Issue 86 • 30 June 1990 • 58p

NEW COMPUTER EXPRESS

WIN £800 Worth of Prizes only in the EXPRESS SUMMER GIVE-AWAY Page 52

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- Octalyzer 8-tracking
- Turrican reviewed
- UK CD service

ST

- Sim City at last!
- Music for schools
- Mouse on a bus

PC

- Handwriting reader
- Smart security
- Railroad Tycoon

CONSOLES

- Wraps off Mega Drive
- On-line round-up

ARCHIMEDES

- Herewith the Clues

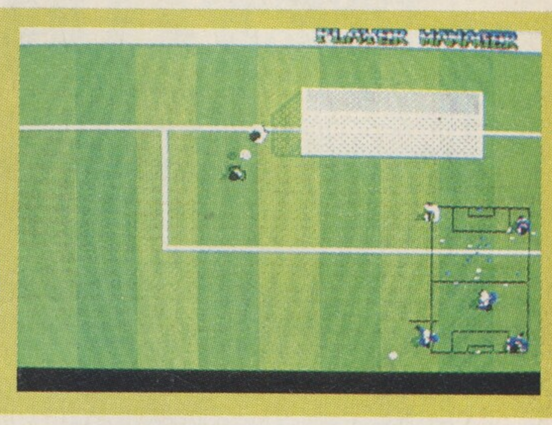
Specialist Columns for:
BBC•C64•MSX•PCW•QL
CPC•SAM•SPECTRUM

BARGAINS! Thousands to be found in **SHOPPING EXPRESS**



NEW BALLS

Seeding out the tennis sims - page 49
Kick Off 2 put to the test - page 50



SONY CD-I STUNNER

EXCLUSIVE

Hand-held interactive CD unit unveiled – and there's a 'ghetto-blaster' version too page 3



FROM RUSSIA WITH ROM

page 4

A closer look at the Leningrad-built Hobbit

GET ON THE RIGHT COURSE

page 53

Tips on computer education and training

CONTENTS

FEATURES

TENNIS FORTUNES 49
Colin Campbell serves up the best of silicon simulations

FOOTBALL KICK OFF 2 50
Boot up the latest from Accolade: it's a guaranteed winner!

THE RIGHT COURSE 53
How to take the first steps on your way to a career in computing

REGULARS

NEWS 2-6

COMMENT & ARCHIVE 7

TECH TIPS 56

SUBSCRIPTION OFFER 52

COMPETITION 52
PCW software must be won

LETTERS 58

SHOPPING EXPRESS

BUYERS' GUIDE 19
PC Essentials, everything you'll ever need

READER ADS 30

EXPRESS SALES 40

PUBLIC DOMAIN 44

EXPRESS JOBS 46

YOUR MACHINE

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

Xenon features in Preston labour exchange

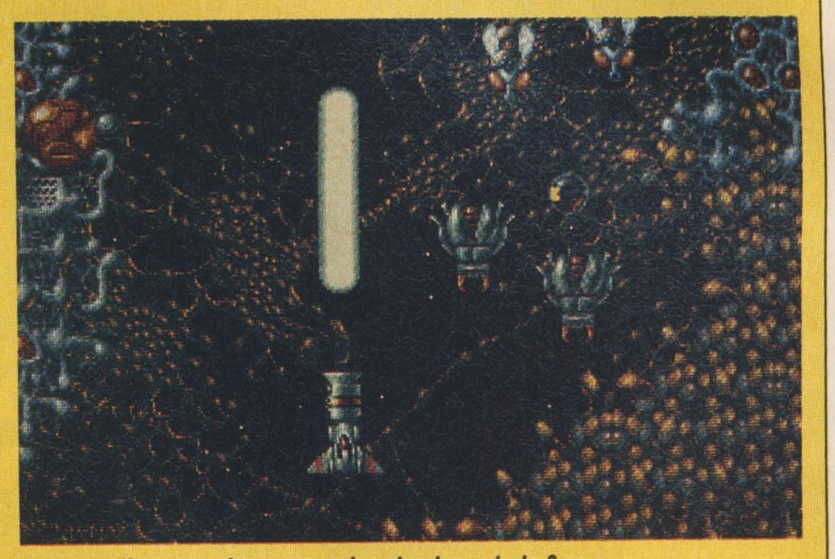
Heavily pregnant Debra Preston was so excited with her score during a midnight game of *Xenon II* that she went into labour and had her baby... but not before she'd finished playing

Debra, a 22-year-old from Tunstall in Staffordshire, is described by her friends as an arcade game addict and a brilliant player to boot.

She was in the midd;le of a game when the contractions came, and both her husband John and an emergency ambulance crew tried in vain to persuade her to put down her joystick and leave her 520 STFM.

But with her highest score ever within reach, Debra decided that the baby would just have to wait.

She went on to complete level four and, with an as yet undisclosed number of points in the bag, allowed herself to be whisked off to Stoke on Trent City General Hospital where baby Tara was born shortly after. ■



• Xenon II – *more important than having a baby?*

UK cartridges are different shape



• The US 16-bit Sega – European versions will have different cartridges to imported models

GAME UP FOR GREY SEGAS

The official UK version of the Sega Mega Drive will not be compatible with grey imports already in the country, *reports Steve Jarrett.*

Virgin's heavy hints of recent months were confirmed at the Paris press launch last week, when it was revealed that the European Mega Drive has differently shaped games cartridges.

This means that even after the official UK launch (which will be backed by a £2.25 million advertising campaign), owners of imported Mega Drives will be stuck with the unofficial market for new games supplies.

At the press junket, eight huge television screens demonstrated new Mega Drive and Master System games such as *Alex Kidd in Shinobi World* and *Super Monaco Grand Prix* – a good looking split-screen, two-player race game. Other titles on show were *Super Thunderblade*, *Super Shinobi*, *Thunder Force II* and Super Hang On. Twenty new games are planned to be available for when the Mega Drive goes on sale.

The occasion was held in the gardens of the Hotel de Sully, where there was sushi, bubbly and trampolining children. Scantily clad waitresses bumped into sumo-sized gents while taking in a Kendo exhibition. (*I hope I'm not paying you for this – Ed*).

Pre-launch orders for the Mega Drive apparently amounted to a sell-out and prompted Virgin's Nick Alexander to call it the: "most eagerly awaited consumer electronic launch since the colour TV."

No mention was made at the launch of the modem option which is known to be available for the machine. ■

Next on CD

Next Technology, the UK company best known for its CD-ROM mastering services for the PC, Mac and Archimedes, will be offering similar production facilities for the new Commodore CDTV.

Besides mastering a Welcome disk for all units of the CD-Amiga sold in the UK, Next will be offering its quick, low-cost pressing service to any software publishers interested. A conversion service priced at a similar level to the company's 'Pressed for Time' facility for the Archimedes, costing as little as £300 for a one-off pressing, is essential to the success of the CDTV in establishing a broad-based applications platform when it is launched here in September.

Data can be imported from any source including slides, video and both IBM and Mac file formats. Next Technology could find itself in a very lucrative position – it has also signed a deal to master Philips CD-I titles. ■

PC Engine to go on line

PC Engine maker NEC is to put up a free on-line 'bulletin board' and software service for end users. The scheme is expected to come on line in Japan in the autumn and bring together PC Engine users.

Public domain PC Engine software will be available free on the network, and users will be able to up and download games as well. Players won't be able to play games with each other, as the phone charges would make it prohibitive, and the service hasn't been included.

A telecommunication adapter will be available when the service comes on line, and a keyboard is planned as well.

Not wishing to be left out, Sega plans an on-line service too. Mega Drive users will also be offered dowloadable games software, but will have to pay for the privilege.

The launch of Nintendo's planned Entertainment System Network in the US has been postponed from this summer to some time in 1991. The service will offer interactive entertainment, on-line information and electronic mail, although the company has dropped out of one deal to create a financial services package and is looking for another partner. ■

Interactive CD computer prices will drop in time for UK launches

HAND-HELD CD-I MACHINES WAITING IN WINGS AT SONY

To a packed audience of leading consumer electronics executives assembled in London last week for the world's first Multimedia Conference on Interactive CD, Sony's executive director, Nobuyuki Idei, unveiled his company's latest technological breakthroughs – three portable CD-I players.

Fully compatible with the CD-I standard pioneered by Philips in association with Matsushita, Polygram and Sony, the tiny hand-helds incorporate 5-inch CD drives with colour LCDs, video-out jacks for display on televisions and CD audio quality sound. At an as yet unnannounced price, the three machines look likely to be publicly previewed in Las Vegas at the autumn Comdex.

Sony's is pitching its CD-I players as "Picture books with sound, and sound with pictures". The design of the new models is not dissimilar to the current portable CD DISCman and ghetto blaster/CD machines – what the hi-fi press call 'yuppie blasters' – but with built-in LCD screens.

The company's intention is to mass produce easy-to-use, high-quality, low-cost players which will become the *de facto* entertainment system of the 90s and bridge the home, office and corporate business markets.

CUSTOM CHIPS

In other developments at the conference, leading chip manufacturer Motorola announced its intention to produce a custom CD-I chip set based on the 68000 with a 32-bit graphics processor, 24-bit audio handling and video chips allowing full-screen, full-motion video.

By Andy Storer

This 'silicon solution' will pave the way for mass VLSI (very large scale integration) production of CD-I machines, destined to be delivered into the professional markets early next year, and will help to complete the CD-I's full range of audio-visual capabilities.

PRICES FALLING

To further consolidate the new medium's market potential, already supported by over 100 licensed publishers and hardware manufacturers, Philips announced its CDiNavigator system, an authoring package including hardware, priced at only $9900 and offering 'point and click programming'.

Philips now expects domestic CD-I players to be available in the UK by 1992, with prices dropping significantly from the $1,000 price point projected for their US launch next year – this will be made possible by mass production and VLSI.

With the company heralding CD-I as the birth of 'Television with a mind of its own – yours', representatives from every major consumer electronics company except Atari and Commodore were present at the showcase event.

Although Atari's attitude to CD-I remains ambiguous, with US executives keener to leap on the bandwagon than their UK counterparts, *Express* can reveal that several Philips technicians have been seconded to Commodore in the United States to work on CDTV/CD-I project liaison – the Amiga CDTV is actually manufactured by Matsushita, one of Philips' CD-I partners.



• Sony's CD-I version of the 'yuppie blaster' – a must for rich skateboarders everywhere

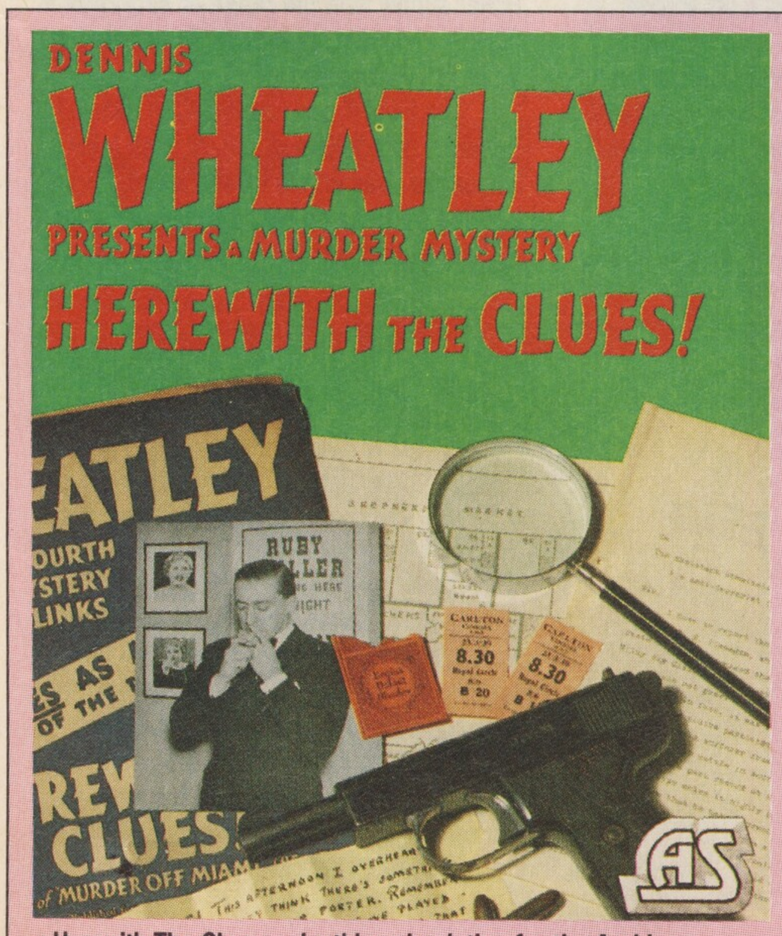
While interested parties such as Amstrad, BBC Enterprises, Rediffusion, Nimbus Records and Virgin quietly maintained a low-profile attendance, American and Japanese consumer giants abounded. JVC, Epson, Sanyo, Fujitsu, Toshiba, Yamaha, Ricoh and Pioneer all either showed or announced CD-I players.

SOFT OPTIONS

On the software side, CBS/Sony and RCA/Columbia Pictures demonstrated new titles, with prices ranging from $15 to $50, aimed at the educational, entertaiment and information markets.

American Interactive Media, a joint Philips/Polygram venture headed by ex-20th Century Fox personnel, unveiled 10 new interactive entertainment titles. Several European publishers announced support, prominent among them Maxwell Communications whose Nimbus Records division announced capability of pressing 9 hours of CD sound on a single CD-I disk, and Bertelsmann which plans to launch a series of CD-I travel guides of European cities and tourist sights.

Other elements of the conference were thoroughly eclipsed by Sony, though. Nobuyuki Idei's concluding remarks set out the future Sony has planned for us all. Digital video tape recorders, high-definition TV, digital audio tape and CD-I in every home by the year 2000, based on chips with 64 times more power and ten times more speed than those currently available. ■



• Herewith The Clues – *sleuthing simulation for the Archie*

Game for gumshoes reaches Archimedes

Dennis Wheatley's *Herewith the Clues*, already a popular puzzler on the ST and Amiga has brought its own brand of sleuthery to the Archimedes. The £24.95 whodunit casts you in the role of detective who must sift through photographic evidence in search of a brutal murderer.

You start with a single screen, and moving the pointer to various things on it brings you access to biographical details and a library of suspects. Armed only with your powers of deduction, your task takes you on a search through the unsavoury details of many people's lives.

When you think you have solved the crime, there's a competition. Send your solution to CRL and if you're right, you get a scroll confirming your ability. If you're wrong, try, try again.

The PC version is expected in a few weeks, and more information is available from CRL on 081-533 2918.

• The Archimedes version of *Herewith The Clues* was written with the Archie version of DUNE, the games programming utility. ■

Still life satellite

The days when scratching an itch could gain you a Van Gogh and cost you an ear and a leg might be over. A company called Lasernet haslaunched an electronic catalogue for fine art and antiques auctions.

Anyone wishing to participate needs to buy a terminal, satellite dish and decoder. Photographs of saleable articles are sent into Lasernet where they are digitised and then, with their histories and prices, beamed world wide to subscribers. Sold articles can be rapidly removed from the system. ■

Wrist top pager

A wristwatch that incorporates a message pager is being marketed in the US.

The Seiko Receptor uses the watches digital display to show a 16-letter message and the memory can hold up to 8 messages.

Seiko hopes to sell a million Receptors in three years and plans to distribute it in Europe and Asia within a year. ■

Leningrad micro would cost a Russian 13 years' worth of salary

SOVIET HOBBIT COVERS THE RED END OF THE SPECTRUM

By Keith Pomfret

Beyond the recently-parted Iron Curtain is Leningrad-based InterCompex, a Soviet hardware company specialising in personal computers. InterCompex designer Dmitri Michailov and director Michail Osetinskij brought their new Spectrum-emulating Hobbit to Britain earlier this month to test the waters in the West.

On a visit to the *Express* offices, Michail Osetinskij said: "The Hobbit is popular in the USSR, but it needn't stop there. It can support any alphabet or character set so it could be exported to the developing world where they need technology that is easy to build, repair and understand." He added that the UK was a possible market, too.

The off-white case, with its strange Cyrilic/Roman 74 keys, looks austere next to the modern monitor that we used to test it. As well as the Sinclair operating system, a ROM-based utility is included that allows such functions as the disassembly of machine code and program monitoring.

Designer Dmitri Michailov said: "The only thing that holds back production is the lack of memory chips."

The USSR produces relatively few chips, and InterCompex usually has to barter for its share, often trading food to factories which won't take roubles. Michailov continued, "The design and specification means that thre is a great demand for the Hobbit and it's a shame that we can't make more." He added that they hoped to source chips in the UK, but that prohibitive currency exchange rates could make it difficult to purchase them.

NET ASSET

A couple of full size 5.25-inch drives in a black metal case gave the machine an air of functionality. After a whirr as they initialised, we were treated to... no, not *Tetris*, but a networking program. The Soviets have a collection of over 2,000 Spectrum programs but the emphasis is clearly on work, not play..



• InterCompex's Hobbit. One of 20 or so Soviet Spectrum compatibles.

The computer scene in Leningrad is different to the one we know here in the UK. Michaiklov said: "There are at least 20 different kinds of Spectrum compatibles in Leningrad. In the USSR if you want a computer, you must make it yourself. You take out your soldering iron and hope that someone has the plans."

He added that the Hobbit was the only 'official' Spectrum-like computer behind the Iron Curtain, and that with no western copyright laws in the USSR, anyone could copy software or hardware without official reprisal.

Technical specifications

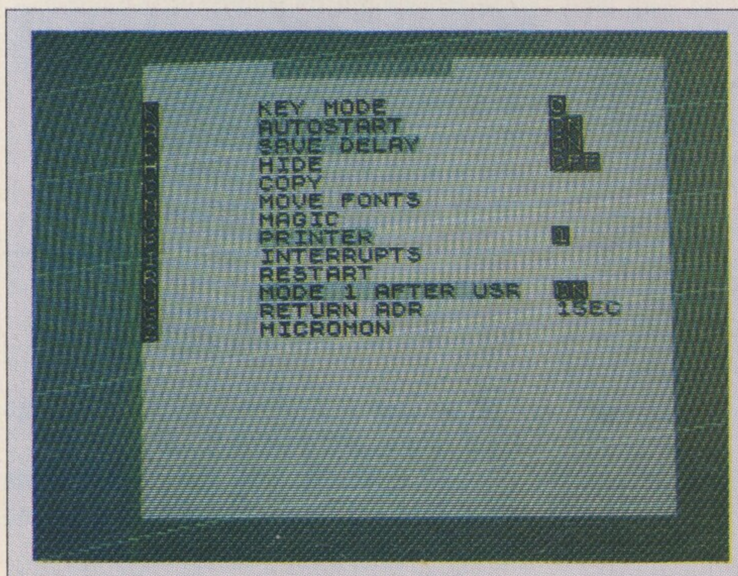
The Hobbit has a single piece keyboard and processor unit with a Z80A processor, running at 3.5 MHz. Additionally, it has 64K of addressed memory, a ROM operating system (16/8/0 kilobytes depending on system configuration), and it is RAM paged as 48, 54 or 64K including 6.5K screen memory.

Additionally, the Hobbit offers a range of interfaces including system bus, parallel port (centronics), RS232 and three joystick ports (2 Sinclair, 1 Kempston).

The keyboard has 74 keys, including 33 reprogrammable function keys. It adapts to provide Cyrillic/Roman/Arabic alphabet support, and it sports a 'soft' programmable keymap.

The disk controller is mastered for both 5.25 SS/DD and DS/DD drives, and it supports up to 4 drives – two are included. Power supply is in the range of 220-240V at 50/60, while display is via a TV or standard 9-pin TTL PC monitor.

The Hobbit can run BASIC, a network Driver up to 100KBaud, CP/M, high level languages available in ROM (Pascal, Forth LOGO, C) and an on-board assembler, plus all Spectrum programs including games.



• Utilities software running on the Hobbit.

Rouble trouble restricts ownership

To own a home computer in the Soviet Union is unheard of. The average wage is about 250 roubles per month and a PC can cost 60,000 roubles. This amounts to around twenty years' salary. Even the Hobbit comes out at an expensive 40,000 roubles. With prices like these, it should be a long time before the Hobbit becomes obsolete.

It is only institutions, companies and educational establishments that have micros. So far 15,000 Hobbits have been distributed to Soviet schools. The machine can be networked, and any one in the network can take the role of host computer. If for any reason the host crashes, any other networked machine can take over, and in many cases can access the crashed machine and retrieve files.

As well as networking with other Hobbits, connection to larger host machines such as PCs or even mainframes is possible. Thus a teacher can run a class, networking Hobbits to a PC with high density storage. Work done on the Hobbit can be handed into the teacher's computer via the network.

The Hobbit's specifications demanded that it interface with a variety of printers, drive TVs or monitors, run high level languages such as BASIC and LOGO from ROM, and connect directly to Sinclair and Kempston joysticks.

PC-based weather better who doesn't want better weather

Piers Corbyn, an astrophysicist at London's South Bank Polytechnic, regulary uses his IBM PC to win a few hundred pounds a month.

He avoids the gee-gees and steers clear of the football, his betting – generally 25 bets of £20 a month – centre on the weather. Corbyn provides long range forecasts for a company called Weatherplan. They have been correct for 7 out of the last 10 months. His lastest punt is an accumlator. The stake rides on the hope that rain will effect the first day of four major sporting events; the Derby (correct), the 1st Test (correct), Royal Ascot (we're not too sure) and Wimbledon, which Mr Corbyn predicts will be wetter than Jaques Cousteau's drinks cabinet. ■



• The weather is safer than the dogs.

Game over, it's the Fed

A computer game has been installed in the corridors of Washington's Federal Reserve. The idea behind the game is to stave off boredom for visitors to the establishment.

People awaiting appointments can put some of their money in the slot and then pretend to be Alan Greenspan, the Chairman of the Reserve.

Strategies revolve around fighting the threat of inflation or battling the forces of recession. All good clean fun – unless there's a Boesky option, that is.■

Nelson's tape

A traditional ticker-tape welcome for Nelson Mandela in New York nearly came a cropper. The reason... no ticker-tape. Since the computer took over as the Big Apple's main machine, tape supplies have dried up.

The answer was to import 150 miles of paper ribbon which arrived, in 85 bags, the night before the parade. This was backed-up with shredded faxes and ripped up 'phone books. It's not known how Mandela stands on Green issues.■

'Lost' names to cost St Albans' tax payers £9 each

COMMUNITY CHARGE COMPUTER CHAOS

A computer error has been blamed for yet another extraordinary Poll Tax foul-up.

By Colin Campbell

St Albans' Council last week announced that Poll Tax payers would be charged an extra £9 a year to make up for monies lost due to no-payers. However, non-political non-payers are complaining to the council about people who have fallen off the register.

Like most UK councils, St Albans has spent thousands of pounds installing an efficient system suitable for such a large scale operation as tax registration. But the computer program, designed by ICL, has somehow lost the names of 3,000 eligible payers. St Albans council says that it can't realistically attempt to track down the missing names without a fully functional computer program. The shortfall is costing hundreds of thousands of pounds.

A spokesperson for the council was reluctant to give details but said that the fault lies entirely with the computer. St Albans isn't the first council to be troubled by computer gremlins. Hundreds of people have filed complaints after receiving Poll Tax demands for babies or even dead relatives. Last year one group of anti-poll tax campaigners claimed to have inserted a virus inside the Lothian and Tayside regional computer.

The virus was deleting one name every 15 minutes and replacing it with the name of a dead, comical or nonexistent person. That council was quick to check the system and emerged claiming that no such virus had been found despite the numerous reports of curious Poll Tax forms received in the area.■

Side by side with Chuckie

At long last, Chuck Yeager's *Advanced Flight Trainer* is available for users with ST and Amiga machines.

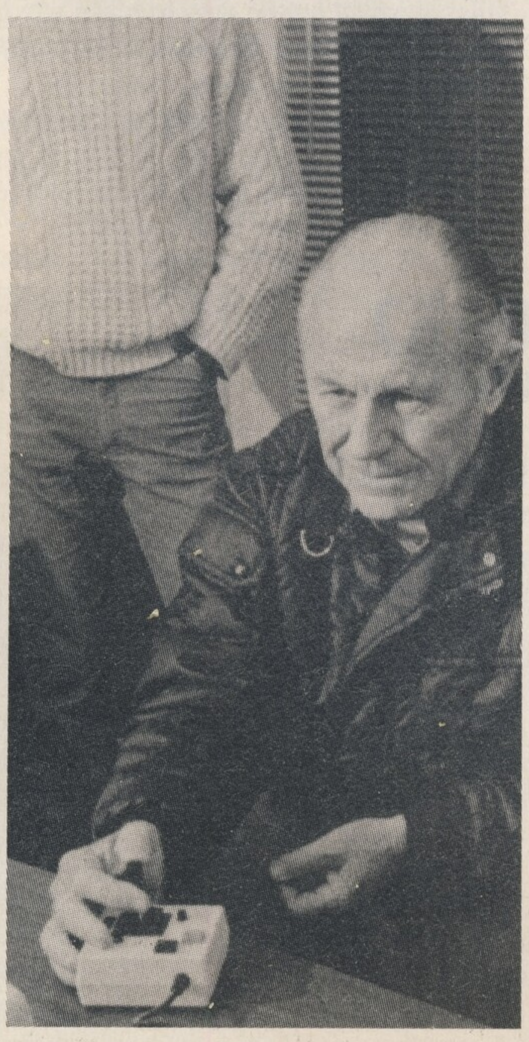
General Chuck's teach-yourself-flight sim has long been a favourite on the PC, with boardrooms around the country thrilling to the sound of young executives screaming things like 'Neeeeoow' and 'Daka-daka-daka'.

Even owners of 8-bit machines have learnt the joys of high-speed air racing, with granite-jawed Yeager acting as the hard-bitten, yet friendly, co-pilot.

The new 16-bit version comes with an audio tape which has the old man himself guiding you through horrendous loop-the-loops, acrobatic dives and general barnstorming activities.

You're not stuck with one plane either, with the *Advanced Flight Trainer* you get to fly 18 different 3D-modelled aircraft, including the Space Shuttle and Stealth fighter. Multi-aircraft formation flying, racing and an on-screen 'Six Day Flight School' are also part of this deluxe package.

All this will set Amiga and ST owners back the sum of £24.99. For more information on the package contact Electronic Arts on 0753 49442.■



• At long last, Chuck's on the ST and Amiga.

Paperlike Interface makes life easier for PC scribblers

How would you like to be able to scribble a few notes directly into your computer just as if it were a notebook?

This dream has been around the computer industry for many years, and finally there is a possibility that the Paperlike Interface, from IBM, could be the answer to this tough nut.

Still in experimental stages, the interface is said to be able to recognise handwritten characters and even hand-drawn marks such as lines, mathematical symbols and musical notes. IBM reckons that 'gestures' on the tablet – possibly something like printers' proof marks could also be used as commands.

The Paperlike Interface uses a stylus as a pen, a transparent digitising tablet and a flat liquid crystal display.

Pundits are wagering that, whatever else it can do, it still won't be able to read Doctor's handwriting. ■

Ten years hard labour

The next decade is reckoned to have been sussed by the Labour party – at least in terms of technology and education.

Dr Jeremy Bray, the spokesman for science and technology, outlined the game plan. If Kinnock's crew makes it into government we might expect the following:

Far greater use of CD-ROM and Interactive Video (IV). Regular software and hardware upgrades will be made at least every three years by central government. Big business will also be welcomed into schools and colleges.

The companies can use the educational sites for research and development – the pupils and staff will get new equipment for little or no outlay.■

EC rules force one-box plan to be reconsidered

MODULAR MOVE FOR NEW LOW-END MAC

By Martyn Lester

The UK's low-end Macintosh is now likely to be an easily expandable modular machine, according to continental *Express* sources, and will be one of three new modular Macs to be marketed in the near future.

The decision has apparently been taken partly because new European Community laws on monitors in the work-place (which will eventually see the old Mac 9-inch screens outlawed entirely) are expected to come into force early in West Germany.

Some pundits still believe that Apple will launch an all-in-one-box low-end machine with more rounded styling than the current angular Plus and SE machines, and this will almost certainly be the case in the US.

It is possible that for Europe there will be an either/or option on two styles with the same technical specifications.

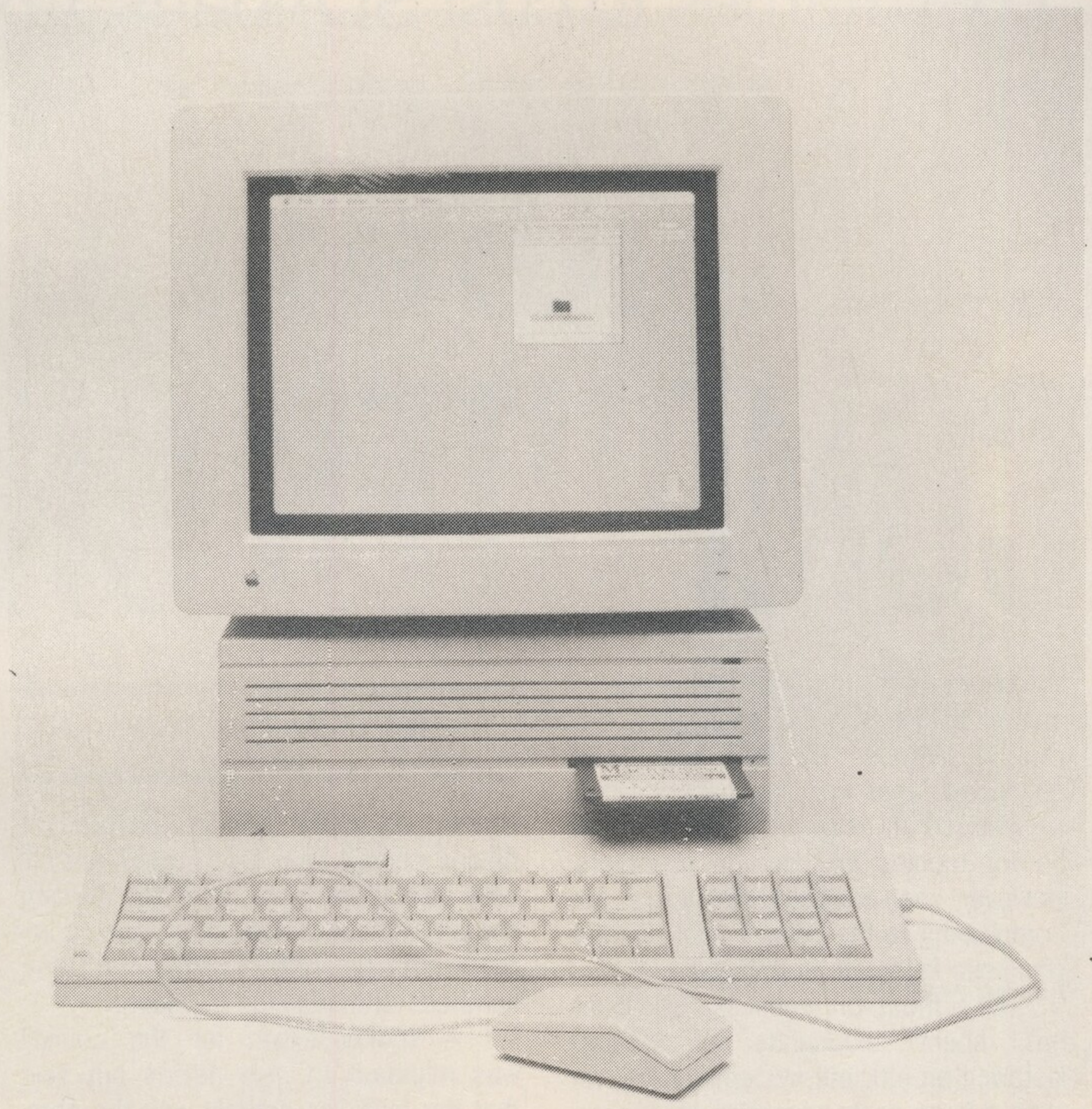
However, sources close to the top of Apple Europe are hinting strongly that they see no point in producing two radically different versions of the entry-level machine for the European market. Furthermore, the modular Mac with separate monitor is a cheaper machine to manufacture, allowing Apple to bring in its new low price policy while maintaining acceptable margins.

Any US-style single-box machine would be fine for home or education use, but during 1992 would become unsaleable as office equipment across the EC, as Community regulations will require tilt-and-swivel monitors in the workplace.

Apple personnel remain as tight as clams regarding the price of the proposed machine, but third-party developers in the know believe that the entry-level version will be pitched to attract the type of buyer who may otherwise be looking at ST and Amiga models. Prices between £700 and £800 are rumoured, with monitors extra.

The basic, floppy drive only machine is expected to come with 1MB of RAM, a new version of System 6 and either 8-bit colour capabilities or a cheap upgrade to colour. To run System 7, due at the turn of the year, it would have to upgraded to at least 2Mb or RAM, but its 68000 processor would not be able to make use of the new operating system's virtual memory capabilities.

The other two modular machines expected are a hard disk version of the entry-level machine and a direct replacement for the current SE30 model.



• The new entry-level Macintosh is now expected to look like this IICX rather than an SE.



• FBI gives the thumbs-up to computerised fingerprinting – really!

FBI puts the fingers on

The Federal Bureau of Investigation has got so far behind with its archaic manual fingerprinting system that it is spending $185m on computerisation to catch up.

The facility will include a sophisticated automated system that can match a print with a database of 25 million others and give a turnaround time of less than two hours.

The present system recieves over nine million cards per year and with 700,000 fingerprint cards unprocessed, a criminal could offend again because the relevant card is still in the system and identification hasn't been made.

Stanley Klein, of the FBI fingerprint division said: "Say one of those people on those cards is a killer. By the time we get the information back again, he's killed again."

Fast phones

Canada is being treated to some fast phonelines with the Bell Sonet (Synchronous Optical Network). The new network can carry voice, data and video over optical fibre cables, and each strand has the capacity for 32,000 simultaneous phone conversations

The system whizzes along at 2,488 gigabits per second, which is 259,166,666 times the speed of Prestel.

Gates plans for palace

Bill Gates, otherwise known as the boss of Microsoft, is building a 45,000 square foot underground mansion with the fortune he made from selling software.

The soon to be built $10m home will be placed on the shores of Lake Washington in Seattle. The mansion will have a 20-car garage, three kitchens, a theatre, reception and dining rooms, a swimming pool and sports courts – but the exciting part of the project is that it will be over 80 per cent underground.

The 4.5-acre site will be developed to incorporate a dock, an artificial estuary and a creek. All right for some...

A chip named Sue?

The 68030 processor, which lies at the heart of the new Macintosh FX as well as the Commodore A3000, may be pulled from the world market if a judgement by a Texan judge takes effect.

This action stems from the long-running wranglings between Motorola and its former partner Hitachi. Both firms have sued and counter-sued over copyright infringments and patenting problems relating to the 68030.

Hitachi's H8-532 chip is also a problem child, and a ban affecting this might not be too far away. On March 29 sale of the chips was banned and both companies were fined for violating each other's patents. In a very fast reversal of the situation, March 30 saw the ban lifted.

Hitachi returned to Judge Bunton and he has indicated that a further embargo might be in the offing. Motorola doesn't appear to be too worried – it has launched an appeal which will probably reverse the decision yet again.

Out of court, Hitachi and Motorola are said to be 'dedicated to resolving the issue'.

Keystroke-driven

Every good boy deserves food. The response to this well worn fact from people who have suffered at the hands of sadistic piano teachers is normally: "Arghhhhh".

American firm The Software Toolworks aims to change all this with a new product for the Nintendo Entertainment System.

The Miracle Piano Teaching System, which costs $299.95, comprises a specialised electronic keyboard – which can also work as a stand-alone device – and an interface.

It also uses an artificially intelligent system which monitors bum notes and other problem areas in order to structure the teaching to the pupil.

There are also 'customised video based lessons' to take students from one-finger ineptitude to one-finger proficiency in a matter of hours.

Diddley Dudley Moore, an accomplished pianist better known for his escapades with Peter Cook, Bo Derek and Tesco chickens, has been named as musical consultant for the system.

COMMENT

Has Commodore's month-old CDTV already been eclipsed by the rival CD-I system? This week's Comment is by Andy Storer.

After the Walkman and Watchman, Sony unveils what will probably become known as the CD-IMan. Announcing a portable CD-I unit before desktop versions have even appeared may seem a little surprising, but this is exactly the kind of innovation we have come to expect from the world's leading consumer electronics company.

On reflection, it seems an obvious move; the only logical conclusion. For if you combine audio and video portability in one hand-held unit and add the excitement of interacting with anything from a flight-sim to a French course, you have a product all set to soar through the sales counts.

