest! Apparently Virgin has sorted out all the packaging and such like and will be shipping the game as soon as possible. I may even be able to give you a review in the next couple of weeks.

As a follow up to *MicroDrive*, CIS will be releasing a course designer. It will come complete with four new courses plus the original two. Due to the high complexity of designing contours in the development version, it is likely that the final release version will have a large number of preset hills that can be placed on each hole.

Calderglen, more well known as a supplier of hardware, has a second game out now. *Kaptain Konflict* looks rather like *Commando* but much prettier, watch out for it. Superior Software, which is still really in the BBC market, has set an early December release for *Master Break*. This is a trivia game based around snooker – rather similar to the 'arcade' game *Give us a Break*. It will feature 2,000 questions in six categories, some complete with music and graphics. Further question disks are planned for release next year.

If Superior can negotiate the rights with Infogrames and Maxis, an Archie version of *Sim City* is a definite possibility, but not this year.

Finally, ARXE systems has a large number of Sisteme's *Ballarena* (which I have yet to see!) now in stock. So why not phone 081-534 1198 (evenings) to get your copy and save an expensive call to France!

RISCOS COMPLAINTS

Following on from last week's RISC-OS style piece, one of my own personal dislikes in applications is when a setting in a dialogue box can only be changed by cycling through the available options with select and adjust. This may be OK if only two or three options are available, but many more and this becomes a pain – a menu should be provided.

Clares' *Rhapsody's* note/rest etc menus unfortunately suffer from this – you must step forward and backwards through the various quavers and minims to find the particular duration you require. *!PrinterDM* has the same problem when selecting the printer type and resolution.

Oh yes, and how about the annoying habit of applications using the hourglass to show how they are progressing, only to find it reach 99 per cent then start again and again and again.

CONTACTS

If you want to follow up any of these products, you'll need these: Technomatic 081-205 9558, 4th Dimension 0742 700661, Clares 0606 48511, Virgin 071-727 8070, Calderglen 0282 871717, Superior 0652 58585.

Ken Coumarin

TOP QUALITY
3.5" DSDD Disks from

40p INC

10-49 @ 44p ea 50-99 @ 42p ea
100 + @ 40p ea

NO POSTAGE
NO EXTRAS
100% GUARANTEED

Pin numbered - Japanese Media - Including Labels
Disk boxes and other disks - Call for prices

MARKETACE LTD

20 Stapledon Road, Orton Southgate,
Peterborough PE2 0TD
Tel: (0733) 371799 (24 hours)
Fax: (0733) 370722

Access VISA

Callers welcome Mon-Fri 9-5. Sat. 10-1.

What you see is what you pay - no hidden charges!

PC

DRIVING MAD

I have to admit that driving games are my weakness, racing games even more so. Which is why two new games, from Accolade and Gremlin respectively, were ripped out of their Jiffy bags before anyone else in the office could get their thieving hands on the post.

Accolade's *Grand Prix Circuit* has all the makings of a Lawton favourite. First of all, it's about Formula One, the greatest sport in the world. Secondly, you get to drive on all the world's famous circuits in your bid to become champion. Thirdly, you can even choose which team you drive for.

This last choice is a bit of a poser. Now, you could go for the Ferrari. It handles like a dream, but it's a bit short of speed down the straights. Or there's the McLaren, which goes like anything but corners like a battleship. And then there's the Williams – maybe this one's got the compromise of speed and handling that you need?

Great – a game that features all the famous names and cars of Formula One racing. Now all we need's a digitised Murray Walker and James Hunt...!

The trouble is, it all falls down once you get on the track. Well, not falls down precisely, but begins to pale.

• Hmm... do we want to drive for Ferrari this year? It's a tricky one, isn't it...?

• Grand Prix Circuit looks pretty, but the on-track action is just too slow.

The graphics are colourful enough, but just too slow. I'm afraid it's *Test Drive 2/The Cycles* all over again, a combination of sluggish screen update and oversensitive control. Although that's perhaps a bit misleading. The trouble is that you have to work so hard to correct one slide you create another one twice the size. More like trying to get a ten-year-old Skoda round a greasy roundabout that guiding a thoroughbred, race-tuned rocketship around the Nurburgring...

That said, *Grand Prix Circuit* does run a tad faster and smoother than its predecessors. It's still not enough, though, to turn it into a decent racing game. When you're qualifying it would seem to be impossible to come in better than last, while during the race, as long as you can storm to the front in the first few seconds. (Just take to the grass to get past the pack).

There are other gameplay problems too. It's a shame, as the principle of the game and the factual content are great. And I was looking forward to a brilliant season's racing, too.

By contrast, Gremlin's *Lotus Esprit Turbo Challenge* looks anything but slow. This one only came in this morning (literally), so I've only been able to play it for a short time. Being programmed in four-colour mode it doesn't look quite as pretty as *Grand Prix Circuit*, and the split-screen display (there's a simultaneous two-player option) leaves you with a wide but very narrow (from bottom to top) playing window, but in one-player mode the things moves like greased lighting. Two players slow it down quite a lot, but it's still extremely playable. Best of all is when you come up behind your opponent's car and give him or her a nasty surprise by belting past – the first they know about it is seeing your car suddenly appear in front of them.

Like I say, I haven't had the chance to play *Lotus Esprit Turbo Challenge* much yet, but I get the feeling I'm going to. Look out for the full review real soon!

COUNTING THE COST

It's been a few months since ABC software from sunny Weston-super-Mare produced the easy-to-use *Small Business Accounts* package, but boss Andy Constant hasn't been idle. His latest project, *Costmaster*, is aimed at self-employed types needing a fast and efficient way of costing their jobs and turning out estimates.

The program lets you store customer details on a database, ascribe regularly-used items to single keypresses (for example, the price of housebricks) and calculate costings. In common with *Small Business Accounts*, you also get your last ten 'moves' recorded so that you always know what you've done.

The program does a lot more that there isn't really space here to describe – suffice to say that it's hard to imagine any costing job it couldn't handle. The only thing is, the manual is there to guide you through the program, not tell you how to run up costings. For that, you need other advice.

Cost of the program is £27.95, and you can find out more by writing to ABC at 31 Magdalen Way, Worle, Weston-super-Mare, Avon BS22 0PG, or calling 0934 516714.

AUTHORS NOTE

I've got a letter here from Simon Warford of London. Here's what he has to say.

"First of all, I have a favour to ask you. I am attempting to set up a fanzine dedicated to new writers of science fiction/fantasy. It will be set up along the lines of a writers' workshop. Each issue will contain, depending on the length, one or two short stories or a novella. The following issue will then contain letters of praise and constructive criticism on those stories as well as new ones. There is more, but this is the basic premise.

"The favour is this: that you print this letter and my address in full so that people interested can write to me (enclosing an SAE) for an information pack.

But what's this got to do with the CPC, Simon?

"Well, it's simple: the whole thing will be put together using *Pyraword* and *Stop Press* on a 6128. Neat tie-in, eh? If you could do this, I would be eternally grateful."

OK, anyone interested can write to: Simon Warford, 134 Draper House, Hampton St, London SE1 6SY. It's a good practical use for a CPC and also a good idea for writers. I must admit, I've dabbled a bit in sci-fi myself, and have thought once or twice about a mag on Simon's lines. Unlike me, though, Simon's gone out and done it – good for him!

It's a pretty good basic idea, and all you budding Asimovs out there should get cracking.

Rod Lawton

THOUSANDS OF BARGAINS FOR EVERY COMPUTER!

ALL FORMATS COMPUTER FAIRS

Saturday 15th December 1990 10am - 5pm
Saturday 2nd February 1991 10am - 5pm

At:
The New Hall of the Royal Horticultural Society
Greycoat & Elverton Street · Westminster · London

Tubes:
Victoria · Pimlico · St James Park
Admission £3.00

STANDS ONLY £75

Book With:
JOHN RIDING · 0225 447453
MIKE HAYES · 0457 875229

Tickets:
Avoid queuing advance tickets from:
Mike Hayes · 8 Midgrove · Delph
Oldham · OL3 5EJ · Tel: 0457 875229
£3.00 each (Cheque - Visa - Access)

MEL CROUCHER COMPUTER FUN LINE
0898 299399
3 mins of mind blowing entertainment

SAM Coupé HOTLINE
featuring Alan Miles & Bruce Gordon
0898 299 380

THE HOTTEST GAMES SECRETS
0898 299388
MEGATIP GAMESLINE

TONY TAKOUSHI CONSOLE LINE
0898 299 390
games-tips
news-gossip

NEW MESSAGES EVERY WEEK
Calls charged at 33p per min. cheap rate and 44p per min. at all other times.

WESTONING LTD

NEW LOW, LOW PRICES!

31/2 DS/DD 30p Inc labels
51/4 DS/DD..... 20p
51/4 DS/HD..... 38p
31/2 DS/HD 70p
31/2 BOXES
40 cap £3.50
80 cap £4.00
150 cap £10.75
51/4 BOXES
50 cap £3.50
100 cap £4.00

★ NO QUIBBLE GUARANTEE - FOR LIFE!

ADD £4 P&P OR £9 NEXT DAY DELIVERY

AMIGA	
Screen Gems	£349
First Steps	£490
Class 90s	£490
External Drive	£55
1/2 meg upgrade with Clock	£35
1/2 meg upgrade without clock	£29
11/2 meg upgrade with clock	£90
11/2 meg upgrade without clock	£80

VISA
Access

ATARI	
520 Discovery	£260
520 Power	£350
1040 Extra	£420
Portfolio	£210

ALL PRICES INCLUDING V.A.T

WESTONING LTD
12 SANDERSON ROAD, WESTONING, BEDFORD MK45 5JY
TEL: 0525 718668 0836 775060

MICRODIAL

ATARI

520STFM DISCOVERY PACK	£279.00
520STE TURBO PACK	£369.00
1040STE EXTRA PACK	£460.00
PORTFOLIO	£199.00
LYNX	£165.00

COMMODORE

A500 FLIGHT OF FANTASY PACK	£369.00
A500 CLASS OF THE 90'S PACK	£515.00
M501 1/2 MEG UPGRADE INC CLOCK & GAME	£75.00
PC STARTER PACK	PLEASE PHONE
1 MEG SCREEN GEMS OR F.O.F.	£440.00

PRINTERS

STAR LC-10	£169.00
STAR LC-24/10	£249.00
MANNESMANN TALLY MT81	£147.00
CITIZEN 120D +	£125.00
SEIKOSHA SP2000	£235.00

SOFTWARE UP TO 20% OFF RRP

THIS IS A SMALL SELECTION OF OUR WIDE RANGE - PLEASE PHONE - WE WILL TRY TO MATCH ANY PRICE

All prices include VAT and P&P, Courier Delivery add £8.

Please make cheques, P.O.'s payable to **"MICRODIAL"** *and send to:*

THE OLD CAMP SHOP, WARRINGTON LANE, ADGEN WHARF, LYMM, WARRINGTON, WA13 0SW.

All items are subject to availability, prices are subject to change without notice. All goods despatched upon cleared payment. Proprietors: Mike Todd and Mal Neary. E. & O. E.

24 HOUR ORDER LINE 0925 75 7696

NINTENDO OWNERS!

AMERICAN No1 ARCADE HITS NOW AVAILABLE FOR EUROPE

ATARI GAMES from TENGEN

SUPER SPRINT – £34.95

GAUNTLET – £34.95

VINDICATORS – £39.95

TRADEWEST

DOUBLE DRAGON – 39.95

DATA EAST

BAD DUDES – 39.95

America's greatest arcade hits converted by UNITEC to work on all UK/European NINTENDO systems. In stock now and available only from UNITEC.

Order now – be first with the best.

By Post, with cheque or postal order

UNITEC SYSTEMS

Unitec Systems Ltd., 8 James Street, Helensburgh G84 8AS, Scotland

Hotline – Tel: 0436- 79123

NINTENDO, ATARI, TENGEN, DATA EAST, TRADEWEST and product names are trademarks of the company or manufacturer respectively

C64

HIT THE BAR

Following its recent announcement that profits were down on the year by £50 million (see *Express* 106), Commodore began its sixteenth end of year show by hauling the UK bosses up before some frosty industry and press people, at 9.00 am sharp, and getting them to explain why they were going to spend five million pounds on a Christmas advertising campaign between Monday November 19th and Christmas.

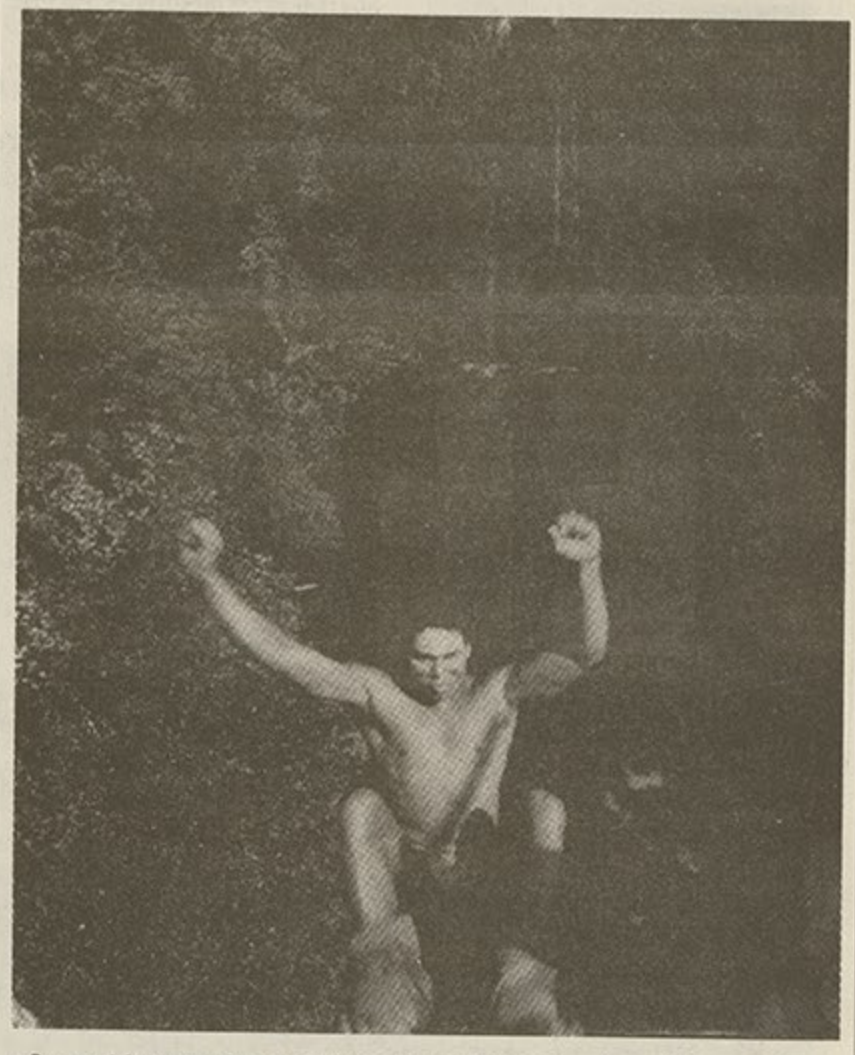
They're doing it so that people will get into the habit of saying, "Have you seen that new Commodore ad?" in the same way that they talk about Levis 30-second spectaculars. The two filmed advertisements concentrate on two individuals who risk their lives without using computers. One of them is an aboriginal youth who launches a boomerang and then blindfolds himself before catching it; the other is a native of the New Hebrides who undergoes a ritual called land diving in which he throws himself from an enormous height, having previously tied long enough vines to his ankles to stop his fall just before the ground does. At the end of each advert, there's footage of both a GS and a 64. Commodore believes that sane adults who see these advertisements will then be more likely to buy one of their machines than any new fridge they might need. This may prove to be correct.

BACK TO BUSINESS

The rest of the Commodore Christmas Show was about as lively and enjoyable as you'd expect one to be after 15 years' practice. Peripheral manufacturers, user groups and fanzines and software and hardware dealers filled two exhibition halls in the perennial Hammersmith Novotel venue. However, perhaps slightly more noticeable at this show was the bite of hard economics. A few dealers never made it to the stands they'd booked and that can only mean they're in extreme financial difficulty. Without getting sidetracked too much here, I'd bet that we'll see a handful of the mail order outfits and small electronics companies that support the C64 go out of business in 1991. Such speculation didn't spoil the weekend, however, of the few visitors who spoke to me.

GOT 'EM!

Four games certain to be missed in Mark Higham's column are *Helter Skelter, Gotcha!, Summer Camp* and



• Because it's getting close to Christmas, I think it's worth running a little competition to help Commodore's advertising campaign along. This still is taken from a press pack about the new ad campaign and it's given the witty caption: "In a new departure from computer advertising Commodore uses the ancient ritual of land diving to portray the excitement and originality of its new range of leisure computers." Okay, you can wake up now. This photo deserves a better caption than that. Send something funnier to: "Five Million Quid Is No Laughing Matter", C64 Column, NCE, Future Publishing, 30 Monmouth St, Bath, BA1 2BW. Your side-splittingly funny words should get here by Tuesday December 18th. If the winning entry really tickles my peripherals the sender will win a year's subscription to an excellent little magazine I've come across called Commodore Format.

The Spy Who Loved Me – the C64 versions of which have all arrived in the office recently. *Helter Skelter* is an Audiogenic platform game in which you must bounce a ball between walls and platforms to knock out cuddly looking creatures. You have have to bash the creatures in a given order (indicated by an arrow which appears precariously above the head of the next creature in line). Hit the wrong creature and it splits into two. Matters are made more difficult by a time limit in which a screen must be cleared. It's tough from the start but certain items help. One freezes time, another stops the creatures in their tracks and a third makes everything on the screen a viable target. If you're into therapeutic furry thang squashin', this one's for you.

Kingsoft's *Gotcha!* has the distinction of being quite unlike anything that's gone before. We're talking more bouncy balls but that's where similarity ends. You have to colour code your ball from a row of paint pots at the bottom of the screen and with it duly hued, knock out an appropriately coloured blob from the top of the screen. In your way are a number of obstacles which do unspeakably bad things to your ball. It's a lot harder than it sounds but unfortunately it's not very exciting either.

Dumb scenarios are practically prerequisites for good platform games so it seems only fair that one such outrageous idea is employed by Thalamus in *Summer Camp*. Maximus the mouse follows in the footsteps of such pioneers as Miner Willy and Bounty Bob through screens full of elevator balloons and bed spring trampolines in a fairly cheerful and colourful Christmas release.

Domark's *Spy Who Loved Me* is its 007th pot-boiler but by no means the best of the Bond licences. If you don't suffer from deja vu in the *Spy Hunter*-like sequences you might still find it's worth a crack.

Try before you buy.

Sean Masterson

PC

SMOOTHING IT OUT

There has been a utility on the Apple Macintosh for some time now called Adobe Type Manager. This remarkable widget generates screen and printer fonts on the fly from PostScript fonts, and is now available in a version for Microsoft Windows 3.

Being able to create instant screen fonts means that text on the screen is always smooth-edged and clear, no matter what point size it is in. There is no need to have dozens of screen fonts knocking about, *ATM* generates its own as and when you need them.

Even better, *ATM* allows you to generate printer fonts on the fly too. Anyone who has a LaserJet will know the vast amount of hard disk space that even a few take up, and when you get into desktop publishing, large fonts can take up many megabytes. With *ATM* you can use PostScript outline fonts instead, which take up only 40K or so per family - that's every point size your software allows you to use.

ATM is simple to install and completely transparent in use; a small loading icon appears when you launch Windows and that's about all you ever need to know. An application program allows you to install new fonts and to select the size of the RAM cache which it uses to store the fonts it generates in a session.

Considering that it has to calculate the fonts afresh each time you need to use one *ATM* is surprisingly fast, even on an unexceptional PC. I haven't yet fully explored its printing options, and I'll report back when I have.

ATM costs a mere £79 including three free PostScript fonts from Adobe on 071-627 1000.

FRESH BATCH

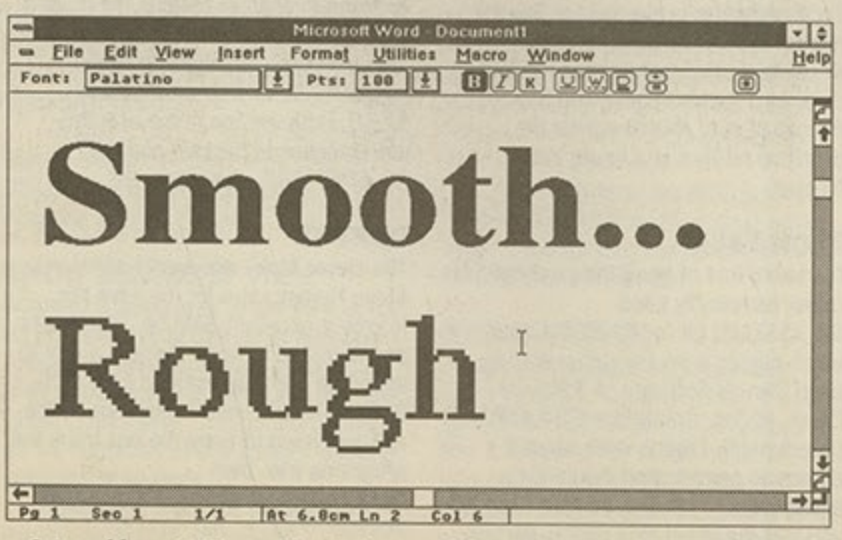
Batch files are deadly slow, but then, they're free. One of the reasons they're slow is that MS-DOS insists on going off to disk for each new line. You can prove this easily enough by running the sample file below and releasing the disk part way through.

```
ECHO PRINTING IRRELEVANT WAFFLE
ECHO PRINTING IRRELEVANT WAFFLE

--add a hundred or so lines here

ECHO PRINTING IRRELEVANT WAFFLE
ECHO PRINTING IRRELEVANT WAFFLE
```

Normally I wouldn't recommend this



• *Quite a diferncel* **ATM** *smooths out those rough bits.*

GB SYSTEMS LINK

AMIGA A500
SCREEN GEMS PACK

PACK 1: *INCLUDES:*

Shadow of the Beast II, Nightbreed, Back To The Future II, Days of Thunder and Deluxe Paint II, plus manuals, Workbench 1.3, modulator etc

£369.99 inc. VAT and Postage

PACK 2: *INCLUDES:*

Everything listed above, plus joystick, mouse mat, disk box and extra software including games, utilities, a word processor etc

£389.99 inc. VAT and Postage

Access VISA

TEL: 081-979 5638
FAX: 081-941 4440
G B SYSTEMS UK
86 Walton Road, East Molesey, Surrey KT8 0DL

COMPUTER AUCTIONS

Saturday 15th December at Bowlers, Longbridge Road, Trafford Park Manchester
Sale starts 11.00am, viewing and testing from 8.30am

about 1000 lots of computer equipment inc: Many late computer systems, software, printers, disks, monitors, consumables etc.

★ NEW VENUE★
SATURDAY 19TH JANUARY AT

Speedball, Horton Park Avenue, Bradford, West Yorkshire.
Lots similar to above.

For your catalogue ring COMPUTER CONNECTIONS ON 025481 3316

SPECIALISTS IN NEW AND USED COMPUTER EQUIPMENT

The ST Club

49 Stoney Street - Nottingham - NG1 1LX - (0602) 410241

ST Applications.
Over two years ago New Computer Express described our newsletter: "To call it a newsletter shows a terrific amount of modesty on their part... It really is packed with information, with more concentration on the serious side of the ST." ST Applications is a complete re-design of The ST Club Newsletter that has grown to 3,500 subscribers since we started it four years ago. Each monthly issue runs to at least 60 A4-pages. If you would like to subscribe or receive an evaluation copy please complete the form below.

Fontkit Plus 3.
The essential font utility for the ST. Edit or create GEM fonts, Signum fonts, screen fonts and downloadable printer fonts. Incorporates a suite of drawing tools, plus block manipulation tools, and it will import Calamus, Degas and Macintosh fonts.Price: £19.95.

UIS III.
Powerful replacement for the Atari Item Selector. Universal Item Selector III incorporates a host of utility functions: format disks, copy, move and rename files and folders, create folders, find files, set file paths, etc. "You'll wonder how you ever lived without it", ST Format, December 1990. Price: £19.95.

The Catalogue.
Our collection of PD and Shareware disks runs to over 2,000 disks and we guarantee same day dispatch on all orders. Our Free Catalogue - (46-pages A4) details these disks and all of our products and services: Books, Budgie Disks and Laser Printing. We also publish: Astronomy Lab (£19.95), Key Master (£6.95), Oxford Chess (£9.95), Molgraph (£12.95), Guides to Timeworks DTP (£9.95) and 1st Word (£6.95). Details of these are in our current catalogue. Write or telephone for your copy today.

Please send me:

- ❑ 12-issues of ST Applications (£15).
- ❑ Sample copy of ST Applications (£2).
- ❑ A free copy of the ST Club catalogue.

Cheque/PO made payable to "The ST Club" for £ enclosed

Your guarantee: If at any time you want to cancel your subscription you may do so simply by writing to us. The balance of your subscription will be refunded in full.

From:
.....
.....
.....
.....
.....

HIGH QUALITY DISKETTES

PIN NUMBERED QUALITY DISKETTES 100% CERTIFIED AND GUARANTEED 100% ERROR FREE. MANUFACTURED AND QUALITY ASSURED BY AN INTERNATIONAL BRAND NAME

3 1/2 DS DD COLOURED 40p EACH

RED, WHITE, BLACK, GREY, YELLOW, ORANGE, GREEN.

ORDERS OVER 100 RING FOR PRICE

3 1/2 DS DD 37p EACH

3 1/2 DS HD 80p

5 1/4 DS DD 22p

5 1/4 DS DD COLOURED 28p

5 1/4 DS HD 42p

3 1/2 PLASTIC LIBRARY 5 1/4 CASES EA 89p

STORAGE BOXES

3 1/2 40 cap ...£4.20 3 1/2 80 cap .. £4.60

5 1/4 50 cap ...£4.40 5 1/4 100 cap £4.90

EURODATA
12A QUAKERS YARD
ADAM AND EVE ST
MARKET
HARBOROUGH
LEIC LE16 7LT
TEL: 0858 433992
FAX: 0858 432549

RING FOR MEMOREX BRANDED PRICES

LIFETIME GUARANTEE
ALL PRICES INCLUDE DISKETTE LABELS ENVELOPES AND VAT
ORDER NOW WITH POSTAL ORDER OR CHEQUE MADE PAYABLE TO EURODATA, OR TELEPHONE YOUR ORDER USING MASTERCARD & VISA. SUBJECT TO AVAILABILITY
ADD £3.20 P&P

Access VISA

LOWEST PRICES FOR HIGHEST QUALITY

practice but it does illustrate the process rather well. Every time the disk comes out the printing stops, MS-DOS tells you how upset it is at not being able to read the disk and you're asked if you would like to Abort, Retry or Fail (or something similar depending on the version of MS-DOS you're using.

This is obvious enough but it has some consequences when building batch files to run things from floppy disks. If your batch file includes instructions to change disks then it absolutely has to be running from somewhere other than the disk being changed. That's the reason that hard disk owners often find batch files hanging around on their hard disks after installing software. The first thing the installation routine has done is to copy a batch file to the hard disk and transfer control. Now you know.

One of the major reasons that batch file compilers speed things up is that they run everything in memory - not from disk. This has the added bonus that with a compiled batch file you can run it and immediately change disks - everything keeps right on rolling. If you want to build batch files that necessitate disk swapping buy a batch file compiler - you often get extra commands thrown in too - many of them quite useful. One final tip. Don't use ANSI.SYS commands in batch files you plan to hand out - not everyone bothers to install it and the without it ANSI commands make a complete hash of the screen.

Stuart Anderton and Steve Patient

Spectrum

GLAM TIMES

It's good to see the Spectrum isn't getting passed over in favour of 16-bit machines when it comes to the glamourous, exciting and usually rather memory intensive world of flight simulation. Due out for our machine in the near future is the long drooled after *F-16 Combat Pilot* from Speccy users fave producers of software of a distinctly flight simmy nature, Digital Integration. I've raved about this a few times over the years and it appears it's finally ready. At least with Digital Integration you can bet the delay's been caused by their fanatical attention to detail or tireless game testing rather than trying to find a celeb to endorse it or something.

It promises to be a flight simulator of the old, more authentic school where purchasing the farm, as we pilots say, is a regular occurence and the list of controls runs to a chunky handbook full, rather than the new upstart breed of more action based affairs. There should be enough action in F-16 for even the most experienced of Speccy fliers though with ground targets, varied armoury, day and night flying, a strategy mode and a profusion of devilish MiG 29s trying to 'prang your kite'. I'm dusting off my goggles and silly leather hat even as we speak.

Digital Integration isn't leaving Speccy types out of the fun with its next game either, I'm glad to report. The sequel to the excellent *Advanced Tactical Fighter* is planned for Speccy release in January and I think we should all salute these wizard chaps for their continued support above and beyond the call of duty. Watch out for the definitive reviews in a future *Your Sinclair*.

TECH TALK

I've heard lots of good things about the rather technically titled SC_ASSEMBLER for the SAM Coupé which comes from the rather homely titled Steve's Software of 7 Narrow Close, Histon, Cambridge CB4 4XX. Unfortunately I'm too thick when it comes to complicated things like assemblers to confirm this but I can tell you that the latest incarnation, version 1.2 has just been released.

Improvements are numerous and include a faster Keyscan editor so you can type at finger endangering speeds, an auto insert command which lets you insert extra lines, the ability to assemble to different parts of the SAM memory, and best of all a bonus freebie program called SC_SPECLONE. This turns out to be another Spectrum emulator which goes a long way further than the official bundled utility and apparently achieves an estimated 99 per cent compatibility with 48K Speccy programs.

It's menu driven making it pretty easy to operate and options to use a printer are included. As well as that excellent and thoroughly worthwhile bonus, the 512K version of the SC_ASSEMBLER comes with a trendy desk top published manual that's a lot fatter than the one you get with the plain vanilla 256K one.

The author, Carol Brookshank (who writes for the respected *FORMAT* mag) makes the harsh forbidding world of assemblers a little bit clearer and it's a pity weedy underpriviledged 256K owners don't get a similar publication to guide them through the copious features of the assembler. The other benefit 512K owners get in this case is obviously more space for source code and the like. SC_ASSEMBLER Version 1.2 costs £10 for the 256K SAM and £12.50 for 512K Coupé owners.

Steve's Software generously offers free upgrades from previous versions to anyone sending the original assembler disk, customer number and SAE. You can also upgrade to the bigger 512K version for a measly £2.50. Both version come with the aforementioned bargain copy of SC_SPECLONE. A bargain eh?

COPY IT

The clever bloke who wrote all this, Steve Nutting, also let me have the following excellent SAM tip. "You might be interested to know there is a way to speed up copying disks on SAM DOS 2. First you will need to find out on the disk you need to copy the last track the programs use, then

```
POKE 493764,62,track+1,201:
FORMAT "d1:" TO "d2:"
```

The disk will now Format tracks 0 to

the last track you poked in and copy the tracks. For example, to copy SC_Assembler 256K it took 33 seconds and 48 seconds for 512K. Also if you POKE from 498530 to 498538 with 0 you cancel out the "Are you sure Y/N?" Huge unqualified amounts of grateful thanks to Steve for supplying me with that.

SOCCER TIPS

Here are a few tips for the SAM Coupé version of *Football Director II*, which were kindly sent to me by the thoroughly sound John Newman of Kent. John didn't say but I think you'll need to break into the program to enter the first two cheats. For lots of money – LET AI = AI + n (where n = amount of money). Then press F5. For morale – LET HE = 99 Then press F5. If you're losing a game, break into the program and type R1 = your score: LET R1=R.

Another tip is to buy from Division One and always use your scout to go for one type of player only and with a skill of eight or nine.

Thanks John! If anyone else has got any tips, cheats or pokes for games, be they Speccy or SAM titles, send them without further delay to me, Robin Alway at The Spectrum Column, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

Infinite thanks, the warm feeling that comes from giving unselfishly and possible a free game or something could be your reward.

Robin Alway

ST

PC SPEED PRICE PLUMMETS

If you have to use a PC contemptible at work and would like to work at home too, you're probably wondering whether you can use your ST.

The answer is, it rather depends. More recent STs can read from and write to PC formatted disks, so if your work is mostly word processing you can use your ST word processor and create an ASCII file (ie one that doesn't have lots of additional control codes in), then load it into your PC word processor at work.

If, however, your work involves any kind of graphics or other stuff that can't be done in ASCII files – database or spreadsheet work, for instance – you're going to have to get yourself PC'd up.

What, you say, buy a second computer when I already have an ST? Er, no actually. Buy a PC emulator, a little piece of kit that contains the guts and gubbins of a PC but enables your ST to act as keyboard and controller.

Believe it or not, such a device costs less than £200. In fact, with the recently announced price cut of one of the most popular PC emulators, it now costs less than £100. Now that really is quite something.

PC Speed is distributed in this country by the recently established UK branch of Compo, the German manufacturers. Boss Neal Onions explained to me that this remarkable price chop is down to German technical wizardry, though this is of course complete poppycock (how can German technical wizardry suddenly make it profitable to sell the same piece of hardware at half the price it was previously costing?).

Anyway, ours is not to reason why, ours is but to call Compo on 0480 891819 for more details of the amazing £99 PC Speed.

SHOW BUSINESS TIME

Actually, a better way to get your hands on PC Speed is to turn up at Wembley Arena between December 6th and 9th, where you'll find the *Computer Shopper* Show in full swing. Compo will be there, as will hundreds of box-shifters offering bargains of all kinds.

Entry is a fiver, but this isn't expensive. In fact, it's bloody outrageously expensive, and I demand the resignation of the organisers immediately.

SHOW BUSINESS II: THE REVENGE

If you're too busy trying to cope with C******s and all that shenanigans to make it to *Computer Shopper*, there's always the 16-bit Computer Fair from 4th to 6th January.

All the big guns of the ST universe will be there, including Silica, Microdeal, Gasteiner, Power Computing, 2-bit Systems and Hybrid Arts.

And also present are expected to be German companies GE-Soft, Protar Electronics and Manfred Carle, as well as Americans Double Click Software, responsible for superb programs DC Desktop and DC Utilities.

More details of this show a little nearer the time.

MASTER SOUND REVAMP

Speaking of Microdeal – and I was, if you look carefully – Master Sound, one of the best of the new generation of ST budget samplers, has undergone an update, if that doesn't seem like a contradiction in terms.

The latest version includes all kinds of exotic-sounding features, such as an oscilloscope, 3D display, filter, shrink and cuddly toy, I shouldn't wonder.

So now you can incorporate samples of your own choosing into your musical twiddlings. Just think: it doesn't have to be James Brown or John Bonham all the time, it could be... well, Kylie or Bros (quick joke: Knock, knock! Who's there? Bros. Bros who? That's show business!).

Price of Master Sound 2 is a very modest £39.95 from Microdeal, which eagerly awaits your call on 0726 69692. Don't disappoint.

VIRUS ATTACK

Anyone who bought the December issue of an ST magazine called *ST User* got rather more than they bargained for, it appears. For on the cover disk was not only the usual collection of programs, but a rather nasty little virus called Green Goblin -so called because

AMAZING PRODUCTS

Incredible Prices

For your Commodore Amiga

Red Hot Amiga Software

Cross Dos	£24.95
Digiview Gold V4	£99.00
Sculpt-Animate 4D	£229.00
Broadcast Titler 2	£189.00
Pro Video Post	£189.00
Pro Write V3	£89.00
Saxon Publisher	£219.00
Vista	£49.95
Distant Suns	£34.95

Large range of educational software in stock- Call for details

A500 RAM Expansions

512K RAM Clock Card	£34.95
512K Card Without Clock	£29.95
1.5MB RAM Clock Card*	£89.95
1 MB ICD Expansion	£139.00
2MB ICD Expansion	£179.00
4MB ICD Expansion	£249.00

** Requires the Amiga to be opened. Needs Kickstart v1.3 or above.*

Amiga Floppy Drives

880K External Drive	£65.00
880K Drive + 512K Clock Card	£95.00
A500 Internal Drive	£49.00
Dual External Drive	£110.00

Amiga Peripherals

Philips CM8833 Monitor	£249.00
NEC Multisync 3D Monitor	£649.00
Star LC200 Colour Printer	£229.00
Star LC10 Mono Printer	£169.00
Tough Perspex Dust Cover	£9.00

WE SUPPLY ATARI ST AND COMMODORE AMIGA COMPUTERS AND PERIPHERALS AT BEST PRICES! PLEASE CALL!

All items on this ad. may be ordered by postal mail order or by telephone.

We accept Access and Visa.

Please make cheques and POs payable to **Power Computing.**

POWER COMPUTING

44a Stanley Street, Bedford. MK41 7RW

0234 273000

(5 lines!)

Prices include VAT and delivery. Please add £7.50 for overnight courier delivery if required. We reserve the right to change prices and product lines without prior notice.

that's the message it flashes onto your screen.

If you have ever found your ST doing strange things – your mouse behaves as if it's upside down, for example; or a part of the screen is suddenly inverted; or your ST gets up, blows a raspberry and walks out on you right in the middle of a game – it's more than likely that you've been hit by a virus.

For those who don't know, a virus is a destructive program that can seriously damage your disks, written by a total and utter *@!&! who hasn't got the brains to know he's got none and is incapable of writing any more complex piece of code or washing or getting a girlfriend. Usually a virus silently and secretly copies itself onto other disks, thereby spreading the disease.

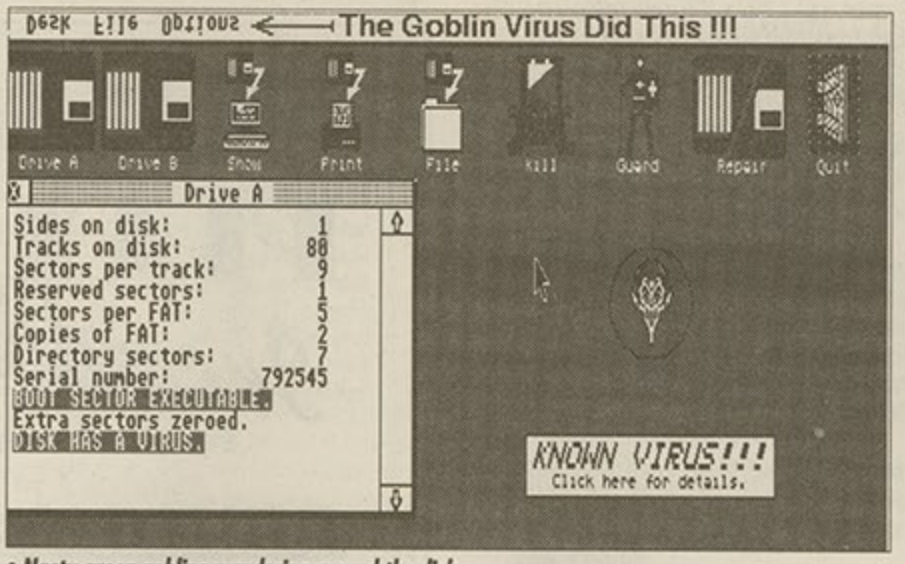
One of the most dangerous kind is a boot sector virus, named because that's the part of the disk it writes itself to. And that's the danger of such viruses – of which Green Goblin is one – because if one gets onto a commercial game, it ruins it. You can't load it.

I understand that the ST User virus got onto the disk at the duplicator, Stanley Precision, after it was instructed to make a change to the mastered disk. This strikes me as bad practice.

What's also rather odd is that this is not some new, exotic and unheard of virus, but one discovered 18 months ago.

So I thought I'd just remind you of the steps you should take to protect yourself from these nasty little buggers.

Firstly, get yourself a decent virus detector and killer – CRL's aptly named



• ***Nasty green goblins wandering around the disk.***

Virus Killer is probably the best and certainly the best known (£9.95 from 081 533 2918), though most public domain libraries have a few good ones in stock.

Secondly, use it. (WARNING: do not use it on games. It'll detecting the auto-loader in the boot sector and destroy it, causing as much damage as the worst virus.)

Thirdly – and if you don't already have a virus killer, this could well be the most crucial step for you to take right now – make sure the write protect tab on all of your disks is in the on position except when you need to write to disk.

Most games, for instance, don't need you to write to disk, and should therefore never be exposed to the risk of infection. In plain terms: if you can see through the little hole in the corner of your disk, you're OK.

Fourthly, when you're inserting a disk into your drive, first of all turn off your ST for 30 seconds. (That way, any viruses in your ST's memory will be killed.) It's a pain in the bum, but it's a hell of a lot better than finding your entire disk collection infected.

Sixthly, make a back up of any important disks and put the originals away safely. Never use an original if you can use a back up.

This has been a public service announcement.

A MOUSE WITHOUT BALLS

A fortnight ago in this column I raved about Golden Image's new £150 scanner, which also features the highly rated *Touch Up* software.

Now the same company has come up with a rather intriguing item: a mouse that works by light. Usually, as you'll know, a computer mouse has rollers that detect movement via a little ball.

Problem is, the little bugger invariably gets clogged up with the dust and general grunge that accumulates on your desktop. Golden Image's solution: a mouse that detects movement by light.

I've been using one for a while now, and it works perfectly. The only problem is that you need to use a special mouse mat (supplied) that has a regular dot pattern that makes it easier for the mouse to "see" movement. It's OK, but just a little bit constricting, especially if, like me, you have a white table that the mouse finds it difficult to "read."

Anyway, it's got to be better than the crappy old mouse that came supplied with your ST. It costs £39.95 from Golden Image on 081 518 7373.

AUTOROUTE PRICE CUT

Last year the word was NextBase was going to kill the ST version of *Autoroute*, the computerised map program, due to piracy. Well, I'm glad to say rumours of its death were greatly exaggerated, and it's still going.

Indeed, it's just taken a price cut down to £70, which is less than half its previous tag. If you clock up a good few thousand miles a year in the old motor, it may well be worth giving NextBase a call on 0784 460077.

Steve Carey

BLACKMORE ELECTRONICS SAY
BUILD IT YOURSELF

MOTHERBOARDS
XT TURBO 12 MHz V20, small size takes 256k x 4 DIL £62.10
AT TURBO 12MHz baby size up to 4M on board £158.00
AT TURBO 16MHz version £205.00
AT TURBO with EMS 12MHz, up to 5Mb on board £188.00
386SX ALL-IN-ONE 16MHz includes floppy, serial and parallel ports. Takes 1M x 1 £399.00
Memory is available for all these boards.
Please call for current prices

DISK CONTROLLERS
Universal floppy
Drives 360/1.2/720/1.44 drive suitable for
AT and 386 systems £24.50
XT Hard/floppy controller £81.00
XT Hard disk controller £65.00
AT floppy/Hard controller £107.00

DISPLAY ADAPTERS
Hercules plus printer £39.20
Dual CGA/HERC £38.00
EGA PLUS £99.50
VGA 8 bit £99.00
Universal VGA 8/16 bit.
VGA, EGA, CGA, MDA, Hercules
Standard plus 800 x 600 plus
1024 x 768 resolution £137.00

1/0 ADAPTORS
Serial RS232 £16.10
DUAL RS232 £24.10
Serial/parallel game com 1,2,3,4
PAR 2, 3 links £14.50
Dual serial + par + Game £25.00
XT SER/PAR/CLOCK/
FLOPPY/GAME £31.50

KEYBOARDS
101 key XT/AT switchable £46.00
101 CHERRY X T/AT £65.00

CASES AND PSUS
XT/AT Three 5.25" and one 3.5" slots for disks, flip top lid £44.50
Suitable 150W PSU £43.70
DE-LUXE with speed display £65.00
Suitable 200W PSU £69.00
MINI TOWER with speed display £72.50
Suitable 200W PSU £69.00

MONITORS
MONO 12" green £73.00
VGA 14" paper white £165.60
VGA 14" colour .70
REMEMBER ! ! all our prices include VAT. Call for free catalogue.
Delivery £3.00 (under £40)
£9.00 (over £40)

FLOPPY DRIVES
5.25" 360k £66.70
5.25" 1.2M £80.50
3.5" 720k £71.76
3.5" 1.44M £85.56
5.25" cradle for 3.5" drive with adapter cables £12.50

SKELETON SYSTEMS
These consist of motherboard, case and PSU. You add the rest !
XT 12MHZ £155 AT 12MHZ £250
AT 16MHZ £305

PC - DIY BOOK
ONLY £7.95
No VAT or P & P

Not sure how to build your own PC? Then this is for you !
112 Pages of practical tips.

BLACKMORE ELECTRONICS LIMITED
VISA, ACCESS & AMERICAN EXPRESS
CONTACT US NOW
Unit 14A, Sunrise Business Park,
Blandford Forum, Dorset. DT11 8ST
Tel : (0258) 451347
Fax : (0258) 456046

Macintosh

OOPS

There have been some unexpected consequences of Apple's decision not to include a maths co-processor into the Mac IIsi as standard.

The IIsi is the only member of the Mac II family not to contain this chip, and some applications are getting rather confused by the fact. *Studio/8*, an extremely popular 8-bit paint package, refuses to run on the IIsi, as does Microsoft *Excel*, a spreadsheet which, it is claimed, nine out of ten Mac spreadsheet owners use. The manufacturers of both applications were quick to realise the problem, and Microsoft already has a free bug fix, while there should be a IIsi-compatible version of *Studio/8* available by the time you read this.

Users who actually want the increased speed that the maths co-processor will provide will have to wait until the IIsi NuBus adaptor card arrives – it's scheduled to start shipping some time in December.

PROBLEMS, PROBLEMS

As if that wasn't enough, it transpires that System 6.0.6 (the version shipping with all the new Macs) is... er... well, 'not astonishingly robust' might be a polite way of putting it. System 6.0.7 is already shipping in the United States, but Apple has said that it will not be bundled with machines sold outside the USA. Instead, Apple are supplying a bug-fixing INIT. It's the first time in my memory that Apple has not released a version of the System simultaneously around the English-speaking world. So watch out if you intend to buy a Mac in the States: there shouldn't be any incompatibility problems, but who knows?

TROUBLES IN THREES

What, more? Yes, more. We saw our first production IIsi here a week or two ago (which at least proves that they are shipping), and we were rather surprised to discover that *HyperCard* 2.0 was not included. To get the product, you have to fill in a little card, and it will be sent to you. Why? Who knows...

And anyone who wants to use the new Macs to develop *HyperCard* stacks for other users can think again. It seems that System 6.0.6 and later will only run *HyperCard* 2.0 and later. Now, stacks created in *HyperCard* 1.2.5 (which over 95 per cent of Mac users have) can be used in version 2.0, but stacks created in 2.0 cannot be run on 1.2.5. So, until a hell of a lot more people start to upgrade to version 2, you won't have much of a market for your product.

Of course, this raises the whole question of compatibility, which is (or was) at the centre of Apple's philosophy. "As long as you stick to our programmers' guidelines," it said, "we guarantee that anything you write will work on any new Macs which we bring out." But since *HyperCard* 1.2.5 (which is written by Apple) won't run on System 6.0.6, hasn't Apple broken its own guidelines somewhere?

In fact, Apple is now having to face the fact that lots of software written for System 6 will not run on System 7 when it arrives, even if the software had been written to follow the Apple guidelines. According to one American developer I spoke to, this has to be the price that we pay for progress; no gain without pain, as they say. But this means that Apple will have to work even harder to persuade people that System 7 is a good thing: after all, would you upgrade your System if doing that meant that you had to upgrade all of your applications as well?

MACUSER SHOW

Talking of talking to people, the *MacUser* show was held on November 7-10. Sadly, there weren't many whizzy new products on show – and precious few Mac Classics and IIsi's, either. The whole Macintosh scene seems to have slowed down recently; it's almost as if people were waiting to see what the new Macs were like before deciding whether to support them in the future.

Well, now they know. And while there weren't many new products actually at the show, many of the people I spoke to said that they had new stuff waiting just around the corner. So, while some companies are switching part of their attention to developing software for Windows on the PC, the vast majority are still supporting the Mac with a vengeance.

What was at the show in large quantities was multimedia equipment. One stand had what must have been hundreds of thousands of pounds-worth of synthesisers, Macs, U-Matic video machines and editing equipment. And the stuff that they were producing was truly incredible. Suddenly, a fair bit of the power of systems like Quantel's *Paintbox* is in the hands of Mac users – for a fraction of the price.

YUPPIE CORNER

One product on display at the show is a must for all you yuppies out there. Called *Dynodex*, it's an address book program with a difference. Unlike most programs of this type, where data can only be exported to a word processor or printed out on standard sheets of paper, *Dynodex* is designed to output to special, pre-punched paper which can then be put straight into your Filofax (which is, of course, a registered trademark). It needs a laser printer or 'non-impact' printer to work (ie not a dot matrix), and it really is rather good. The database features are fine, it's easy to look up phone numbers and things on the computer and having a

CHRISTMAS SPECIALS

OFFER 1:
Double Sided 31/2" Disks, Individually Wrapped, 880k 135 tpi, ideal for Amiga, ST, etc..Blue, Pin No., made in Japan, 100% Error Free. 2 for 1 Warranty or money back.

10 x 3.5"	45p each	£4.50
25 x 3.5"	40p ... "	£10.00
50 x 3.5"	33p ... "	£16.50
100 x .3.5"	32p ... "	£32.00
250 x 3.5"	31p ... "	£77.50
500 x 3.5"	30p ... "	£150.00
1,000 x 3.5"	29p ... "	£290.00

Inc. labels

3 1/2" DISKS FROM 29P Inc VAT

OFFER 2:
Genuine Sony 3.5" Disks Double Sided, made in Japan, sold in Sony outers, probably the best disk in the World!

10 x 3.5"	£5.90
25 x 3.5"	£12.50
50 x 3.5"	£21.00
100 x 3.5"	£41.00
250 x 3.5"	£100.00
500 x 3.5"	£195.00
1,000 x 3.5"	£350.00

Including labels

AMIGA A500 PACKS
Inc Modulator
Only £329.95
Inc VAT

OFFER 3:
5.25" Double Sided 48/96 tpi for IBM PC and Clones, etc, 100% Error Free. 2 for 1 warranty or money back.

25 x 5.25"	£6.95
50 x 5.25"	£14.95
100 x 5.25"	£23.00
250 x 5.25"	£56.95
500 x 5.25"	£112.95
1,000 x 5.25"	£200.00

Complete with labels, envelopes & w.p.'s

Star LC10 Printer
£158.95 inc. VAT
Star LC10 Col. Printer
£199.95 inc. VAT

OFFER 4: High Density Disks.
when only the Very Best will do.

5.25" HD 1.6mb for IBM, AT, Etc.		3.5" D/SHD 1.44mb, made in Japan, HD in corner of Disk.	
10 x 5.25" HD	£4.60	10 x 3.5" HD	£11.00
25 x 5.25" HD	£11.00	25 x 3.5" HD	£27.25
50 x 5.25" HD	£21.50	50 x 3.5" HD	£35.00
100 x 5.25" HD	£42.00	100 x 3.5" HD	£69.00
250 x 5.25" HD	£100.00	250 x 3.5" HD	£169.50
500 x 5.25" HD	£197.00	500 x 3.5" HD	£335.00

Including Labels, Envelopes & w.p.'s
100% Error Free. 2 for 1 Warranty

OFFER 5: 'Keep your data safe'
Top Quality Anti Static Lockable Disk Boxes, complete with 2 keys, Small or Large Capacity, ideal for Home or Office use!