Of course, prices will be steep to start with. The early Walkmans came in at just under £100, a purchase price nearer to £200 today after taking inflation into account, and yet you can now walk along your High Street and pick one up for under a tenner. It might not be a Sony but it's a portable cassette player. But how long will it be before we can buy Saisho CD-Is from Dixons? Perhaps sooner than you think. At any rate, a lot sooner than an Amiga-compatible Saisho CDTV.

For Sony has worked in close conjunction with two of its immediate competitors, Philips and Matsushita, to ensure the system's success. The vital ingredients? A user-friendly, low-cost, high-quality world standard combining every medium under the sun. Video, photography, animation, graphics and CD quality stereo sound all in the one magic box of a multimedia machine.

We're talking big bucks in a big league here, and the CD-I inititative is one based on the confidence of knowing that the customer will flock to the new medium. Walkmans and Discmans, even Gameboys and Lynxes – they sell like hot cakes to the architypical consumer – the bored commuter.

But the biggest bucks are to be had in the home. Education, Information and Entertainment are the key words uniting family needs, and the current systems designed to meet them are geared towards transparent technologies. That's why IBM isattempting to muscle in on the biggest market of all with a low-cost integral system. This too is the positioning behind Commodore's CDTV.

Punters never overcame the first wave of techno-shock. What they want now is a computer that looks like a Hi-Fi, is easier to operate than a video and more useful than a TV. On all these counts, both CD-I and CDTV score heavily. They offer point and click control, access without effort and fun without tears; the days of the Command Line Interface Hard Men are over – the WIMPs have won the day.

But that's where the similarity ends and economies of scale take over. With the backing of the three largest consumer electronics companies in the world, CD-I will benefit from mass production and large scale integration in a way that Commodore can only dream of. 'The Price is Right' may never pass the lips of potential CDTV purchasers.

At the moment Commodore's machine is out on its own, but it only has something like six months to take the high ground. Beyond that the CDTV could be submerged in a sea of 16-bit games conversions at the expense of a handful of 'serious' titles for a machine that can't afford to drop its pricing. Commodore had a CD-ROM machine built by Sanyo some eighteen months ago. It may now have left it too late.

FROM The ARCHIVE

ONE YEAR AGO

A heinous virus known only as Datacrime was discovered doing the rounds of PC systems.

Instead of the usual Friday 13th viruses, this one was designed by its devious creators to do its stuff on October 12. By catching it three months before its deadline, however, vaccines were prepared and damage was limited.

There were groans of anguish emitting from every PCW-using quarter as a batch of defective *Mini Office Professional* disks was released by mistake.

The already delayed package slipped out with a spelling checker that didn't work, a word processor that couldn't load *Protext* or *LocoSript* files and an American thesaurus.

A report from the National Curriculum Council said that the brightest pupils should be able to create, amend and present text on a word processor and enter, select and retrieve fields in a database by the age of seven.

Atari, desperate to break Nintendo's hold on the US games market, had its plans trashed by a court injunction preventing the marketing of *Tetris* in the US.

Retailers already stocking the Atari *Tetris* cartridges were advised to remove the games from shelves.

The court ruled that Nintendo had, in fact, purchased the worldwide rights to *Tetris* on home video game systems direct from the Soviet government.

Commodore made another thrust at Amstrad's share of the low end business market with a PC bundle that included Ashton Tate's *Framework* 2.

The £1,091 XT clone bundle was aimed squarely at the Amstrad PC2086, which at the time was bundled with Lotus *Symphony* at £1,148.

One year on and Commodore has changed its marketing strategy twice without making any great impact on Amstrad.

Rombo Productions' eagerly-awaited real-time video digitiser for the Amiga was delayed due to problems in the HiSoft BASIC compiler which was used to write the software.

The program did arrive eventually, and by all accounts was worth the wait.

Micronet put together a package for yearly subscribers to beat the 15 per cent VAT slapped on by the Government. A 3,000 strong petition had failed to persuade the then Chancellor, Nigel Lawson, to reconsider the new tax on its services.

In the 007 film *Licence to Kill*, the multi-million pound drug barons were seen using the sub-£50 database *Masterfile* to keep track of their dastardly deeds.

The incredibly creative reason behind such a move? The film's producer used *Masterfile* to catalogue publicity stills, so it was available and at hand.

Zenith was first to jump into the fax-on-the-move market with the 286-based SupersPort, complete with a built-in fax modem.

It was 'fully approved' and compatible with the majority of the world's telephone systems.

Cynthia Payne, Britain's most famous madam, opened her problem line on Micronet.

Keying the appropriate page number could take you straight to the lady's boudoir, where she gave her own particular brand of reply to people's problems.

A report suggested that the 20 million users of Visa and Mastercard (Access in the UK) would soon be treated to 'Smart' replacement cards with a range of uses hitherto not available on a credit card.

And the quote of the week from David Kelly of Cambridge Software International :
"With the Archimedes' capability for graphics it's obviously the ultimate games machine and we want to make a lot of money out of it."

(Sources: *New Computer Express* and *Computer Trade Weekly*.)

NEW COMPUTER EXPRESS

EDITOR • Martyn Lester
FEATURES EDITOR • Andy Storer
PRODUCTION EDITOR • Stuart Anderton
ART EDITOR • Amanda Cook
STAFF WRITERS:
Tim Smith • Keith Pomfret
DEPUTY PRODUCTION EDITOR • Ben Feinbaum

CONTRIBUTORS:
Rob Ainsley • Maff Evans • Steve Carey
Simon Williams • Robin Alway • Andrew Brown
Keith Neal • Jason Holborn • Bertrum Carrot
Rod Lawton • John Torofex • Pete Gerrard
Mark Higham • Colin Campbell

ADVERTISEMENT MANAGER • Mark Salmon
AD EXECUTIVES:
Simon Moss • Helen Kirkhope • Sophie Eades
AD ADMINSTRATION • James Leach
AD PRODUCTION • Frances Wasem
AD TYPESETTING • Terry Turner

ASSISTANT PUBLISHER • Jane Richardson
PUBLISHER • Greg Ingham

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

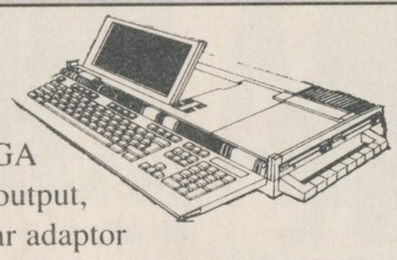
ABC audited circulation July-December 1989: 22,277 copies per week

© Future Publishing Ltd • 30 Monmouth Street, Bath BA1 2AP • Tel: 0225 442244 • Fax: 0225 446019 • Subscriptions: The Old Barn, Somerton, Somerset (0458) 74011
• Printed by Redwood Press, Melksham, Wilts
• Distributed by Comag, West Drayton, Middx

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.

UK HOME COMPUTERS

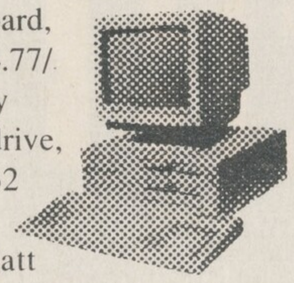
AMSTRAD PPC640S



640K RAM, Serial & Parallel Interface, External Disk Drive interface, External CGA Compatible monitor output, Mains, battery & cigar adaptor powered, MS-DOS, PPC Organizer, & MIRROR COMMS Software. True IBM Compatible. Internal 3.5" 720K Disk Drive (Option for second drive), Built-in modem (Hayes compatible), Free carry case and full manuals.

OUR PRICE £399.95p
Fully Inc.

SAMSUNG PC/XT

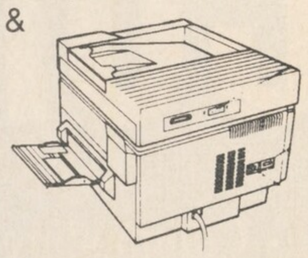


512K RAM, Full-Size keyboard, MS-DOS 3.2, GW-BASIC, 4.77/ 10MHz Clock Speed, Battery Back-Up, Single 360k disk drive, Hercules display Card, RS232 & Parallel Ports, 8087 Co-Processor socket, 90 Watt switched Power Supply, Small Foot Print, 4 Empty Expansion Slots, 1 Empty Disk Drive Slot. Free Ex-Display Mono Monitor.

Single Drive **£459.95p** 20 Mb Hard Disk **£689.95p**

Overnight Carriage £14.00p

CITIZEN LASER
OVERTURE 110+



At last! an affordable laser printer. 512k memory, Epson, IBM, & Diablo compatible. 10 pages per min. Parallel & Serial I/F, 300x300 dots per inch.Landscape or portrait printing. 12 Months on-site warranty. Send for further details, or order TODAY!

OUR PRICE £804.95p
Including VAT, Carriage & Warranty

"ABILITY"

Made by MIGENT, the complete integrated package for the PC & all clones. 5.25" disks, the package offers a wordprocessor, database, spreadsheet,graphics package & communications software. And of course, all programs are integrated. Supports LOTUS 1-2-3 & hercules graphics cards. This package originally retailed at over £100.00p, and still offered at £60-£65 everywhere. Now check out our price.

OUR PRICE £29.95p
inc. VAT & Postage

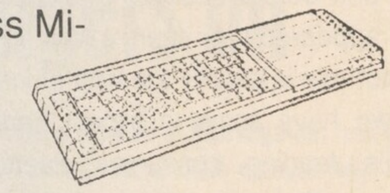
PC NETWORKS

Manufactured by AST, we have on offer ASTORUS NETWORK PACKS & SOFTWARE, and ASTORUS NODE COMPLETE NETWORK SOLUTION. Send now for details of our limited network stocks & full details. We also have a small quantity of TAPESTRY Software.

OUR PRICE £149.95p
Postage & Packing £5.05p.
Send now for full details of this and all of our networking offers.

SINCLAIR Q.L.

Fast 68008 CPU 128K RAM. Twin fast-access Microdrives. Complete with all manuals, cables, PSU, and software (Wordprocessor, Database, Spreadsheet, & Graphics.)

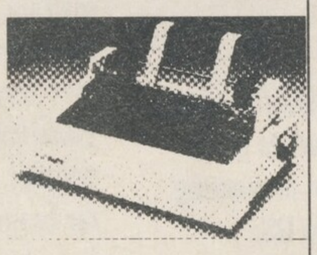


JM ROM £99.95p
JS ROM £119.95p

Postage & Packing £4.05p.

DISCOUNT PRINTERS

CITIZEN LSP 100



150 cps. 30 NLQ, Friction & Tractor, EPSON & IBM Compatible, Front Panel, Control, Parallel Interface, Small foot print, 80 columns, 9 Pin Dot Matrix.

recommended price £249.95p
OUR PRICE £119.95p
Postage & Packing £5.05p

PC AT/XT KEYBOARDS

Top-Quality 101 key-keyboards made by ZENITH DATA SYSTEMS. Standard AT layout, and switchable between PC/XT & PC/AT. Don't put up with your inferior keyboard any longer, at our price you can afford to upgrade NOW! Standard 5-Pin DIN Connection makes this keyboard compatible with almost all IBM's and clones. Stocks are very limited so send today!

OUR PRICE £39.95p inc. Post

DAISYWHEELS

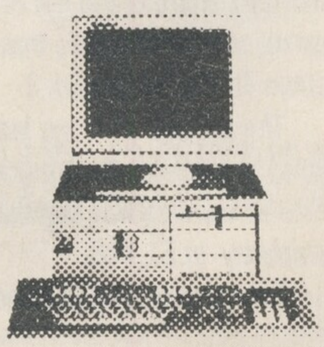
Brother Daisywheel Printers at half price. The HR20 (Usually £450.00p) & the Brother HR40 with a single sheet feeder (Usually £800.00p) at our incredibly low prices. Send today for the full specification details and compare our prices below. These printers are top-of-the-range workhorses and represent tremendous value.

HR20 £275.00p
HR40 £349.95p

Inc. VAT & Postage (Overnight carrier add £5.00p)

SAMSUNG 6000/1 PC/AT

A top-branded PC/AT at an XT price. 80286 Processor with a 6/ 10 MHz speed. 1Mb RAM, 6 expansion slots, 1.2 Mb 5.25" floppy, 102 key keyboard, battery back-up, Hercules/Monochrome Video Card, RS232 & Parallel Ports, MS-DOS 3.2 & GW-Basic.



£649.95p
inc. VAT & Carriage

SEND FOR DETAILS

Our all-in price of £649.95p includes the Brand New Samsung, an Ex-Display Mono Monitor, & O/N Delivery.

BARGAIN BASEMENT-TO CLEAR

STAR NB-15 FONT ROMS	**£19.95**
GW-BASIC (MICROSOFT)	**£14.95**
PC MEMORY BOARDS (unpopulated)	**£9.95**
PS2 512K MEMORY CARDS	**£49.95**
TAPESTREAMER CARTS. DC300XLP	**£10.00**
COMMODORE C64 MUSIC SYSTEM	**£29.95**
NEC 3.5" 720K UNCASED DRIVES	**£49.95**
ZENITH EAZY-PC MEMORY MODULE	**£33.00**
EPSON LCD SCREENS (for laptops)	**£49.95**
64K SERIAL/PARALLEL BUFFER	**£49.95**

We have numerous PC items to clear. Send now for our full list. Phone for availability and postage charges for the above items.

Access

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

VISA

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

CPC

SWEET SUCCESS

Book publisher, Century, is about to release a new book called *Alan Sugar – the Amstrad Story*, it will coincide with the 10th anniversary of Amstrad's flotation. It starts with 'Big Al' selling car aerials in the East End and ends with 'one of the richest men in the country'.

The author is David Thomas, who has worked for the *Financial Times* for three years, as electronics correspondent, and he draws extensively on interviews with key industry personnel close to Alan Sugar. Price is £14.99, and Century is at Random Century House, 20 Vauxhall Bridge Road, London SW1V 2SA: phone: 071-973 9670.

RIPPER GETS THE BOOT

On the letters front, I've received an interesting communication from a company called Visual Images. It's about a new game, which... well, I think I'll quote the letter...

'Our company is soon to release an adventure based on the true story of spring-heeled Jack 'the Demon of London'. The player takes the position of the Duke of Wellington who, even though 70, arms himself and chases the 'creature'.

'It will be on released at a price of £9.99 first on the Amstrad, then followed by other 8-bit releases, sporting some complex puzzles to keep even the best player hooked for days.'

So – if you want to play a 70-year-old Duke of Wellington, er, chasing Jack the, um, Ripper through, er... Anyway, the address is: Visual Images, 21 Inmans Road, Hedon Nr Hull. Blimey.

BOMBFUSION POKE

This comes from that veritable wizard, Andy Price from Dunstable, and it gives you infinite lives on the tape version of Mastertronic's blow-'em-up.

```
{NnAo} 1 ' Bombfusion
{JsAq} 2 ' by Andrew Price
{BxAq} 3 ' Amstrad Action
{ExAs} 4 ' Infinite lives
{NvAs} 10 DATA 21,66,3B,06,0D
{DvAr} 20 DATA AF,77,05,B0,28
{GwAs} 30 DATA 03,23,18,F7,3E
{LjAr} 40 DATA C3,32,E3,3B,3E
{EpAs} 50 DATA 20,32,E4,3B,3E
{HpAt} 60 DATA 3E,32,E5,3B,CD
{MtAs} 70 DATA 60,3B,E5,F5,D5
{OrAr} 80 DATA C5,DD,E5,FD,E5
{AqAs} 90 DATA 21,E3,3B,3E,3A
{LtAs} 100 DATA 77,23,3E,40,77
{AjAt} 110 DATA 23,3E,86,77,AF
{FtAt} 120 DATA 32,71,4A,FD,E1
{HnAu} 130 DATA DD,E1,C1,D1,F1
{IlAr} 140 DATA E1,C3,E3,3B,00
{InAp} 150 DATA 00,00,00,00,00
{BpAq} 160 DATA 00,00,00,00,00
{AoAn} 170 DATA A.P
{OtBj} 180 MODE 1:PRINT"LOADING...-
":MEMORY &3B5F
{EmAt} 190 LOAD"BOMB
    FUSION",&3B60
{FoAo} 200 chk=0:x=&3E00
{CxBs} 210 READ a$:IF a$=
    "A.P" THEN 230 ELSE
    a=VAL("&"+a$)
{LrBi} 220 POKE x,a:x=x+1:
    chk=chk+a:GOTO 210
{GvBq} 230 IF chk<>&217C THEN PRINT
"DATA ERROR.":END
{KoAo} 240 CALL &3E00
```

MORE MATURITY

"Another thought for Mr Peck," writes John Hudson of Huddersfield in response to the Mr Peck's letter in this column in *Express* 84, "is the spreadsheet module of *Mini Office II*.

"This will cope with up to 500 active cells and, in spite of only having five operators (+, -, *, and # or SUM), will cope with remarkably complex calculations if you split them into stages and use cells outside the area you might want to print for those intermediate calculations.

"The graphics module is also well worth exploring and can produce better graphs than some programs that need incredibly big machines to run on.

"Alternatively, if he is more interested in improving the appearance of the church newsletter and doesn't have a desktop publishing package, he could have a go with *ProScript* (£8 from DW Software, 62 Lascelles Avenue, Withernsea, North Humberside HU19 2EB.)

Thank you very much for your tip, Mr Hudson of Huddersfield.

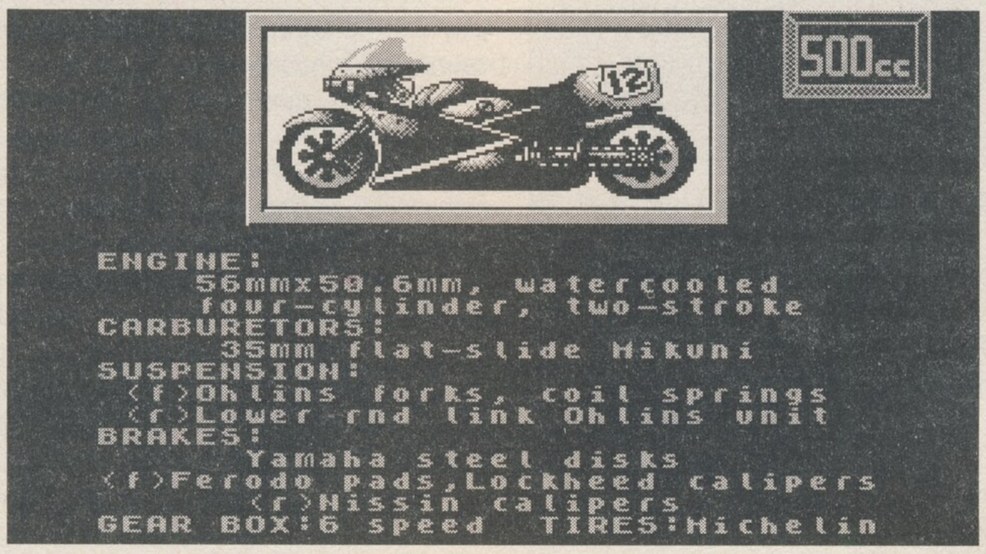
Rod Lawton

PEDALLING BACKWARDS

There are funny things going on down at Accolade. A few months back the company brought us the utterly excellent *Jack Nicklaus Golf*, a few weeks later came the dismal *Test Drive II*, and now along – after a good dose of hype – comes *The Cycles*, a 3D grand prixe bike racing sim, which is even more disappointing.

All the signs were good. You can select your own machine and circuit, for a start, and you are offered a rider's-eye-view of the tarmac as it unrolled beneath your wheels.

That was the theory. In practice, *The Cycles* just looks like *Test Drive* in drag. Admittedly, it runs a lot faster than even the second version of the car sim, but it still has that one central problem. It's much, much too slow.



• Choose your trusty steed – and then spot the difference on the track!

Anyone expecting the breathtaking pace of *Hang On* will be disappointed to find the thing runs more like *Castle Master*! This lack of any real sense of speed is a major problem.

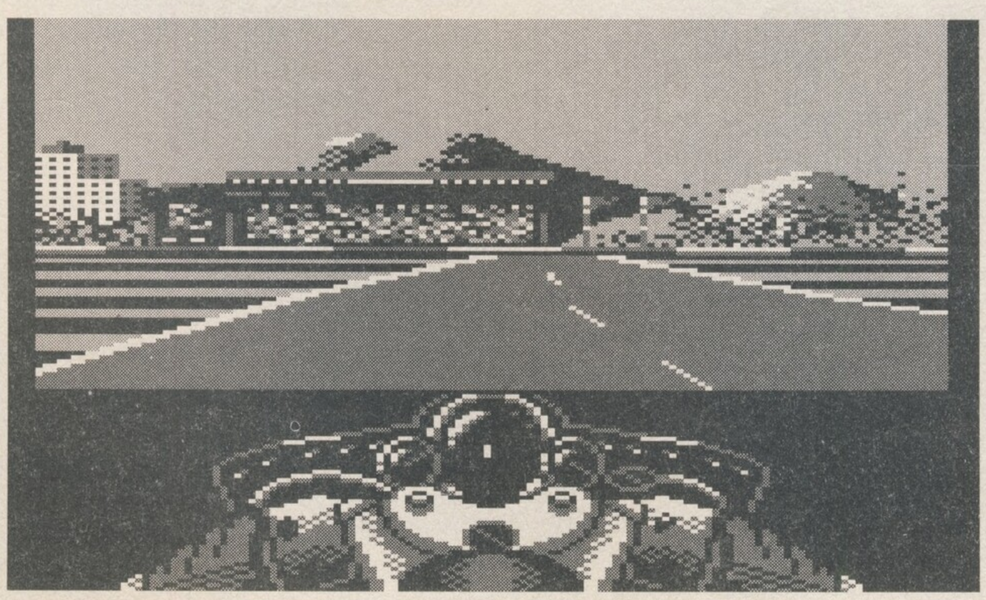
You could be doing 15mph or 150mph – you'll only find out five seconds into a corner, when you plough off the road no matter how hard you grab the brakes or how fast you slam down through the gearbox.

And even if you do succeed in staying on the track, it's only by such monumental overcorrection that you fishtail on and off the track for the next half minute, doing a better job of mowing the grass than scorching the tarmac.

Against this basic lack of playability or immediacy, other quibbles are minor. The worst is probably the handlebars on the bottom part of the screen.

You could be hanging, Mamola-style, off the bike with your backside on the tarmac at 90mph round a hairpin, and those handlebars on your screen will stay steadfastly upright. Part of the central feel of motorcycling is leaning into corners, but with *The Cycles* that's entirely missing.

Enough said: like *Test Drive II*, The Cycles undoubtedly represents some pretty nifty and ambitious coding. Unfortunately, it just doesn't come off.



• The Cycles: That track may look wide, but just you wait...

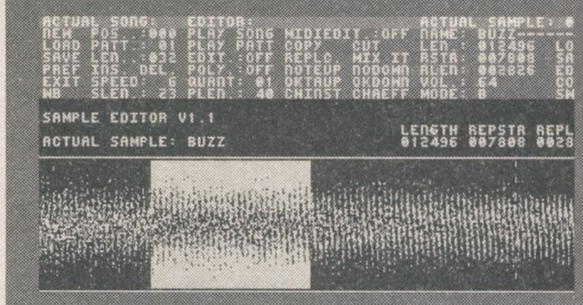
YOUR FORMAT

MACHINE SPECIFIC COLUMN

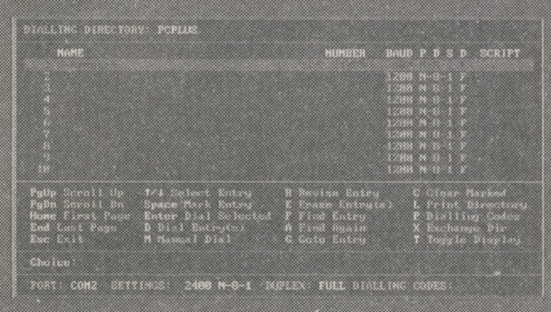
CPC 9
Spectrum 10
SAM Coupé 10
PCW 10
MSX 10
QL 11
BBC 11
Archimedes 11
C64 11
Amiga 12
PC 14
ST 16



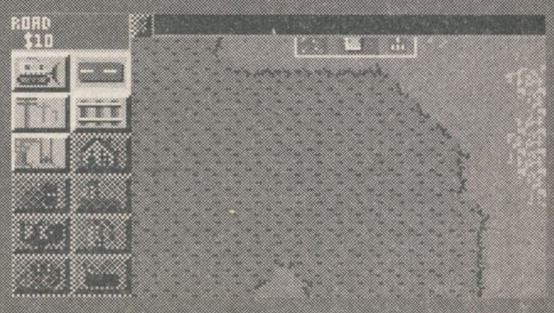
• The Cycles: *a curious offering from Accolade.*



• Hold on to your treblclefs: it's Octaliyser.



• ProComm Plus: *how to do it.*



• Sim City *on the ST: hurrah!*

YOUR FORMAT

MACHINE SPECIFIC COLUMN

SPECTRUM

IT'S DESTINY

Destiny Mission, the first release from a one-person software house called Williams Technology, with its minimalist packaging, comprises one inlay-less cassette case and a sheet of typed instructions. What it lacks in the way of 'free' posters, novellas, stickers, soundtrack cassettes and the like, it certainly makes up for with some slick professional programming and a mighty addictive line in gameplay.

It's a horizontally-scrolling shoot-'em-up with the accent on, er, scrolling horizontally and, um, shooting things, as you singlehandedly guide your ship through eight levels packed to the pixels with nasty alien types.

Traditional genre features that you expect to find in any blaster worth being played with joystick in autofire mode are present here – like tokens to upgrade weapons, pneumatic crushers to fly through or be squashed by and, of course, the essential end of level mega, mega nasty.

Anyone who has played a fair smattering of classic shoot-'em-ups will recognise the influences, and in terms of originality – well, there isn't much of that. Technically, however, it's great, with some crisply-drawn graphics, excellent snappy sound effects and a parallax back, middle and foreground that scrolls so smoothly it just has to be done with mirrors.

The monochrome colour scheme does mean, unfortunately, that there's the odd case of disappearing bullet syndrome to contend with, and I think maybe hardened joystick wagglers will find it a bit easy (I got to level six).

All in all this is easily as good as most of the sumptuously-packaged commercial Speccy products you'll find in your local software shop. That shouldn't really be surprising because the programmer/publisher, Tiny Williams, was also responsible for the Spectrum version of *Xenon*, and we know how good that was.

Having got: "little credit and even less money" for it, he's decided to publish his work himself, and *Destiny Mission* is available mail order only at the moment for £7.95.

I reckon that might be a few pennies too much, but this would be a worthy addition to anyone's collection.

Robin Alway

A FEW MORE POKES

We should all be grateful to good old Matthew Wilson who's just heaved another batch of his finest multiface pokes in my direction.

To get any of the infinite benefits the following offer, you'll need to insert them into the appropriate game with a Multiface or similar interface. Thanks, Matthew!

GAME	POKE	EFFECT
Beyond the Ice Palace	38281,0	Infinite lives
Roadblasters	55214,0	Infinite fuel
Crazy Cars	29403,0	Infinite time
Rolling Thunder	39792,0	Infinite lives
Stormlord	56877,0	Infinite lives
Rampage	56693,0	Infinite lives
Robocop	31007,0	No enemies

SAM COUPE

CUT THE TAPE

Samtape 2 is here, and it includes an enhanced manual and full instructions to allow customisation and transfer of *Tasword* 2 to the SAM.

Price is £9.99 (considerably less if you're coming from the original) from Lerm, 11 Beaconsfield Close, Whitley Bay, Tyne and Wear NE25 9UW. Send an SAE for details.

SAMCOMPO: THE WINNER!

The winner of that much too easy Coupé competition I ran a few columns back was lucky old Colin Henderson of Glasgow. The person who wrote SAM-Basic was, as if you didn't know, Dr Andy Wright.

Congratulations to Colin, a piece of sparkly new SAM software should be winging its way to him shortly. Thanks to everyone else who entered.

The last little Coupé program I printed seemed to go down pretty well so here's another small, but perfectly formed, little routine with impressive results. The impressiveness of the results shouldn't really come as any surprise because it's by Hamish Rust.

Hamish is a regular contributor and one of the talented types which programs the *Enigma* tape magazine (review next issue) for the Spectrum and SAM.

What more need I say apart from thank you very much, Hamish – and, you can select any speed between one and five:

```
1 INPUT "SPEED?";P: LET R=1: LET S=1
2 LET C=1: FOR G=R TO R+(S*5) STEP
   S: PEN C: CIRCLE 128,80,G: LET
   C=C+1: NEXT G: LET R=R+ (S*5):
   LET S=5+1: IF S < > 8 THEN GOTO 2
3 FOR GO=0 TO 9: PALETTE G,0: NEXT G
4 FOR G=1 TO 5: PALETTE G,127: PAUSE
P: PALETTE G,0: NEXT G: GOTO 4
5 REM ENIGMA TAPE MAGAZINE 1990
```

Robin Alway

PCW

COVER VERSION

As anyone who has ever looked inside a PCW monitor or keyboard will tell you, there are enough layers of dust there to keep an archaelogical dig happy for as long as it took *LocoScript PC* to come out. (Only joking, everyone at Locomotive!) The answer is, of course, to buy a set of dust covers.

Owners of the 9512 with the cut sheet feeder have had a problem though; dust covers aren't made to fit the printer with the feeder attached. Until now. Real dustbusters, Jenart Design, on 0769 54127 will sell you a set of covers to fit the 9512 with or without sheet feeder for £15.25.

MUSIC MICRO PLEASE

From my current job on the classical music magazine *Classic CD*, I know that many of our contributors use PCWs – including some well-known concert recitalists.

One (who shall remain nameless) is clearly more at home with a Steinway keyboard than a PCW, and if he were to play like he types, his Beethoven would sound like Schoenberg.

Anyway, musicians or music students with PCWs will no doubt know of the *Composer's Pen*, an excellent music manuscript writing package that lets you cut, paste, copy, transpose, etc.

It's great value at £86.25, but some users – beginners or first-year students perhaps – might not have that sort of money, and might not need the full power of the program that can handle anything up to full orchestral scores.

Makers, Composit Software, have therefore brought out a cut-down version called *MusicPad* for £23. It prints up to 4 staves, copes with any key or time signature, transposes and can include song lyrics.

It's just as easy to use the original, but if you're looking for the ability to produce simple music for your course work, or you want to put down your band's songs on paper, this is an exceptional bargain. Call the good people on the following digits 0952 595436.

CAPITAL CITY

Ever wondered why computer programs (and now drama series) have the obligatory mixed upper and lower case – *LocoScript*, *SuperCalc*, dBase, *EastEnders* etc?

Apparently it's because, traditionally, program variable names cannot have spaces in them – so the capital letters are used to distinguish the words. The classic example is the two variables used in controlling plotters: PenIsUp and PenIsDown.

QUICKIES CORNER

Some quick tips for *LocoScript* users:

1. You can move to a new page with [ALT] [RETURN].
2. When editing long documents (over 10K say) copy them to the M drive first and edit them from there. When you're finished, copy them back to the original drive and group. It's much faster.
3. You can make a document or group have a name with two separate words by using the underline ([SHIFT] hyphen), e.g. NEW_CAR.DOC

Rob Ainsley

MSX

NORTHERN LIGHTNING

A company that trades under the name of Computer Man has been in touch to inform me that it stocks a large range of MSX games at its branch in Shipley, West Yorks.

Not only a selection of tape-based games, the company also has several games on ROM as well as a few second hand MSX 1 computers for sale (Sanyo's I believe).

Altogether Computer Man has four branches in this region of Yorkshire, but at present the company only stocks the MSX range at its ASDA complex, Units 1 to 10, Shipley. By the time you read this article a fifth branch should be open in Skipton, however, and, if there is a demand for MSX software at this branch, it may carry a range of software for our format.

Now there is no need for those in the North of England to moan about lack of support, is there?

NO PLACE LIKE HOMESOFT

In the same week that Computer Man wrote to me, a catalogue of MSX 1 and 2 software arrived courtesy of Homesoft, a Dutch-based software distributor.

The list of titles available in Holland is quite comprehensive, with over 100 budget MSX 1 games, 60 plus full priced MSX 1 games, and 40 plus MSX 2 games.

There are also a few business programs for the MSX 1 and 2 computers, eg *Tasword* on tape or disk, and *Tasword* 2 on disk for the MSX 2. Turbo 5000, the backup cartridge for the MSX 1 and 2 computers, is also still available at approximately £25.

For those lucky enough to own an MSX 2 or 2 Plus computer, *Dynamic Publisher*, the desk top publisher for the MSX 2, is also available for around £50.

As you can see from this small selection from the catalogue, Holland is the place to be for the MSX at the moment. Now the bad news: Homesoft does not supply direct to the end user, but it has promised to put me in touch with a mail order company.

I should, therefore, shortly have the name of a mail order company in Holland, so watch this space for this information. If any retailer would like to contact Homesoft with the view to obtaining software for retail, write to me at the MSX column in *Express*, and I will forward a copy of the list of software.

ALL FORMATS

I visited the All Formats Computer Show in London this week, and, frankly, I was disappointed with the turnout.

The first thing that you noticed on entering the hall was the quiet, with stallholders almost outnumbering visitors. The 'MSX Village' failed to materialise, with only MSX Central, and MSX Link being represented.

In fact, on the Sunday I visited the show, even MSX Link failed to attend, so the poor old MSX user had a very disappointing day of it.

Talking to David Stodell, who was representing MSX Central, I discovered that Saturday was also quiet, although not as bad as the Sunday. What on earth has happened to the computer scene?

Keith Neal

C64

A RATTLING GOOD YARN

Writing a good adventure game is often thought to be similar to writing a good novel. However, there are many things that the adventure author has to consider which would not cause the would-be novelist any sleepless nights.

True, they both have to come up with a string-plot, but there's a lot more to it than that. Does the adventure writer market the game or send it to a publisher? And which publisher? Should a utility be used, or a programming language?

Software protection, data encryption, story-line, screen display, mazes and puzzles, graphics and sound, are all things that the adventure writer must consider. Happily, there is now a book which considers them all for you, and much more besides.

The book is called *Computer Adventures – The Secret Art*, written by adventure author Gil Williamson, and published by Amazon Systems at the price of £7.95. Anything and everything you might possibly want to know about writing adventures seems to be covered by the book, so if you are at all interested in coming up with your own games then track down a copy today.

KING SOLOMON'S MINES

There is an annoying feature in this adventure game for the C64 that you should know about. In part one of the game, do not drink from the canteen, otherwise part two becomes impossible owing to an empty desert which should have something in it.

Never mind, Softgold, better luck to you next time: better luck to arcade players, too.

A GOOD, QUICK POKE

I promise to have a fistful of POKEs next time, but for now I have a couple of quickies for you.

On Flying Shark, `POKE 7929,173:SYS 2061` for the cheat mode, and on *Commando*, `POKE 14631,0:SYS 2128` for its cheat mode.

Pete Gerrard

DIGITAL DYNAMITE

New companies producing software for the Commodore 64 do not spring up every day, so a big welcome to Digital Dynamite.

The company's first release is a collection of four games and a free demo (it says here) for the price of £8.99 on tape or £11.99 on disk. The games cover all areas, from platforms and ladders to adventures and puzzles – and, while the so-called action game *Starburst* is not likely to win any awards this year, I did like the adventure *Citadel Of Corruption*.

The demo, it has to be admitted, is a gem. The price includes p&p, so there are no hidden extras to worry about. For further details or to place an order, write to Digital Dynamite at 54 Watermill Road, Fraserburgh, Grampian AB4 5RJ.

QL

QL ON THE BOX!

Watching the finals of the recent BBC2 design competition, I was intrigued to see what appeared to be a QL on the desk of one of the designers of a nifty pocket microscope.

The outfit responsible is called Science of Cambridge, which was the name of Sir Clive Sinclair's original computer company, which itself developed an odd little system called the MK14 over 10 years ago.

Chris Curry, one of the founders of Acorn, used to run the original Science of Cambridge outfit for the avuncular knight, and he is now a partner in the new venture.

The QL in question had an unfamiliar expansion unit with a circular top plugged into it. According to Tony Tebby of Qjump, this is a mockup of a proposed 0.5Mb wafer-scale memory expansion for the QL.

This product has subsequently been developed into the Anamartic wafer-scale 'silicon disk'.

RFI

RFI is the trade name for Radio Frequency Interference. If you find your QL interferes with radio reception, you could try winding the power supply cable, and the printer cable, through ferrite toroids. This is a technique often used by radio amateurs for reducing RFI from computers.

SPEAK TO ME!

Some time ago, QUANTA co-founder, Leon Heller, had a phone call from a lady who was looking for a QL speech synthesiser.

Her husband is blind, and such a device would enable him to use his QL more effectively.

If she is reading this column, could she contact Leon on 0424 714790 – he has a possible solution to the problem.