3.5" x 40 Capacity	£3.95
3.5" x 80 Capacity	£4.50
3.5" x 100 Capacity	£5.50
3.5" x 120 Capacity	£6.50
5.25" x 50 Capacity	£3.95
5.25" x 100 Capacity	£4.95

OFFER 6: Accessories;
Sourced from the world's leading manufacturers, Quality and Price Guaranteed, Buy with Confidence

Amiga/ST dust covers	£1.95
Universal Screen Filter	£14.95
3.5" or 5.25" Cleaning Kit	£1.95
Mousemat	£1.95
200 Labels	£2.99
Roll of 1,000 Labels	£7.50
PC or Amiga Cable	£5.95
Mouse House/Bracket	£2.40
Printer Stand with Tray	£13.99
Printer Stand	£11.95
Mouse/Joystick Extension	£3.95

Call for printer ribbons prices

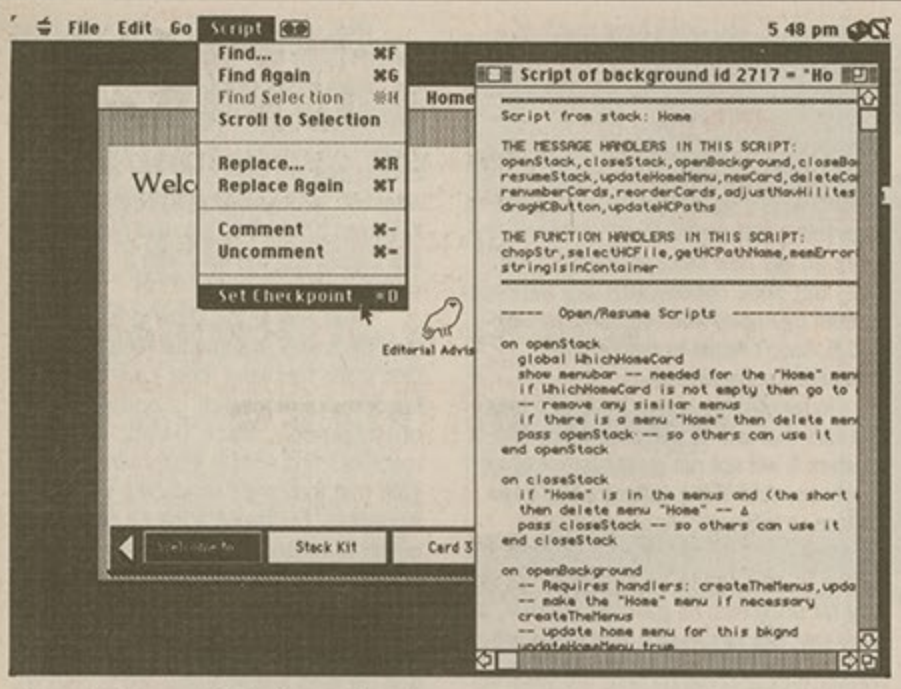
Four good reasons for choosing Original Media as your Supplier,
1 No Minimum Order.
2 Access and Visa accepted
3 Next Day Delivery (If order placed before 12.00 a.m.)
4 Free Helpful Advice

Post add £3.50 per order.
Next Day Courier £8.95

CORPORATE, EDUCATION & TRADE ENQUIRIES WELCOME.

THE ORIGINAL MEDIA COMPANY LTD.
TEL: (0530) 813591 (8 LINES)
Fax: 0530 813595

Dept NCE
14 ASHBY RD
COALVILLE
LEICESTER
LE6 2LA



• **HyperCard 2: *compatibility issues abound....***

printed address book should make you the envy of everyone at your local wine (or should that be whine) bar. Got a Filofax? Get a copy.

Dynodex is available for the princely sum of £89 from Softline: 081-642 4242.

POSTCARD FROM AMERICA

Okay, enough from me for this week. What's Morgenstern been up to...?

"They've struck again! There's a sly group of silicon tricksters pulling pranks in the Valley. Their latest repertoire is a spoof press release on Ted Nelson's Xanadu Project. Nelson is the 'father' of hypertext, and he's been pushing his vision of computing's future for years. His concept is the best, of course, and other implementations (ones that really exist) of hypermedia are brushed off. Don't even mention the word *HyperCard*. Here's a big byte of it:

"Tomorrow's Paradigm: A Seamless and Reunited Computer World. One World! Almost Ready to Ship!

"The long-awaited Xanthoma™ stowage program, under development even as you read this, at the Xanthoma Company, Ltd., a subsidiary of A Real Big Corporation, Inc., may have insanely dramatic consequences throughout the universe as we know it and will set a record for using run-on sentences inside of crowded press releases that look suspiciously like New-Age advertisements.

"A New Universe – No Kidding! This new way of using your computer, which we cannot really even describe, will permit anyone to access any data, anywhere, made at any time since Creation, all shared thru links forged of iron.

"Open HyperText Publishing means that we hope a lot of people are going to put out stuff that will be interconnected to other stuff, in all forms of data, including text, graphics, 3-D lab data, clips from old movies, digitised family vacation photo albums, and all other conceivable forms of information; all automatically cross-indexed in microseconds with no red tape or psychoactive drugs.

"Paradigm Warp. This is a new way of thinking about everything. It is wrenching to the mind. That's why this broadsheet doesn't really even tell you what it is. Dramamine™ should be included with every package. I'm getting sick now, just reflecting on even considering the possibility of pondering it.

"The Schedule

"Real Soon: We're just about ready to tell you what we're going to do! Full details of everything, with graphic colour photos (must be over 18).

"Sooner than You Think: Something will be released that shows we're serious about all this.

"Just a Little Bit Later: Everyone on the planet will own a copy and want to buy your stuff!

"While You're Still Young Enough To Enjoy It: Early developers could make Big Bucks with Xanthoma™ Rotostowage™ applications."

Ian Wrigley

There's more where this came from!

Your column isn't the only place to find vital information about your machine. Check out Whole Wired World, Tech Tips, Games Week, and of course the news ansd features pages. There's something for everyone in Express

AMIGA SYSTEMS

UNREPEATABLE CHRISTMAS SPECIALS!

LATEST AMIGA 2000 WITH 1084S	~~£1595.95~~	£999.95 Inc
VIDI AMIGA (PAL)	~~£114.95~~	£89.95 Inc
RENDALE 8802 GENLOCK	~~£299.95~~	£169.95 Inc
STAR LC10 MONO	~~£199.95~~	£139.95 Inc
STAR LC10 COLOUR	~~£299.95~~	£199.95 Inc
3.5" FLOPPY DRIVES WITH SWITCH & PASSTHROUGH	~~£99.95~~	£59.95 Inc
1084S COLOUR MONITOR	~~£299.95~~	£225.95 Inc
HITACHI HI-RES MONO CAMERA	~~£286.95~~	£189.95 Inc
XT-BRIDGE BOARD	~~£399.95~~	£199.95 Inc
4 WAY PARALLEL SWITCH BOX	~~£59.95~~	£29.95 Inc
COMIC SETTER	~~£49.95~~	£29.95 Inc
PAGESTREAM DTP	~~£109.95~~	£109.95 Inc
PROFESSIONAL DRAW	~~£139.95~~	£69.95 Inc

PLUS - RECONDITIONED SECOND HAND AMIGA 2000S FROM **£599.00** Inc.

RECONDITIONED 1084 MONITORS FROM **£149.95** Inc

WIDE RANGE OF AMIGA SOFTWARE AT SILLY PRICES E.G.

THE AMAZING REALTHINGS (HORSES) AN IDEAL CHRISTMAS GIFT NORMALLY £24.95 NOW ONLY **£7.95!**

CANDO - MULTIMEDIA AT ITS BEST NORMALLY £149.95 NOW ONLY **£89.95**

AND LOTS MORE - HARDS DRIVES, CABLES, PLUGS, CONTROLLERS ETC.

AMIGA SYSTEMS
RAVENSWOOD
THE SHIRES
HEDGE END
HAMPSHIRE
SO3 4BA
TEL: 0489 78 78 68

Access/Mastercard/Visa/Eurocard No:

Expiry Date:

All Cheques/Postal Orders etc. to be made payable to: Amiga Systems

Add £1.00 for Postage & Packing

Name: .....
Address: .....
.....
.....

Access VISA

SPECIAL OFFER FOR CHRISTMAS

AMIGA A500

Flight of Fantasy

or

SCREENGEMS

(please specify)

+

MIDI HIFI

Tape to tape, tuner & record deck

All for just

£359.99

(excluding VAT & del.)

Delivery charge £10.00

Cheques/Postal orders to..

TECHNICAL SUPPORT SERVICES

3 Adelaide St, Burnley, Lancashire, BB11 5AU

Tel: 0282 25556 (7 days) Fax: 0282 26710

AMIGANUTS UNITED

169, DALE VALLEY ROAD, HOLLYBROOK, SOUTHAMPTON, SO1 6QX

0703 785680 - 10am to 7pm Weekdays

1pm to 5pm Saturdays

FREE DISKS + FREE PROGS + FREE MEMBERSHIP

521:	ALL NEW STAR TREK, AUTHORISED English instructions.	£4.00
631:	PE MEGADIGISHOW Packed with good pics (2 DRIVES)	£3.00
640:	8 GAMES INC TRAIN SET, A MUST for the kids.	£2.00
680:	WORD SQUARE SOLVER - Solve magazine puzzle squares.	£2.00
681:	AMI-FX ISSUE 1 3 DISKS (FRACTALS) (1 MEG MIN).	£5.00
700:	D-COPY Fantastic new copier.	£2.50
705:	AMIBASE PROFESSIONAL. A LICENCEWARE DATABASE PROG.	£2.50
706:	3 GAMES BY PH SOFTWARE. The TURN, TRICKY, MARBLE SLIDE.	£2.00
728:	UTILS The Famous BOOT-SHOP, BOOT-KIT + others.	£2.50
740:	MED V2.13 A COMMERCIAL quality version of this FANTASTIC music utility, a host of new additions, including synth sounds.	£2.50
741:	NorthC V1.2 The VERY LATEST from Steve Hawtin, this new set is on TWO DISKS, packed with extra examples & advice on bugs.	£5.00
798:	ROB BAXTER'S AMIGADEUS (Mozart), classical music disk.	£1.50
812:	STAR TREK U.S. Version. GOOD! (1 MEG) (2 Drives).	£4.00
813:	A-GENE Geneaology (FAMILY TREE DATA). (1 MEG Min).	£2.00
814:	AEROTOON ANIMATION. With great sound efx (1 MEG).	£1.50
818:	EXCELLENT Legend Of ROBIN HOOD Animated Demo. (1 MEG).	£1.50
832:	TEXTPLUS 2E0 A fantastic Wordpro/Spellchecker package.	£2.50
834:	BOWL V2.0 TEN PIN BOWLING SCORES ARCHIVER. (2 DRIVES).	£2.00
836:	KHERN ANIM GOOD, BUT NEEDS 2 MEG TO RUN IT. (3 DISKS).	£4.00
838:	RAYTRACE SLIDESHOW 9 BY T. RICHTER EXCELLENT! (1 MEG)	£1.50
840:	PROFESSIONAL SOUNDTRACKER V1.0C.	£1.50
841:	FANTASTIC LOST IN SPACE ANIM ON 3 DISKS (2 MEG).	£4.00
848:	NEW UTILS FROM KEFRENS, INCLUDES POWERMENU A MUST!	£2.50
855:	PUSSY INNERSHIP THIS IS AN EXCELLENT GAME DISK!	£2.50
861:	GENOCIDE PICTURE SHOW (FOR ADULTS ONLY!)	£2.00

A SPECIAL OFFER TO ALL USERS OF Teijo Kinnuen's FANTASTIC MED MUSIC UTILITY TEN DISKS PACKED WITH MODULES THAT WE GUARANTEE WILL LOAD/RUN WITH MED, SIMPLY SEND £14.00 AND ASK FOR THE SPECIAL MED MUSIC MODULES PACK.

AT LAST! THE DISK THAT CODERS HAVE BEEN WAITING FOR.

ACC 1-4: The first compressed issues of a new disk for coders, even if you are new to computers, get this one, if you want to learn assembly, (devpac). PACKED with Advice and sources etc. Edited by MARK MEANY. INTRODUCTORY ISSUE OFFERED FOR ONLY £1.50

ACC 5: HERE IS THE NEXT ISSUE OF WHAT LOOKS LIKE BECOMING A HOT FAVOURITE WITH NEW AND OLD AMIGANUTS ALIKE, PACKED WITH SOURCE, HINTS, TIPS FROM MANY OF THE WELL KNOWN PEOPLE ON THE AMIGA SCENE TODAY. THIS IS A LICENCEWARE DISK AND A SHARE GOES TO THE EDITOR. £3.00

ACC 6 + 7: Now available at £3.00 each.

OVER A THOUSAND DETAILED PROGS ON THE MAIN CATALOGUE DISK £1.00

PRICES QUOTED ABOVE INCLUDE THE DISK AND RETURN POST/PACKING

MERRY XMAS TO ALL OUR CUSTOMERS

Make cheques/Postal Orders payable to: AMIGANUTS UNITED
169, DALE VALLEY RD, HOLLYBROOK,
SOUTHAMPTON SO1 6QX. PHONE 0703 785680.
Please note: Some demos contain language that may be considered offensive

WAREHOUSE CLEARANCE

XEROX

A unique opportunity to purchase Professional products at greatly reduced prices

-Leaflets Sent On Request-

LASER PRINTER

with inbuilt Photocopier

***10ppm *HPLaserJet+**

***Low cost Toner**

512K RAM 1MB RAM

£650 £750

3 months on-site warranty

Xerox 4045R

Normal Price £1,200

INKJET COLOUR PRINTER

* **Hi-Res, Versatile Performance**
* **Ideal for Amiga Users (4096 shades)**
* **Optional Sheet Feeder**
* **Parallel Interface**

£599

3 months warranty

Xerox 4020

Normal Price £650+

VENTURA (V2)

***inc. Professional Extension**

***3 1/2" & 5 1/4" disc sets included**

***Xerox Users Helpline**

***Brand new sealed stock**

£245

Normal Price £3,995

All prices exclude VAT and Carriage / Insurance. Order by phone for next (working) day delivery

ACCESS VISA **accepted.**

COMMONSIDE

HARDWARE SERVICES LTD

Unit 13, 193 Garth Road

Morden Surrey

SM4 4LZ

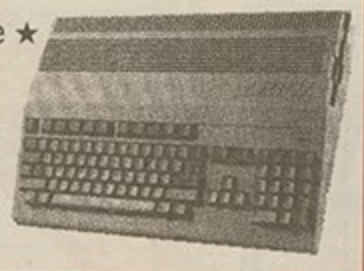
081-330 7533

Fax 081-330 4838

AMIGA DEALS

AMIGA 500 STANDARD PACK

★ A500 computer ★ 512k RAM ★ 1Mb disk drive ★
★ mouse ★ modulator ★
★ power supply ★ operation-manuals ★
★ workbench disks, etc. ★



ONLY **£339.95**

AMIGA ½ MEG UPGRADE BOARD

★ Uses latest 4 chip design
★ Memory on/off switch
★ Option of battery backed clock
★ Full 12 month guarantee
★ New super low price

£29.95
Clock Version
£34.95

A590 HARD DRIVE

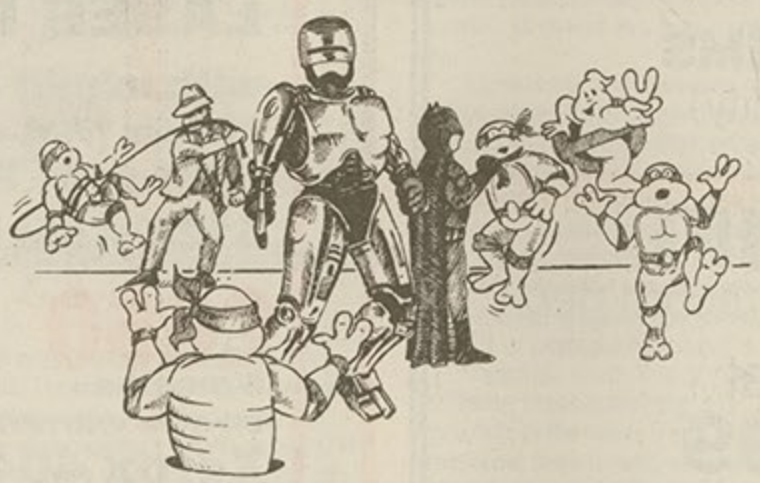
★ Official Commodore hard drive
★ Sockets for 2Mb RAM
★ Complete with free software pack
★ Built-in P.S.U./cooling fan

£269.95

MOVE OVER TURTLES - ROBOCOP AND HIS PALS ARE IN TOWN!

ROBOCOP

BATMAN



INDIANA JONES

GHOSTBUSTERS II

AMIGA SCREEN GEMS PACK *featuring* ROBOCOP AND FRIENDS

Just Look At What You Get

★ Amiga as in standard pack
★ Days of Thunder
★ Shadow of the Beast II
★ Back to the Future II
★ Nightbreed
★ Deluxe Paint II

PLUS *exclusive* to Dowling
★ ROBOCOP
★ BATMAN the Movie
★ GHOSTBUSTERS II
★ INDIANA JONES and the Last Crusade

All for the incredible price of **£369.95**

THE ALL NEW ULTIMATE GAMES PACK

Take the pack on the left featuring Robocop etc and add the following:
EXCLUSIVE DOWLING MEGA TEN GAME PACK comprising RVF HONDA, DATASTORM, DUNGEON QUEST, E-STORM, GRAND MONSTER SLAM, KID GLOVES, POWERPLAY, SHUFFLEPACK CAFE, MICROPROSE SOCCER, TOWER OF BABEL.

Total RRP of games over £229
PLUS
★ **Megablaster Joystick** ★ **High Quality Mousepad** ★ **Dustcover**

All for the unbeatable price of **£399.95**

DOWLING

AMIGA "FIRST STEPS" EDUCATION PACK

★ Amiga as in standard pack
★ A501 0.5Mb upgrade
★ Pro-write 2.5
★ Deluxe Paint II
★ Deluxe Print II
★ Infofile
★ Music Mouse
★ Amiga Logo
★ Talking Turtles
★ Lets Spell at Home
★ BBC Emulator
★ Ten CBM disks

All this for just **£529.95**

NEW COMMODORE 64 NIGHTMOVES/MINDBENDERS PACK

Comprises:
★ The worlds best selling home computer - the Commodore 64 ★ C2N cassette unit ★ 2 joysticks PLUS:- Nightmoves games ★ Nightbreed ★ Shadow Warriors ★ Midnight Resistance ★ Secret Agent Sly Spy ★ Mindbenders games ★ Trivial Pursuits ★Snare ★ Confuzion ★ Split Personalities

ALL FOR JUST £149.95
Plus FREE exclusive to Dowling
"Music Studio Software Pack"
Whilst stocks last!

THE NEW 200 SERIES FROM star

"The best printers just got better!"

LC200 FACT FILE — RRP £297.85
★ Mulit-purpose 9-pin, 80 column dot matrix printer with colour
★ Black and colour ribbons included as standard
★ Electronic dip switches (see LC24-200)
★ 180 cps draft elite/45 cps Near Letter Quality
★ High speed draft facility 225 cps at 12 cpi
★ Swivel selectable push or pull tractor
★ Bottom feed
★ Advanced paper parking with sheet feeder installed
★ Eight resident NLQ fonts: Courier, Sanserif, Orator, Script and italic versions
OUR PRICE **£199.95**

LC24-200 FACT FILE — RRP £366.85
★ Versatile 24-pin 80 column dot matrix printer
★ 200 cps in draft elite/67 cps in Letter Quality mode
★ 10 Resident LQ fonts
★ A high speed draft facility of 222 cps at 10 cpi
★ Swivel selectable push or pull tractor
★ Bottom feed
★ Advanced paper parking with sheet feeder installed
★ The economy of first and last line printing
★ 7 K-byte buffer expandable to 39 K-bytes
★ 11.7" carriage (A4 in landscape format)
★ Multi-part mode for 1 + 4 copies
OUR PRICE **£239.95**

LC24-200 COLOUR FACT FILE — RRP £424.35
★ Multi-purpose colour version of the 24 -pin LC24-200
★ Seven colour printing - black, purple, orange, green, pink, blue and yellow
★ 30 K-byte buffer expandable to 62 K-bytes
★ 10 resident Letter Quality fonts: Sanserif, Times Roman, Courier, Prestige, Script and Italic versions
★ Electronic dip switches operable from the push button front control panel (as the LC24-200 mon version)
★ Optional font cards including Russian
★ Standard black ribbons available for economy purposes
OUR PRICE **£279.95**

COMPUTERS

UNITS 48-50 TYNE ROAD, SANDY, BEDS, SG19 1SA

THE star COMPUTER PRINTERS

Being Star registered dealers we only sell official UK machines which come with a full 1 year guarantee. Beware of inferior imported products.

PRINTERS	RRP	OUR PRICE
Star LC10 Mono 144/36 cps	£229.95	£149.95
Star LC10 II 25% faster version	£263.35	£169.95
Star LC10 colour, 7 colours	£297.85	£189.95
Star LC24-10 - 24 pin multifont	£343.85	£229.95
Star LC24-15 wide carriage version of LC24-10	£573.85	£389.95
★ Star FR10 300/76 cps, 31K buffer, 16 NLQ fonts	£527.85	£369.95
★ Star FR15 wide carriage version of FR10	£688.85	£459.95
★ Star XB24-10 professional 24 pin series, 27K buffer	£688.85	£459.95
★ Star XB24-15 wide carriage version of the above with 41K buffer	£907.35	£599.95
★ Star LS08 LASER PRINTER 1Mb Ram, 300 x 300 dpi	£2172.35	£1399.95
Star LC10 sheet feeder (auto)	£74.75	£59.95
Star LC10 mono ribbons	£5.95	£3.95
Star LC10 colour ribbons	£7.95	£5.95
Star LC24-10 ribbons	£7.95	£5.95
Star LC10 quality dust cover	£7.95	£5.95

★12 months on-site maintenance

ATARI ST DEALS - Choose your own pack

DISCOVERY PLUS PACK

★ Atari ST Computer
★ Bombjack ★ Carrier Command
★ Outrun ★ Space Harrier
★ First Basic ★ Neochrome
★ STOS Games Creator
★ ST Tour Tutorial
★ Discover the Atari ST
PLUS -*exclusive to Dowling*
★ Konix Megablaster Joystick
★ High Quality Mousepad
★ Dust Cover

TURBO PLUS PACK

★ Atari ST Computer
★ Anarchy ★ Blood Money
★ Dragons Breath ★ H.K.M.
★ Impossible Mission II
★ Indiana Jones ★ Outrun
★ Super Cycle ★ First Basic
★ Hyperpaint II ★ Music Maker II
★ STOS Games Creator

PLUS - *exclusive to Dowling*
★ Konix Megablaster Joystick
★ High Quality Mousepad
★ Dust Cover

ULTIMATE GAMES PACK

★ Atari ST Computer
★ All software listed in "Turbo" pack **PLUS - *exclusive to Dowling***
★ Drivin' Force ★ Asterix
★ Trivial Pursuit ★ Skweek
★ Pipemania ★ Rock 'n' Roll
★ Rick Dangerous ★ Onslaught
★ Live & Let Die ★ Chess Player 2150
PLUS - *exclusive to Dowling*
★ Konix Megablaster Joystick
★ High Quality Mousepad
★ Dust Cover

	520STFM	520 STE 512K RAM	520 STE 1 MEG RAM
DISCOVERY PLUS PACK	£259.95	£329.95	£369.95
TURBO PLUS PACK	£299.95	£339.95	£379.95
ULTIMATE GAMES PACK	£329.95	£369.95	£399.95

UPGRADED 520 STE DEALS

520 STE with 1 MEG RAM	520 STE with 2 MEG RAM	520 STE with 4 MEG RAM
£349.95	£419.95	£499.95

3 ½" HIGH QUALITY DISKS

Box of 50 .....£19.95
Box of 100 .....£37.95
Box of 250 .....£79.95
Roll of 1000 labels £5.99

★ 100 % certified ★ Individually wrapped
★ "Made in Japan" Media ★ Fully Guaranteed

CUMANA CAX 354 DISK DRIVE "SCOOP"

★ Latest slimline design
★ High Speed Access
★ Acknowledged as "the best"

RRP £89.95 SCOOP PRICE £59.95

ATARI ST VERSION £69.95

MUSIC X SCOOP

Music X Junior .....~~£79.95~~ £34.95

Music X 1.1 .....~~£149.95~~ £59.95

4 Port Midi Interface....~~£29.95~~ £14.95

HURRY STOCKS LIMITED

COMMODORE 1084S OR PHILIPS 8833 MKII

★ Stereo Colour Monitor
★ Can be used as a TV with Tuner
★ includes Amiga/ST cables

RRP £299.00 OUR PRICE £249.95

TELESALES ORDER LINE 0767 681760 (8 lines)

DOWLING

HOW TO ORDER

Access VISA

BY PHONE

Simply call our head office quoting your Access/Visa number on

(0767) 681760

(8 lines)

BY POST

Make cheques, building society drafts or postal orders payable to:

Dowling Computers

DELIVERY (UK Mainland, most areas)

Please add £6 courier delivery for orders over £100, add £2 p&p for orders under.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

GOLD CLUB SERVICE

★ 7 day money back guarantee if not completely satisfied
★ 30 day exchange for new policy should a fault occur
★ 1 year guarantee giving FREE collection and delivery service should a fault occur
★ Exclusive gold card with personal membership number entitling you to special offers
★ All this for a nominal £10 per item over £100

PRICE PLEDGE

We know the majority of you prefer to buy from us but are sometimes tempted by smaller companies offering a £1 or so price difference. That is why we have now introduced our

"PRICE PLEDGE"

"WE WILL MATCH ANY PRICE OFFERED ELSEWHERE ON A SAME PRODUCT BASIS"★

★ Subject to stock

WHY CHOOSE DOWLING?

★ **ESTABLISHED OVER 4 YEARS**
With a growing reputation for "putting the customer first". We intend to satisfy many more customers for years to come

★ **TECHNICAL SUPPORT/ON-SITE ENGINEERS**
Employing over 20 specialist staff, we are equipped to deal with the majority of queries

★ **FULL TESTING PROCEDURE**
All computer hardware is tested prior to despatch, proving Dowlings commitment to customer care

So choose Dowling and put our reputation to the test!

PRINTERS

All of our printers come with a free cable and have a full 1 year warranty.

Star LC10 Mono (9-pin)	£157.00
Star LC10 Colour (9-pin)	£205.00
Star LC200 Colour (9-pin)	£230.00
Star LC24-200 Mono (24-pin)	£275.00
Star LC24-200 Colour (24p)	£299.00
Panasonic KXP1124 (24-pin)	£249.00
Panasonic KXP1624 15" (24-pin)	£399.00
Hewlett Packard Deskjet 500	£499.00
Citizen 124D (24-pin) + s/feed	£225.00
Citizen Swift 24 (24-pin)	£299.00
Canon BJ10E Portable BJet	£339.00

PRINTER ACCESSORIES

HP Deskjet - FX85 Module	£59.00
HP Deskjet - Ink Cartridge	£17.95
Swift 24 Colour Kit	£34.95

RIBBONS

All of our ribbons are GENUINE manufacturer ribbons - NO copies!

1 x LC10 Black Ribbon	£3.50
5 x LC10 Black Ribbons	£16.95
10 x LC10 Black Ribbons	£32.95
1 x LC10 Colour Ribbon	£5.20
5 x LC10 Colour Ribbons	£24.95
10 x LC10 Colour Ribbons	£47.95
1 x LC24/10 Ribbon	£4.75
5 x LC24/10 Ribbons	£22.00
10 x LC24/10 Ribbons	£40.00
Swift 24 Colour Ribbons (each)	£13.95
1 x Panasonic KXP1124 Ribbon	£8.95
5 x Panasonic KXP1124 Ribbons	£39.99
10 x Panasonic KXP1124 Ribbons	£69.99

ATARI LYNX

THE SPECIALISTS!

Lynx Games Machine (with free California Games)	£159.00
Blue Lightning	£22.50
Chips Challenge	£22.50
Electrocop	£22.50
Gates of Zendocon	£22.50
Gauntlet II	£25.00
Slime World	£25.00
Klax	£27.50

GAMES COMING SOON

Paper Boy	Cyberball
Flying Ace	Zarlor
A. P. B.	Mercenary
3D Barrage	Xenophobe
Road Blasters	Rampage
Super Soccer	Vindicators
Chequered Flag	Turbo Sub
World Cup Soccer	Junk Yard Dog
N F L Superbowl	Miss Pacman
Ninja Gaiden	Robo Squash
Pinball Shuffle	War Birds

PHONE FOR AVAILABILITY

HP DESKJET 500

- 120 cps in LQ
- 240 cps in Draft
- 75 to 300 dpi
- 100 x A4 sheet feeder
- Optional plug in font cartridges
- Optional Epson FX emulation
- Notator V3 compatible
- Calamus compatible
- Cubase V2 compatible

£499

AS USED TO PRINT THIS ADVERT

MICE

Contriver - ST compatible	£18.95
Contriver - Amiga compatible	£19.95
Contriver - PC compatible	£23.50
Contiver Trackball ST	£29.99
Naksha - ST/Amiga/Amstrad PC	£34.99

PC COMPATIBLES

All PC prices include VAT and delivery

Amstrad ALT286 (20Mb HD, 1Mb RAM, 16Mhz)	£1595.00
Amstrad ALT386 (40Mb HD, 1Mb RAM, 16Mhz)	£1995.00
Amstrad PPC512 DD	£579.00
Amstrad PPC512 SD	£419.00
Amstrad PPC640 DD	£679.00
Amstrad PPC640 SD	£539.00
Atari ABC286 VGA COLOUR (60Mb HD, 1Mb RAM, 16Mhz)	£1399.00
Atari PC3 XT EGA COLOUR (30Mb HD, 640K, 8Mhz)	£699.00
Atari PC3 XT EGA MONO (30Mb HD, 640K, 8Mhz)	£599.00

All PC prices include VAT and delivery
All PC computers listed above (except ALT 286/386) come with 12 months on site warranty free of charge.
Ring for further details or prices.

DUST COVERS

Atari STFM/STE computer cover	£6.99
Amiga A500 computer cover	£6.99
Atari SM124 monitor cover	£7.99
Philips 8833 monitor cover	£7.99
Star LC10 printer cover	£6.99

PORTFOLIO

Portfolio Pocket PC	£179.95
Parallel Interface + cable	£39.95
32K Memory card	£46.75
64K Memory card	£82.95
128K Memory card	£119.00
Finance Card software	£47.50
PC Application software	£47.50
Utilities Card software	£47.50
Serial RS-232 Interface	£56.95
Super Memory Expander	£164.95
Portfolio Card Drive	£67.50
Mains Power Adaptor	£11.99

ATARI ST ACCESSORIES

SM124 Mono Monitor	£99.99
Megafile 30 Hard Disk	£449.95
Megafile 60 Hard Disk	£619.95
SLM804 Toner Cartridge	£37.50
SLM804 Replacement Drum	£159.99
Roctec 1 MB External Drive	£75.00
Forget-Me-Clock II Card	£24.95
ST Monitor Switch Box	£14.95
STE Stereo scart lead	£12.99
STFM standard scart lead	£7.95
Replacement STFM/E PSU	£99.95
Atari CX40 Joystick	£4.95
Joystick/Mouse extension lead	£4.75
Replacement Mouse lead	£3.75
Standard Parallel Lead	£5.95
Mouse Mat	£3.50
2 Midi leads	£6.95
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

SOFTWARE

Hyper Pack software	£14.95
Power Pack software	£34.99
Turbo Pack software	£24.99
Discovery Pack software	£19.95
Tenstar Pack software	£29.95
Metacomco ST Basic	£4.95
Degas Elite	£19.95
First Word Plus	£56.99
Data Manager Pro	£29.99

BUSINESS SOFTWARE

Amazing new exclusive package!

K-Word 2 word processing software
K-Data database software
K-Spread spreadsheet software

only £59.99

runs on all ST machines

MIDI SOFTWARE

Sequencer One (ST)	£69.95
Dr.T Tiger Cub (ST)	£59.00
C-Lab Notator V3.0	RING
C-Lab Creator V3.0	RING
C-Lab V3.0 Upgrades	RING
Steinberg Cubase V2.0	RING
Steinberg Cubeat V1.0	RING
Digital Muse Prodigy	£99.95
Digital Muse Virtuoso	£219.95
Steinberg Editors :	
D110/10/20	RING
Kawai K1	RING
Roland M50	RING
Roland MT32	RING
Yamaha DX/TX	RING

The staff at BEST PRICES would like to wish all of our customers a very Merry Christmas and a prosperous New Year.

Thanks for all of your support in 1990 and we look forward to hearing from you all in 1991.

And a special thank you to all of our customers who wrote or called us to compliment us on our fast and efficient service.

Remember

BEST PRICES are No 1

for price, for service, for facts, and for putting the customer first.

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 disk prices include vat and delivery. Ring for prices on larger quantities.

QUANTITY	10	20	30	50	100
UNBRANDED 3.5" DS/DD	5.99	10.99	15.99	25.99	49.00
SONY BRANDED 3.5" 2DD	9.50	18.50	26.50	42.00	80.00
UNBRANDED 3.5" HD	14.95	27.95	39.95	59.99	115.00
SONY BRANDED 3.5" HDD	27.50	53.00	77.00	120.00	235.00
UNBRANDED 5.25" 360K	3.25	6.25	9.25	14.95	27.50
SONY BRANDED 5.25" 2D	7.95	15.50	22.50	36.99	69.99
SONY BRANDED 5.25" HDD	12.99	24.99	34.99	56.99	99.99

AMIGA

AMIGA A500 SCREEN GEMS PACK

A500 cpu, mouse, tv modulator, manuals, Workbench, Dpaint 2 and Days of Thunder, Back/Future II, Nightbreed and Shadow/Beast II **£359.00**

AMIGA A500 FLIGHT OF FANTASY PACK

A500 computer, mouse, tv modulator, manuals, Workbench, Dpaint 2 and Planet/Robot Monsters, Rainbow Island and F29 Retaliator **£359.00**

AMIGA A500 BASE PACK

A500 computer, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software **£339.00**

AMIGA A1500 PACK ★ NEW ★

A1500 1Mb ram computer with 2 x 3.5" drives, mouse
1084S Stereo Colour Monitor, and software : Platinum Works, DPaint 3
Populous, Simm City, Battle Chess, Their Finest Hour and 2 books **£1099.00**

Astra Pack - 10 games	
★NEW★ Phone for details	£29.95
Photon Paint version 1	£9.95
Photon Paint version 2	£39.95
Deluxe Paint version 3	£59.95
PACK 1 : F29/R.Bow Isl/ Robot Monst/DPaint 2	£19.95
512K Ram Upgrade with clock	£39.95
A590 20Mb Hard Disk drive	£369.95
A590 1Mb Ram Upgrade	£49.00
Roctec external disk drive	£73.00
Vidi Amiga video digitiser	£99.99
Amiga Stereo Scart Lead	£9.99
Mouse Mat	£3.50

All Amiga prices include VAT and delivery

ATARI STE + STFM

ALL ATARI STE PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. ALL MACHINES ARE CHECKED PRIOR TO DESPATCH. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES. WILL YOU EVER WANT TO EXPAND YOUR STE'S RAM? ALL OF OUR ATARI STE COMPUTERS HAVE THE "PLUG-IN" RAM SOCKETS - OUR PRESENT STOCKS DO NOT REQUIRE A SOLDERED IN RAM UPGRADE UNLIKE THE MACHINES OFFERED BY OTHER MAIL ORDER COMPANIES. OUR PRESENT STOCKS ALSO HAVE THE NEW DMA CHIP SET FITTED ALLOWING TROUBLE FREE OPERATION WITH ATARI HARD DISK DRIVES.

STE STANDARD PACK

Consists of the 520STE computer (available in 4 different RAM sizes) with mouse, tv lead and manuals etc
The Standard Packs come with no bundled software.

520STE 512K STANDARD	**£349.00**
520STE 1MB STANDARD	**£375.00**
520STE 2MB STANDARD	**£419.00**
520STE 4MB STANDARD	**£529.00**

STE BUSINESS PACK

Consists of K-WORD 2 word processor, K-SPREAD spreadsheet, K-DATA database and METACOMCO BASIC programming language. Who needs the 1040STE pack ?

520STE 512K BUSINESS	**£385.00**
520STE 1MB BUSINESS	**£405.00**
520STE 2MB BUSINESS	**£459.00**
520STE 4MB BUSINESS	**£565.00**

STE TURBO PACK

Consists of STOS Games Creator, First Basic, Hyper Paint II, Music Maker II, 8 great games (Indiana Jones & the Last Crusade, Impossible Mission II, Human Killing Machine, Super Cycle, Outrun, Dragons Breath, Anarchy and Blood Money) and a joystick

520STE 512K TURBO	**£369.00**
520STE 1MB TURBO	**£389.00**
520STE 2MB TURBO	**£439.00**
520STE 4MB TURBO	**£549.00**

STE POWER PACK

Consists of 20 great software titles (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) and a joystick.

520STE 512K POWER	**£389.00**
520STE 1MB POWER	**£409.00**
520STE 2MB POWER	**£459.00**
520STE 4MB POWER	**£569.00**

STE DISCOVERY PACK

Consists of 7 great software titles (First Basic prgramming language, NeoChrome art package, STOS games designer and 4 games - Carrier Command, Space Harrier, Outrun, Bomb Jack) and the complete ST Tour book and a joystick.

520STE 512K DISCOVERY	**£365.00**
520STE 1MB DISCOVERY	**£395.00**
520STE 2MB DISCOVERY	**£439.00**
520STE 4MB DISCOVERY	**£555.00**

REMEMBER : WE ONLY SELL THE ATARI STE WITH PLUG IN RAM SOCKETS. OTHER COMPANIES MAY OFFER MACHINES WITH SOLDERED IN RAM BOARDS. SO RING US FIRST. WE CAN HELP YOU

STE RAM KITS

DIY 1 KIT - 520STE to 1MB
(2 x 256K cards) *SIMMS* **£34.99**

DIY 2 KIT - 520/1040 to 2MB
(2 x 1MB cards) *SIMMS* **£109.00**

DIY 4 KIT - 520/1040 to 4MB
(4 x 1MB cards) *SIMMS* **£205.00**

All RAM prices include VAT and delivery and come with instructions.
PLEASE CHECK YOUR STE CONFIGURATION BEFORE ORDERING SOME STE MACHINES SUPPLIED BY OTHER COMPANIES REQUIRE SOLDERING !

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

520STFM DISCOVERY PACK - £ 279.00
520STFM BUSINESS PACK - £ 310.00
520STFM STANDARD PACK - £ 265.00
for software contents - see STE section above.

ST GAMES ONLY £1.75 EACH ?

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.
All of the above games are available in the Power Pack Software pack for only -

£34.99 - thats less than £1.75 each !

(requires double-sided internal disk drive)

BEST PRICES MAIL ORDER

(DEPT NCE), UNIT A, GRAFTON PLACE, WORTHING, WEST SUSSEX. BN11 1QX

VISA **(0903) 700714** Access

TELESALES 10am till 12 midnight

All prices include VAT and UK delivery unless otherwise stated. All prices / specifications / special offers are subject to change without notice. Goods usually despatched same day as cleared payment is received. Please make cheques/P.O's out to BEST PRICES. Mail order only. No callers. Thank You.
ADD £5.00 INC VAT FOR NEXT WORKING DAY UK DELIVERY, ADD £25.00 INC VAT FOR SATURDAY UK DELIVERY

ALL PRICES INCLUDE VAT AND DELIVERY
TELESALES OPEN 10.00am TILL 12.00 MIDNIGHT (MON to SAT)

MICROBYTE

HOME ENTERTAINMENT CENTRE

For the best selection of software, hardware and peripherals for your:
AMIGA, ATARI ST, COMMODORE C64 + GS, SPECTRUM, AMSTRAD + GX4000, IBM PC, SEGA MASTER SYSTEM, SEGA GAMEGEAR, ATARI LYNX, PC ENGINE, NINTENDO GAMEBOY, ATARI 2600 + 7800.

THERE IS ONLY ONE PLACE TO GO! THAT'S WHY MICROBYTE WERE VOTED
"RETAILER OF THE YEAR"

IN STOCK NOW! THE LATEST SENSATION, THE

★ SEGA MEGADRIVE ★

YOU CAN OWN THE ULTIMATE HOME ENTERTAINMENT SYSTEM
FOR ONLY £149.99
Microbyte Megadrives are fully compatible with all UK and US cartridges and the latest releases from Japan.

MICROBYTE
129 St Georges Way
The St Johns Centre
LIVERPOOL
TEL 051 707 1931

MICROBYTE
11 Friargate Walk
St Georges Centre
PRESTON
TEL: 0772 882243

MICROBYTE
52 High Street
The Meadowhall Centre
SHEFFIELD
TEL: 0742 56837

NEW STORES OPEN NOW!

MICROBYTE
56 Garden Walk
The Metro Centre
GATESHEAD
TEL: 091 460 6054

MICROBYTE
109 Upper Broadwalk
The Broadmarsh Centre
NOTTINGHAM
TEL: 0602 586454

MICROBYTE
1 Kirkgate Mall
The Kirkgate Centre
BRADFORD
TEL: 0274 308829

MICROBYTE
34-36 County Arcade
LEEDS
West Yorkshire
TEL: 0532 450529/441287

MICROBYTE
424 Grand Parade
The Bull Ring Centre
BIRMINGHAM
TEL: 021 616 1036

MICROBYTE
20 Cleveland Street
DONCASTER
South Yorkshire
TEL: 0302 329999

MICROBYTE
5 Pasture Road
GOOLE
TEL: 0405 763183

MICROBYTE
33 Kirkgate
WAKEFIELD
TEL: 0924 376656

MICROBYTE
46/47 The Greenmarket
NEWCASTLE
TEL: 091 261 9050

ALSO A NEWLY REFITTED SHOP AT THE ARNDALE CENTRE, MANCHESTER. TEL 061 832 1438

THERE'S ONE NEAR YOU!

WHOLE WIRED WORLD

A regular trip around the world with Steve Gold

SHOCK WAVE HITS THE US

Shock Wave is the name of a new US computer and games console magazine which, from its press release issued last week, sounds like it plans to cover almost all of the games/console industry in some depth.

Edited by Antonio Barnes, the first issue of the magazine is being offered free of charge to US residents, so the inclusion of a few international reply coupons from readers of *NCE* in the UK should obtain the first free ones on this side of the Atlantic. Barnes is enclosing a half-price subscription voucher with the first issue – making the magazine well worth sending off for.

Included in the first issue is a `hands-on' review of the Super Famicon and Super Mario Bros, as well as a review of the *Game Gear*, Sega's new hand-held games console. On the computer front, the magazine includes reviews of several of the latest games for the Atari ST and Commodore Amiga.

Contact: Z Publications, 2240 Mac Arthur Blvd., Suite 1400, Oakland, Ca. 94602, United States.

STATUS BBS GOES INTERNATIONAL

Status BBS in Auckland, New Zealand, has hooked up to the X.25 packet data network, meaning that subscribers to the BT PSS and Dial Plus packet data networks, as well as the Mercury 5000 packet network, can access the service on a local phone call basis.

While the cost of placing a call to Status is rather less than dialling direct to New Zealand, the charges can mount if you pipe a lot of data over the link.

Callers should place a packet data call to Status via the network user address (NUA) of A9-5301-9500-0013-13. On connection, callers will see the response 'Paxus Faxnet' and should log in using the Visitor option, and register as normal.

APPLE V APPLE

Remember the *Express* story regarding the legal row of the use of the Apple logo a few weeks back? According to the ST report on-line newsletter, if Apple Corps wins its lawsuit against Apple Computer, the latter may have to pay up to $200 million in royalties to Apple Corps, and may have to stop selling much of the Macintosh line of computers.

MOTOROLA ON A WINNER

Motorola has unveiled an radio frequency LAN system that will allow wireless computer networks to be installed in corporations and businesses. Called the Wireless In-building Network – WIN for short – the system uses standard radio signalling techniques to transmit data throughout a LAN.

A key feature of WIN is that different types of computers can be connected using the system. WIN is also billed as being 50 per cent faster than the industry standard 10 megabits/second Ethernet system.

Don't ask the price, as WIN isn't out yet – shipment is expected early next year, by which time the price will have been firmed up.

WORDPERFECT 4.1 FOR ATARI ST

As previously reported in this column, WordPerfect has released version 4.1 of its word processing software for the Atari ST, the package is effectively an `engineering' re-work of the previous edition, and includes several new features, as well as sorting out a number of bugs in v4.0.

Amongst the many new features are: support for large screen monitors; full directory listings for all disk types, including Ram disks; improved F-Sel support; and inclusion of the complete document path and name is now displayed in the window title bar.

Registered WordPerfect Atari users in the US are being encouraged to obtain the updated edition of WP for the Atari ST for $15 plus $3 postage and packing. Since I'm not too sure when the version will be shipping on this side of the Atlantic - if at all - it might be worth giving the company a call on 0101-83-800-222-9509 if you're at all interested.

Contact: WordPerfect Corporation Atari Products Division, PO Box 731, Orem, UT 84059-0731, United States.

SPECIAL OFFER ON GRAPHICS

Version 2.0 of Seurat, a graphics program for the Atari ST, will be launched towards the end of this year. A special pre-release edition of the package – two disks plus a 34,000 word users manual on disk –has been released by SK-Ware One for just $35.

The package allows users to create and edit Degas, Macpaint and Gem Img files of any size, and includes zooming and panning facilities within the editing module.

Other key features include support for a wide variety of printers, either integrally within in the program or – for the less well-known printers – as a separate printer driver modules.

Also available is a self-collating two-sided printing routine for printing the 34,000-word User's Manual on the Hewlett-Packard Deskjet and other printers in draft mode. The routine adds $3-00 to the package price.

Contact: SK-Ware One, PO Box 277, Bunker Hill, Illinois 62014, United States.

AMIGA ADD-ON ON HOLD

As previous reported, a German company called Medusa has developed an Amiga add-on unit that accepts Atari ST Rom chips – much as the A-Max add-on for the Amiga does. The cartridge unit effectively allows the Amiga to run all Atari ST programs as normal.

According to the ST Report on-line newsletter, Medusa was scheduled to show its product at the recent *World of Amiga* in Chicago, but was `advised' by Atari that legal action was likely if the system were sold at the show.

While Medusa withdrew from the show, the company promised to release a reworked edition shortly that would be function much as the Spectre Mac emulator for the Atari ST works – the user buys the emulation cartridge and then plugs in his or her own ST Roms.

Watch this space for further information.

FAX INTO VOICE MESSAGES

Berkeley Speech Technologies of New York has obtained a US patent for a new system that can translate incoming faxes into voice messages. While this new development will probably enjoy widespread use by visually impaired users of fax machines, it can also be used with the variety of voice mail services which are springing up around the world.

BST is planning to release a software package early next year that converts E-mail and fax messages in the spoken word. No pricing on the system as yet, but watch this space!

Also in the pipeline is a custom chipset that BST plans to sell to fax manufacturers. When used, the chipset will, BST claims, allow fax machines to speak the ASCII text from a fax page directly to the user!

CLEAR THINKING HITACHI

Hitachi Japan has developed a 10-inch thin-film transistor colour liquid crystal display for use in workstations. The screen has 870,000 pixels or three times as many as existing types.

According to the Japanese giant, the screen is as clear as cathode ray tube technology and is capable of displaying up to 4,096 colours on-screen at once.

As WWW went to press the price was not available, but Hitachi is in active discussion with a number of computer manufacturers. Expect to see the technology in use by next summer.

AT&T PHONE GOODIES

AT&T has announced a digital, tapeless telephone answering machine. The System 1337 costs $139.99 and comes in a case with a footprint of 10 x 10 inches and a height of six inches.

As supplied, the unit can record up to seven minutes of spoken word, and allows users to play back, repeat and skip messages without the need to wind the tape in either direction.

The unit is on sale now at AT&T phone shops in the US. Sadly, this writer wasn't able to buy one at Comdex earlier this month, despite phoning round more than a few stores.

What I did get, however, was a $89.99 unit called the CLI 64, a battery-powered calculator-sized unit that uses the caller line ID system - available on a growing number of a PABXs and planned for service on some BT exchanges 'real soon now,' to display the originating phone number of people calling you, while the phone is still ringing.

CLI works by generating a modulated signal on the phone line between the first and second rings, giving the phone number of the person calling, together with the date and time of the call. The AT&T CLI 64 stores data on the previous 64 calls.

If the calling phone number is on an exchange that does not support CLI, the unit displays an 'out of area' signal, or a variety of other messages, as circumstances dictate. Needless to say, the AT&T CLI 64 is not approved for use on BT or Mercury circuits in the UK. ■

NINTENDO AND OTHER DEVELOPMENT OPPORTUNITIES

We are expanding once again and have opportunities for senior and junior programmers, artists, musicians, designers and product testers.

We create leading edge flight simulators, arcade and strategy games on the latest technology; from personal computers to video game systems including Nintendo, Commodore, IBM and Atari.

If you are self-motivated, hard working and would like to join one of the UK's best known development companies, then give us a call to arrange an informal chat or send us full details about you and what you can do.

Argonaut Software ... Where the future is flying high.

Call Richard or Jez on 081 906 4253 or Fax: 081 959 5052

ARGONAUT SOFTWARE LIMITED
66b The Broadway Mill Hill London NW7 3TF

★ Member of the Society of Software Authors ★

Official developer with Nintendo of America and Nintendo Co Ltd (Japan)

WJS Design

"**BAAL**" - ST Format Gold 91% - ST User Star Game
"**BLOOD MONEY**" - ST Format Gold 90% - NCE 5 star game
"**ANARCHY**" - C&VG Hit! 96%

WJS Design are an experienced software house specialising in the very best 16 bit software. Having worked exclusively for PSYGNOSIS for over 2 years, we are now expanding and will shortly be requiring the following people to join our in house team:

68000 PROGRAMMERS (ST/ AMIGA/ MEGADRIVE)
GRAPHIC ARTIST

The successful applicants will be self-motivated, take pride in their work, non-smoking and possess a sense of humour! In return we can offer a competitive salary, top development systems and a relaxed working environment. We even give you FREE COFFEE, now we can't say fairer than that can we?

If YOU think you've got what it takes (and you like coffee), telephone:
WAYNE SMITHSON on 0532 636554
or write:
WJS DESIGN, PARK MILL HOUSE, STANNINGLEY ROAD, LEEDS, LS12 3LR.

Citizen SOFTWARE

Hi TEC Software

PAL Developments

COMPUTER PROGRAMMERS Z80/6502/68000/PC

Salary Circa £10K+ Sheffield based

PAL Developments has vacancies for experienced programmers to work on a variety of computer game based projects. Many of these are for our highly successful sister company Hi Tec Software and include internationally famous cartoon characters.

An excellent working environment alongside an already established dedicated team of programmers. Programmers should have experience of working with either Z80/6502/68000/PC.

Salary is negotiable and will reflect the importance of this position.

Only apply if you have a proven track record in games programming.

In the first instance apply, preferably in writing, to Mr. A. D. Palmer at the address below, or telephone for an appointment.

4/5 Barmouth Court,
Barmouth Road,
Sheffield S7 2DH
Tel: 0742 587555 Fax: 0742 580547

PALMER ACOUSTICS LTD
10 YEARS 1977-1987

FUTURE FAKE

TOP CAT

YOGI'S GREAT ESCAPE

Cricket Captain

© 1990 HANNA-BARBERA PRODUCTIONS INC.

Future PUBLISHING

WANTED!

Editors
Sub-editors
Staff writers

- Launched in 1985
- Now over 125 staff
- 10 national newsstand magazines
- Market leader in computer titles
- Exciting launch plans
- Britain's fastest-growing publisher

Britain's fastest growing publishing company, Future Publishing, is looking for exceptionally talented and ambitious magazine staff to work on existing titles and planned launches.

Future, based in beautiful Bath, already publishes *Amiga Format, ST Format, New Computer Express, Commodore Format, Your Sinclair, Amstrad Action* and *Sega Power,* as well as *PC Plus, 8000 Plus* and *Mac Publishing*.

In return for your blood, sweat etc etc the company offers a good salary, an excellent working environment and the opportunity to take on new and exciting challenges as Future continues to expand.

If you have good reason to think Future needs you, send your CV, together with examples of published work – or 500 words on "What magazines are for" – to Greg Ingham at the address below. (Editors: send copies of recent issues.) Do it today if you know what's good for you.

Future Publishing Ltd, Beauford Court, 30 Monmouth Street, Bath, BA1 2BW Tel: (0225) 442244

A STORM GATHERING

The Sales Curve Ltd. continues to strengthen and diversify its operations as 1991 approaches.

The launch of our own label: STORM and our on-going expansion mean that we are now looking to increase our development capacity.

If you are a programmer/artist on any of the following formats: Atari ST, Amiga, Commodore 64, Spectrum and Amstrad, we want to talk to you.

We're also interested in people who are willing to work on the SEGA, NES and Superfamicom machines.

We're primarily interested in in-house programmers, but for exceptionally talented and experienced people will consider freelancers and third party teams.

For further information contact Rob Henderson at:

THE SALES CURVE
LOMBARD BUSINESS CENTRE
50 LOMBARD ROAD
LONDON, SW11 3SU
Telephone: 071-585 3308

We offer an excellent salary and bonus scheme - plus the prospect of working for a company that's rapidly becoming a major contender in the Software Entertainment Industry.

Tim Smith's CENTR

Write to 30 Monmouth Street, Bath BA1 2BW (if you dare)

OPENING TIME

In the words of the immortal James Brown, "Haiiiiiow!". To misquote the great Douglas MacArthur (it's smoke an Acorn for America week boys!) "I have returned!".

The caring, bonding, feeling, loving, gracious part of me would like to say thank you to all of my stand-ins. Luckily I left that at a pool hall in Buckhead so stuff it.

Time for serious business. It would appear that while I have been away the European parliament has passed some anti-piracy laws which have incensed 'industry figures'. I have just one comment on this matter – it's a big planet guys. This thought came to me as I typed a few notes into my (sadly now lost) NeXt portable. I was sitting atop the Peachtree Plaza hotel, in the revolving restaurant (cheers Mike) at the time. Let me tell you, 72 floors up is a long way. I was looking down on to a helicopter at the time and this reinforced the idea. It's a big, big planet with heaps and heaps going on. So stop bleating and get active.

In the deep south of the States, the Amiga is a, and I quote, "Cult machine which looks like catching on in a big way." Sadly, the ST is "not doing too well." Walking into a seriously games oriented store I was overwhelmed by PC, Nintendo, Sega, Neo-Geo and Turbo Grafix games while over in a corner were a few Amiga products. It's a big world.

And try this one out for a bile instilling piece of news: the Sega Mega is selling at $189.99. With a current exchange rate of $1.98 to the pound this should mark the price at £95.95. Strangely though the English price for the machine is £189.99. What is going on in the world of market forces?

A final thought; the day after I get onto the plane, first class of course, Geoff Howe ups and resigns. Spooky or what?

Well that's enough of that banter. Get the hell out of this column and don't ever come round here begging grits and biscuits again.

TALE SPIN

Computers seem like methodical, organised gizmos, but they have a dark, chaotic side. It's this electronic twilight zone that swallows your data, crashes your system and causes you to become technophobic.

To err is human, but it takes a computer to really screw things up. If you have any weird, wonderful or wacky computer fables, tell them to Tale Spin and riches could be yours. (Well, maybe a bit of software, if they're really good)

AND HE DROVE THE FASTEST MILK CART

ERNIE, the electronic brain behind the biggest lottery in the UK, the Premium Bonds, is secretly sitting on a cash lump sum which could equal the GNP of a small country.

Apparently there is £8 million in unclaimed prize money in a bank account in Ernie's name. It's all sitting there, probably accruing more interest than anyone in this office could hope to make in six life-times waiting for a winner to come along and pick it up. The dosh will stay there forever, or at least until the Premium Bonds office manages to get in touch with all the winners who never bothered to check the papers (whichever comes first what with time being relative and all if you see what I mean).

As part of Centrefold's caring-for-you policy, we can now let you in on the big secret – YOU haven't won anything! In fact, you have adhered to one of the golden rules in life which is that the Premium Bond two numbers after yours was the nearest you came. Tough!

But Centrefold is also an ecologically sound title and we don't want all of those nasty pieces of paper littering up the place so... Send all those unwanted Premium Bonds to: Tim (Here it is on a plate for you my dear boy) Smith, Centrefold, 30 Monmouth Street, Bath, Avon.

IT'S ALMOST ALWAYS HUMAN ERROR, DAVE

A recent issue of big sister magazine *ST Format* featured a jolly little program on the cover-disk. Called HAL9000, it played a short digitized sample of the fearsome 2001 computer announcing, "I'm completely operational and all my circuits are functioning perfectly" when you reset your system.

A jolly wheeze for most, but one poor fellow found it all too much to cope with and phoned *Format's* offices complaining that "my computer's not operational or perfect at all. The modulator's fallen out and the screen's all messed up". Attempts to explain that the program was merely a sample player fell on deaf ears. "But it's lying" said the sad little chappie. In desperation, one member of the *Format* team tried an analogy to explain.

"When a game says YOU ARE DEAD, you're not really dead are you. It's the same thing!"

"Ah!" replied the desperate laddy, "but none of my games say that. They all say GAME OVER and then it is!"

Er....case dismissed, m'lud.

OUT OF TOWN TOP TENS

Researched by Dave [the Dandy] Golder

Leicester must rate as the most parochial place we have turned tofor this colomn so far. Just look at the amount of new entries. These Leicesterians obviously have strong ideas about their gaming requirements. And the place they go to is Telegames, (tel: 0533 813606) owned and run by Peter Mortimer, who finally compiled this week's chart:

SEGA MEGADRIVE TOP TEN

1) *Strider* – Hacking 'n' chopping to the top of the chart. .
2) *E-Swat* – Cops of the future in disappointing arcade conversion.
3) *Ghouls and Ghosts* – spooks and ladders.
4) *Golden Axe* – More hack'n'chop.
5) *Dynamic Duke* – Great name, great game.
6) *Burning Force* – In with a bullet.
7) *Rainbow Island* – cutsie wootsie and tricky as hell.
8) *Super Monaco Grand Prix* – Vvvrrrmmm!
9) *World Cup Soccer* – Still doing the business.
10) *Thunderforce* – Scrolling fast-action extravaganza.

8-BIT TOP TEN

1) *Mario 2* - –The famous computer character returns.
2) *Chase HQ* – Excellent classy car chase game in which you get to drive a Porsche 928. If only...
3) *Operation Wolf* – Ultra violent, ultra good.
4) *Double Dragon* – Twice the amount of Ninja turmoil.
5) *Batman* – Holy film tie-ins.
6) *World Games* – but does it feature boycotts for realism.
7) *Wonderboy Maze* – Get lost.
8) *Kung Fu Superkids* – High kickin' action.
9) *Fire and Forget* – Fast action cars'n'crashes.
10) *Silent Service II* – Not a game about Jimmy Connors after a tracheotomy.

THE CHARTS

This week's Bleeding Charts club entry comes from that great film making double act - the Lumiere Bros. Our happy medium, Madame Zara Von Singt managed to contact les freres Lumiere last Monday and this is what they said...

1) *Robocop* – zees iss a grreat film et ze geme iss cool too.
2) *Indiana Jones and the Temple of Doom* – nuff zed.
3) *Batman* – zat Michael Keeton, he's a screeeeem.
4) *The Spy Who Loved Me* – Cubby Broccoli vot a guy.
5) *Gremlins* – Gizmo vos always our fave cherecter.
6) *Aliens* – Zigoruney Veaver, a star, a star.
7) *Howard the Duck* – vell ve liked de movie.
8) *Total Recall* – veird geme, veird film.
9) *Predator* – Arnie again, he's a real hunk n'est-pas?
10) *Rambo* – ze sinking voman's Sam Fox.

THE TOSH TEN

Every week there's rubbish, utter garbage and wibble. But this week there's tommy-rot, mindlessness, and idiocy. The Tosh Ten proudly presents 'Ten Things Freud Would Have Said About Softwareæææ'

1) *Autoroute* – an attempt to re-target neurosis.
2) *Fish* – a highly potent sexual symbol.
3) *Personal Nightmare* – a healthy outpouring of sexual desire.
4) *ESWAT* – a anagram of sweat. Very sexual in nature.
5) *Golden Axe* – Mmmm, a complex sexual symbolism.
6) *Fire and Forget* – forgetting is impossible, this game is a feeble attempt to present blocking transferences.
7) *Hollywood Strip Poker* – Nothing to say here.
8) *Fun School 3* – a deeply disturbing illustration of frustrated childish desires.
9) *CP/M* – a meaningless word hiding a sexual confusion.
10) *Lotus 1-2-3* – Lotus relates to position. 1-2-3 is a very short time.... deeply symbolic.

TREFOLD

Letter Spray

Want to see your name in print? Then write to Centrefold. This week's replies by the Great One who has returned.

This is the section of Centrefold which gives you the reader the chance to air your views. Unlike the great and good HFW, I don't have thousands of crisp fivers to chuck around the place. I do have the occasional prize however. So, get writing.

Dear whoever it is this week,

What the hell is all this rubbish about Tim Smith being in America anyway? You must think that we're really stupid. It is obvious that you have just been changing the names on the Centrefold and that Tim Smith has been writing the stuff all along. Ken Mosely, Tarquin St John-Sprout, Jeanette Brashier, and Mandlebrot! I ask you. The whole thing is obviously a desperate attempt to liven up a boorish, unfunny, childish space filler. Why don't you just cancel the entire thing?

Yours MA Lutyens, Chislehurst, Kent

Dear MA,

Well thanks a bunch. Welcome back Tim. Nice to have you here again, we missed ya big guy. Thanks a great deal. So, was I in the USA or was I not? Has this entire last few weeks been a marketing ploy? What do you think? Write in and tell me. As for you MA, frankly I don't care for your tone, your style, your attitude or your handwriting. Get yourself a printer, and if I ever catch you reading these pages again be prepared for an on-going head-ripped-from-shoulders scenario. Get it?

Dear Tim,

I hope it's you answering the letters this week because I have a very personal question to ask. Do you really have a NeXt portable or is it just something you write to make yourself sound more impressive than you already are (creep, creep)? I only ask because I haven't heard any mention of the machine in any other magazines. I would have thought that it would be a big story and I can't believe that no one else has one. Please clear up this problem for me.

Yours Cheryl Brewer, Truro, Cornwall

Dear Cheryl,

HAD. Had is the operative word here. Up until a couple of weeks ago I had a NeXt portable. In fact it was the only one in the world; it probably still is unless the power-crazed, jumped-up, pig ignorant traffic cop who stole it from me has trashed it. The reason you have not heard anything about it was because I was writing a special report. I won't say who for but it wasn't NeXt. Sadly now that the little baby has fallen into the hands of someone who probably thinks it's a weird microwave I have been informed that no other such machines are planned. By the way, if you were even thinking about calling me a liar... well it doesn't bear thinking about does it... Cheryl?

Dear Tim,

I would very much like to meet with you in order to discuss some problems we have been having with your on-line turf account.

As you know our system is one of the most highly developed in its field anywhere in the world. By using a simple swipe card in one of our many home terminals it is possible to make investments in nearly any sphere you wish. But you already know this. What you probably are not aware of is that it is so sophisticated that it has already frozen your account, black-listed you with every other analyst of statistical probablity and chance in the country, and attempted to debit your personal banking account. I say attempted due to the fact that your bank also appears to show a solvency problem on your part.

I trust that we can come to some mutually agreeable arrangement before next Friday at 11am. If this scenario is not attained I will be forced to take recourse to the Jerusalem Brothers.

Yours DD Vernon, Twyford, Hampshire

Dear DD,

Indeed yes your betting system is impressive in its technological advancements. The Jerusalem bros on the other hand are not. While it would take me a few months to hack your DEC PDP11 mainframe in order to collect evidence relating to your personal embezzlement practices, sexual pecadillos – there's more than one reason to stay at a race track – and general mismanagement, it would only take me two minutes to hack the pathetic bros. Don't hassle me freak.

NEXT WEEK. . . NEXT WEEK. . .NEXT WEEK. . . NEXT WEEK. . .

Next week I will have recovered from jetlag; Andy Editor and Graeme Publisher demanded that "Get back into the *u*k*n* office by 8:30" when my flight got in at 6 am. This means that in a week's time there will be:

● Competitions ● I Wish I'd Said That ● Tales Spin ● Letter Spray

● Opinion, News, rubbish, lies, freak-headed world views, monstrous libles, fetishes, ducks and Dr Drenal's Membership Ointments!

●The American trip in fool (*fool being the operative word, eh? – sub*)

Until then it's keep your feet in your shoes and your head off my shoulder. Keep your bottom in your undies and your nipples in your vest. See you, same place, same time, same spot on the dial. (*Is that enough to get people to read this tripe again – Sub?*)

DESPATCHES

Every week we bring you the best from around the world. What's the hottest machine in Peru? We'll let you know. What's selling best in Croatia? Look here for the answer. This week we bring you the return of Joe Sixpack from the USA.

Yo Dude!

What a fine time we had! What the hell happened to ya boy? The last thing I remember in full is missing that meeting with Wozniak. After that it all goes a little hazy. Anyway Lindybob and my good-self decided not to bother looking for you once you got that far soûth.

We lit out for Seattle for a meeting with Burl X Sangster the programmer and black civil rights activist. Burl has been working on a new spreadsheet system which he calls Orchid 6-7-8. As he so rightly said just after his studio was raided by a bunch of dark suited heavy types; "Screw look'n'feel man, just screw it. I mean did Chuck Berry ever sue the Rolling Stones? Did Robert Johnson's estate ever git litigious with Eric Clapton? Nope. They accepted it. So, if I want to bring out a program which takes the best from extant software and adds to it then why the hell shouldn't I? It's a first amendment issue if you ask me."

Strong views indeed. In fact the argument surrounding look and feel is brewing up a storm over here with more sides being taken than a over-endowed dodechahedron.

After spending an hour or so with Burl [he's not a drinking man so we had to head out if you see what I mean]. We crammed into the old jaloppy and headed out to the Philadelphia metropolitan area. Lindybob adores the city of brotherly love for some reason. Philly is the home of many wonderous computer people, one of the more impressive being Mary Bukowski famed for her work in nanotechnology. She is currently working on an engine which is only 150 microns thick. It is intended as the heart of Japanese soda fountains.

That's all for now dude. Hope you're ok. Lindy-Bob says "Very hi!". Steer clear of Jose.

FROM THE ARCHIVE

Those who ignore history are condemned to repeat it... or something like that. So here we go with a slice of computing history. What was happening this time last year?

QUEEN IGNORES HACKING

There was no mention of the much debated computing hacking bill in Lizzy I's speech to Parliament. It is not known what the protector of the faith actually thought about computing (she is said, by a friend of mine called Bernie Bastard from Bermondsey, to be an expert at Stunt Car Racer on the CPC) because her speeches are written by the cabinet. The lack of computer mention was received with some shock and chagrin by such campaigners as Tory MP Emma Nicholson.

NAUGHTY NAUGHTY BLUE

IBM admitted that it had sold used computers as being new and that it had certified foreign built machines as having been made in the USA. This all came to light after IBM filled in some order forms for a deal with Uncle Sam [the US govt] himself. The megacorps claimed that the claims made on the form were due to an administrative error rather than to any serious underhandedness... now what was it that Mandy Rice-Davis said?

ONE SMALL STEP...

Moonwalker, the game inspired by Micheal Jackson's strange and wonderful movie was launched onto the home computer market. The hype said that Mike himself had a hand in the creation of the game.

Magnetic Media

AMIGA PUBLIC DOMAIN
BLANK DISKS FROM 37p EACH INC VAT
PD:- £1.80 each or £16.50/10 inc VAT

A small selection from our vast range

359/360 Star Trek 3	1 Meg
443 Coma Demo	1 Meg
444 Dope Intromaker	0.5 Meg
445 Magnetic Fields Music	0.5 Meg
453 Cryptic UK Demo Comp	0.5 Meg
459 Time Circle Demo	0.5 Meg

SPECIAL OFFER! ALL 7 DISCS - £11.50

Postage Inc.

VICTORIA ARCADE,
ALDERGATE, TAMWORTH, STAFFS
S79 7DL TEL: 0827 59566

KAO
KAO MF2DD
1Mb capacity

OPENING HOURS
Mon-Fri 9.30am-7.00pm
Sat 9.30am-6.00pm
Sun 10.00am-3pm

THE WORLD'S FINEST DISKS FROM T.D.K & KAO SERIOUS QUALITY FOR SERIOUS USERS

Free delivery on orders over £50

BRANDED BOXED IN 10'S WITH LABELS

			KAO	TDK
3.5"	MF2DD	135 tpi DS/DD	£8.00	£9.00
3.5"	MF2HD	135 tpi DS/HD	£15.00	£16.00
5.25"	MD2DD	96 tpi DS/DD	£5.00	£8.00
5.25"	MD2HD	96 tpi DS/HD	£8.00	£10.00

NEW LOW PRICES

KAO DISKAROO DISK WALLET CONTAINING 10 BRANDED MF2DD DISKS £10.00
KAO MF2DD BULK DISCS 8 COLOUR: BLUE, GREY, RED, YELLOW, GREEN, BLACK, ORANGE, FOG WHITE

		50	100
1 MEGABYTE	3.5" MF2DD BULK 50p each or	£24.00	£48.00
2 MEGABYTE	3.5" MF2HD BULK £1.00 each or	£48.00	£95.00

(PURCHASERS OF 100+ DISKS: WE WILL INCLUDE A FREE 3.5" DISK DRIVE CLEANING KIT)
All above disks are 100% error free & warranted free from defects & as such carry a 1 for 1 guarantee
POSSO BOX 3.5" +5.25" ONLY £14.00 EACH.
DISK BOXES 3.5" 40 cap £4. 3.5" 80 Cap £5. 5.25" 50 cap £4. 5.25" 100 cap £5
STAR PRINTERS LC-10 Mono £150, LC-200 Colour £210, LC24-200 mono £255, LC24 -200 col £290.
All include FREE IBM printer lead.
NB All prices inc. VAT with FREE postage & packing on orders over £50.00. Overnight delivery £8.00 extra

K.C. VIDEO, 6 & 8 DONCASTER ROAD, SOUTH ELMSALL,
NR. PONTEFRACT, WEST YORKS, WF9 2YZ
TEL: (0977) 649100 FAX: (0977) 643312

Access VISA

◆ SERVICES

SELLING computer games? Want each one individually advertised? If so, then ring Chris on 081 398 8127 (eves)

BARDS Tale 1 maps/units, all levels. Send £3, s.a.e. (A4) to: M A Bond, 22 Walnut Tree Way, Tiptree, Essex, CO5 0NH

I AM ready to help you program anything in BASIC, dBASE III + or Pascal. Send your requiremements and specs to: Eddie Awabuoku, C/o Dr E. T. Nwabuoku, Dept of Theatre Arts, UNIBEN, Benin City, Bendal State, Nigeria. No problem too big.

◆ Announcements

PBM join today. The most comprehensive footy PBM to date. Try it out. Write to 31 Challacombe, Furzton, Milton Keynes, Bucks

ST public domain contacts wanted. Write to M Tillett, 30 Prospect Road, Oulton Broad, Lowestoft, Suffolk, NR82 3PT

SIRIUS whizz bang Vicki wallop. Issue, Postbus 3707, 1001 AM Amsterdam

ATARI Lynx users wanted for link-ups in the scottish borders. Tel: Neil on 089 682 2576

PD SOFTWARE FOR £2.00
Telephone **071-930 0697**
Or write to: **LCS Ltd,**
46-47 Pall Mall, London SW1Y 5JG

AMIGA PD for 40p! Just send a stamped s.a.e. and disk to Burman's PD, 41 Pinner Park Gdns, Harrow, Middx, HA2 6LQ

◆ Personal

I'D love to hear from PS/2 users all over the world. Pirates keep off! I'm into Pascal, BASIC, C, dBASE and assembly, games, chess and graphics. Write to: Eddie Nwabuoku, C/o Dr E T Nwabuoku, Dept of Theatre Arts, UNIBEN, Benin City, Bendal State, Nigeria. Hi to Patrick Brown and Paul Turton (wherever you are)

◆ Wanted

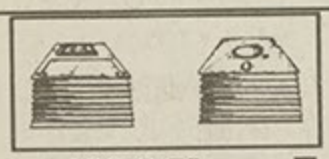
WILL pay up to £500 cash for best offered Atari ST system. Telephone 0495 272 358 anytimee between 4 pm and 10 pm.

USER guide for Honeywell Microsystem Executive (COS-86) or FCOS-86 (Ferranti). Farnborough 0252 543 122

USER guide or any info. for Honeywell printer type S11CQ. Farnborough 0252 543 122

USER guide (digital research) for concurrent CP/M-86. Farnborough 0252 543 122

FOR ALL YOUR PC NEEDS
Ring for best quotes
Telephone 0695 579106



100 3.5" DISKS WITH STORAGE BOX - £34.95

Fantastic Savings!

100 5.25" DISKS WITH STORAGE BOX £34.95

All boxes come complete with dividers, two keys and are antistatic
All discs come with labels and are guaranteed 100% error free

Same Day Despatch

HUNMANBY COMPUTER SUPPLIES
SUPPLIES HOUSE
HUNMANBY INDUSTRIAL ESTATE
FILEY, NORTH YORKSHIRE YO14 0PH
Tel: 0723-891-888 (24 hours) 5 Lines
Fax: 0723-890-836

Free Delivery

ASK FOR FREE CATALOGUE

Remember - all prices include VAT and delivery! There are no hidden extras to pay! Personal callers welcome: Monday-Friday 9.30am - 4.30pm

VISA E/OE Access

ALL COMPUTER HARDWARE AND SOFTWARE WANTED FOR CASH OR EXCHANGE
NOTHING REFUSED!!
071 727 0424

ORIC • ORIC • ORIC

Huge stocks of computers, disc drives & software at unbelievable prices
For full details ring **(0734) 328251** *or write to:*
OPELCO, IMPERIAL COURT,
STATION PARADE, VIRGINIA WATER,
SURREY, GU25 4DH.
We have been selling ORIC hardware & software for over 6 years

ANY Amiga owners in or near Chelmsford, Essex who would like to meet to talk & show hardware, progs, graphics etc phone Norman 0245 352 538

ATARI ST contacts wanted to swap software. Interested in utilities or anything. Lloyd Cassidy, 25 Provost-Christie Drive, Rothes, Nr Aberlour, IV33 7BX

ST contacts from UK, Europe, USA, anywhere just write to Steve, 205 Turnberry AVe, Ardler, Dundee, Scotland, UK.

CAN anyone help me obtain PC Ditto for the Atari ST? C Allen, 52 Boverton Dr., Brockworth, Glos., GL3 4DA

F16 Combat Pilot enthusiast seeks ST contacts, beginners of experienced pilots. Write to Clive, 51 Longdales Road, Lincoln, LN2 2JR

AMIGA PD wanted. Send disks to: Paul, 112 Eyrescroft, Bretton, Peterborough, UGH PE3. Disks returned with list. Blank disks 60p.

ANNALS of Rome computer game for Amiga. Will pay £10. Tel Blackpool 0253 86731

ATARI STE printer driver for serial 8056 thermal printer. Is there one or can you help me? S Hiscocks, 33B Stanwell Rd, Penarth, S. Glam.

WANTED operating instructions for VCR Sanyo model no 9300 PN alsto Ricoh Syncrofax RP. Bill, Bognor 829 171

WANTED Amstrad 6128 with colour monitor. Any condition - cash waiting. Phone 06 333 5493 anytime.

WANTED: Multiface ST. Also Atari ST games urgent! Super sprint, Arkanoid II, Defender O/T Crown, Populous, Test Drive 1 & 2. A Harvey. 10 Polweath Road, Penzance, Cornwall, TR18 3PN. Good money paid.

STUDENT looking for MAC-SE/SE-30, used or new, reasonable price. Call 02744 728 484 evenings.

EXCHANGE Sony ICF7600D synthesized receiver for ST compatible colour monitor. Phone 0232 792 369 after 6 pm.

ALPHACOM printer and paper for Spectrum, 48K. Phone 0924 257 219 evenings.

DOOMDARKS Revenge wnated for ZX Spectrum. Good price paid. Contact A Fear, 85 Shortwood Rd, Bristol, BS13 0QW

COLOUR monitor and hard disk card for Amstrad PC1512. Write to De., 131 Limetree Ave. Wymondham, Norfolk.

WANTED broken Amiga 500. Any condition considered. Cash paid. 0778 393 470

WANTED basic spec for CPC6128 (soft 967). Phone Gloucester 0452 612 234

WANTED DKTronics real time clock for CPC6128. Must be boxed with all manuals and original software. Gloucester 0452 612 234

SOUTHERN PUBLIC DOMAIN

Amiga P.D. Library open Mon-Sat 9am-5pm
Southern P.D. presents its P.D. madness
All disks are now only 99p + 60p P&P
Buy 10 or more disks and get 5 blank disks FREE

A005 Puggs in Space	A080 RSI Megademo (2 disks)	A054 Amiga Music 1
A009 Predators Megademo. (2 disks)	A117 Shadow of the Beast Demo	A058 Crusader Audio X
A013 Kefrens Megademo 8. (2 disks)	A119 Turtlemania by Red Devil	A059 Vision Megademo IV
A012 Alcatraz Megademo 4 (3 disks)	A101 Game Music Creator	A082 Rebels Megademo
A015 Star Trek Game 1 (2 disks 1 Meg)	A093 Ace Demo Disk 2	A083 Space Ace Demo
A019 Powerlords Powermix 1 (1 Meg)	A089 Ian & Micks Megademo	A081 Amazing Music 1
A023 Vangelis Demo (1 Meg)	A090 Link First Megademo	A112 Madonna: Spanky
A024 Digital Concert 2	A070 RAF Megademo (2 disks)	A116 Uedit (W/Processor)
A038 Digital Concert 3	A017 Eatmine (boulderdash Game)	A109 Kefrens Jukebox
A039 Digital Concert 4	A044 Space Blitz (4 space games)	A100 Yahzee (dice game)
A078 Budbrain Megademo (2 disks)	A048 Avenger Megademo	A071 Mig Demo disk 55
	A046 BAD (M Jackson)	A036 D-Mob Music 4
	A042 Amiga Chart 3	A073 Darkstar Utility 3
	A061 THR Demo	A110 Amiga Chart 5
	A053 Crusader Bacteria	A027 No Limits Demopack
		A004 Nasa Pictures

Catalogue on disk 99p. Blank disks 60p each or 10 for £5.00
All P.D. disks are now only 99p each + 60p P&P
Please make cheque/postal order payable to: **SOUTHERN COMPUTERS**
31 Hanson Road, Newhaven, East Sussex, BN9 9EQ. Tel: 0273 517147
Please send a stamped addressed envelope, 9x4 for a free catalogue.

WANTED Indiana Jones and the Last Crusade for Atari 1040. Write to Ian Johnstone, 14 Carledubs Crescent, Uphall, West Lothian, EH52 6TH or phone 0506 855 247

NEEDED desperately: Turbo Pascal 4.0, QuickBASIC 2.0, Quick 1.0 or Microsoft Macro Assembler manuals. My originals were stolen from my dorm room! Xerox copies O.K. Please help! Edward Nwabuoku, C/o Dr E T Nwabuoku, Dept of Theatre Arts, UNIBEN, Benin City, Bendel State, NIGERIA

WANTED Z88 or Samcoup. Will swap Jupiter Ace 16K and progs. Flat 19, Mount Pleasant, Bracknell, Berks.

ATARI 520 STFM 1 Meg disk drive. No software please. Whitby 0947 810 914

STE compatible version of Defender of the Crown wanted. Any ideas? Cash for working game. Tel. Susie on 0646 683750.

CPC6128 DK'Tronics silicon disc wanted. Phone 0353 777006. Or write to: B. Watson, 39 High Street, Sutton, Ely, Cambs, CB6 2RA.

MONITOR for Amstrad 1640. Preferably ECD. Also hard disc. Please phone 081 423 4797 evenings.

SOFTWARE wanted for Apricot XI. Contact Stephen Bateman, 39 Brunswick St, Dukinfield, Chesh.

GAMEBOY + any carts wanted. Will swap for Casio HT-700 Stereo midi keyboard. Tel: Bolton 0204 492881.

ADS - AMIGA PD LIBRARY

Tel no. (0903) 210279
PD discs all at only **99p**
Please send £1 or blank disc
& SAE for free catalogue & demo to:
7 Park Crescent, Worthing, W. Sussex
Please make cheques & P.O. payable to: **ADS**

SGM ELECTRONICS

IF YOU WANT
NAKED LADIES
CUT THROAT PRICES
COWBOYS
TRY ELSEWHERE,

BUT IF YOU WANT
Good prices, good service and a good product range covering all leading Midi/Music packages, education, art and graphics packages plus business packages please contact us.

FOOD FOR THOUGHT
DON'T THINK CHEAPEST IS ALWAYS BEST
DON'T BUY GREY IMPORTS
DON'T PAY UNTIL YOU'RE SURE
DO REMEMBER THAT AFTER-SALES SERVICE IS WORTH IT'S WEIGHT IN GOLD

REPAIRS: NO PROBLEM
WE HAVE OUR OWN SERVICE DEPARTMENT
Mon-Thurs 11am-9pm **Fri-Sat 11am-7pm**

SGM Electronics, 19 Charles Street, Wigan, Lancs WNI 2BP
TEL: (0942) 321435 FAX: (0942) 821273

WANTED FOR CASH

Amstrad PC's, PCW's, Amigas, Atari ST's. Printers,
Lasers, ANY QUANTITY CONSIDERED, working or not.
DMR ELECTRONICS: 0274 817889

MEGADRIVE games wanted, trade in your games for new ones. Call Kinman on 0254 53195 evenings.

MGT 2-Face for Spectrum with manual etc. Tel Andrew More 081 651 25229 eves.

ATARI-1050 discdrive wanted. Must be cheap as I'm poor. Tim Mansfield 0623 644 366

JESUS IS the answer. He may use you! Wanted a plotter. Anything considered. Buy or exchange for my good wood lathe. Telephone 0840 Camelford 2133 901.

MGT Twoface for Spectrm wanted. Also Slomo. The post office lost the last one for me. Help! Tell 0642 598 935

WANTED disk copy of Elite (not Supreme Challenge) for CPC6128. Must be original with all manuals/instructions. Gloucester 0452 612 234

WANTED Amstrad SM2400 modem. Boxed with manual and cables. Will swap office style electronic typewriter (Facit 8000). Gloucester 0452 612 234

WANTED ST Stampede No. 5. Also any St PD games or Midi contacts. 500 disks of PD available. Tel. 0742 425 525 (Ian)

WANTED print master libraries, borders and fonts for ST system. Will swop for my libraries. All letters answered. Bob, 10 Martindale Close, St Andrews, Leicester

WAKE UP NOTTINGHAM!

AMIGA, ST, PORTFOLIO, LYNX
Hardware, software and peripherals
at fantastic show prices!

at the **CHRISTMAS COMPUTER SHOW**
Sherwood Community Centre, Mansfield Road, Sherwood, Nottingham. *(opposite Woodthorpe Park)*

Sunday 2nd December 1990 - All day.
See you there, or if you can't make it ring

MIKE JERVIS 16 bit computers (0602) 274369
19 Portree Drive, Rise Park, Nottingham. NG5 5DT
for a free price list

Access **20% OFF RRP** VISA

AMIGA, ATARI, PC SOFTWARE

Games, WP, Database, Graphics,	DTP, Accounts, Spreadsheets, Utilities	We can get virtually any software package discounted so please ask for details.

BIGGER DISCOUNTS FOR BULK ORDERS | **Call now for a full price list**

PTA Software, 6b Brockley Cross, London SE4 1BE Tel: 081-692-2994

P.M. GAMES

PO BOX 155,
HORSHAM,
WEST SUSSEX
RH12 4TE.

MEGADRIVE

Megadrive	£145.00
Joystick	£35.00
Batman	£35.00
Columns	£30.00
Eswat	£31.00
Ghostbusters	£31.00
Golden Axe	£31.00
Klax	£31.00
Moonwalker	£31.00
Phelios	£31.00
Super Shinobi	£31.00
Super Monaco	£31.00
Super Thunderblade	£31.00
Thunderforce III	£35.00

P.C. ENGINE

Core Grafx	£145.00
Control Pad	£15.00
Atomic Robokid	£31.00
Devil Crash	£31.00
Die Hard	£35.00
Don Doko Don	£31.00
Gunhead	£31.00
Hell Explorer	£31.00
Klax	£35.00
Ninja Spirit	£31.00
Operation Wolf	£35.00
Rastan Saga II	£31.00
Splatter House	£31.00
Superstar Soldier	£31.00

Cheques payable to: P.M. GAMES
P&P: Consoles £3.00 Games 50p
Hotline (0403) 61899 6pm-9pm only please

FAULTY computer equipment wanted, especially printers. Fair prices paid. Tel: Graham on 0633 254656.

SPECTRUM version of "The Valley" wanted. 48K or 128K. Must have instructions. Tel: 0946 693352 during office hours.

COLOUR printer wanted for the Amiga. Must be in good condition. Can pay upto £100. Phone Buckfastleigh (0364) 42755 and ask for Richard O'Neill.

WANTED: Replay 4 ST. Must be in good condition + boxed. Upto £30. Also wanted - Quartet, upto £20. Tel: 0407 810762.

GAUNTLET 2 or Sim City wanted for Amiga. Will swap Populous for either. Tel: Hugo on 0572 756525 after 6pm.

WANTED Atari 2600 games and Collecovision games. Large collections wanted with or without consoles. Tel: 0527 32230.

ANY electronic items, any condition for student. Send to J.D.A., 58 Pelham Road, Gravesend, Kent, DA11 0HZ.

TRS-80 model 1 mini disk drive wanted. Part 26-1161. Write to 29B Houldsworth St, Reddish, Stockport, SK5 6BU.

MSX Greetings software for sony PRNC41 P/P lotter Plus instructions for use of DIP switches urgently req.

TURBO Pascal wanted for Amiga 500 Also help with getting a genlock and software working. 0734 698067.

WANTED Amiga corporation swap for Indy 500 or E.Huges, Int Soccer. Tel: 088362 4988 After 6.30pm ask for Paul.

ATARI SM124 monitor or similar wanted. Will collect anywhere in N.Ireland. Phone Jim 0232 794812.

PHILIPS 8833 monitor wanted. Must be in good condition. Will collect anywhere in N. Ireland. Phone Jim 0232 794812.

WANTED Sega Megadrive cash. Waiting or six months old C64 lightgun joysticks datacorder loads of games 3D glasses in part exchange or cash.

WANTED Amiga PD I will return all disks with a free blank disk. Send PD to: Pete, 68 Donald Drive, Chadwell Heath, Romford, Essex RM6 5DU.

WANTED: 1MB Amiga with software. Will buy or swap for 1Mb Atari ST + software + Loads more 081 653 878 (evenings).

P/X MT91 inkjet printer against ST mono monitor £550 or 24 pin DMP £400 or sell for £650 ONO. Serious offers only please. (0332) 367642.

Let this advertising space work for YOU!!
For Only £61
Contact Tim Partridge on 0225 442244

THE VIDEO ZONE 0836 405 301

REVIEWS ☆ NEWS ☆ GOSSIP
THE CHARTS ☆ AND COMPETITIONS!!!

CBC, EX13 7HL. Calls cost 44p min Peak/33p min other times. Ask whoever pays the bill before you dial

WANTED - Zero magazine issues 2, 3, 5, 6, 7, 8. Also ST Format issues 1, 2, 4, 5. Pay upto £1.00 per mag. Steve, 18 Paul St, Lochgelly.

WANTED BBC B power supply unit or dead beeb with a good UN. Phone Ron after 6 or weekends on 0723 515511 (Yorks).

WANTED White Lightning for Spectrum +. Must be original. Complete with manual. Telephone 0782 635502 with price.

ATARI 1050 disk drive with super Archiver fitted. Good money waiting. Phone Geoff on 051 424 4243.

WANTED Philips CM8833 monitor or similar for Amiga. Money waiting. Yorkshire area. Tel: 0977 678275.

WANTED Amiga A500 with accessories. Will pay up to £260. Also minigen. Pay up to £40 and Action Replay pay £30. Ring Khalid (Bradford) 0274 491389.

T199/4A modules and hardware wanted. Call Les on 0245 72572 (Essex).

MAC + with hard disk and printer wanted. Please phone 081 883 3812.

I have a Kirk's Enterprise modem, 200 baud maximum, no documentation, can anyone help, wish to use it with IBM PC and or Amiga. Mr. S.E. Williams, 2 Raleigh Drive, Burncross, S30 4WR.

VIEWDATA editors required for new bulletin board! Write to Andy Fuller-Lewis, Elm Farm, Long Drove, Cottenham, Cambridge, CB4 4RR.

WANTED early byte, EDN Call Apple or Nibble mags. Also 6805 machine language books or progs & any symbiotic / Ice hard disk. 091 4100936.

ST PD wanted everything returned Ian Kennedy. 9 Cedar Road Redditch, Worcs B97 6HL. Send blank disk for list.

MEGADRIVE games wanted buy sell swap phone Neil on 0753 39462.

WANTED circuits info etc for mannesman tally printer mod TU1000 please phone Graham 0602 625649 after 6pm.

WANTED software for Amiga especially Turtle games. Please phone 0603 423978.

WANTED

USE YOUR VOICE TO OUTDRAW THE GUNFIGHTER

DEAD OR ALIVE

CASH PRIZES

0898 31 35 94

INFODIAL POBox 36 LS1 4TN Call charges 33p Per Min Cheap 44p Per Min All Other Times

NEW SHOP NOW OPEN

RIVERDENE PDL

NEW SHOP NOW OPEN

30a School Road, Tilehurst,
Reading, Berkshire RG3 5AN.
Telephone: (0734) 452416 Fax: (0734) 451239

ATARI ST & AMIGA
PUBLIC DOMAIN SOFTWARE

1st Class Service
1st Class Disks
1st Class User Group
1st Class Postage
1st Class Selection
1st Class Help

FIRST CLASS LIBRARY

FREE PD CATALOGUE ON DISK
(please state Atari ST or Amiga)
when you send a blank disk and
SAE to RIVERDENE PDL

Access VISA

THE following back issues of NCE 3, 4, 6, 10, 11, 13, 14, 15, 16, 19, 21 & 29. Please phone Terry on 071-790 7499 after 6pm.

POOLS Master for Commodore 64 or will swap for Pools Winner II and Fixgen 1990/91. Telephone Tyneside 2634866.

WANTED: must be cheap, or swap. Two PSUs for the 3X81 and one RAM pack (16K). Phone Reading (0734) 750918, ask for George.

AMIGA A500 desperately needed. Can pay up to £200. No extras needed. Tel: (0252) 615836, ask for Scott, after 5pm.

WANTED: ICL computers or parts of, also Rair or Merlin. Nigel, Tel: (0293) 513354 anytime.

MUSIC X user manual wanted. Mine was stolen! Also Octylizer PD disk. Both for Amiga. Tel: (0274) 876154 after 5pm.

LASER printer, HP compatible. Swap or P/ex. other PC equipment eg. VGA monitor, memory modem, etc. 081-668 8041.

WANTED: soft 968 firmware manual for Amstrad CPC. Also loads of original games for sale, mainly budgets. James Neill, 4 Oak Tree Meadow, Walton, Wakefield, W. Yorks.

IS there anybody out there who can give me any tips for the Gradius 3 coinop? If so, then please write to: B. Cassidy, 12 Cawood Square, Brinnington, Stockport, Cheshire, SK5 8JS.

WANTED: Timeworks DTP for A level student, only able to afford around £20. Tel: 081-205 8149, ask for Mubashar.

WANTED: any information, manuals, hardware, etc. for a Redstone computer. F. Waspe, 21 Brooklyn Avenue, Leeds, LS12 2BS, 639545.

ACTION Replay enhancement disk for CBM64 for cash. Write to: S. Wilgaus, 1 Newton Grove, Grimsby, DN33 1DB.

WANTED: a DTP for the C64, will pay £20-£25 or will swap for games; ie Batman, etc. Phone (0207) 580130.

PRINTER wanted for an Atari ST up to £60 paid, will answer all. Jon, 65 Granby Close, Weymouth, Dorset, DT4 0SR.

WANTED: 48K Spectrum + Microdrive + manual. Also books etc. for 48K and printer interface. Offers to John Adams, 17 Abbey Gdns, Belfast, BT5 7HL.

COMPUTER wanted: Atari ST or Amiga 500, but would consider any package with 3.5" disk, reasonable price. J. Mooney, 82 Tiree, Drive, Cumbernauld, G67 1NX.

EXCELLENT PD FOR THE ATARI ST

Great prices as mentioned in issue 101

PDQ Games
PO Box 38, Eastleigh, Hampshire, S05 5WR
Telephone: 0703 644407

AMIGA wanted will swap for 1040STFM with 5.25" drive and 1000+ games. Write to: Mike, 254 Grasmere Avenue, Warrington, Cheshire, WA2 0LW.

WANTED: Apple II+/E hardware/software contacts. I need a new power pack. Please call Paul on 091-297 0541.

WANTED: Colecovision games and Atari 2600 games large or small collections with or without console. (0527) 32230.

WANTED: Starquake by Bubble Bus will pay up to £10. Phone Paul on (0642) 473722.

WANTED: TI99/4A games modules and cheap hardware. Call Les on (0245) 72572 (Essex) after 6pm.

MANUAL or any info on Watanabe plotters (pref. MP1000) to buy or borrow, expenses paid. (0763) 260120 eve or w/e.

MODULA 2 for Atari ST must work in .5m RAM, low price - student. Contact I. Brown, SY S1, Block B3 Waveney Terrace, UEA, Norwich, NR4 7TJ.

◆ FOR SALE

ATARI 1040STF + 2.5 Mb Ramm and PC. Speed and hires mono. £750, 97 Mb hard disk £450, for ST and Spectre GCR £315. Tel 081 741 4570

AMSTRAD 1640ECD 32 Mb hard card internal 3.5" and 5.5" floppy plus software including PC tools. All as new £670. 0634 864 348

IBM EGA card £60. IBM PS2/30 20 Meg hard disk £125, Game Blaster sound card £88555, Konix joystick and card £10.

DRAGON 32 plus games, tapes, manuals and two joysticks still boxed £40. Tel. 0983 872 616

SEAGATE hard disk ST238R, 30 Meg, suitable for RLL Controller £99. 0277 226 621 (Brentwood)

MICRODRIVES (2) £15 each M/Drives carts 20 used inc. TAS2 & M/File £30 Kempston centronics "E" PTR I Face £15 0905 422413.

BARGAIN! CBM64, Disk drive, printer, accessories £1300 original software, amazing! Only £325. Phone 0442 62554 & ask for Paul?

AMSTRAD CPC 2nd drive £40 Amstrad DMP2000 £60 good condition tel (0794) 513911.

AMSTRAD colour CPC 6128 + manual £250 buyer collects tel (0794) 516911.

PROTEXT and Prospell in Rombobox use with Amstrad CPC 6128 £40 tel (0794) 516911.

AMSTRAD CPC464, colour monitor, £500 worth of games, printer, listings book, sound book, joystick + loads of mags. £300 ono.

DRAGON 64, JP101 Printer, cassette, utilities inc. Edit+ Word Proc. Games manuals £100. 0329 230871 Fareham.

CMB MPS803 Printer. Suit CBM 64/128. Inc ribbon + manuals etc. Boxed as new. Tel 0206 860763 (Andy) after 5pm.

C64 software on cassette SAE for lists Michael Vainola 5 Woodside Cottages, Highwood, Chelmsford, Essex CM13RD.

BROTHER daisy wheel (hr15) printer with sheet feeder. Works ok but could use service £100 Tel: O81 773 4424 David.

AGENDA 64K organiser + accessories. Still boxes £100. Sharp ZQ5200 - £50. Casio SF8000 - £50. All as new 0236 824049.

TOSHIBA MSX HX10 with Data Corder, joystick, BW TV, 45 games + manuals. Still boxed. £200 ono tel: Mark 0625 33669.

£150 for Amstrad CPC colour monitor. Excellent condition. Need quick sale phone Steve after 5pm weekdays. Harlow (0279) 434191.

SEGA master system plus. As new still boxed. joystick. Many games. Worth over £200, sell for £95. Ring Luton 0582 462346.

C64+ tape drive, hundreds of games, books, mouse, magazines, joysticks sell £230 ono Ian (0635) 66098.

Everything's a bargain

TMJ COMPUTER SOFTWARE

Archimedes - IBM - PC -Atari ST - Amiga 500
software offered **at 10-20% off R.R.P**

Interdictor	R.R.P £34.95 OUR PRICE £29.95
Pipedream	R.R.P £113.95 OUR PRICE £99.99
Action Fighter	R.R.P £24.95 OUR PRICE £20.95
Paper Boy	R.R.P £19.95 OUR PRICE £16.95

Access VISA
Please send SAE for Price List to:
TMJ Computer Software
39 Farmstead Road, Corby, Northants, NN18 0LE.
Telephone 0536 69011 Enquiries Welcome
Electronic BB Darkhaven 0604 413716
All prices quoted are inclusive of VAT and Postage

TREASURE ISLAND

CASH PRIZES

0898 313 586

Infodial PO Box 36 LS1 4TN Call Charges 33P Per min Cheap Rate 44P all other times

FREE FREE FREE

THE ULTIMATE PC SHAREWARE CATALOGUE-ON-A-DISK

- Updated every-day
- 1000's of programs
- Menu Driven disks
- Tested & guaranteed
- Fast service

Easy to use
100's of disks
Quality media
Lowest prices
Friendly staff

PRICES
£1.00-£1.50 (5.25")
£1.50-£2.00 (3.5")
plus £1.00 p & p

Write or telephone today for your free copy.
Premier Shareware, 8 Berrylands, Orpington, Kent BR6 9TF

TEL: 0689 839533

ARCHIMEDES 310 base Riscos. Boxed, as new with manuals, £495 o.n.o. Tel: (0282) 602836 or 692929, NW Lancs.

1040STFM £300 o.n.o. 5.25" drive + 1000 games £150 or swap for Amiga - 254 Grasmere Avenue, Warrington, WA2 0LW.

TOSHIBA T1000SE - virtually unused, CW Locoscript PC, mouse, disks £750, Diconix 150+ £225. Tel: (0223) 247980.

COMMODORE 64, C2N, 1541 disk drive, speech unit, joystick, loads of games £260. Tel: 051-220 2771 after 6pm.

520STE + 1 Meg upgrade. Excellent condition. Free joystick, F19, Xenon 2 etc. £260 for quick sale. Tel: (0703) 234728.

CONTROL robots, lights, motors with ZX Spectrum or 81. 8 relay o/ps & 8 switch i/ps £25. Tel: Ian (0603) 250 479.

ACORN Electron 64K turbo, plus one, view/viewsheet, manuals, leads, PSU, programming books 5 unused games, all as new £120. (0392) 77462.

PLEASE will someone buy my PC Supercharger with 1Mb RAM, DOS and 6 months warranty, £250. Nick (0628) 31793.

COMMODORE MPS803 Printer £50. CNT6410 modem & software £40. Both for C64/128 only. Chester (0244) 851066.

BBC Master compact 128k. Built-in 3.5" disc drive. Joystick. £400+ games, mags + manuals. VGC bargain £270. ONO (0772) 39895.

DISK Drive and disciple interface for spectrum 128 also multiface 128 offers to J.Daw 83 Fells Rigg Livingston West Lothian Scotland.

C64 manual leads 3 joysticks 2 cassette drives balkup cart Mk1 v70 maga £1000 + of games inc Italy 1990 Kick Off 2 OP Wolf £220 ONO.

BOXED ST originals: International Soccer Challenge, Imperium, Projectyle, Flood £10 each o.n.o. (0992) 714500.

C64, manual, 3 joysticks, 70 mags, 2 cassette drives, MKIV replay cartridge, £1000 + software, inc. Italy 1990, Kick Off 1&2, £220. (0582) 594756.

1/2 meg Atari ST internal drive, good condition £20. Telephone Mick on (0827) 283732 Tamworth.

F29 Retaliator £15 or swap for Batman (Amiga). Graphology program £25. Poolsmaster £10, both originals. Tel: (0268) 793973.

GEOS128 (or 64) + Deskpack Plus + Fontpack worth £60 will accept £25.

CONEC COMPUTER SERVICES TEL: 0582 24236

HOME COMPUTERS	WORD PROCESSORS	FAX MACHINES
464 Plus Mono £194	PCW 8256 ....£339	Samsung SF1000 ...£319
464 Plus Colour.....£275	PCW 8512 ... .£429	Amstrad FX9600T...£429
6128 Plus Mono £275	PCW 9512 + ASF £439	Mitsubishi FA320 ....£599
6128 Plus Colour.....£359		
Spectrum +2 007 AP ...£139		

- Phone for PC's, Printers, Hardware & Software -

Prices exclude VAT, UK delivery free on orders over £200, otherwise add £5

SOFTCELL SUPER SAVERS
PC Share Ware
£1.75 Per Disk Fully Inclusive

PC Type II (3)	£5.00	EGA Pacman	£1.75
NY Word (3)	£5.00	Deskjet Collection	£1.75
PC File dB (3)	£5.00	Educational Games	£1.75
PC File (3)	£5.00	Dr. Sleep	£1.75
Front Office (3)	£5.00	Laser Letterhead	£1.75
PC Type (3)	£5.00	Home Records	£1.75
PC Calc (3)	£5.00	Share Spell	£1.75
PC File + V3 (3)	£5.00	Bar Codes	£1.75
Freeway Accts (3)	£5.00	Windows Toolkit	£1.75
Ford Car 11 (2)	£3.50	Windows Games	£1.75
Super Astrology (3)	£5.00	dbase 4 Tutor	£1.75
Page Finc. Cont. (3)	£5.00	Food Analysis	£1.75
£5.00 Set £6.00 3.5		+ 100's more	

COMMODORE STARTER PACKS FROM £498

SCHNEIDER COMPUTERS
* Quality
* Value
* Free Software

10 5/14 Discs £16.00, 10 3 1/2 Discs £25.00
For further details write or phone for a FREE catalogue!

Softcell Services, Dept NCE, 25 Maywood, Brynna, Pontyclun, Mid Glamorgan, CF7 9PZ. Tel: (0443) 238630 *anytime*

No Hidden Extras!

Kensai 80386/25 PC, VGA Colour, 60Mb HD

Includes: 5.25" Floppy, Colour Monitor, Keyboard, MS-DOS 4.0
1 Parallel and 1 Serial Port, GW Basic
Many other systems/configurations available

Call or write today for details!

£1995 +VAT

Kensai Computers
2 Lovatt Close
Edgware
Middlesex
HA8 9XG

Call 081-958-1440 NOW!

LEARN to code. Books for sale. Master Machine Code ZX Spectrum. Also ZX Spectrum Astronomy offers. (0934) 502537 eve.

YOUR Spectrum mag, 1 to 18, QL World complete to Feb 90 (except Aug. 88), 65 mags. Offers: Reading (0734) 422908.

SEGA 16bit megadrive (Scart) 2 1/2 months old, with Super Monaco, Herzpg Zwei, Arnold P. Golf, Batman, £230 o.n.o. Tel: (0302) 859851.

SAM Coupe 256k. Joystick, tape recorder, Spec. games £160 SAE: F. Robertson, 2a Lethame Road, Strathaven, ML10 6AD.

PC Engine + 10 games + extras. Cost £547 accept £250. Also BBC B + tapedeck, games, joysticks £160. Tel: eves (0255) 474468.

AMIGA software Lattice C v5 £75, Aztec C £45, AMOS Basic £25, DPaint 3 £35. Tel: 081-902 4310 eves and weekends.

MAGAZINES and most discs Commodore disk user vols 142 & your Commodore 4/86 to 2188 £20 Chester (0244) 851066.

Z88+ 128K + Power Pack £250. Diconix 150. Portable inkjet £250. Commodore 128+ 1570DD + Datacass and £1000 of software £220.