Leon would like to hear from anyone else who is interested in such a device as he has a working prototype, using a Z80 processor and the ubiquitous SPO-256 speech chip.

A speech synthesiser for the QL was advertised by a New Zealand outfit a couple of years ago. Unfortunately, that company no longer appears to be trading, and I don't know of anyone with one of the units.

Suitable toroids (about 4cm across) are available from Tandy stores. Six turns or so should suffice. This tip works with other computers, of course!

Radio amateur Peter Dean (call sign G3FNT) has written a log program using Archive. If anyone is interested, send a cartridge, with return postage and packing, to him at 17 Pineheath Road, High Kelling, Holt, Norfolk NR25 6QF.

Peter would also like to hear from anyone who has information on how to use radio fax with the QL. He has a suitable modem.

John Torofex

BBC

HEAD TO HEAD

I have, managed to compare two spreadsheets, *Viewsheet* and *Intersheet*. The results are presented below:

All tests were conducted on a Master 128. The worksheet used contained the formula 22/7 (approx = to PI) replicated from A1 to X58. No attempt was made to optimise for speed.

You can see that, although the two tested differ significantly in some ways, they are both slow at number crunching. In fact, my overall conclusion is that the BBC is not really suitable in its plain form as a spreadsheet tool. Add a co-processor, and the picture does change, but the cost may be prohibitive.

ViewSheet has one factor in its favour though – it's free with every Master sold! On the other hand *Intersheet* does possess some advanced facilities including the ability to link with other applications in the 'Inter' family, such as *InterChart*. Next week, Wordprocessors!

THE RETURN OF ESM

After a long quiet spell, ESM is back with a whole clutch of new releases: *World Map Study*, a graphical world database and *Frieze* and *Kaleidoscope* – both design programs aimed at pupils following the new Maths National Curriculum.

I'll give all three programs a full going over when I get hold of copies, but for now I'll confine myself to saying that, with the advent of the National Curriculum, I believe the Government has done a disservice to all in Education and the software industry in particular.

Andrew Brown

ARCHIMEDES

MULTI-SELECTION

The term 'shift-click' seems to have confused a few readers, (*Express* 83). I'm sorry, I thought it was more generally applicable.

Shift-click is available in all versions of GEM, beloved of Amstrad PC and Atari ST users. It simply means that by holding down [Shift], you can select several files at once with the mouse. On the Arc, of course, the same effect can be achieved using the 'adjust' mouse button, instead of 'select'.

What I'm still no closer to, though, is being able to select a block of files by rubber-banding them. This is a lot quicker than clicking on each in turn, but I don't think it's possible on the Arc. Unless you know better...

DESKTOP GOODIES

A good crop of letters this week, and a couple of readers mentioned the *!StickyBD* utility, which, in addition to letting you paste down a sprite as a desktop backdrop, lets you pop icons directly on the desktop for easy access at any time. It's available in the public domain.

Bob Voisey was one of the people to mention this in a letter, and he also put in a word for his bulletin board, Noah BBS, which includes a news/reviews section on Arc products and over 700 files of PD software.

Bob is Bristol-based and his board is on 0272 572322. He enclosed a very handy disk of 'utilities', mostly amusing like the *Desk Duck*, which swims along the top of the icon bar, quacking as it goes. One of particular interest is the *Squeaky Door*. This utility plays a digitised door squeak whenever you open a filer window. This was one of the other 'want list' items from issue 83.

As other readers have pointed out that the error beep can be fairly easily replaced with a digitised sound using *FX310,20, it seems likely that any interrupt could be intercepted in this way and assigned the appropriate sound. It just wants somebody to tie it all together, grab a good set of sounds and present the whole as a nice RISCOS application for us in the point and click brigade.

Bob also passed on an invitation from Julie Dolling, co-ordinator of the Avon Archimedes User Group. There are around 100 members at the moment, including some top Arc programmers. Meetings are held regularly and a lot of information changes minds at them. Contact Julie on 0454 323081.

I'm particularly interested in hearing from other groups around the country and will post names and contact numbers through the column as I receive them.

PANASONIC PROBLEMS

I would now like to come back to Chris Eason and his problems with a KX-P1081. The problem occurs when printing from *Impression* through the Computer Concepts dongle.

Sometimes the paper-out detector stops the printer printing to the bottom of the page and Chris has to override it by forcing the printer back on-line. At this point, it prints the rogue characters.

CC doesn't believe it's a problem with the dongle, since nobody else has reported it, but it is repeatable with other Arcs and through different cables. It would seem likely from this that it's either a fault in the printer's buffer, exacerbated by the dongle, or a problem with the dongle itself. Perhaps you could try your Arc with another KX-P to confirm this, Chris? A workaround would involve the use of A4 continuous paper. The paper-out sensor would not then trip out at the bottom of a page.

Bertrum Carrot

GAMES ARE IN

A couple of readers moaned that there are too many games reviews in this column and that this is some way 'degrades' the standing of the machine. I can't subscribe to this view, as the Arc, like its predecessor, is intended as an 'all-rounder'. Many of the features that make it so good as an educational, video or sound manipulator are also those which can be stretched by games.

I also believe that a growing games library may lead to a wider buying public for the Arc. At the moment I have sufficient space to mention every program I receive.

If there are more games coming in than other applications, they're the ones that get the coverage.

YOUR FORMAT

MACHINE SPECIFIC COLUMN

AMIGA

TAKE YOUR TABLET

Although the Amiga certainly doesn't lack its fair share of graphics tablets, they have never really caught on among Amiga artists. Some credit this to the quality of the Amiga mouse – after all, why buy a graphics tablet when the Amiga mouse is perfectly acceptable for producing art work within packages such as *Deluxe Paint*? Others credit it to a more plausible reason – price.

Until recently, such devices were certainly out of the reach of most Amiga owners – at over £350 for even the cheapest of tablets, it's no wonder they never really caught on. However, all that could change with the announcement by HB Marketing of the-soon-to-be released graphics tablet.

Although no specific details have been disclosed, the company hopes to sell the tablet at around the £150-170 mark, which will certainly make it the cheapest available. The board is being manufactured by SummaGraphics, whose previous tablet sold at a considerably higher price level. For more, give HB a call on 0753 686000.

KEYBOARD CAPERS

Doesn't Commodore's CDTV look like one sexy machine! I for one can't wait to get my hands on the little beauty, and as soon as I can talk those nice people at Commodore into sending me a review model, I'll bring you a full review of Commodore's multi-media baby.

Regular readers of *Express* may remember the picture of the CDTV that was published in *Express* 83. Going back to it, how many of you spotted something strange about the picture? No? Well, if you take another look you'll soon realise that it looks like Commodore has finally resorted to using left-overs and spare parts to build its latest creation. The CDTV keyboard is no other than the old A1000 keyboard, which many users (including myself) came to know and love.

Interestingly enough, this comes only weeks after news that Commodore in the States had changed its policy on A1000 upgrades. For several months now, Commodore has been offering American A1000 users the chance to trade in their old machines for spanking new A2000s (a bit like the A2000/U offer that Commodore UK recently made to UK A500 and A1000 users).

Previously, retailers who supported this offer were allowed to re-sell the old machines. However, all that has now changed, with Commodore requesting retailers to send just the keyboards back, in an attempt to remove the A1000 from circulation. Perhaps the CDTV project could explain where all those A1000 keyboards are actually going!

WORD WORKS

New Horizons' *ProWrite* word processor received critical acclaim when it was released over two years ago. Now, two minor revisions later, New Horizons has taken the product further than ever before with the release of *ProWrite* 3.0.

As well as all the features that made *ProWrite* so popular, this latest release contains many powerful word processing tools previously only found in high-end PC word processors. For starters, the program now supports multiple columns, with a choice of either snaking or parallel text flow.

For those of you who hate having to use the mouse when word processing, all the features of *ProWrite* 3 can be accessed through keyboard shortcuts. You can now cut, copy and paste instantly, without ever having to use your rodent.

Additionally, to stop those errors before they start to mount up, *ProWrite 3*'s 100,000 word spelling checker will check your copy as you type – and the vast 300,000 word thesaurus is on hand if you want to impress your friends with your mastery of English.

To save time, powerful macros can be assigned to function keys, thereby allowing you to carry out long and tedious operations with just a single key press. In time for the impending release of Workbench 2.0, *ProWrite* 3.0 includes full ARexx support, allowing you to control all its functions from either another program or from an ARexx batch file.

Previous versions of *ProWrite* were a little slow in the screen update department, but *ProWrite* 3 is no slouch. New Horizons claims that even the fastest touch typists will find it impossible to out run the program – even if your document contains complex graphics.

No UK details yet, but give New Horizons a bell on 010 512 328 6650.

FANZINE SCENE

Amiga fanzines and disk magazines seem a little thin on the ground, so I thought that it was only fair that I gave my support to what is available.

For PD enthusiasts, George Thomson Services has announced *Public Domain News*. *PD News* is packed with news and tips concerning every aspect of the Amiga PD scene, and it costs just 50p from GTS.

Each of the fanzine's 16 pages are a mass of useful information, all of which is layed out in a clear and highly-readable form. If you're into PD software, then *PD News* is a great way of staying in touch with what's hot and what's not.

The most famous Amiga disk magazine of all must surely be *Newsflash*, which is produced by my old friend Martyn Brown (ex of Seventeen Bit Software). Martyn has courageously battled against all odds to put *Newsflash* where it is today, and he certainly deserves recognition within the Amiga industry for his efforts.

For the latest news, gossip and comment, *Newsflash* is a must. I for one look forward to the arrivial of every new issue. For more details, give GTS a call on 077082 234.

Jason Holborn

MUSIC FOR THE MASSES

We've all played with the endless variations of the now infamous Sound Tracker utility, but none can compare with this latest arrival, Octalyzer – the world's first eight-channel sound tracker utility.

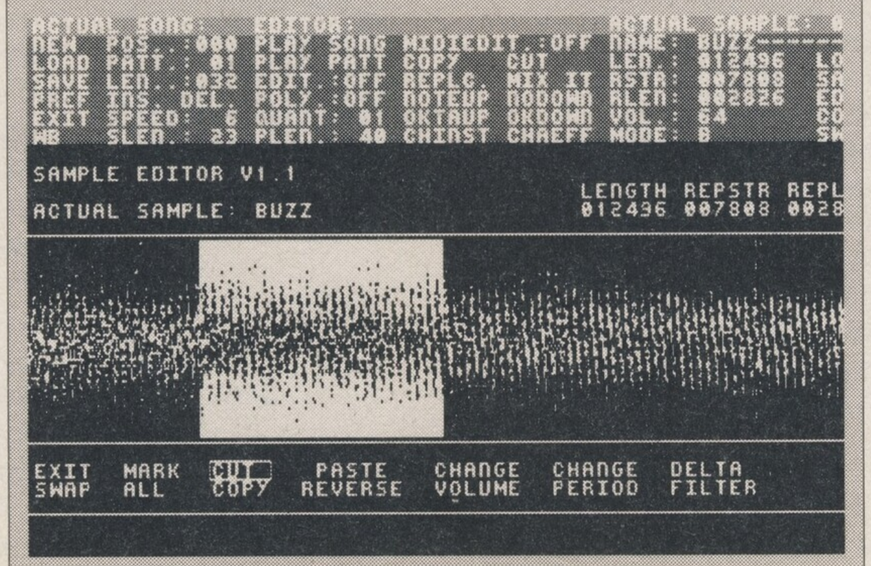
Octalyzer is a sophisticated music composition tool that uses Amiga sound samples as instruments. Using the now familiar Sound Tracker editing system, songs are built up from patterns constructed by placing notes into any of the eight available 'tracks'.

Anyone who has used a Sound Tracker-like program will know how quickly you'll become aquainted with this way of working. Such a system looks initially daunting, but you'll be surprised how quickly you'll be churning out musical masterpieces.

What helps make this latest release far superior to any other sound tracker utility is the inclusion of both a standard file requester (no more pre-set editor – can't be a bad thing) and the use of a small font that allows considerably more music data to be displayed onscreen simultaneously.

Just like Microdeal's Quartet, Octalyzer includes extensive sample editing features. Samples can be cut, pasted, reversed, filtered and generally fiddled around with. Although certainly not the best sample editor in the world, it has the advantage of allowing direct sampling straight into the Octalyzer program – at last you can compose your music and create sampled instruments from within the same program!

Also included is a handy little utility to convert standard 4-channel Sound Tracker song files to work with this new 8-channel variant. Of course the converted files will still only contain 4 channels of music data (what did you expect?), but at least you'll now have the opportunity to 'pad-out' your music scores with extra music data. Contact Crazy Joe's PD on 0709 829286 and ask for disk 259.

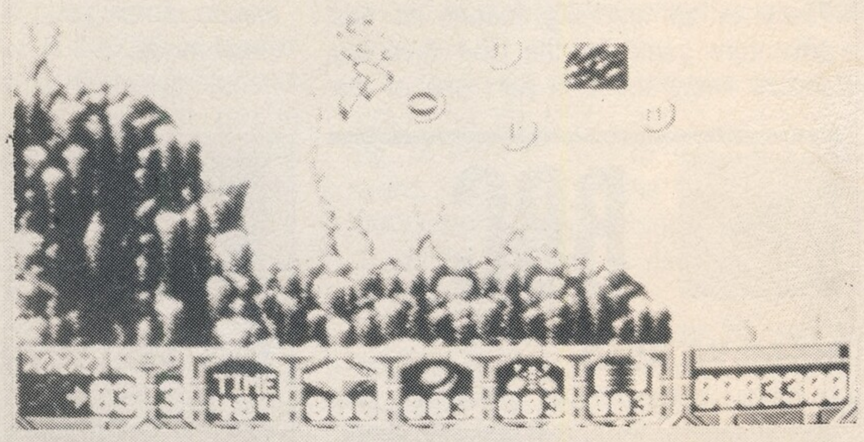


• *If you thought* Sound Tracker *was good, then check out* Octalyser.

TURRICAN

Rainbow Arts • £19.95

AMIGA GAME of the WEEK



Nightmares are terrible. They make sleep a thing to fear and sometimes leak through to fill people's lives with misery and worry.

The creature responsible for the most terrifying dreams in history was named Morgul. His influence was so severe, that people were too afraid to venture out onto the streets at night, for fear of his demons swooping down.

A heroic warrior named Devolon managed to keep hold of his courage and battle the evil tyrant, banishing him to a far off realm where his influence could no longer command fear in the hearts of men.

There have been a large number of occurrences recently of people once again being gripped by terrible dreams, however. The fact is unavoidable: Morgul plans to return.

You are Turrican – a robotic warrior bristling with so much state-of-the-art military hardware that you are capable of taking on any foe without fear. You must travel to the hidden realm that Morgul has managed to transform into a deadly fortress – inhabited by weak-willed creatures perverted into the ways of evil by the dark lord.

You have a huge array of weapons available to you, from lasers and spray bullets to energy lines and shrapnel grenades. For more difficult situations, there is the flash-gun – which sends out a directable beam of energy that wipes out everything it touches. Your task is to fight through the five areas of the realm until you can find and kill Morgul himself.

Although scrolling shoot-'em-ups appear more frequently than number 37 buses, *Turrican* is definitely one of the best to appear for a while. The action is frantic and exciting, with an incredible feeling of destructive power as you begin to let the weapons fly.

As well as fast-paced, blasting action, there are a few hidden surprises and puzzles to solve, which adds a certain spark missing from other gun-toting romps. Another of *Turrican*'s strengths is the superb, polished coin-op feel that the graphics and sound create, with superbly-detailed sprites and backgrounds being backed by ripping sound effects.

Take a break from shoving money into the slots of arcade machines and have a look at *Turrican*. The difference in the playing isn't too great, but the price of owning the game is: good value, good game.

Maff Evans

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

NOW INC HYPERPACK

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!
- ★ Hyper Pack S/W inc Hyper Draw, Hyper Paint and Borodino Battlescape War Game worth over £70.00

520STFM DISCOVERY PACK
£279.00

NEW

NEW! fantastic value for money pack includes:
- ★ 520 STE 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 WORD UP wordprocessing software, featuring glossary and mail merge, K-Spread 3.0 spread sheet and SUPERBASE PERSONAL 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

AMIGA A500 GAMES PACK featuring BAT PACK or the new FLIGHT OF FANTASY PACK
£399.00
Inc. VAT and Next Day Delivery

NEW!

BAT Games Pack includes:
- ★ 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 II GRAPHICS PACKAGE.
- ★ FREE HOLIDAY 14 days accommodation
- ★ FREE, only-just-released BATMAN - THE MOVIE games software.
- ★ NEW ZEALAND STORY arcade games software.
- ★ F18-INTERCEPTOR - amazing 3D flight simulator software.
- ★ A further £230 worth of Games Software, including BUGGY BOY, MERCENARY, BARBARIAN, WIZBALL & six more games.
- ★ 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 mains plug!

FLIGHT OF FANTASY Pack Includes:
- ★ F29 RETALIATOR - fantastic NEW flight simulator - replaces Batman
- ★ RAINBOW ISLANDS - smashing new arcade game - replaces New Zealand Story
- ★ ESCAPE FROM THE PLANET OF THE ROBOT MONSTERS - replaces F18
- ★ Everything else listed for BAT Games Pack.

AMIGA 1 MEG BAT GAME PACK
£499.00

NEW!

1 Meg Bat Games Pack includes:
- ★ Fitted 1 Megabyte Memory Expansion + Real Time Clock Card
- ★ Everything listed for the A500 Bat Game Pack
- ★ DRAGON'S LAIR 1 MEG MEGAGAME!

AMIGA A500 CLASS OF THE 1990'S BUSINESS + EDUCATIONAL PACK
£549.00

FEATURES:
- ★ Amiga A500 + TV Modulator
- ★ Midi Interface + Software
- ★ Kind Words II word processor
- ★ Page Setter DTP
- ★ Super Base Personal Database
- ★ Maxiplan 500 Spreadsheet
- ★ Amiga Logo, BBC Emulator, Deluxe Paint II
- ★ Mouse mat, 10 blank disks and disk wallet

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

PC

SECURITY AIMS

I'm obviously on PC Security's mailing list. I had an invite to a launch last week, which I couldn't attend. The company has since sent me a folder on the new product – so I feel obliged to give it a mention for the implied hospitality.

The launch covered the CP8 Smart Card reader which you attach to the back of your PC. The cards are issued to your privileged personnel who must then insert them, as with a cash dispenser, to gain access to the machine.

Three questions sprang instantly to mind with this arrangement.

What happens if a Would-Be-Felon (WBF) boots the PC from a floppy? What happens if said WBF cuts the wire connecting the PC to the card reader? And why isn't the reader mounted internally in one of the drive slots?

A quick word with John McIntosh of PC Security (phone 0628 890390) cleared these worries up. Insert a floppy and you have no access to the hard disk at all.

Likewise if you cut the cord or disconnect the card reader, which plugs into the serial port. An internally mounted reader is expected later this year. The box costs £360 and the cards around a tenner each.

HAYES GETS SMARTER

As announced in last week's Express news, page 6, Hayes, manufacturer of the world's most popular modems, has released what it hopes may be the definitive communications software.

Smartcom Exec combines features of earlier software and now includes mouse support, keyboard macros, a 'peruse buffer' (Hayes's words, not mine) and a powerful text editor with word processing capabilities.

A telephone address book is also included, as you might expect, and a scripting language, *Scope*, enables automation of your repetitive comms tasks.

Smartcom Exec will run under *DesqView* and *Windows* and comes in at £79.

THE ZEN OF MASTERMIND

It was good to see a technical writer on the final of BBC's *Mastermind* this week. In among the inevitable civil servants and teachers was a lady who apparently wrote the manuals for Apricot's Zen range of micros.

She answered questions on Mary Wollenscroft, one of the many pioneering women writers and thinkers of the 19th Century and, had the competition not been so intense, may have done better than a very creditable fifth place.

MIND YOUR BATS

Mark Beevers writes to extend a batch file technique mentioned in *Express* 83. Create a couple of mini files first, by doing the following (this assumes you have a sub-directory called \DOS):

```
COPY CON \DOS\CR.DAT [Return]
[Return]
[F6] [Return]
```

and then

```
COPY CON \DOS\DASHES.DAT
[Return]
— [Return]
[F6] [Return]
```

Now add these lines to your AUTOEXEC.BAT file, after any date or time commands that may be needed to set up your system clock:

```
DATE < C:\DOS\CR.DAT | FIND
"C" >> TIMES.DAT
TIME < C:\DOS\CR.DAT | FIND
"C" >> TIMES.DAT
TYPE C:\DOS\DASHES.DAT >>
TIMES.DAT
```

Every time your PC is booted from now on, the time and date will be noted and added to a log file. If your system also uses a program to shutdown your hard disk, you can build in a log-off time as well. This kind of wheeze is particularly useful on office systems.

PROSPERO, I PROSPER

Another issue of the *Prospero* software newsletter arrived this week, which is an interesting event as I know of very few other language companies that bother to inform users of what's going on.

The latest issue details the release of version 5.2 of the PC Pascal compiler which seems to offer lots of interesting goodies, including full level 1 ISO conformance, structured function results, rather than a single passed variable, and short-circuit evaluation of boolean elements.

This last point bears on a rule I've long advocated; If you're making a multiple condition up with an AND function, choose a line of the form IF expression1 THEN IF expression2 THEN... This evaluates much faster than IF expression1 AND expression2. In the first case, a false result to the first expression will prevent the second being evaluated: not so with the second form.

I DON'T HALF PICEM

One of the things I'm trying to do with the *PC Plus Personal Productivity Pack*, which, despite what I said last week, really *should* be out by the time you read this, is to include clip-art in each package.

W've got a good supply of PCX format, mono clips and I have included 10 or so on the first disk set. How much more convenient, though, if I could also display the clips using a utility on the disk.

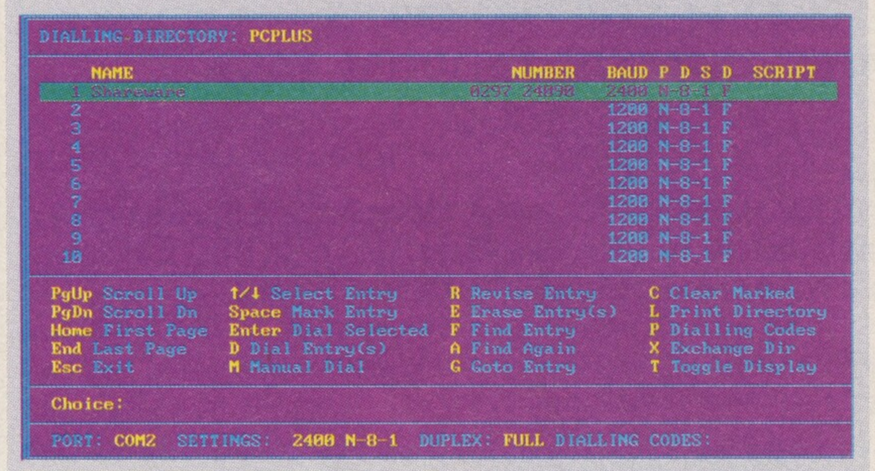
I've been scouting around for a PCX file viewer and have so far drawn a blank. It needs to be quite short (10K – 20K) and to be able to auto-sense the monitor running with it. Anyone know of a likely candidate in the public domain?

While hunting for a program, Mike Williams, a well-known contributor to the *PC Plus SuperDisk*, sent through a copy of *PICEM*. This is a shareware viewer for a variety of filetypes. While not suitable for *P5*, as it's over 40K and doesn't auto-sense, it does handle colour as well as black and white files in several formats – including GIF.

Mike got his copy of *PICEM* from a BBS in the States – called BBB – but it may be available over here, too. Anyway, it's a good excuse for printing the shot of a NASA astronaut which Mike also supplied.

Simon Williams

PROCOMM PLUS DEFEAT



• Where to ring with PROCOMM

At a late stage in production of the next *PC Plus SuperDisk*, I discovered that the shortened version of 4DOS, especially prepared by Shareware Marketing, was not the right one. The proper one needed to be transferred to my place of work ASAP.

I don't know whether I've ever explained about my paranoid loathing of comms, but next to it the relationship of the Crusaders and the Turks was positively close.

Nonetheless, I was willing to put a very old version of *Mirror* to the test and dial into Shareware Marketing's bulletin board to try and pull the necessary files off it. After the best part of an hour's hand-holding from SM's technical manager, we'd still only managed to get two of the shorter files across and Steve Lee, SM's boss, reluctantly agreed to courier the files across the following day, with mutterings of 'If he'd had *ProComm Plus*, we'd not have had this trouble'. *ProComm Plus* is SM's preferred comms package.

The following day, Steve's Roller rumbled into our village side street and four hours later we had the disk together and running.

Not to be beaten, Steve also had a go with a copy of *ProComm Plus* on my trusty old PPC 1640 to show what could be done. Half an hour later even Steve had to agree that it wasn't me, it wasn't *Mirror* – though *ProComm* certainly looks a better beast – and it wasn't the PPC. Current theory is the suspicious-looking BT box on the wall. Could this be an amplifier? Could this be a dead amplifier?

RAILROAD TYCOON PC

GAME of the WEEK

Microprose • £34.99



With games like *F-19 Stealth Fighter*, *Red Storm Rising* and *M1 Tank Platoon* on its books, it is not surprising that Microprose has a reputation for glorifying the American war machine.

Those who find this war-mongering objectionable will be pleased to hear that top programmer Sid Meier has come up with a real winner that has nothing to do with war at all.

***Railroad Tycoon* puts you in early 19th century America or Europe with $1 million in your pocket and a landscape of isolated settlements crying out for transport. So you find a couple of cities, not too far apart, build a couple of stations , a train and start shuttling passengers and mail back and forth for a tidy profit.**

Next build a branch line, transporting coal from the hills to the steel mill on the edge of town. Then take the steel on to the factory down the line, and perhaps build another branch to take the factory's output to a harbour on the coast.

Meanwhile, your efforts have inspired the locals to open new industries and, before you know it, you've got your hands full looking after a major network.

Satisfying ever changing supplies and demands is only part of the story – you've got an expanding railway network to manage. Building new lines means finding economic routes, and you've got to make sure your existing stock is being used efficiently.

You've also got to keep an eye on up to three competing railroad tycoons, each capable of taking your custom and even buying into your business.

***Railroad Tycoon* looks stunning too. Trains puff their way through glorious countryside, and there's a full animation whenever a station receives its first delivery or a major train crash happens on the line. A totally absorbing game, although it's a shame there are no facilities for two player games.**

Matt Nicholson

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 ACCESS 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	CGA	MONO VGA	COLOUR VGA
£699	£829	£849	£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)

ST

ART FOR ATARI'S SAKE

Hat Software is in the throes of polishing off *Art Tutor*, a tutorial package that's designed to give you a foundation in the principles of art. Subjects include the human body, (an object most readers should be fairly familiar with) as well as animals, cartoons, plants, landscapes and the use of colours.

Naturally there's a paint package included, one that features the usual stuff: compactor, mirror, brush designer and so on. There are also art picture files you can load into the paint package.

Price has not yet been finalised, though expect Hat's usual keen pricing policy to apply. Call 0743 231763 for more details.

SOUNDS EXCITING

It seems that the ST is beginning to take off in the education field. Rules governing the spending of school funds (such as they are) are changing to allow schools to have a bigger say in where their money goes and, in such an open environment, the ST should do very well.

One subject in which the ST is likely to do particularly well is music, for it has built-in MIDI in and out ports and is the universal choice for the serious muso.

And Impac Resources is gearing up to meet that growth with a series of new packages to encourage the development of musical abilities on the ST.

Tunemaker and *Rhythm Kit* are budget-priced MIDI programs that enable pupils to compose on the ST using traditional music notation. Place the notes, rhythms and words on screen and the ST plays your music through any MIDI instrument, giving a printed copy of the music for your book or folder.

There's also a good quantity of worksheet material to keep you occupied while you wait your turn at the keyboard. (Incidentally, Impac describes these materials as 'photocopiable,' so there's no need for teacher to be seen bending rules to make the goods go round.)

The cost of these programs is hardly prohibitive, with *Rhythm Kit* and *Tunemaker* costing £27.60 and £19.95 respectively – until September that is. Call Impac on 0723 862617 for orders or for further information.

NOTATOR ADD ONS

Still on the subject of ST-based music in schools – many departments have invested in the fabulously capable *C-Lab Notator* sequencing software.

As a follow-up, Impac has now released the *Notator Resource Kit*, a three disk package of examples together with more than 100 pages of exercises and score extracts, student information, teaching strategies – and a section telling you what the program can do.

According to Impac, even the *C-Lab* boffins don't know about everything that's in this package!

Steinberg Pro24, recently relegated to the shadows of the mighty C-Lab, is also well catered for in a separate package. *The Notator* and *Pro24 Resource* packs each cost a very modest £43.12 (blame VAT for the odd pricing), and more details can be obtained by ringing the number provided in the previous section. Tell Impac *Express* sent you.

JUST A MINIX

The MINIX Centre has announced the release of the MINIX multi-tasking operating system that runs on the boring PC, the outrageously expensive Mac – and on the glorious ST. MINIX, as if you didn't already know, started life as an academic teaching aid and is now in worldwide use as a low-cost UNIX look-alike and development system.

MINIX 1.5 contains more than 180 utility commands and both ANSI and POSIX C libraries. It comes supplied with full source code. Interested? You should be talking to the MINIX Centre on 0953 89345.

BUZZBOX 4 – THE REVENGE

The latest version of one of the best ST magazines on disk, *Buzzbox*, is due soon, featuring the usual strong and densely-packed selection of PD and reader contributions.

There's also a questionnaire, in which readers can vote for the best Public Domain library, and the best ST related magazine – a category the editor of *ST Format* will be watching with some considerable interest.

Buzzbox is available for a nominal fee; write for more details to Buzzbox Computing, 5 Balmoral Rd, Moorlands, Lancaster, Lancs LA1 3BT.

SECONDHAND ROLES

What do you do with your software when you've finished with it? Let's face it, if you've played a game all the way through to the surprisingly unexciting final screen, you're never going to load it again.

Teresa Tyler to the rescue. Teresa has had the rather neat idea of starting up a service for buying and selling secondhand games and other software. Send her a list of what you want to get rid of, together with an SAE, and she'll send back a list of what she wants and what she's offering. Sounds good to me.

Write to Teresa Tyler, 105 Burnham Green, Burnham Green, Welwyn, Herts AL6 ONH.

ST TOP TEN (PART 94)

Latest contributions to the ST Top 10 come from Jim George of Aberdeen. (Sorry about the Scotland team by the way, Jim). Jim went for the blanket approach, including a list of 396 songs with the letters 'S' and 'T' in the title. That wasn't exactly what I had in mind!

I did, however, like the inclusion of the Stiff Little Fingers' dittie *Suspect Device* – clearly a description of the Commodore Amiga games machine.

Dave Horton of Haverfordwest put a little more thought into his collection than some others I could mention. *Two out of Three Ain't Bad* by Meatloaf, for example, is clearly the song for the STE games player, and the Madness tune *Embarrassment* could well refer to Atari's feelings surrounding the STE launch.

And how about Wacko Jacko's *Wanna Be Startin' Somethin'*, which is what everyone says after the first three hours sitting in front of the GEM Desktop? Nice one Dave, to whom a highly valuable piece of ST software is even at the moment winging its way.

This month's competition is to come up with an Atari limerick. Keep it clean if you want to see yours published, though, as always, I will be glad to receive any scintillating and imaginative forays of the less decent sort for my own enjoyment.

Address your entry to: There Was A Machine From Atari, Steve Carey, Express, 30 Monmouth St, Bath BA2 2XF.

Steve Carey

SIM CITY

ST GAME of the WEEK

Infogrames • £29.99



It's been picking up awards left, right and centre, and now *Sim City* has finally made it into the ST. This amazingly-addictive game places you in the role of mayor and your job is to build up a city, satisfying the whims of a whingeing public and keeping your finances in check.

As an added headache, you can inflict disasters on the land such as earthquakes or flooding, leaving you with the unenviable task of trying to recover from the disaster. Alternatively, the game comes with eight pre-set scenarios which give you specific objectives – for example, to restore an earthquake-torn San Francisco to prosperity within five years.

The game is played using GEM windows, icons and drop-down menus. You can view the entire map with the cursor keys or the window slider bars. Icons down the left of the screen enable you to select the types of property to position across the map.

At the start of a fresh game you're allocated a budget. With the money you can buy and place residential plots and industrial and commercial zones around the map. Everything must have a power supply, so your first job is to buy a power plant. When these sites have been linked with power, people begin to move in. Road ways are then laid to give the residents easy access to their workplaces.

To encourage people into your city, you need to set low tax rates. Although these don't generate much income, people move in so fast that the city grows rapidly. When enough people have moved in you can bump up the tax rate and reap the cash.

Crime and fire problems can develop, necessitating a police station and fire brigade. These are on-going services which require annual funding. Roads and rail networks also require maintenance fees, and extravagant designs can eat up ridiculous amounts of tax revenue.

The only major complaint is that *Sim City* has maintained the GEM environment, with all its problems running at speed. Windows appear slowly and mapping out roads and railways can be frustrating and tedious.

If you're not used to playing other formats of the game, then this isn't going to be a problem. You get so involved that you cease to notice faults with GEM after a time. Indeed, *Sim City* gives hours of pleasure as you discover what it is that makes a good city and what makes a bad one. It's frighteningly-addictive and is certain to scale the software charts.

Catch the full 3-page review in this month's *ST Format*.

Mark Higham

CONTRIVER BUS ROUTE

If you have been unable to sleep at nights, worrying that the world has not yet seen a mouse that works across five different computers, fear not, for help is at hand.

Contriver, the aptly-named mouse specialist, has come up with a 'bus' mouse that works quite happily with ST and four other, lesser computers. And at £29.99 it's not a bad price for one with microswitches. Call 0280 822803 if you don't believe me.

BEST SHOPPING EXPRESS

- Bargains
- Advice
- Prices
- Offers
- Jobs

The *weekly* computer market place for people *serious* about buying

THIS WEEK'S BUYERS' GUIDE

PC ESSENTIALS

- Word processors
- Spreedsheets
- Databases
- Graphics
- Games

The comprehensive guide to all the software you'll ever need for your IBM compatible, from games to desktop publishing and business graphics

JOB SHOPPING?

Check out our recruitment section inside

ALSO INSIDE

Take advantage of our latest mail order offers.

Benefit from our reliable buyers' guides. No waffle, just facts.

Pick up bargains galore from dealers and readers from all over the UK.