GAMES for sale, for Amiga, Bomber £6, F29 £6, D-Master £6, X-Out £6, many more originals, call 081-688 2602.

PHILIPS green monitor, hardly used, boxed £35. Buyer collects. Contact: Z. Harun, 25 Brunswick Street, Sheffield, S10 2FJ.

ATARI 65XE, data recorder, joystick, 100+ games £125 o.n.o. Contact Simon on (0203) 661270 mon-Fri 6pm-8pm. (Coventry).

AMIGA hard drive (A590) for sale. Only 3 months old, boxed as new £275 o.n.o. Phone (0756) 794713, after 6pm.

GAMEBOY, 4 weeks old, unwanted gift. Immaculate, includes 2p lead, Tetris, headphones, only £70. Bath: (0225) 743727.

BBCB monitor, disk drive, ROMS, software, disks, printer, joysticks, etc. £350 or offer. Tel: (0306) 885298. (Dorking).

FOR sale: Sony branded disks MFD-1DD £6 for ten. Phone Andy after 6pm on 081-440 0095.

AMSTRAD CPC original software on disk. SAE for list. T. Keevil, 14 Pytchley Close, Brixworth, Northants, NN6 9EW.

A whole new way of communicating your message:

CHEST-TOP PUBLISHING!

Why limit yourself to mere paper?

Now you can use your computer to print personalised T-Shirts!

Use our special heat-transfer ribbons with any software (text printing requires reversal) on any computer to make a transfer sheet of your design, then simply iron onto a T-Shirt or other cloth item. We also have two sizes of heat-transfer pens for colouring your design, as well as four-colour ribbons for certain colour models (like Star LC-10c). Example price - Amstrad PCW-8256/8512 black T-Shirt ribbon £9.95 incl.VAT/UK p&p.

64 different printers supported

MGA SoftCat

41 Cinque Ports St., Rye, E. Sussex TN31 7AD
Tel: (0797) 226601 fax: 226721

ST emulator PD bought in error, as it needs 2 drives. Claims to run autoroute, Battle Chess, Tiger Cub. Send £3 + disk for the Amiga! S. Oswin, 19 Bridge Meadow, Denton, Northants, NN7 1DA.

HIGH speed IBM-PC modem with software 2400 baud 100% Hayes compatible, many features, £99. Tel: (0533) 610215.

2MB STE £370, 2nd drive £50, Master Sound £20, Multiface ST £20, Devpac v2 £30, Syn. Exp £25. (0206) 47626 ask for Richard.

STE 1/2 meg upgrade £25, Modluar 2 Developer £40, Devpac v2 £25, also lots of software, originals. Tel (0206) 47626 - Richard.

MAGAZINES - Atari ST User, Aug 88 - Feb 90 inclusive. Contact Stephen, 8 Roddens Gdns, Belfast, BT5 7JJ, N. Ireland.

MAGAZINES - The Games Machine, issues 1 to 33 inclusive, mint condition. Contact Stephen, 8 Roddens Gdns, Belfast, BT5 7JJ, N. Ireland.

COMMODORE PC10 twin 5.25" drives, hardly used, with 1084S colour monitor, £495. Phone Steve on (0298) 72502.

3.5" disk drive, black, 1/3 height, uncased, v.g.c. £40 each. Phone (0204) 389528 after 6pm, ask for Sohail.

CHANTRY COMPUTERS

Guaranteed Best Prices
We are dealers in the following:-

Amstrad	Panasonic
Commodore	Philips
Atari	Cambridge
Sharp	Psion
Sega	Nintendo

We also deal in telephones, fax machines and all software.

Phone Mick: 0924 897533 (9am - 7pm)

Computer LYNX
- The AMIGA Disk Magazine! -

ISSUE 20 NOW AVAILABLE!
NEWS - REVIEWS - DEMOS - UTILITIES
AND MUCH MORE!!!

(Back issues from issue 15 still available)

Computer LYNX costs just £1.50 + 50p P&P per issue from

Computer LYNX, 187 Perrysfield Road, Cheshunt, Hertfordshire, EN8 0TL. Tel: (0992) 465366

RACAL Cadet PCB designer (not PC) with manuals and software. Offers wanted. Tel: (0622) 672525 evenings only.

SPECTRUM computer 48K joystick port + joystick manuals, 30 games £50 o.n.o. Phone (0293) 521347 after 5pm.

ATARI 520STFM, 1meg RAM, 2DD drives, mono monitor, software, mags, disks, etc. All boxed, £395. Ring (044282) 4600.

SEGA Megadrive for sale only £180 with 3 top games. As text convertor, so all games in Eng. Mat (0270) 216549.

AMIGA software: Protext v5 £100, Prodata £50, The Works £50. Phone Paul 091-417 4168 after 6pm.

GREENKAT 10 x 50 binoculars, super wide angle quick focus optics. P/ex. for Atari SM124. 061-653 8535.

PRINTER Panasonic 1081, 10 mths old with extras £90, or part-exc. for col. monitor (Amiga). Tel: Shaz 081-570 3564.

ATARI 520STE many extras £300 STE 4Mb RAM upgrade £160. Paul, 35 Shaw Crescent, Lochgelly, Fife, KY5 9LH.

QL software: Reluctant sale of £500 worth for £200, may split. Ring Sue 071-928 7631 (days).

ATARI 8 bit disk software, £3 + post per disk. (03985) 438 or SAE: 2 Townmead, Oakford, Devon, EX16 9EW.

MASTER SYSTEM **MEGA DRIVE**

SEGA

GAMES **JOYSTICKS**

Compute-iT 151 HIGH STREET, TEWKESBURY, GLOS. **TEL TEWKS (0684) 290097**

COMPUTER GAMES SPECIALIST

AMIGA audio digitiser for sale £20.Still in box and Amiga games for sale. Send for list. S. Hobbs, 40 Penrhos Crescent, Rumney, Cardiff, S. Wales, CF3 8PB.

SINCLAIR 128 +3 for sale, good condition, will sell for £65. Contact Snardy Tel: Ori 5216715 after 6pm.

ATARI STE, 8 months old + games (Power Pack), also other software, hardly used, receipts to prove date of purchase, immaculate, £250. Mr. WJ Billington, 86 Sherfield Gdns, SW15 4PR.

CPC6128 green monitor, Pocket Wordstar, Multiface 2, games etc. Cost £650+ sell £300 o.n.o. (0686) 650597 - Mid Wales.

AMIGA A500, 2nd drive, 1 meg memory colour printer, 1200 baud modem, software, blank disks, books. Phone for entire list £750, may separate. (0502) 717566.

A2000 40Mb HD. A1081, ext. drive, Epson LQ850, Digiview, Copystand, £2000 software, £2000 no offers. Dave 071-627 0667.

ACORN Electron + books, games, magazines, LInkword, Spanish and German course, + Lisp + Turtle graphics, £70. 051-334 3083.

SPECTRUM Teletext adaptor cost £100, will accept £50. Alphacom printer + 5 rolls paper £25 o.n.o. 051-334 3083.

SPECTRUM 48K + interface, Microdrive + 1, 2 cartridges, £100. Interface 2 and joystick £20. Tel: 051 334 3083.

ATARI 130XE + brand new, boxed, data recorder with all relevant leads etc. £55. Contact (0989) 65818.

A & A SUPPLIES

Everything for the Commodore and Atari including: Amiga Batman/Flight of Fantasy / Screen Gems Pack and Atari Discovery Pack at very competitive prices

TELEPHONE: **0908 216312**

14 The Green, Newport Pagnell, Bucks MK16 0JW
FAX: 0908 211057
24 Hour credit hotline
0908 216312

MasterCard Access VISA

WHITEROSE COMPUTERS

NO 1 IN WEST YORKSHIRE... FOR *ATARI ST & AMIGA*
WE ALSO SUPPORT ... ATARI XL/XE/2600. COMMODORE 64/128, SPECTRUM 48K/+3, AMSTRAD CPC464/6128/PCW, ATARI & CBM PC's & NINTENDO

** Special Offer ** **AMIGA A500** from **£349.99** inc.
LEISURE/ENTERTAINMENT, EDUCATION, GRAPHICAL, BUSINESS & MUSIC PACKAGES **ALL AT DISCOUNT PRICES**
1000s OF TAPES & DISKS IN STOCK!
Monitors, printers, disk drives, RAM upgrades, cassette units, ribbons, discs, storage boxes, joysticks & interfaces, cleaning kits, mice (C64-ST-Amiga-PC etc). Plugs, leads, stands for printers & monitors also dust covers, cassettes, head alignment kits and lots more!!!

CHECK OUT OUR ST PD LIBRARY OVER 250 DISKS NOW IN!!!

OPEN 6 DAYS A WEEK 10AM- 5.30PM WHITEROSE ARE TWO THIRDS OF A MILE FROM J26 M62 NEXT TO THE TRAFFIC LIGHTS/CROSSING

WHITEROSE COMPUTERS: BROOKLYN COURT: BRADFORD ROAD CLECKHEATON: WEST YORKSHIRE: BD19 4TJ: 0274 851131 OR FAX US ON 0274 875977 (both lines 24 hours a day!)

MODEMS! MODEMS! MODEMS!

Large stocks of major brands available at realistic prices.
Technical advice a pleasure!
V22 (1200 baud) Hayes compatible from £75
V22bis (2400 baud) Hayes compatible from £90
Fax cards from £120

Supply Solutions specialise in top quality second-user modems from major UK manufacturers. All modems are BABT approved, fully tested prior to despatch and guaranteed

Supply Solutions
187 Uxbridge Rd, LONDON W13 9AA
Tel: 081-566-3639. Lines open10am - 6pm (till 8pm Mon & Tues)
STRICTLY MAIL ORDER ONLY

AMIGA 500 1/2 MEG UPGRADE

16 Bit technology
12 Month warranty
Disable switch
British made
with clock £32.95
without clock £27.95

Tel: 0530 813591 HOTLINES

Send order with payment to:
C.S. UPGRADES, 14 ASHBY ROAD, COALVILLE, LEICS, LE6 2LA
Postage £3.50 p&p

PLEASE SEE OUR MAIN AD ON PAGE 27

Crazy Joe's

PUBLIC DOMAIN SOFTWARE FOR THE AMIGA

* OVER 1,000 P.D. DISKS IN OUR LIBRARY *
* PRICES FROM £1.00 PER DISK *
* SEND 17p STAMP FOR FREE CATALOGUE DISK *

PD GAMES PACK	SOUNDTRACKER SPECIAL	HOME BUSINESS PACK
37 TITLES ON 8 DISKS	8 DISK STARTER PACK	8 DISKS FULL OF PROGRAMS
ONLY £10.00	ONLY £10.00	ONLY £10.00

CRAZY JOE'S, DEPT.NCE, 145 EFFINGHAM STREET, ROTHERHAM, S.YORKS. S65 1BL TEL: (0709) 829286

COMMODORE MPS801 printer with manual, lead, ribbon and paper, cost £250, will accept £125. Phone (0742) 477958.

MT91 inkjet printer, with accessories, boxed, as new. 360dpi print quality! Offers around £650. No time wasters. Phone Paul (0332) 367642.

AMIGA A501 mem. exp. only £35. Printer paper cont. narrow tractor 2000 £5, wide 2000 £8. (0703) 676949 after 7pm.

SPECTRUM 48K, interface + Microdrive, Teach Yourself Programming and other programs. Ring 081-577 6671 after 5pm. £50 only.

ATARI 520STFM 1Mb RAM int. DS drive, ext. drive, mono monitor, Pandaal Scanner, various books + software £495. (0272) 572641.

AMSTRAD SM2400 stand alone modem, never used, £150 o.n.o. (0925) 572313.

SEAGATE ST251 hard disk, used £75. Tel: (0494) 445864 eves & w/ends.

520STFM computer & mouse, internal 1Mb disk drive, some software incl. PD. Phone Gaz: (0993) 845859, price £230.

AMSTRAD CPC software clearout. Titles from 75p - many bargains. Send SAE to: M. Pinder, 4 Wham Hey, Preston, PR4 4XU.

Access **SMG SUPPLIES** VISA
For all your computer needs

AMIGA'S ONLY £379

SEGA MEGA DRIVES ONLY £180
ALL PRICES HAVE NO HIDDEN EXTRAS

ATARI ST's FROM £289

DISKS FROM 38p

SMG SUPPLIES
13 Pine Close
Bradley, Wrexham
CLWYD LL11 4BQ
(0978) 758842

STE SIMMS from £30

STFM UPGRADES from £35

MANY ITEMS NOT LISTED PLEASE PHONE

COMPAQ 386S 5Mb RAM, 40Mb hard disk, VGA colour monitor and immac. computer trolley, less than one year old, £1700 o.n.o. 081-311 5178.

COMMODORE 64 budget games for sale 31 each, S. Hang On, Crazy Cars, Rebel, Quattro Sports and Batman Caped Crusader. Tel: Glos. 722371 (ask for Dave).

OIDS, Virus and Stonebreaker - 3 great games for £10, Taritalk £13. Phone Geoff on (0506) 416131. Replay software £15.

AMSTRAD CPC6128 with colour monitor, games and joystick for £250 ONO. Tel: (0582) 492069.

STAR LC10 mono printer in excellent condition and boxed - £135. Call evenings or weekends: 0705 864006.

IBM compatible, 640K, 5.25" mono with mouse £370. LQ 24 pin printer new £200. Tel: Paul on 0762 851641 after 6pm.

AMIGA software. Powerdrome, Stunt Car Racer, Fast Lane, Falcon, Crazy Cars II, Super Hang On, £10 each or £50 the lot. Write: M. Sutton, 8 Heol Cleddau, Waunarlwydd, Swansea.

COMMODORE 64+ joystick, £300 + worth of software including Kick Off 2, Stealth Fighter, Gunship only £110 ono. Tel: (Weymouth) 776703. Ask for Darren.

AMIGA software including Power Basic, GFA Basic, K-Data and more. All unregistered. Offers. Tel: 0294 67086.

SYNCRO express Mk II £25. Phone 0827 51738.

ATARI 520STFM. 11 months old. Joystick, over 60 games (all new), dozens of utilities, demos, mags etc. All boxed, documented. Mint condition £450 ono. Tel: (Midlothian) 71-74559.

ZX Spectrum +2, Magnum Light gun, £200 worth of software, Multiface 2, 2 joysticks, books and manuals. All boxed £200. Phone 0482 899956.

INTEL 80387-25, 25Mhz co-processor, VGA monitor & card, 2Mb memory card. Fully populated. Sell/swap. Tel: 081 668 8041.

MANNESMANN MT80 printer. Excellent condition, dust cover £65. No offers. Tel: 0708 746900.

ATARI 520STFM, 14 months old, external drive £700 + software, mouse, joystick, lots of mags and disks. £330. Tel: 051 608 9761.

WH Smith computer data cassette recorder. Absolutely ideal for Spectrum 48K etc. £18 P&P. Tel: 021 443 1265.

COMMODORE 64 + 76 games. Perfect working order with manual + program book. Tel: Manchester 061 755 3210 £80.

OLD Crash magazines for sale. All include cassettes. Write to: B. Cassidy, 12 Cawood Sq, Brinnington, Stockport, Cheshire, SK55 8JS.

SECONDHAND Spectrum software for sale. For more info write to: B. Cassidy, Brinnington, Stockport, Cheshire, SK5 8JS.

FOR sale: Back issues of Sinclair User going very cheap. For list write to: B. Cassidy, 12 Cawood Sq, Brinnington, Stockport, Cheshire, SK5 8JS. Please enclose SAE.

BOOKS for sale for Archimedes. Including books on Assembly Language. Write to: B. Cassidy, 12 Cawood Sq, Brinnington, Stockport, Cheshire, SK5 8JS. All replies answered.

ATARI ST originals at very good prices plus original IBM with 5.25" DV + 20 Meg HD. Offers: Tel: 0533 878562.

20MHZ Oscilloscope. Brand new, boxed, complete. £250. 35Mhz, digital storage adaptor, brand new, boxed £300. Details call: 061 633 0824.

AMIGA A500, 1Meg, 2nd drive, 14" Sony - Trinitron, 140 disks, 100 magazines, joysticks, etc £700 ono. Tel: 0354 55480 (Cambs).

HARD disk, Kyocera 21M and XT controller. WDGEN 2 plus and cables £120 ono. Phone Simon 0734 422386 after 6pm.

ATARI 520STFM external drive, joystick, mouse, lots of games, mag and disks. 14 months old, boxed as new £330. Tel: 051 608 9761.

BEAT THAT BUG

Don't tear your hair out or stay up all night trying to make your program work – see what Mary Branscombe recommends for those killer programming blues.

Whether you are prototyping a program or implementing a known algorithm, you will soon reach the point where you have a piece of code that works – almost. Whether the faults are obvious errors or subtle problems found by obscure test data, the techniques are the same. Few programs are written without at least one bug that needs fixing, but some simple guidelines can make the process a little less painful.

Testing and debugging a program should not be a last minute process, or even separate from the central development of the code; most bugs should be corrected or removed before the program is run. Bugs only remain in the program because the programmer doesn't know that they're there. If you notice a bug before you try to run the code, you should correct as you develop the code; if you don't find the problem until you run the code, correction of a bug seems more like improving the code.

The actual syntax errors and error codes produced by a faulty program will be specific to the language and the environment, but most bugs fall into general categories. Many bugs will be the result of a typing error, but some mistakes may reveal fundamental errors in the program. The level of support offered for debugging varies with languages and environments and it is worth using any debugging facilities available. Removing one bug, especially if it is a syntax error, is likely to reveal several more!

If a bug is caused by a typing error the problem will usually be reported as a syntax error – the language obeyed by the computer has a very strict form or syntax and any command errors will cause problems when translating into machine code. Many languages will report the location of a syntax error and this is the point at which the compiler or interpreter ran into problems, not where the actual error will be found.

COMMON MISTAKES

In the code example (see box), the missing quote is after the word "world" on the third line, but the parser in the compiler or interpreter reading in the code will take the words "hello world print" as the print statement and will then complain about the second "hello" as an unknown quantity; an undefined variable or constant may be reported, rather than a syntax error. Some environments may complain about the third quote as unmatched or offer intelligent syntax editors that can detect and supply missing punctuation or constructions which can be a great help.

Another common mistake, especially in languages that allow lengthy variable names, is the incorrect spelling or typing of one occurrence of a variable. Again, some parsers will detect unique variable names that are used only once in a program (often known as singleton variables). If a function or procedure is changed, it is easy to forget to update all calls to the procedure, leaving some with incorrect variables and parameters.

Some bugs are due to incorrect specification of mathematical functions or the misuse of built in functions. The write or print statement in many languages has an parity of one (it accepts only one parameter, although this can be a list) – specifying multiple arguments for such write statements is a frequent mistake. Confusion between real numbers and integers can also cause problems when using mathematical functions.

An incorrect loop to print a greeting ten times:

```
FOR I:= 1 TO 10
PRINT "HELLO WORLD
PRINT "HELLO READERS"
NEXT I
```

An incorrect listing to add a column of ten figures and print a running total:

```
FOR I:= 1 TO 10
PRINT "INPUT NEXT NUMBER"
READ NEXTNUMBER
NEXTTOTAL := TOTALSOFAR +
NEXTNUMBER
NEXT I
PRINT NEXTTOTAL
```

Although omitting punctuation like commas may be a simple typing error, missing out or misplacing closing brackets may indicate that you are not quite certain about the flow of data and control within a program. If parts of constructions are omitted or misplaced (misplacing the end of a loop or the alternative command for a conditional selection is particularly common) this may indicate a fundamental misunderstanding of the control flow.

The second box shows a fragment of a code listing to add a list of figures and print a running total, but the print statement has been left outside the loop. If you put a command outside the loop, when you actually want it to be obeyed every time the program goes through the loop, then you are not sure what you want repeated, or you have not understood how a loop works. In either case, a diagram of the flow of control for the program is the best place to start.

The classic picture of debugging depicts late nights, strong coffee, fluorescent marker pens and a sheaf of computer printout. Printouts are certainly helpful, if only because it is often easier to read a listing at length on paper than on screen. Similarly, you can use a flourescent marker to highlight the location of the variable that holds the value that you are interested in, so that you can see the flow of data through the code. This may seem trivial, but problems occur because the programmer cannot visualise the program in action.

TAKE A BREAK

If looking at the code and considering what is going on in the program does not enable you to solve the problem within half an hour or so, then get another listing or another cup of coffee, or simply stop for a few minutes. Leaving the program overnight is advised if you come to a standstill as mistakes are much easier to spot with a clear mind.

Some simple mistakes can be remarkably difficult to see, perhaps because you expect the punctuation to be in the correct place and find it hard to see that it isn't there. Showing the listing to another programmer is usually the best way to solve this problem. If the problem is more complex, explaining what the program is supposed to do, and what it actually does, to someone else will again help.

If none of these methods provide a solution, then you must clarify your mental image of the program. The behaviour of any program is determined by the flow of control – which of the possible commands in the program will be executed next – and the flow of data – what values are in what variables. If you predict the order of commands to be executed and the values to be found in the variables at each stage, you can then compare the prediction to the computer's execution of the code. Thus the bugs will be found where your predictions are wrong. Whether the code is not doing what you believed it would do or your prediction was incorrect, you will located the bug and can start trying to solve it.

If the output of the program is not what you expect or the program terminates unexpectedly, then you should run the program on different data to compare the outcome. If the data causes the problem, then run the program on a subset of the data and run the data through a subset of the code, to see where it is.

DIFFERENT VIEWS

Good environments will offer various debugging tools, geared to the peculiarities of the language that you are using and it is well worth learning how these work. Most of these are based on the notion of breakpointing – setting points in the program where the contents of the computer's memory and registers are displayed. Code animation provides similar information from various viewpoints while the program is running.

Perhaps the best way of dealing with bugs in your code is to write clean, simple structured code, so that any mistakes can be seen easily. ■

DEBUGGING TIPS

- A bug is only a bug when you don't know what or where it is. Most can be solved by looking at the program and going through it more rigourously.
- Most bugs are due to simple error and mistyping.
- More complex bugs may reflect some misunderstanding about what the code is supposed to do or how a construction works.
- Syntax errors are rarely where the machine thinks they are.
- One bug leads to another; as soon as you have fixed one bug, you will often find that five more appear!

Cadbroke Computing International

12 Months On Site Warranty, featuring 24 hour response time is available as an option on all ST's for just £29.99 extra.

Please Read: Terms of Sale.

We are the longest established Atari dealer in the U.K. We have developed an extensive customer service policy which means that we test all Hardware/Software prior to despatch to ensure that goods arrive in working order. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. This isn't just our opinion, we were voted "Best Dealer 1989" by the readers of ST World magazine, not for "the number of boxes shifted", but for quality service.

On Site Warranty: We have recently changed our backup programme by offering 12 months on site warranty as an extra with all ST's therefore giving the customer a wider range of options. We already offer on site warranty on all Star printers and Philips monitors listed at no extra charge.

All prices are correct at copy date 20/11/90, and are subject to change without prior notice. All prices are accurate while stocks last. Phone for up to date prices. All prices include VAT, there are no hidden extras (WYSIWYG). Delivery (in Mainland UK) is free, on orders over £100 (add £10 for next day courier delivery. All prices available on Mail Order, Shop prices may differ.

ST Packs

520STFM Discovery Pack	£279.99
520STE Power Pack while stocks last	£369.99
520STE Turbo Pack	£369.99
1Mb STE Turbo Pack	£399.99
2Mb STE Turbo Pack	£474.99
4Mb STE Turbo Pack	£549.99

These prices do not include on site warranty

Amiga Packs

A500 Batman Pack	£369.99
A500 Flight of Fantasy	£369.99
A500 Screen Gems	£369.99
Any of above + Tenstar + joystick + mouse mat	£399.99

Service Centre

Diagnostic service £15

Our Engineers can repair ST's and Amiga's in minimum time at competetive rates. We also offer a diagnostic service for which the customer is given a quote for the total cost of repairing the machine.

ROM switch + TOS 1.4 £49.99

This switch allows two sets of ST ROM's to be fitted to an ST and switched between to ensure compatability with all software. Machines must have TOS 1.09 in two ROM form. If six sockets are fitted, no soldering is required. TOS 1.4 (2 ROM's) and two extra sockets are supplied.

Exchange ST PSU's £59.99

We can offer fully compatible PSU's for ST's at this price in exchange for the damaged PSU. Our engineers can fit any STFM memory upgrades for £20. We can also fit SIMM's, TOS, Blitter chips, PSU's for just £10. Phone for details.

star Printers

Star LC-200 — £219.99 (New)
7 Colour printer
Colour + mono ribbon supplied
225 cps
5 Resident NLQ fonts
Bottom feed
Push or pull tractor feed
Paper parking

Star LC24-200 — £249.99 (New)
24 Pin printer
222 cps
5 Resident LQ fonts
Accepts font cartridges
Bottom feed
Push or pull tractor feed
Paper parking

Citizen Swift — £319.99 (Special offer)
24 pin printer
192 cps
Includes colour upgrade
Bottom feed
Push or pull tractor feed
4 LQ fonts
Accepts font cartridges

New Star LC24-200 7 Colour	£319.99
Star Laser 8DB, 2Mb RAM	£1899.99
Star LC-10	£169.99
Star LC-10 Mk II	£189.99
Citizen 120D+	£139.99

All Star Printers carry 12 months on site warranty(Mainland UK). All printers include IBM Centronics cable. Phone for ribbons, paper and printer stands.

64K buffer 3 input switch	£79.99
256K buffer 3 input switch	£149.99

Monitors

Atari SM124 Hi-res Mono monitor	£ 109.99
Philips 8833 MK II Colour, Stereo monitor	£ 249.99
Cmdr 1084S Colour monitor * limited offer *	£ 269.99
Philips 15" FST TV	£ 269.99
Philips 8833 + Tv tuner	£ 299.99

The philips 15" FST Tv includes: remote control, Scart input, 60 tuner presets, sleep timer and Fastext. All displays include Scart cable. Deduct £10 from Monitors only, if bought with computer. The Philips 8833 comes with full 12 months on site warranty.

Trust PC's

AT 12Mhz Desktop	£449.99
AT 12Mhz VGA Mini tower 40Mb	£799.99
AT 16Mhz Desktop	£499.99
AT 16Mhz VGA Mini tower 40Mb	£849.99
386SX Mini tower	£699.99
386SX VGA Big tower CK66 40Mb	£1099.99
386SX-20 VGA Mini tower 40Mb	£1129.99
386-25 VGA Mini tower	£1194.50
386-25 VGA Big tower CK66 40Mb	£1599.99
386-33 VGA Big tower CK590 40Mb	£1699.99
486-25 VGA Big tower CK590 210Mb	£POA
Mono Monitor	£99.99
VGA Colour Monitor	£299.99

PC Emulators

PC Speed, XT Emulator	£99.99
AT Speed, AT Emulator	£199.99
ATOnce, AT Emulator	£199.99

Midistudio Master

- 100 tracks storage, 20 tracks playing simultaneously.
- 240 ppq resolution.
- Realtime mix-down via mouse,
- Realtime scrolling arrange window.
- 11 levels of quantise, including humanise.
- Pipeline/Module system.
- Loop record.
- Midi soft keys.
- Works on 1040STF(M)(E)

Master £129.99

Midistudio £49.99

Midistudio is a 20 track sequencer which can operate on a 520STFM(E), in medium res. Midistudio is an easy to use, low cost introduction to Midi music composition.

ST FAX/Modem

Now you can use your ST to send faxes. Uses a fully featured modem so you can also access Bulletin boards and commercial communication systems.

- Fully Hayes compatible modem
- Auto dial/ Auto answer
- 300/1200/2400 Baud
- Mix text and graphics.

Cannot receive faxes.

£200

Lantech Netwk

We are the U.K Distributor of the Lantech Network

- Uses Cartridge port.
- 10 Megabit per second data transfer rate.
- Up to 200ft between ST's.
- Any computer can be configured as a server to share, Hard, Floppy, RAM disks and Centronics printer.

Lantech server and node £374.99 *Lantech Add-on-Kit* £179.99

Kawai Fun Lab Music System

music system Fun LAB

Amiga MIDI interface

1x MIDI IN
2x MIDI OUT
Colour matched to Amiga

Keyboard FS680

- 61 Full sized keys
- 100 preset sounds
- 16 bit PCM quality
- 100 preset rythms
- 32400 sound combinations
- ONE-FINGER AD-LIB
- 2x Stereo speakers
- Effects: Chorus, Sustain, Pitch up/down
- 2x MIDI cables

Amiga Software

- 5 Track sequencer
- 5 channel mixer
- Quantization
- Left/right locator
- Auto loop
- Graphic notation
- Lyrics(KARAOKE)
- Registration page
- Synthesizer editor

Funlab Music System for Amiga including: MIDI Interface, FS680 Keyboard, Midi cables and software.

For Amiga £330

Kawai Music system for ST including FS680 keyboard, MIDI cables and Midistudio sequencer software.

For ST £330

Funlab Junior is available for the Amiga priced £230. Phone for details.

Ladbroke Computing Hard Drives

We use only top quality, brand new, CDC or Quantum mechanisms. Not reconditioned mechanisms.

- Autoparking 3.5" mechanisms.
- Extra long DMA.
- Full metal case suitable as monitor stand.
- On/off button and DMA device selector mounted on front.
- Integral PSU.
- DMA Out port for daisy chaining.
- Megadrive controller, low power, controls up to 8 SCSI drives.
- Compatible with emulators such as Spectre GCR, AT Once.
- Up to 14 GEM partitions (255 with TOS 1.4), up to 1 Gigabyte in size.
- Selection of Accessories/boot partition with boot editor.
- Backup & utility software provided.

New Prices

42HD - 42Mb 11ms access time	Only £ 479.99
48HD/28 - 48Mb 28ms access time	Only £ 399.99
84HD - 84Mb 24ms access time	Only £ 579.99
111HD - 111Mb 15ms access time	Only £ 699.99
211HD - 211Mb 15ms access time	Only £ 1099.99

Phone for other capacities

A4 Scanner

- 200 Dpi scanner.
- 16 grey scales or Black/White mode.
- High quality thermal image printer.
- Acts as photocopier.
- Works with ST, Amiga, PC, requires 1Mb RAM.
- Amiga version includes Photon Paint II.
- Comes complete with software, cable, thermal paper.
- Thermal paper available ex-stock at £7.99 per roll.

ST or Amiga Version
£449.99
PC version + board
£479.99

IMG scanner £49.99

The IMG scanner is a device for scanning photocopied material at horizontal resolutions of up to 1000 Dpi on an ST, when used in conjunction with an Epson compatible printer.

Cumana 3.5" Drives

CSA 354: ST 3.5" drive.	£69.99
CAX 354: Amiga 3.5" drive.	£64.99
ST Internal drive upgrade.	£64.99

The Cumana, ST internal drive requires the ST's case to be modified (full instructions supplied). The external ST drive is a high quality, slim, quiet drive which comes complete with integral power supply and so does not draw power from the ST which could cause problems. Add £3 P&P for drives.

How to Pay

You can phone your Access or Visa card details or send a cheque/postal orders made payable to Ladbroke Computing International. Please allow sufficient clearance time for cheques.

33 Ormskirk Road, Preston, Lancashire, PR1 2QP Open Monday to Saturday 9:00am to 5:00pm. Dealer enquiries welcome. Ladbroke Computing International is a trading name of Walton Marketing Limited. All trade marks recognised.

New Prices Upgrades

Amiga boards

Includes Enable/Disable switch

512K upgrade board £34.99

512K board with clock £39.99

STE SIMM's

512K SIMM's upgrade £39.99

2Mb SIMM's upgrade £119.99

4Mb SIMM's upgrade £239.99

512K STFM, 16 or 4 chip kit.	£ 39.99	512K ST board+chips, kit.	£ 59.99
2Mb ST board+chips, kit	£ 159.99	4Mb ST boards+chips, fitted	£ 344.99
TOS 1.4 kit (6 ROM's)	£ 39.99	STFM Blitter chip, kit	£ 39.99

Please check configuration of your machine with our staff before ordering. Prices quoted for machines not previously tampered with. All upgrades carry 90 days parts and labour guarantee. Please add £1.50 P&P for upgrades priced under £100.

Spectre GCR

"Power of the Mac, without the price."

- Reads, writes and formats Mac disks.
- Supports Hard drive and second floppy.
- Compatible with STE, Stacy.
- 30% bigger screen area than Mac Plus.
- Runs 20% faster than Mac Plus.
- Software upgrades available.
- Send SAE for Spec' sheet.

Spectre GCR
With 128K ROM's
£369.99

We are the consistently longest serving supplier

Quality Disks

Qty	Bulk Sony or Kao Loose	Bulk Sony or Kao Boxed	Sony Brand Boxed in 10's
10	£ 5.99	£ 6.99 Includes x10 Ryford black plastic box	£ 9.49
40	£ 20.99	£ 26.99 Includes x40 Lockable, disc box	£ 34.99
100	£ 48.99	£ 57.99 Includes x100 Lockable, disc box	£ 84.99
150	£ 66.99	£ 83.99 Includes x150 Posso Stackable disc box	£ 125.99

All bulk disks are top quality Sony or Kao, not cheap seconds. All disks carry an unconditional lifetime guarantee. Please add 75p P&P for each 10 disks.

Ladbroke Computing International

(0772) 203166 Fax 561071

CIRCUIT CITY

At last a chance to plug into what you drive into. Keith Pomfret turns the company Rolls into a Power Station with an on board inverter that allows you to fit an ordinary 3-pin plug on your dashboard.

A trip to sunnier climes on the overland bus brings you on board movies, hot drinks and even cooked food. A close examination of the latest Neoplan coach revealed that instead of hanging huge generators off the frame, the mains power was provided by a set of inverters.

With these coaches costing huge (at least six figure) sums, it isn't the cost that dictates the power supply but the size and reliability. The *Express* budget didn't stretch to a skyliner coach, but with the help of Maplins we were able to gather up an inexpensive kit that will turn the stuff from under the bonnet into the stuff from the mains.

To make this magical transformation, the inverter takes the 12 volts direct current from the car's electrical system and inverts it to alternating current.

A 20:1 transformer boosts it up to mains voltage of 240v. Swings and roundabouts dictate that you'll not be able to run a 20,000 watt sound rig from the inverter. A 60w output is about the most that can be hoped for unless you beef things up by using more batteries and components.

In a simple in-car system, the 240 volts from the inverter might be used to run a computer, or any of the many low current drain appliances.

For an in-car installation, it's a good idea to add an extra battery to the car and have the two batteries interchangeable between inverter and car electrics. A simple switch will then allow you to interchange between charging the battery on the car's circuits and discharging on the inverter's.

The kit comes complete with everything that's needed except for a box and costs £64.95 including VAT. It isn't a simple kit and should only be undertaken by a competent electronics DIYer or someone who doesn't mind wasting the £65 or so.

An inverter produces mains current so remember when you're testing the finished product that it can bite – you should treat the completed inverter with the same respect as you treat any live 240v socket that you're working on. If in doubt ... don't.

The kit comes in a box with a constructors guide and all of the necessary parts bagged ready for the job. There's a list of components and before you spread them all over the bench you should get several bags ready to place parts in as you check them off the list.

Open each bag separately and note the contents. Tick the parts off the list as each bag is checked place the parts from it in a fresh bag and keep the bench clear. If anything is missing, check the bags again. If it's still missing, contact Maplin before you continue.

For this job you'll need the normal pliers, screwdrivers, wiretrimmers etc, and a multimeter to test everything. Also make sure that the requisite volts amps and watts are as ordered. A soldering iron with a fine bit, good light and a supply of patience will see you through.

For a full in depth look at how to go about constructing any of the Maplin kits, there are a series of books available that go through the rudiments and theory as well as the soldering. The £2.95 that the appropriate book adds to the cost is well worth the investment. When building the kit, I found the book indispensible.

First things first, take the PCB that comes in the kit and examine it for signs of damaged tracks or 'shorts'. It is a fairly simple single sided PCB and the quality of the review sample was good, with no whiskers or breaks. The integrity of the circuit board was fine when connections were checked using diagnostic equipment so I was ready to warm up the iron.

The parts that are attached to the PCB were scrutinised and with everything intact the job was laid out on the bench.

To allow any one that wants to build it in tandem with Circuit City, I've unplugged the iron and I'm going to sit and twiddle my thumbs for 14 days to allow you time to send the Christmas money to Maplin to get your own kit. ■

A FORTHCOMING PROJECT

For those of you out there d-d-d-digitally sampling everything from the whoopee cushion under a maiden aunt to the pistons of the Flying Scotsman, there's a bit of good news.

If you've ever tried to sample broadcast sound from the TV (with the permission of the TV company of course!) you'll know what a load of krshhttthhhh gets into the nasty analogue sound on the box. To find a cheap way around that we've decided to build the under £90 NICAM stereo box.

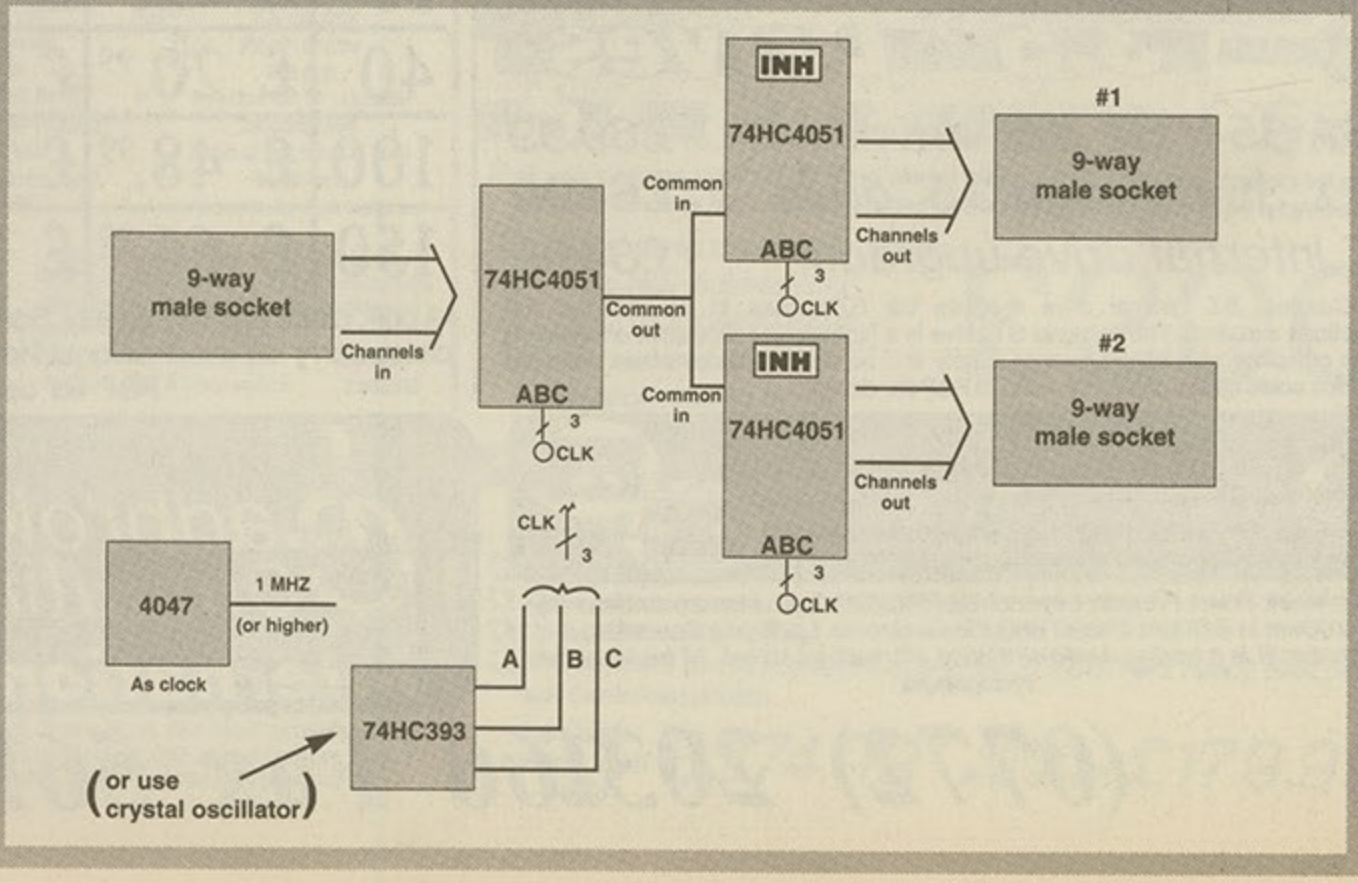
As well as offering a splendid digital source for sampling, it gives you the advantage of room-busting stereo to add to your steam driven TV.

EXPERIMENTS WITH MICE

When I sloped off to the Soviet Union to try cabbage soup first hand and find out if a Soviet soldering iron burned the fingers as efficiently, Amiga afficionado Pat (Is he real or is he Memorex) MacDonald stepped in at the eleventh hour to fill my spot.

The mouse sharing device that Pat described set some of you thinking and several of you sent me plans and diagrams for improved better featured mouse fettling devices. They were all good, but one stood out as being slightly mega.

As it came from a commercial enterprise, I'm not allowed to advertise them (I've lost the piece of paper really so if they'll FAX me again, I'll give them a credit.). here it is in all of its glory. All the bits are marked and it goes without saying that neither I nor anyone I know will take responsibility if you build it and it goes terribly wrong.



FIRSTCHOICE

LEEDS (0532) 637988 COMPUTERS

WEST YORKSHIRES PREMIERE AMIGA AND ATARI COMPUTER STORE
UNIT 8, ARMLEY PARK COURT, OFF CECIL ST, ARMLEY, LEEDS, LS12 2AE

ALL PRICES INCLUDE VAT AND DELIVERY
ALL OUR PRODUCTS ARE GENUINE UK SPECIFICATION
FULL REPAIR SERVICE AVAILABLE FREE ESTIMATES
AUTHORISED DEALERS FOR STAR, CITIZEN, COMMODORE, ACORN AND AMSTRAD

ATARI

CHRISTMAS PACK
Everything you'll need in one superb value package. Fully microswitched Cruiser joystick, 10 Sony disks, disk box, mouse-mat, Atari cover plus three extra games of your choice.
ONLY £30.00
with any Atari pack

DISCOVERY PACK
DISCOVER THE ATARI ST
Pack comprises of the Atari 520STFM, First Basic Language Disk, Neochrome Graphics Package, S.T.O.S The best selling games creator, ST Tour - Tutorial Disk, Mouse and Manuals.
Plus 4 great games titles Outrun, Carrier Command, Space Harrier and Bombjack.
ONLY £279.00

NEW TURBO PACK
THE NEW ENHANCED ATARI 520 STE
Now with Indiana Jones and the Last Crusade, Impossible Mission 2, Human Killing Machine, Super Cycle, Outrun, Dragon's Breath, Anarchy, Blood Money, First Basic, Music Maker, Hyperpaint and S.T.O.S the games creator plus all leads, mouse and manuals.
ONLY £359.00

EXTRA PACK
1040 STE
The Extended RAM (1 meg) version of the Atari STE. This machine is capable of runnning complex business and utility software,. The pack includes ST Word - word processor, ST Base - Database, ST Calc - spreadsheet, ST Graph, S.T.A.C, Adventure Creator, HyperPaint, Prince - strategy game and Metacomco ST Basic language disk with full manuals, plus mouse.
ONLY £429.00

THE MEGA SERIES
Mega 1 with 1 meg of RAM
£509.00
Mega 4 with 4 meg of Ram
£1089.00
The Mega ST has long been the professionals' choice for DTP, CAD and other memory intensive applications plus all the usual business utilities. Atari SM124 high res mono monitor when bought with a Mega ST or 1040
ONLY £99.99

AMIGA

AMIGA A500 PACK inc. Workbench 1.3, Amiga Basic, mouse, TV modulator, leads, extras disk, PSU, manuals and tutorial
£349.00

FLIGHT OF FANTASY PACK £369.00 ONLY UNTIL STOCKS LAST

SCREEN GEMS PACK
A500 pack as STD plus Back to the Future II, Days of Thunder, Knightbreed, Shadow of the Beast III! And Deluxe Paint II
£369.00
With any Amiga pack you have the option to buy the amazing
ASTRA PACK
10 incredible games inc. E-Motion, Kid Gloves, Powerplay, RVF Honda, Tower of Babel, Shufflepuck Cafe and many more
ONLY £29.99

CHRISTMAS PACK
TAKE THE HEADACHE OUT OF BUYING A COMPUTER THIS CHRISTMAS
No need to shop around, we'll make sure you get everything you need in one superb value pack.
Comprises any Amiga games pack plus a top quality Cruiser joystick, mouse mat, 10 disks, Amiga fitted cover and 3 extra games of your choice!
£399.00

CLASS OF THE 90's BUSINESS PACK
NOW WITH 1 MEG OF RAM AS STANDARD!!
A500 pack plus Kindwords 2.0, Pagesetter, Artists Choice, Headline fonts pack, Amiga logo, Superbase Personal, BBC Emulator, Deluxe Paint II, Maxiplan Spreadsheet, Dr T's Midi Recording Studio, Midi interface, mouse mat, 10 disks and diskette storage wallet
£549.99
New in stock "First Steps Pack" similar to the Class of the 90's Pack but aimed at a younger age group

AMIGA 1500
THIS MUST BE ONE OF THE BEST VALUE AMIGA PACKAGES YOU CAN BUY SPECIFICATION:
★ Commodore 1084S stereo monitor
★ Dual drives as standard
★ Separate quality keyboard
★ Platinum Works integrated business package inc. wordprocessor, database and spreadsheet.
★ Deluxe Paint II graphics package
★ Battle Chess 3D chess simulation
★ Their Finest Hour flight simulator
★ Sim City + Terrain Editor
★ Populous + Promised Lands
ONLY £1089.00

PRINTERS

ALL OUR PRINTERS INCLUDE A STD CENTRONICS CABLE FREE!

STAR LC10 MONO
The excellent LC10 is packed with features normally found in much more expensive printers
★ 9 pin print head
★ 4k buffer
★ 144 CPS draft 36 CPS NLQ
★ Multiple built in fonts.
£159.00

STAR LC200 COLOUR
9 pin head, 180 cps draft, 225 cps high speed draft, 16K buffer, 8 resident fonts, 11.7" carriage that can take landscape format, optional serial interface, comes with a mono and colour ribbon
ONLY £209.99

STAR LC24-200
24 pin head, 200 cps draft Elite, 222 cps high speed draft, 67 cps LQ, 7K buffer expandable to 39K, 10 resident fonts 11.7" carriage (landscape) serial interface option.
ONLY £249.99

STAR LC24-200 COLOUR
The 7 colour version of the new 80 col 24 pin LC24-200
NOW IN STOCK!
ONLY £299.99

CITIZEN SWIFT 24
Superb quality 24 pin machine
* 24 Pin print head
* 192 CPS draft
* 64 CPS NLQ
* 8K buffer expandable to 32k
* Optional colour capability 360 DPI
* Add £34.99 for colour option
* 2 year warranty
£289.99

EPSON EPL-7100 LASER
* A4 page laser printer
* Multiple built in fonts
* 512k memory
* Expandable to 6Mb
* 300*300 DPI graphics
* 6 pages per minute
* Small footprint
£919.99

3.5" BULK DISKS
SONY/VERBATIM
100% ERROR FREE, 135TPI, LIFETIME GUARANTEE

10	£5.99
25	£12.99
50	£22.99
100	£39.99
200	£74.99
500	£159.99

SONY BRANDED 3.5"
In boxes of 10 ..... £9.99

DISK DRIVES
HIGH QUALITY EXTERNAL FLOPPY DISK DRIVES
CUMANA ATARI
CSA 354 1 MEG EXT.
ONLY £72.99
CUMANA AMIGA
CAX 354 1 MEG EXT.
ONLY £69.99

RAM EXPANSION
ASHCOM 1.8 MEG FOR THE AMIGA
Inc. Clock
512K populated....£56.99
1Meg populated ...£93.99
1.5 Meg pop £114.99
Fully (1.8 Meg) ...£129.99
ASHCOM 512K RAM EXPANSION inc. CLOCK
£37.99

HARD DRIVES
AMIGA A590 20 MEG
NEW LOW PRICES!
£289.99
AMIGA A590 (2 Meg of RAM)
£359.99
DRAM CHIPS (256K * 4)

Quantity = 4	£5.00 each
Quantity = 8	£4.75 each
Quantity = 16+	£4.50 each

ATARI

Megafile 30	£439.00
Megafile 44 (removeable cartridge drive)	£799.00
Megafile 60 (as 30 Meg spec)	£589.00

MONITORS
PHILIPS CM8833 MKII
Stereo sound, 600 * 286 resolution, green screen facility, 1 yr on-site warranty
£239.99
INCLUDING ALL LEADS

ATARI SM124
High resolution mono (600*400). This monitor has a superb clear, stable image. Ideal if you are using drawing or wordprocessing applications.
£109.99

MAIL ORDER
ORDER BY TELEPHONE QUOTING YOUR CREDIT CARD NUMBER. IF PAYING BY CHEQUE PLEASE MAKE PAYABLE TO
• FIRST CHOICE •
TEL: 0532 637988
FAX: 0532 637689

REMEMBER WE OFFER
- FAST Mail order service
- FREE postage in UK mainland
- FREE 2-3 day courier service
- (Next day delivery £3 extra)
- Goods tested before despatch
- Call into our showroom
- Spacious free parking
- Full repair service Free estimates

*** IT COSTS LESS AT FIRST CHOICE! ***

• OPEN MON-SAT	9.00AM-5.30PM
• SUNDAY OPENING	10.00AM - 3.00PM
• THURSDAY NIGHT	LATE TIL 8.00PM

Access VISA

EXPRESS ON-LINE

Your weekly guide to the hundreds of bulletin boards and user groups now on three pages. This week's featured bulletin board is AST On-Line. And if you run a board, don't forget to write in with all the details!

• USER GROUPS

ATARI AND AMIGA PC EMULATOR SUPPORT CLUB Free associate membership. Newsletters, factsheets and technical support. SAE to 153 Parrock Street, Gravesend, Kent, DA1 21ER

BURMAN'S PD Amiga PD only 40p a disk. For a catalogue send a blank disk and an SAE to Burman's PD, 41 Pinner Park Gardens, Harrow, Middx, HA2 6LQ. Can you afford to miss this fantastic opportunity?

CID (Computers and integration for the disabled) is a registered charity. We would like to hear from any similar groups or interested individuals. Any old hardware/software donations most welcome. Telephone 0467 24202, ask for Gordon

DATA PD LIBRARY for Amstrad CPC users. For programs and newsletter send SAE, tape/disk and 50p to Kingsmill 202 Park Street Lane, Park Street, St Albans, Herts AL2 2AQ

ELMSOFT PUBLIC DOMAIN SERVICE We are one of the largest suppliers of PD for the ST. Send £1 cheque or PO for our monthly newsmag/PD list or see us any weekend at Camden canal market, Haven Street, London

ENTERPRISE William Creaser, 6 Provident Street, Shaw, Oldham, DL2 8AQ. Independent Enterprise User group. Tel 0706 881382 7-9pm weekdays.

GUNNING PD ST PD Public Domainonly £1 per disk. For the latest ST disk catalogue send three first class stamps to Gunning PD, 47 Auchingane, The Tryst, Edinburgh, EH10 7HX

PC/PD CLUB Stacks of PD/shareware for the PC. Send for catalogue now. 48 King William Drive, Cheltenham, Glos, GL53 7RP

SA40 User group. Roy Williams, 17 Grove Road, Acton, London W5 6AW. £10 registration PD Library, quarterly newsdisks. First PD disk free. PD disks £2 plus 50p postage and packaging.

SEGA SWAP CLUB Exchange your old megadrive/master system carts. Send an SAE or 40p for details to Sega Swap Club, 10 Sandwith Road, Todwick, Sheffield, S31 0JP

SOFTWARE EXCHANGE Buy/swap/sell Amiga/ST/PC and Megadrive games, utilities. SAE for info 13 Bourneville Lane, Birmingham, B30 2JY or call 0860 444594 12-10pm

SPECTRUM +3 USER GROUP monthly magazine. Telephone helpline, discount software/ hardware, disk magazine, PD library. Six hundred members. Send an SAE to 57 Lovers Walk, Dunstable, Bedfordshire, LU5 4BG

ACORN ARCHIMEDES.RISC user.117 Hatfield Road, St Albans, Herts AL1 1EX

ACORN ARCHIMEDES Archive, 18 Mile End Road, Norwich NR4 7Q

AMATEUR RADIO (CBM) - Simon Lewis GM4PLM Commodore Radio Usrs Gp, 69 Irvine Drive, North Clippens, Linwood, Paisley PA3 3TB

AMATEUR RADIO 9COMMS0 - If interested contact Pat & John Beedie GW6MOJ/MOK BARTG Ffynnonlas Salem, Llandeilo, Wales SA19 7NP. 0558 822 286 MBX 558 822 286

AMIGA DISK FANZINE – Paul Harthen, 43 boyds Walk, Dukinfield, Cheshire SK16 4AX

AMIGA PUBLIC DOMAIN. Amiga disk fanzine specialising in pd. Send sae for details to Chris Jackman,3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk

AMSTRAD BUSINESS USRS - Amstrad Professional User Club, enterprise House PO BOX 10, Roper St, Pallion Ind Estate, Sunderland SR4 6SN. 091-510 8787

AMSTRAD CPC USERS - Tony Baker, United Amstrad User Gp, 26 Uplands Crescent, Fareham, Hants PO16 7JY 0329 234 291

AMST. CPC HOME USERS - Steve Williams, WACCI, 9 South Close, Twickenham TW2 5JE. 081-898 1090

AMSTRAD LOCAL GROUPS - Amstrad Groups Federation, 4 Sutton Roadc, Gorton, Manchester M18 7PN

AMSTRAD PC SOFTWARE - Colin Smith, COLBAR, 10 Penwood cl, Westbury, Wilts BA13 3LW

AMSTRAD PCW - PD software: Bob Ellis 0432 761860 Queries: David Axford 0428 56438 AMSTRAD PCW - Bob Ellis "Rowan" 100 St Peters Close, Moreton-on-Lugg, Hereford HR4 8DW. 0432 761 860

AMSTRAD CPC HOME USERS - Steve Williams, WACCI, 9 South Close, Twickenham TW2 5JE. 081-898 1090

AMSTRAD 1512/1640/PPC - PC Independent User Group, The Computer Advice Centre 87 High Street, Tonbridge, Kent TN9 1RX Phone 0732 771 512

AMSTRAD BUSINESS USERS - Amstrad Professional User Club, enterprise House PO BOX 10, Roper St, Pallion Ind Estate, Sunderland SR4 6SN. 091-510 8787

AMSTRAD LOCAL GROUPS - Amstrad Groups Federation, 4 Sutton Roadc, Gorton, Manchester M18 7PN

AMSTRAD PCW - Bob Ellis "Rowan" 100 St Peters Close, Moreton-on-Lugg, Hereford HR4 8DW. 0432 761 860

APPLE II USERS – telephone 051 9284142 for further details

APPLE MACINTOSH. John Lewis, Macintosh user group, Macintosh House, 11 South Parade, Summertown, Oxford OX2 7JL

APPLE SYSTEMS – Irene Flaxman, Apple 2000, PO Box 3, Liverpool L21 8PY.

ARABIC COMPUTING - Rich Lackey, Arabits, 9 Bellview road, Worthing, West Sussex BN13 1EY

ASHTON TATE SOFTWARE - Silvia Robinson, Baseline, Ashton-Tate, 1 Bath Road, Maidenhead, Berts 0628 33123. Prestel page 43221

ATARI ALL MACHINES – Colin Hunt, BaPAUG, Wimborne Road, Oakdale, Dorset BH15 3EF

ATARI PORTFOLIO - D Gilpin, Atari Portfolio User Group, 84 Cambridge Avenue, Gidea Park, Romford RM2 6QU. 0708 730764

ATARI ST RESURRECTION SOCIETY – 0495 272092

ATARI ST SOFTWARE - 16/32 PD library 35 Northcote Road, Strood, Kent ME2 2DH

ATARI ST - Paul Glover, The ST Club, 9 Sutton Place, 49 Stoney Street, Nottingham NG1 1LX. 0602 410241

BBC MICRO - BEEBUG, 117 Hatfield Road, St Albans, Herts AL1 4JS. 0727 40303

BURNAMS PD – 41 Pinner Park Gardens, Harrow, Middx, HA2 6LQ

C64 PD CLUB – E Masaba, 84 Garmoyle Rd, Liverpool L15 3JH

C64 PUBLIC DOMAIN – Phoenix, 64 Plumberow, Basildon, Essex

C LANGUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX Telephone 021-722 3168

C USER GROUP –phone 0865 246490 for further details

CAMBRIDGE Z88 - Roy Woodward, Z88 Owners' Club, 68 Wellington St, Long Eaton, Nottingham NG10 4NG

CD ROM - UK CD-ROM User Group, High Wings, Salem, Treforys, Abertawe 0792 844 370

CHOICE on-line help. Telephone: 0308 23224 7-9 AM only for now

Get yourself listed!

If you run a user group or bulletin board, don't miss out – fill in the form for a free entry today!

From: .....

Address: .....

.....

User group/Bulletin board (delete as applicable) Specialisation

CHESHIRE NIMBUS USER GROUP – Geoff Nelder, Queens Park High School, Handbridge, Chester CH4 7AE

CHURCH ADMINISTRATION - Rev Stoker Wilson, Church Computer Usr Gp, St John's Vicarage, Greenside, Ryton, Tyne & Wear NE40 4AA. 091-413 8281

COBOL LANGUAGE - Allen Reavie 22 Mourneview St, Portadown, Northern Ireland. BT62 3AW
COMPUNET - Independent Compunet Club, 148 Furzehill road, Boreham Wood Herts

DATAEASE USER GROUP – High-Tech House, 10 Blackfriars Street, Norwich, NR3 1SJF

ECONET - Michael Ryan, Econet User Gp, Balkeerie Cottage, Eassie by Forfar, Angus DD8 1SR

ENET (like econet) - T K Boyd, Enet (Amcom) User Gp, Seaford Cottage, Petworth, West Sussex GU28 0NB

EXMOORE SOFTWARE – Queen Street, Lynton, N Devon EX 35 6AQ

COLECO ADAM - Keith Marner, UKAS 33 Homer Road, Croydon CXR0 7SB

COMMODORE ALL MICROS - Jack Cohen, ICPUG 30 Brancaster Road, Newbury Park, Ilford IG2 7EP 081-346 0050 home: 081 579 1229 day

COMMODORE AMIGA - UK Amiga Users Group. Contact 144 Charles Street, Leicester LE2 00D .0533 510066 voice; 0533 517615

CLARGY/MEDICAL EDUCATN - Mr T Jones, FREE-ED Shareware/PD 85 Stoke road, Taunton, Somerset TA1 3EL. 0823 321 481

COMMUNITY COMPUTING - Community Computing Network 2nd Floor, 35 Pink Lane, Newcastle, NE1 5DW 091-261 0317

COMPUCORP. Compucorp University users group c/o Compucorp, Cunningham House, Westfield Lan, Kenton, Middx

COMPUNET - Independent Compunet Club, 148 Furzehill road, Boreham Wood Herts. WD6 2DX

CONFERENCING - Compulink, suite 2, The Scantuary, 23 Oakhill Grove, Surbiton, Surrey KT6 6DU Voice 081-390 8446 CIX BBS 081-399 5252

CPM & MSDOS Users Group, 42 Birkbeck Road, Wimbeldon, London SW19 9NZ. 081-543 0824

CRYPTOGRAPHY & CODES - Mike Barlow, American Cryptogram Association 5052 Chestnut Avenue Pierrefonds, Quebec HBZ 2A8 Canada

DISABLED - Jeff Hughes, Special Needs User Gp, 39 Eccleston Gardens, St Helens WA10 3BJ 0744 24608

DRAGON - Paul Grade, National Dragon Users Group, 6 Navarino Road, Worthing, Sussex 0903 207585

ECONET - Michael Ryan, Econet User Gp, Balkeerie Cottage, Eassie by Forfar, Angus DD8 1SR

EDUCATION - Charles Shannon, TECUG, 35 Wellington St, Gravesend, Kent DA12 1JG. 0474 567 931

EIGHT -BIT BACK-UP 8-bit user group for all. 25p plus sae. to: 8-bit back-up, 1 Northolme Close, Grays, Essex.

EINSTEIN - Graham Bettany, UKEUG 80 Dales Road, Ipswich IP1 4JR

EMULATE. For Amiga, Amex. With monthly newsletter. Write to Pat 12b Northbrooks, Halrow, N Essex

ENTERPRISE - Tim Box, Independent Enterprise User Group, 50 Holdenhurst Avenue, Finchley, London N12 0HX. 081-346 8032

FLIGHT SIMULATOR (MSDOS) - Alan Hawkins, SIMFLY Club 2 Henley Manor Raincliffe Ave, Scarborough YO12 5BU

FORTH Language - Douglas Neale, FIG (Forth Interest Group) UK, 58 Woodland Way, Morden, Surrey SM4 4DS

FRACTALS/CHAOS THEORY - Andy Lunness, 69 Bronte Avenue, Bury, Lancs BL9 9RN. Telephone061-764 6469

GENEALOGISTS - Computer Group, Society of Genealogists, 14 Charterhouse Buildings, London EC1M 7BA. 071-251 8799

GENERAL HOME MICROS - Steve Winter, Chic Computer Club, PO BOX 121, Gerrards Cross, Bucks SL9 9JP 0753 884473

GUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX 021-722 3168

HITACHI MBE 16002 PC - Bruce Ainge HICUPS 16 Nine Acres Road, Cuxton, Kent ME2 1EL. 0634 715759

HOUSING ASSOCIATIONS - Caroline Maries, Micro Users Ltd, Beaver Housing society, 23 Lewisham High Street, London SE13 5AF. Telephone 081-318 1126

HEALTH WORKERS - Sue Mckendrick, Healthlink, 164 Windsor Rd, Ashton-in-Makerfield, Wigan WN4 9ES. Voice: 0942 712 385

IBM PC - The IBM PC User Group PO BOX 360 Harrow HA1 4LQ.081-863 1191 BBS 081-863 6646

JUPITER ACE - John Charter, Jupiter Ace Forth User Group, 17 Spring Wood Close, Dunston, Chesterfield S41 8BS. 0246 237555

FIND YOUR LOCAL CLUB - John Dale, Banc y rhosyn, 14 Bron Y Glyn, Bronwydd Arms, Carmarthen SA33 6JB. 0267 230 771

LOCAL AUTHORITIES - Local Authority Micro User Group, John New, Borough Engineer's Dept, Municipal Offices, North Quay, Weymouth, Dorset DT4 8TA. 0305 785101 ext 272

LOTUS PRODUCTS - Lotus User Group, 79-80 Peascod St, Windsor, Berks SL4 1DH. Telephone 0753 841686

LYNX - R B Jones, Lynx User Group, 39 Ashton Close, Needingworth, St Ives, Cambs

LYNX DISK USER GROUP. J Koushappas. 172 Pasteur Gdns, London N18. Tel: 081 807 3859

MEMOTECH FILE – 93b StJohns Road, Biddulph, Staffs ST8 6LL

MEMOTECH - Phil Eyres - Memotech Owners Club, 23 Denmead Road, Harefield, Southampton SO2 5GS Telephone 0703 585106

MICROSOFT WORD - Lesley Port, Microsoft Word User Group, Folly House, Madeira Walk, Bachelors Acre, Windsor, Berks SL4 1EU. 0753 831001

MID CORNWALL COMPUTER CO-OP. Atari ST. 8 Victoria road, Roche, St Austel, Cornwall PL 26 8JF. 0726 890473

MIDI/MUSIC. Spectrum music machine/MIDI user group. Magazine on tape, plus programs and lots more. For more details contact Sean Sanderson on 05242 62258

MOTOROLA 68xxx MICROS - Rick Applegate, 68 Microgroup, 8 Great Cob, Springfield, Chelmsford, Essex. BBS 081-316 7402

MSX SYSTEMS - Keith Neal, MSX Link, Austerby House, 80 Austerby, Bourne, Lincs PE10 9JL

NASCOM/80-BUS/CPM - Scorpio Systems, PO BOX 286, Aylesbury, Bucks HP22 6PU. 0296 624868

NEWBRAIN - Ron Bury, NewBrain Support Grp, 70 Cranberry Lane, Darwen, Lancs BB3 2HL 0254 771891

NIMBUG, 13 Belle Vue Ave, Gosforth, Newcastle-upon-Tyne NE3 1AH 091-285 7806

NW ARCHIMEDES USER GROUP. Meets every Friday at Citizens Advice Bureau, next to Spectrum arena in Birchwood, Warrington. Ring Paul on 051-426 3915 after 6pm

OS/2 - Karen Burns, OS/2 User Group,Cecily Hill Castle, Cirencester, Glos LG7 2EF Telephone 0285 655888

OSBORNE/CPM/MSDOS - Jeremy Browne BOOG, 102a Aldershot Road, Fleet, Hants GU13 9NY. 0252 621745 voice, 626233 BBS

PHILOSOPHY APPLE - G Haines, Chinese Room Club, 43 Cornwallis Gdns, Hastings, East Sussex TN34 1LX. 0424 714 102

PICK OPERATING SYSTEM - Hugh Kellt, UK Pick Users Assocn, PO BOX 907, London N10 2SB. 081-462 4666

PC SOFTWARE - PC Serve, 1147 Greenford Rd, Greenford, Middx UB6 ODP 081-864 2611, BBS 081-864 2633

PRESTEL - Andy Leeder, ClubSpot 810, Church Farm, Stratton St Michael, Norwich,NRQ15 2QB

PSION ORGANISER - Mike O'Regan, IPSO, 130 Stapleford Ln, Beeston, Nottingham NG9 6GB. 0602 735482

PUBLIC DOMAIN. Amiga disk fanzine specialising in public domain.Write, with sae, to Chris Jackman, 3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk, PE32 2QQ

RESEARCH MACHINES - Steve Rochford RM National User Group, George Stephenson High School, Southgate, Killingworth, Newcastle NE12 0SA. 091-268 2002

REVELATION (PICK) - Malcolm Frame UK Revelation User Gp, 136 St Albans Road, Watford WD2 4AE. 0923 35515

R:BASE - Mrs Tansy Beal, R:Base User Group c/o Room A2044 BBC Woodlands, 80 Woods Lane, London,W12 0TT. 081-576 7187

SANYO MBC-550 - M H Syed, Wistaria, 53 Acacia Grove, New Malden, Surrey KT3 3BP. 081-942 9009

SERVICES USERS - Sqn Ldr G Howson, Services Personal Computer Association, Stlk Eng 15a HQSTC RAF High Wycombe, Bucks

SCIENTIFIC PC USERS - Tim Bunning, SPCUG PO BOX 17, Retford, Notts DN22 6BQ Telephone 0777 709009

SCHNEIDER EURO PC - Alex Kefford, SEPUG, 11 Crabbet Road, Three Bridges, Crawley, West Susex RH10 1NF

SHARP USERS CLUB Andrew Ferguson, 11 Harcourt Close, Henley-on-Thames, Oxon RG9 1UZ. Telephone: 0491 574850 evenings only

SIRIUS - Simon Sheppard, ISSUE PO BOX 222, Brighton BN1 3BR

SOLITUDE MOUNTAIN. Friendly new Amiga user group. Offers free PD, competitions etc. Blank disk or 50p to 565 Heathway, Dagenham, Essex

SORD M-23 B Nicholson, Schlumberger Norge A/S Bjergstedveien, 4007 Stavanger, Norway. 474 657002

SMART SYSTEMS USERS - Francis Barton, smart User Group, Basement Holy Rosary church, Louis Street, Chapeltown, Leeds LS7 4BP. 0532 629202

SOUTHERN AND DISTRICT. PC and ST user group.Tony Lowes 61A Broadway West, Leigh on Sea, Essex S59 2BX

STEN. The ST enthusiasts newsletter. Send a disk and an sae for a copy to Dave Mooney, 14 School Rd, Morningside, Newmains, Lanarkshire

SUPERPROJECT - Geoff Groom, 3 Sunnymeade Ave, Carshalton Beeches, Surrey, SM5 4JA. 081-643 3336

SYNCROSOFT. Exclusive 64 computer information. Hardfacts, trouble shoots, pocket book. £2.95 to join, including p&p. Make cheques to Syncrosoft and send them to 9-10 Morland Gdns, Southall, Middx UB1 3DY

TAS (DATABASE) - Neil Hegarty, TASUG C/O Solutions for You, 1st Floor, 2 Lytton Rd, New Barnet, Hertsm EN5 5BY. 081-441 1133, BBS 081-449 4171

TANDY/MS-DOS - Roger Storrs, NATGUG Oakfield Ldge, Ram Hill, Coalpit Heath, Bristol BS12 2TY. 0454 772 920

TEXAS T199/4a - Peter Walker, T199/4a Usr Gp UK, 24 Bacons Drive, Cuffley, Potters Bar, Herts EN6 4DU. 0707 873778

TEXAS T199/4a - Peter Brooks, International TI User Group 96 Banbury road, Oxford OX2 6JT. 0865 510822

THUNDERNEWS. CBM 64 user magazine on disk/tape. Send sae for details and competition to Thunderscrews, 159 Hough Road, Wallsall, West Midlands WS2 9BG

TIUGUK. TI99/4A user group UK for S/W on disk, tape and module. Offers magazine and help. Write with SAE for more details to Peter Walker, 24 Bacons Drive, Cuffley, Potters Bar, Herts EN6

TRANSPUTER - Howard Oakley, Transputer User Group, Brooklands Lodge, Park View Close, Wroxall, Ventnor, Isle of Wight

UNIX USERS - UKUUG Secretariat Owles Hall, Buntingford, Herts, SG9 9PL. 0763 73039 /73255 (fax)

VENTURA PUBLISHING - VPU (Ventura Publisher User grp) Linda Liddell VPU c/o LLA Lound House, Forncett St Mary, Norfolk, NR16 1JP. 0508 41580

WORDPERFECT - Michael Norman, Wordperfect User Group (UK) Dove Barn, Manor Farm, Wootton Woodstock, Oxon, OX7 1DX Telephone 0993 812 670

WORDPERFECT - Dr Ian Barton, A Perfect World, High Rigg, Alma Rd, Tideswell, Derbys SK17 8LS Telephone 0298 871 925

• BBS

INFOCOMM UK BBS 0895 72021 local call London V21, V22 V22 BIS. 9am-9pm seven days a week. Ideal for new-comers and oldtimers in the comms world

LOGICAL BBS The total solution. Speeds 300 to 2400. The BBS for all computer users with on-line computer shopping and free downloads. Tel 0772 623167 on-line from 5pm to 9am

SAS BBS for the ST. Telephone 0742 325232 for further details

SOUTH LINCS BBS online for news, files, online mags and a real club atmosphere. 11pm to 6am Monday to Friday. Call 0780 63954

SPHERE BBS on 0294 221350 8pm-8am every day. V21/22/23/22b MNP 5. ST and PC areas. Call Tonight!

01 For Amiga	071-377 1358	v21/22/22b/23
061 Pc Support	061-443 1529	V21/22/22b/23
4/abc	0460 64511	V21
Above Board	0254 682862	Hst
Absolute Zero Qbbs	081-741 7233	V21/22/22b/23
Advance Opus Hull	0482 28367	V21/22/22b/23
After Hours	0276 52096	V22/V22bis
Airtel	0342 717800	V21/22/22b
Aix-386	0905 52536	V21/22/22b/23
Ajl Electronics	0452 309125	V21/22/23/23v
Alan Solomon'S Bb	0494 724946	V21/22/22b/23
Alchemist	0666 504597	
Alma Bbs	0787 277745	
Alternate Reality	0352 856626	V21/22/22b/23
Alternative Reality	0959 76695	V21/23/23v
Alternative V/data	081-761 8220	V21/23/23v
Amiga Board	0268 510495	V22/22b/23
Amiga Connection	081-981 9289	V21/23
Amiga Shack	0737 361178	V21/22/22b/23
Amiga South-east	0293 28464	V21/22/22b/23
Amlink Bbs	021-778 5868	V21/22/22b/23
Amtech Support	0202 294716	V21/22/22b
Andromeda Galaxy	0243 379430	V21/22/22b/23
Apple Crackers	0268 781318	V21/22/23
	0268 780724	V22/22b.
Apricot Tech Supprt	021-456 2402	V21/22/22b/23
	021-456 2401	V21/22/22b
Arcport	0252 737065	V21/23
Arena	0625 539063	V21/22/22b/23
Argus Project	091-490 0327	V21/22/22b/23
.Arkham Bbs	081-952 5128	V21/22/22b/23
Aspects	061-792 0260	V21/22/22b/23
Atavachron	0480 412884	V23v
Attic	081-308 0466	V22/22b
Auld Reekie	031-663 9924	V21/22/22b/23
Avalon Northeast	091-564 0009	V21/22/22b
Babile Bbs	0532 785964	V21/22/22bis
Babbs Tower	0394 276306	V21/22/22b/23
Banat Board	081-783 1151	V21/22/22b/23
Bar	0904 642560	V21/23/23v
Barnabas	0708 852526	Hst
Barney'S Rubble	021-441 1801	V21/22/22b/23
Basingstoke Opus	0256 728331	V21/22/22b/23
Bath Bbs	0225 83584	1/840060
Bbs09	0705 736025	Hst
Bbz	081-663 3732	V21/22/22b/23
Beeb-tec	0472 276476	V23v
Betelgeuse 5	0463 231339	
Beyond Belief	0642 787898	V21/23
Big Bang Burger	081-420 6356	V21/22/22b/23
Bike Shop	0705 827764	V22/22b
Bixbox	0634 200931	V21/22/22b
Blackpool College	0253 57941	V21/22/22b/23
Blindin' Bbs	01 764-0954	V21/23
Blitter	0292 671638	Hst
Body Matters	071-603 7581	V21/22/22b/23
Boggin	0532 483563	V23/23v
Boog Bb	0252 626233	V21/22/22b/23
Boroughbridge Q	0423 324532	V21/22/22b/23
Bradford Bb	0274 480452	V21/23/23v
Braindead Opus	0823 254352	V21/22/22b/23
Breakthrough	051-734 5817	V21/22/22b/23
Brown Bag	071-404 0897	V21/22/22b
Brunel Bbs	0272 584352	V21/22/23
Buz Board	081-202 9175	V21/22/22b
Buzby's Grapevine	041-762 2000	Hst
Byte Back!	081-959 8105	V23
Cargo BBS	0420 475462	V21/22/22bis
Campus Ros	0223 357445	V21/22/22b/23
Castle Bbs	0276 691872	V21/22/22b/23
Cats Board	0628 824852	Hst
Catweazle	081-428 9476	V21/22/22b
Ccl4	0482 655798	V23/23v
Central Bbs	021-711 1451	V21/22/22b/23
Chase Wildcat U.g.	0543 871562	V21/22/22b/23
Chequers	0622 891308	V21/23
Chiba City	0501 44262	
Chipboard	0532 320225	V21/23/23v
Chronos' Lair	021-744 5561	V21/22/22b/23
Clx	081-399 5252	V21/22/22b/23
Clapham Junction	0234 64261	V21/22/22b/23
Cliff's Corner	0502 518274	V21/22/22b/23
Club 1512	081-204 8755	Hst
Co-op Board	081-316 6488	V21/22/22b/23
Co-op Board (crs)	061-832 1961	V21/22/22b/23
Co-op Board (nicc)	0509 826339	V21/22/22b/23
Co-op B'Mouth	0202 532701	V22/22b
Co-op P'Mouth	0705 754851	V21/23
Codeomatic Bbs	0472 250690	V21/22/22b/23
Communitel Demo	081-968 7402	V23v
Compass!!	0942 896661	
C'center Opus	071-928 2005	V21/22/22b
Computers 4 Christ	0926 428294	V21/22/22b/23
Connection	071-978 8540	
Connections	081-903 1309	V21/23/23v
Connex	071-431 3922	Hst
Consett Forum	0207 506179	Hst
Corby Town Opus	0536 205113	V21/22/22b/23
Cornwall Gate Opus	0752 848806	V21/23
Cp/m User Group	0753 868196	V21/22/22b/23
Critical Mass Bbs	0727 56939	V23/23v
Crown Green	071-245 1512	V21/22/22b/23
Crystal Tower	081-886 2813	V21/22/22b/23
Cure	0604 27865	Hst
Cv Database Bb	0427 810211	V22/22b
Cymrutel	0492 49194	
Cynotel	081-346 2816	V23v
D.i.e.	061-434 9907	V21/22/22b/23
Dabbs	0846 693067	V21/22/22b
Dambusters	0203 333195	V21
Dark Crystal	081-207 2989	Hst
Dark Halo	0392 434477	Hst
Dark Side	0446 33729	V21
Darkhaven	0604 413716	V21/22/22b/23
Data Network	081-478 5464	V21/22/22b/23
Datasel/wanderland	081-680 5330	V23
Datasoft Opus Bbs	0460 54615	V21/22/22b/23
Datatrade Qbbs	0536 725180	Hst
Dbase User Group	0532 842213	V21/22/22b
Dce Board	0296 88165	V21/22/22b
Dcs	081-879 7578	V21/22/22b
Deep Thought	0634 683696	Hst/v32
Deeply Wonderful	0455 557261	
Desert	0244 550332	V21/22/22b/23
Diamond Opus	0791 86504	Hst/V32
Diggertel #1	0925 411265	V21/22/22b/23
Digital Matrix	021-705 5187	V21/22/22b/23
Direct-line 1	081-841 1847	V21/22/22b/23
Direct-line 2	081-842 2030	V21/22/22b
Domain Bbs	081-773 2422	V22/22b
Dragon'S Tower	081-202 0709	V21/22/22b
Dunedin Blackhole	031-669 2974	
Dwarfen Realm	0376 501036	V23v
Ebbs-1	0274 541156	V21/23/23v
Eddie'S Bbs	0635 71324	V21/22/22b/23
Empirical Research	0543 675158	V21/22/22b/23
Empyrion	0792 580781	V21/22/22b/23
End To End	0376 84644	V21/22/22b/23
End Zone	0524 752245	V21/22/22b/23
Engineers Workbnch		
	051-327 7036	V21/22/22b
Eureka Gateways	0603 250689	V23/23v
Eureka Ii	081-683 0629	V21/22/22b/23
Exchange S/w	0767 5051	V21/22/22b/23
Eye-2	0525 715789	V21/22/22b/23
Fal Opus	0736 794827	V21/23
Falcon Bbs	081-527 4165	V21/22/22b/23
Family Skeletons	0480 812097	V22b
Fen Tiger	0954 210692 Rb	V23v
Fido Uk1	0734 713909	V22/22b
Firm	0273 513872	V23v
Flight Path	081-759 1957	V22/22b
Focus International	0905 795002	
Focus Tbbs	0303 42690	Hst
Focus Uk	0905 774477	V21/22/22b/23
Forth View	031-660 3474	V21/22/22b/23
Forum-80 Hull	0482 859169	V21
Fox'S Den	0689 27085	V21/22/22b/23
Free Net One	0767 51972	V21/22/22b/23
Freelance Lynx	0480 406261	V21/22/22b/23
Friday The 13th	0642 224833	V21/22/22b/23
Fuzzy Logic	0634 200707	V21/22/22b
Gabbs	0705 524805	V21/22/22b/23
Gallery Qbbs	081-847 2795	V21/22/22b
Game Over	0752 848070	V21/22/22b/23
Games Online	0273 699200	
Gaslamp	0706 358331	V21/22/22b/23
Gaugonzola Bbs	0453 511112	V21/22/22b
Gnome At Home	081-888 8894	V23v
Gods	081-994 9119	V21/23
Golly!	0734 320812	V21/22/22b/23
Goobtel	0602 706307	V21/23
Good Life	081-541 0187	Hst
Gopherit'S Box	061-320-3208	V21/22/23

BBS of the week: AST on-line

While it may not have the most glamorous of images, AST's very own on-line service has been offering an invaluable and practical service to its users for over a year now.

Set up by AST following a similar operation in the US, the service offers its users a variety ofinformation about machine settings, technical bulletins, software and field change data.

What makes the AST On-Line different to comparable services offered by other manufacturers is that it is totally free. Both AST and non AST users can take advantage of its unrestricted service. Also available free are file areas with software updates.

The UK AST On-Line has already provided almost 10,000 software downloads while over a similar period the US version took nearly 90,000 calls.

AST On-Line can be accessed by any computer user with a synchronous modem on 081-847 5389.

Gourmet	0474 536654	V21/22/22b
Grainstore	0905 770198	V21/22/22b
Grenadier	0825 762803	V21/22/22b
Hacker'S Delight	0702 523853	V21/22/23
Halfwits Bbs	0272 340310	V22/22b
Hamnet	0482 465150	V21
Harlequin	061-945 3612	V21/22/22b/23
Hastings Bbs	0424 717919	V21/22/22b/23
Hawk'S Castle	0344 411621	Hst
Hazzard Bb	071-737 0505	V21/22/22b/23
Health-data	081-986 4360	V23v
Heartbeat	0734 352032	
Hilary's Board	0277 233468	V21/23
Hot-air Opus	0579 70347	V21/22/22b
Humber Bridge	0482 850785	V21/22/23
Ichthus (trinity 3)	0734 461466	V21/22/22b/23
	0903 700771	V21/22/22b/23
Index Linked	0227 770403	V21/22/22b
Intel Ace	0832 73003	V23v
Islington Bbs	071-704 0760	Hst
	071-226 1248	V21/22/22b/23
It Contacts	0482 500286	
Jabulon Bb	0254 59352	V21/23/23v
Jersey Bbs	0534 37779	V21/22/22b/23
Jersey Opus	0534 39389	V21/22/22b/23
Jocks Away!	031-225 5368	V21/22/22b/23
Jolly Fisherman	0754 67796	V21/22/22b/23
Jolly Roger	081-742 1640	V21/22/22b/23
Jusavo	0324 32414	V21/23
Just The Place	0705 258694	Hst
K-wood	0608 83458	Hst
Kashmir'S Bbs	0472 347882	V21/22/22b/23
Kernow Bb	0209 821670	V21/22/22b/23
Key-board	0908 668398	Hst
Keydata	081-676 0072	V23v
Kidlington Bbs	0865 56703	V21/22/22b
King Of The Castle	0233 620228	V21/22/23
Kirklees Opus	0484 665415	V21/22/22b/23
Kleopatra's Pyramid	0602 384281	V21/23/23v
Komputer Knidge	0844 274066	V21/22/22b/23
Kybernesis	081-673 7294	V21/22/22b/23
Labyrinth	051-724 4458	V21/23
Lamplight Qbbs	0705 811531	V21/22/22b/23
Laser Tbbs	0532 438430	V21/22/22b
Lau'S Ql Bb	081-751 6096 Rb	V23v
Lightfinger's Place	0202 485723	V21/22/22b/23
Linelight	0580 212043	V23v
Linx Bbs	0522 511277	V21/22/22b/23
Liquorice Allsorts	0633 279965	
Liverpool Mailbox	051-428 8924	V21/22/22b/23
Liverpool Ros	051-931 4271	V21/22/23
Loch lomond	0389 55762	V22/v22bis
Loft	0442 230461	V21/22/22b/23
Log On In Tynedale	0434 606639	V21/22/22b/23
London Bb	081-455 6607	V21/22/22b/23
London City Mag	081-468 7648	V21/23/23v
London Connexion	081-667 1313	V21/22/22b/23
London Embassy	081-366 1778	Hst
London Guest Hse	081-748 0974	Hst/V32
London Mail Centre	081-534 1200	V21/22/22b/23
London Metropolis	081-519 1055	V21/22/22b/23
London Underground		
	081-423 2233	V21/22/22b/23
Loony Bin	0703 787489	V21/23
Mabbs	021-444 8972	V21/22/22b/23
Mach II Bbs	0242 260 685	V21/22/22bis
Mactel Hq (gm Box)	0602 455444	V21/22/22b/23
Mactel Metro	081-543 8017	V21/22/22b/23
Mactel Phoenix	0473 610139	V21/22/22b/23
Madness Bbs	0603 300947	V21/22/22b/23
Magic Castle Bbs	021-430 3761	V21/22/22b/23
Magic Mushroom	0361 83641	V21/22/22b
Magnum	0274 547006	V21/22/22b/23
Magrathea	0376 24402	V23v
Manor	0980 863031	V21/22/22b/23
Marctel	081-346 7150	V21/23/23v
Matrix	051-255 0225	V21/22/22b/23
Mbbs Leconfield	0964 550745	V21/22/22b/23
Mbbs Mitcham Iic	081-648 0018	V21/23
Medway	0634 280031	V21/22/22b
Mektronic Cnsltnts	061-773 7739	V21/22/22b/23
Mercianet	0203 611943	V23v
Merkinstead	061-434 7059	V21/22/22b/23
Merlin	0443 834179	V21/22/22b/23
Mgbbs	0443 733343	V21/23S
Micro Live Bb	081-567 6500	V21
Micro Update	081-877 1529	V21/22/22b/23
Microdeal	0726 65422	V21/22/22b/23
Microlog	0422 71921	V21/22/22b/23
Microview!	081-509 0729	V23v
Midget Gem	0748 834836	V21/23
Midnight Caller	0633 279243	V21/22/22b/23
Mind Boggles	0362 762868	V21/22/22b/23
Mininet 3	0642 672813	V21/22/22b/23
Miracom Support	0473 232540	Hst
Mirage	061-652 1242	V21/22/22b/23
Mirror Ii	0628 810889	V21/22/22b/23
Mirrorworld'quest 1	0683 844044	V23
Mission Impossible	0602 654329	Hst
Mk Board	0908 311005	V21/22/22b/23
Mkbbs	0908 504556	V22/22b
Monkey Tree	0952 677002	V21/22/23
Monusci	0293 545665	V21/22/22b/23
Motor Exchange	0484 435314	V21/22/22b
Multi-bbs	041-649 9043	V21/22/22b/23
Murdoch'S Hangout	021-711 2620	V22/22b
Murky Caverns	081-426 9386	Hst
Mwcfe	0926 421844	V22bis
My Little Phoney	0865 773277	V21/22/23
Nicc Mid-west	0341 250377	V21/22/23
Nite Life	071-976 6807	V21/22/22b
No Escort Required	081-200 3817	Hst
No.1 Bbs	081-958 1689	V21/22/22b
Norpac	0434 608324	V21/22/22b
North Wales Bb	0978 88372	V21/22/22b
North Yorks Qbbs	0423 868065	V22/22b?
Northern Lights	0768 773685	V22/22b
Norwich Onion Bbs	0603 423305	V21/22/22b/23
Nova	0455 553371	V21/22/22b
Nova-net	0274 370760	V22
Odd-ball	081-679 2583	V21/22/22b/23
Open Access	081-427 3974	
Optix	0482 872294	V21/22/22b/23
Organic Garden	081-464 3305	V21/22/22b/23
Out Of The Blue	081-668 7667	V21/22/23
Owl Service	0532 605876	V21/23
P'S & Q'S Tel	051-236 3105	V21/22/22b/23
Pacific Lightning	0732 845338	V22/22b
Packet Bbs	081-547 1479	V21/22/2
Packet Place	0484 435620	V21/22/22b
Palm Beach	0303 265979	V21/22/22b/23
Pazaz Viewdata	0383 620259	V23v
PC Access	071-608 0081	V21/22/22b/23
PC Forum	0322 335348	V21/22/22b/23
PC Serve Shop	081-864 2633	V21/22/22b/23
PC Serve Softnet	0895 420164	V21/22/22b/23
PC Serve Storehouse		
	0494 728094	V21/22/22b/23
Pc-vax Opus	081-800-3549	V21/22/22b/23
Pcamiga Bbs	0602 735119	V22/22b
Peacenet West	0895 448998	V23v
Pecan Software Bbs	0272 248076	V21/22/22b
Penguin	0943 830820	V21/22/22b/23
Phantom	0226 340425	V21v/22v/23
Phoenix	0249 817704	Hst
Piston Popper	0424 853361	
Plug-ole	021-472 0256	V21/22/22b/23
Plus And Minus	0559 322766	V21/22/22b/23
Poacher	0476 62450	V21/22/22b/23
Polynet Bb	071-580 1690	V21/22/22b/23
Port Of Call	081-391 5779	V21/22/22b/23
Power Play Qbbs	0698 423669	V21/22/22b/23
Power Tower	0533 880114	V21/22/22b/23
Prestonet	0772 612462	V23v
Project Bbs	0384 401770	V21/22/22b/23
Prometheus	081-300 7177	V23v
Proximity	0793 480028	V21/22/22b/23
Publishing Shop	091-261 5228	V21/22/22b/23
Purely Pc	0232 645942	V21/22/22b
Pyramid	071-239 0871	V21/22/22b
Pyroto Mountain	0895 59071	V21/22/22b
Really Interesting	0582 414991	
Reflex Bbs	0703 685527	V21/22/22b/23
Regency Bbs	0542 33050	V21/22/23
Remote!pcw	0555 851887	V21/22/22b/23
Rivendell	0602 640488	V21/22/22b/23
Rm Tech. Support	0865 796431	V21/22/22b/23
Road Runner	061-483 4105	V21/22/22b/23
Roamer I	0292 45345	Hst
Royalink Uk	0962 66807	V21/22/22b
SAC Bbs	0242 260685	V21/22/23/22b
Sas Bbs	0742 325232	V21/22/22b/23
Satellite Southwest	0392 53116	V21/22/22b/23
Saturn Bb	0282 23570	
Scabs	0909 479080	V22bis
Scary Monster	0734 320297	Hst
Scot Air	0505 36036	V21/22/22b/23
Scothelp-st	031-313 2734	V21/22/22b/23
Scottish Opus	041-880 7863	V21/22/22b/23
Scottish Wildcat	0674 671141	V21/22/22b/23
Scs One	0444 236002	V22b
Sector	0772 454328	V23v
Semaj Qbbs	0303 862415	V22/22b
Sentinel Bb	0628 781429	V21/22/22b/23
Shades	0342 810905	V23
Shadowfax	0252 528146	V21/22/23
Shadowland	081-897 0488	V21/23
Shareware Library	0424 83654	V22/22b
Shasby'S Lair	0772 561066	Hst
Sherwood Forest	0602 397113	V21/22/22b/23
Short Circuit	0273 462967	Hst
Sid (acorn Service)	0223 243642	V23v
Signal Box	081-337 6583	V21/22/22b/23
Sin Bin	0532 661536	V23
Sirius	081-542 3772	V21/22/22b/23
Sirius Ii	0494 778425	V21/22/22b
Skull's Tower	081-943 1194	V21/22/22b/23
Sky-line	0603 742273	V21/23/23v
Skyline 1	0234 741691	Hst
Softmatic Bbs	0733 322540	V21/22/22
Software Source	0892 661149	V22/22b
Sounds Of Mercia	0203 682896	V21/22/22b
Spanx	0793 480287	V21/22/22b/23
Split Infinity	0342 712248	V23v
Pook Bbs	0268 767365	V21/22/22b/23
Sputnik Spitfire	0501 31754	V21/22/22b
St London Bbs	081-443 2432	V21/23
Stabb	0793 855176	V21/22/23/22b
Staines Bb	0784 465794	V21/22/22b/23
Starbase One	071-733 3992	V21/22/22b/23
Strange Brew!	081-665 5038	V22/22b
Stun User Network	061-429 9803	V21/22/22b/23
Summer Wine	0484 653234	Hst
Sunburn Inc.	021-449 5269	V21/23
Super Ops Bbs	0782 284081	V21/22/22b
Swindon Newc Bb	0793 616683	V21/23
System-c-v	0403 50607	Hst
T.a.b.b.s.	0533 517615	V21/22/23
Tabbs	0225 743797	V21/22/22b/23
Taecomm	0994 6709	V21/23
Taff'S Retreat	0634 4562	V21/22/22b/23
Tardis	0772 27236	V21
Tasque	0355 222664	Hst
Tasug Opus	0904 760129	V21/22/22b/23
Tavern	081-445 6514	V21/22/22b/23
Tbbs-rovoreed	081-542 9767	V21/22/22b/23
Tequila Sunset	0703 867786	V23v
Terminal Net 5	0402 456135	V21/22/22b/23
Terminal-net	081-423 5262	V21/22/22b/23
Tharr Bbs	0234 261804	V22/22b
Third Wave	071-585 3163	V21/23
Three Kings	0354 56267	V21/22/22b
Track 83	0953 851351	V21/22/22b/23
Trans-atlantic Res.	0375 25375	V21/22/22b/23
Transylvania	0274 621668	
Tranz-com Bbs	081-952 6273	V21/23
Trinity I	0392 410210	V21/22/22b/23
Trinity Ii	0367 22764	V21/22/22b/23
Tug Ii	0905 775191	V21/22/22b/23
Twilight Zone	081-788 0884	V21/22/22b/23
Twilight Zone Ii	071-608 1485	Hst
Typesetter's Wkshp	0274 491606	V21/22/23
Uk Healthlink	0942 722984	V21/22/22b/23
Unisys Etoi Bbs	081-453 5739	V21/22/22b/23
Unit One	0285 713688	V21/22/22b
V.i.t.a.s.	021-749 5860	V21/23
Valente'S Bbs	071-978 2078	Hst
Vector System	0329 45824	Hst
Viking East Anglia	0255 503048 Rb	V23v
Village	081-464 2516	V21/22/22b/23
Village Fayre	081-841 5971 Rb	V23
Voyager Bbs	061-725 9580	V21/22/22b/23
White Lightning	0635 37259	V22/22b
Whitehall Pent	071-930 3903	V21/22/22b/23
Wild Imaginings	091-263 4303	V21/22/22b/23
Winchester Remote	0962 69322	V21/22/22b/23
Wolverhampton Ros	0902 745337	V21/22/22b/23
Womble Base	081-979 9606 Rb	V23
Woodgreen Bbs	081-889 5624	V21/23
Yugo Bbs	0734 753648	V21/22/22b/23
Zeus Bbs	0487 710487	V21/22

EXPRESS EXTRA

This is the second of our regular monthly round-ups of second-hand prices, compiled from Shopping *Express* and already some interesting trends are becoming apparent. Read on for those bargains . . .

While Shopping *Express* is undoubtedly the perfect way to track down the best bargains in the computer world, many people are still, perhaps understandably, wary of buying products through mail order or through personal ads. This is mainly because you usually cannot see the item you are buying before you hand over your money.

We do everything in our power to make sure that all the advertisements we run are above board. But here are a few tips designed to take the risk out of buying through the post or over the phone:

- Be precise in describing what you want to buy. Leave no room for error. Feel free to go overboard in double-checking details – make, model, specifications, colour, size, the page number and name of the magazine in which you saw the advertisement etc.
- Confirm the price you are supposed to be paying. If you are phoning a company check whether there are any hidden extras, such as postage and packaging.
- Check how the item will be delivered to you and how long it will take. This is especially important with the reader ads where delivery details are rarely mentioned.
- If you are writing off for the product keep copies of all correspondence. If you are phoning note down details of when you phoned and who you spoke to.
- If possible, enquire about guarantees and servicing. Check the supplier's policy on returns and refunds. With reader ads, it is probably best to make the effort to see the item before you hand over any money.
- It is best to pay by credit card, especially for items over £100, as this provides extra cover under the credit card companies' own insurance schemes. Otherwise use a crossed cheque or postal order. Avoid sending cash at all costs.

SECOND HAND PRICE ROUND-UP

As usual, just a few points to bear in mind:

- The lower priced products are usually accompanied by the words in the ad: "Some repair work necessary."
- The higher priced computers are invariably as part of a package including numerous add-ons – anything from printers to laser guns – and mountains of software.
- Remember that this is only a guide, so if you find a PC for £20 down your local market, bully for you.

	Range	Average	Movement
SPECTRUM	£30-90	£60	↓
SPECTRUM +2	£50-250	£135	↓
SPECTRUM +3	£120-300	£180	↓
QL	£50-79	£67	↓↓
CPC464	£65-350	£200	↑
PCW8256	£70-275	£200	↓↓
8512	£250-450	£350	↑
6128	£200-400	£250	NEW
520STFM	£80-390	£270	↓↓
1040	£190-375	£290	↓↓
520ST	£280-300	£290	↑
STE	£270-399	£310	NEW
LYNX	£130-200	£160	NEW
800XL	£40-120	£90	↓
A500	£200-590	£385	↓↓
PC ENGINE	£95-330	£200	↑
SEGA	£30-100	£80	↓
SEGA MEGADRIVE	£180-360	£265	↑↑
SAM COUPE	£100-270	£150	NEW
LC10 PRINTER	£100-175	£120	NEW

KEY: ↓ = down, ↓↓ = down by over £50, ↑ = up, ↑↑ = up by over £50, NEW = now selling in significant amounts.

● BARGAINS OF THE MONTH

For the kids, Spectrums can be picked up a good price, while an Amstrad PCW 8256 at around £200 should be appealing to would be writers.

Biggest mover was the Sega, down a massive £120 on average and now on a more realistic level than last month. The most over priced machines are the Sega MegaDrive – none of which could be picked up for less than you would pay for it in the shops – and the Amiga 500. Both are usually advertised with bundles of games which tends to push their prices up rather disproportionately. Still the easiest second-hand machines to lay your hands on are the Atari 520STFM and the Amiga 500, while surprisingly the old 520 ST is advertised very little.

SOUTH EAST

Abtek (0722 413337)
8 December – New College, Helstone Road, Swindon.

CEAC (071 738 2400)
1 December – Canterbury College, New Dover Road, Canterbury, Kent.Viewing and testing 9am-10.30am, sale starts 10.30am
7 December – CEAC offices, 8 Grant Road, Clapham Junction, SW11. Viewing 12 noon-8pm on 6 December and 12 noon-5pM on the day, sale starts 6pm.
15 December – CEAC offices, 8 Grant Road, Clapham Junction, SW11. Viewing 9.30am-10.30am, sale starts 11.30am.
21 December – CEAC offices, 8 Grant Road, Clapham Junction, SW11. Viewing 12 noon-8pm 20 December and 12 noon-5pm on the day, sale starts 6pm.

London Computer Auction Rooms (071-794 1116)
8 December – Barnet College, Russell Lane. Viewing from 8.30am, sale starts 11am.

MCD (0276 692260)
8 December – St Paul's School, Green Street, Sunbury-On-Thames. Viewing and testing 5pm-8pm on Friday 7 and from 9am on the day, sale atarts 10.30am.

Technology Computer Services (081-651 3639)
8 December – Kemnal Manor School, Sevenoaks Way, Orpington, Kent. Viewing 9am, sale starts 10.30am
15 December – Kemnal Manor School, Sevenoaks Way, Orpington, Kent. Viewing 9am, sale starts 10.30am

SOUTH WEST

Traderdesk (0527 579120)
8 December – BAWA Leisure Centre, 589 Southmeade Road, Filton, Bristol. Please phone for further details.

MANCHESTER

Computer Connections (0254 813316)
15 December – Bowlers Leisure Complex, Trafford Park, Manchester. ■

DECEMBER AUCTION ROUND-UP

BIDDING TIPS:

- Prices at auctions can be quite a lot lower than in shops, but you will have to pay in full on the day.
- Get a catalogue before hand.
- Set yourself a limit.
- Give your selected items a good looking over and check if there is any warranty. If there isn't you still have the rights of a second-hand buyer – under the Sale of Goods Act you are entitled to a refund if the item is faulty or does not match up to the description given.
- Wait for the auctioneer to call the first bid – he'll come right down if no-one offers.
- Don't be tempted to outbid over the odds – you might come up against a dealer for whom a bargain is just a higher than normal margin.

WHAT'S ON AND WHERE

If you run auctions anywhere, or know of any coming up in your area, please contact us with details so that we can make this listing as comprehensive as possible.

New Computer Express, 30 Monmouth Street, Bath, Avon BA1 2BW.

COMPONENTS CORNER

FLOPPY DRIVES

5¼"	360 @ £34.00
	1.2 @ £38.00
3½"	720 @ £33.00
	1.44 @ £37.00
Cable set	£6.00
3½" fitting kit (to fit 5¼" slot)	£2.50

All sold with full fitting instructions

MS WINDOWS

286 and 386 – new and unregistered (Version 2.1)
Retailing around £60.00
SPECIAL PRICE: £19.99 (286)
£27.99 (386)

DR-DOS

Version 5.0, with all of its benefits.
This month only £65.99

KEYBOARDS

102-key keyboards, auto switching XT/AT, clicking key operation, high quality enhanced keyboard only £35.95

MONITORS

12" amber monochrome	£48.00
14" amber monochrome	£68.00
14" paper white	£72.00
14" CGA (colour)	£135.00
14" monochrome VGA	£98.00
14" colour VGA	£205.00

ALL monitors include tilt and swivel

VIDEO CARDS

Monochrome	£14.99
CGA	£34.99
VGA	£47.99
Super VGA	£75.99

Full fitting instructions included

GOLDSTAR PRINTERS

9-pin, 80 column printer with tractor feed at an amazing £99.99.
Centronics printer cable £9.99.
H-P Deskjet Plus (only a few left!), at an incredible price of £599.00.
Ex demo Sharp laser printer with H-P laser jet emulator. Only a few left at £699.00.

HARD DRIVES

20 MB	£130.00
XT/AT Controller card	£48.00
Cable set	£6.00
40 MB IDE (AT) drive	£175.00
40 MB MFM drive	£180.00
IDE Controller card with cable	£38.00
MFM Controller card with cable	£55.00
IDE Controller card, with cable, 2 serial ports, 1 parallel port, games port and floppy disc controller	£42.00

SAMSUNG AT/286

12/8 MHz, 1.2 floppy, 40 MB hard drive, 1 MB RAM, 102 enhanced keyboard, four expansion slots, serial and parallel ports, colour VGA, 14" colour VGA monitor, MS-DOS manuals, one year guarantee, desk ready with operating manuals.

Recommended retail price £1,699 – Yours for almost half price at £849.00. All come with free 286 Windows.

SOFTWARE

- DacEasy Word – Wordprocessing package (includes dictionary and full manual).
- DacEasy Lucid (Lotus compatible) – Spreadsheet package
- DacEasy DBase (DBase II compatible)
- Individual packages at £24.99 each, or all three for only £69.99 including a free menu system.
- DacEasy Accounting – fully integrated accounts suite encompassing payroll, stock control, nominal ledger etc. £99.99

ALL software provided with FREE helpline.

SHARP QA-25 PROJECTOR PANEL

IBM compatible, Sharp QA-25 computer projection panel.
Place onto an OHP glass to produce images from PC direct to screen.
Panel connected to a CGA video port, allowing projection of the PCs display via an OHP without requiring any software modification. This serves to enlarge text and graphics directly onto a screen. Includes AC adaptor.
Retail price £700.00, our price only £399.00.
PLUS, CGA adaptor card to allow projection panel to be used at the same time as the monitor. Total Package £429.00.

Oxford ACADEMIC Systems

TEL 0993-778077 – ASK FOR SALES DESK.
Or send your order to Oxford Academic Systems
Four Seasons House, 102b Woodstock Road
Witney, Oxford.

Access VISA

ALL TRADE MARKS RECOGNISED.

All prices exclude VAT and delivery.

Oxford ACADEMIC Systems

Free Mouse with every System

A COMPLETE 386 SX SYSTEM WITH COLOUR VGA

386SX COLOUR VGA MONITOR
40 MEGABYTE HARD DISK
1 MEGABYTE RAM
102-KEY KEYBOARD
1.2 OR 1.44 FLOPPY DRIVE
2 SERIAL, 1 PARALLEL PORT

AVAILABLE NOW

This is an American system switchable between 8-16Mhz. Comes fully configured and desk ready. Fully documented, 2 years all parts and labour warranty. The mother board will take up to 4 Meg of RAM on board with the capacity to take 16Meg on a daughter board. The system is 0 wait state and has 8 slots, 6 being free for expansion. The hard drive is a Western Digital 40 Meg sub 25ms IDE device. The video card is a 16 Bit paradise card 256K populated.