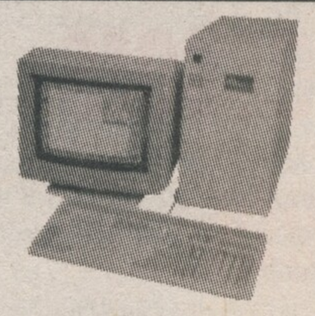
Score on the free reader adverts. Sell your products for *absolutely no charge!*

Save your cash, save your time

5 STAR COMPUTING FROM Dolan

£3145! 25MHZ 486

DOLAN 486/25 STANDARD FEATURES



- ★ 100% IBM Compatible (DOS/Novell/Unix/Xenix/OS-2)
- ★ 25MHz CPU 80486dx
- ★ Landmark 0.99 speed 117MHz
- ★ 8Mb RAM (expandable to 16Mb on board)
- ★ Desktop tower case with one-piece door with 220W PSU
- ★ 8 Expansion slots (6x16 bit 2x8 bit) (6 free fully configured 4x16 bit 2x8 bit)
- ★ 102 key keyboard U.K. Keycaps
- ★ 1.2Mb 5.25" and 1.44Mb 3.50" Floppies
- ★ 2 RS-232 Serial Ports (1x9 pin 1x25 pin)
- ★ 1 IBM Centronics Parallel Port
- ★ IBM Games Adaptor/Joystick Port
- ★ IDE Hard Drive Interface/Tape Backup Interface Port
- ★ Battery Backed Real Time Clock/Calendar
- ★ 1024x768 SVGA Card 512Kb RAM
- ★ High Res Mono Monitor
- ★ DR-DOS Operating System

	VGA P/W	SVGA PW	VGA	SVGA 1024
As Above	£3145	£3245	£3345	£3495
45Mb 25ms*	£3495	£3595	£3695	£3845
100Mb 18ms*	£3695	£3795	£3895	£4045
180Mb 18ms*	£3845	£3945	£4045	£4195
330Mb 18ms	£4445	£4545	£4645	£4795

Options for 486/25:
1Mb RAM Upgrade Modules £85
Mouse w/Driver Software £35

£1095! 25MHz 386

DOLAN 386/25 STANDARD FEATURES



- ★ 100% IBM Compatible (DOS/Novell/Unix/Xenix/OS-2)
- ★ 25MHz CPU 80386dx
- ★ Landmark 0.99 speed 36MHz
- ★ 1Mb RAM (expandable to 16Mb on board)
- ★ Small footprint desktop case with 200W PSU
- ★ 8 Expansion slots (6x16 bit 2x8 bit) (6 free fully configured 4x16 bit 2x8 bit)
- ★ 102 key keyboard U.K. Keycaps
- ★ 1.2Mb 5.25" and 1.44Mb 3.50" Floppies
- ★ 2 RS-232 Serial Ports (1x9 pin 1x25 pin)
- ★ 1 IBM Centronics Parallel Port
- ★ IBM Games Adaptor/Joystick Port
- ★ IDE Hard Drive Interface/Tape Backup Interface Port
- ★ Battery Backed Real Time Clock/Calendar
- ★ 1024x768 SVGA Card 256Kb RAM (expandable to 512Kb)
- ★ High Res Mono Monitor
- ★ DR-DOS Operating System

	P/W	SVGA PW	VGA	SVGA 1024
As Above	£1095	£1195	£1295	£1445
45Mb 25ms*	£1445	£1545	£1645	£1795
100Mb 18ms*	£1645	£1745	£1845	£1995
180Mb 18ms*	£1795	£1895	£1995	£2145

Options for 386/25:
1Mb RAM Upgrade Modules £85
Math Co-Processor.....£350
Mouse w/Driver Software.....£35

£399! 12MHZ XT

DOLAN XT STANDARD FEATURES

- ★ 100% IBM Compatible (DOS/Novell)
- ★ 12MHz CPU V20 (switchable to 4.77MHz)
- ★ 640Kb RAM (expandable to 1Mb on board)
- ★ Small footprint desktop case with 200w PSU
- ★ 8 Expansion slots (5 free fully configured)
- ★ 102 key keboard U.K. keycaps
- ★ 360Kb 5.25" Floppy Drive
- ★ 2 RS-232 Serial Ports (25 pin)
- ★ 2 IBM Centronics Parallel Ports (VGA 1 only)
- ★ IBM Games Adaptor/Joystick Port
- ★ Battery Backed Real Time Clock/Calendar
- ★ Hercules Graphic Card & High Res Mono Monitor
- ★ DR-DOS Operating System

	MONO	P/W	EGA	VGA
As Above	£399	£444	£625	£725
40Mb 40ms	£599	£644	£825	£925

Options for XT:
720Kb 3.50" Floppy Drive.....£65
360Kb 5.25" Floppy Drive.....£50
640Kb to 1Mb RAM Upgrade.....£45
Math Co-Processor £135
Mouse w/driver software.....£35

1 YEAR ON-SITE MAINTENANCE £45
(Any system, any configuration)

£795! 16MHz 386/SX

DOLAN SX STANDARD FEATURES

- ★ 100% IBM Compatible (DOS/Novell/Unix/Xenix/OS-2)
- ★ 16MHz CPU 80386sx (20MHz optional)
- ★ Landmark 0.99 speed 20MHz (20MHz version 26MHz)
- ★ 1Mb RAM (expandable to 8Mb on board)
- ★ Small footprint desktop case with 200W PSU
- ★ 8 Expansion Slots (6x16 bit 2x8 bit) (6 free fully configured 4x16 bit 2x8 bit)
- ★ 102 key keboard U.K. keycaps
- ★ 1.2Mb 5.25" and 1.44Mb 3.50" Floppies
- ★ 2 RS-232 Serial Ports (1x9 pin 1x25 pin)
- ★ 1 IBM Centronics Parallel Port
- ★ IBM Games Adaptor/Joystick Port
- ★ IDE Hard Drive Interface/Tape Backup Interface Port
- ★ Battery Backed Real Time Clock/Calendar
- ★ 1024x768 SVGA Card 256Kb RAM (expandable to 512Kb)
- ★ High Res Mono Monitor
- ★ DR-DOS Operating System

	P/W	SVGA PW	VGA	SVGA 1024
As Above	£795	£895	£995	£1145
45Mb 25ms*	£1145	£1245	£1345	£1495
100Mb 18ms*	£1345	£1445	£1545	£1695
180Mb 18ms*	£1495	£1595	£1695	£1845

Options for 386/SX:
20MHz CPU Upgrade £75
1Mb RAM Upgrade Modules.....£85
Math Co-Processor £250
Mouse w/Driver Software.....£35





£1845! 33MHz 386

DOLAN 386/33 STANDARD FEATURES

- ★ 100% IBM Compatible (DOS/Novell/Unix/Xenix/OS-2)
- ★ 33MHz CPU 80386dx with 32Kb on-board Cache
- ★ Landmark 0.99 speed 58MHz
- ★ 4Mb RAM (expandable to 16Mb on board)
- ★ Desktop tower case with one-piece door with 220W PSU
- ★ 7 Expansion Slots (5x16 bit 2x8 bit) (5 free fully configured 3x16 bit 2x8 bit)
- ★ 102 key keboard U.K. keycaps
- ★ 1.2Mb 5.25" and 1.44Mb 3.50" Floppies
- ★ 2 RS-232 Serial Ports (1x9 pin 1x25 pin)
- ★ 1 IBM Centronics Parallel Port
- ★ IBM Games Adaptor/Joystick Port
- ★ IDE Hard Drive Interface/Tape Backup Interface Port
- ★ Battery Backed Real Time Clock/Calendar
- ★ 1024x768 SVGA Card 512Kb RAM
- ★ High Res Mono Monitor
- ★ DR-DOS Operating System

	VGA P/W	SVGA PW	VGA	SVGA 1024
As Above	£1845	£1945	£1995	£2145
45Mb 25ms*	£2195	£2295	£2345	£2495
100Mb 18ms*	£2395	£2495	£2545	£2695
180Mb 18ms*	£2545	£2645	£2695	£2845
330MB 18MS	£3145	£3245	£3295	£3445

Options for 386/33:
1Mb RAM Upgrade Modules.....£85
Math Co-Processor £450
Mouse w/Driver Software £35

SALES HOTLINES 0267 234444

Dedicated to bringing you a reliable product at a realistic price, **DOLAN** leave the wild claims & hidden extras to our competitors. A quick check of our specifications will **PROVE DOLAN** is **THE** cost effective solution. Accordingly, when a leading magazine surveyed fifty of the best selling P.C.'s **DOLAN** were the only systems to be rated 5 stars.
(A list of the "Also Rans" is available upon request).

DOLAN ELECTRONICS LIMITED
Dolan House, Johnstown Ind. Est.
Johnstown, Carmarthen,
Dyfed, SA31 3RB

Tel: 0267 234444
Fax: 0267 231863

Prices and specifications subject to change. Payment by Visa/Access/Cheque/COD.
Leasing Terms available

THE SHOPPING EXPRESS BUYER'S GUIDE TO

PC ESSENTIALS

WORD PROCESSORS • SPREADSHEETS • ACCOUNTING • DATABASES • DESKTOP PUBLISHING •LANGUAGES • GAMIES

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

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

WORD PROCESSORS

● PROTEXT V4

£100 • Arnor • 0733 68909

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

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

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

VALUE FOR MONEY ★★★★★

● TASWORD

£50 • Tasman Software • 0532 438301

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

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

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

VALUE FOR MONEY ★★★★★

● CELEBRITY

£80 • Software Paradise • 0222 887521

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

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

▼ Thesaurus US and a bit slow
▼ Window dimensions fixed

VALUE FOR MONEY ★★★★

● MULTIWRITER 2

£115 • NewStar Software • 0245 265017

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

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

▼ Filer awkward to use

VALUE FOR MONEY ★★★★

● BORLAND SPRINT

£199.95 • Borland • 0734 320022

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

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

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

VALUE FOR MONEY ★★★★★

● MICROSOFT WORD

£395 • Microsoft • 0734 500741

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

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

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

● WORD PERFECT

£250 • Sentinel • 0932 231164

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

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

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

VALUE FOR MONEY ★★★

● CHIWRITER

£92 • Shareware Marketing • 0297 24088

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

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

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

VALUE FOR MONEY ★★★

● TOPCOPY PLUS

£109 • Innova Software • 0453 835379

Big brother of *Topcopy* – a very powerful and well-featured word processor. Verging on the 'big league'. Very fast – memory resident – and keeps everything reformatted as you go. Multi document handling together with the speed of operation makes it ideal for people who shunt text around a lot. good spell check and mail merge too.

▲ Memory resident
▲ Can import text from defined areas of underlying screens

➤

DATAPLEX

VISA

129 Bath Road,
Slough Berkshire,
SL1 3UW
Tel: 0753 35557

19 High Street
Swindon, Wiltshire
Tel: 0793 488448

Showroom open:
Monday - Friday 9.30 - 5.30 Saturday 9.30 - 4.30
All prices excluding VAT and delivery

AMIGA HARDWARE

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

AMIGA BATMAN PACK £317

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

AMIGA ACCESSORIES

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

Amiga Class of the 90's.....£439
Amiga A501 RAM pack + Clock (original).....£85
Amiga joystick £10
TV Modulator.....£15
Phillips CM8833 colour monitor + lead £199
Phillips BM7502 12" green monitor.....£79
Phillips BM7522 12" amber monitor.....£89
Amiga To Philips cable.....£8

AMIGA DRIVE

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

ATARI DRIVES

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

ATARI COMPUTERS

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

SCANNERS

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

MOUSE

Naksha mouse.....£29

STAR PRINTERS

Star LC10 mono.....£135
Star LC10 II mono £159
Star LC10 colour.....£168
Star LC2410 + lead + stand £215
Star LC15 9 Pin 136 column.....£264
Star LC2415 24 Pin £328

PANASONIC

Unbeatable Prices!
Panasonic 1081 .....£125
KXP 1124 + lead + stand £215
KXP 1624/132 column, 24 Pin £249
KXP 1180 .....£144

CITIZEN PRINTERS

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

MANNESMAN TALLY

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

REPAIRS FOR AMIGA AND ATARI

▲ **Auto reformats but still fast**
▲ **Three files on screen at once, handles up to six documents**
▲ **Spell checker and mail merge**
▲ **Very fast**

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

VALUE FOR MONEY ★★★★

● GALAXY

Shareware • Advantage/PDSL • 0242 224340/ 0892 663298
One of many shareware word processors that resembles *WordStar*.

Doesn't compete with ones you pay a hundred quid for, but for the price you get a usable program ideal for occasional use.

▲ **Menus**
▲ **Spell checker**
▲ **Bargain price**

▼ **Restricted power – best for occasional user**

SPREADSHEETS

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

●VP PLANNER PLUS

£172 • Paperback Software • 0245 265017
Fully featured, Lotus *1-2-3* compatible spreadsheet generally held to be the ultimate in PC spreadsheet programs. There's support for a mouse as well as multi-dimensional financial modelling.
▲ **Comprehensive**
▲ **Complex modelling can be achieved**
▲ **Reasonably priced (there's a cut-down £115 version too)**

▼ **Difficult to learn**
▼ **Hard drive and printer required**

● LUCID 3-D

£91 • PCSG Inc./Software Paradise • 0222 887521
Cheap spreadsheet from PCSG lacking graphics but with the ability to perform most of the necessary functions.

There's absolutely no 'minimum hardware' requirement and it's cheap. Also this program has the advantage of featuring 3-dimensional linking of cells from different spreadsheets.

▲ **Cheap**
▲ **Linking of separate spreadsheets**
▲ **No minimum hardware requirement**

▼ **No graphics**

● THE TWIN

£67 • Mosaic Software • 0604 830496
Cheap 'n' cheerful spreadsheet that is the younger sibling of the outrageously named Legend: Twin Level III. The Twin is an almost exact copy of Lotus *1-2-3* at a fraction of the cost of that eponymous program. Well worth 67 quid.

▲ **Cheap**
▲ **All of the features of Lotus *1-2-3***
▲ **Powerful graphics**

● LEGEND: TWIN LEVEL III

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

▲ **123 features provided**
▲ **3-D cell linking**
▲ **Powerful**

▼ **Not for the spreadsheet novice**

● PC-CALC PLUS

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

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

▼ **Basic**

DATABASES

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

● DBASE IV

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

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

▼ **Expensive**
▼ **Not for beginners**

● DBXL 1.2 DIAMOND RELEASE

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

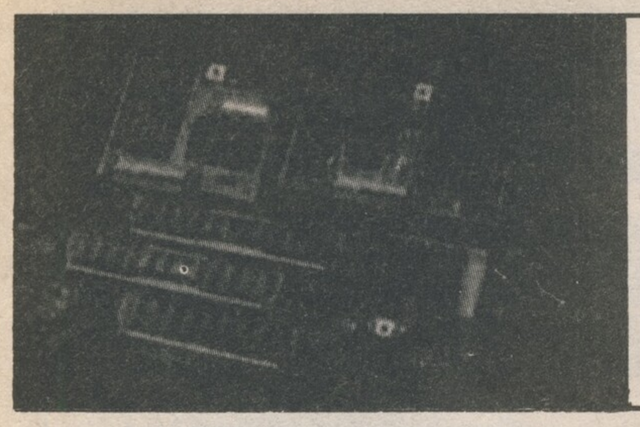
▲ **Cheap**
▲ **Very powerful**

▼ **Difficult to master**
▼ **Not for beginners**

● TAS PLUS

£120.75 • Megatech • 01-874 6511
Powerful database that allows you to spread a database over many files. It's programmable, relatively easy to use and cheap.

▲ **Fully featured**
▲ **Easy to use**
▲ **Cheap**



MEMORY UPGRADES

ONE STOP SOURCE FOR ALL PC MEMORY UPGRADES

DATRONTECH

COMMITTED TO MEMORY

UK exclusive distributor

Kingston TECHNOLOGY

The market's first choice and leader in plug compatible memory. 5 year warranty, large UK inventory, UK technical support and 24 hour replacement policy.

1 CHIP UPGRADES

Chip and Memory Module upgrades to suit all microcomputers including: APPLE, AST, AMSTRAD, COMPAQ, COMMODORE, DELL, DEC, EPSON, EVEREX, HEWLETT PACKARD, IBM XT/AT, IBM PS/2, INTEL, MITEC, OLIVETTI, TANDY, TI, TOSHIBA, TULIP, SUN, Plus many more.

Call our unique free advisory service for any memory upgrade assistance.

Chip Support includes:

	(£)		(£)
64K x 1 – 120	1.25	1M x 1 – 100	6.25
64K x 4 – 100	1.85	1M x 1 – 80	6.65
64K x 4 – 80	2.45	1M x 1 – 70	6.95
256K x 1 – 120	1.75	256K x 4 – 80	6.65
256K x 1 – 100	1.85	4M x 1 – 80	Call
256K x 1 – 80	2.45		

Call Sales Office for details on full range including: SRAMS, EPROMs, EEPROMs, MEMORY CARDS, and custom requirements.

2 SIMMS & SIPS

Over 80 different types of stock:

Popular options include:	(£)
256K x 8 – 120	19
256K x 9 – 100	23
256K x 9 – 80	26
1M x 8 – 80	64
1M x 9 – 100	68
1M x 9 – 80	71
1M x 9 – 70	82
4M x 9 – 80	Call

Call for SIP Pricing.

81MM upgrade available for ORCHID, EVEREX, TECMAR, AST CD, INTEL Above Boards.

3 CO-PROCESSORS

		(£)
8087 – 1	10 MHz	115
8087 – 2	8 MHz	95
80287 – 6	6 MHz	98
80287 – 8	8 MHz	150
80287 – 10	10 MHz	175
80387 – 16	16 MHz	260
80387 – 16SX	16 MHz	235
80387 – 20	20 MHz	295
80387 – 25	25 MHz	370
80387 – 33	33 MHz	395

4 IBM XT/AT MEMORY

		(£)
128KB	Plug in Module	88
512KB	· Orchid	265
1MB	EMS Boards.	299
2MB	· User	345
4MB	upgradeable	495
8MB	to 8MB.	790

5 EVEREX MEMORY

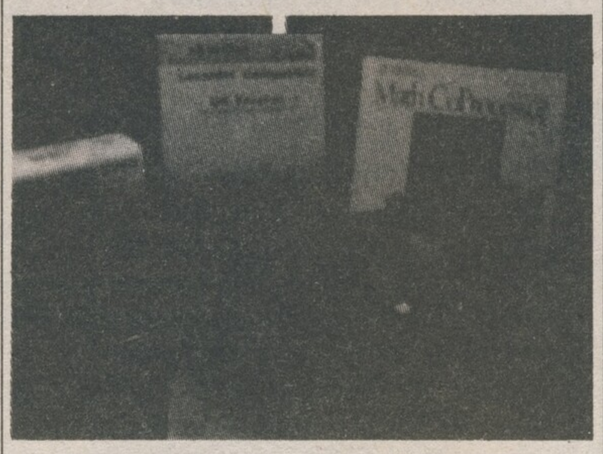
Complete family available. Popular configurations include:

	(£)
RAM 10000 (with 2MB)	325
RAM 3000 Deluxe (with 1MB)	195
MiniMagic Card (with 128KB)	80
MaxiMagic Card (with 2MB)	240

6 IBM PS/2 MEMORY

Planar Memory. Plugs directly onto system board. For assistance in selecting correct upgrade path call Sales Office.

		(£)
PS/2 25	128KB	34
PS/2 30/286	512KB	76
	2MB	210
PS/2 50/ & 55	512KB	76
	2MB	210
PS/2 70	1MB	135
	2MB	215
PS/2 80	1MB	175
	2MB	295



7 TOSHIBA MEMORY

			(£)
Portable T1600 2MB Card			344.00
Portable T3100e			
512K card	148.00	2MB card	344.00
Portable T3200 3MB card			485.00
Portable T5100 3MB card			344.00
Portable T5200 2MB Module			344.00
Portable T3100 SX 2MB card			344.00
Portable T3200 SX 2MB card			344.00
Desktop T8500 SX 2MB card			344.00

8 APPLE/MACINTOSH MEMORY

Standard SIMM upgrades for: Macintosh II, IIcx, IIx and IIci available (C.S.O.) Special Modules include:

	(£)
MAC IIci	
16MB Memory Kit	1589
MAC IIfx	
4MB Memory Kit	390
PORTABLE	
1MB Upgrade	323
4MB Upgrade	£Call
LASERWRITER II/NTX	
1MB Expansion Kit	145
4MB Expansion Kit	359

9 HP LASERJET MEMORY

LASERJET II & IID

	(£)		(£)
1MB	155	4MB	365
2MB	235		

LASERJET IIP & III

1MB	175	3MB	305
2MB	250	4MB	370

Cannon and IBM Laserjet upgrades also available (CSO).

10 IBM PS/2 ADAPTOR BOARDS

EMS Board that accepts special IBM Planar Simms (See Section 6).

	(£)
PS/2 50, 507, 557, SX & 60	
2 – 8MB Expansion Boards	445
PS/2 70 & 80	
2 – 8MB Expansion Boards	450

11 COMPAQ MEMORY

Full range available to suit Portables II, III, 386, SLT and LTE and all DESK Pro Series 286e to 386/33.

	(£)
DESKPRO 386/33	
2MB Module	28
DESKPRO 386/20/25/e/s	
1MB Add-on Module	135
4MB Add-on Module	455
1MB Expansion Board	170
4MB Expansion Board	495
DESKPRO 386/16	
1MB Kit	235
4MB Kit	785
1MB Expansion Board	270
4MB Expansion Board	985
PORTABLE II & III	
512KB for III	69
1MB for II	89
2MB for III	179
COMPAQ SLT/286	
1MB Board	225
COMPAQ LTE/286	
512KB Board	175
1MB Board	225
2MB Board	325
COMPAQ SYSTEMPRO & 486/25	
2MB Module	285
8MB Module	1745

12 HP FONT CARTRIDGES

100% Compatable HP Font cartridge series.

STANDARD CARTRIDGES	(£)
86/A,C,D,E,G,H	43.00
86/B,F,J to Q,S, to Y	59.00
86/R and Z	69.00

65 IN 1 CARTRIDGE

Equivalent to HP Pro Collection. UK version includes Line Draw and OCR-A. 135.00

MASTER TYPE CARTRIDGES NOW

Equiv. to HP C2053 AC01 to C02 (CSO)

13 EXTERNAL FLOPPY DISC DRIVES

IBM PC/XT	(£)
3.5 Inch 720KB	85
5.25 Inch 360KB	85
IBM AT	
3.5 Inch 1.44MB	97
5.25 Inch 1.2MB	97
IBM PS/2	
5.25 Inch 360KB	105
5.25 Inch 1.2MB	115
LAPTOPS	
Toshiba, Zenith Supersport and Compaq SLT/286:	
5.25 Inch 360KB	90
5.25 Inch 1.2MB	105

14 IBM PS/2 EMS LIM 4.0 MEMORY

EMS boards that accept standard memory for uses upgrades. Upto 8MB for both 16 and 32 bit PS/2 Systems.

	(£)		(£)
512KB	295	1MB	315
2MB	360	4MB	515
8MB	820		

Call for other configurations.

Datrontech Limited,
Datrontech House,
33 Grosvenor Road,
Aldershot, Hants
GU11 3DP.

Tel: 0252 313155
Fax: 0252 341939

CALL 0252 313155

- **ALL PRODUCTS CARRY FULL WARRANTY**
- **PRICES EXCLUDE VAT & CARRIAGE**
- **CALL FOR TRADE AND VOLUME DISCOUNTS**
- **LOWEST PRICE GUARANTEED**

Access VISA

FIND OUT MORE

Please send me more details on the following:

1	2	3	4	5	6	7	8	9	10	11	12	13	14

Please tick

Name _____

Company _____

Address _____

_____

Tel. No: _____

MICRODIAL

MILES GORDON TECHNOLOGY
SAM COUPE´ £179.00
SAM COUPE´ + 1 DISK DRIVE.....£245.00

ATARI
520STFM DISCOVERY PACK £279.00
520STE POWER PACK.....£369.00
1040STE BUSINESS PACK £460.00
PORTFOLIO £229.00
LYNX.....£165.00

COMMODORE
AMIGA A500 BATMAN PACK.....£369.00
A500 FLIGHT OF FANTASY PACK.....£369.00
A500 CLASS OF THE 90'S PACK.....£515.00
C64 WORLD CUP PACK.....£150.00
PC STARTER PACK.....PLEASE PHONE

PRINTERS
STAR LC-10.....£169.00
STAR LC-24/10.....£249.00
MANNESMANN TALLY MT81 .....£147.00
CITIZEN 120D £125.00

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

3½" DSDD DISKS

100% CERTIFIED ERROR FREE

PRICE INCLUDES VAT & LABELS

ALL OUR DISKS ARE FULLY GUARANTEED

40p

100 Capacity Disk Box £5.50: With Disks £4.50
12 Capacity Boxes 95p each £7.50 for 10
Quality mouse mats £2.50
3½ inch High Density disks £1.00 each.
150 Capacity stackable Posso Boxes at £16.95

AMIGA 512K UPGRADE WITH CLOCK £46.50

PLEASE ADD £2.95 P+P PER ORDER
Cheques/PO's to:-
All our disks are of the highest Batrachomyomachia quality and are manufactured by Mitsubishi or Verbatim

MEDIA DIRECT - DEPT NCE
11 SAGE CLOSE, HANLEY
S-O-T ST1 3SF
TELESALES HOTLINE:
0782 - 208228

Access VISA

● HYPERPAD

£114 • Software Paradise • 0222 887521

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

▲ Comprehensive
▲ Easy to use
▲ Moderately priced

▼ Setting up may confuse absolute beginners

COMMUNICATIONS

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

● THE $25 NETWORK

£25 • EQ Consultants • 0334 84248

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

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

● CALLBOX

£171.35 • Callbox Ltd • 0600 4478

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

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

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

● LINK MASTER

£19.95 • Amstrad Software • 0277 230222

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

▲ Cheap
▲ Easy to use

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

● PROCOMM PLUS

£59 • Shareware Marketing • 0297 24088

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

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

ACCOUNTING

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

● MICROSYSTEMS

£454 • Multisoft • 0420 85572

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

▲ Menu driven
▲ Fully featured
▲ Easy to use

▼ Too expensive for the home or small business user

● A-B-C

£299 • A-B-C Systems • 01-661 0488

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

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

▼ A little expensive for home users

● PENNYWISE

£50 • Buzzz Software • 0865 56083

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

▲ Cheap
▲ Easy to use

▼ Lacking in features
▼ For the smallest of businesses

● CASH TRADER PLUS

£171 • IT Marketing • 08045 6566

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

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

▼ Not cheap if you're a home dabbler

Always *Reasonable* *Reliable* *And* *No Fuss*

COMPUTERS

ACORN

ARCHIMEDES A3000 LEARNING CURVE PACK

Includes
- ★ 1st Word Plus
- ★ PC Emulator
- ★ DOS Software
- ★ Genesis (comprehensive suite inc, Animation, Text, Graphics and Music)
- ★ Informative video

RRP £803.85
LIMITED OFFER PRICE.....£685.00 INC VAT
WHILE STOCKS LAST

A300 COLOUR MONITOR

RRP £299.00
OFFER PRICE.....£235.00

AMIGA

AMIGA A500 BATMAN PACK

Includes Batman The Movie, New Zealand Story, F18 Interceptor, Deluxe Paint II, TV Modulator
RRP £399.00
OFFER PRICE £375.00

BATPACK + 10 STAR PACK

£395.00

BATPACK + A501 RAM UPGRADE

£459.00

A500 FLIGHT OF FANTASY PACK

Inc Escape from the Planet of the Robot Monsters, F29 Retaliator, Rainbow Island, Deluxe Paint II
RRP £399.99
OFFER PRICE £375.00

A500 CLASS OF THE 90's PACK

Complete Educational Package
Extensive software,
too much to list
Total Value - £1002.00
RRP £573.00
OFFER PRICE .....£516.00 inc VAT

AS ABOVE + A501 RAM UPGRADE

£595.00

ATARI

ATARI 520 STE POWER PACK

Includes 20 games, music software, business organizer, Hi-Soft basic
RRP £399.00
OFFER PRICE £375.00

520 STFM DISCOVERY PACK

Inc First Basic, 4 games, Neochrome, STOS games creator and ST Tour.
RRP £299.00
OFFER PRICE £275.00

1040 STE PROFESSIONAL PACK

This includes Word Up, Superbase Personal, K Spread 3, ST Basic Source and Tutorial Book.
RRP £499.99

OFFER PRICE £460.00

AMSTRAD

AMSTRAD PCW 9512

Incl 12 months on-site maintenance

(Inc Free Autosheet Feeder)
+ Daisywheel printer
RRP £573.00
OFFER PRICE.....£533.00

MONITORS

PHILIPS CM8833

Colour Med-res
RRP £299.00
OFFER PRICE.....£235.00
Lead ST/Amiga £9.95
Please state which

COMMODORE 1084S

Med-res Colour (Inc Amiga lead)
RRP £299.00
OFFER PRICE.....£235.00

DISK DRIVES

AMIGA

1Meg 3.5" Slimline
daisychainable, disable switch
OFFER PRICE.....£74.95

ATARI ST

1 Meg 3.5" Slimline
Joystick Powered
OFFER PRICE.....£69.95
OFFER PRICE with PSU £79.95

UPGRADES

A501

1/2 Meg upgrade with clock card
RRP £149.99
OFFER PRICE.....£85.00
1/2 Meg with clock £75.00
1/2 Meg without clock.....£65.00

PRINTERS

STAR LC10 9DMP

OFFER PRICE.....£175.00

STAR LC10 COLOUR 9DMP

OFFER PRICE.....£225.00

STAR LC24-10 24 DMP LQ

OFFER PRICE.....£265.00

NOW AUTHORISED DEALER FOR PHILIPS AND OLIVETTI PC COMPATABLES

- **Credit card 24 hour facility**
- **Credit cards not debited until goods despatched**
- **Offered subject to availability and price change**
- **Same day despatch on stock items**
- **Amstrad & Commodore authorized business dealer**
- **Ring for price lists**
- **Large selection of games on most formats**
- **Large selection of business software IBM/PC compatibles**

VISA Access

IBM/PC COMPATIBLE

Amstrad Advanced System Centre

NEW LOW PRICES INCLUDE 12 MONTH ON SITE MAINTENANCE

AMSTRAD PC

PC 1512

SD MONO	£413
DD MONO	£516
SD COLOUR	£516
DD COLOUR	£620

PC 2086

SD 12MD	£516
SD 14CD	£672
SD 12HR	£672
SD 14HR	£723
DD 12MD	£620
DD 14CD	£775
DD 12HR	£775
DD 14HR	£827
HD 12MD	£827
HD 14CD	£982
HD 12HR	£982
HD 14HR	£1034

PC 2286

	OUR
DD 12" MD	£930
DD 14" CD"	£1085
DD 12" HR	£1085
DD 14" HR	£1137
HD 12" MD	£1033
HD 14" CD	£1189
HD 12" HR	£1189
HD 14" HR	£1241

PC 2386

HD Mono 12"	£1954
HD Colour 14"	£2128
HD Colour 12" Hi Res	£2128
HD Colour 14" Hi Res	£2184

AMSTRAD PORTABLES

PPC 512	D	£412
PPC 512	DD	£568
PPC 1640	D	£516
PPC 1640	DD	£671

COMMODORE

AUTHORISED BUSINESS DEALER

INTRODUCING:
STARTER PACK WHICH INCLUDES:
- ★ Mavis Beacon Teaches Typing
- ★ The Secretary Bird Integrated Package
- ★ MS DOS Introduction Disk
- ★ Explanatory Video

NEW LOW PRICES INCLUDE 12 MONTH ON SITE MAINTENANCE

PC10SD

	OUR
Mono 12"	£546
Colour 14"	£670
Mono VGA 14"	£746
Colour VGA 14"	£815

PC10DD

Mono 12"	£597
Colour 14"	£746
Mono VGA 14"	£767
Colour VGA 14"	£862

PC20HD

Mono 12"	£769
Colour 14"	£912
Mono VGA 14"	£960
Colour VGA 14"	£1055

PC30HD

Mono	£1108
Colour EGA	£1294

ARRAN ARRAN ARRAN ARRAN ARRAN

EDUCATION & GOVERNMENT ORDERS SUPPLIED - RING FOR SPECIAL RATES

WHY NOT CALL IN AND SEE US

Mail Order Send Cheques/PO to:

ARRAN COMPUTERS
17A LOWER HILLGATE, STOCKPORT
SK1 1JQ
TELEPHONE 061 480 3975/061 429 8817
Fax: 061 429 8257

PRICES INC. VAT
P&P FREE UK ONLY
OVERSEAS ADD £3.00
NEXT DAY COURIER ADD £5.00

ONLY POOLS & HORSES

The Tipster

This **HORSE RACING** software was used to select the 100/1 NORTONS COIN outsider in this years GOLD CUP. Phone for details.

VISA **£29.95** Access

The Punter

Let your computer **WIN THE POOLS** for you with our latest software. We have used the same sums that the TIPSTER proves can beat the odds to give you a better chance with ANY POOLS COMPANY.

VISA **£29.95** Access

TAM Marketing
7 GD UNITS
Marsh Barton Trading Estate
Exeter
DEVON

Telephone: (0392) 215485

A & P Computers Ltd

QUALITY ! RELIABILITY ! GOOD SERVICE !

IBM COMPATIBLE SYSTEMS

XT Systems *

AP88M 640K/360K FD/S/P/G/RTC/102 Keys/Mono Monitor.....£445
AP88H 640K/360K/20Mb/S/P/G/RTC/102 Keys/Mono Monitor.....£625
AP88C 640K/360K/20Mb/S/P/G/RTC/102 Keys/Colour Monitor.....£795

AT 286-16MHz Systems *

AP286M 1Mb/1.2M FD/40Mb 28Ds/S/P/G/102 Keys/Mono Monitor.....£995
AP386V 1Mb/1.2M FD/40Mb 28Ds/S/P/G/102 Keys/14" VGA Colour ..£1295

386-25MHz Systems *

AP386M 2Mb/1.2M FD/40Mb 28Ds/S/P/G/102 Keys/14" VGA Mono £1595
AP386V 2Mb/1.2M FD/40Mb 28Ds/S/P/G/102 Keys/14" VGA Colour ..£1795

* All systems come with MS DOS 4.01 plus GW Basic. * All prices include 1 year warranty.

DFI MOTHERBOARDS - BEST QUALITY

TOP-286 12MHz £175	386SX 16MHz.....£295	386-20MHz.....£525
DFI Scan HS3000+ £149	DFI Mouse 200H.....£35	DFI VGA 3000 .....£99
DFI EGA 3000 .....£79	DFI Memo 2000X.....£79	DFI Memo 2000A.....£105
CGP CARDS £28	MGP Card.....£28	XT 1/0 S/P/G/RTC/FDC.....£35
AT 1/0 S/P/G £28	RS232 Card.....£15	AT WA3-16 HD/FD Card.....£75
Printer Card £12	XT F/D Card £18	XT/AT FDC 360/720/1.2 .....£28
XT EXP Card £28	XT FDC-4 .....£65	Jumbo Tape Streamer.....£235
150W PSU UL.....£45	220W L Shape £55	Video Frame Grabber.....£149
84 Keyboard £49	102 Keyboard £49	St 225 20Mb 68Ms £155
360K Drive £59	1.2M Drive.....£76	ST 251 40Mb 28Ms.....£245
720K Drive W/F £59	1.44M DR W/F £79	Eprom Programmer EP4 .....£135
XT/AT STD Case £59	Compact Case.....£79	Tower Case + 230W PSU.....£175

We will build a computer to your specifications at no extra cost.
Repair your PC at low rate + 6 months warranty.
All prices exclude delivery and VAT charges.
Specifications and prices may be changed without notice.

A & P Computers Ltd
35 Walnut Tree Close, Guildford, Surrey GU1 4UN
VISA **Tel: 0483 304118** Access
Fax: 0483 304124

● RETAILER

£185 • Ob-serve • 0258 451299

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

▲ Powerful
▲ Feature packed
▲ Reasonably priced

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

● TAXCALC

£19.95 • Consumers Association • 0800 252100

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

▲ Very cheap
▲ Easy to use
▲ Suitable for beginners

DESKTOP PUBLISHING

Need to produce the definitive subversive pamphlet? Lacking in a good display maybe, but the PC can boast a wealth of DTP programs...

● FREEDOM OF PRESS

£431.25 • Ctrl-Alt-Deli • 0908 662759

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

▲ Uses ordinary cheap dot matrix printers
▲ Lots of features

▼ Beyond the budget of the average home user

● NEWSMASTER II

£70 • MGA Microsystems • 0233 83571

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

▲ Cheap
▲ Clip art library
▲ Can import graphics

● FINESSE 2

£171 • Logi UK • 0925 413501

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

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

▼ You must have a mouse

● TIMEWORKS DTP

£129 • Electric Distribution • 0480 496789

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

▲ GEM/3 included
▲ Powerful
▲ Reasonably priced

● VALUETIME RANGE

£9.95 each • Electric Distribution • 0480 496789

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

▲ Very cheap
▲ Very easy to use
▲ Good results can be obtained

LANGUAGES

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

● ZORTECH C V3.00

£57.44 • Zortech • 01-316 7777

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

▲ Fast
▲ Cheap
▲ Widely available

▼ Standard C tutorial text necessary

● DBFAST

£113.85 • Megatech • 01-874 6511

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

▲ Very cheap
▲ Powerful

▼ Not for beginners

● QUICKBASIC

£98 • Microsoft • 0734 576744

The standard for penning BASIC programs and peddling them to the business community. QuickBasic is the grown-up sibling of all those home computer BASICs. Lots of features.

▲ Industry standard
▲ Fast
▲ Powerful

● TURBO PASCAL V5.00

£115 • Borland UK • 0734 320022

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

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

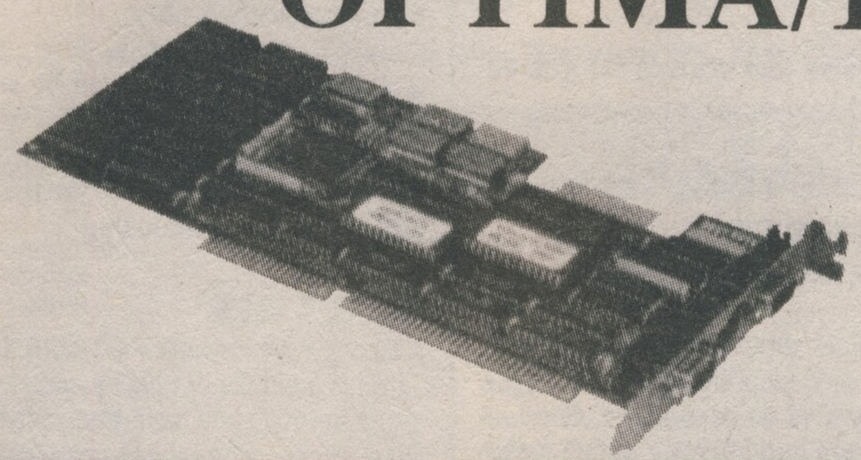
▼ A little overpriced

GAMES

Not formerly associated with games playing, the drop in the price of the average PC compatible has set off a chain reaction amongst leisure soft-

THE OPTIMUM VGA CARD

OPTIMA/1024 PLUS



16 bit 512k on board memory

FOR ONLY £115.00

FIVE YEAR GUARANTEE

Price excludes VAT • Postal delivery £2.50 • Next day delivery on quotation
Support systems: PC/XT/AT/386 • Compatibles: PS/2 Model 25/30
Quantity discounts to:
Government, Education, Corporate Sales and Contracts

CHIPSTEAD SPRINGS LTD

Please contact for further information:
or **Order by Telephone (0483) 300194**
or **Order by Fax (0483) 574301**

VISA Access

THE OLD CHAPEL, 172 LONDON ROAD, GUILDFORD, SURREY, GU1 1XR

Payment by **Access, Visa** or **Corporate Account**

It's NEW! It's the BEST!

Send for our comprehensive dtp brochure



The SHARP JX9500

Only from Network News of Tilbury Essex: ***Britain's top dtp experts. 0375 :859103***

The new SHARP laser....

*** All popular emulations, including HP Laserjet II, IBM, Epson, Diablo etc.
*** Fast download time.
*** Memory up to 4 meg.
*** Two paths ... one for up to 3-sheet card; one for paper.
*** 250-sheet paper capacity.
*** Plug-in font cards or soft fonts.
*** 1 year on-site guarantee.
*** For dtp, we recommend the 2 meg model: RRP £1825.
*** *OUR PRICE £1392 + VAT*
Includes the new wonder-toner which gives razor-sharp, soot-black printouts.
Inquiries from dealers welcomed.

ware writers eager to cash in on a new market.

● 688 ATTACK SUB

£29.99 • Electronic Arts • 0753 46465

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

▲ Wonderful graphics
▲ Complex
▲ Quality gameplay

▼ VGA necessary for best display
▼ Expensive

● FLIGHT SIMULATOR 3

£52 • Microsoft • 0734 500741

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

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

▼ Expensive

● ELITE

£24.95 • Firebird Software • 0666 504326

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

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

▼ Expensive (the eternal PC games criticism)

● F-19 STEALTH FIGHTER

£39.95 • MicroProse • 0666 504326

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

▲ Complex
▲ Good graphics

▼ Expensive
▼ A little boring in the early stages

● INFOCOM ADVENTURES

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

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

▲ Complex plots
▲ Intelligent dialogue
▲ Excellent input parsing

▼ Far too expensive

● UNIVERSAL MILITARY SIMULATOR

£24.95 • Rainbird • 01-240 8838

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

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

● TETRIS

£19.95 • Mirrorsoft • 01-928 1454

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

▲ Unique
▲ Addictive
▲ Colourful

● VP EXPERT

£115 • Paperback Software • 0245 265017

At last, an affordable expert system for your PC. Doctors! Why waste valuable drinking time skulking about in the surgery when your PC can have the punters diagnosed and through the consulting room doors in a trice.

And what about you garage owners? Bamboozle the mugs with your 'intelligent' computer and relieve them of twice the cash...

▲ Lots of functions
▲ Affordable
▲ Fun?

● PC GLOBE +

£80.44 • Paperback Software • 0245 265017

Discover the gross national product of the Cayman Islands. The quota of dentists resident in Zimbabwe and the quantity of hearing aid specialists touting for business in Finland. Thousands of fun facts for all the family.

▲ Complex
▲ Colourful
▲ Instructive
▲ A boon for pre-school kiddies with a thirst of knowledge

● FILE RESCUE PLUS

£29.99 • Mirrorsoft • 01-928 1454

Go on. Admit it! How many times have you lost precious files due to your own severe ineptitude? Now you can retrieve them fast with File Rescue Plus. For just thirty quid you'll never need to look stupid again.

▲ Easy to use
▲ Cheap
▲ Comprehensive

● MICRODRAFT

£100 • Timatic Software • 0329 236727

And now, for all design engineers and draughtspersons an affordable computer aided design program. Don't pore over blue prints with a pencil and compass let this software do the hard work for you.

▲ Cheap
▲ Lots of functions
▲ Can achieve good results

PHONE Blandford (0258) 451347

BUILD IT YOURSELF!

FAX (0258) 456046

MOTHERBOARDS

XT TURBO 12MHz, 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

I/O 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 SERIAL/PARALLEL/ CLOCK/FLOPPY/GAME	**£31.50**

DISPLAY ADAPTORS

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**

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 adaptor and cables	**£12.50**

KEYBOARDS

101 Key XT/AT switch	**£46.00**
101 CHERRY XT/AT	**£65.50**

MONITORS

MONO 12" green	£73.00
VGA 14" paper white	£165.60
VGA 14" colour	£389.00

DISK CONTROLLERS

UNIVERSAL FLOPPY

DRIVES 380/1.2/720/1.44 drive AT and 386 systems..... **£24.50**

XT Hard/Floppy controller . **£81.00**

XT Hard disk controller..... **£65.00**

AT floppy/hard controller . **£107.00**

CASES AND PSUS

XT/AT Three 5.25" and 3.5" slots or disks, flip top lid **£44.50**

Suitable 180W PSU **£44.85**

DE-LUXE. With speed display **£65.00**

Suitable 200W PSU **£69.00**

MINI TOWER with speed display **£72.50**

Suitable 200W PSU **£69.00**

PC-DIY BOOK

If you are not sure how to go about building your own PC, then this is for you! 112 pages full of practical tips for **£7.95** inclusive. (NO VAT)

REMEMBER! ALL OUR PRICES INCLUDE VAT. CALL FOR FREE CATALOGUE
DELIVERY £3.00 (under £40) £9.00 (over £40.00)

"SKELETON" SYSTEMS

These consist of motherboard and PSU. You add the rest!

XT 12MHz £155
AT 12MHz £250
AT 16MHz £305

BLACKMORE ELECTRONICS LTD

4 The Plocks, Blandford Forum, Dorset DT11 7AA
Telephone Blandford (0258) 451347
WE TAKE ACCESS, VISA AND AMERICAN EXPRESS

ATARI LYNX HAND HELD
Portable Games Machine
£179.95

MAIL ORDER

SOFTSELLERS LTD

6 Bond St., Ipswich, Suffolk. IP4 1JE

5a Dogs Head St., Ipswich, Suffolk, (Retail). 36a Osborne St., Colchester, Essex (Retail).

MAIL ORDER

VISA

AMIGA MEMORY EXPANSION
512K + Clock Card & FREE game
£79.95

MAIL ORDER PURCHASE LINE (0473) 257158/210605 FAX (0473) 213457

	ST	AMIGA
*4th Dimension	16.99	16.99
688 Attack Sub		16.99
Action Fighter	15.99	15.99
*Adidas Champ. Football	16.99	16.99
*Adidas Tie Break	16.99	16.99
Anarchy	13.99	13.99
*Ancient Art of War	16.99	16.99
Ancient Art of War at Sea	16.99	16.99
Ants Head (Data Disk)		12.99
*Aquaventura	24.99	24.99
*Atomics	13.99	13.99
*Back to Future II	16.99	16.99
Balance of Power 1990	15.99	15.99
Barbarian II (Palace)	16.99	16.99
*Barbarian II (Psygnosis)	16.99	16.99
*Bangkok Knights	13.99	16.99
Battlechess	16.99	16.99
Batman (The Movie)	13.99	16.99
Beach Volley	13.99	16.99
BattleValley		13.99
Black Tiger	13.99	16.99
Blade Warrior	15.99	15.99
Blue Angels	16.99	16.99
Bad Company	12.99	15.99
Battle of Austerlitz	15.99	15.99
Budakhan		16.99
Chase HQ	13.99	16.99
Chaos Strikes Back	16.99	*16.99
*Chuck Yeagers A.F.T.	16.99	16.99
California Games	13.99	13.99
Cabal	*13.99	16.99
*Combo Racer	13.99	13.99
Conflict Europe	16.99	16.99
Conqueror	16.99	16.99
Continental Circus	13.99	13.99
*Corvette		19.99
*Carthage	15.99	15.99
Colorado	16.99	16.99
*Crack Out	16.99	16.99
Cyberball	13.99	13.99
*Chicago 90	12.99	12.99
Defender of the Earth	12.99	12.99
Dragon's Breath	19.99	19.99
Dragon Flight	16.99	19.99
Dragons of Flame	16.99	16.99
*Dragon War	--.--	16.99
Dungeon Master	16.99	16.99
Dungeon Master Editor	9.99	9.99
Demons Tomb	13.99	13.99
Drakken	19.99	19.99
Double Dragon II	13.99	13.99
*Dynamic Debugger	15.99	15.99
*Eagle Rider	16.99	16.99
Elite	15.99	15.99
*Elvira Mistress of the Dark	19.99	19.99
Emlyn Hughes Int. Soccer	16.99	16.99
E-Motion	13.99	16.99
*Epoch	15.99	15.99
Eye of Hercules	16.99	16.99
*Flash Dragon	13.99	13.99
F29 Retaliator	16.99	16.99
*F19 Stealth Fighter	15.99	15.99
F16 Combat Pilot	15.99	15.99
Falcon	16.99	19.99
Falcon Mission Disks	13.99	13.99
*Federation Quest 1	13.99	13.99
Ferrari Formula One	16.99	16.99
Fighter Bomber	19.99	19.99
Full Metal Planet	15.99	15.99
*Flood	16.99	16.99
Footballer of the Year II	13.99	13.99
Forgotten Worlds	13.99	13.99
Fast Lane	12.99	12.99
*Frankenstein	12.99	12.99
Future Wars	16.99	16.99
Fiendish Freddy	19.99	19.99
*Future Basketball	16.99	16.99
Gemini Wing	13.99	13.99

	ST	AMIGA
Giants Compilation	19.99	19.99
Grand National	19.99	19.99
Ghostbusters II	13.99	16.99
Gun Ship	15.99	15.99
Gravity	16.99	16.99
Games Summer Edition	13.99	13.99
Ghouls and Ghosts	13.99	16.99
Grim Blood	13.99	13.99
*Halls of Montezuma	16.99	16.99
Hammerfist	16.99	16.99
Heroes Quest	24.99	--.--
Highway Patrol	15.99	15.99
Hillsfar	16.99	16.99
Hard Drivin	13.99	13.99
Heavy Metal	13.99	16.99
Hound of Shadow	16.99	16.99
*Hoyles Book of Games		24.99
*Imperium	16.99	16.99
Indiana Jones (Lucas Films)	16.99	16.99
Indiana Jones (US Gold)	13.99	13.99
Ivanhoe	13.99	16.99
Infestation	16.99	16.99
Interphase	15.99	15.99
International 3D Tennis	16.99	16.99
*International Champion Wrestle	16.99	16.99
*Iron Tracker	12.99	12.99
Italy 1990	16.99	16.99
It Came From The Desert		19.99
*Jack Boot	16.99	16.99
*Jack the Ripper	12.99	12.99
Keef the Thief		16.99
Kick Off	12.99	12.99
Kick Off II	12.99	12.99
Kick Off II (World Cup Edition)	*16.99	16.99
Kick Off Extra Time	9.99	9.99
Klax	13.99	13.99
Knights of Krystallion	--.--	19.99
Krystal	19.99	19.99
*Killing Game Show	13.99	13.99
Leisure Suit Larry II	19.99	24.99
Leisure Suit Larry III	*29.99	29.99
Leaving Terramis	13.99	16.99
Licence to Kill	13.99	13.99
Lightforce (compilation)	16.99	16.99
Lombard R.A.C. Rally	16.99	16.99
Lords of the Rising Sun		19.99
Last Ninja II	16.99	16.99
Lost Patrol	13.99	16.99
*Last Stuntman	12.99	12.99
Majic Fly	16.99	16.99
Manchester United	13.99	16.99
Maniac Mansion	16.99	16.99
Microprose World Cup Soccer II	15.99	15.99
Midwinter	19.99	19.99
*Majic Johnson	12.99	12.99
Matrix Marauders	16.99	16.99
*Mitro	13.99	13.99
*Neuromancer		16.99
New York Warrior	*24.99	13.99
Ninja Spirits	16.99	16.99
Ninja Warrior	13.99	13.99
North and South	15.99	15.99
Nuclear War	*16.99	16.99
Operation Thunderbolt	13.99	16.99
*Oriental	15.99	15.99
Onslaught	13.99	13.99
Paperboy	12.99	12.99
*Paradroid	16.99	16.99
Pinball Magic	13.99	16.99
Police Quest II	16.99	16.99
Populous	16.99	16.99
Populous Data Disks	9.99	9.99
Premier Collection III (Comp.)	19.99	19.99

	ST	AMIGA
Player Manager	12.99	12.99
P47	15.99	15.99
Powerdrift	13.99	16.99
Pictionary	16.99	16.99
*Panic Station	13.99	13.99
*Projectile	16.99	16.99
Pro Tournament Tennis	16.99	16.99
Quartz	15.99	15.99
*Quarterback	13.99	13.99
Rainbow Islands	13.99	16.99
*Renegade	13.99	16.99
Resolution 101	16.99	16.99
Rock and Roll	13.99	13.99
R.V.F. Honda	15.99	15.99
Red Storm Rising	15.99	*15.99
Risk	13.99	13.99
Rally Cross	12.99	12.99
S.E.U.C.K.	19.99	19.99
*Scroll	12.99	12.99
Secret Agent Flies By	13.99	16.99
Sherman M4	16.99	16.99
Sonic Boom	16.99	16.99
Skidz	13.99	13.99
Starflight	16.99	16.99
Space Quest III	19.99	19.99
S.T.O.S.	19.99	--.--
Steve Davis Snooker	12.99	12.99
Story So Far I (Compilation)	12.99	12.99
Story So Far 3 (Compilation)	12.99	12.99
Stryx	13.99	13.99
Stunt Car	15.99	15.99
Shinobi	13.99	13.99
Street Fighting Man	13.99	13.99
Switchblade	13.99	13.99
*Silpheed	19.99	19.99
Slayer	13.99	13.99
Stormlord	13.99	13.99
Shadow of the Beast	*24.99	16.99
Star Blaze	13.99	13.99
*Super Quintet	15.99	15.99
Sim City	19.99	19.99
Seven Gates of Jambala	12.99	15.99
Super League Manager	16.99	16.99
Super Cars	13.99	13.99
Sword of Twilight	16.99	16.99
Shadow Warriors	13.99	16.99
Tennis Cup	16.99	16.99
Test Drive II		16.99
*The Keep	16.99	16.99
*Toyottes	13.99	13.99
*Turrican	16.99	16.99
T.V. Sports Basketball		19.99
TV Sports Football	16.99	19.99
Triad III (Compilation)	19.99	19.99
Trivia	12.99	15.99
*Track Attack	13.99	16.99
Turbo Outrun	13.99	16.99
Typhoon Thompson		16.99
Ultimate Golf	16.99	16.99
Ultimate Darts	13.99	13.99
*Universe III	12.99	12.99
Untouchables	13.99	16.99
*UMS II	15.99	15.99
Ultima V	19.99	19.99
*Venus Fly Trap	13.99	13.99
Warhead	16.99	16.99
*War Monger	16.99	16.99
Warp	13.99	12.99
Waterloo	12.99	15.99
Winners (Compilations)	19.99	19.99
Xenon II	16.99	16.99
Xenomorph	16.99	16.99
X-Out	13.99	13.99
*Zone Warrior	16.99	--.--

ATARI 520STFM DISCOVERY PACK
Bombjack, Carrier Command, Outrun, Space Harrier, STOS, Neochrome, First Basic, ST Tour, Discover the ST.
£269.95

ATARI 520STE POWER PACK
23 Great Software Titles
£349.95

ATARI 1040STE
Professional Pack
£449.95

ATARI SM124
Monochrome Monitor
£99.95

ATARI EXTERNAL DRIVE
Power Drive 1 Meg D.S
£79.95

AMIGA 500 "FLIGHT OF FANTASY" PACK
Modulator, F-29 Retaliator, Rainbow Islands, Deluxe Paint II, E.F.T.P.O.T.R.M.
£369.95

AMIGA 500 "BATMAN" PACK
Modulator, Batman, New Zealand Story, Interceptor, Deluxe Paint II
£369.95

AMIGA 500 + 8833
Either Pack above + Colour Monitor
£599.95

AMIGA 500 "CLASS OF 90's" PACK
Educational Pack
£529.95

PHILIPS 8833
Colour Monitor
£249.95

AMIGA EXTERNAL DRIVE
Power Drive 1 Meg D.S
£79.95

A590 HARD DRIVE
20 Meg Hard Drive
£369.95

CHEQUES AND POSTAL ORDERS PAYABLE TO SOFTSELLERS. POST & PACKING FREE IN UK. OVERSEAS £1.50 PER SOFTWARE ITEM, HARDWARE AT COST.
Subject to availability and price change without notice. *Not all titles released at time of going to press.

TITLE	COMP	PRICE
	TOTAL COST £:	

Have you ordered from us before? YES NO

Name .....

Address .....

.....

.....

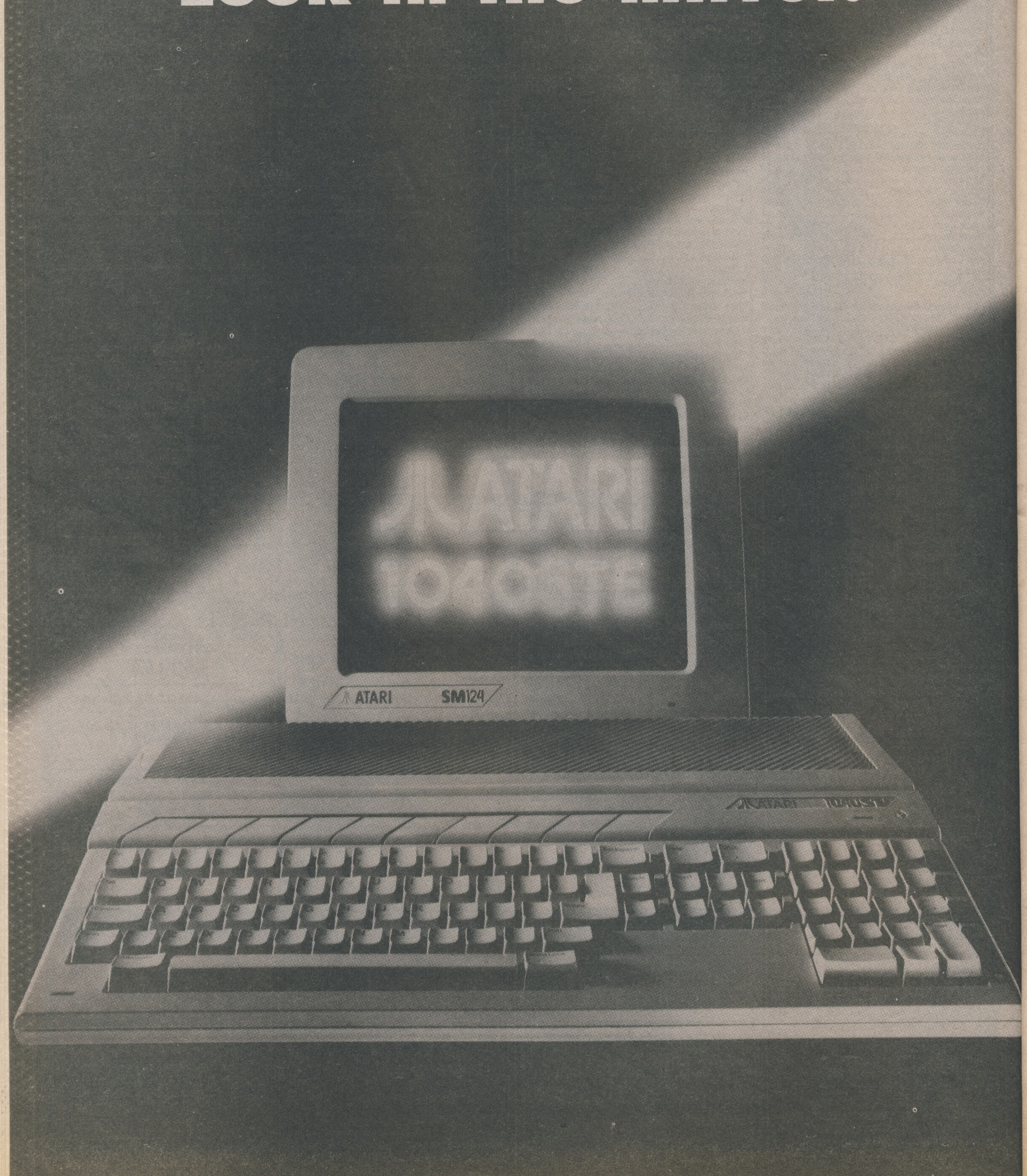
Tel. No: .....

NCE 28.6.90

ATARI LYNX HAND HELD
Portable Games Machine
£179.95

AMIGA MEMORY EXPANSION
512K + Clock Card & FREE game
£79.95

Find out its limits.
Look in the mirror.



Introducing the powerful new Atari 1040 STE. With such an awesome machine, we're convinced the only limits you'll come across are your own.

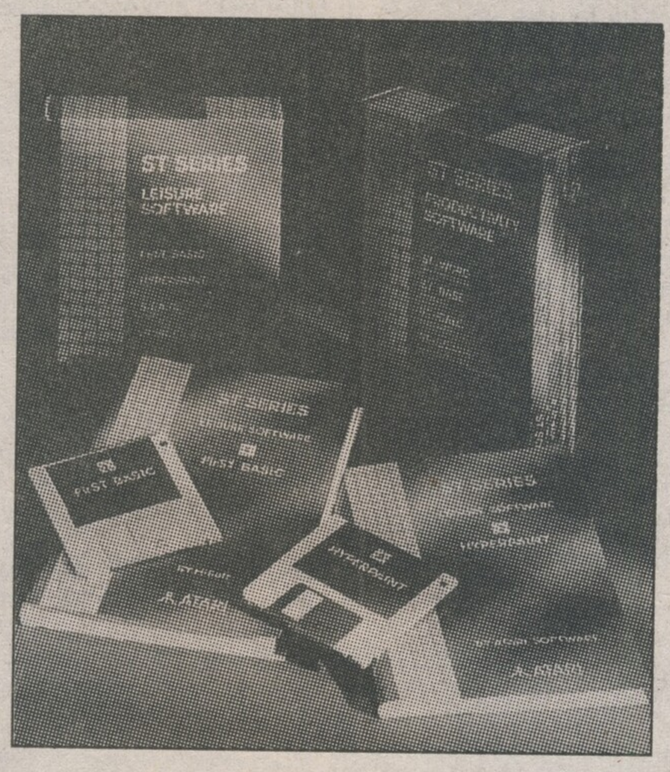
Based on the incredibly successful 1040 STFM, the 1040 STE itself goes beyond the limits of its predecessor.

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

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

To ensure precise and realistic images, the STE features 'hardware scrolling', enabling smooth scrolling in any direction and split-screen effects. And, with the SM124 monitor, you'll get razor sharp black-out-of-white text that's as clear as the type on this page.

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



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

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

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

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

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

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

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

The Productivity bundle features a database, spreadsheet, word processor and business graphics package, and there's S.T.A.C., FirST BASIC, Hyperpaint and Prince in the Leisure bundle.

If you're itching to get your hands on the controls, there are two 15-pin analogue controller ports (which accept paddles, light-guns and light-pens) and a 9 pin mouse port and joystick port.

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

At £499.99 it certainly won't be too much for one person to afford.

The ideal computer at the ideal price, you may think. We think so, too. But there remains only one potential problem: not whether you'll make impossible demands of the 1040, but whether the 1040 will make impossible demands of you.

Please send me further details of the 1040 STE and other Atari products.

NAME: _____

ADDRESS: _____

_____ POSTCODE _____

Please send to Atari Corp (UK) Ltd. Atari House, Railway Terrace, Slough, Berkshire. SL2 5BZ.

ATARI 1040STE

WITHOUT IT YOU'RE JUST PLAYING GAMES

SHOPPING EXPRESS READER ADS

There are great bargains to be had in our reader ads section, but remember to check before you buy - we cannot be held responsible for the quality of the goods on offer!

● FOR SALE

50 AMSTRAD tapes all originals, offers of cash or WHY Electron stuff always wanted. Also penfriend Beeb wanted. Paul, 3 Moorend Avenue, C'wood, Birmingham, B37 5SD.

UNIX and C language books, tutorial disks and shareware for IBM or Clone from £3. M Din, 4 Trelawney Drive, Tilehurst, Reading RG3 5WQ.

SPECTRUM +3, manual, leads, Multiface 3, approx 300 games, Tasword, all worth more than £500, sell for £170. Telephone Michael on (0438) 364722 after 6pm.

THE ULTIMATE gamers machine PC Engine and TV Pal convertor, excellent condition, £150 (no games) Tel (0484) 720353.

ATARI ST games all Original, Sidewinder £5, Outrun £5, Mach 3 £4, Apolonia Pools System £25, Trivial Pursuit 2 £8. Where Time Stood Still £8 (0484) 720353.

COMMODORE 64, disk drive, datasette, joystick, mouse, Action Replay MK6, loadsa disks, games, graphics, utilities, books, mags, programming guides etc £275 ono Somerset (0460) 40830.

AMSTRAD portable PPC640, dual 31/2" disk drives, built-in modem, 640K Ram, plus TV adaptor, £350 ono. Phone (0271) 43296.

LOTUS syphony 3.5" disc, new not required package, best offer secures. Tel (0723) 581931 before 8pm.

ENTERPRISE 64K boxed as new, complete with P54 manuals and all leads, £40. Tel (0527) 579620 (Midlands).

FERGUSON TV monitor for sale 12" screen colour with RGB video inputs, headphone socket, suit BBC Amiga as new only £170 ono. Ring Burnley (0282) 53986.

COMMODORE 64+ tapedeck, joystick and mags. Over £1000 of software many top titles from simulations to Arcade games all in excellent condition all yours for £150. Cash needed for Amiga. Phone (09952) 5266 after 6pm quick sale.

AMSTRAD PCW 8256 printer for sale £70. Phone (0208) 77409.

AMSTRAD CPC 6128 colour monitor, joystick, cassette recorder, leads, manuals, plus over £500 original boxed software, total £900, sell for £400. Call Steve SE London (081) 691 7349.

MULTIFACE one plus Lifeguard, plus Spectrum printer, alas no paper or instructions £20 ono. 091 237 2329.

12 ASSORTED computer games Amstrad 464 £10 ono. Graham Skinner, 36 Outseats Drive, Alfreton, Derbyshire.

AMIGA software - F29 £15, Player Manager £15, Devpac £15. Phone 0705 522924 or write to 48 Monchton Road, Gosport PO12 2BQ.

AMSTRAD CPC464 with green monitor, TV adaptor and software, also 2 train sets £45 each computer £150 ono. Tel (0294) 67086.

BOOKS for sale programming languages, operating sytems, computer use, BBC micro. Adrian 081 545 0933

DTP/TYPESETTING IBM Micro tex, complete with manuals and registration card, RRP £495 will sell for £300 ono (also printer drivers for Impress/Imagen) Adrian 081 545 0933.

VARIOUS Amiga originals for sale. Prices from £2.50, Miracom WS4000 modem £50, Amiga second drive (Cumana) £45 blank disks 32p ring Mike on (0889) 574070.

ATARI SM124 high resolution monitor (slightly damaged) and monitor master (monitor switcher) both for only £85. Tel Paul 021 706 3030.

SPECTRUM 48K all leads and connections with games, joystick interface. Games include Dizzy, Skool, Daze etc. Phone (0347) 22159 David Pearson after 5pm £60 ono.

AMIGA originals, lots of top titles worth £700 accept £350 ono also printer £60, phone (0429) 862966 and ask for Paul. Will swap for 144 HST.

BBC issue 7, 128K Ram expansion, disk drive, Toolkit Plus, Rom, twin joysticks, lots of games, Mini Office II, all manuals, 100+ magazines £400 ono. (0530) 415535 after 6pm.

SEGA Master system for sale with 8 games plus two joypads plus rapid fire. Sell for £100 ono. Phone after 6.30pm 021 354 2346.

MITSUBISHI 1 ML-F80 64K MSX, cassette recorder, approx 40 games, including Rambo 3, The games, Living Daylights. Sell for £70. Phone Phil on Tyneside (091) 438 3455.

AMIGA originals for sale including Op Thunderbolt, Gazzas soccer and many more top titles £8 each, 17 for £80, alos HR5 printer £40. (0268) 691658.

PROGRAMMERS! Amiga game - writing explained in a good new book "The Amiga Games Programmers Guide". For more details, send SAE to C J Ditchburn, 12 Edencourt, ST Andrews, Fife.

TWO Moore Reed acoustic modems, needing attention! Another project I never got the time to do! £40 the pair (postage extra). (0455) 634443 Martin Sylvester.

ST bargains: Art Directro £20, Replay 4 £25 ono. Plus loadsa games incl. Hostages, Lombard Rally, Battle Hawks, Platoon, Op-Neptune, Millenium 2.2, immaculate condition . Tel 091 276 3754.

BBC B series 7, 32K sideways Ram, 40trk disc drive, data recorder, joysticks, mouse, printer lead, various software, Roms, magazines, books, £270. Tel Bristol (0272) 563722.

PSION organiser 11cm includes Oxford spell checker and two unformatted 32K datapacks, several programs including failsfafe password program worth £190 accept £80. Phone (0883) 717946.

COLOUR monitor RGB suit PC has din plug interface and internal speaker. Works but I don't know how to wire it up sell £25 or swap 2 joysticks Phone (0883) 717946.

NEW ASPECTS



MAIL ORDER PRICES ONLY!!

ALL GOODS FULLY TESTED PRIOR TO DESPATCH

LYNX Colour Games Console + California Games £164
LYNX GAMES Blue Lightning.....£25 Gauntlet III.....£29
Electrocop.....£25 Rampage.....£29
Zendocon.....£25
520 STE Power Pack inc 1Mb drive, 512K RAM, TV Modulator £345
MEGA ST 2 inc Software & Mono Monitor.....£900
MEGA ST 4 inc Mono Monitor & Software.....£1234
Cumana 3.5 External 1Mb ST Disc drive £89
PORTFOLIO PC PC-Power in your pocket! £225
STE and FM memory upgrades available

CALL FOR OTHER GREAT ATARI BARGAINS!

AMIGA A500 Flight of Fantasy Pack inc TV Mod, games, etc.....£360
AMIGA A500 Batman Pack inc TV Mod, games, Deluxe Paint 2 .....£360
AMIGA A2000 inc Colour Monitor.....£1144
10/10 3.5 External Amiga Disc Drive.....£89

NEW ASPECTS, 57 LOVERS WALK, DUNSTABLE, BEDS, LU5 4BG
Telephone: (0582) 472067

All prices include VAT and P&P. Goods despatched next day whenever possible.
Courier Delivery: Add £5 for next working day or £10 for Saturday delivery

E.E.C. LTD

QL FROM £90

PRINTERS FROM £50

QL BACK UP, WITH P.S.U. etc., JM ROM £90
QL BACK UP, WITH P.S.U. etc., JS ROM £100

QL COMPLETE AS NEW 2.35 SOFTWARE
JS ROM with Quill, Abacus, Archive + Easel £135
Same with JM ROM.....£120
90 days warranty on above items

★ QL ACCESSORIES SOFTWARE
SAE FOR DETAILS ★

★ SPECTRUMS AS NEW ★
Plus 2 - £109.95 Plus 3 - £149.95

★ PRINTER CLEARANCE ★
★ ALPHACOM 32 with I.Face & PSU for SPECTRUM .....£49.95★
ALPHACOM PAPER 1 ROLL £3.50, 5 Roll Pack £12.95
★ SEIKOSHA GP 100A Dot Matrix 80 Col., 50 cps.....£79.95 ★
Tractor Feed, ideal for QL with Centronics Interface .....£24.95 only extra

★ COMMODORE BARGAIN ★
★ **BROTHER HR10** Letter Quality Daisywheel 2K Buffer
Tractor Feed, 80 Col., 12 cps. CBM Lead free. .....£129.95 ★

★ MICRODRIVE EXPANSION KIT★
Includes Microdrive, Interface 1, Booklet, Network lead, intro, cartridge and flex connector £69.95
As above with 2 Microdrives.....£79.95

EXTRA MICRODRIVES (New) £24.95
EXTRA MICRODRIVES (Reconditioned).....£16.95
CARTRIDGES
Wallets with 4 cartridges : - £12.00 Boxes of 20: - £55.00
INTERFACE 1 CONNECTORS AND LEADS each £3.50
PRINTER (RS232) LEADS FOR INTERFACE ONE.....£12.95
POWER SUPPLY UNITS 48k Std £8.95
POWER SUPPLY for Heavy Duty or 128K £10.00
POWER SUPPLY for Heavy Duty or 128K + 3 .....£18.00
POWER SUPPLY for QL or Commodore.....£22.00

★ Min. Orders £10.00. £6.00 Carriage - Printers and Micros. £3.00 other items P & P UK
Overseas add £15.00 Printers etc. £5.00 others. Terms CWO or Visa/Access.
All offers subject to availability.

Orders to EEC Ltd. Dept NCE 1,
18-21 Misbourne House, Chiltern Hill,
Chalfont St Peter, Bucks SL9 9UE. Tel: 0753 888866

PROGRAMMERS Amiga game writing explained in a new book " The Amiga games programmers Guide" fpr more details, send sae to D J Dichburn 12 Eden Court, St Andrews, Fife, Scotland KY16 9BD.

ATARI 520 STFM 1 meg drive power pack. Over £950 software including Rainbow Islands, Xenon 2, Populous and Word processor, 6 months guarantee £300 no offers. Phone (0883) 717946 after 6pm.

ST software, GFA Raytrace £30, Barbarian 2 £8, Bubble Bobble £4, Super Sprint £4, or will consider swapping for Amiga A3000. Ask for Damian on (0253) 828308 after 4pm.

SPECTRUM 48K for sale, loads of games, budget and full price, 2 joysticks and interface, computer mags all for £60 ono. Phone (0279) 32208.

FILMS VHS/BETA computer generated demos 3 hours long only £4 seeing is believing you'll be amazed. Phone Steve 0803 528095, ll York Gardens, Paignton S Devon TQ4 5NP.

ATARI 1040STF boxed, music and business S/W. Micro P CP80 NLQ printer. Pace Linnet Hayes compatible modem. All leads. No monitor hence £400. (0483) 65757.

C64 disk drive printer 2CN joystick over 100 disks and cassettes, originals include Gunship Turbo, Outrun, Bomber etc £300 ovno. Contact Lee (0679) 66139.

DATAPRODUCTS 5PG 8020- 2-GS computer printer, wide carriage, fully working, professional model £75. 061 789 3791 (home), (0925) 832000 ex 4578 (work).

COMMODORE MPS1230 printer hardly used - condition as new and in original packing. Please ring (0532) 438057 price £99 only.

CRUCIAL C64 games at crazy prices! over 100 originals for sale. Phone (0925) 68796 or write to Dave, 54 Middlehurst Road, Grappenhall, Warrington, WA4 2LG.

IBM portable twin 3.5 drives 512K start disk and manual, A/C adaptor, Batt pack £375 no offers. Bargain as new Canvey, Essex area. (0268) 685366.

C.C Interbase, Spellmaster £25 each; C.C Mega 3 £45, Watford Quest/Conquest and mouse £60, Wapping Editor and disc £50; PMS Publisher and fonts £45 others available (0452) 506361.

LOTUS symphony version 2 31/2" disc new and unused, unwanted package £200 (092572) 2533.

A500 Plus one MB , plus ext disc drive, Batpack and ten games packa nd joystick five months old £350 ono. Tel (0244) 535204 (answerphone).

ATARI SM204 hard disk drive (20MB) with utility software and cables £275. Call Hornchurch (04024) 46450 after 6pm.

ATARI 520STFM professionally expanded to 1mb ram, two floppy disk drives, mouse, joystick, dust cover and some software £250. Call Hornchurch (04024) 46450 after 6pm.

MEMORY upgrade kit for Atari ST £40 SCSI - ST506 interface card ideal if building ST hard disk £75 consider swaps for any above. (0495) 272092.

ATARI Cumana disk drive. Hardly used, new Xmas. A real giveaway at £70 ono. Tel 021 559 3911.

AMSTRAD PPC640 portable with built in 20meg hard drive and modem. Still guaranteed. Includes Word Perfect, plus other software £850 ono. Tel John (0483) 65757.

APPLE lle, monitor, disk drive, printer, 80 column card, word processor software. All manuals, various expansion cards and leads £350 ono. (0270) 875221.