£999 +VAT

VISA Access

Other products available
XT 10/12 MHz
AT 12/16MHz
386 20/25/33 MHz
486 25 MHz

Prices exclude VAT & delivery and are correct at time of printing. Warranty does not cover misuse or abuse and normal wear and tear on components.

TELEPHONE US NOW ON:

(0993)-778077

Four Seasons House, 102B Woodstock Road,
Witney, Oxon OX8 6DY.

NAME _____ COMPANY _____

ADDRESS _____ TITLE _____

_____ _____

_____ _____

TEL _____ FAX _____

Are you directly responsible for purchasing? ☐

Tick box if you would like a free Mouse with your system ☐

Please supply me /
386SX at £999 ☐
with 2nd High Density Floppy £1034 ☐
with extra RAM @ £55 per Meg ☐
80 Meg HD add £175 ☐
Maths co-processor add £279 ☐

Sub total ☐
VAT ☐

Total ☐

THE PD COLUMN

There's a wealth of free software out there which is yours for the price of a disk. Adam Waring, takes a look at what wonderful freebies are on offer this week in the weird and wonderful world of Public Domain...

The Run • ST (double sided, 1meg) • The Other PD Library

Remember that amazing car demo on the Amiga? Probably not if you've got an ST and not an Amiga. Well now ST owners can enjoy this amazing demo courtesy of The Other PD Library.

The original Amiga version broke away from the usual mould of wibbly-wobbly scrolling messages. Instead it featured a high speed car chase though oncoming traffic.

A cop car in hot pursuit of a renegade vehicle weaves its way through the traffic with pin-point accuracy. The game is a rolling demo with a limited number of frames creating a sequence which is then repeated.

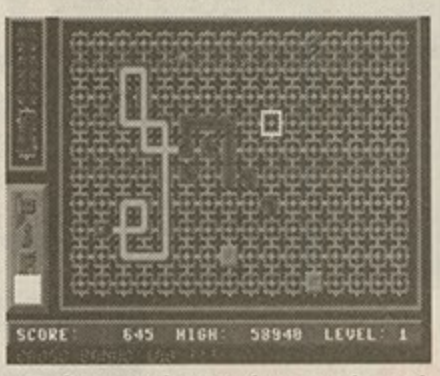
The demo was penned by the famous PD programmer Tobias Richer. As you'd expect from such an accomplished writer the ST version is just as breath-taking as the Amiga version. So take a seat, strap yourself in, and prepare to be stunned.

Games Disk 22 • Amiga • Capricorn Computers • Disk 451

Public Domain games are improving all the time. No longer are they the 'poor man's' version of the leisure side of computing. Some are virtually indistinguishable from their commercial counterparts.

Take *Pipeline* for example. This game is heavily based on the popular arcade game *Pipe Mania*. Your aim is to build a pipeline to contain the flow of some sticky, gooey substance.

To do this you use a variety of pipe segments including horizontal and vertical straights, bends and cross pieces. You plonk them down with the aim of forming one continuous length of piping. The snag is that you have no control over which pieces you are given. You have to work with what you get.



• **Pipeline: *stop the gunge from spreading with various pasta shapes.***

More often than not there's a gap left in the pipe you're building but you just cannot find the right shape with which to fill it. Meanwhile the fluid continues to flow relentlessly, and you have to get rid of the pieces that don't fit by putting them down elsewhere, then wait for one that does.

A window showing the next few pipes appears on the left of the screen. The trick is to position these in places where they'll come in useful later on.

The graphics are more than adequate and the music is good too. All in all it's an extremely polished piece of public domain software.

Pipeline is a very addictive game. I'll confess that I haven't actually progressed any further than the first level yet, but I'll keep on trying...

Three other games come on the same disk. *Jeopard* has had a mention before in these pages, but for those who missed it here's a short description.

Basically, *Jeopard* is a computerised version of the famous board game *Risk*. Players take charge of armies, each with the aim of conquering the world.

The main advantage the computer version has over the board game is that there's none of that messing around with playing cards and fiddly bits of plastic.

Also on the disk is a version of another famous game, *Mastermind*. In it the computer sets the code which the player has to crack using logic and deduction before they run out of a limited number of turns

The game runs from the workbench and can be clicked on and off with ease. This makes it useful to have on your own

ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI

A brilliant offer for readers of New Computer Express!

Devpac ST 2

FROM HISOFT ONLY £44.95

Devpac ST Version 2 is widely regarded as the most powerful assembly language development system for the Atari ST. It incorporates a debugger, stand-alone assembler and a fast linker

DevpacST 2 version 2

Complete Assembler/Debugger System for the Atari ST Computers

IT INCLUDES:

➤ **GenST** Assembler is a high-performance, full-featured, two-pass Motorola standard macro assembler at up to 75,000 lines per minute. It has multiple modules and sections, repeat loops and macro calls that maybe nested as deeply as memory allows.

➤ **MonST** Debugger is an advanced symbolic monitor, debugger and disassembler. Now in addition it can offer Multiple window display, full expression evaluator, up to 22 significant characters in symbols, viewing of source files and conditional breakpoints.

➤ **Example Files** of a wide variety including a full GEM type windowing application and an example desk accessory.

The package comes complete with an extensive ring-bound manual plus notes on the various operating system levels and debugging strategies.

SAVE £15

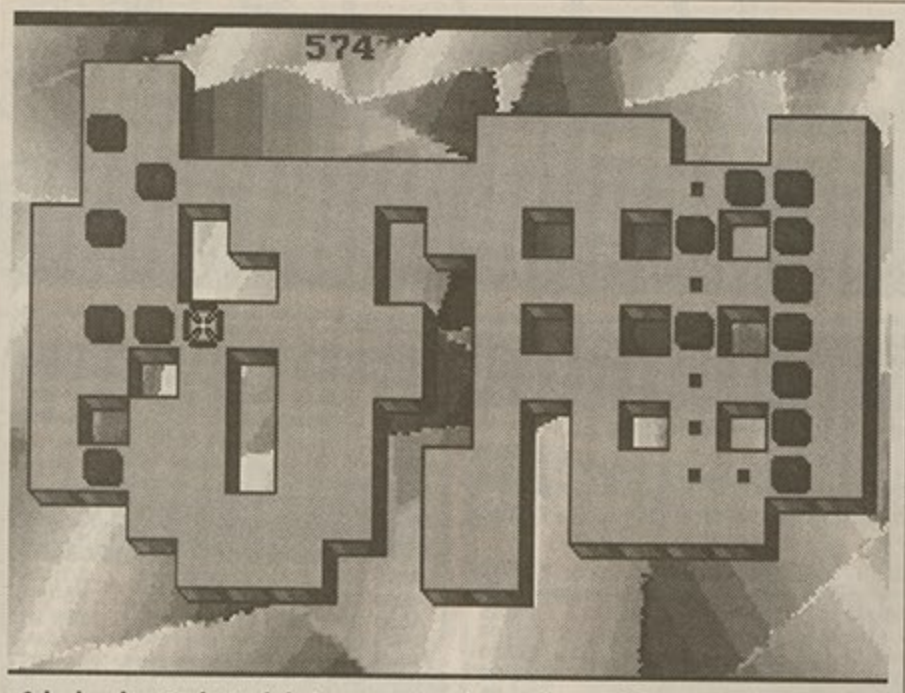
Yes, I would like to order a copy of Devpac ST 2
Name _____
Address _____
_____
_____
Tel No _____

I would like to pay by *Access Visa Cheque PO*
Please debit my credit card
No _____
Expiry Date _____
Tel. No _____

Send & make cheques payable to Future Publishing, FREEPOST, The Old Barn, SOMERTON, Somerset. TA11 7BR

Order now by phone from the NCE mail order service or send the coupon to our FREEPOST address.

HOTLINE NUMBER 0458 74011



• Sokosky: *deceptively simple logic game, easy to learn and impossible to master*

utilities disk, so you can kill a few seconds between more serious work.

The final game, *Sokosky*, is a logic game which takes plenty of brain power to master. Basically you have to push tiles onto dots. This may sound easy but believe me, it's not.

What is easy, though, is getting the tiles trapped. Push one against the other and it becomes jammed. The same thing happens if you push one against a wall. What starts off looking very simple indeed is, in fact, extremely difficult and frustrating. Just when you're sure that you've solved the blasted thing, you realise there's absolutely no way you're ever going to be able to get that last stupid one to fit. Grrr!

Sokosky looks very simple and basic on first viewing. Appearances can be deceptive, however, and of all the games on the disk, I spent the most time playing this one.

PD LIBRARY FOR SAM

Owners of the Sam Coupé must be fed up that they can only run Spectrum games on their technically superior computers. All this has changed, though, because now there is dedicated – and, more importantly, free – software available for them. Turbo PD is a library which specialises in public domain programs for the late MGT's baby.

The library boasts seven disks so far but I understand that many more are being added all the time. The library is doing very well considering it is supporting such a minority machine. Games, demos and utilities can all be found on the disks.

I was sent a copy of one of the games, called *Samtris*. Unfortunately, the office coupé is lying in bits on Technical Editor Keith Pomfret's desk at the moment but I'll take a look at *Samtris* as soon as the machine is re-assembled. I'm sure you will be able to guess what kind of game it is, though.

All Turbo's disks cost just £2. Cheques should be made payable to A Betts, who can be contacted at Turbo PD Library, 8 Healy, Lakeside, Tamworth, Staffs B77 2RF.

COMING SOON...

Christmas is coming, *Express* is getting fat. And for the festive season your favourite computer weekly is planning a bumper Christmas issue.

Amongst the yuletide treats there'll be a 'Best of 1990' PD feature in which we'll be compiling a list of the top ten PD packages for all major machines over the last year.

Regular readers of this column will realise that it hasn't yet been running a whole year. It's just possible that I may have missed out one or two of the best PD programs around.

So if your library has an amazing PD program that hasn't been mentioned in the Column, then I'd very much like to see it.

Whatever machine you cater for, I need to see the best you've got, whether they're games, utilities, serious or just plain unusual.

Send your stuff to: Santa's PD Column, *NCE*, Future Publishing, 30 Monmouth Street, Bath BA1 2BW. ■

WHERE TO GO

Capricorn Computers, 35 Warick Road, Olton, Solihull, West Midlands B92 7HS. Telephone 021-707 0381. Ram some Amiga PD into your Amiga's disk drive. Prices are £2.50, or £1.50 if you include a blank disk with your order.

The Other PD Library, 108 Kenmare Road, Wavertree, Liverpool L15 3HQ. Telephone 051-734 4465. If you've looked all over the place and can't kind what you need, why not try The Other PD Library? Prices start at £2.50.

Lorenzo's Domain
Amiga P.D. & Shareware

OUT NOW NEW MEGA MAGAZINE/CATALOGUE DISK
Free with every order or 75p without order

MUSIC
102: Lorenzos music utility disk. Rippers and Players galore.
111: Rave Demo (1 meg) by H.C.C
126: Arnold Schwarzennegar. Total Remix. (2 Disks). Very funny.
136: Digital Concert 6 by Flash Productions. The latest 8 minute mix.
138: Sound of Silents. A disk with some great tunes by the Silents.
139: Alcatraz Music Disk. An excellent Remix of "You Got The Power"
140: Newtons Music Disk. 6 Good songs with some crazy equalisers.
141: Dmob Music 3: Their best so far. Quite excellent.
144: 100 Greatest C64 tunes: All your old favourites.

DEMOS, INTROS & MEGADEMOS
206: 5 major demos inc: The Revenge of Babbnassen, Cebit90 by Red Sector
209: Scoopex: Mental Hangover
223: DeathStar Mega Demo (2 Disks)
226: Freddy Krugar Rap.
228: Robocop demo.
229: RAF Megademo: (2 disks): Some great animation on this one
230: Red Sector Megademo: (2 disks): Simply one of the best around.
232: Safe Sex Demo: Absolutely hillarious and it isn't even X-Rated.
239: Goldfire Megademo: New first demo from Goldfire. Excellent.
247: Crionics Neverwhere. (1 MEG). A disk that deserves to be called MEGA
248: Crionics Megademo. 3 Parts all great. The Madonna Animation especially.
249: Cave Compact. (1 MEG). A compilation of really good demos.
250: Brainstorm Megademo. (2 DISKS).
251: Giants Megademo. (2 disks).
253: Rebels Megademo. Hot stuff from beginning to end.

ALL DISKS 99p each

GRAPHICS PICCYS AND ANIMATION
308: Nightbreed Slideshow by H.C.C.: These are the best pics I've seen yet.
315: Miller Lite Advert.
319: Neighbours Slideshow. Full of hillarious captions.
407: Walker 1 Animation (1 Meg). Been around for a while. A Classic.
408: Walker 2 Animation (1 Meg). Yep! You got it another Classic.
412: The Education of Cool Cougar (1 Meg): Brilliant
420: Fractal Flight. (1 Meg): Demo of Fractal Flight by Hypercube. Wow!!
425: Raiders of the Lost Arc. (1 Meg). Best sequence from the film.
430: Dragons Lair 2. Time Warp Demo: (512K). Great demo of the new game.

GENERAL
500: Jazzbench: Jazz up your workbench
501: Fonts Disk: Loads of fonts
502: Wordprocessor
503: Spreadsheet.
504: Database.
506: Dope Intro writer.
507: Virus Killer disk.
508: Tetra copier. New and very very good.
511: North C: Complete programming language by Steve Hawtin
512: Complete C Manual: (2 Disks): 200 Page manual with 70 example progs.
513: Clip Art Collection. (6 Disks). All the Clip Art you'll ever need.

GAMES
702: Star Trek 3: (2 Disks): absolutely fantastic.....
707: Paranoid: Arkanoid like game with its own screen editor.
709: Pseudo Cop. Wooooooooow!!. Absolutely brill.
710: Flaschbier. A very good Boulderdash look alike.

ONE DISK FREE WITH EVERY 10 ORDERED

No membership. FREE catalogue with every order. When you choose from Lorenzo's Domain you can be sure of getting the best VIRUS FREE P.D around. We aim to have your order back in the post within 2 hours. Delivery on PD disks 50p on total order. Delivery on other items £1.50 on total order. Send your order with a cheque or P.O to:

LORENZO'S DOMAIN
39 COLQUHOUN SQUARE, HELENSBURGH, G84 8AQ

SHAREWARE IN YORKSHIRE

Pack or single programs: -
All IBM format 5.25 or 3.5
Packs include: - Autocad Utilities, D BASn, Clipper, Turbo Pascal, Turbo-C Quick BASIC, Turbo-BASIC, Wordperfect-Tools, Symphoney Tools, Ventura-Publishing, MS-Windows, Programming Tools

All our program packs 1/2 price until December 20th

New Amiga & Atari lists

+ MANY MANY MORE

Details:
SJG SYSTEMS,
109 MILLFIELD LANE,
TANG HALL, YORK
YO3 0JP
TEL: 0904 430320/415246
*** HARDWARE PRICES ON REQUEST ***

Evesham Micros

ALL PRICES INCLUDE VAT AND DELIVERY

Buy with confidence from one of the longest established companies in their field, with a reputation for good service and prices. We have invested heavily in a computer system to enable our Telesales staff to provide up-to-the-minute stock information, coupled with highly efficient order processing. Our fully equipped Workshop enables us to carry out almost any repair on our premises. We feel sure that you won't be disappointed if you choose Evesham Micros.

AMIGA SPECIAL DEALS

Our 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

Amiga 500 512K Screen Gems pack including 'Back to the Future 2', 'Night Breed', 'The Beast 2', 'Deluxe Paint 2', Days of Thunder' and TV modulator £379.00

Amiga 500 1Mb Screen Gems pack upgraded to a full 1Mb using our 512K RAM/Clock £409.00

Amiga 500 Screen Gems pack with Drive includes our high quality 3½" External Drive £430.00

Amiga 500 1Mb Screen Gems pack with Drive features our 512K RAM/Clock Upgrade *plus* our 2nd 3½" External Drive £465.00

Vidi-Amiga video digitiser package	£95.00	Philips CM8833 colour monitor inc.cable	£249.00
Vidi-Chrome colour accessory for Vidi-Amiga	£16.00	Kickstart 1.3 Upgrade pack	£29.95
MiniGEN Genlock Adapter	£95.00	AMOS Game Creator	£37.50
Contriver Hi-Res replacement Mouse package	£22.95	Music-X incredibly powerful music package	£129.00
Naksha Hi-Res replacement Mouse package	£28.95	Home Accounts (Digita)	£18.95
Kraft Trackball (plugs into mouse/joystick port)	£44.95	Amiga 500 dust cover	£4.95

CBM A590 HARD DRIVE

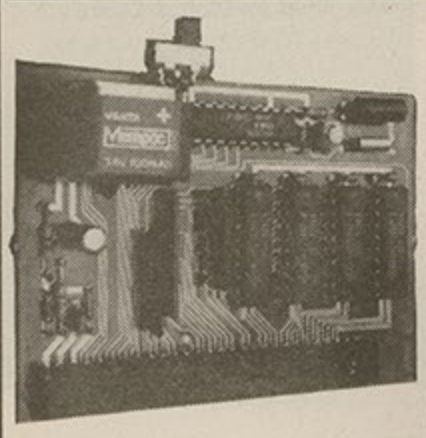
Good quality Commodore 20Mb Hard Disk, including its own PSU and built-in cooling fan. Features sockets for up to 2Mb of RAM expansion (see below). Autoboots when used with Kickstart 1.3.

A590 (20Mb) only £289
40mb version only £409

A590 512K RAM Upgrade kit £31.95
A590 1Mb RAM Upgrade kit £59.95
A590 2Mb RAM Upgrade kit £99.95
RAM upgrades fitted free when bought with A590.

Genuine replacement Commodore Amiga PSU .. £39.95

A500 SOLDERLESS RAM UPGRADES



512K MEMORY UPGRADE

ONLY £34.95
including VAT & delivery

512K RAM/CLOCK EXPANSION FEATURES :

- ☆ Direct replacement for the A501 expansion
- ☆ Convenient On / Off Memory Switch
- ☆ Auto-recharging battery backed Real-time Clock
- ☆ Compact unit size : Ultra-neat design
- ☆ Only 4 low power consumption FASTRAMs

512K RAM expansion without clock only £29.95

NEW! 1.5MB RAM BOARD

- ☆ Fully populated board increases total RAM to 2MB !
- ☆ Plugs into the trapdoor expansion (as with 512K unit)
- ☆ Auto-recharging Battery Backed Real-Time Clock
- ☆ Socketed FASTRAM ICs for accommodation up to 1.5MB

Unpopulated RAM Expansion Board with Clock £39.95
RAM Board with Clock, with 512K FASTRAM installed £59.95
RAM Board with Clock, with 1Mb FASTRAM installed £74.95
RAM Board with Clock, with full 1.5Mb FASTRAM installed £89.95
N.B. Requires Kickstart 1.3 to operate - Kickstart 1.3 Upgrade available from us for £29.95

SPECIAL NEW AMIGA PRODUCTS

MIDI INTERFACE Only £19.95

GET CONNECTED !
Our new fully compatible, high quality MIDI interface connects directly with the Amiga serial port and provides IN, OUT and THRU ports for good flexibility. Features LED indicators on each port to assist ease of use and also for diagnostic purposes. Superb compact design.

'TESSA' speaker system Only £34.95

HEAR THAT STEREO !
Your Amiga produces excellent quality hi-fi stereo sound. Enjoy high quality, stereo sound reproduction to the full with our great new twin speaker system, TESSA (twin ergonomic stereo speakers, amplified). Incorporates a specially designed, quality 2.5 watt per channel amplifier, including volume control, to obtain the best sound.

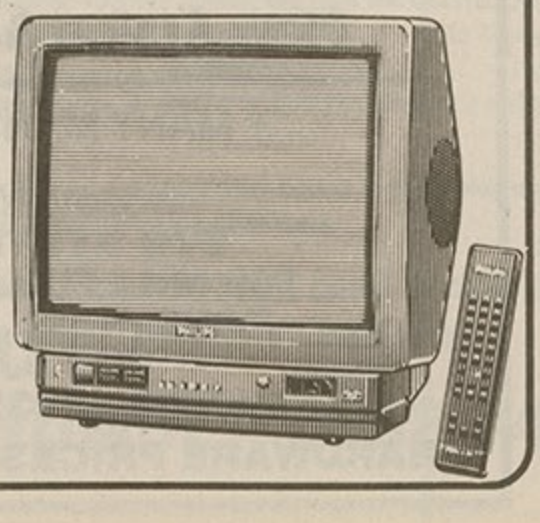
STEREO SOUND SAMPLER Only £29.95

S-S-SAMPLE THIS !
Offering full compatibility with almost any Amiga audio digitiser software, our Sound Sampler features excellent circuitry, yielding professional results. The main A/D converter gives a digitising resolution of up to 50KHz, with a fast slew rate. Two phono sockets are provided for stereo line input, plus an option for microphone. Adjustable gain is achieved with built-in control knob. Complete with public domain disk containing sound sampling applications/utilities.

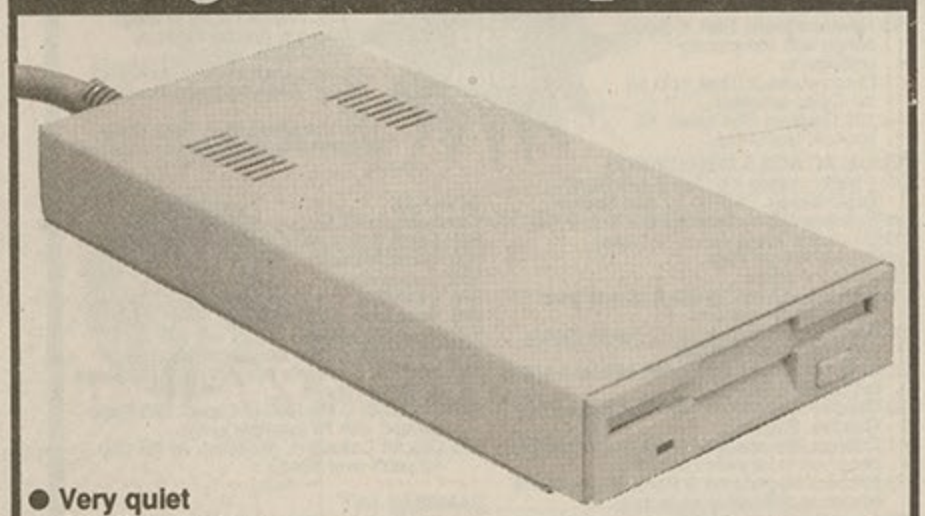
PHILIPS 15" FST TV/Monitor (MODEL 2530)

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 !

£269.00
Includes VAT, delivery and computer connection lead



Amiga & ST 3½" Drives



- Very quiet
- Slimline design
- Cooling Vents
- Sleek, high quality metal casing
- Quality Teac / Citizen mechanism
- On / Off switch on rear of drive
- Throughport connector (Amiga)
- External plug-in PSU (Atari ST)
- Full 1Mb unformatted capacity
- Long reach connection cable

ATARI ST VERSION : £64.95
AMIGA VERSION : £59.95

5¼" External 40/80 Track Drive also available, only £99.00

Greater London Computers

Professional Computer Dealers for Professional Computer Buyers.

What We Offer

A wide range of computer equipment, that we think is hard to match anywhere.

3 Day Credit Accounts for our Business Customers.

Regular new Catalogues listing updated prices and all the new products.

A range of computer supplies, ribbons by original manufacturers only, no cheap imitations.

A range of general office equipment to augment your Computer, such as Telephones and Fax machines.

Regular calls from our friendly and helpful Sales team.

Telephone support helpline from our Technical Support department.

If you're not with GLC then you should be, call Nigel Hodson or Mike Sleath on 081-527-0405 today, or fill in the form below.

Greater London Computers, 481 Hale End Road, Highams Park, Chingford, London E4 9PT.
Tel: 081-527-0405 Fax: 081-503-2341

Name: .....
Company: .....
Position: .....
Address: .....
.....
.....
Telephone: .....

What computer do you currently use? .....
.....
What software do you currently use? .....
.....
What computer equipment will you require in the next six months? .....
.....

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! Atari drive extra

I have just acquired a pair of elderly 5.25-inch floppy disk drives and I need some information to enable me to use them with my 520STFM.

The drives are Mirropolis model 1115-1V. They are large, old fashioned looking (single side?) American beasties. The power supply connections (+12, +5, 0V) are self explanatory, but what I need is the pin out for the PCB edge connector. It has 17 underside connections which are all common (ground?) numbered odd (1-33) and top contacts (2-34) even numbers. I need to know which contact number to wire to each of the 14 pins of the Atari connecting plug.

I would be most grateful for any information you can give me about these drives. Also do you know of a supplier of Atari type 14-pin plugs or leads.
Brian Sherry, Laindon.

The 5.25-inch drives you possess aren't in any of our catalogues although the connectors seem to be normal. Get a competent computer repairer to check the pin outs for you and check the capacity. Even if they're a strange capacity it may be possible to use a software patch to run them, but with extra ST drives only costing £45.50 (if you look hard), it may be that the cost outweighs the benefits.

The plugs and leads that you are after can be obtained from RSD on 0992 584205.

HELP! Address printer

The only job that is truly computerised in our office is printing the sticky labels to go on envelopes. We address 600 envelopes a day and at the weekend, the same sticky label program is used for our weekly stock update.

The problem isn't so much the weekend when there is only one person using the printer, but during the week when our printer has to be taken off line and be adjusted for the labels. During the time that the labels are being printed, no one can have access to the printer for letters, reports and such like.

It wasn't too bad initially. We are a well organised company and we allocated time slots to every use of the hardware. As business increases, the leeway between those time slots is gobbled up and we currently have to allocate ten hours of overtime per week in order to get the labels set and printed.

We know that we must get another printer and we have an XT clone that isn't used and could be set up purely to drive a dedicated printer for labels. With space at a premium, I wonder if you can recommend a simple printer that could do the one job of labels.
Marion Ox, Crawley

I am loathed to recommend a printer specifically for one job. The situation that you have described is a small fast developing company. If your main printer goes pop and the only other alternative is the one that you use for labels, you will be wondering where the paddle is if your label printer can only print labels. My advice would be to invest in a good brand name printer that may be slightly over specified for the job, but would be a good emergency back up for the main one if that blew up or otherwise chose to take a day off.

If your needs were slightly different and you had redundancy already built in to your printing requirements, I would suggest a nippy little widget from Seikosha. The Seikosha Smart Label Printer is a teeny little software driven dedicated printer that takes up very little space, doesn't make a lot of racket and can do labels, bar codes, and all the other sticky jobs that a printer is usually needed for. It comes with its own software and will run on any IBM PX XT, AT, PS/2 or true compatible. We tried it on half a dozen machines around the office without any problems.

Seikosha is on 0753 685873.

HELP! Virus insight

Could you recommend a book on viruses that isn't too heavy on the brain, will give me an insight into the problem and can tell me what to do about them. I already have information on Solomon's virus service but want to try something different.
John Stott, Redcar Cleveland

What's wrong with Dr Solomon? We've always found him to be more than adequate, easily comprehensible and very approachable. If you honestly don't want the country's leading virus-fettler's advice I suppose you have your reasons.

The current book catalogue lists several virus specific books, but the one that comes closest to your needs is *The Computer Virus Handbook* by RB Levin. It is published by Osborne McGraw-Hill and has the number ISBN 0-07-881647-5. It's an American import with a cover price of $24.95, but as with all US books, shop around for a good price. WH Smith says that it can get it easily enough but we couldn't find anyone local with it on the shelves so be prepared to wait the statutory 14 or so days after it's ordered.

HELP! Piracy again

I have bought an Amiga second-hand and it came with some useful utilities. Amongst these was a program called *X-Copy* which I used to back up all my friends' games. I got a virus on a disk and it has trashed most of my games disks and made them unplayable.

Unfortunately, *X-Copy* was trashed too so I can't start again. I only have about 30 games left. What should I do?
Adrian Kelly, No Address supplied (cowardly ploy)

You should get a good solicitor. If you copy games you are breaking the law. If you had bothered to put an address on the letter we would have been able to send Bob Hay and the team from FAST (Federation Against Software Theft) along to lend a helping hand with the cataloguing of your remaining illegal disks.

The only thing that you can do now is get a good Virus killer (*Virus X* or suchlike) from a PD library and go through your disks checking them for nasties. The games with their copy protected loaders will have to be trashed because the virus killer will mistake their non-standard bootblocks for viruses and render them unusable. Still that's not a great price to pay as you didn't pay anything in the first place!

HELP! driver diversity

I have two printer orientated questions I wish to ask.

Firstly, I have recently bought a Citizen Swift 24 colour printer for connection to an Amiga 500. After getting familiar with the highly complex menu system which this printer employs, I now have to contend with software difficulties.

I am having particular problems with my trusted word processor, ProWrite version 2.0. I can get my Citizen to print both NQL and draft covering all 80 columns, but when I want something printed in the standard print mode, used for coloured graphics with text, the printer then starts printing the output half way across the page. When the print head reaches the furthest right hand position it makes a very disturbing growling noise then jumps to the middle of the next line.

I have tried everything to stop it - altering the built in menu, printer drivers, preference settings, even repositioning the paper, but all have failed to solve my problem. I am desperate.

My second printer problem concerns a Watanabe X-Y Plotter model MP1000. It's a serial printer with a standard RS232C interface. My problem is I know of no printer drivers, no software or anything enabling me to use this plotter.

In desperation I wrote a short program on Amiga basic telling the plotter to print the letter 'A'. After running it all I got was a load of numbers and letters, none of which made any sense. I hope you can help me with both these problems.
Noel Hardwick, Halesowen.

You've hit the nail on the head when you say that the problem is one of printer drivers. The Amiga is well specified in that department with dozens of PD libraries clambering over each other for the honour of filling your needs.

You could choose any that are advertising in the computer press, but here's one to start with: Amiganuts, 169, Dale Valley Road,Southampton.

HELP! Amstrad extra

I have recently bought a second drive for my Amstrad PPC640S and after fitting it in accordance with the instructions and powering up the computer both drives were recognised by the computer, but a message "put system disk in drive A" appeared. No matter what I did this message still came up. If I put a disk in each drive then the computer tried to access drive A ten times before the message appeared.

After fitting the new drive in place of the original drive and not connecting the second drive the computer worked OK recognising the system disk.

Have you any suggestions, please?
Arthur Wilkes, Durham City.

Sounds like you've got a dose of "Whoops, I ssem to have forgot to send the drive select jumpers properly" syn-

drome. Most drives have jumpers that can be set in four positions (0,1,2,3) Drive A is 0, Drive B is 1 and so on. Make sure that you've got this sorted. If it still doesn't work, there could be jumpers or DIP switches on the controller or board that need setting. Check your manuals foer the correct setting. finally, make sure that your connectors are clean and that you are trying to connect the correct things together. (Manuals again!) There, it works now, doesn't it.

■ HELP! PCW rainbow

VGA monitors get talked about in all of the PC magazines and the pictures of them are better than the PCW display. How do I add a VGA monitor to my PCW? The local computer shop was unhelpful, telling me to upgrade to a 9512 for a a paper white monitor.

Paper white isn't good enough. I want to see what my PCW programs look like in colour. How can I put a colour VGA monitor on my 8512.
Alma Dearwick, Urmston

You don't. The PCW is incapable of displaying colour and has no way to address the analogue input of a VGA monitor. Your dealer may have sounded disheartening, but was being realistic. The PCW programs that you are using don't have any colour so even if you could weld the desirable VGA monitor to it, you'd not get colour.

■ HELP! Green Berries

I have a PC type computer that my wife uses for letters, the kids use for games and I pick up the bills for. Is there any way that I can use it to record the precipitation of noxious materials on flowers, leaves and berries as part of a survey that I'm doing on the adverse effects of chemical and nuclear polution? I need to be able to type in a single word i.e. plutonium and get all the references on the subject.
Granville Cooch, Sidmouth Devon.

Any database should do the job for you. check up with your local computer shop to see which one they know best and if it's within your budget, buy it. Databases can be a fiddly thing to learn so it's important that you choose one that your shop can train and support you on.

■ TIP! Merger

There seem to be two schools of thought that like different sorts of help. There's the traditional ones (like me) who own a BBC and used to hang on to KG's every word There are the young pretenders (like yourself) who ridicule everything sensible and don't ever use proper computer printed diagrams.

I know that your readers like the lightweight approach to technical help, but . . .
Miles Drewry, Whitehaven, Cumbria.

I had to use the editorial knife on that letter as it went on for 2,500 words. I feel sorry for the freelance typist who had to struggle to type it in only to see it ripped to bits. To condense Mr Drewry's letter into a couple of sentences:

1) He didn't like the mouse doubler done for Circuit City by Pat Mac in my absence.

2) He had an alternative that he wanted me to print. (I won't because like most of his letter it was unadulterated effluent.)

So, Mr Drewry, pin yer eyelids back and take a look at a real solution. Several readers commented that there may be a more elegant way of doing it, but Pat did have to organise it in a hurry when I scooted of to the Sov-bloc for a spell in the Lubianka.

The best solution to the mouse doubling scenario is in Circuit City this week.

■ HELP! On line on-line

Most of my reports are typed on the train going to or from meetings. The disk from my Tosh is given to a secretary and after spell checking etc, the report is output through a Laserjet. From time to time, I'm away from the office for a couple of weeks and the only way to get the work done without any outside help is to post or courier the disk back to HQ.

There must be a more satisfactory way to do this and I'm wondering if I can connect a portable phone to my tosh and send the data back to the office that way.
Allan Maudslay, Coventry

It's possible, but it isn't quite as simple as you think. We've tried several ways of getting data to and from remote locations and it can be difficult.

The first attempt was using an acoustic coupler and a portable modem. This allowed us to log on to an on-line service, but the acoustic connection allowed a lot of corruption to get on the line. It worked from the top of a big hill at a quiet time of day, but on the train and a National Express coach, it wasn't so clever. From the passenger seat of a car on the M25 we had slightly better results but in order to guarantee error free communication, stronger medicine was called for.

A telephone call to RACAL, the nice vodaphone folks, confirmed that they do a dedicated cellphone modem that will connect to certain portable phones and uses a system akin to packet radio with stringent checksumming to ensure data integrity. What this means is that the data is collected into 'packets', an algorithm checks its content and is attached to the packet. This is squirted along the cell phone radio signal and 'caught' by a receiver that 'opens' the packet of data, checks what's in it against the checksum and if all's well, places it in a received file. If there's a problem, it sends a signal back to the transmitting modem and asks for the packet again. This carries on until the packet is received without error.

Using this system, your document should get there without corruption. RACAL is on 0635 503236.

That however is only half of the story. Once you've got your mobile system up and working, you'll have to have a method of receiving data. The simplest way would be to have a modem attached to a spare PC in the office and have the PC running host software. This would work like a private BBS with you pinning your messages on to the board and your secretarial staff taking them off.

Watch *Express* for a hands on review of the RACAL portable cell phone modem.

■ HELP! Eraserhead

Computers isn't my subject. The PC that I bought for reports and letters has worked well but I get an error message now when I try to save letters. The data disk must have become corrupted. It has worked OK for just a year and now that there isn't a warranty it has chosen to be full. When I type dir (in Portext) I get a list of files and I have no trouble loading or printing any of them. When I try to save I get a disk full error. How can I fix the data disk?
John Willey, Plypton, Devon

It sounds as if your data disk is full. If this is the case, follow the instructions that you used to make your original data disk and you'll have a shiny new empty disk ready for the next years work.

■ Help! Power

How can I get my computer to work away from the office. The budget won't stretch to a lap top or other portable so I'm stuck with a 286 AT clone. I have seen TVs coffee makers and even videos, microwaves and fridges (on buses) running from vehicle electrics. Is it possible to make a PC work in the back of my Espace without towing a huge generator around. I don't think that that would work anyway because of the mucky electric from a jenny.
Andrew Fenton, Nantwich, Cheshire.

Yup, you can now plug into what you get into. The implement that will do your bidding is an inverter. This does the necessary by taking car power (12v dc) and turning it into ac before transforming it by a factor of 20:1 to the dangerous mains stuff. It would be crazy to attempt to build one from scratch so we asked Mr Maplin to send us the bits and some instructions on how to weld them together.

The how to turn Tech Tip's Roller into a power station project starts in Circuit City this week. ■

■ HELP! Jerusalem Joystick

Is there a simple joystick solution to run games on a PC? I use an XT from IBM and it is very difficult to operate the directional parts of games from the numeric keypad on the right of the keyboard. I don't want to mess about with cards and things as I had a major problem fitting a soundcard that ended up with my dealer charging £47 plus VAT to sort it out.
Charles Kunz, Dorchester, Dorset.

Up until a day or so ago I would have wibbled on about how easy it is to fit a games port to a PC etc, but as you're obviously not happy with any idea that involves a screwdriver and the bonnet up, think yourself lucky that we're on the list for international whizzy products.

Dropping on the floor with a thud (or even thudlet) came the Keestick, the latest computer peripheral from the land of ripe oranges and friendly Kibbutzs.

Keestick is a simple device that sits on the numeric cluster and operates 2,4,6 and 6 depending on which way it's pushed. This gives you the sensitivity of a joystick while retaining the use of the cluster by lifting it off.

Keestick and more details of other such clever twidgets from Israel can be had from BIPAC, the Britain/Israel Public Affairs office on 071-490 5373.

• Keestick gives you the seasitive touch

MAIL ORDER

0908 564369

Amiga A500 Screen Gems Pack
£379 inc VAT & Next day Courier

Screen Gems Pack includes:

Amiga 500 512K keyboard with built in 1 Meg disk drive • Free TV Modulator worth £24.99 allowing you to use the Amiga with a normal TV • Joystick, mouse mat + 10 blank disks, mouse + mains plug • Amiga basic, Amiga extra's 13 workbench 13 *PLUS* Amiga step by step tutorial • With a further four new releases • Shadow Beast II, Back to the Future II, Nightbreed and Days of Thunder

Amiga A500 Screen Gems Pack Extra
£399 inc VAT & Next day Courier

Screen Gems Pack includes:

Amiga 500 512K keyboard with built in 1 Meg disk drive • Free TV Modulator worth £24.99 allowing you to use the Amiga with a normal TV • 10 free games *PLUS* software has a potential RRP of £200 • Joystick, mouse mat + 10 blank disks, mouse + mains plug • Amiga basic, Amiga extra's 13 workbench 13 *PLUS* Amiga step by step tutorial • With a further four new releases • Shadow Beast II, Back to the Future II, Nightbreed and Days of Thunder

Amiga 1500

The Amiga 1500 Personal Home Computer is the ultimate in Personal Home Computers for the whole family. Platinum works – integrated – Word Processor, Database and spreadsheet. Deluxe Paint 3 – the ultimate in paint packages. Populous and Sim City – State of the Art strategy games. Battlechess – the chess programme amongst all chess programmes. Their Finest Hour – The battle of Britain brought to life in a technical flight sim. A1084's stereo colour monitor to get the best from your Amiga. The Amiga 1500 has been designed around the already popular Amiga A500, but with hardware facilities that would put any mid range business machine to shame.

Please call for further details
£1049.00 inc VAT + next day courier service.

AMIGA A500 CLASS OF THE 1990's BUSINESS + EDUCATIONAL PACK
£499.00 inc VAT & next day courier

FEATURES

Amiga A500 TV Modulator • Midi Interface-Software • Kind Words II wordproc'or • Page Setter DTP • Super Base Personal Database • Maxplan 500 spreadsheet • Amiga Logo BBC Emulator Deluxe Paint II • Mouse mat 10 Blank Disks and disk wallet

AMIGA A500 SOUND & VISION PACK
£399 inc VAT & next day courier

Bat Games Pack includes: 10 free games inc Blasteroids, Wizball, Menace, Buggy Boy • Amiga A500 512K keyboard with built in 1 Megabyte Disk Drive. • Free TV Modulator worth £24.99 allowing you to use the Amiga with a normal TV • Deluxe Paint 11 Graphics Package • Shadow of Beast II horizontal scrolling games software • Back to the future film action software • Nightbreed state of the art graphical arcade action • Free joystick, mouse mat and 10 blank disks • Amiga Basic Amiga Extras 1.3 Workbench 1.3 PLUS the Amiga Step by Step Tutorial • All leads manuals PLUS Mouse and Mainsplug • PLUS Days of Thunder serious fast action games software

HALF MEGS – Quality four chip ram board with complete utility disk support with software on/off switch.
£34.99

AMIGA + ST DRIVES – A powerful 880K formatted drive with an external on/off switch, anti clicking and daisy chain facility.
£59.99

MONITORS

Commodore Amiga A1084 Stereo Monitor inc lead.....£269.00

Phillips CM8833 stereo colour monitor inc lead for ST or Amiga.....£259.00

4096 coloured stereo monitor with first class reproduction including leads for ST & Amiga.....£259.00

Naksha Mouse – Quality micro switched, accurate Amiga ST OR Amstrad PC Mouse
£26.00

Contriver Mouse – The perfect direct replacement mouse for the ST or Amiga
£18.00

PRINTERS

Star LC24 1024 Pin incl lead ST/ Amiga.....£249.00

Star LC10 including lead for ST/ Amiga £169.00

Star LC10 colour including interface lead for ST/Amiga.....£219.00

LC10 — The most po:ular letter quality printer on the market only £219.00 with all Amiga + ST leads

Tel: 0908 564369, Fax: 0908 560040

MICROSMART 24HR HOTLINE (24 HRS) TELEPHONE 0908 564369

TITLE	COMP	PRICE
TOTAL COST £:		

Have you ordered from us before? YES NO

NAME: .....

ADDRESS:.....

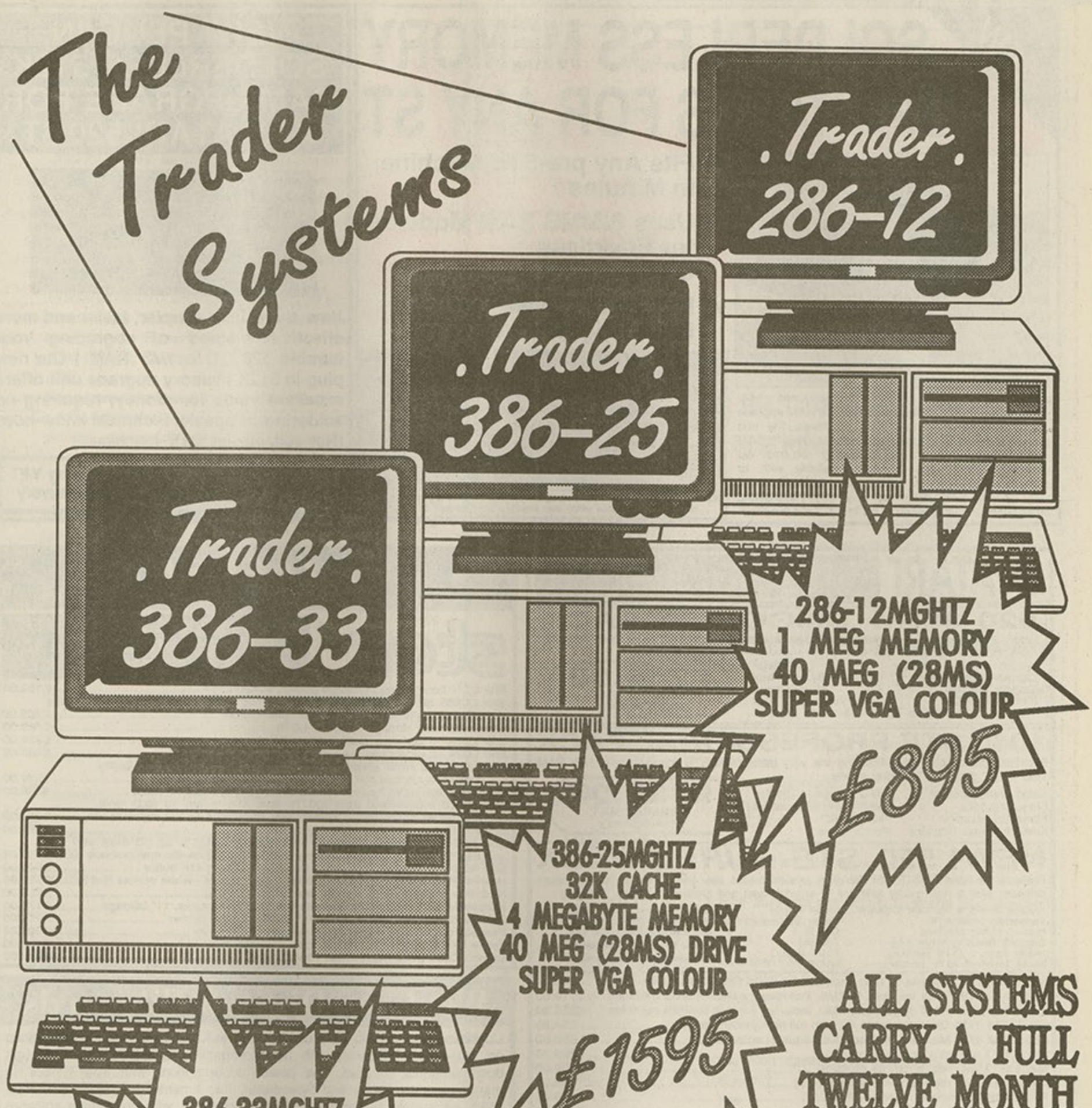
.....

.....

TEL NO: .....

Please send this to Microsmart, 125 High Street, Stony Stratford, Milton Keynes. MK11 1AT

The Trader Systems



286-12MGHTZ
1 MEG MEMORY
40 MEG (28MS)
SUPER VGA COLOUR

£895

386-25MGHTZ
32K CACHE
4 MEGABYTE MEMORY
40 MEG (28MS) DRIVE
SUPER VGA COLOUR

£1595

386-33MGHTZ
32K CACHE,
4 MEGABYTE MEMORY
110 MEG (19MS)DRIVE
SUPER VGA COLOUR

£1995

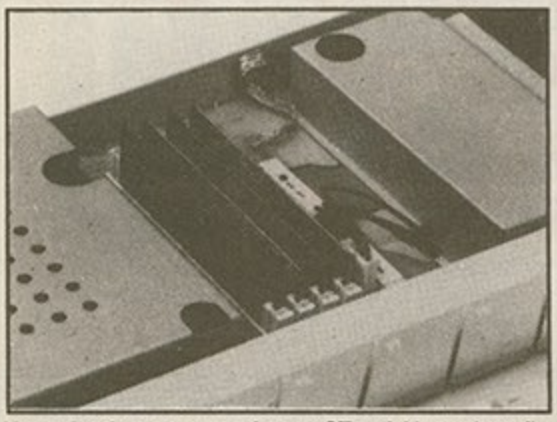
ALL SYSTEMS CARRY A FULL TWELVE MONTH WARRANTY

PRICES SUBJECT TO VAT AND DELIVERY CHARGES

TRADERDESK
THE CLENT UNIT
BARNSLEY HALL DRIVE
BROMSGROVE B61 OED
HEREFORD & WORCESTER
TELEPHONE 0527 579120 (6 LINES)

NEW

SOLDERLESS MEMORY UPGRADES FOR ANY ST



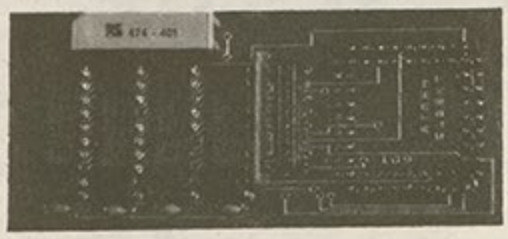
- ✔ Fits Any pre-STE Machine in Minutes !
- ✔ Uses SIMMS RAM Modules for Effortless Upgradeability
- ✔ Probably the Neatest ST RAM Upgrade available !

Upgrade the memory of your ST quickly and easily with our new, fully software compatible RAM upgrade board. Designed for pre-STE machines, the unit accepts SIMMS slot-in memory modules, making RAM fitting simplicity itself. *No soldering required! No electronics knowledge needed!* Available with or without RAM modules. Allows upgrade in stages of 1Mb, 2.5Mb and 4Mb, as and when necessary. Straightforward installation - full instructions provided.

RAM Upgrade Kit with board unpopulated	£59.95
RAM Upgrade Kit With 512K RAM installed: upgrades a 520 ST to total of 1Mb RAM	£89.95
RAM Upgrade Kit With 2Mb RAM installed: upgrades a 520/1040/Mega ST1 to 2.5Mb	£174.95
RAM Upgrade Kit With 4Mb RAM installed: upgrades a 520/1040/Mega ST1 to 4Mb	£284.95

N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a small amount of soldering.

NEW! PLUG-IN, SOLDERLESS 512K RAM UPGRADE FOR ANY ATARI 520 ST



Now there is a simpler, faster and more effective method of upgrading your humble 520 ST to 1Mb RAM ! Our new plug-in 512K memory upgrade unit offers excellent value for money, requiring no soldering or special technical know-how. (Not suitable for STE machines.)

ONLY £69.95 including VAT and delivery

ATARI

All our ST prices include: mouse etc. plus 5 disks of software including 'First Word' wordprocessor, utilities, 'Neochrome' graphics utility, game and demos.

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:

STOS Game Creator, Carrier Command, Space Harrier, FirST BASIC, Outrun, Bomb Jack, Neochrome, Atari ST Tour, *plus* 'Discovering your Atari ST' Book

£259.00 Including VAT and delivery

1040 STE PROFESSIONAL PACK

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

Kuma Wordprocessor, Kuma Database, Kuma Spreadsheet, Kuma Business Graphics, STAC Adventure Creator, Hyper Paint (STE version), FirST BASIC, 'Prince' game

£429.00 Including VAT and delivery

NEW! 520 STE *TURBO PACK*

Features the latest 520STE with 1Mb drive, joystick, mouse, user guide, 5 disks of public domain software, plus a high quality selection of entertainment and creativity software, including :

Indiana Jones & the Last Crusade, Impossible Mission II, Human Killing Machine, Dragons Breath, Hyper Paint 2 (STE version), Music Maker 2 (STE version), Blood Money, Super Cycle, Out Run, Anarchy, FirST BASIC, STOS

£339.00 Inc. VAT & Delivery

520STE RAM upgrade to 1Mb, includes 2x256K SIMMS modules	£40.00
520/1040STE RAM upgrade to 2Mb, includes 2x1Mb SIMMS modules	£119.00
520/1040STE RAM upgrade to 4Mb, includes 4x1Mb SIMMS modules	£235.00
520STFM 1Mb Drive Upgrade Kit with full fitting instructions	£54.95
520STFM 1Mb Memory Upgrade Kit, requires soldering	£59.00
Mega ST1 with monochrome monitor	£599.00
Mega ST2 with monochrome monitor	£849.00
Mega ST4 with monochrome monitor	£1099.00
SM124 monochrome monitor	£99.00
SC1224 colour monitor	£279.00
Philips CM8833 14" colour monitor (stereo sound) c/w ST cable	£249.00
Vidi-ST 16-tone video frame grabber inc.digitising software	£89.00
NeoDesk V3 Desktop replacement	£29.95

PRINTERS

All prices include VAT, delivery and cable

star

EVESHAM MICROS SPECIAL OFFER - ALL STAR PRINTERS INCLUDE 12 MONTHS ON-SITE MAINTENANCE!

Star LC10 best-selling 144/36cps printer, 4 NLQ fonts	£159.00
Star LC200 NEW replaces LC10 Colour model, with new features: 180/45cps with bottom feed facility and push/pull tractors	£209.00
Star LC15 wide carriage version of LC10	£329.00
Star LC24-10 feature-packed multifont 24 pin printer	£239.00
Star LC24-15 wide carriage version of LC24-10	£409.00
Star LC24-200 NEW uprated ver.of LC24-10 with bottom feed facility, push/pull tractors and a print speed increase to 200/67cps	£249.00
Star LC24-200 NEW 7-colour version of LC24-200, excellent value	£289.00
Star FR-10 Professional 9pin 300/76 cps, 31K buffer, 16 NLQ fonts, EE-PROM configuration memory and 12 months on-site maintenance	£399.00
Star FR-15 9pin as FR10, wide carriage version	£499.00
Star XB24-10 Professional 24pin: 27K buffer, 4 SLQ & 25 LQ fonts with EE-PROM configuration memory and 12 months on-site maintenance	£499.00
Star XB24-15 wide carriage version of XB24-10, with 41K buffer	£649.00
Hewlett Packard Deskjet Plus 300dpi inkjet printer - while stocks last!	**£399.00**
NEC P2+ budget 24pin, special low price!	**£239.00**
Panasonic KXP1180 super 9pin with over 3400 typestyles, 11" carriage	£179.00
Panasonic KXP1124 good quality 11" multifont 24pin printer	£269.00
Panasonic KXP1624 wide carriage version of KXP1124	£399.00
Epson LX400 popular 10" 180/25 cps	£159.00
Epson LQ550 good 24pin printer 150/50 cps	£340.00

Western Digital Filecards

Upgrading your PC to hard disk? Look no further, we offer the best prices on top quality filecards, with ultra-competitive speed ratings. Thorough documentation supplied, low power consumption, with free XTree file management software and Speedread. For Amstrad PC 1512/1640/2086 users we supply filecards tested and formatted, with our simple software installation procedure. Probably the best packages available!

21MB...£225.00 32MB...£239.00 41MB...£279.00

ATARI AMSTRAD

Buying a PC? Shopping around for the best deal? Evesham Micros is one of the UK's leading suppliers of Olivetti, Amstrad, Sharp and Atari PC's, offering highly competitive deals at the lowest prices. Contact us now for a quote!

Olivetti SHARP

Evesham Micros

RETAIL SHOWROOMS

Unit 9 St Richards Road, Evesham, Worcs WR11 6XJ
☎ 0386-765180
fax: 0386-765354
Open Mon-Sat, 9.00 - 5.30

5 Glisson Road, Cambridge CB1 2HA
☎ 0223-323898
fax: 0223-322883
Open Mon-Sat, 9.30 - 6.00
Specialist Education Centre

1762 Pershore Road, Cotteridge, Birmingham B30 3BH
☎ 021-458 4564
fax: 021-433 3825
Open Mon-Sat, 9.00 - 5.30

ALL PRICES INCLUDE VAT AND DELIVERY

Same day despatch whenever possible. *Express Courier* delivery £5.00 extra.

MAIL ORDER DEPARTMENT

Unit 9 St Richards Rd, Evesham, Worcs WR11 6XJ

Access

Call us now on ✆ 0386-765500

8 lines, Open Mon-Sat, 9.00-5.30. Fax: 0386-765354
Technical support (open Mon-Fri, 9.30-5.30): 0386-40303

VISA

Send an Order with Cheque, Postal Order or ACCESS/VISA card details. Allow 5 working days personal chq. clearance.

Government, Education & PLC orders welcome
All products covered by 12 Months Warranty
All goods subject to availability, E. & O.E.

WIN £100 IN HARD ECUs

Well, until the Europeans agree to print them would you settle for hard cash? All you have to do to is fill in this revealing questionnaire and come up with a really whacky idea for an article in Express...

The more observant among you may have noticed that we had a couple of technical hitches with the questionnaires we printed in the last couple of issues.

So here we are, The *Express* Questionnaire mark three. As an extra incentive, we're now offering a £100 cash prize for the best suggestion in Section Five for a really cool *Express* feature. For the runners up we are giving away five free subscriptions. But that's not all; the winners of the *Express* subscriptions also win a year's copies of the Future magazine of their choice – select from *Amiga Format, ST Format, PC Plus, Commodore Format, Your Sinclair, S* and *Amstrad Action.*

To have a chance of winning you'll need to get your questionnaire back to us by December 1. Send it in an envelope marked *'Express* Questionnaire' to *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW.

If you have already sent in a questionnaire your entry will automatically be included in the £100 competition – please don't send in another form.

SECTION ONE: HARDWARE

What machine do you use the most at home?

- Amiga 500 ☐
- Other Amiga ☐
- ST ☐
- STE ☐
- Desktop PC ☐
- Laptop PC ☐
- Archimedes ☐
- CPC ☐
- Spectrum ☐
- C64 ☐
- Console ☐
- Macintosh ☐

Other (specify).....

What machine do you use the most at work/college?

- Amiga 500 ☐
- Other Amiga ☐
- ST ☐
- STE ☐
- Desktop PC ☐
- Laptop PC ☐
- Archimedes ☐
- CPC ☐
- Spectrum ☐
- C64 ☐
- Macintosh ☐
- Mini/mainframe ☐

Other (specify).....

What other machines do you have at home?

- Amiga 500 ☐
- Other Amiga ☐
- ST ☐
- STE ☐
- Desktop PC ☐
- Laptop PC ☐
- Archimedes ☐
- CPC ☐
- Spectrum ☐
- C64 ☐
- Macintosh ☐
- MSX ☐
- BBC Micro ☐
- PCW ☐
- Atari 8-bit ☐
- Console ☐

Other (specify).....

What other machines do you use at work/college?

- Amiga 500 ☐
- Other Amiga ☐
- ST ☐
- STE ☐
- Desktop PC ☐
- Laptop PC ☐
- Archimedes ☐
- CPC ☐
- Spectrum ☐
- C64 ☐
- Macintosh ☐
- Mini/mainframe ☐

Other (specify).....

How long have you owned your computer?

- Less than three months ☐
- Three months to a year ☐
- One to three years ☐
- Over 3 years ☐

What peripherals do you own?

- Monitor ☐
- Hard disk ☐
- Extra floppy drive ☐
- Modem ☐
- Printer ☐
- Memory expansion ☐
- Scanner/digitiser ☐
- Sampler/MIDI ☐
- Multiface/Action Replay ☐
- Joystick ☐

What peripherals do you intend to buy in the next year?

- Monitor ☐
- Hard disk ☐
- Extra floppy drive ☐
- Modem ☐
- Printer ☐
- Memory expansion ☐
- Scanner/digitiser ☐
- Sampler/MIDI ☐
- Multiface/Action Replay ☐
- Joystick ☐

How much did you spend on hardware last year/last two months?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

How often do you buy goods mail order?

- Regularly ☐
- Sometimes ☐
- Never ☐

How many times have you bought through *Express* advertisements?

.....

How do you buy your hardware? (tick all used in the last year)

- Independent retailer ☐
- High Street store (Dixons etc) ☐
- Mail Order ☐
- Auctions ☐
- Classified advertisements ☐

How much do you expect to spend next year/next two months?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

Are you responsible for computer buying decisions at work?

- Yes ☐
- No ☐

Do you intend to buy a new computer in the next year? If so, what?

- No computer ☐
- Amiga 500 ☐
- Other Amiga ☐
- ST ☐
- STE ☐
- Desktop PC ☐
- Laptop PC ☐
- Archimedes ☐
- CPC ☐
- Spectrum ☐
- C64 ☐
- Macintosh ☐
- Console ☐

Other (specify).....

In an ideal world, which of these computers would you most like to own?

- Amiga 500 ☐
- Other Amiga ☐
- ST ☐
  - STE ☐
  - Desktop PC ☐
  - Laptop PC ☐
  - Archimedes ☐
  - CPC ☐
  - Spectrum ☐
  - C64 ☐
  - Macintosh ☐
  - NeXT ☐

Other (specify).....

SECTION TWO: SOFTWARE

What do you use your computer for at home?

	Main use	Sometimes
Games	☐	☐
Word processing	☐	☐
Spreadsheet/accounts	☐	☐
DTP	☐	☐
Graphics	☐	☐
Music	☐	☐
Education	☐	☐
Programming	☐	☐
Comms	☐	☐

What do you mainly use your computer for at work/college?

	Main use	Sometimes
Games	☐	☐
Word processing	☐	☐
Spreadsheet/accounts	☐	☐
DTP	☐	☐
Graphics	☐	☐
Music	☐	☐
Education	☐	☐
Programming	☐	☐
Comms	☐	☐

How much have you spent on games in the last year/last two months?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

How do you buy your games? (tick all used in the last year)

- Independent retailer ☐
- High Street store (Dixons etc) ☐
- Mail Order ☐
- Dodgy street markets ☐
- Classified advertisements ☐

How much do you expect to spend next year/next two months on 'serious' software?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

How do you buy your 'serious' software? (tick all used in the last year)

- Independent retailer ☐
- High Street store (Dixons etc) ☐
- Mail Order ☐
- Classified advertisements ☐

Do you use PD libraries?

- Yes ☐
- No ☐

SECTION THREE: MAGAZINES

How long have you been reading *NCE*?

- This is the first issue bought ☐
- A few months ☐
- A year or so ☐
- Since the beginning ☐

How regularly do you buy NCE?

- Subscriber ☐
- Every week ☐
- Two or thee times a month ☐
- Once a month ☐
- Occasionally ☐

What was you favourite article in this issue?

.....

Rate the following sections of *Express* out of 10

- News ☐
- FrontEnd ☐
- The Week in View ☐
- Hardware reviews ☐
- Software reviews ☐
- Feature articles ☐
- Games Week ☐
- Competitions ☐
- Machine-specific columns ☐
- Express mail ☐
- Centrefold ☐
- Programming ☐
- Circuit City ☐
- Tech Tips ☐
- PD Column ☐
- Console Zone ☐
- Whole Wired World ☐
- Express On-line ☐
- Reader advertisements ☐
- Recruitment advertisements ☐

Which sections would you like to see more or less of?

	More	Less
News	☐	☐
FrontEnd	☐	☐
The Week in View	☐	☐
Hardware reviews	☐	☐
Software reviews	☐	☐
Feature articles	☐	☐
Games Week	☐	☐
Competitions	☐	☐
Machine-specific columns	☐	☐
Express mail	☐	☐
Centrefold	☐	☐
Circuit City	☐	☐
Tech Tips	☐	☐
Programming	☐	☐
PD Column	☐	☐
Console Zone	☐	☐
Whole Wired World	☐	☐
Express On-line	☐	☐
Reader advertisements	☐	☐
Recruitment advertisements	☐	☐

What other magazines do you read apart from *Express*?

- Amiga Format ☐
- ST Format ☐
- PC Plus ☐
- Amstrad Action ☐
- Commodore Format ☐
- Your Sinclair ☐
- ACE ☐
- The One ☐
- Zero ☐
- Raze ☐
- Personal Computer World ☐
- Byte ☐
- What Personal Computer? ☐
- Popular Computing Weekly (sorry, bad joke)

What do you like about them compared to *Express*?

.....

.....

SECTION FOUR: ABOUT YOU

All personal details will be treated in confidence.

Are you male or female?

- Male ☐
- Female ☐

How old are you?

- Under 13 ☐
- 13-18 ☐
- 17-25 ☐
- 26-35 ☐
- 36-50 ☐
- Over 50 ☐

What is your job?

.....

How much do you earn?

- Nothing ☐
- Student grant ☐
- £5,000-£8,000 ☐
- £8,001-£10,000 ☐
- £10,001-£15,000 ☐
- Over £15,000 ☐

What county do you live in?

.....

SECTION FIVE: PRIZE COMPETITION

My suggestion for a really good article in *Express* is (max 50 words) .....

.....

.....

.....

.....

.....

Name .....

Address .....

.....

If I win a runners-up prize I would like a subscription to *New Computer Express* and:

- ST Format ☐
- Amiga Format ☐
- PC Plus ☐
- Amstrad Action ☐
- Your Sinclair ☐
- Commodore Format ☐
- Sega Power ☐

24-HOUR SERVICE
OPEN: MON - FRI 9.00 - 5.30
SATURDAY 10.00 - 2.00

Business Technology Centre

PHONE OR FAX: 0282 831900

SEIKOSHA SL92
24 PIN 42K BUFFER 9 FONTS
£299 INCLUDES ON-SITE WARRANTY

DOT MATRIX PRINTERS

9 PIN 80 COLUMN		draft/nlq	£
STAR	LC-10	144/36	125
STAR	LC-10 colour	144/36	166
STAR	LC-10 colour comm 64	144/36	166
CITIZEN	120D PLUS	120/25	105
CITIZEN	120D PLUS comm 64	120/25	105
CITIZEN	PRODOT 9	300/60	265
SEIKOSHA	SP2000 (21k buffer)	200/40	199*
SEIKOSHA	MP1350	300/50	359*
PANASONIC	KXP 1180	192/36	139
MAN. TALLY	MT 81	130/26	104
OLIVETTI	DM 100SPR	200/30	119*
EPSON	LX 400	180/30	135
9 PIN 136 COLUMN			
STAR	LC-15	180/45	255
CITIZEN	PRODOT 9 x	300/60	345
PANASONIC	KXP 1592	216/45	255
SEIKOSHA	MP5350	300/50	499*
24 PIN 80 COLUMN			
STAR	LC24-10	170/57	195
CITIZEN	SWIFT 24	192/64	239
CITIZEN	PRODOT 24	200/60	369
PANASONIC	KXP 1124	192/63	219
SEIKOSHA	SL92 (42k buffer)	240/80	299*
24 PIN 136 COLUMN			
STAR	LCX24-15	200/67	325
STAR	XB24-15	240/80	510*

***ALL DOT MATRIX PRINTERS MARKED WITH A * INCLUDE A ONE YEAR ON-SITE MAINTENANCE CONTRACT.**

A ONE YEAR ON-SITE MAINTENANCE CONTRACT IS ALSO AVAILABLE FOR MOST OTHER DOT MATRIX PRINTERS - ONLY £16.

A FULL RANGE OF SHEET FEEDERS, TRACTORS, ACCESSORIES AND CONSUMABLES ARE ALSO AVAILABLE FROM STOCK - CALL FOR DETAILS.

SWIFT 24 COLOUR
24 PIN PRINTER INC. COLOUR KIT
£269

TERMS

ALL PRICES EXCLUDE VAT.
PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.
CALL TO CONFIRM BEFORE ORDERING.
STRICTLY CASH WITH ORDER.
ACCESS, VISA AND AMERICAN EXPRESS WELCOME.
POSTAL ORDERS, CHEQUES AND BANKERS DRAFTS ACCEPTED.
OFFICIAL ORDERS FROM EDUCATIONAL AND GOVERNMENT ESTABLISHMENTS, CORPORATES AND PLC's WELCOME.

DELIVERY

ALL GOODS NORMALLY DESPATCHED WITHIN 24 HOURS FROM RECEIPT OF CLEARED PAYMENT - subject to stock availability.

PC's AND LASERS	£15.00	NEXT DAY DELIVERY
OTHER LARGE ITEMS	£10.00	NEXT DAY DELIVERY
SMALL ITEMS	£5.00	4 DAY DELIVERY

WARRANTY

ALL GOODS CARRY MANUFACTURERS WARRANTIES.
ON-SITE WARRANTY AVAILABLE ON MOST DOT MATRIX PRINTERS AND PC's - CALL FOR DETAILS.
TECHNICAL SUPPORT AVAILABLE. E. & O.E.

Goods not offered on trial basis.
Goods are offered for sale subject to our standard terms and conditions of sale - available on request.
WE STOCK MANY MORE PRODUCTS - CALL FOR DETAILS.
LARGE STOCKS OF FLOPPY DISKS AND RIBBONS CARRIED.

VISA · AMERICAN EXPRESS

NON-IMPACT PRINTERS

		£
SEIKOSHA	OP105 LED (desktop size, takes legal paper)	1299*
STAR	LASER 8	1179*
STAR	LASER 8 DUAL BIN	1599*
H. PACKARD	LASERJET II	1199*
H. PACKARD	LASERJET III	1299*
OLIVETTI	PG 306	899*
CANON	BJ130 INK JET	519

ONE YEAR ON-SITE MAINTENANCE IS INCLUDED IN THE PRICE OF ALL THE ABOVE PRINTERS MARKED WITH A *.

A FULL RANGE OF TONERS, FONTS, MEMORY CARTRIDGES, INK CARTRIDGES AND OTHER ACCESSORIES ARE STOCKED - PLEASE CALL FOR FURTHER DETAILS.

OLIVETTI PG306
LASER PRINTER
£899 INCLUDES ON-SITE WARRANTY

PLOTTERS AND SCANNERS

HITACHI	681	A4/A3	PLOTTER	520
HITACHI	674	A4/A1	PLOTTER	2149*
(includes one year on-site warranty)				
PANASONIC	FX-RS505		SCANNER	919
(with I/F card, cables, IMAGE AND OCR software)				
NISCAN	HAND SCANNER			139
NISCAN	OCR software			189

DRIVES

CITIZEN	OSDD 05A-WD 3.5" 720K in 5.25" KIT	59
CITIZEN	OSDA 39C-WD 3.5" 1.44mb in 5.25" KIT	69
CITIZEN	OSD 76A-WD 3.5" 720K AMSTRAD KIT	59
INTERNAL	5.25" 1.2mb	59
INTERNAL	5.25" 360K	69
JAVELIN	HC20 20mb XT HARD CARD	185
JAVELIN	HC30 30mb XT HARD CARD	199
FILECARD	HC40 40mb AT HARD CARD	229
KYOCERA	KC 20B(s) 20mb XT/AT DRIVE, 3.5"	138
KYOCERA	KC 30B(s) 30mb XT/AT DRIVE, 3.5"	158
KYOCERA	FRAME 5.25" kit for 3.5" hard drives	5

DRIVE CONTROLLERS AVAILABLE - CALL FOR DETAILS.

CABLES AND ACCESSORIES

PRINTER CABLE	1.8 metre	8
PRINTER CABLE	3.0 metre	9
SERIAL CABLE	1.8 metre	10
T SWITCH	2 way serial	18
T SWITCH	2 way parallel	18
T SWITCH	2 way serial crossover	25
T SWITCH	2 way parallel crossover	25
BUFFER	64k in-line	79

ACORN A3000
1Mb RAM KIT
£89

COMPUTERS

ALL OUR COMPUTERS INCLUDE A MONITOR.

COMMODORE

ALL MODELS INCLUDE ONE YEAR ON-SITE MAINTENANCE

		MONO £	CGA £	VGA MONO £	VGA COLOUR £
PC 10	SD	485	615	635	725
PC 10	DD	535	665	685	775
PC 20	HD20	675	795	845	945
PC 30	HD20			967	1128
PC 40	DH40			1229	1379

COMMODORE SPECIAL
PC 10SD INC 40MB DRIVE & MONITOR
INCLUDES ON-SITE WARRANTY
MONO £699 · CGA £829 · MONO VGA £849 · COLOUR VGA £949

SAMSUNG

ALL MODELS INCLUDE ONE YEAR ON-SITE MAINTENANCE

	MONO £	VGA MONO £	VGA COLOUR £
SPC 3000 SD	483	589	789
SPC 3000 DD	569	659	859
SPC 3000 HD20	739	839	1039
SPC 6512 DD		919	1119
SPC 6512 DD HD40		1109	1309

HYUNDAI

	MONO £	EGA £	VGA MONO £	VGA COLOUR £
16TE SD	419	699		
16TE DD	459	759		
16TE HD30	619	919		
286x SD			639	819
286x HD40			939	1119

HYUNDAI 16TE
£419 MONO XT AND MONITOR

HYUNDAI 286X SD
£1099 HD 40 AND VGA MONITOR

PORTABLES

SHARP	4602		DD	789
SHARP	5541	286	HD40	2099
SAMSUNG	S5200	286	HD32	1707*
(includes on-site maintenance)				

NOW IN STOCK
SHARP 8041 & 8081 386 LAPTOPS - CALL FOR PRICES.

SHARP 5541
£2099 HD 40 286 LAPTOP

THIS IS ONLY A SMALL SELECTION OF THE PC's THAT WE SELL - CALL FOR FURTHER DETAILS.

PHILIPS CM9053
EGA MONITOR
£249 INCLUDES ON-SITE WARRANTY

MONITORS

				Price £
MONO	HYUNDAI	HMM1200	12"	65
MONO	PHILIPS	BM 7513	12"	69
MONO	PHILIPS	BM 7913 FST	12"	80
MONO	SAMSUNG	MA 2671	12"	81
MONO VGA	PHILIPS	BM 7749 FST	12"	107
MONO VGA	SAMSUNG	ML 2611	12"	81
MONO VGA	SAMSUNG	ML 4571	12"	95
MONO A4 (includes card and software)	SAMSUNG	MP 5671	A4	634
CGA	PHILIPS	CM 8833	14"	199
EGA	PHILIPS	CM 9053	14"	249
EGA	PHILIPS	CM 9073	14"	289
EGA	SAMSUNG	CM 4551	14"	281
VGA	PHILIPS	3CM 9809	14"	325
VGA	SAMSUNG	CJ 4581	14"	281
MULTISYNC	SAMSUNG	CT 4581	14"	340

ALL MONITORS INCLUDE ON-SITE WARRANTY EXCLUDING THE HYUNDAI HMM 1200.

MDA/CGA CARD with PRINTER PORT	45
MDA/CGA/EGA CARD	99
VGA CARD	129

UPGRADES AND ENHANCEMENTS

MDM2400 PC CARD MODEM
£135 INCLUDING SOFTWARE

AKHTER	MDM 2400 PC CARD MODEM	135
FAXTEL	FAX SWITCH (auto switches calls to fax or phone)	69
KEYBOARD 84	84 KEY UK LAYOUT XT	41
KEYBOARD 102	102 KEY UK LAYOUT XT/AT	52
RAM CARD	576K - XT	27
RAM CARD	2Mb - specify XT or AT	93
SERIAL MOUSE	includes DR Halo III software	38
MULTI I/O CARD	XT - RS232/printer/clock/ games/floppy	54
I/O CARD	AT - RS232/Printer	54
I/O CARD	XT RS232	19
UPS	250W	199

MEMORY - call for prices of SIMM's, SIP's and DRAM's.

SUPERDEALS

SCHNEIDER	220 AT MONO PC SYSTEM	909
SCHNEIDER	20Mb HARD DRIVE KIT	199
HYUNDAI	360K DISK DRIVE	45
YE DATA	720K DISK DRIVE	49
SHARP	JX 9300 LASER PRINTER	949
SHARP	JX 720 INK JET PRINTER	649
MICROVITEC	1431 DS4 - BBC MONITOR	169
MICROVITEC	1451 MS4 - BBC MONITOR (metal case)	229
MICROVITEC	1456 DL2 - NIMBUS MONITOR	249
MIRACOM	COURIER HST MODEM 9600/ V22bis/V22/V21/V23 & MNP	539
IBM	MODEL 30-021	849
IBM	MODEL 50-061	1599

WE ARE AN ACORN EDUCATIONAL DEALER - CALL FOR PRICES.

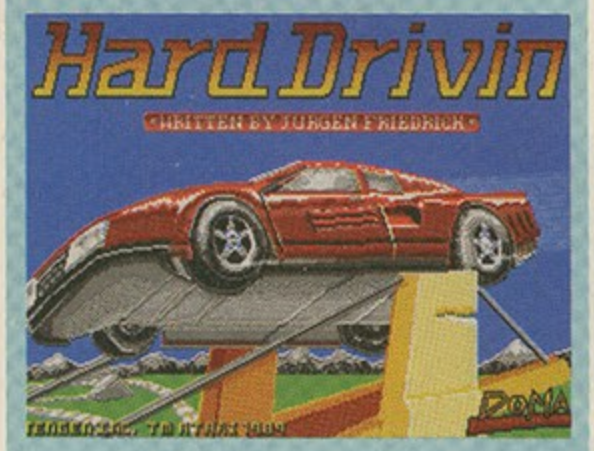
Business Technology Centre
HOLE HOUSE FARM, BURNLEY RD., CLIVIGER, LANCS., BB11 3RF
Tel. & Fax: 0282 831900 (24 HOURS)

GAMES ON THE CHEAP

Just one of the games on the Challengers compilation

Gone are the days when compilations featured games about as appealing as the green socks your granny gives you on Christmas morning. For around £30 you can now buy some of the year's biggest titles. So here's a quick run down of some of the more notable compilations available in the run up to Christmas

• Powerdrift *and...*



...Hard Drivin, just two of the motor racing games on Domark's Wheels of Fire *bundle.*

Domark's *Wheels of Fire* compilation features last Christmas's big car racing games: *Hard Drivin', Chase HQ, Turbo Outrun* and *Powerdrift.* The C64 version of the compilation includes the much-awaited *Hard Drivin'* which has never previously been available on the C64.

Beau Jolly's *Power Pack* comes with the classic *Xenon II, Bloodwych* (a 2-player adventure), *TV Sports Football* (an American football simulator) and *Lombard RAC Rally* (yet another racing game).

Certainly the best of the compilations is UBI Soft's *Challengers* which features tennis, aircraft, football, car and ski simulators in the form of *Pro Tennis Tour, Fighter Bomber, Kick Off, Stunt Car Racer* and *Super Ski.* Not bad for £29.99.

MARK HIGHAM'S Games Week

SIM CITY: FROM STRENGTH TO STRENGTH

Fed up with playing *Sim City*? Bored by the similarities of each game? I prescribe a dose of the *Sim City* architecture disks.

They replace the graphics already supplied with the game so that you get a completely different set of residential zones and commercial or industrial zones. They also give you more problems to watch out for and some new scenarios. However, the game is still the same so if you're starting to feel that *Sim City* is a little like building a town out of Lego bricks you're not going to lose that impression after playing with the architecture disks.

There are two new disks available each coming with three different scenarios. The first is architecture disk one set in the distant past. The first scenario is ancient Asia where farmers and craftsmen must be encouraged to thrive in their little villages. The second, set in medieval times places you in the role of king of the castle, thriving on the high tax revenues collected from your people. The last scenario is set in the wild west in 1849. You need to develop a community to support the gold-digging miners and watch out for such disasters as contaminated water, rattlesnakes and jackals.

• Sim City: *the original is like building with lego bricks. Now two new architecture disks are set to improve things*

Architecture disk two is based firmly in the future. The first scenario puts you in the USA during the 21st Century. The city is highly commercialised and you now need to buy spaceports to transport passengers and goods on interplanetary flights. Instead of ordinary power stations you now have a choice between nuclear fusion or fission and must be ever careful of the likelihood of thermo-nuclear pollution.

In the second scenario you're placed in Europe in the year 2155. The continent is united and your job is to build a new capital for Europe, encouraging international research, trade and production. A monorail transport system and space ports make life more appealing in the new Europe but disaster is just around the corner.

The last scenario on this disk puts you on the moon where mining resources and reduced gravity enable you to grow quickly. However, extra-terrestrial life-forms, plagues and lack of oxygen threaten to disrupt your progress at every turn.

The architecture disks aren't going to miraculously eradicate the problems with the original *Sim City* but they are set to make it interesting enough to keep you addicted a little while longer – at least until *Sim City 2* comes out next year.

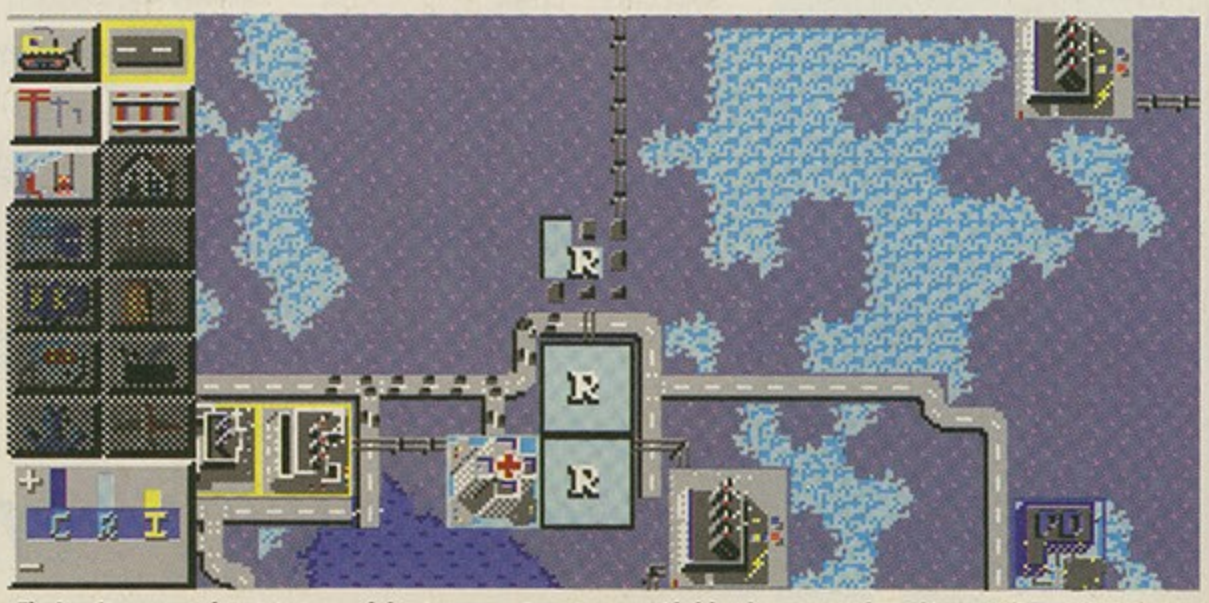
MORE TURRICAN MAGIC

After repeatedly stating that *Turrican* would never make it onto the ST, Rainbow Arts has released an ST version this month. It's hardly had time to climb the charts before Rainbow Arts announced plans to produce a follow-up called *Turrican 2 – the Final Fight,* though how final it's likely to be must surely depend on its success.

If you found the original *Turrican* difficult then prepare for some mega torture in *Turrican 2.* I've had a chance to play Amiga and ST demos of the first level and it's something of a monster. The shoot-'em-up action has been greatly enhanced by some tremendous visual effects. In level one you walk through waterfalls which behave like waterfalls, over bridges that flex under every footstep and through a nightmarish battle against wind which unrelentingly tosses you backwards.

However, what Rainbow Arts is most excited about are the sound effects. Lively sampled tunes not only introduce each level but have been correctly synchronised to come in at exactly the right moment. Sampled speech and other complimentary sound effects accompany the real action.

Besides ST and Amiga formats, *Turrican 2* is being released on the C64, CPC and Spectrum. All are due out early next year. ■



•The Sim City *moon colony is just one of the six new environments provided for the game on the architecture disks.*

CHEATS GALORE FOR NINJA WARRIOR AND SILKWORM – OR HOW TO MAKE YOUR ENEMIES HOPPING MAD

This week we have cheats for two of Random Access's most addictive games.

For those Amiga owners who are going mental trying to get through *Silkworm,* here are some handy tips.

There are two versions of *Silkworm* in existence and the cheat is different for both of them. Try hitting the HELP key first of all. This should activate the cheat mode giving you infinite lives as well as enabling you to hit the number keys to go directly to a new level.

However, if you own the second version of the game a message appears saying, "Congratulations, you have found the cheat mode... unfortunately, it has been ZZAPPED!"

No need to worry, though. Instead, go straight to the control selection screen and type SCRAP 28. You will now be able start the game with the cheat active.

For ST owners hooked on *Ninja Warriors*, try these for size.

Hold down the ALTERNATE key and type the following words to make all sorts of weird effects happen:

- CASABLANCA Screen goes black and white
- GENESIS OF THE DALEKS The screen inverts
- THE TERMINATOR Your ninja body parts explode when you die
- MONTY PYTHON Enemies come onto the screen backwards
- SKIPPY The enemies bounce repeatedly
- A SMALLSTEP FOR A MAN (with no space between SMALL and STEP) Jumping baddies now leap right off the top of the screen
- EAT TO THE BEAT You can now press Q to toggle slow motion mode on and off

Switch the whole lot on and believe me, *Ninja Warriors* will look and play like nothing you've ever seen before.

THE 16-BIT TOP TEN

F-19 is still hanging on in the top slot but *Supremacy*, just released on the ST, could knock it from grace next week. A surprising new entry is *M1 Tank Platoon* from Microprose. This tank simulator has pushed Empire's own tank game down a few notches. It's amazing just how these detailed simulators (you can hardly call them games) are scaling the charts of late.

For the week ending 10th November

1	*F-19 Stealth Fighter*	MICROPROSE	ST/AG/PC
2	*Lotus Turbo*	GREMLIN	ST/AG
3	*Kick Off 2*	ANCO	ST/AG/PC
4	*Supremacy*	VIRGIN	ST/AG
5	*Power Pack*	BEAU JOLLY	ST/AG
6	*Indy 500*	ELECTRONIC ARTS	AG/PC
7	*M1 Tank Platoon*	MICROPROSE	ST?AG/PC
8	*Captive*	MINDSCAPE	ST/AG
9	*Wheels of Fire*	DOMARK	ST/AG
10	*Team Yankee*	EMPIRE	ST/AG

ST – ATARI ST AG – COMMODORE AMIGA PC – IBM PC OR COMPATIBLE
Chart compiled by GALLUP © European Leisure Software Publishers Association.

STRIDER 2: HACK 'N' SLASH WITH LASER GUNS

US GOLD • £19.99

Arcade conversions and movie licences reign supreme over the Christmas period. The story of *Strider 2*, though, is an interesting paradox. Instead of being a feeble attempt at reproducing hit arcade gameplay, *Strider 2* has actually been devised on 16-bit machines and the intention is to produce an arcade game out of the idea sometime next year.

The original *Strider* game was one of US Gold's biggest ever hits. It succeeded in collecting coveted awards after its release last year and was widely acclaimed as one of the most impressive interpretations of an arcade licence.

In *Strider 2* you play with the same acrobatic hero armed with a sabre which you can use to hack the heads off of anything that comes your way. When the action gets too intense, simply leap majestically into the air and sail over your enemies head. But there are many new additions *Strider 2.*

First off there is a challenging exploration element to the sequal. Instead of confronting a scrolling level in which one legion of enemies after another is tossed into your path, you have to find your way around a multitude of platforms and pathways in a bid to discover the end of the level. In level one you simply need to advance horizontally but by the time you reach level two you're in for some serious headaches.

The two towers level is arranged as two indivdual columns comprising sets of platforms and lifts. The idea is to scale the platforms and climb to the top of the first tower from where you cross to the second. You then have to try to climb down to the ground.

In other levels you must constantly attempt to sail downwards. When you reach the end of each level you then have to confront a massive enemy sprite which must be totally obliterated before you can to proceed to the next.

To help you overcome the end of level bad guy you can transform into a robot providing you have collected enough pods on your travels. Each pod collected buys you more time as a robot. Whereas Strider's sabre only has a short range, when you change into a robot you are armed with a laser gun which fires across the entire length of the screen. It is so powerful it can wipe away the end of level bad guy after just a handful of well-directed shots.

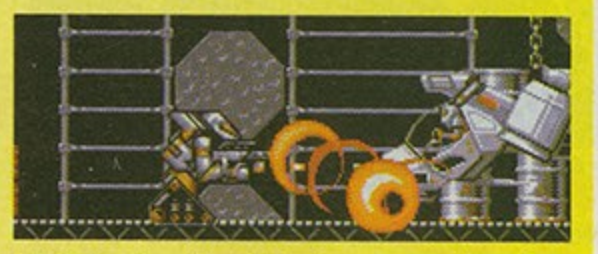
One drawback is that the robot is only capable of moving horizontally so you can't use it to scale platforms. However, it does offer limited protection against enemy bullets so it can very worthwhile changing into a robot when you get the chance.

Strider 2 is a very competent arcade-style game. The animation is smooth, the levels are colourful and varied and the extras give it the edge over more straightforward scrolling games.

In the year since the release of the original Strider game, though, we've come to expect much more from our games. In the 16-bit arena particularly, shoot-'em-ups have become much faster, visuals damned near enormous and sound effects positively brilliant. *Strider 2* doesn't have any of these ingredients and as a result has a very dated feel to it.

If you buy every arcade game that hits the shelves, *Strider 2* is going to be an absorbing challenge. But if you only buy one arcade game every six months, hold out for something better.

• Complicating the action in Strider 2 are all manner of new obstacles from laser doors to lifts. Can you get to the top of this installation in time to pick up those bonus pods?



• Dash down the platform in level one, somersault over those hunch-backed zombies then change into a robot. Aim for the cockpit of the helicopter and give it everything you've got.

• By the time you get to level three the action has become seriously frenetic. Change into a robot each time you see that end-of-level head and blast it before it floats off screen again.

• Race ll the way through to the end of level three and you meet this awesome beast. Aim a few well-timed blasts at his head and he's gone in a flash!

THE CONSOLE ZONE

Your weekly guide to console gaming with Richard Frederick.

ATARI LYNX

• **Paperboy:** ***One for malicious brats everywhere.***

Paperboy has been released for the Lynx in Japan. This popular coin-op has you riding through American suburbia delivering the morning papers while avoiding milk trucks, boy racers and out-of-control lawn mowers. Extra points are gained by breaking the windows of non-customers. Paperboy costs 4300 yen (£17) on the Lynx and is also available for the Gameboy, NES and Sega Master System.

NINTENDO SUPER FAMICOM

• **Actraisers-** ***Active and creative, need we say more?***

More idiosyncratic Japanese software has started to appear on Nintendo's new 16-bit console. *Actraisers* comes from Enix, the same company that produces all those console games that cause massive queues outside Japanese stores on their first day of release.

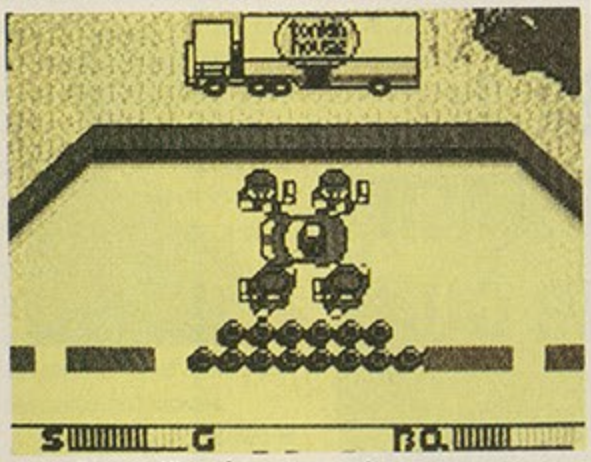
Enix is billing its first Super Famicom release as 'active and creative' and has employed its most experienced games engineers on the task of producing what could be another blockbusting title.

WE WANT YOU!

Come on you lazy lot, where are all your tasty tips and hot hint? We need your playing tips for any video games available for the Megadrive,Gameboy, Lynx, Game Gear, Sega Master, PC Engine, NES and Neo-Geo. Write to The Console Zone at the usual address.

NINTENDO GAMEBOY

Roadblaster is the latest driving game to race onto this busy handheld baby. Tonkin House has produced a race-sim packed with features including pitstops and multiple drivers. *Roadblaster* costs 3300 yen (£13).



• **Roadblaster,** ***Nintendo's newest racing game.***

PLAYING TIP
Who needs pizza power when you've got this neat *Teenage Mutant Ninja Turtles* cheat for instant energy: press pause then [Up], [Up], [Down], [Down], [Left], [Right], [Left], [Right], [B] and [A]. You can only do this once during a game.

SEGA MASTER SYSTEM PLAYING TIP

Continue *Thunderblade* by simultaneously pressing [Lower Right] and [Button 2] after losing your last life.

SEGA MEGADRIVE

Did you enjoy Capcom's brilliant robo-shooter, *Side Arms*? Get ready for more of the same in *Heavy Unit* from Kaneko and Toho. In this horizontally-scrolling shoot'em-up you control a useful piece of military hardware which can transform from a fighter plane into a heavily armed and armoured robot. Lots of extra options help this cart stay ahead of the competition, including a four-word password system to instantly access already attained higher levels and a game record/replay facility. *Heavy Unit* costs 6400 yen (£25).

• ***Get heavy on your enemies with*** **Heavy Unit.**

PLAYING TIP
Continue the *Last Battle* by simultaneously pressing [A], [B], [C] and [Start] on the title screen. ■

NEC PC ENGINE

• ***Now you can play American Football without breaking you neck.***

Cinemaware has converted its successful arcade simulation of *American Football* onto the PC Engine. *TV Sports Football* has all the film-like presentation you'd expect from this top-notch producer of 'interactive movies'. *TV Sports Football* allows one to five players to compete and lets your quarterback call audibles and reverse direction plays at the line of scrimmage, and gives you control of both field goals and punts. You can even assign three different jobs to three defensive players - though you'll still have to endure the American sports announcer. Lead me to those cheerleaders!

PLAYING TIP
For a Level 19 fighter in *Dungeon Explorer* enter the passcode: AEPAJ-DPIAA

NINTENDO ENTERTAINMENT SYSTEM

• **Pacman -** ***the one that started it all - is back.***

Pacman is back in another dot-filled ghost-infested adventure on your NES. *Tengen*, born from Atari Games, has released Namco's *Pacmania* on the 'world's number one video games system'. *Pacman* can now jump for joy as his home has been turned into a series of three-dimensional multi-directional mazes. Tengen says, "You'll love the new challenging mazes - they come in so many mind-boggling shapes, they'll turn you into a certified Pac-Maniac!"

PLAYING TIP
Get an extra 5000 points in *Gradius* by flying through the mountains with gaps in them.

PD & SHAREWARE
who do you get yours from?

BRITAINS No.1 PD Service

There are many PD libraries around but do they offer you....
- ☆Huge collection, thousands of programs on over 3000 disks
- ☆Same day service - 1st Class post - GUARANTEED
- ☆Knowledgable staff on hand (no 'phone after six and ask for fred'!)
- ☆Three years experience collecting and distributing PD & Shareware to satisfied customers all over the world.
- ☆FREE 30 page catalogue, S.A.E (35p stamp) and state MAKE of computer CLEARLY and we'll rush one to you by return.

AMIGA

urrently over 800 disks in our catalogue, including Fred Fish, APDC, AMICUS, PanoramA etc. Our own SOF collection is so good other libraries stock them now and of course we are exclusive distributors of the fabulous UGA disks. All are auto-boot, menu driven and so very easy to use, probably the best collection available! We also run an Amiga Club, ask for details.

ATARI ST

We currently stock over 800 disks full of PD/ Shareware for these machines, containing every imaginable type of program! Choose from ALL the Public Domain, not just "a selection". If you are new to ST'ing why not join "Clubville", our popular user group, £6:50 gets you newsheets, offers, special prices on goods, 5% Off blanks/PD etc.

IBM PC

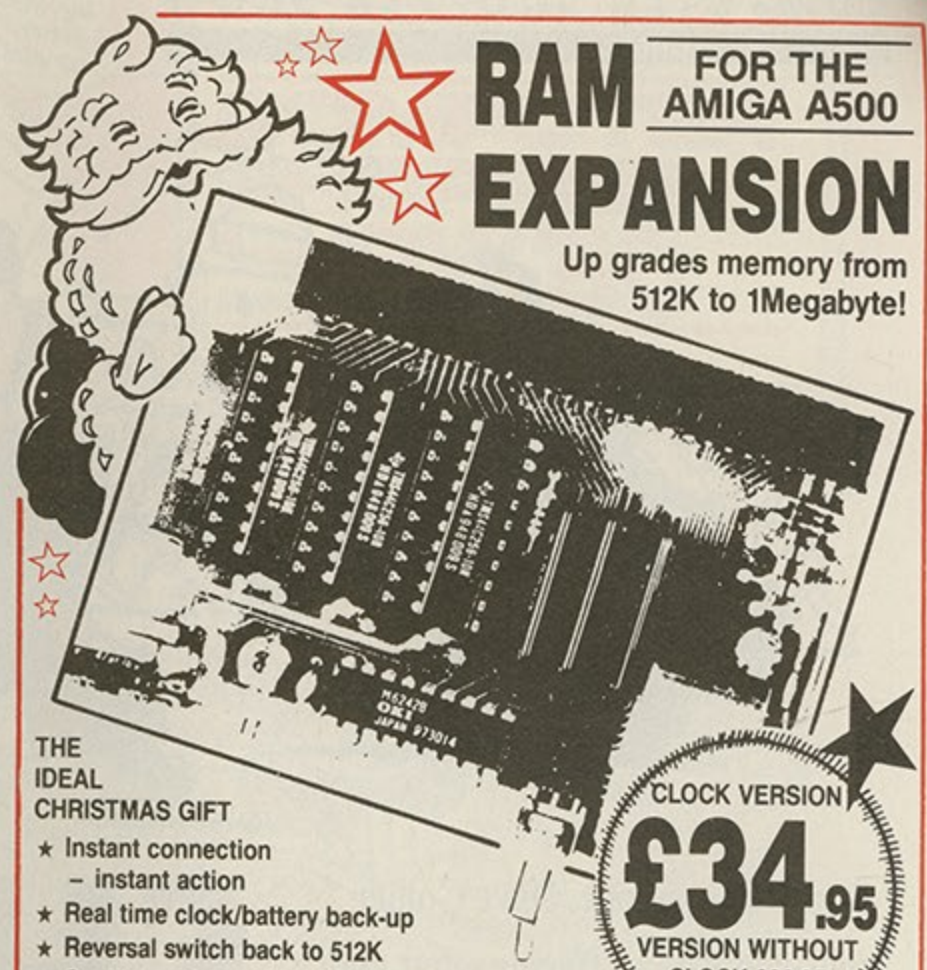
(and compatibles)

Thousands of the most popular Public domain and Shareware programs in our current catalogue, all available on either 3.5" or 5.25" format, if ordering (opposite) state which. Whatever type of program you may require, we've probably got it.

MEGA PACK - £19:50 (£14:50)
5 PD disks + 5 blank disks
plus a Library case
(Selection of current popular titles).
INTRO DISK - £1:50
(Atari or Amiga only)
VIRUS KILLER DISK - £1:50
(state machine clearly)
(prices in brackets for 5.25" disks, state preference)

24 Hour orderline on
0705-266509
VISA Access

SOFTViLLE
Unit 5, Stratfield Park,
Electra Avenue, Waterlooville,
Hants. PO7 7XN



RAM EXPANSION
FOR THE AMIGA A500

Up grades memory from 512K to 1Megabyte!

THE IDEAL CHRISTMAS GIFT

- ★ Instant connection – instant action
- ★ Real time clock/battery back-up
- ★ Reversal switch back to 512K
- ★ Quality product

CLOCK VERSION
£34.95
VERSION WITHOUT CLOCK £29.95

Call us today. Prices include VAT and delivery

SWIFT-TECH

Access — SALES HOTLINE — VISA
0480-811805
HIGH STREET · OFFORD D'ARCY · CAMBRIDGESHIRE · PE18 9RF

Two new brilliant books from the publishers of New Computer Express, Amiga Format and ST Format

If you're the proud owner of a Commodore Amiga or Atari ST, then the *Get the most out of your Amiga* and *Get the most out of your ST* books are invaluable tools for you.

THE ONLY WAY TO GET THE MOST OUT OF YOUR AMIGA & ST

In 172 information-packed pages it aims to provide advice on all aspects of the Amiga and ST scene: what software to buy, how you can get it free through the PD libraries, how to solve those tricky technical problems, where you're going wrong with a game you can't beat.

You can get all this for the bargain price of only £9.95. Alternatively, for a mere £4 more you can also have two 880K disks absolutely packed with the most useful utilities and the most entertaining programs, carefully picked to be the essential collection from the PD and elsewhere. Start getting the most out of *your* Amiga and ST!

BOOK ORDER FORM

☐ Yes, I would like to order _____ copy/copies of *GET THE MOST OUT OF YOUR AMIGA* at the recommended price £9.95
(Please add £1.45 per copy to cover p&p.)

☐ Yes, I would like to order _____ copy/copies of *GET THE MOST OUT OF YOUR AMIGA* plus two disks at the recommended price of £13.95.
(Please add £1.45 per copy to cover p&p.)

☐ Yes, I would like to order _____ copy/copies of *GET THE MOST OUT OF YOUR ST* at the recommended price of £9.95
(Please add £1.45 per copy to cover p&p.)

☐ Yes, I would like to order _____ copy/copies of *GET THE MOST OUT OF YOUR ST* plus two disks at the recommended price of £13.95.
(Please add £1.45 per copy to cover p&p.)

If paying by cheque, please enclose payment with this card in a sealed envelope addressed to: Get the Most...***Book Offer,*** **FREEPOST, Future Publishing Ltd, The Old Barn, Somerton, Somerset TA11 7BR.** (No stamp is needed if the letter is posted in the UK.) ***Please allow up to 28 days for delivery.***

Name: *(BLOCK CAPITALS PLEASE)* .....

Address: .....

.....

.....**Postcode:** .....

Telephone: .....

I enclose a cheque for £ .....

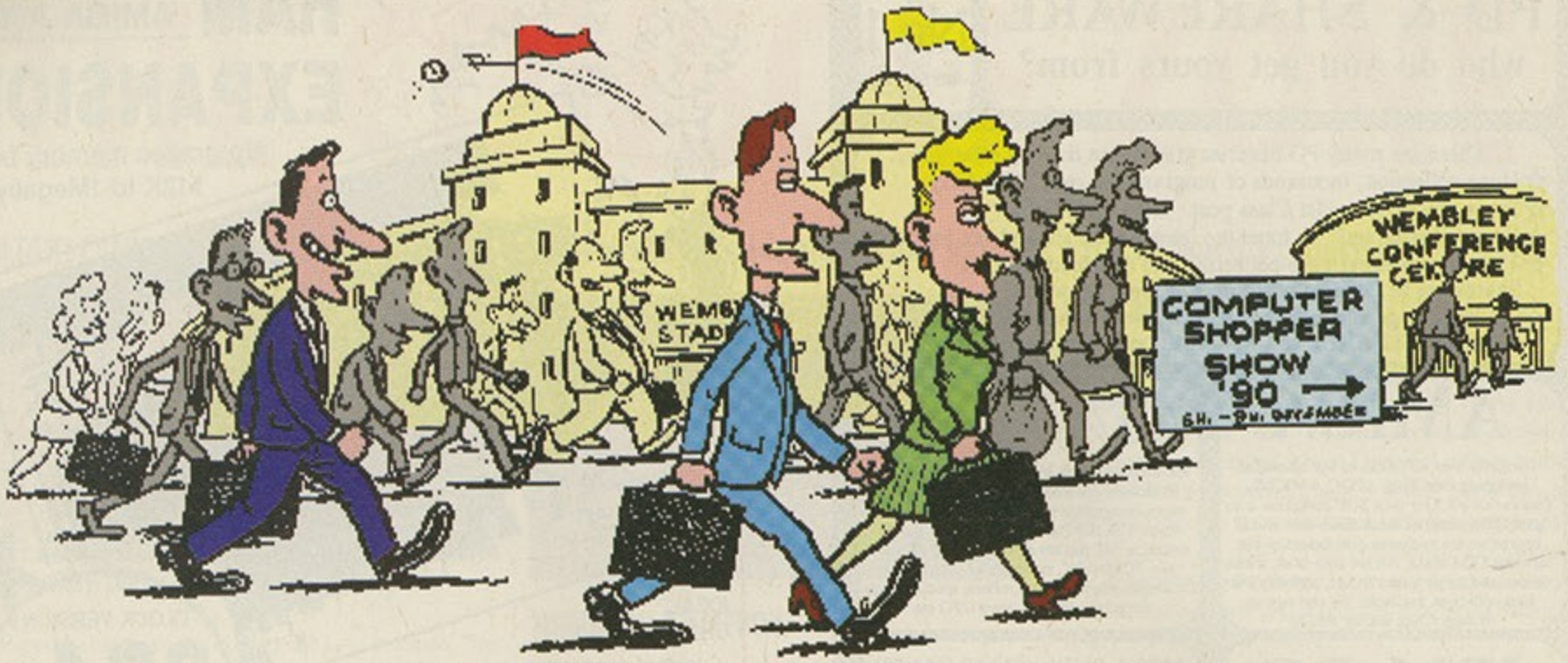
Made payable to Future Publishing Ltd

My credit card number is: .....

Expiry date: .....

I wish to pay by Access/Visa*
*(*please delete as appropriate)*

Signed: .....



SHOP 'TIL YOU DROP

Super-Shopaholic, Dave Golder tells you who's offering what and where you can pick up all those brilliant bargains at this year's Computer Shopper Show. But there's more to it than just splashing out cash – how about watching the Kick Off final?...