COMMODORE 64 tape games for sale. Cheap prices. SAE for full list to:- H Fu, 59 Baden Powell Road, Chesterfield, Derbyshire, S40 2SL. All originals!!!

EXCHANGE ST software for word processor, database etc. Includes Bomber, Fast Lane, Jet some unused. Also swap Racal MPS1222 modem for software. Phone (0375) 67954 evenings.

MITSUBISHI unbranded 31/2 inch double sided lifetime guarantee disks. Unused with labels. Unwanted gift 10 for £6.50. Tel (0706) 44552 or (0706) 355375.

SPECTRUM hardware 32-col thermal printer with paper £22. VX modem (128 compatible chip) £18. Fred, Newport (0633) 266647 after 6pm.

WANTED two SCSI to ST506 controller cards MFM type. Must be in good condition. Will pay up to £20 each. Phone (0272) 581 5496 after 7pm.

SERIAL I/Face board for Okimate printer, excellent condition, still in box £25. Phone 027 581 5496 after 6pm. Fnord Morgens das sconner system Hagbard.

AMIGA 501 Ram clock expansion, Minigen Genlock, sensibible offers please upgraded to Amiga 2000. Ring Newton Abbot (0626) 69656.

AMIGA games TV sports basketball £11, hard drivin £7, Pac manin £5, £21 the lot. Phone Orpington (0689) 30183 after 4pm.

PC Engine and CBM 64 with loads of games, all originals. Sell for £280 ono or swap for Atari ST or megadrive. Interested Phone (0698) 381736.

MODEM Racal Milgo CP 2123 auto dial/ answer, rates 300 V21, 300 Bell 103, 1200 V23, 1200/75 Prestel £55 ono. Phone Mike after 6pm or weekends. (0268) 729645.

ATARI 520STFM immaculate conditioln, includes £225 of software, mouse, 20 magazines, about 50 blank disks, only £350. All fully boxed. Phone (0273) 463886 Brighton area.

AMIGA Midi master interface plus all leads £25. Amiga logo still in unopened original box £20. Excellent for children learning to programme. Tel (0772) 716965.

DR T's recording studio for Amiga. Cost £49.00 new. Will accept £20 an excellent music programme for Amiga, still in box, unused. Tel (0772) 716965.

AMSTRAD CPC6128 colour monitor, joystick, printer cable, Mini Office II, manual and Amstrad disc companion book. As new, boxed £225 ono. Phone Chris on (0507) 526356 (eves) (Lincs).

AMSTRAD CPC464 6128 Rom disk drive 128K, mouse, Stop Press, Mono monitor, TV adaptor, Multiface disk and tape software and more £230 ono. Toby on (0703) 770228.

SPECTRUM hardware VTX5000 modem, boxed £20, 3 channel sound synthesiser £12, Kempston Interface E, no cable, hence only £5, Multiface 1, £20. Tel (0258) 880394.

C64 games for sale. All tape and very cheap. Also pen pals wanted. Send SAE or letter to: J Clowes, 9 Ryder Gardens, Rainham, Essex RM13 7LS.

SPECTRUM +2A, lightgun outfit, immaculate 2 weeks use, includes joystick, lightgun, etc Chase HQ, Operation Thunderbolt, Myth, Batman, Untouchables, Indy, Black Tiger and many more (many magazines) 081 504 8861.

SPECTRUM ZX-digitiser, DK Tronics lightpen; animator, graphics adventure creator, pictionary, books on M/C code, Spectrum and Microdrives, Phone 051 228 1147 for list.

C64 games for sale. All originals, titles inc Mini Office II, War in Mid Earth, Battle Stations, Speedball, Armalyte, many more (100) v cheap. Send SAE for list. R G Davies, 98 Bangor Road, Johnston, Wrexham, Clwyd.

LAUNCH into the nineties, a new decade of BARGAINS!!

ALL PRICES INCLUDE V.A.T.

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"	£4.90
25 x 3.5"	£11.95
50 x 3.5"	£20.50
100 x .3.5"	£40.00
250 x 3.5"	£98.00
500 x 3.5"	£195.00
1,000 x 3.5"	£350.00

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"	£14.35
50 x 3.5"	£26.48
100 x 3.5"	£49.78
250 x 3.5"	£123.95
500 x 3.5"	£238.00
1,000 x 3.5"	£463.00

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"	£24.95
250 x 5.25"	£59.95
500 x 5.25"	£129.00
1,000 x 5.25"	£200.00

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

3 1/2" DISKS FROM 35P 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 2mb, 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	£54.00
100 x 5.25" HD	£42.00	100 x 3.5" HD	£94.72
250 x 5.25" HD	£100.00	200 x 3.5" HD	£178.00
500 x 5.25" HD	£197.00	500 x 3.5" HD	£425.00

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	£3.50
3.5" x 80 Capacity	£3.95
3.5" x 100 Capacity	£4.95
3.5" x 125 Capacity	£3.50
5.25" x 70 Capacity	£3.95
5.25" x 100 Capacity	£3.95

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

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

VISA
Access

Post add £3.50 per order. Next Day Courier £7.95

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

Evesham Micros

RETAIL SHOWROOMS

63 Bridge Street
Evesham
Worcs WR11 4SF
☎ 0386-765180
fax: 0386-49761
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

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

Access VISA

Send an Order with Cheque, Postal Order or ACCESS/VISA card details

Government, Education & PLC orders welcome
All products covered by 12 Months Warranty
All goods subject to availability, E. & O.E.

ATARI

All our Atari ST prices include: mouse etc. plus 5 disks of software including 'First Word' wordprocessor, utilities, 'Neochrome' graphics utility, game and demos.

NEW - 520 STFM DISCOVERY PACK

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

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

Also available with 1Mb RAM fitted for only £339.00

ATARI 520 and 1040 STE

STE models feature an extended palette of 4096 colours, PCM stereo sound, two additional analogue device inputs and TOS 1.6.

1040 STE Professional Pack: including Kuma Wordprocessor, Database, Spreadsheet and Business Graphics, plus 'FirST BASIC', 'STAC Adventure Creator', 'Hyper Paint' and 'Prince' all for only £429.00

520 STE POWER PACK

Includes the very latest 520STE with 512K RAM, 1Mb drive, joystick, mouse, user guide, 5 disks of public domain software, plus an incredible selection of chart-topping software with a total RRP of over £500! Software included is:

R-Type, Afterburner, Double Dragon, Super Hangon, Space Harrier, Overlander, Pacmania, Starglider, Super Huey, Eliminator, Predator, Bombjack, Out Run, Bombuzal, Xenon, Gauntlet II, Black Lamp, Starray, Nebulus, Stargoose, First Music, First Basic, Organiser

£339.00 Including VAT and delivery

HURRY! VERY LIMITED SPECIAL OFFER : 520 STFM with 1Mb RAM installed PLUS all software extras as supplied with 'Power Pack' and ALSO all software as supplied with 1040STE Pro. Pack - ALL FOR ONLY £399.00

520STE 1Mb RAM Upgrade Kit, extremely simple to fit (SIMMS cards)	£49.00
520/1040STE 2Mb Memory Upgrade Kit, with simple fitting instructions	£145.00
520/1040STE 4Mb Memory Upgrade Kit, with simple fitting instructions	£290.00
520STFM 1Mb Drive Upgrade Kit with full fitting instructions	£64.95
520STFM 1Mb Memory Upgrade Kit, requires soldering	£59.00
Mega ST1 with monochrome monitor	£599.00
Mega ST2 with monochrome monitor	£849.00
SM124 monochrome monitor	£99.00
SC1224 colour monitor	£279.00
Philips CM8833 14" colour monitor (stereo sound) c/w ST cable	£259.00

Amstrad PC1512/1640/2086

Free with 1512 models... Ability and 4 US Gold Games

	SD	DD	AMS H.D.	SD 21MB	DD 21MB	SD 32MB	DD 32MB
				EVESHAM UPGRADED MODELS			
MONO 1512	346.96 / 399.00	433.91 / 499.00	N/A / N/A	542.61 / 624.00	629.57 / 724.00	554.78 / 638.00	641.74 / 738.00
COLOUR 1512	433.91 / 499.00	555.65 / 599.00	N/A / N/A	629.57 / 724.00	716.52 / 824.00	641.74 / 738.00	728.70 / 838.00
MONO 1640	477.39 / 549.00	554.35 / 649.00	738.26 / 849.00	673.04 / 774.00	760.00 / 874.00	685.22 / 788.00	772.17 / 888.00
CGA (COLOUR) 1640	564.35 / 649.00	651.30 / 749.00	825.22 / 949.00	760.00 / 874.00	846.96 / 974.00	772.17 / 888.00	859.13 / 988.00
EGA (ECD) 1640	651.30 / 749.00	738.26 / 849.00	912.17 / 1049.00	846.96 / 974.00	933.91 / 1074.00	859.13 / 988.00	946.09 / 1088.00
2086 MONO	433.91 / 499.00	520.87 / 599.00	694.78 / 799.00	629.57 / 724.00	716.52 / 824.00	641.74 / 738.00	728.70 / 838.00
2086 CD	564.35 / 649.00	651.30 / 749.00	825.22 / 949.00	760.00 / 874.00	846.96 / 974.00	772.17 / 888.00	859.13 / 988.00
2086 12" HRCD	564.35 / 649.00	651.30 / 749.00	825.22 / 949.00	760.00 / 874.00	846.96 / 974.00	772.17 / 888.00	859.13 / 988.00
2086 14" HRCD	607.83 / 699.00	694.78 / 799.00	868.70 / 999.00	803.48 / 924.00	890.43 / 1024.00	815.65 / 938.00	902.61 / 1038.00

12 MONTHS ON-SITE MAINTENANCE PROVIDED WITH ALL MODELS OF PC1512, 1640 AND 2086 FREE OF CHARGE !

upgrades / accessories

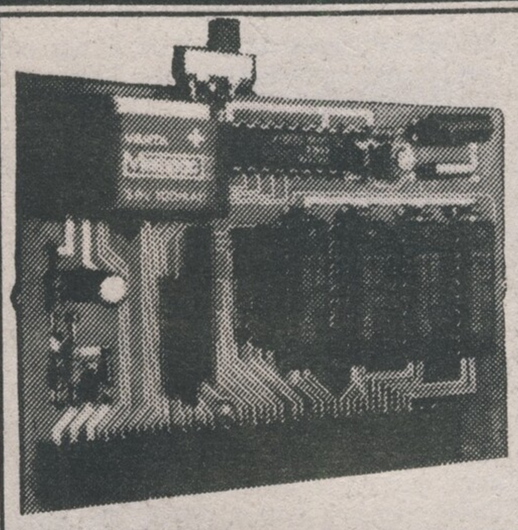
PC1512 memory upgrade to 640K	£29.95	Enhancer 101 replacement keyboard	£74.95
Maths Co-processor 8087-2	£119.00	3.5" drive (720K) for SD models	£79.95
NEC V30 (8086 replacement)	£24.95	PC2000 series compatible 5.25" (360K) external drive	£84.95
Archive XL 40Mb Ext. tape streamer	£379.00	Genius GM6000 Mouse package	£32.95
Amstrad Modem Card V21/23	£99.00	Konix Joystick & Controller Card	£28.95
Communicate Fax Card SR	£199.00		

Amstrad PPCs

Low prices on all portable PCs - especially twin drive models
prices in brackets are excluding VAT

PPC512S	(£373.04) £429.00	PPC640S	(£477.39) £549.00
PPC512D	(£433.91) £499.00	PPC640D	(£546.96) £629.00

Low price External 3.5" floppy drive (720K), suits any Amstrad PC 1512/1640 inc. DD and HD models, uses no expansion slots £99.95



AMIGA A500 512K MEMORY UPGRADE

ONLY £49.00 inc.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
- ☆ Uses only 4 D-RAMs for High Reliability
- ☆ Low power consumption

RAM expansion without clock, only ... £43.00

Amiga & ST 3.5" Drives

- ★ Very Quiet
- ★ Slimline Styling
- ★ Fully Compatible
- ★ Top quality Teac / Citizen drive mechanism
- ★ On / Off switch for Amiga
- ★ External plug-in PSU for ST
- ★ Throughport for Amiga
- ★ 1Mb unformatted capacity

Fully compatible, high quality 3.5" external drives for the ST and Amiga

Amiga version only £64.95
Atari ST version only £69.95
Prices include VAT & delivery

Western Digital Filecards

Upgrading your PC to hard disk? Look no further, we offer the best prices on top quality hardcards. Thorough documentation supplied, low power consumption, with free XTree file management software and Speedread. For Amstrad 1512/1640/2086 users we supply hardcards tested and formatted, with our simple software installation procedure. The best packages available!

21MB...£225.00 32MB...£239.00 41MB...£279.00

3.5" disks

10...£ 9.95 in plastic case £11.95
25...£22.95 in 40 cap case £29.95
Fully guaranteed double sided media

5.25" disks

25...£11.95 in 50 cap box £18.95
in 100 cap box £20.95
Fully guaranteed double sided media

PRINTERS

All prices include VAT, delivery and cable

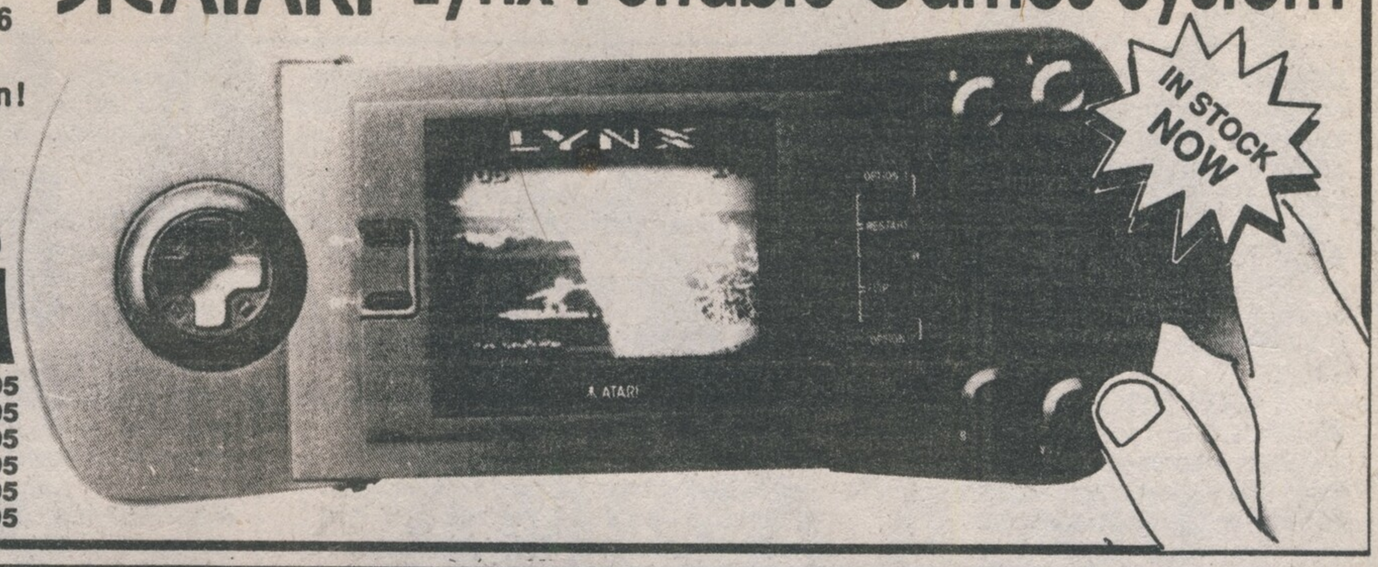
star

We use and recommend Star printers since they do offer an unbeatable combination of features, print quality, reliability and value. Get it right with a Star at our special, all in, prices. We can provide on-site maintenance contracts for only £7.95 extra.

Star LC24-10 feature-packed multifont 24 pin printer, amazing low price	£239.00
Star LC10 best-selling 144/36cps printer, 4 NLQ fonts, inc.2 extra ribbons free	£159.00
Star LC10 7-colour version of above printer, inc.2 extra black ribbons	£209.00
Star LC15 wide carriage version of LC10	£329.00
Star LC24-15 wide carriage version of LC24-10	£409.00
Star FR-10 new 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
NEC P2+ budget 24pin	£289.00
Olivetti DM100S Super 9pin 200/30cps, inc.1 year on-site maintenance!	£129.95
Amstrad DMP3160/3250DI good value 10" 9pin	£169.00
Panasonic KXP1180 super new 9pin with over 3400 typestyles, 11" carriage	£179.00
Panasonic KXP1124 good quality 11" multifont 24pin printer	£259.00
Panasonic KXP1624 wide carriage version of KXP1124	£399.00
Epson LX400 popular 10" 180/25 cps	£159.00
Epson LQ550 (was LQ500) good 24pin printer 150/50 cps	£349.00
Mannesmann Tally MT-81 130/24 cps	£149.00

ATARI Lynx Portable Games System

- Fantastic hand-held portable 16-bit video games machine
- Excellent built-in high definition, full colour LCD display
- Capable of displaying up to 16 colours out of a possible 4096
- 32-bit audio processor produces superb 4-Channel sound
- Left or right hand play easily achieved with screen flip option!
- Multiplayer Competitions possible using COMLYNX cable (supplied) to connect with other Atari Lynx systems
- Free California Games (multiplayer) game card supplied!
- Uses 6 x AA batteries (not supplied) or AC adapter (supplied)



ONLY £159.00 including VAT and delivery

Game Cards now available :

Blue Lightning	£19.95
Gates of Zendocon	£19.95
Electro Cop	£19.95
Chips Challenge	£19.95
Gauntlet III	£22.95
Rampage	£22.95

SPECIAL DEALS

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

A500 512K Flight of Fantasy pack includes 4 software titles and TV modulator £379.00
A500 512K Batpack includes 4 software titles and TV modulator £379.00
Amiga 500 1Mb Batpack (*OR* F.O.F. Pack) features our 1Mb RAM Upgrade fitted £419.00
Amiga 500 Batpack (OR F.O.F. Pack) with Drive includes our 3.5" External Drive £439.00
Amiga 500 1Mb Batpack (OR F.O.F. Pack) with Drive features our 1Mb Memory Upgrade *plus* 2nd 3.5" External Drive £479.00

External 5.25" 40/80 track switchable drive	£114.95	MiniGEN Genlock Adapter	£95.00
Omega Projects MIDI interface	£29.95	Philips CM8833 colour monitor inc.cable	£259.00
Vortex System 2000 40Mb Hard Disk	£499.00	Contriver Hi-Res replacement Mouse pack	£22.95
Vidi-Amiga inc.Vidi-Chrome	£110.00	Amiga 500 dust cover	£4.95

CBM A590 HARD DRIVE

Good quality 20Mb Hard Disk from Commodore, including its own PSU. Features sockets for up to 2Mb of FAST RAM expansion (see below). 80ms Access time, with up to 2.4Mb/sec transfer rate. Will autoboot when used with Kickstart 1.3. Has built-in cooling fan.

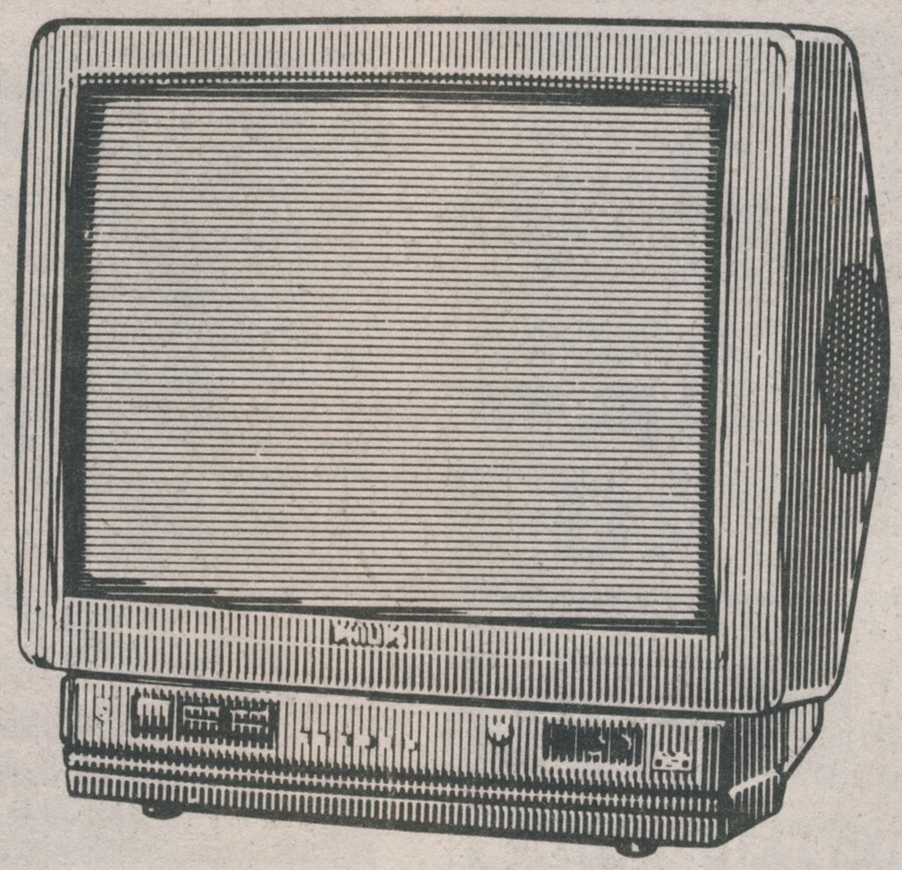
Only £379.00

A590 512K RAM Upgrade kit £36.00
A590 1Mb RAM Upgrade kit £70.00
A590 2Mb RAM Upgrade kit £135.00
RAM upgrades fitted free when bought with A590.

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 !

- ✔ Suits ST or Amiga (cable supplied)
- ✔ Teletext facilities; on screen graphics
- ✔ Full infra-red remote control
- ✔ SCART Input/Output Connector
- ✔ Audio/Composite Video inputs
- ✔ 60 TV tuner presets
- ✔ Headphone private listening jack
- ✔ External aerial input (loop supplied)





£269.00
Includes VAT, delivery and computer connection lead

ATARI ABC-286

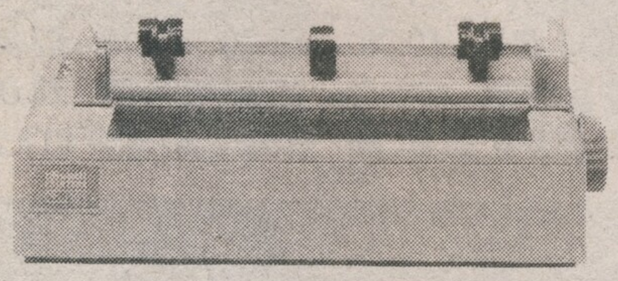
FREE with all ABC-286 machines : Logotron '8-in-1 Professional' inc. W/Processor, Database, Spreadsheet, Graphics, etc.

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

ABC286 SD/30 Mb base unit . £803.85
ABC286 SD/30 Mb with Mono Monitor £861.35
ABC286 SD/30 Mb with EGA Monitor £976.35
Prices Include VAT/Delivery and 12 months On-Site Maintenance

Optional 5.25" 1.2Mb internally fitted floppy drive available £119.00

OLIVETTI DM100S



Top value, high performing 9-pin dot matrix printer

- ○ 200 cps draft, 30 cps NLQ print speed
- ○ Pica, Elite and Condensed printing
- ○ Standard Centronics Parallel interface
- ○ Friction and Tractor feed
- ○ Optional auto cut sheet feeder available

ONLY £129.95

Cut sheet feeder available for only £79.95
Prices include VAT, delivery and 12 months on-site maintenance!

olivetti PCS 86/286

FREE WITH ALL MODELS :
- ✔ 12 Months On-Site Maintenance
- ✔ Genius GM-U2 Mouse with software
- ✔ Logotron 'Eight-In-One' Integrated Package
- ✔ 'Top 10 Solid Gold' Games package



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

	SD	DD	SD 20MB	SD 40MB
PCS86 MONO	649.00 **746.35**	749.00 **861.35**	949.00 **1091.35**	N/A **N/A**
PCS86 COLOUR	899.00 **1033.85**	999.00 **1148.85**	1199.00 **1378.85**	N/A **N/A**
PCS286 MONO	N/A **N/A**	1049.00 **1206.35**	1149.00 **1321.35**	1249.00 **1436.35**
PCS286 COLOUR	N/A **N/A**	1299.00 **1493.85**	1399.00 **1608.15**	1499.00 **1723.85**

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

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

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

PCS 286
- ◆ Intel 80286 microprocessor 12MHz clock speed, 1 wait states
- ◆ 1Mb RAM standard, upgradeable to 4Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
- ◆ 3 Full size expansion slots; 1 x 8 bit and 2 x 16 bit (XT/AT style)

ACCESSORIES

5.25" 1.2Mb/360K drive with controller	£129.95
PCS 286 2Mb RAM Upgrade Kit	£175.00
PCS 286 4Mb RAM Upgrade Kit	£350.00

COMMODORE 128/64 with disk drive, cassette, modem, full size music keyboard and extras £1200 worth of software, games and business. Bargain £350. Tel (0454) 315337.

ATARI 520 STFM includes second drive, plus software, magazines, Blitz, Turbo, and books. All boxed with manuals etc. Only 11 months old, as new £310 ono. (0761) 33621,

25 issues ZZap 13 issues C.U, 10 issues C + VG adn assortment of other compier mags 50p each. £20 the lot. Phone (0978) 845017 and ask for Gareth.

ATARI ST software all original from £5 each. Mint condition. Phone or SAE for list, 6 Byron Grove, Reddish, Stockport, Cheshire SK5 6JB 061 442 4791.

SPECTRUM 48K for sale, leads, games and manuals included £35. Contact Stephen (0444) 241946.

COMMODORE 64C, Commodore MPS1230 printer, under a year old, over 80 games, sell for £210 or £110 without the printer. Tel 081 450 2862.

MIDI 1 in 3 throb box, expands. Midi out by 3 times as new £10 post free (0703) 788278.

AMIGA software, superbase, K spread 2, language, DPaint 3, Falcon, Rainbow Island, Op Wolf, Xenon 2, Battle Squadron, Beast, Paperboy, Sidewides, bomjacket, Rampage, Chess, 20+ more £120 Albert 061 773 7208 evenings.

DATEL Midi master, A500 lead included £20 pair of AMP speakers from Trilogic 320 for Amiga. Phone 021 526 5946 after 4pm West Midlands.

PC Amber monitor (Phillips) £40 Minix Operating System (PC version) and book £75. Tel (0234) 226866.

MAGAZINES, NCE issue s1-40 (and preview) ACE 1-21, TGM 1-17 adn odd magazines - all mint condition - reasonable offers considered. call Stace (0707) 873015.

ACORN Electron, loads of games, plus 1, logo games cartridge, 3 joysticks, bargain at £100 ring (0532) 842833 or swap for Sega cards or cartridges.

BBC B DFS 40 track disk drive, loads of software and roms including Interword, Wordwise and hundreds of games 350 ono Tel (0937) 73892.

AMIGA Publishers Choice £45, Maxiplan 500 £15, Superbase Personal £15, Print 2 £10, BBC Emulator £15, Amiga Hold £20 all in original packing, all unused, (0224) 824904.

ATARI 520 STFM, 1 meg Ram, 1 meg internal d/drive, mouse, leads, original box, 20 PD discs, vgc £275 ono. Tel (0225) 316870.

BARGAIN Atari 520 STFM, 1 meg ram, 1 meg internal D/Drive, 20 PD discs, mouse, leads, original box, vgc £275 ono. Tel (0225) 317870.

PAL megadrive, 4 months old; boxed, excellent condition, guaranteed, 2 joysticks + 2 games (Ghouls'n' Ghosts and Space Harrier 2) £230 onol Tel (0762) 342884 after 6pm and ask for Michael.

BBC model B fitted Zif socket £200 disc drive £100 digitises £50, Panasonic KXP1080 printer £60 will split. (0992) 29639.

FREE Spectrum 128K + 2A, books, magazines, joystick, free when you buy £400 of software for £199. A Best, Haven, Dyffryn, Ardudwy, Gwynedd, Wales LL44 2BH.

SPECTRUM Plus 48K computer and recorder, two joysticks, interface and 59 original, mostly mint tapes, plus many spare tapes for sale £120. Phone 081 556 3265.

CBM 64C Neos mouse/ cheese speedking joystick £400+ software £150+ magazines will sell £180 ono. Swap for printer for ST. (eg LC10-colour) phone Andy 091 2629809 anytime.

AMSTRAD PCW software for sale or exchange, orignal discs and manual Phone for list; 061 7998 7279 (after 6pm or leave a message on machine)

AMSTRAD CPC464 colour monitor, over £300 games, Light Pen, books, lots of magazines, worth £500+ £300 ono. Phone after 4pm on weekdays (0752) 562928.

AMSTRAD 464 colour monitor, plus games. All for £150 ono. Tel (0262) 604866, Bridlington, East Yorkshire.

C64C boxed 12 months old all leads, manual, £450+ of original and latest software worth £600+ bargain £150 ono. Phone Manket Deeping (0778) 344751 evenings only.

SPECTRUM Plus, quality tapedeck, manual, all leads, joystick, interface and 52 part programmng course step by step. Bargain only £40 ono. Phone Market Deeping (0778) 344751 evenings.

AMIGA A500, amplifier, two joysticks, booser, aerial, software etc. (1:2) £250. Exchange for Amstrad PCW 8256/8512 in excellent condition and software (03652) 3816 (Devon).

AMIGA A500, amplifier, speakers, mouse, joystick, scart lead, cover, software 50 disks. Sell £250 swap for Amstrad 8256/8512 and software/hardware. Phone Phil (03632) 3816.

C64 Lightgun and games for only £20 only 2 months old. For sale many other C64 games and Electronic games at cheap price. Contact Asad on (0753) 858716 now hurry!

CPC Cassette games for sale, guaranteed originals from 50p. Write to G Wade, 50 Colville Street, Fenton, Stoke on Trent Staffs ST4 3LB.

ATARI 520STFM incl £300+ of latest original software a bargain at only £195. Phone (044284) 2785 after 6pm.

ST games to swap, Falcon, Futurewars, KQI, II, III, Leisure Suit Larry II, Zac Mckracken, Scapegoat. Send list etc to J Daw, 13 Bernard Road, Brighton.

C64 games, over 40 originals, tape and disk send SAE for list to Dave Capewell, 63 Bailey Road, Blurton, Stoke on Trent, Staffs ST3 2DL.

ATARI SM124 and swivel stand, two months old for £110. Phone 021 3269200. Also software for Sinclair QL all at half price.

SPECTRUM 128K datacorder, joystick, over 100 games, toatal value approx £530 will accept £195 ono. Phone 057 381 559 after 6pm weeknights.

SPECTRUM 48K+, Sega 3 keyboard, Plus 'D' with 5.25" drive, Kempston Mouse, software, books, CPA80+ printer (NLQ dot matrix), leads, manuals, £250 ono may split. Tel Coventry (0203) 615543.

MGT plus D interface 3.5" disk drive and Multiface 128. Offers to J Daw, 13 Bernard Road, Brighton, Sussex.

ATARI 520STFM for sale, £700s worth of software, including Elite, Carrier Command, Paperboy, Kick Off, Dungeon Master etc £275 ono. Phone 091 2743320 after 5pm.

YOUR Commodore adn CCI mags 1987 to 1990 offers. Amiga Professional, Hollywood Poker and Dragons Lair, offers or will exchange for Amiga software. (0642) 819549.

AMSTRAD colour 6128 printer, mouse, RS232C, modem and software, joystick, Multiface, manuals, £400 of software plus extras, £600. Buyer collects Craig (0795) 876467 after 8.30pm.

PHONE (0293) 565748

A R B

COMPUTERS (CRAWLEY) LTD

FAX (0293) 612039

VISA

UNIT 19, RUTHERFORD WAY, GATWICK ROAD, CRAWLEY, WEST SUSSEX RH10 2AU

COMPUTERS

COMMODORE

	£		£
PC20 HD MD	752.00	VGA	1035.00
PC30 HD MD	1058.00	EGA	1235.00
PC40 HD MD	1298.00	VGA	1475.00
AMIGA A500 BAT	321.00	A500 FLIGHT	321.00
AMIGA B2000	1095.00	PLUS A1084	1295.00

AMSTRAD

PC1640 HD MD	799.00	ECD	988.00
PC2086 HD MD	752.00	CD	940.00
PC2286 HD MD	940.00	CD	1129.00
PPC640D PORTABLE			611.00

COMPATIBLES

286/16	40Mb HD 5.25" 1.2 Mb HERCULES		1296.00
386SX	40Mb HD 5.25" 1.2 Mb HERCULES		1403.00
386/33	40Mb HD 5.25" 1.2 Mb HERCULES		2824.00

ACORN

AKB01 A3000 NO MONITOR	599.00
AKB19 A3000 LEARNING CURVE	699.00
AKF12 COLOUR MONITOR	220.00
Archimedes 300/400 Series Phone	
BBC MASTER 128	399.00

PRINTERS

CANON

LBP-4 LASER	1157.00
LB-8111 LASER	1809.00
BJ-130E BUBBLE JET 360 DPI	701.00

EPSON

CQ5000 LASER	1146.00

PANASONIC

P44501 LASER	1643.00
KXP4420 LASER	1059.00

Software for MS.DOS / ARCHIE / AMIGA also shipped.
Phone or fax for price list.

This is just a small selection of stock available, if you cannot see the item you want please phone or fax us for rapid turnaround of your order.

Remember your computer, printer is just 24hrs away. (Subject to availability).

DELIVERY
All goods normally despatched within 24hrs from receipt of cleared payment subject to stock availability. We will notify all delays
Carriage PC's lasers 1x box £15.00: 2 x box £25.00: Others £10.00: Small items £5.00
TERMS
All prices exclude V.A.T. prices and specifications subject to change without notice.
All prices are strictly C.W.O. All goods sold are to full U.K. specification with full manufacturers warranty.

MAIL ORDER DISKS
NEW LOWER PRICES
All prices include fast FREE delivery in mainland UK

BRANDED DISKS

Prices per box of 10 disks	1-4	5-9	10-49	50+
TDK 5.25" M2D DS/DD 48TPi	£5.50	£5.20	£5.00	£4.70
TDK 5.25" M2HD DS/HD 1.6Mb	£9.40	£8.90	£8.50	£8.00
TDK 3.5" MF2DD DS/DD 135TPi	£10.00	£9.50	£9.00	£8.50
TDK 3.5" MF2HD DS/HD 2Mb	£24.20	£23.00	£21.80	£20.60

Prices per box of 10 disks	1-4	5-9	10-49	50+
KAO 5.25" MD2D DS/DD 48TPi	£5.20	£4.90	£4.70	£4.40
KAO 5.25" MD2HD DS/HD 1.6Mb	£9.20	£8.70	£8.30	£7.80
KAO 3.5" MF2DD DS/DD 135TPi	£9.40	£8.90	£8.50	£8.00
KAO 3.5" MF2 HD DS/HD 2Mb	£20.20	£19.20	£18.20	£17.20

BULK PACKED DISKS

TOP QUALITY CERTIFIED DISKS

Prices per disk	10-49	50-99	100-399	400+
5.25" DS/DD 48TPi	£0.30	£0.28	£0.27	£0.25
5.25" DS/HD 1.6Mb	£0.74	£0.70	£0.66	£0.62
3.5" DS/DD 135TPi	£0.59	£0.56	£0.53	£0.50
3.5" DS/HD 2Mb	£1.44	£1.37	£1.30	£1.22

SOFT SYSTEMS ENTERPRISES
38 Bryland Ave, Bishopston, BRISTOL, Tel: (0272) 247666

All prices exclude VAT.
Cash/Cheques/PO with order.
Accounts available.
All prices and products subject to change without notice.

Best Prices Proudly Presents Amazing New Deals On The

AMIGA A500

We bought you the Atari 520STE at a realistic price, now you can have the Amiga A500 at one too !