This December you won't have to go to a pantomime to enter an Aladdin's cave, according to the organisers of the second Computer Shopper Show. Blenheim Database Exhibitions promises visitors a high-tech wealth of wonders "with exhibitors slashing prices to the bone in the light of the expected volume of sales."

This is only the second *Shopper Show*, but the inaugural event last December was such a runaway success that the show is already a major date on the computer exhibition calendar.

This year's show takes place at the Wembley Conference Centre from Thursday December 6 to Sunday December 9 and a massive 40,000 visitors are expected to pour through the doors over the four days. And with 280 exhibitors ranging from independent retailers to major names such as Acorn, Atari and Commodore, few would dispute Blenheim's claim that: "This will be the world's largest pre-Christmas computer shopping spree."

The show is indeed the perfect place to pick up Christmas bargains. "Intense competition is the key to it all," according to Michael Meakin, Blenheim's head of organisers. "Exhibitors realise that people come to the show to save money on purchases and are reacting accordingly."

An exit poll of attendees at last year's show revealed that as many as 95 per cent reckoned they had made substantial savings. Although the 1990 show is so close to Christmas it will also be the UK public's first opportunity to buy or try out up to 100 new products ranging from software such as *Colossus Bridge* and *Final Conflict* to the Olivetti PC/S range of small business machines.

The computer companies see the show as the perfect opportunity to make contact with their customers. "Shopper is ideal for both sales and promotional purposes," reckons Atari's Bob Katz. "It is perfectly timed to attract record crowds in that all important period immediately prior to Christmas. Of equal importance to us is that it provides the breathing space in which to do business."

The console giants, Sega and Nintendo, are also keen to exploit the show in the run up to what they see as the "Console Christmas." As Philip Ley, Sega Marketing Manager, explains: "The event is perfectly timed to play a key role in our overall seasonal push for Christmas. We view the show as being an integral part of maintaining the highest profile at this most important time of year."

If with all these glorious opportunities around, you feel a bit in awe and at a loss as to what to buy, fear not. Go to the advice centre where experts will dispense free unbiased guidance on buying computers and peripherals. Additionally, both the London Chamber of Commerce and the DTI will be present to help people with small businesses. And, of course, user groups will

FIVE THINGS YOU SHOULD KNOW ABOUT THE SHOW

● Amongst the stranger artifacts you'll be able to pick up at the show are furry covers for your mice, orthopaedic chairs, answering machines for car phones and indestructible pen sets.

● The Show is all set for a major fundraising effort on behalf on the Starlight Foundation. This is a charity which was set up in 1982 by *Dynasty* actress Emma Samms and helps make the wishes of terminally ill children come true. So if you do make huge savings at the show, you can afford to dig deep into your pockets and give this worthy charity a donation.

● Other products on sale prove that even the computer world can go green. Aside from a new package based on rain forests and endangered species that live in them, recycled photocopying and printer paper will also be on sale.

● The show is vying for a place in the *Guiness Book of Records* with the largest number of Father Christmases ever seen under one roof. Staff manning the stalls have been asked to turn up in Father Christmas costumes so visitors to the show can expect to be confronted by between 600 and 1,000 jolly, fat, bearded men in red.

● Visitors will have the chance to take advantage of over £2 million worth of special offers. Acorn, for example, will be giving away thousands of pounds worth of vouchers to spend at Acorn stalls at the Show.

Just about EVERYONE* can save pots of money buying presents at the Computer Shopper Show!

** An exit poll at last year's Computer Shopper Show revealed that 95 per cent of visitors reported "substantial saving" from their purchases – with individual figures ranging from £50 to more than £1,000!*

- ★ One-stop shopping for ALL your computer Christmas presents!
- ★ Hundreds of stands packed with special show bargains!
- ★ Expert advice to help you make the right choice!

And if all that wasn't enough, cut out the special voucher on this leaflet and save up to 70p off the price of your ticket!

SAVE!

This voucher is worth 70p per person off the admission price to Computer Shopper '90

Only valid Thursday or Friday December 6 or 7.

OR SAVE £4 off the price of a family ticket (two adults and two children)

COMPUTER SHOPPER SHOW'90
Wembley, London • 6-9 December

Only one discount per person is allowable NCE 2

SAVE!

This voucher is worth 50p per person off the admission price to Computer Shopper '90

Only valid Saturday or Sunday December 8 or 9.

OR SAVE £3 off the price of a family ticket (two adults and two children)

COMPUTER SHOPPER SHOW'90
Wembley, London • 6-9 December

Only one discount per person is allowable NCE 2

COMPUTER SHOPPER SHOW

WHAT'S IN STORE

be there to help you with problems over particular machines.

Another major feature of the show this year will be New Horizons, a four day conference sponsored by Acorn aimed at showing visitors the latest technological developments in the computer world. It will include seminars on CD ROM, image processing, hypermedia, desktop publishing, music and education.

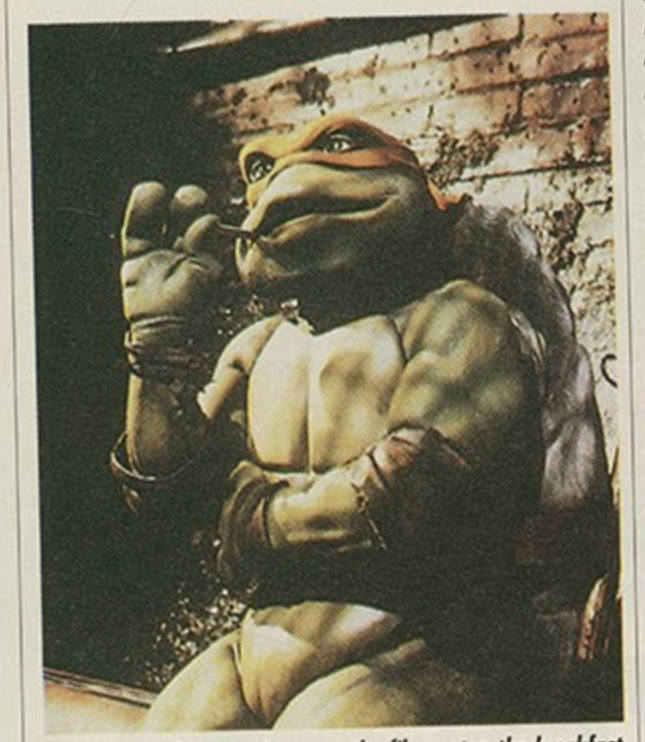
The conference will also contain two market debuts. The Hypermedia For All presentation will reveal *Genesis 2*, due for official launch in January while a new file transfer system designed for improved emulation under RISC OS launched by Acorn recently will be shown off during the PC Emulating seminar.

Tickets for Shopper Show 1990 are £5 for adults and £3.50 for children. A family ticket (two adults, two children) will cost £12. If you book in advance on the 24 hour hotline – 051-357 1736 – there is £1 off each ticket. Doors open at 10am each day (except Saturday - 9am) and the show finshes at 6pm each day (except Sunday – 5pm). Get those cheque books and credit cards ready.

TURTLE MANIA

The Entertainment Hall is an innovation at this year's show, housing *Entertainment Shopper*. The place to visit to test out games and marvel at the latest superfast graphics, both the major console companies, Sega and Nintendo, will be very much in evidence.

Nintendo is hoping to whip up some Turtle mania to promote *The Mutant Machine*, its christmas bundle for this year. The package combines the Nintendo



• *You've read the comics, seen the film, eaten the breakfast serial now play the game.*

Entertainment System with Konami's new game *Teenage Mutant Hero Turtles*. There will be be a whole host of other Turtle promotions including a special launch offer for *The Mutant Machine* allowing Show visitors to buy it for just £79.99, a full £20 less than it will cost in the shops.

Another kids favourite, *Mario* – reckoned to be the most famous computer generated character in the world – will be on hand for personal appearances.

Nintendo is also taking the opportunity to show off its Game Boy hand-held console. Mike Hayes of Serif, Nintendo's distributor in the UK, explained: "When we launch Game Boy we will not be indulging in large television advertising so the *Computer Show* will be the first time that many people in this country will have seen this exciting new product."

Although Sega's rival product, the GameGear, is not yet officially available in the UK, Virgin Mastertronics, Sega's UK distributors, will be on hand with demonstration models of the latest Sega consoles on its stand. And doubtlessly a few unofficial GameGears will find their way into the show.

SHOPPING AROUND

Making its first appearance at the show will be the ARC's *Cyber Assault*, billed as "the first accurate simulation of a humanoid figure travelling in an unrestricted 3D world."

More 3D action comes from Mandarin Software which will be promoting *STOS 3D* which allows the creation of 3D objects and space in STOS.

Also of interest to Amiga and ST users will be new games from Impressions, including *The Last Starship, Striker* and *Win A Billion*, and CDS, including *European Superleague* and *Tank Attack*..

For Amiga fans in particular there will be a number of products available in Amiga versions for the first time,

• *Will it or won't it appear? The* CDTV.

including *Flexidump* from Care Electronics and a doublepack from Microtec consisting of *Bugbash* and *Nucleus*. An improved version of LCL's *Micro English* educational package which now covers oral communication and corresponds to the 1991 syllabus will also make its first appearance.

There are also plans for Commodore's long delayed CDTV to have a viewing at the show, but with the yet another announcement from the company about the postponing of a launch date, the exact form its appearance will take, if it appears at all, remains uncertain.

ST devotees can look forward to new products for their machine. B Bytes will unveil several, including the *B Write* wordprocessor and the art package *Kid Paint*. Version 1.4 of *Supercharger* which allows the ST to run all MS-DOS applications at 8MHz will be launched by Condor Computers while Kuma will be revealing *K-Spread 4*, an accounts package, and *Adimens 3.0*, a relational database.

HIGH FLYING WITH ACORN

Acorn is offering a unique flying experience to all budding pilots at the Show. Built into the Acorn stand will be a realistic fighter plane cockpit complete with ejector seat, joystick and flightdeck instruments.

Once in the cockpit, visitors will experience the thrills and spuills of the Archimedes flight simulator *Interdictor* displayed on a large screen. A real Concorde pilot will also be on hand on the Saturday morning to take on all challengers, so you can see how you match

• Interdictor: *challenge the professionals to a game*

up to the professionals.

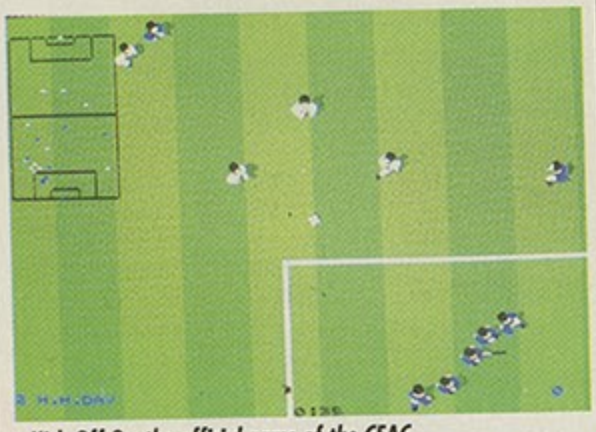
This special attraction is part of Acorn's Test Flight promotion for its major product range *The Learning Curve*. Visitors to the stand will also be able to take part in a competition with prizes including a trip on Concorde, helicopter flights and flying lessons.

CUP FINAL KICKS OFF

Wembley is host to a very different sort of Cup Final this December. The fact that the actual venue is the Conference Centre and not the Stadium must give you a clue about the nature of the match.

Over 5000 computer footballers have been competing across the country over the last couple of months for a place in the final rounds of the *Computer Football Association Challenge Cup* being held at *The Shopper Show* on 9 December.

The CFA was formed by Steve Anderson of Mutant



• Kick Off 2 : *the official game of the CFAC*

Software to promote excellence in the field of soccer simulation on home computers. For its first ever Challenge Cup competition the CFA will use Anco's *Kick Off* and *Kick Off 2* for the matches.

"Support for the competition is amazing. We hope to get a big screen put in at the Show so that supporters and spectators will get a better view. With such a big entry, the players who win their way through to the final rounds will really be worth watching," reckons Steve Anderson.

The eventual winner of the CFAC will scoop the 1990 Challenge Cup and £1000, while the runner up will receive a trophy and £500. The champion will then go on to play a match against the Italian cup winner later in the day. The CFA is also hoping to tempt the French

THE ACORN NEW HORIZONS CONFERENCE PROGRAM

THURSDAY AND FRIDAY	
11am	CD ROM in Education
12 noon	Schema - A Spreadsheet for the Family
1pm	Image Processing
2pm	PC Emulating and other operating systems
3pm	Music Midi Mania
4pm	RISC Technology in the 1990s
5pm	Desktop Publishing

SATURDAY AND SUNDAY	
11am	Hypermedia for All
12 noon	Schema - A Spreadsheet for all the Family
1pm	Programming Made Easy with Basic 5
2pm	PC Emulating and other operating systems
3pm	Music Midi Mania
4pm	Faster Computing
5pm	Designing Documents

Solid Gold Marketing

SEGA MEGADRIVE + ONE GAME (PAL) AND (SCART)

£129.95

+ £10 p&p

ALL AMERICAN NEO GEO £399.95

+ £10 p&p

Sega Megadrive will take British, American and Japanese games.

To order send cheque or postal order made payable to:
SOLID GOLD MARKETING
(Please write name and address on reverse).

SOLID GOLD MARKETING,

Unit 6,
Lomond Trade Centre,
Lomond Industrial Estate, Alexandria,
Dumbartonshire, Scotland, G83 0TL.

Tel: 0389 55973

Please allow 28 days for delivery.
We also accept Access, Visa and Barclaycard
Trade enquiries welcome

The seal of respectability
S G M

HARD DISKS MADE EASY

Hard disks are expensive beasts, but is it worth investing in extra storage? Express investigates . . .

When you first get a computer with a floppy disk drive it seems such a luxury. Compared to cassettes, disks work at the speed of light. Unfortunately you soon hit their limits – principally the small amount of data they can store.

If you ever use a computer with a hard disk drive you will never want to use a floppy disk computer again, it's as simple as that. Hard disks have three great advantages. First, they can hold vast amounts of data and huge programs. Second, you can have all your programs accessible instantly instead of having to find the relevant disks. And third, they are extremely quick.

The smallest hard disk you can get can hold 20 megabytes (20,971,520 characters); the largest common floppy disk drive can squeeze in 1.44 megabytes (1,509,948 characters). An ST floppy disk can be tweaked so it will hold 800K (819,200 characters) so you can see that the leap to a hard disk is a major one – and that's the smallest hard disk drive. You can get drives with upwards of a gigabyte (1,073,741,824 characters) of storage!

The vast spaces of a hard disk allow programs to become more sophisticated as the size of the program code is no longer restricted by the size of the disk. Programs such as desktop publishing applications can be much more powerful – for instance the leading program *PageMaker* is over 1.5Mb long in its latest version and simply cannot be run off a floppy disk.

Hard disks are very fast. Most programs load in a couple of seconds at most, instead of minutes of disk swapping you have to endure with a floppy. Data files can be loaded in a flash.

So they're a valuable addition to your computer armoury. But what should you look for in a hard disk drive?

SPECIFICATIONS

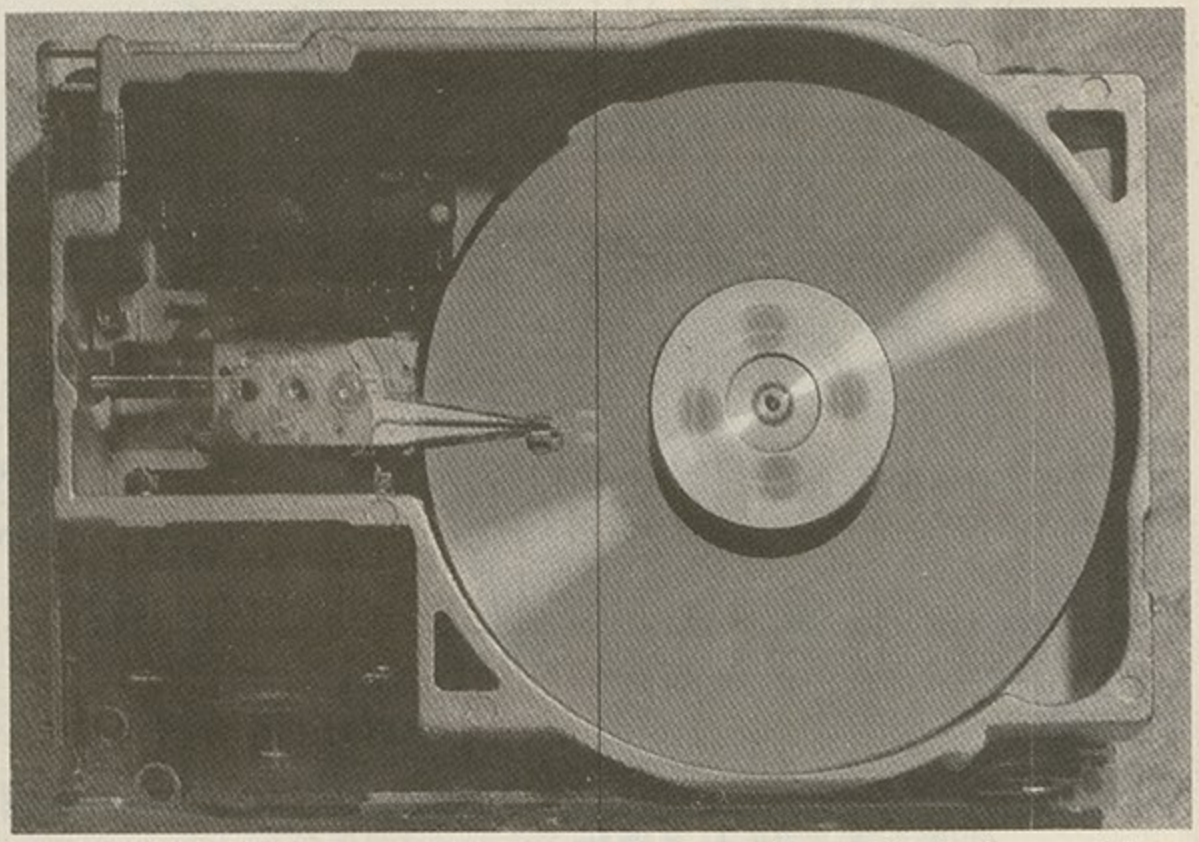
There are four measurements associated with hard disk drives:

● **Storage capacity**. Measured in megabytes, this is the amount of data you can store on the disk. 20Mb is the smallest commonly available size, and the norm is rapidly becoming a 40Mb disk.

● **Access time**. Also called 'seek time' this measures how long it takes the disk to find your data, on average. An access time of 70 milliseconds is slow, many disks operate at 40ms, and 20ms and below is lightning fast (and very expensive).

● **Data transfer speed**. Measured in megabytes per second, this records how quickly the disk can read data into the computer's memory. For average sized files the access time is more important than transfer speed.

● **Interleave**. As the platter of the hard disk spins around the hard drive reads data from it. Unfortunately most computers can't handle data as fast as it pours off the disk. To get around this most drives space the data out so that it comes in at a more reasonable pace. The interleave is a measure of the gap between successive blocks of data, and is expressed as a ratio of data to space. The space is not wasted – several pieces of data are placed alternately on the disk to fill up the disk. A 1:1 interleave hard disk is the fastest on paper, but if your computer cannot cope with the data that fast it will actually be slower than a 1:3 or 1:5 disk.



• The insides of a Western and Digital hard disk. Note the large circular 'platter' and tiny read/write head on a motorised arm

BUYING A DISK

If you have a PC you can shop around and get a disk with the attributes you need. ST, Amiga and Archimedes users are much more limited in their choice, and devices that are in essence the same as a PC hard disk can sell for double the price.

Check through the small ads in *Shopping Express* – you'll find a number of disks on offer. Compatibility is no problem with ST, Amiga and Archimedes drives; if it's stated that the drive will work with that machine then you'll be all right. One feature to look for is 'autobooting'; some disks require you to insert a special floppy before the hard drive will get up and running, autobooting machines just require you to flip the on/off switch. Always choose an autobooting disk if you can.

PC owners have a much more complicated life. Besides having hundreds of drives to choose from, they need an extra gadget called a hard disk controller to get the thing up and running. Unfortunately there are several different kinds of hard disk controllers, which support different kinds of disks. Abbreviations like MFM, RLL, EDSI, IDE, SCSI and ST106 make life harder. In a future article we'll explain what these terms mean, but the important thing is to make sure the controller card matches the disk drive. If you are buying a disk and a controller get them from the same supplier and make it clear you expect them to work together. If you already have a controller get as many details about it as you can and include them with your hard disk order.

You can get around these problems by buying a hard card – that's a hard disk physically welded to the back of a hard disk controller which just plugs into an expansion slot. It's the easiest way, but is a bit more expensive and the drives tend to be low performance models.

Whatever you do, a hard disk is well worth the investment and you'll find your computing life is revolutionised by these superfast disk drives. ■

WHAT'S INSIDE A HARD DISK?

Hard disks consist of rigid ceramic disks, called platters, which spin at several hundred rpm. Devices called 'heads' are controlled by motors that move them around the disk surface reading and writing the data.

Because the hard disk is solidly constructed to high tolerances, it can pack much more data in than a floppy disk. That, combined with the multiple platters and the high rotation speed, gives the hard disk its performance edge.

Because of these fine tolerances, hard disks are notoriously fragile; an *Express* hard drive died after being driven five miles to the photographer's and back! Although this is improving all the time, if you buy a hard drive it will come with a 'parking' program which stores the heads neatly out of the way for moving it. Ignore this program at your peril!

★ POCKET SIZED ★ PC-COMPATIBLE ★ PERSONAL ORGANISER ★

ATARI Portfolio

THE PC IN YOUR POCKET

The new Portfolio from Atari is the world's first pocket-sized electronic organiser that is also a powerful PC compatible computer, with a full QWERTY keyboard and scrolling 80×25 character display.

Portfolio includes everything you would expect from an electronic organiser - an address and telephone book, time manager, diary and sophisticated calculator.

Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

FOR ONLY **£199** INC VAT

SPECIFICATION

- ★ ***Processor:*** Intel 80C88 at 4.9152Mhz.
- ★ ***Operating System:*** Compatible with MS-DOS 2.11.
- ★ ***Internal ROM:*** 256K containing BIOS, operating system and applications suite.
- ★ ***RAM:*** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ ***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.
- ★ ***Size:*** 8" x 4" x 1" (200mm x 105mm x 29mm).
- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

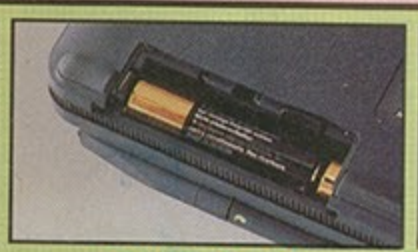
The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

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.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.

INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

SILICA SYSTEMS OFFER YOU

- ***FREE OVERNIGHT COURIER DELIVERY:*** On all hardware orders shipped in the UK.
- ***TECHNICAL SUPPORT HELPLINE:*** Team of Atari technical experts at your service.
- ***PRICE MATCH:*** We normally match competitors on a "Same product - Same price" basis.
- ***ESTABLISHED 12 YEARS:*** Proven track record in professional computer sales.
- ***£13M TURNOVER (with 60 staff):*** Solid and reliable with maintained growth.
- ***BUSINESS/EDUCATION/GOVERNMENT:*** Volume discounts available for large orders.
- ***SHOWROOMS:*** Demonstration and training facilities at our London & Sidcup branches.
- ***THE FULL STOCK RANGE:*** All of your Atari PC requirements from one supplier.
- ***FREE CATALOGUES:*** Will be mailed to you with offers and software/peripheral details.
- ***PAYMENT:*** By cash, cheque and all major credit cards.
- ***CREDIT PAYMENT TERMS:*** Silica are licensed credit brokers - details on request.

Before you decide when to buy your new Atari Portfolio, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Portfolio, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new Portfolio products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

SILICA SYSTEMS

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-309 1111**	
Order Lines Open: Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608	
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA	**Tel: 071-580 4000**	
Opening Hours: Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Fax No: 071-323 4737	
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-302 8811**	
Opening Hours: Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017	
BUSINESS/EDUCATION:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-308 0888**	
Order Lines Open: Mon-Fri 9.00am-6.00pm	Closed on Saturdays	Fax No: 081-308 0608	

To: Silica Systems Ltd, Dept NCE1290 38 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON PORTFOLIO

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

Address: .....

.....

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

Tel (Home): ..... Tel (Work): .....

Company Name: .....

Which computer(s), if any, do you own? .....

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

AN ST FOR ONLY £80!

If you've got an Amiga and envy some of your old adversary's software, the best emulator yet produced for your machine is now available. Jason Holborn defects to the other side...

ST emulation certainly isn't anything new on the Amiga – MacroSystems' Medusa ST Emulator card has been happily running Atari software for a couple of months now, but that did have one slight disadvantage – the price. Coming in at just under £200, you could easily pick up a real Atari for just a few pounds more, which defeated the object of buying an emulator in the first place. Thankfully though, Maxon's *Chamäleon* ST emulator doesn't suffer from this problem. It works equally as well as the Medusa Card, but still manages to sell for around £100 cheaper than it's rival.Why? Because it's software only.

In many ways, there was no real reason why Medusa needed that ridiculously small PCB – Macro Systems itself admitted that the board handled nothing more than I/O, so it wasn't exactly a crucial part of the Medusa system.

LEGAL EAGLE

Chamäleon comes to you on two disks – one for the Amiga and another in Atari format. Also included is a fairly comprehensive manual that covers the basics of what *Chamäleon* will and won't do, how to install it and even how to use the Atari desktop. The packaging contains the oddest illustration I've seen for quite a while – a camel changing from green to orange. Don't these people realise that a *Chamäleon* is a lizard?

Just like Macro Systems emulator (and indeed, every other emulator under the world), *Chamäleon* isn't just a boot up and go affair (surprise, surprise). As always, things are far more involved than that. The first thing you must do is to find a friendly Atari user and talk them into allowing you to extract the operating system from their computer. Sounds painful I know, but the whole process is actually done through software (thankfully).

Here then, is where we encounter the first problem. Maxon doesn't actually supply such a utility with the *Chamäleon* package, so it's up to you to source a program that will do the job.This isn't really surprising, as rumour has it that Atari is clamping down hard on emulator manufacturers. According to a source in the US, *Chamäleon* is already the subject of investigation by Atari's lawyers, so it may be wise to buy your copy now. It's a familiar story. Atari isn't the first company to object to emulators – Apple has been trying to ban Mac emulators for years now. The funny thing is though, Atari seems perfectly happy to advertise the fact that you can run Mac software on an ST (with an emulator such as HiSoft's Spectre GCR). One cannot help but think that-perhaps Atari should practise what it preaches (after all, impersonation is supposedly the sincerest form of flattery!)

COMPUTER MONGREL

Once you've sourced such a program (these are generally available from ST PD libraries, although I used the GETTOS.PRG program that came with the Medusa emulator), all you have to do is to copy the resulting TOS.IMG file onto the supplied ST disk. Once this is done, you're ready to get your first taste of Tramiel computing on the Amiga.

All that now remains is to turn on your Amiga, insert the program disk into the internal drive and *Chamäleon* then starts to boot. Once you're past the fancy loading graphics, *Chamäleon* then asks you to insert the Atari-format disk containing the TOS.IMG file. If everything is OK, *Chamäleon* then reads this file into memory. From here, you can then choose the resolution which your hybrid ST is to work in – all three ST resolutions run on a standard Amiga monitor, so just hit the corresponding function key and you'll be presented with the ST desktop.

You now have a machine which is, to all intents and purposes, an Atari ST. Just insert any Atari-format disk, double click on the appropriate drive icon and *Chamäleon* brings up a window displaying the disk's contents. Most programs seemed to work without problems – I tried the ST versions of *DPaint, Calamus, GFA BASIC 3.5, Protext 5* etc, all of which seemed to work without problems. Even MIDI software such as *Pro-24* ran, which is great news if you're an Amiga musician. Just think, at last Amiga owners can run software such as Steinberg's state-of-the-art *Cubase* sequencer. Oh what joy!

Some programs don't work unmodified, however. Also on the Atari-format diskette are a number of patch programs that fix certain well-known programs to work with *Chamäleon.* These include programs such as *GFA-BASIC, Signum Script!,* etc. Just click on the appropriate patcher program and the application is automatically fixed. Obviously it goes without saying that you should only feed back-up copies of your Atari software through these patcher programs, otherwise you could well end up with an Atari program that won't even work on a real Atari!

There are, of course, some programs that most definitely won't work under *Chamäleon.* For starters, Atari games won't work. Some PD games that don't 'bash the metal' might just run, but the general rule is that games are a non-starter. This isn't exactly suprising. After all, no matter how advanced the Amiga hardware, the fact is that it isn't an Atari. As the old saying goes, nothing runs Atari software better than an Atari.

JUST THE THING

So there we have it, an ST emulator at a realistic price. It certainly works – for people that want to run serious ST software without having to fork out for a second machine, then it could well be just the thing. Indeed, there are really only two things I don't like about *Chamäleon.* The first is that Maxon hasn't included a utility to rip TOS from an ST. Secondly, the *Chamäleon* boot disk uses a special disk format that basically means that it can't be installed on a hard disk.This could make it somewhat less useful for professional users.

Gripes aside though, *Chamäleon* is an impressive achievement in software design. It's highly compatible, fast and above all, relatively cheap. If you already own an Amiga and yearn to get a taste of what the other side is up to, then *Chamäleon* is the answer. All in all, *Chamäleon* comes highly recommended.

Chamäleon is available for £80 from George Thomson Services on 0770 82234. It works on all Amigas including the A1000 and A3000. ■

ADVANTAGES & DRAWBACKS

Very good value for money. Supports all three screen modes on a single monitor. Highly compatible.

Does not include a utility to extract TOS from a real ST, and it won't let you run ST games.

THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created ... affordability.

Silica Systems are pleased to present the new Atari ABC. The ABC is a 286 AT compatible that runs at over 5 times the performance of the IBM XT. This is achieved by combining the power and speed of a 16-bit 286 processor, with Atari Corp's development experience and engineering capabilities, which use the very latest in design technology. However, the Atari ABC's are available at 'XT prices' and many XT owners will wonder why they paid more, but got less!

The ABC is a reliable, high performance computer, built to exceptionally rigorous standards. It is well designed, to a state of the art specification, maintaining maximum expansion capability for the future. This includes up to 4Mb of RAM and 3 AT expansion slots. Plus, unusually for a PC at this price, the ABC has the ability to install two or three extra drives, with the cabling already inside the CPU.

The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

The ABC is the latest addition to a comprehensive range of both 286 (8Mhz or 12Mhz) and 386 (16Mhz and 20Mhz) PC's, from the Business Systems Division of Atari Corp. Atari's PC range offers an unsurpassed combination of reliability, compatibility and expandability, with unique features like Atari's 44Mb removable hard disk on their PC4. Return the coupon NOW for further details of the complete range of PC products from Atari's Business Systems Division.

ABC TURBO
AVAILABLE: JUNE 90

To put the ABC even further ahead of the competition, we have introduced a special 'Turbo' version, which includes a super fast RLL hard disk controller to increase the data transfer rate from 150KBytes/s to 800KBytes/s, with a performance index of 4.801. Plus! to provide exceptional graphics with an outstanding colour resolution of up to 1024×768, we have included a Super VGA graphics adaptor and a 14" VGA colour monitor (which also supports 1024×768 resolution), all for an additional price of only £300. Check the ABC Turbo against the competition, at only £1299 (+VAT) with 30Mb hard disk, Super VGA colour graphics capabilities, plus 12 months on-site maintenance, it offers unbeatable value.

LOW PRICE - HIGH SPEC!

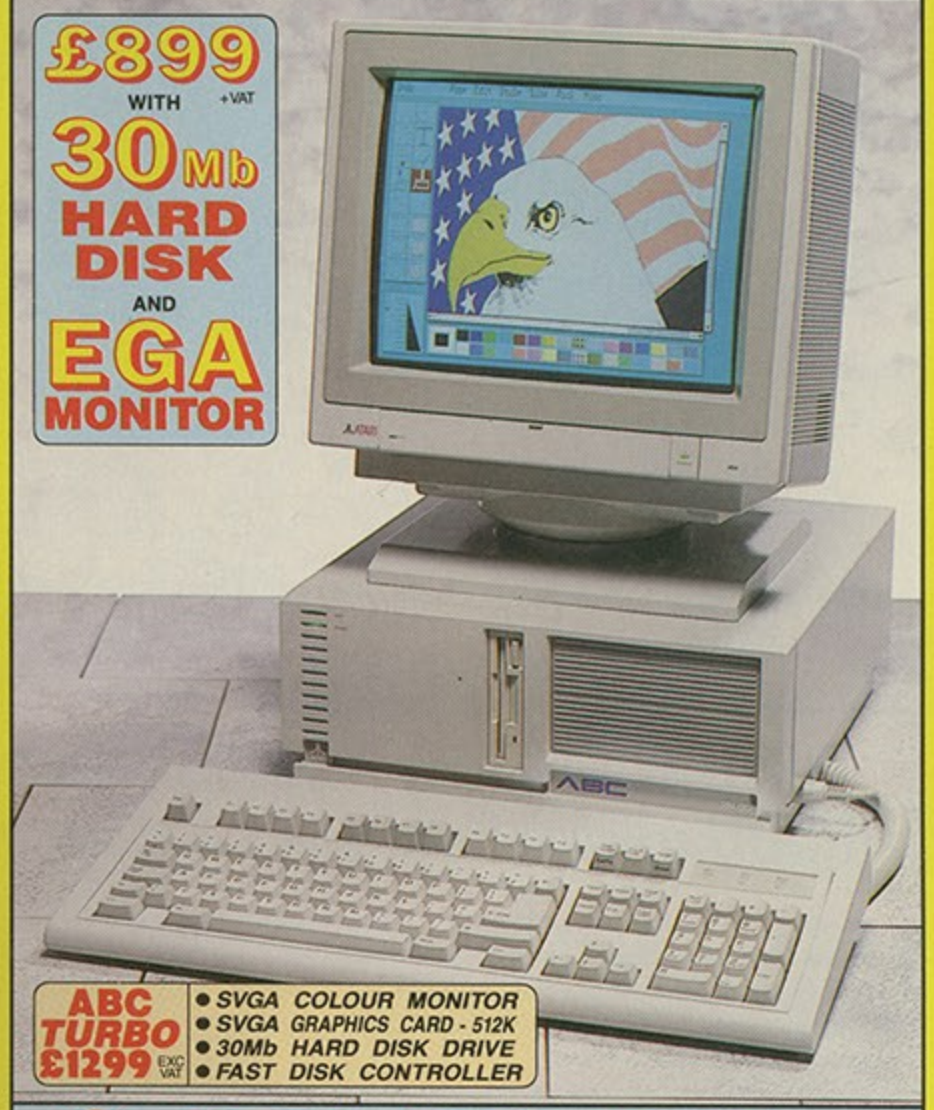
CPU+MOTHERBOARD	• 8Mhz 80286 16-bit CPU • Landmark Speed = 10.3Mhz, Norton SI Test = 9.0 • Latest NEAT (New Enhanced AT) technology chip set • Has user selectable bus, DMA speeds & wait states • Programmable to operate at 0 or 1 wait states • 640K RAM base memory (expandable) • Motherboard expandable to 4Mb RAM memory • Real time clock with battery back-up • Full 16-bit data line capability • Socket for 80287-8 numeric Co-Processor • 3 16-bit AT expansion slots (max)
DISK	• 32Mb RLL hard disk - 150KBytes/s transfer - 60ms access • Fast disk controller - 800KBytes/s transfer - *Turbo version* • 1.44Mb built-in 3½" floppy disk drive • Space for two 5¼" and two 3½" drives (max)
I/O	• Parallel port built-in (25-pin Centronics) • Serial port built-in (9-pin RS-232) • Mouse controller port built-in (9-pin serial)
GRAPHICS	• Super VGA video graphics controller - *512K - Turbo vers* • Super VGA: 256 colours in 800×600 res - *Turbo vers* • EGA video graphics controller built-in • EGA: 16 colours available from a palette of 64 • EGA: 256K of dedicated Video RAM built-in • MDA, CGA and Hercules graphics controller built-in
PHYSICAL	• Low noise operation • Ergonomic small footprint (38cm×41cm×15cm) • Keyboard - 102 key enhanced AT (12 function keys) • Keyboard - has 2 position height adjusters
PLUS!	• Fully OS/2 compatible (requires 4Mb RAM) • Supports Industry Standard Networks • MS-DOS 3.3 with GW BASIC 3.22 • 12 Months FREE on-site maintenance included

286 AT

WITH 30Mb HARD DISK & EGA MONITOR - £899

FREE! - ON-SITE MAINTENANCE
FREE! - TECHNICAL SUPPORT HOTLINE
FREE! - TEST/BURN-IN BEFORE DESPATCH
FREE! - OVERNIGHT COURIER DELIVERY

£899 WITH +VAT **30Mb HARD DISK** AND **EGA MONITOR**



ABC TURBO £1299 EXC VAT
- *SVGA COLOUR MONITOR*
- *SVGA GRAPHICS CARD - 512K*
- *30Mb HARD DISK DRIVE*
- *FAST DISK CONTROLLER*

£899 +VAT= £1033.85

ATARI

	3½" FLOPPY DRIVE NO HARD DRIVE	3½" FLOPPY DRIVE + 30Mb HARD DRIVE
NO MONITOR	£599 +VAT = £688.85	£799 +VAT = £918.85
+ EGA MONO	£699 +VAT = £803.85	£899 +VAT = £1033.85
+ EGA COLOUR	£799 +VAT = £918.85	£999 +VAT = £1148.85
ABC TURBO AVAIL: JUNE 90 • *14" SVGA COLOUR MONITOR* • *SVGA GRAPHICS ADAPTOR* • *FAST DISK CONTROLLER*	£1099 +VAT = £1263.85	£1299 +VAT = £1493.85

SILICA SYSTEMS OFFER YOU

ON-SITE MAINTENANCE (8 hour response): Available Free of Charge on all ABC's.
TECHNICAL SUPPORT HELPLINE: Team of Atari technical experts at your service.
100% QUALITY CONTROL: Every ABC is tested/burnt-in before despatch.
FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13M TURNOVER (with 60 staff): Solid and reliable with maintained growth.
BUSINESS/EDUCATION/GOVERNMENT: Volume discounts available for large orders.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
SHOWROOMS: Demonstration and training facilities at our London & Sidcup branches.
THE FULL STOCK RANGE: All of your Atari PC requirements from one supplier.
FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: Cash / cheque / credit card / credit - we are licensed credit brokers - details on request.

Before you decide when to buy your new Atari ABC, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your ABC, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new ABC products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

SILICA SYSTEMS

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-309 1111**
Order Lines Open:	Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA		**Tel: 071-580 4000**
Opening Hours:	Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Fax No: 071-323 4737
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-302 8811**
Opening Hours:	Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017
BUSINESS/EDUCATION:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-308 0888**
Order Lines Open:	Mon-Fri 9.00am-6.00pm	Closed on Saturdays	Fax No: 081-308 0608

To: Silica Systems Ltd, Dept NCE1290 28, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON ATARI PC's

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

Address: .....

.....

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

Tel (Home): ..... Tel (Work): .....

Company Name: .....

Which computer(s), if any, do you own? .....

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

ALWAYS LOOK ON THE BRIGHT SIDE OF LIFE!

WIN!

6 Monty Python videos plus 10 runners-up prizes

THRILL! to the Gumby •SEE! the nude man at the piano •HEAR! the Spam song •ENJOY! cabbage crates over the briney •LAUGH! at the funniest joke in the world

If you think for one minute that you're going to hear a bunch of dead parrot jokes, the word Ni!, lumberjack songs, nudge-nudge, a nod's as good as a wink to a blind bat, know what I mean squire? Or cheese shop sketches you could well be correct.

Express, in the company of Virgin Software, (which brought the game of the series to the computers of the non serious) are giving you the chance to win 6 Monty Python videos. That's 6 winners. The vids contain many of the wacky, zany, 60's and 70's gags, sketches, surrealities and such like sock-it-to-'em rib rippers which made the Python team so well loved and, well frankly, wealthy.

There are also 10 runners-up prizes of badges and posters to be won by those of you lucky enough. All you have to do is answer the following three questions to the best of your ability. We don't care if you cheat by looking them up. What we do care about is that you buy the magazine. Also to make my life (I'm the compo creep from the cupboard by the way, very humble to meet you) easier would you please send all answers on the back of sealed envelopes or preferably a postcard. Thanks muchly-loads.

All entries should be at this office no later than Monday 17 December 1990. Cheers then, and here we go with the questions.

1) Who wrote the Monty Python theme tune?

A) Sousa
B) Siouxie Sue
C) A boy named Sue
D) Andrew Lloyd-Webber

2) Who was the animator who worked for the Pythons?

A) Terry Griffiths
B) Trevor Gilliam
C) Terry Gilliam
D) Trevor Brooking

3) Which government department did John Cleese work for?

A) The Ministry of Defence
B) The Ministry of Silly Walks
C) The Press Office
D) The Ministry of the Environment

There you go then. All done my old chinas. Simply fill in the form below and send it off to us here at 'The Warm and Wet Comp' New Computer Express, 30 Monmouth Street, Bath, Avon, BA1 2BW.

Name.....

Address.....

.....

The answers are: 1) 2) 3)

Supplementary question in the event of a tie breaker:

Margaret Thatcher will make a sensational comeback in which year

.....*(no later than 1991 please)*

WINNERS!

The winner of the the monthly competion for the Panasonic laser printer was...
LB Webb of Coventry. Well done.

At long last we can announce the winners of the *Dpaint* competition. So here goes....
Andrew Cassidy, Swindon, Wilts; Henry S Suppiah, Milton Keynes; PA Monks, Armingborough; M Westall, Poole, Dorest; Marcus Lauder, Forfar, Angus; Andy Stevens, Oxford; PP Patay, Oxted, Surrey; David Rhodes, Pudsey, W Yorks; Bill Brouard, Freshford, Bath; Steve Baker, Barwell, Liecs

HOLD ON A SECOND! We've also got the Spectravideo joystick winners to announce.....
R Bullock, Deepcar, Sheffield; Dave Brown, North Shields, Tyne and Wear; DRP Ferriday, Cleveland Richard MacLennan, Edinburgh; SA Sherriff, Co Antrim, Northern Ireland; JA Smith, Huddersfield; Robin Smith, Halifax, West Yorks; M Philpotts, Harold Park, Romford Katy Rayner, East India Dock Rd, London; MF Welding, Hinckley, Leics; Leonie Alpin, Ashford, Kent; Bruce Stewart, Dundee; M Lloyd, Soton; John Swire, Pershore, Worcs; R Fitchie, Edinburgh; Graham Greenwood, Newcastle-upon-Tyne; Mark Krason, London, W4; Tony Beedham, March, Cambs; R Daley, Canford Heath, Poole; Gavin Upsall, Sleaford, Lincs

RETURN THE COUPON FOR FREE COLOUR BROCHURES!

NEW! - AMIGA PACK

Commodore A500 Flight Of Fantasy

£399 INC VAT

A500 BATMAN PACK

The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Batman The Movie	£24.95
New Zealand Story	£24.95
Interceptor	£24.95
Deluxe Paint II	£49.95
TOTAL RRP:	£549.78
Less Pack Saving:	£150.78
PACK PRICE:	**£399.00**

£399 INC VAT

AMIGA 2000

For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

£1295 +VAT= £1489.25

FLIGHT OF FANTASY

Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

DELUXE PAINT II:
The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

ESCAPE / ROBOT MONSTERS:
Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

RAINBOW ISLANDS:
Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the Island of Doh to Monster Island, you will encounter Doh himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

F29 RETALIATOR:
The ultimate in flight simulation with a choice of two aircraft and four battle environments with dozens of different tactical missions. Aerial combat, strategic bombings, interactive ground based battles, seagoing carriers ... the list of features is endless. Real time cockpit displays, including 'true radar' enhance the realistic feel of this stunning simulation.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Deluxe Paint II	£49.95
Escape/Robot Monsters	£19.99
Rainbow Islands	£24.95
F29 Retaliator	£24.95
TOTAL RRP:	£544.82
Less Pack Saving:	£145.82
PACK PRICE:	**£399.00**

£399 INC VAT

FOR FURTHER DETAILS OF THE AMIGA RANGE, COMPLETE THE COUPON AND RETURN IT TO SILICA SHOP
THE UK's No1 AMIGA SPECIALISTS

SILICA SHOP OFFER YOU

FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
TECHNICAL SUPPORT HELPLINE: Team of Amiga technical experts at your service.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13M TURNOVER (with 60 staff): Solid and reliable with maintained growth.
BUSINESS/EDUCATION/GOVERNMENT: Volume discounts available for large orders.
SHOWROOMS: Demonstration and training facilities at our London & Sidcup branches.
THE FULL STOCK RANGE: All of your Amiga requirements from one supplier.
FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: By cash, cheque and all major credit cards.
CREDIT PAYMENT TERMS: Silica are licensed credit brokers - return coupon for details.

Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Shop, we ensure that you will have nothing to worry about. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Shop Service".

RETURN THE COUPON NOW FOR FREE BROCHURES

SILICA SHOP

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-309 1111**	
Order Lines Open: Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608	
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA	**Tel: 071-580 4000**	
Opening Hours: Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Fax No: 071-323 4737	
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-302 8811**	
Opening Hours: Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017	
BUSINESS/EDUCATION:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-308 0888**	
Order Lines Open: Mon-Fri 9.00am-6.00pm	Closed on Saturdays	Fax No: 081-308 0608	

To: Silica Systems Ltd, Dept NCE1290-32, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON THE AMIGA

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

Address: .....

.....

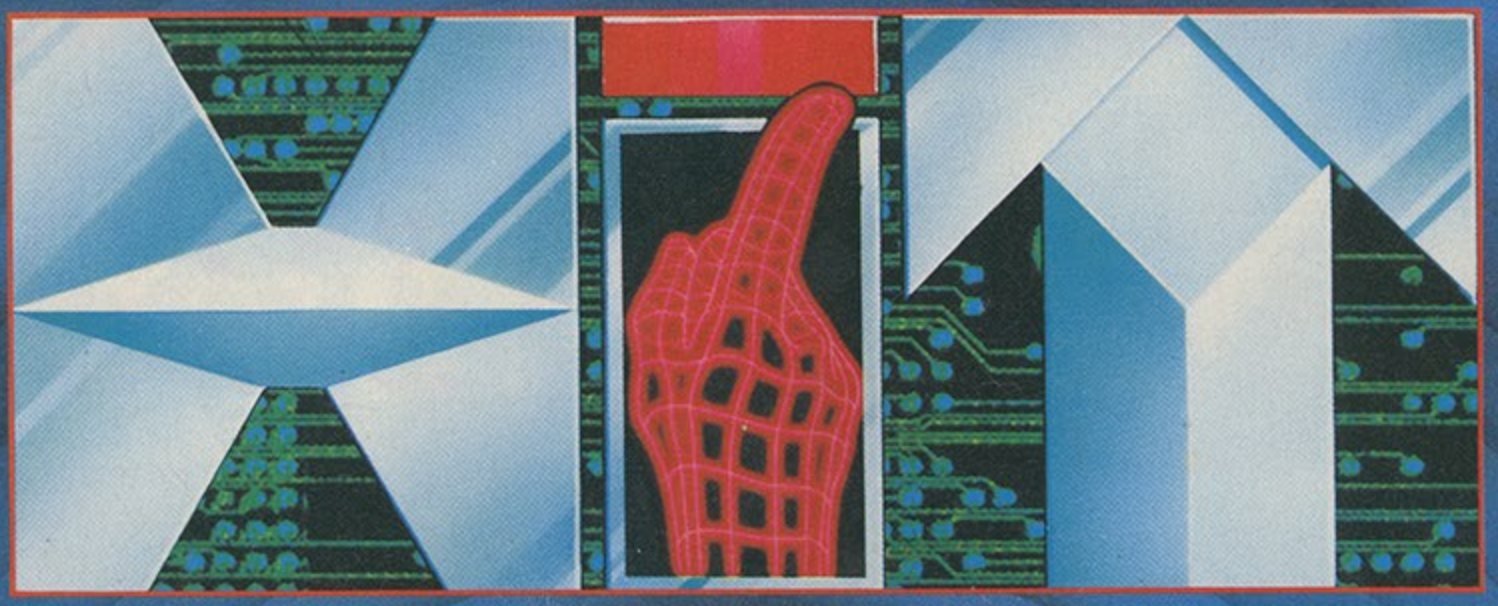
.....

Postcode: ..... Tel: .....

Which computer(s), if any, do you own? ..... A2000 ☐

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

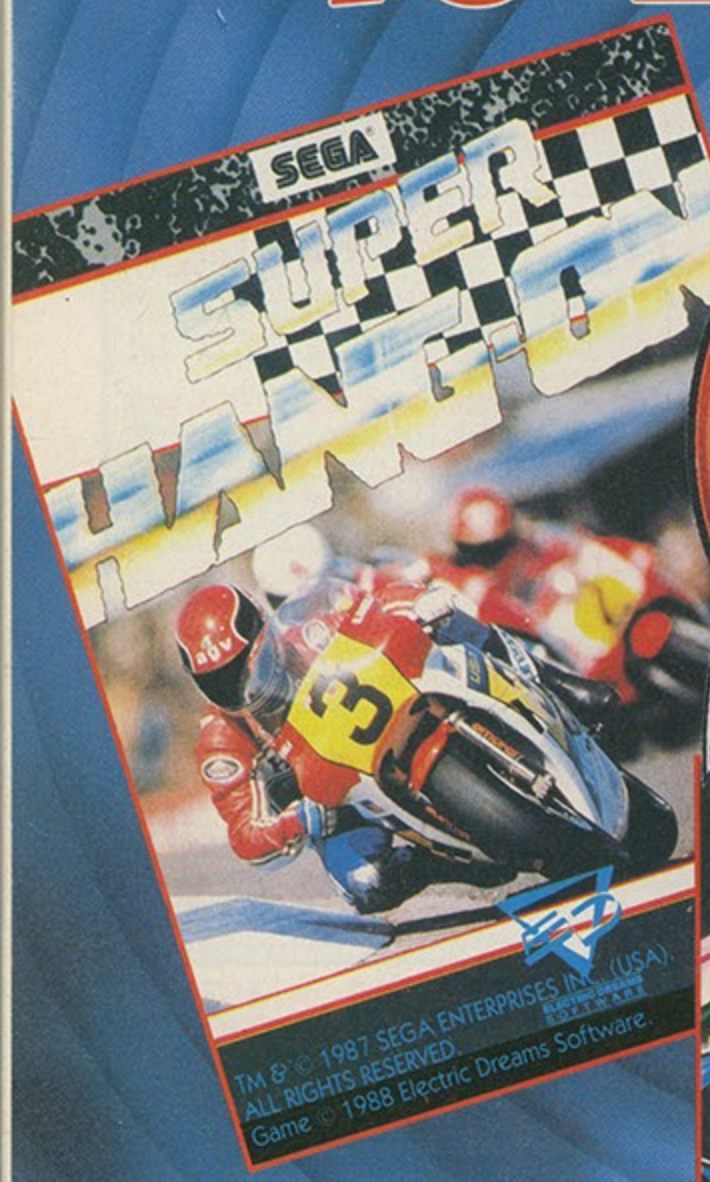
THE BUTTON HAS BEEN



TO LAUNCH A BRAND NEW RANGE OF

16 BIT TITLES

FROM



ONLY £7.99
HIGH QUALITY ACTION FOR YOUR
AMIGA

ONLY £7.99
CHART TOPPING GAMES FOR YOUR
ATARI

HIT NAMES • HIT GAMES • HIT SQUAD

THE HIT SQUAD • PO BOX 350 • MANCHESTER M60 9LX