AMIGA A500 BATMAN PACK

* Commodore Amiga A500 computer
* Television modulator + mouse
* BATMAN game
* NEW ZEALAND STORY game
* F-18 INTERCEPTOR game
* DELUXE PAINT 2 graphics software
* and full instructions

ALL THIS FOR ONLY

£ 365.00

inc vat and 3 day courier delivery

AMIGA A500 FLIGHT OF FANTASY

* Commodore Amiga A500 computer
* Television modulator + mouse
* F-29 RETALIATOR game
* RAINBOW ISLAND game
* ROBOT MONSTERS game
* DELUXE PAINT 2 graphics software
* and full instructions

ALL THIS FOR ONLY

£ 365.00

inc vat and 3 day courier delivery

AMIGA A500 CLASS OF THE 90's PACK

* Commodore Amiga A500 computer
* TV modulator, mouse, mat & 10 disks
* MIDI interface & DrT MRS software
* Superbase Personal Database
* Publishers Choice DTP software
* Maxiplan spreadsheet, Amiga Logo
* BBC emulator, Deluxe Paint 2

ALL THIS FOR ONLY

£ 539.00

inc vat and 3 day courier delivery

AMIGA A500 BASE MODEL PACK

* Commodore Amiga A500 computer
* Television modulator
* Mouse controller
* 512K Ram built in
* Workbench software
* Version 1.3 Rom
* and full instructions

ALL THIS FOR ONLY

£ 349.00

inc vat and 3 day courier delivery

TENSTAR PACK

Amegas, Art of Chess, Barbarian, Buggy Boy, Ikari Warriors, Insanity Fight, Mercenary Compendium, Terrorpods, Thundcats and Wizball

All for only

£ 34.99

inclusive

PLEASE NOTE

The A500 Bat Pack or Flight of Fantasy Pack and the Tenstar Pack are available together for only £385.00 inclusive of vat and delivery

(offer valid while stocks last only)

AMIGA ACCESSORIES

512K Ram Upgrade with clock	£ 59.95
A590 20Mb Hard Disk Drive	£ 379.95
Philips 8833 Stereo colour monitor	£ 259.95
Cumana External Amiga Drive	£ 75.00
Vidi Amiga Video Digitiser	£ 99.99
Deluxe Paint Version 3	£ 59.95
Photon Paint Version 1	£ 9.95
Photon Paint Version 2	£ 39.95
F-29 Retaliator by Ocean	£ 17.95
Tenstar Games Pack	£ 34.99

BEST PRICES, (Dept NCE), Unit A, Grafton Place, Worthing, West Sussex. BN11 1QX

(0903) 700714

VISA

SEE NEXT 2 PAGES FOR MORE DETAILS

ATARI LYNX

Atari Lynx Games Machine
(with free California Games card)

only £164.00 inclusive

Lynx Game Cards		Lynx Game Cards	
BLUE LIGHTNING	£22.00	GATES OF ZENDOCON	£22.00
CHIPS CHALLENGE	£22.00	GAUNTLET III	£25.50
ELECTROCOP	£22.00	RAMPAGE	£25.50

CITIZEN Swift 24

SWIFT 24 ACCESSORIES
Colour Upgrade Kit £34.95
Black Ribbons (ea.) £3.95
Colour Ribbons (ea.) £13.95

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

£310.00
INC VAT AND DELIVERY

Panasonic KXP1124

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

£255.00
Inc VAT and delivery

ATARI ABC 286AT

SINGLE DRIVE, NO MONITOR	£599.99
SINGLE DRIVE, EGA AMBER MONITOR	£699.99
30MB HARD DRIVE, NO MONITOR	£799.99
30MB HARD DRIVE, EGA AMBER MONITOR	£899.99
30MB HARD DRIVE, EGA COLOUR MONITOR	£999.99

ALL PRICES INCLUDE VAT, DELIVERY AND 12 MONTHS ON-SITE MAINTENANCE

NEED A NEW MOUSE ?

Contriver Replacement Mouse
£27.50 (available for ST or Amiga)

Naksha Replacement Mouse
£36.99 (fits ST, Amiga & Amstrad PC)

Commodore 1352 Mouse
£ 34.49 (fits Amiga or Commodore PC)

Genius GM-6X PC Mouse
- ★ 3 Button serial type
- ★ 9 pin & 25 pin connectors
- ★ Dr Halo III graphics software
- ★ Mouse Driver Software

100 % Microsoft Compatible
For use with IBM PC XT or AT compatibles

only **£26.00** inc vat

THE ATARI PORTFOLIO

Atari Portfolio Pocket PC	£229.95
Smart Parallel Interface	£38.00
Smart Parallel Interface – with parallel cable	£39.95
32K Memory Card	£46.75
64K Memory Card	£82.95
128K Memory Card	£119.00
Finance Software Card	£47.50
PC Application Software	£47.50
Utilities Software Card	£47.50
Serial RS-232 Interface	£56.95
Super Memory Expander	£164.95
Portfolio Card Drive	£67.50
Mains Power Adaptor	£11.99

star

Genuine Star LC10 Ribbons...

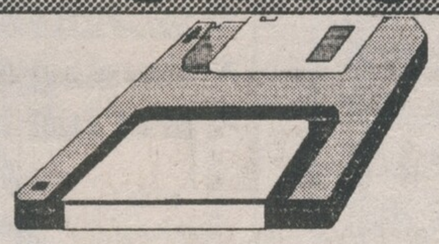
1 x Black Ribbon	£3.50
5 x Black Ribbons	£16.95
10 x Black Ribbons	£32.95
1 x Colour Ribbon	£5.20
5 x Colour Ribbons	£24.95
10 x Colour Ribbons	£47.95

LC10 PRINTERS
Star LC10 Mono £ 169.00
Star LC10 Colour £ 219.95

All printer prices include cable, vat and delivery

BLANK DISKS

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



QUANTITY	10	20	30	50	100	200	250	300
UNBRANDED 3.5" DS/DD	6.50	11.99	16.99	27.50	52.99	96.99	115.00	134.99
SONY BRANDED 3.5" 2DD	11.50	21.50	30.50	50.00	95.00	188.00	230.00	275.00
UNBRANDED 3.5" HD	14.95	27.95	39.95	59.99	115.00	225.00	279.95	330.00
SONY BRANDED 3.5" HDD	27.50	53.00	77.00	120.00	235.00	460.00	570.00	680.00
UNBRANDED 5.25" 360K	3.25	6.25	9.25	14.95	27.50	52.50	65.00	77.50
SONY BRANDED 5.25" 2D	7.95	15.50	22.50	36.99	69.99	135.00	165.00	189.99
SONY BRANDED 5.25" HDD	12.99	24.99	34.99	56.99	99.99	195.00	235.00	275.00

ST MIDI

LATEST and ORIGINAL versions !!

- C-Lab Creator SL V2.2
- C-Lab Notator SL V2.2
- C-Lab Unitor
- C-Lab Export
- Steinberg Pro 24 V3
- Steinberg Pro 12 V1.1
- Steinberg Cubase V1.5
- Steinberg Voice Editors
- Digital Muse Virtuoso
- Digital Muse Prodigy
- FM Melody Maker
- other packages available.

RING TODAY – LATEST VERSIONS IN STOCK AT AMAZING PRICES!

STEINBERG CUBASE WITH 520STE 1MB RAM

SPECIAL OFFER – WHILE STOCKS LAST
RRP £1049.00
SAVE £300.00
ONLY

£750.00
INCLUSIVE

Other Cubase Packs ....
520STE 2MB + CUBASE PACK £ 830.00
520STE 4MB + CUBASE PACK £ 980.00

BEST PRICES,(Dept NCE), Unit A, Grafton Place,
Worthing, West Sussex. BN11 1QX
Tel : (0903) 700714

VISA

SEE PREVIOUS & OPPOSITE PAGE FOR MORE DETAILS

SPECIAL OFFER !

520STE 1MB RAM

with First Basic, Music Maker and Organiser for only

£365.00

AMAZING

inc vat and 3 day delivery
Hurry, only while stocks last

AMAZING

ATARI STE

520STE 512K RAM	**£345.00**
520STE 1MB RAM	**£365.00**
520STE 2MB RAM	**£449.00**
520STE 4MB RAM	**£599.00**

All STE computers come with 3 software titles :

First Basic, Music Maker and Organiser.

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

ATARI STFM POWER PACK

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

ALL THIS FOR ONLY

£299.00

including vat and 72hr delivery

STE RAM KITS

DIY 1 KIT - 520STE to 1MB
(2 x 256K cards) £50.00
DIY 2 KIT - 520/1040 to 2MB
(2 x 1MB cards) £149.95
DIY 4 KIT - 520/1040 to 4MB
(4 x 1MB cards) £324.95

All RAM prices include VAT and delivery.

520STE 1MB POWER PACK

- **Atari 520STE 1MB RAM computer**
- **20 top selling games** (as above)
- **Mouse, Joystick and instructions**

£399.00

including vat and 72hr delivery

ATARI ST PERIPHERALS

Atari SM124 Mono Monitor	£ 99.99
Atari Megafile 30 Hard Disk	£ 449.95
Atari Megafile 44 Removable HD	£ 849.99
Atari Megafile 60 Hard Disk	£ 619.95
Atari SLM804 Laser Printer	£ 1115.00
Atari SLM804 Toner Cartridge	£ 37.50
Atari SLM804 Replacement Drum	£ 159.99
Philips 8833 Stereo Colour Monitor	£ 259.95
Cumana 1 MB External Drive	£ 89.95
Microtime External Clock Card	£ 24.95
ST Monitor Switch Box	£ 14.95

HYPER PACK

Hyper Paint, Hyper Draw and Borodino

only

£14.95

inclusive

ATARI ST PERIPHERALS

STE Stereo scart lead	£ 12.99
STFM scart lead	£ 9.95
Metacomco ST Basic Language	£ 7.95
Replacement internal STFM/E PSU	£ 99.95
Trakball (Mouse/Joystick)	£ 24.95
Joystick/Mouse extension lead	£ 4.75
Replacement ST Mouse cable	£ 3.75
Parallel Printer Lead	£ 5.95
14 Pin Din Plug (ST disk drive)	£ 2.25
14 Pin Din Socket (ST disk drive)	£ 2.95
13 Pin Din Plug (ST Monitor)	£ 1.95

ST GAMES ONLY £2.00 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 -

£39.99 - thats less than £2.00 each !

(requires double-sided disk drive)

BEST PRICES

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

Access

(0903) 700714

VISA

YOU CAN PLACE YOUR ORDER 24 HOURS A DAY

All prices include VAT and delivery unless otherwise stated. Goods despatched same day whenever possible.

All prices are subject to change without notice BEST PRICES only supply original equipment and not grey imports. All of our equipment is fully guaranteed. Thanks to Lee Cooke of Composite Engineering (0903) 41633 for rescuing our hard drive !!.

Mail order only, callers and collections only by prior arrangement with us. Thank You.

ALL PRICES INCLUDE UK DELIVERY UNLESS STATED
ADD £5.00 INC VAT FOR NEXT WORKING DAY DELIVERY, ADD £10.00 INC VAT FOR SATURDAY DELIVERY
ADD £10.00 FOR AM WEEKDAY DELIVERY, ADD £15.00 FOR 72HR COURIER DELIVERY TO N.IRELAND

FARFISA TK100, digital sampled synth. Full midi spec, mains adaptor, mint condition. Cost £300. Accept £200. Ideal partner for Amiga/ST.(0472) 86456

IBM compatible 286PL 10mhz mono monitor, 640K, 1.2 floppy no hard disk. Offers around £500. Call (North London) (0860) 466120.

C64 cassette, games 100s of titles, large SAE for lists. Michael Vainola, 5 Woodside Cottages, Highwood, Chelmsford, Essex CM1 3RD.

MIGENT'S Ability Plus Package £50. 081 954 2628.

C64 hardware and software. Send SAE for list Mr A H Foster, 24 Pansy Road, Bassett, Soton S02 3GR. Wanted cheap Amiga Maxiplan.

K-DATA Database program for Amiga. Runs on 512K single disk machine. Original disk and manual. Reviewed Amiga Format May. £23+ postage. Phone Dunstable (0582) 603362.

PANASONIC KX-P1081 printer, brand new £200 ono. Also Amstrad games. Send for list from J Clarke, Rose Cottage, Rectory Road, Mellis, Suffolk P23 8EA or phone Mellis 037 983 601.

SPECTRUM games for sale including Batman, Op Wolf, Robocop etc. All originals in vgc. Prices from 50p to £3. Ring Mike 081 572 1165 anytime Hounslow, London.

AMIGA software F29 Retaliator £17, Battlehawks 1942 £13, Lancaster Bomber £15, all new and unused. Call Mark (0978) 840634 after 6pm or weekends.

LYNX 48K (computers) good working order offers? Also TRS-80 16K B/W monitor works by screen scrolls. Offers? Call Mark (0978) 840634 evenings.

664 Amstrad disc, green monitor, Protext Plus utility disc, printer cable 3120 ono. Leave phone no. 071 373 4479 (messages only as hotel reception).

RBASE latest version complete with manuals etc. Never used, reason for sale, loss of job. Also 256K dram for sale. Tel Jon (0905) 53248.

NINTENDO Robot for sale, only used few times, in unmarked condition with all accessories £20 or swap any 2 Nintendo cartridges Tel (0983) 840363.

YAMAHA DX21 full sized synth full Midi spec, 128 voices, perfect condition £230. Phone Andy Worthing (0903) 64883.

CBM-64, 3 datasettes, 4 joysticks, back YP board, breaker, loads of games (£1500+) all originals, lots of magazines. All this and more £300. Phone 041 954 3432.

AMIGA 500 six months old, still under guarantee, modulator, PSU manuals, disks, D Paint, Superbase Personal, £250 of games, boxed as new. Pristine condition only £380. (0224) 824904.

GENLOCK Rendale 8802 Amiga Semi pro, 4 months old used twice £125. Get into desk top video on your Amiga. Phone Nottingham (0602) 261498 before 5pm.

FILMS VHS/Beta, 3 hour video extravaganza featuring reviews, games, demos and films only £4.00. Phone Steve (0803) 528095 state VHS/Beta, 11 York Gardens, Paignton, S Devon TQ4 5NP.

AMSTRAD PCW 9512 with Locoscript 2, extra daisy wheel, 13 discs, instruction books, magazines and box. Little used £400 ono. Phone 081 809 1023.

COMMODORE Plus/4 MPS801 datasette 1541 disk drive. All for £200 plus lots of software. Phone 081 517 8679 or 071 987 1592 after 6pm or weekends.

STEREO 4 channel sampler for Atari ST, Midi keyboard and sequencer, Ideal for beginner £150 ono. Phone (0932) 786185 eves for details.

UPGRADE forces sale, Speccy, QL, C64, CPC, ZX81, Jupiter Ace hardware, software SAE, 2 Town Mead, Oakford, Devon EX16 9EW or call 039 85 438.

COMMODORE 64 (boxed) 1541 disk, Koalapad, lightpen, Simons Basic, Joystick, loads of games, disks, tapes £180. Phone (0257) 451771 after 6pm.

AMIGA software, originals as new, Running Man, Pop Quiz, Voyager, Phobia, Tetris, Commando, Nebulus, Trivial Pursuit, Chessmaster 2000, Menace, New Zealand Story £6 each. Ring (0224) 824904.

LC10 colour printer for CBM 645/128 boxed with manual, cable and ribbons and Mini Office II disc £120. Phone Jim on 041 881 1101 after 6.30pm.

SPECTRUM +3 with disk drive £250 games lots of accessories mint condition, still under guaranteee £275. Wanted. Call and see, 14 Birkside Way, Mereside, Blackpool, Lancs.

PSION organiser, Model-XP (with manual). Good condition, welcome offers sensible price??? Consider swapping? letter replies only (SAE) no phone callers. Charles Trager, 7 Grantley Street, Glasgow, G41 3PT.

RAM music machine for Spectrum, very little use, still boxed £25. Tel Kendal (0539) 821182.

AMIGA 1/2 meg upgrade £40, Cub colour monitor with Amiga lead £50. Contact Robert Hart, 8 Egbury Hse, Danebury Ave, Roehampton London SW15.

C64 cassette, original, The Temple of Apsahi Trilogy, offers wanted. Gauntlet type game Michael Vainoca, 5 Woodside Cottages, Highwood, Chelmsford Essex CM1 3RD.

ST original games, Hillsfar, Sleeping Gods Lie, Battlehawks 1942, Vulcan Firezone £5 each. Phone after 6pm (0455) 38518.

45 AMSTRAD tapes plus speech/face £50, STOS stac art and film director for ST £60, no offers. Paul, 3 Moorend Avenue, C'wood, Birmingham B37 5SD.

SEGA Master system for sale, 2 controlpads, 1 joystick and £180 worth of games only £125. Call Leon on 081 989 2930.

ACORN Electron with plus 1 interface, cassette recorder, printer lead and manuals. All in vgc £35 the lot (04023) 44439 after 6pm.

AMSTRAD games for sale (cass only) Altered Beast, Super Wonderboy, Ghouls 'n' Ghosts, Shinobi, Strider, Dominator, Double Dragon and many all £6 each. Phone Hin after 4pm 081 858 3228.

ST Software all originals and mint, including Cyber Studio £25, Cyber Sculpt £35, Hard Drivin £9, Red Storm Rising £10, lots more Tel (0977) 683889.

AMSTRAD CPC464 with games, joystick and mags. Requires monitor or modulator £80. Also 30 issues of Electron User (Nov86-April 89) £15 081 648 8317.

COMPLETE system A500 1/2 meg upgrade, 2nd drive, colour monitor, printer, television receiver, excellent condition, with lots software. Price £610 or £690 with Lattice C (0872) 865096.

SPECTRUM 48+ tape deck, interphase, mags and loads of games including Robocop, Dragon Ninja, Double Dragon etc. Phone (0705) 599858 ask for Marc £80.

AMIGA originals: Blood Money, Dungeon Master, Xenon 182, Thunderblade, Hard Drivin, Forgotten Worlds, Stunt Car, Rocket Ranger £60 the lot. Telephone (0202) 682195 after 5pm.

VGA card will suit IBm PS2 model 30, or IBM PC £100 ono. Phone (0475) 520112.

LOOK! WHY PAY MORE FOR YOUR DISKS & BOXES?

3½" DS/DD 39p

LOOK! DISK BOXES
40 CAP £4.00
80 CAP £4.40
100 CAP£4.49

INCL LABELS

5 1/4 DS/DD 23p
5 1/4 DS/HD 50p

3 1/2 DS/HD 95p

SAME DAY DESPATCH

ADD £2.50 P&P. ADD £9 next day delivery.

AMIGAS
BATPACK.....£358
FLIGHT OF FANTASY.....£359
CLASS OF THE 90'S.....£493

Mouse Mat.....£2.80
Cleaning Kit.....£2
Ram Pack.....£41
+ clock.....£46
Amiga ext drive.....£59

ATARIS
LYNX.....£158
DISCOVERY..£259
EXTERNAL DRIVE +PSU.....£67

★ C64 WORLD CUP PACK £140 ★

CALL OR SEND CHEQUES TO B.C.S LTD,
349 DITCHLING ROAD, BRIGHTON BN1 6JJ

VISA 0273 506269 24 hours 7 days

Seven Disk

3.5 inch Disks + boxes

10 disks + 10 capacity storage box - £6
25 disks + 50 capacity lockable box - £16
50 disks + 50 capacity lockable box - £26
100 disks + 100 capacity lockable box - £48
200 disks + two 100 capacity lockable boxes - £90

For a stackable/lockable Banx high quality 90 capacity disk box add £9 to these prices. Banx disk box without disks £12

Best quality unbranded disks

3.5 inch DSDD 100% Guaranteed
Includes labels and postage
10 + 50p a disk
50 + 45p a disk
100 + 43p a disk
250 + 40p a disk
500 + 37p a disk
1000 + 35p a disk

5.25 inch DSDD 100% Guaranteed
Includes labels sleeves and postage
10 + 30p a disk
50 + 29p a disk
100 + 28p a disk
250 + 27p a disk
500 + 26p a disk
1000 + 25p a disk

Other Supplies

Disk Cleaning Kits (3.5 & 5.25") - £2.00
Disk Boxes - 10 capacity - £1.20
- 50 capacity - £6.50
- 100 capacity - £7.50
Roll of 1000 3.5" disk labels - £9.00
ST520/1040 and Amiga 500 Dust Cover - £3.00
Colour/Mono dust cover - £3.50
Mouse/Joystick 2 metre ext. lead - £4.00

All prices are fully inclusive of VAT + postage (UK only)
No nonsense - just fantastic value

Super Value

VISA

Cheques/Postal Orders payable to Seven Disk. Or send Access/Visa card number expiry date and signature
Seven Disk. (NCE). Digswell Water Lodge, Digswell Lane, Welwyn Garden City. Herts. AL7 1SN
24 hr order line - Tel: 0438 840456

MACINTOSH SE FD HD, 2mb ram, 40mb HD. 0.8-1.4 disk drive, mouse, brand new, hardly used (2 months old certified and still under 10 months guarantee) £1850. Contact Achilles 071 7405346 before 9.00am or after 8pm (Mon to Sunday).

AMSTRAD CPC464 colour monitor £200 of games, magazines, Light Pen, Stereo Amplifier speakers, Speech synthesiser, an absolute bargain at £250. Phone (0533) 886039 after 6pm.

INFOCOM adventures wanted for C64 or PCW. Originals only please. Tel 061 798 7279 (eves or answering machine).

HUGE record collection for sale or preferable exchange for ST, Amiga or PC. W.H.Y? Details and 30+ page catalogue from 061 798 7279 (evenings or ansaphone).

COMMODORE 64 programs. Steinberg Pro 16+ £30, D + 7 editor, plus voices £30, share investor £30, 061 998 3494.

LOOK Atari 1040 STFM, mono monitor, second drive, and replay 4, phone John (0532) 602 284 with any offer for any of the above.

SINCLAIR Spectrum 128 +2A joystick, Multiface 150+ games inc Batman, Operation Wolf, Robocop etc £200 vgc 081 550 2593.

AMSTRAD modulator to connect CPC ragne of computers to colour TV unused, in box £15. (0925) 66591 ask for Andy (eves only).

STE owners 512K for sale take your machine to 1 meg onlyu £40. Please reserve first, hurry! hurry! Paul, 35 Shaw Cres, Lochgelly, Fife, Scotland KY5 9LH.

ATARI ST original software for sale, all boxed, originals with inst etc. All priced at £10, Rainbow Islands etc 35 Shaw Crescent, Lochgelly, Fife KY5 9LH.

PANASONIC P1081 printer brand new, never been used, genuine reason for sale £175 ono. Interested then phone Mellis 037 983 601.

AMSTRAD CPC 464 with colour monitor, dust covers and 50+ games, joystick, manual and magazines very good condition £140 ono. Phone 081 788 9273 after 6pm weekdays.

ARCHIMEDES PC-Emulator, (unregisterd) £55, Mitsubishi 5 1/4" DS-DD 80T drive £65, Technolog external disk interface £25, Amstrad DMP2000, Epson Compat printer £65. Tel 051 546 1543 (Liverpool).

ST originals, unopened, Castle Master £11.00, Paperboy £8.00, Fun School 2 £8.00. Ring Simon on (0904) 625016.

AMIGA logo £20. Fighter Bomber, F29, 688 Sub, Pipemania, D Paint 2, £9 each. Dr T's Studio, £15, Midi Master £20, Publishers Choice £40. All as new. (0224) 824904.

AMSTRAD 664 green screen, protext Rom card, TV modulator, a few disks, some games cassettes £195, Sunderland 091 5144095 after 6.30pm.

BBC goodies for sale. Disk drives 40/80T £45, Watford Quest, Conquest movie fonts £45, Fleet Street Editor £15. Plus games, books. Basildon (0268) 418887 all at silly prices.

AMIGA PD send £1.25 for useful catalogue disk or SAE for list speedy service is guarantee. Ghostwriters, 38 Westover Road, High Wycombe, Bucks.

AMIGA A500 + 1084S colour monitor, mouse, leads and joysticks, Falcon Sports Football, Carrier Command, Hound of Shadow and many more games, all in great condition, a bargain at £425.00. 081 290 1841.

STAR LC10 for CBM64 two ribbons, manual lead £110 ono. Steve Parry, Walkden 061 702 9862 after 6.30pm.

AMSTRAD CPC6128 colour with DMP2000 printer many games including R-Type, Operation Thunderbolt and others, mostly on disk, tape recorde and mags. Also worth £1000 sell for £400. 1 Outlack Road, Lisnadill, Armagh, Co Armagh, N Ireland BT60 2AN.

A-MAGIC, Turbo dizer for sale an excellent quality IG shade video digitiser for the Atari ST with free lead and 5 discs £50 ono. Tel 061 740 5271.

ATARI 520STFM one meg upgrade 1/2 meg drive and boot switch. £300 s/ware, PD, ten blank disks and box (50c) and joystick £250. Tel 061 740 5271.

AMIGA games Football Manager 2, Flinstones and joystick £15.00 inc post 081 206 0851. Wanted Sage accountant on disk.

ACORN Z80 second processor for BBC B/ Master including Microfocus Cobol, forms, animator, CP/M, Memoplan Graphplan, Fileplan, Accountant, each with manual DNFS, as new £90. 081 440 9400.

ATARI 520STFM (1 meg upgraded) £250. Steinberg Pro 24 V.3 £150, Falcon, STOS, OCP Art Studio, £8 each, everything boxed with manuals. Will post! Telephone (0405) 861169 ask for Jerry.

ORIGINAL Atari ST games for sale, all less than £6 each, many top titles, will consider swaps for good software or hardware. (05438) 4102 evenings.

AMSTRAD CPC464, monitor, Lightpen (Rom) joystick, 73 games, selling due to upgrading. Excellent condition £150 ono. Tel East Klbride (03552) 43130 after 4pm.

COMPUTER clearout Spectrum, Ace Memotech more. Hardware, software, Books SAE for list. A Jones, 2 Town Mead, Oakford, Devon EX16 9EW.

GOOD selection MSX games for sale send SAE to Mr D Gregory, 219 Richmond Road, Sheffield S13 8TE for list phone (0742) 698191.

PC ENGINE, Pal, bought since Xmas, excellent condition, worth £180+ now sell for £120. Phone 071 359 2633 after six.

AMIGA B2000 1084 monito XT Bridgeboard, 20 mbyte Amiga/MSDOS hard disk, 8087 math co-processor, Autocad Release 9, DBase III, Clipper, Lotus 123, plus many more also hundreds of Amiga software £1895 ono. Telephone (0429) 870140 contact Steven.

DATEL Electronics 3.5" external drive for Commodore Amiga, only four months old, £60 ono. Also Synchro Express Professional Duplication System, requires external drive £25 ono. (0253) 711605 after 6pm.

THE LOFT BBS with games, text files, user support and 900Mb+ of downloads available. Call now V21, V22, V23 V22 bis Protocols 8N1 (0442) 230461.

ATARI 520ST, games, joystick extender cables, disks, perfect only £185. Yamaha PSS470 synth £51.50 ono. Both for £200 ideal for music. Phone after 8pm (0227) 464881.

AMIGA A500 modulaotr, joystick, disk box, only 2 months old, boxed, excellent condtion. Comes with around 20 games. Bargain at ony £320. Phone (0698) 733229.

LARGE amount of PC XT related s/w and h/w clearing out loft and short of cash. Contact John (0905) 53248 or (0905) 56610 BBS HST.

ELECTRON software, utilities, arcade adventures, original, Scott Adams hint book, decent cassette recorder + leads. £25. Phone anytime (0895) 421160.

EPSON RX80FT+ dot matrix printer vgc £85 with manuals and nlq. Rom for the BBC £15. Phone 081 316 8452 or (0753) 32821 (eve).

EINSTEIN computer single drive, Spectrum emulator, Wrdpro, Scrabble, games, books manuals £100. Tel (0429) 871130.



Available now for the Amiga, Atari ST and PC.

The ***Printercept*** allows your computer to appear to another computer as if it were a printer, enabling you to transfer files (text and black and white pictures) with great ease, retaining file formats (bolds, italics etc).

If you ever use more than one computer then the ***Printercept*** is for you! Save hundreds of hours of re-typing – a nuisance.

Be part of the communications revolution!

CAMBRIDGE COMPUTERS Z88

Also available from the Music Suite,

the **Z88 to ST/Amiga link.** – software £19.95, cable £12.95.

** Special package price consisting of a Z88 computer with Atari ST or Amiga link: **£245 inc. VAT and delivery.**

** **Z88 computer pack:** Z88 computer, 128K ram pack, mains adaptor, carrying case, Amiga or Atari ST link software and cable **£295 inc. VAT and delivery.**

Place your order direct on our:

CREDIT CARD HOTLINE: (0239) 710594 (Visa/Access) or

FAX: (0239) 711343.

Cheques or P/O's to 'Music Suite Ltd.', Cenarth, Newcastle Emlyn, Dyfed SA38 9JN.

Trade enquiries welcome.

T. C. COMPUTERS

12A Barnards Way, Charlton Heights, Wantage, Oxon, OX12 7EB.
Tel: Wantage (02357) 60177

AMIGA A500

Amiga A500 Batman Pack	£359.00
Amiga A500 Flight of Fantasy	£369.00
Amiga A500 Appetizer Pack	£379.00
(Word Processor / Paint Program / Music Program / Game)	
Amiga A500 inc TV modulator & 2nd disc drive	£439.00
Amiga A500, 1Mb RAM inc TV modulator & Game	£449.00
Amiga A500 & Colour Monitor	from £579.00
Amiga A500 System Pack	£749.00
(A500 / Colour Monitor / Printer / The Works Software)	
Amiga A500 Class of the 90's Pack	£539.00

AMIGA 2000

Amiga 2000 / A500 Upgrade with 40Mb Hard Disk	£1099.00
Amiga 2000 CPU Base Unit	£975.00
Amiga 2000 & Colour Monitor	£1199.00
Amiga 2000 / PC Pack	£1525.00
(2000 / Colour Monitor / XT Bridge Board / 5.25 drive / 20Mb HD)	

Too much to list please call for other systems and prices

PERIPHERALS

TC Amiga Console for the A500 (keep things together)	£39.00
512K RAM/Clock expansion	from £59.99
Commodore A501 RAM/Clock expansion	£129.00
Commodore 1084S Colour Stereo Monitor	£259.00
Philips CM8833 Stereo Colour Monitor	£249.00
Cumana CAX 354 1Mb External Disk Drive (Disable/Enable)	£89.00
NEC or Citizen 1Mb External Disk Drive (Disable/Enable & Through)	£79.50
Star LC-10 80 col. 144cps. Dot Matrix Printer	£169.00
Star LC-10 80 col. 144cps Colour Dot Matrix Printer	£212.00

Software at up to 30% OFF RRP...Phone for prices
All prices inc. VAT and are subject to change without notice

GUNFIGHTER



USE YOUR VOICE TO OUTDRAW THE GUNFIGHTER

CASH PRIZES

0898 31 35 94

INFODIAL POBox 36 LS1 4TN Call charges 25p Per Min Cheap 38p Per Min All Other Times

---

QUALITY SHAREWARE for the PC on QUALITY DISKS

1000's of programs available on all subjects - catalogue on disk (5 1/4 or 3 1/2)
All Software supplied on
Verbatim Branded Disks.

PRICES
5 1/4" 10 for £10.00
3 1/2" 10 for £14.00

VISA

BPD & SL
17, KNOCKBREDA PARK
BELFAST BT6 0HB
Telephone:
0232 645942

AMIGA & ATARI ST GAMES

Compute-iT THE GAMES CENTRE

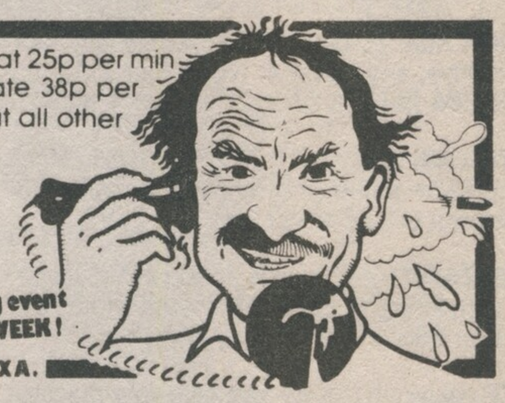
161 HIGH STREET, TEWKESBURY, GLOS GL20 5JP
TEL: TEWKESBURY (0684) 290097

MEL CROUCHER -COMPUTER FUN LINE

0898 299399

charged at 25p per min cheap rate 38p per minute at all other times

New entertaining event Starts EVERY WEEK!



Proprietor-B.Everiss, PO. Box 71. Kineton, Warwick, CV35 0XA.

ALL COMPUTER HARDWARE AND SOFTWARE WANTED FOR CASH OR EXCHANGE

NOTHING REFUSED!!

01 727 0424

COMPUTER REPAIRS

Specialists in Home and Business Computers, all makes repaired.
ATARI, AMSTRAD, COMMODORE, SPECTRUM, SINCLAIR etc.
Atari Approved Service Centre.
We also repair Printers, Monitors, Disk Drives etc.
FREE estimates, all work fully guaranteed.

A.M.C., UNIT 4, WESTON ROAD INDUSTRIAL ESTATE, STRATFORD-UPON-AVON, WARKS, CV37 0AH
0789 292269

An Edited Company Presents

TOMB OF DEATH



TEL: 0898 100634

K'Helm box 256, NN1 4AL
calls cost 25p/min off peak/38p other times.

VACCINE

A new hardware Virus protector for the Amiga.
Keeps discs safe from all boot block virus.
Only £19.95 *+ £2.50 P&P VAT inclusive.*

Special introductory offer free virus killer disc with all orders received before July 31st 1990.

Cheques & PO's payable to **A.M. ROE ELECTRONICS**
31 PEATFIELD ROAD, STAPLEFORD, NOTTS NG9 8GN
TEL: (0602) 396353

COMPLETE SYSTEMS

XT-12MHz -20Mb HDisk £499
12MHz, 3.5" or 5.25" fdrive, 102kboard, mono
286-16MHz - 20Mb HDisk.....£699
16MHz, 3.5" 1.44mb drive, 102 kboard, mono
386-16MHz SX spec as above.....**£855**

Add £100 for VGA mono, £260 for VGA colour
Add £80 for 40mb (28ms) hdisk
COMPONENTS - eg 3.5" 1.44mb drive £54, Case + 200w power supply £75, multi i/o £23 & others

K&O PRODUCTS

Tel: 071 249 3620 Mon-Sat 8am-8pm

ATARI LYNX

ONLY £157.00

INCLUDING: CALIFORNIA GAMES CARD, MAINS ADAPTOR, POST AND PACKING

GAME CARDS: Blue Lightning, Electrocop, Gates of Zendocon, Chips Challenge: ONLY **£21.00** each inc. P&P
Gauntlet III, Rampage: ONLY **£24.50** each inc P&P

CHEQUES/P.O.s PAYABLE TO "COMPUTERS BY MAIL"
All prices completely inclusive. Prompt service by 1st class post.

ALL CORRESPONDENCE TO
COMPUTERS *by* MAIL
PO BOX 668 BEARSDEN GLASGOW G61 1BL

Proprietor: Mr J Elder, 115 Ravelstone Road, Bearsden

COMPUTER REPAIR SPECIALIST - COMPUTER REPAIR SPECIALIST

COMPUTER SALES & SERVICE

COMPUTER REPAIR SPECIALIST

We charge just £15.00 labour plus the cost of the parts fitted.

MGT SAM COUPE IN STOCK

WE CAN SUPPLY PARTS AND ADVICE ON YOUR COMPUTER.
MGT DEALER
AMSTRAD BUSINESS DEALER

More information? Call PHIL on **0909 487820**
P & J ENTERPRISES, UNIT 1, CANAL TERRACE, WORKSOP, NOTTS

COMPUTER SALES & SERVICE

COMPUTER REPAIR SPECIALIST - COMPUTER REPAIR SPECIALIST

YOU CAN'T TRUST MAIL ORDER!

How many times have you thought this? Have you tried mail order companies and been disappointed with the service you received?

MAYBE you placed an order and had to wait weeks/months for your goods to arrive. We only advertise items we have in stock. All our hardware prices include courier delivery to your door. We will dispatch your order quick. No more waiting around for weeks, and at prices we believe to be very competitive. Give us a try, you won't regret it!

ATARI 520 STFM BASIC PACK.....275.00	ATARI MONO MONITOR £95.00
ATARI 520 STE POWER PACK 359.00	AMIGA EXTERNAL 3.5 DISK DRIVE 70.00
ATARI 1040 (CHOICE OF 3 PACKS).....449.00	STAR LC10 MONO PRINTER.....169.00
AMIGA A500 FLIGHT OF FANTASY PACK..359.00	STAR LC10 COLOUR PRINTER 239.00
AMIGA A500 CLASS OF 90'S PACK 519.00	BLANK 3.5 COLOURED DISKETTES
ATARI EXTERNAL 3.5 DISK DRIVE 78.50	RED, YELLOW, BLACK, GREY, BLUE
ATARI LYNX CONSOL £165.00	*100% ERROR FREE GUARANTEED*....10 FOR 6.50

THESE are just a sample of our prices. If you can't see what you want it doesn't mean we haven't got it. If we haven't got what you want we can get it!! FAST!! Don't forget all prices include VAT. Delivery on hardware is FREE. For orders below £50 please add £2.00 P&P. Please ring for all your ST and AMIGA requirements. CALLERS WELCOME.

DRIVE [A] COMPUTER SUPPLIES
9 WELLINGTON CHAMBERS, SMITH STREET, ROCHDALE,
LANCS OL16 1TU
TEL: (0706) 861104

Access MasterCard VISA

PD & SHAREWARE

PC	5.25" disks	£1.20	**ATARI**	ST/STE	
	3.5" disks	£1.50		All disks	£1.50

Write or phone for catalogue - Tel: **(0706) 344106**
Disk catalogue available £1.00 (PC state 5.25 or 3.5)
When ordering catalogue please state PC or Atari

BG Computers, 11 Roch Mills Crescent, Rochdale OL11 4QW

ATARI ST & STE PUBLIC DOMAIN

Send for your Disk Catalogue now!

This issue includes
News, Tips, Demos (not 1 but 2!), Utilities,
Competitions and details of all our
Public Domain & Shareware software

For your copy simply send a blank disk (we'll pay the return P&P) or if you're out of blank disks send £1 to

THE OTHER PD LIBRARY
108 KENMARE ROAD, WAVERTREE,
LIVERPOOL L15 3HQ

R J COMPUTERS SALES & REPAIRS

Amiga Batman or Flight of Fantasy Pack £369.00	**PRINTERS: Star LC10 (inc cable) £165.00 Colour Version (inc cable) £225.00**	**Atari 520 STFM Discovery Pack £285.00**
Atari 520 STE Powerpack £359.00		**3.5" disks from £5.75 for 10**

Tweety boards £12.50!! LIMITED OFFER.

30 Westbourne Rd, Downend,
Bristol, BS16 6RX Tel: (0272) 566369

COMPUTER REPAIRS

2nd hand computers bought & sold.
Unwanted, damaged computers bought for cash.
Tel: 051 548 6940/051 549 2172/0695 25881
Future Electrical Instruments & Services
10 Webber Road, Liverpool, L33 7SW

clipart



Over 2000 simple clipart pictures in 4 sets. Each set has a printed picture catalogue.
Sets 1 to 4 £14.99 each Inclusive VAT & 1st class same day post.
Buy 4 sets + catalogues for £44.97 save £14.99 For Timeworks, FSE, Ventura etc.
FREE! 2 clipart sets (normally £29.98) with DeskPress purchase.
Also Timeworks trade in deal for DeskPress. Phone!

PD from £1.75
3½ disks only 50p extra.

Public Domain
IBM & PC compatibles

Inclusive of VAT & 1st class post.

FREE PD & Shareware catalogue or £1.00 for disk and book catalogue (state 3½ or 5¼ Disk) Refundable with first order.

Country Publications
Dept NCE, 79-79a Highcroft Ave.
Oadby, Leicester. LE2 5UH
Tel: (0533) 715160
Open 9-30 to 5-30 Closed MONDAYS and 1st 2 weeks in July.

VISA

nova PD

FAST, PROFFESIONAL AND FRIENDLY AMIGA PD SERIVCE

HIGH QUALITY PUBLIC DOMAIN DISKS

£2.00 OR LESS*

Two Disk Catalogue £2.00

We'll get any PD disk for you - NO EXTRA CHARGE
NO EXTRA FEES - Write for overseas postage
FREE MONTHLY PRIZE DRAW
ALL Libraries available (Fish, TBAG, AGATron etc.)
Latest demos, animations etc.
Discount Hardware/Software/Disks etc.
eg. PHOTON PAINT 2 £49.99 SONIX £39.99
DIGIVIEW GOLD V4 inc. DIGIPAINT £119.99
NEW Amiga BBS (0295) 275045 (24hrs)

A SAMPLE....
Jazzbench
Nudge Nudge Demo (2 disks)
Viz Slideshow
Rebellion Music
Newtek Reel 3 (1 Meg) (2 disks)
Sozobon C - Full version
8 Channel Soundtracker
AMOS Demo
AGATron Star Trek (2 disks)
Roger Dean Slideshow
All the above are £2 per disk.

* Prices start at £0000
Cheques/POs Payable to NOVA

NOVA (NCE5), 30 Parsons St, Banbury, Oxon OX16 8LY ☎ (0295)262029

CONSOLE MA'ZINE

NEWS, REVIEWS AND MUCH MUCH MORE FOR ALL MAJOR CONSOLES
A MUST IF YOU HAVE OR ARE THINKING OF HAVING ANY CONSOLE!
JUST £1 PER ISSUE
PHONE NOW ON 0602 606442

The South West Software Library

Public Domain Software for the Atari ST

Software tools from ARC to ZOO - and so much more. The best catalogue (current update level 5.0) and fast friendly service.

Write:
The South West Software Library
PO Box 562, Wimborne, Dorset. BH21 2YD

See us on stand 101 at the 16 BIT COMPUTER FAIR

THIS SPACE CAN BE YOURS FOR ONLY £35!

To find out how it can work for you, CALL SOPHIE EADES NOW!!!
ON: 0225 442244

COMPUTACHAT

Are you a computer games player, programmer, musician or artist?

Would you like to talk to others like you to swap hints, tips, pokes or even software (must be originals or PD).

Are you interested in forming a group to buy blank disks or cassettes in bulk or would you just like to chat in general about computer orientated activities.

RING COMPUTACHAT ON

0898 338939

EXPERTS ON HAND TO ANSWER ADVENTURE QUERIES

TME PLC, Box 54, South West Manchester M15

Calls charged at 25p/min "cheap" rate - 38p at all other times

COLOUR MONITORS 12" High resolution, RGB input, IBM compatible, in screening case and with psu, ready to use. Brand new £89.00 + £5.00 delivery.

31/2" DOUBLE SIDED DOUBLE DENSITY DISK DRIVES all by the famous Japanese EPSON Co. All these models in stock with maker's data: SMD 24OH, SMD28OH, SMD24OL, SMD180B. Also 51/4" Models SD540 & SD58OL, all brand new and will work with most computers and offered at £59.50 each + £3.00 delivery.

31/2" DOUBLE SIDE NEC disk drives still available but not many left, will work with the Altra St etc. £59.50 + £3.00 delivery.

CHINON 31/2" single side for BBC and many other PC's. Cased and with leads, last few only £39.00 with data. Post £3.00.

ATARI 65XE PC tested and as new and guranteed less PSU. Only £35.00. Why not have one as a spare. Post £3.00.

PRINTER PLOTTER by Sharp originally listed at £150.00 brand new with data showing how to use it with other PC, £16.00 + £3.00.

DATA RECORDER Acorn for BBC, Electron etc £12.00 + £2.00 post.

PHILIPS BLACK AND WHITE MONITOR New but uncased £16.00 + £5.00 post.

SUPER MULTITESTER Ex British Telecom, as new tested and guranteed. Original cost probably over £50. Yours for only £7.50. Leather case for this £3.00 + £2.00 post.

Telephone Orders Welcome
0273 430380

M & B Electrical

12 Boundary Rd, Hove, Sussex BN3 4EH. Fax 0273 410142

ADVENTURE HELPLINE

Do you play computer adventures? Have you ever been faced with a seemingly impossible situation?

WE CAN HELP

Our adventure rescue team work 7 days a week until midnight and will be pleased to answer your queries. We offer help with any games or any computer - so if you are tearing your hair out ring this number NOW!

0898 338 933

T.M.E Plc 10b Hulme Hall Road. Manchester M15 4LY

Calls charged at 25p min "cheap" rate/38p at all other times

HEATH COMPUTERS

EST 1984 **SALES + REPAIRS + +SPARES.**

SPARES		
6510	CPU	10.95
6526	CIA	11.50
6581	SID	15.00
8569	VIC	25.50
Kernal ROM		11.20
Basic ROM		12.20
Char ROM		9.25
PLA		9.75
8501 CPU		12.20
8360 VIDEO		21.50
Amstrad SPARES		POA
AMIGA SPARES		POA
CBM 128 SPARES		POA
Sinclair SPARES		POA

REPAIRS	
CBM 64	30.00
CBM 16	30.00
CBM +4	30.00
CBM 128	30.00
CBM 1541	30.00
CBM PRINTERS	30.00
MICROVITEC MON	30.00
AMSTRAD CPC	30.00
BBC B	30.00
SPECTRUM 48K/48+	20.00
SPECTRUM 128/+2	20.00
AMIGA A 500	40.25

ANY OTHERS PHONE

SPECIAL OFFERS

AMIGA INTERNAL DRIVE REPLACEMENT ONLY £95.00 JUST SEND AMIGA WITH CHEQUE.

ALL PRICES INCLUDE VAT & P&P
REPAIRS 24HR TURNAROUND
3 MONTHS WARRANTY

021 707 7160

OFFICE 10, I-MEX HOUSE, KINGS ROAD, TYSELEY, BIRMINGHAM., B11 2AG.

15 AMIGA originals for sale £8 each. Write to 17 Curlender Way, Hale, Liverpool.

● SERVICES

'SEGA Mode' The best bi-monthly mega'zine available for the Sega. Subscribe to Andrew Hudson, 6 Albemarle Road, St. Ives, Cambs PE17 6UN. for only £4 for 6 issues + 1 free!!!

STE Power Pack wanted also contacts. Tel: (0250) 5108.

AMIGA contacts wanted, send disk with stuff for prompt return. Your lates for my lates. Write to C Smith, 98 Murillo Road, Lewisham, London SE13 5QQ.

WANTED: All C64 owners who want to join Crystal Unicorn a system of users to swap ideas, tips and PD interested? Call Steve on 081 845 0259.

AMIGA disk mag starting, send contribution to Mr V Lawrence, 62 Pelican Road, Pamber Heath, Basingstoke, Hants RG26 6EN. Articles and demos welcomed, disks sent with magazine.

MEGA drive cartridge hire club £10.00 membership includes first hire free and newsletter. Phone Tony on (02271) 46155 or Steve on (0271) 815489.

AMIGA contacts wanted for the latest stuff. Ring Basil on 081-682 3260. No lamers OK. UNS contacts also wanted only latest titles.

SEND a disk of demos or PD stuff and receive a disk of PD stuff. Send with SAE, no extras. G White, 9 Wood St, Glasgow G31 3B7.

GENEALOGY wonder about your family name? Trace your ancestors. Computer printout of the history of your family name. Details + £2.50 to Peter, 80 Cranbrook Road, Bristol BS6 7DB.

CBM64 pokes, hints and passwords galore. Over hundred pokes, loads of hints, passwords and maps £1 for booklet. Send SSAE, N Price, 64 Plumberow, Basildon, Essex SS15 5LQ.

THE 16 Bit Exchange Club, free membership, only £1.50 per swap. Send SAE to Russ, 4 Sandown Road, West Malling, Kent ME19 6NS.

PD software for Amstrad's. Send S.A.E. for details: Alan Scully, 119 Laurel Drive, East Kilbridge, Glasgow G75 9JG over 200 progs. Also PD wanted (cassettes).

VIDEO shop owners! Own an ST? I have the perfect program for you. I will customise it to your needs. Ring Dave 091 4835612 5-9pm.

SOFTWARE developed for IBM PC experienced programmer offers his skills for negotiable renomeration. Contact Jeremy Aston on (0903) 776602.

LABELS printed addresses advertising etc.. Large and small print available, reasonable rates, send S.A.E. to 62/6 Longfellow Road, Kings Norton, B'Ham B30 1BD.

I know hundreds of people with Amiga software to swap. Send SSAE to: Janek Newton, 104 Scotland Road, Penrith, Cumbria CA11 7NR for more details.

AMIGA mouse repairs done for a small price. Phone Yucel on (0202) 477658.

AMIGA coder wants help to get started out. Call me on (0202 477658. I live in Bournemouth OK. Ask for Hairgel.

WANTED: Freelance computer work (DTP/CAD/WP/etc). Phone Michael on (0443) 472494 most evenings.

YOUR computer can easily earn you £100 weekly. Discover experts secret. Free details S.A.E. to J Stanley, 15 Balaclava Road, Roath, Cardiff CF2 5BB.

ONLY 40p for all the info we have on a particular game(s) eg maps, pokes, tips etc. Send 40p to 4 Chitty Walk, Keens Park, Guildford, Surrey GU3 3HW. Free P+P. Allow 21 days for delivery.

AMIGA corrupted disks repaired. Send £1.50 per faulty disk (charge includes cost of new disk if required) to Tony Corken, 81 Laharna Avenue, Larne BT40 1NY.

AMIGA send disk containing something (anything), get my cheats disk in return (nothing gets nothing back). Jerry Lakin, 132 Windmill Road, Marham, Norfolk PE33 9LD.

FIRST class CV's, letters. Reasonable prices, special prices for unemployed. all work done in complete confidence, UB40 proof may be required. Rig Martin 081 903 5428.

MENU driven PC shareware from £1.25 per disk. Send SAE for disk catalogue to B. Guy, 8 Berrylands, Orpington, Kent BR6 9TF. State 5.25" or 3.5" disk.

STUCK on a game? Write for help including game/machine name and S.A.E. to Tip Finders, 44 Scotland Drive, Dunfermline, Fife KY12 7TD. Quick response guaranteed.

GAMES Exchange Club, all Commodore computers, free membership, swap those boring games. Send S.A.E. to T.G.E. (CE), 106 Ardgowan Road, Catford, London SE6 1UU.

AMIGA send disk containing something (anything), get my cheats disk in return (nothing gets nothing back). Jerry Lakin, 132 Windmill Road, Marham, Norfolk PE33 9LD.

GAMES Exchange Club, all Commodore computers, free membership, swap those boring games. Send S.A.E. to T.G.E. (CE), 106 Ardgowan Road, Catford, London SE6 1UU.

● GOODS WANTED

TANDY 102 computer wanted. Must be cheap. Please ring quickly for cash on the spot (eve) (04024) 70948 ask for Paul. Thanks

ANY backup device (cartridge) also a PC emulator for Atari 520STM. Ring (0705) 257765. Portsmouth area.

APPLE III system software wanted ie Pascal and pro-file, Shadow drivers, comms package etc. Ring and leave details on 081 965 7756 any help appreciated.

ATARI STFM has anyone got an unwanted game of Bard's Tale 2 or Ultima 1, 2 or 3. Willing to pay. Please phone (0670) 855189.

WANTED Any software for TRS80III LDOS or TRSDOS anything. Phone (0242) 584454/576560.

DELUXE scrabble on Amiga wanted also Trivial Pursuit £8 approx offerd. Also any other board games would be considered. 41 Springmill Street, Bradford, W Yorks BD5 7EF.

WANTED Parker games Popeye, cartridge for Atari XL/XE. Kev (0992) 761706.

WANTED colour monitor, second disk drive. Anything Atari 520. Can collect within reason. Phone (Derby) (0773) 826743 anytime.

MONO monitor needed for Atari ST will pay up to £70. Contact Robert on Sheringham (0263) 825454.

WANTED PDs for STE want to build up library. Please send list to: Shakil Glaffar, 23 Brook Close, Hillfields, Coventy CV1 5JJ or tel (0203) 226746.

WANTED Any software for TRS80III LDOS or TRSDOS anything. Phone (0242) 584454/576560.

PLACE AN AD FREE!

Selling an old computer?
Need some help?
Got any tips?
Run a bulletin board?
In charge of a consumer group?
After a second-hand bargain?

● You've come to the right place. Just fill in the form to place a free classified advertisement in Shopping Express

● Send your reader ad to:
Reader Ads Department
New Computer Express
30 Monmouth Street,
Bath BA1 2AP

READER ADS ORDER FORM

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

☐ HELP OFFERED ☐ GOODS WANTED ☐ USER GROUPS ☐ BULLETIN BOARDS
☐ BUGS DISCOVERED ☐ EVENTS ☐ SERVICES ☐ VIRUS WARNIG
☐ ANNOUNCEMENTS ☐ MINI-TIPS ☐ FOR SALE ☐ PERSONAL

NAME _____

ADDRESS _____

_____

TEL: _____

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

_____

THE PD COLUMN

There is a lot of software out there available for the price of a disk. This week Adam Waring looks at some of the demos for the Atari ST and the CPC, and he instructs you on where to go for the best of the lot.

There are many different types of program available in the public domain. Some are more useful than others. They range from full implementations of sophisticated languages, to simple routines that speed your mouse up.

The most useless of all, though, are demos. They don't serve any real purpose. Very few have any kind of human interaction at all. The only thing you can do is sit tight and look at them.

Yet demos still come by the bucketload. Enthusiastic collectors have hundreds tucked away in their disk boxes. PD libraries have tons of them listed in their books. Why then is there so much interest in what is such an apparently useless product?

Well, it's because demos are visual extravagnzas. They are normally extremely well written programs, and can be a pleasure to watch. The programmers try and squeeze in as much impressive coding as they can, battling against memory restrictions and processor time – but most of all, battling against the writers of other demos. The competition is very fierce, and there's an awful lot of one-upmanship in the world of demo-writing.

ATARI ST

There are plenty of demos around for Atari's baby. They range from the run of the mill scrolly messages that you've seen a million times before, to some rather more interesting and unusual examples.

It's all very well, these demos running at lightning speed, pushing state-of-the-art 68000 programming to its limits. But it's a feat everyone could accomplish. The thing is, a demo written in BASIC just wouldn't be a scratch compared to the coded equivalents, would it now? Not true!

Demo City proudly presents *The Ultimate GFA* demo. As the name suggests, it is written entirely in GFA basic, but it is every bit as impressive as those 100 per cent machine code spectacles.

There are around 12 demos on the disk. Admittedly, some are of a better quality than others – some are definitely very impressive indeed.

One of the best is the *Who Dares* demo. This one is very similar to a machine code demo that was doing the rounds a while ago. It has the mandatory bouncy scrolling message, parallax backgrounds, a stunning sound track and much more besides.

There are some really sick people out there. I mean, a demo that does nothing but animate some poor souls head exploding? Surely no-one's interested in that sort of thing...

Oh, you are. Well in that case the *Scanners* demo from The Other PD Library may be of interest. It's based on the enjoyable psychic splatter movie of the same name.

The demo displays a sequence of digitised stills from the film. More specifically, it's that particularly gruesome scene where the TV presenter loses his head. It is beautifully animated, showing everything in gory detail.

On a similar theme, ie films, I came across a demo that attempts to tell the story of *Predator*. A combination of stills from the film, animated sequences, digitised sounds and computer graphics, tied together with a little clever programming produce a very atmospheric show indeed.

Obviously you can't glean total understanding of the plot from this three minute demo – so it's no substitute to

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 (28p stamp) and state MAKE of computer CLEARLY and we'll rush one to you by return.

AMIGA
Currently 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

SOFTViLLE
Unit 5, Stratfield Park,
Electra Avenue, Waterlooville,
Hants. PO7 7XN

SHAREWARE/PD DISKS

For all IBM AMSTRAD PC's and compatibles.
Fully menu driven quality software.
1000's of titles available!!

5.25 disks £1.95 each.
3.50 disks £2.50 each.
1 FREE disk every 5 ordered!

Our members receive disks at
40% discount .... ask for details.

POPULAR TITLES INCLUDE - PC TYPE (3 DISKS), MINDREADER NEW YORK WORD, PC FILE (3 DISKS), FILE EXPRESS (2 DISKS), DREAM (3 DISKS), FREEWAY ACCOUNTS (3 DISKS), FREEWAY PAYROLL (3 DISKS), FREEWAY CASHBOOK (3 DISKS), PC CALC (3 DISKS), AS EASY AS, QUBECALC, PROCOMM (2 DISKS), TELIX (2 DISKS), EASY LINK,BRADFORD, FONTASTIC, LQ, A86/D86, ESIE VARIOUS TUTORIALS, FORD SIMULATOR, SCRABBLE, MONOPOLY, DANCAD (3 DISKS), PC KEYDRAW, THEDRAW, AUTOMENU, DISK COMMANDO (2 DISKS), BAKERS DOZEN - AND MANY MORE.

New titles arriving monthly.

THE SOFTWARE LINK
5A MANCHESTER ROAD, DENTON,
MANCHESTER M34 3JU
(061) 320 - 3242 Monday-Friday 9-5pm
(061) 308 - 4463 Evenings & Weekends

hiring the video. In fact, *Predator* the demo probably won't make an awful lot of sense to those who haven't yet seen the film.

Predator comes once again from Demo City. This library is purely devoted to demos, and their shelves are well stocked, with almost 150 of the things. Another library bulging at the seams demo-wise is Sphinx Software.

This company has millibongs of them, a fair percentage of which arrived on my desk, and the combined weight of which threatened to return the poor piece of furniture to its pre-assembled, flat-pak state.

The Swedish Demo looked like it might be, 'erm, interesting. No such luck though, not a Swede in sight. I couldn't find vegetables of any description. This demo has been put together by scandinavian programmers.

These industrious Swedes do their level best to make their messages impossible to read. Not because of the language barrier though – no it all makes perfect sense in English.

The problem is in the way the letters twist and turn in the most alarming fashion. There are six demos in all. They tend to follow the same old format, but that said, they really take your breath away when you run them. These are well worth the look, and you won't be disappointed.

CPC

So is it only the 16-bit machines that are capable of such spectacular, but superfluous software? Until recently you'd have thought so, but that was before seeing the latest offerings from Robot PD. Robot has got its hands on a couple of rather nifty French demos.

The *Spy Hunter* demo from the Bitmasters starts the ball rolling, with the usual complement of scrolling, flashy effects in the border and so on. It'd be reasonably impressive on a 16-bit, so it's pretty good stuff for your CPC.

It pales into comparison next to the *Malibu Demo*, though. *Malibu* starts off well enough, with a scrolly message at the bottom and a big bouncing logo at the top. Then there's a quick burst of synthesized speech.

It's in French unfortunately, so I haven't any idea of what it actually says – I just hope it's not obscene. Things improve enormously from then on. The music is nothing short of brilliant, it must be pushing the CPC's sound chip to its limits, and as the letters scroll across they split up. All in all, it's clever stuff.

That said, there is plenty of room for improvement for this type of program in the CPC scene. Hopefully, more programmers will be encouraged by the French efforts, and we'll be seeing some real class on what, after all, is the best of the 8-bit machines. (Corks, that's a bit of a sweeping statement, eh readers?)

DEMO HISTORY

The history of the demo goes way back. The first were probably those produced as rolling displays for shop windows. They were like electronic adverts, persuading the punter that the Commodore Pet really was the machine they needed more than anything else.

They highlighted the features of the machine, and while they weren't particulally amazing, compared to today's hottest stuff, they probably sold at least as many computers as their human counterparts, the salesman.

Hacking into games to make them easier to copy cannot be condoned, but it's an important factor in this history lesson. It's where demos really took off, on the sixteen bit machines especially.

It became a tradition to leave a crackers message stating which team was responsible for bringing you the game. Pseudonyms where of course used, only a complete fool would have left their real identity for all to see.

These messages became more and more prominent, until eventually there was more programing skill going into the animated scrolling displays than some of the games themselves. People were getting hold of the latest cracked software, not for the program, but to see how good the hackers demo was.

Hence the demo we know and love was born. Many of the cracking groups stopped bothering to crack the games, and devoted their energies to writing more and more intricate demos instead .

There are of course, mixed reactions to demos. Some people find them incredibly tedious, while others cherish each and every one. At any rate, demos are getting better – so investigate.

WHERE TO GO

• Demo City, 15 The Wind, Dunshalt, Cupar, Fife KY14 7HE. Phone 0337 28159. If it's demos you're after, and you have an ST, Demo City has plenty. Prices are £2.50 per disk, reduced to £2 when you order ten or more.

• The Other PD Library, 108 Kenmere Road, Wavertree, Liverpool, L15 3HQ. Phone 051-734 4465. Another ST-only library. Disks from £2.50.

• Sphinx Software, Erw Fynnydd, Carmel, Llanelli, Dyfed. SA14 7SG. Tons of ST software, including lots of demos.

• Robot PD, 2 Trent Road, Oakham, Rutland. LE14 6HF.

A cassette-based PD library for the CPC. Send a blank tape and 40p for a sample cassette-full of some of the best demos around.■

J P COMPUTERS LTD
SHAREWARE

CROMER HOUSE, 1 CAXTON WAY, STEVENAGE, HERTS SG1 2DF

OPEN 7 DAYS A WEEK 9am-8pm HOT LINE (0438) 362177 INCLUDING TECHNICAL SUPPORT
24 HOUR ANSWERING MACHINE (0438) 314062
WE DON'T STOCK EVERY SHAREWARE DISK ONLY THE BEST FOR IBM'S AND COMPATIBLES

WORD PROCESSORS
MINDREADER
PC WRITE (3D)
PC TYPE II (3D)
PC TYPE + (3D)
GALAXY
NEW YORK WORD (2D)
WORDPLAN
SPELL CHECKER
THESAUR PLUS
PC WRITE SUPPORT I

TEXT PROCESSORS
BLACK MAGIC (3D)
HYPERSHELL
PC OUTLINE
ANSI OF LA
SOFTKEY
RPG EDIT
Q EDIT

DATA BASE MANAGEMENT
PC FILE + (3D)
PC FILE DB (3D)
FILE EXPRESS (2D)
WAMPUM (2D)
DREAM (3D)
FLEXBASE (2D)
LABEL MAKER
CATALIST (2D)
CONTACTS MANAGER

SPREADSHEETS
PC CALC + (3D)
QUBE CALC
AS EASY AS V4
GOAL SEEKER
LOTUS WORK SHEETS I
LOTUS WORK SHEETS 2
LOTUS GENERAL LEDGER

TUTORS
PC TUTOR
TURBO PASCAL TUTOR (2D)
TYPING TUTOR
BASIC TUTOR
MODULAR 2 TUTOR (2D)
DBASE IV TUTOR
C TUTOR (2D)
ASSEMBLER TUTOR
LOTUS & SYMPHONY (2D)
123 TUTOR

ACCOUNTS
FREEWAY ACCOUNTS + (3D)
FREEWAY CASHBOOK (3D)
FREEWAY PAYROLL (3D)
SOAR (3D)
MR BILL (2D)
C.A.S.E. (3D)
CASHBOOK NON VAT
CASHBOOT VAT
FASTBUCKS
HOME ACCOUNTS

GAMES/LEISURE
GOLF
CLASSIC ARCADE I
CLASSIC ARCADE II
CLASSIC ARCADE III
SHOOT EM ARCADE
BOARD ARCADE
STRATEGY
MAZE ARCADE
MONOPOLY
PINBALL WIZZARD
KINGDOM OF KROZ
DRACULAR IN LONDON
SCRABBLE
FORD SIMULATOR
TRIVIA MACHINE (3D)

MISCELLANEOUS
FOOTBALL FORCAST
SKY GLOBE
DEEP SPACE (2D)
FAMILY TREES
PIANO MAN
PUNTERS PAL
CROSSWORD CREATOR

DESKTOP ORGANISERS
HOMEBASE (3D)
AMPLE NOTICE
PC DESKTEAM
DESK COMMANDO

PRINT UTILITIES
SIDE WRITER
L.O.
BRADFORD
FONTASTIC
SIGNSMITH

PROGRAMMING
ARVDMO ASSEMBLER
CHASM ASSEMBLER
SMALL C COMPILER
PC PROLOG (2D)
BASIC INTERPRETER
3 PASCAL COMPILERS
CP/M EMULATOR
E.S.I.E.
MODULAR—2 COMPILER (3D)
FF FORTH (2d)

GRAPHICS/CAD
FORMGEN
EZ FORMS EXEC
PC KEYDRAW (4D)
PC GRAPH
DANCAD (2D)
IMAGE (3D)
THE DRAFTSMAN (2D)
FLO-DRAW (2D)
DROEGE (2D)
PC D.O.G.S. (10D)
ALTAMRA
FINGER PAINT
DRAFT CHOICE
PICTURE CONVERSIONS
DRAW2 ME
PC DRAFT II
FLOWCHARTER (2D)
OPTIKS

COMMUNICATIONS
GT POWER (3D)
KERMIT (2D)
PROCOMM UK
BOYAN (2D)
WILDCAT (2D)
EASY LINK
DSZ
PROCOMM UTILITIES

UTILITIES
BAKERS DOZEN
RECOVERY TOOLS (2D)
FILE SECURITY
POWER MENU
AUTO MENU
MAGIC MENU
DLITE
MASTER KEY
DISK COMMANDO (2D)
FLUSHOT
VIRUS SCAN
UTILITIES I
UTILITIES II
DOS
MS WINDOW TOOLS
WINDOW TOOLS
ANARKEY
NEWKEY
PICZEP
NARC
TEXT FILE UTILITIES (2D)

Disks	5.25"	£2.50each	10=£22	20=£40
	3.5"	£3.50each	10=£32	20=£60

All prices include VAT and P&P
FREE Catalogue on a disk!

Shareware is not free! Its try before you buy

MENU DRIVEN
BEST QUALITY
BEST SERVICE
BEST VALUE

PROGRAMMERS AND ARTISTS REQUIRED TO DEVELOP FOR THE NINTENDO ENTERTAINMENT SYSTEM

"**SOURCE**" a development company officially licensed by Nintendo of America require programmers experienced in 6502 and Z80 assembly language. Graphic artists should have experience across all computer formats especially ST and Amiga. All applicants must be enthusiastic and have a proven track record in the entertainment software industry.

Source offer to successful applicants:

1. Above average basic salary.
2. Royalties on all sales.
3. Large modern offices in the centre of Leeds.
4. Backup from a highly experienced in-house programming team.
5. Working on and possibly designing original games.

Apply in writing or simply telephone our regional office for further information.

The Source,
Lencett House,
45 Boroughgate,
Otley LS21 1AG
Tel: (0943) 467511

Nintendo and Nintendo Entertainment System are registered trade marks of Nintendo of America Inc.

DO YOU WANT TO BECOME A PROGRAMMER?

Established 1968

Move across to the rewarding world of IT.

We have a series of short and long term training programmers in Computing and Information Processing.

* C & G 424/425 Certificate in applications programming.
* C & G 418 Computer Programming & Information Processing.
* Evening courses in DBASE, WP, Spreadsheet Analysis.
* Evening courses in Pascal, BASIC & COBOL.

Contact Central London College on 01-580 4596.

TRAINING FOR YOUR FUTURE

PAL Developments

SHEFFIELD BASED
COMPUTER PROGRAMMERS
Z80/6502/68000/PC.

PAL Developments has vacancies for experienced programmers to work on a variety of computer game based projects. Many of these include internationally famous cartoon characters.

An excellent working environment alongside an already established dedicated team of graphic artists and programmers.

Programmers should have experience of working with either Z80/6502/68000, PC.

Salary negotiable according to experience and ability.

In the first instance apply, preferably in writing, to Mr. A. D. Palmer at the address below, or telephone for an appointment.

Citizen SOFTWARE

4/5 BARMOUTH COURT,
BARMOUTH ROAD,
SHEFFIELD S7 2DH.
TEL: 0742 587555
FAX: 0742 580547

PAL Developments
PALMER ACOUSTICS LTD.
10 YEARS 1977-1987

HiTEC Software

Amiga Programmers

The **MultiMedia Corporation**, an associated company of the BBC, is developing a range of titles for consumer markets on CD-ROM. We have an immediate opening for an outstanding **Amiga** programmer to join our team of producers, designers and software engineers at our new premises in Primrose Hill.

- Candidates must be fluent in **C**, thoroughly familiar with the **Amiga** development environment and enthusiastic to pioneer multimedia publishing.

- Preference will be given to candidates with a training in computer science and who can show examples of published work.

Write in confidence to:
Ted Barnes, The MultiMedia Corporation,
109X Regents Park Road, London NW1 8UR,
or ring 071-722-7595

FREE !! HIGH QUALITY SOFTWARE

**Learn how to write it,
Get a Recognised Qualification
and get a good job.**

One 'A' Level, good GCSE's or equivelent could qualify you to study for a BTEC

Higher National Diploma

in

Software Engineering

**LEA grants are available for this course.
In addition sponsorship providing extra money and a guaranteed job offer upon completion is also available.**

For further details and an application form
Contact:- WATFORD COLLEGE,
Faculty of Technology, Hempstead Road, Watford,
Herts. WD1 3EZ Tel (0923) 57613 (24Hrs)
Course starts 1st October 1990

Splinter Vision Ltd.

ASSEMBLER PROGRAMMERS

P.C. 8086 AMIGA 68000

Having relocated to Stroud (Glos.) we are looking for people to join our expanding team of programmers. If you have experience in one of the above languages and are interested in the leisure software industry please contact us on:

0453 873224

PROGRAMMERS & GRAPHIC ARTISTS

We are looking for experienced programmers and graphic artists to join our in-house development team. If you have a successful track record on product development on any of the following systems then we'd like to hear from you.

ATARI ST ★ AMIGA ★ IBM PC

If you are looking for a highly competitive salary, a friendly working environment and recognition of your skills then why not give me a call on: **0276 684959** or send your details to:

**Dave Marshall
Digital Integration Ltd
Watchmoor Trade Centre
Watchmoor Road
Camberley, Surrey, GU15 3AJ.**

Digital Integration

Ladbroke Computing International

ST World 'Best Dealer' 1989

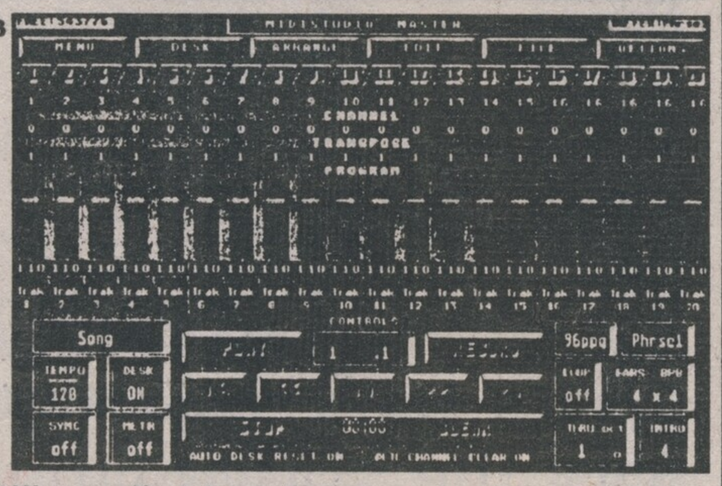
Please Read: Terms Of Sale

All prices are correct at copy date, 21/06/90 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. Delivery, in Mainland UK, is free on orders over £100 (phone for next day courier delivery).

Phone us, We will try to match any price.

Midistudio Master £129.99

- 100 tracks storage, 20 tracks playing simultaneously.
- 240 ppq resolution.
- Realtime mix-down via mouse, realtime clock.
- Realtime scrolling arrange window.
- 11 levels of quantise, including humanise.
- Pipeline/Module system.
- Loop record.
- Midi soft keys.
- Works on 1040STF(M)(E)



Original Midistudio still available at an amazing £49.99

Quality 3.5" Disks

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

All disks carry an unconditional lifetime guarantee. Please add 60p P&P for each pack of ten disks.

A4 Flat Bed Scanner

- 200 Dpi scanner, 16 grey scales or Black/White mode.
- High quality thermal image printer.
- Acts as photocopier.
- Ready to scan in minutes.
- Works with ST, Amiga, PC(+£30), requires 1Mb RAM.
- Comes complete with software, cable, thermal paper. No more to buy.
- Thermal paper available ex-stock at £7.99 per roll.

£449.99

IMG scanner still available at an incredible £49.99

ST & Amiga Memory Upgrades

512K STFM/STM fitted.	£74.99 *	512K STFM, kit.	£49.99 *
512K STE SIMM's, SIP's	£49.99 *	512K ST board+chips, fitted.	£114.99
512K ST board+chips, kit.	£104.99	2Mb ST board+chips, fitted	£224.99*
2Mb ST board+chips, kit	£199.99 *	2Mb STE SIMM's, SIP's, Kit.	£174.99*
4Mb ST boards+chips, fitted	£424.99*	4Mb STE SIMM's, SIP's, Kit.	£349.99*
STFM Blitter chip, fitted	£49.99 *	STFM Blitter chip, kit	£39.99 *
512K Amiga board (no chips)	£24.99	512K Amiga board+chips	£64.99
512K Amiga board (no chips)+clock	£34.99	512K Amiga board+chips+clock	£74.99

*Please check configuration before ordering. Our Atari trained engineers can repair all hardware, including Amigas, in minimum time at competetive prices. Prices quoted for machines not previously tampered with. All upgrades/repairs carry our 90 days parts and labour guarantee.

Monitors & TV's

Atari SM124 Mono	£ 109.99
Philips 8833 Colour	£ 249.99
Philips 8801 Colour	£ 219.99
Philips 15" TV	£ 259.99

Includes: FST, remote control, Scart input, 60 tuner presets, sleep timer and Fastext. Monitors come complete with Scart cable, also deduct £10 when bought with computer.

'1040STE' Power

- 520 STE upgraded to 1Mb.
- Atari Joystick.
- 20 Power pack games.
- Organiser, 1st BASIC, 1st Music.

All for Only £399.99

While stocks last

Spectre GCR

"Power of the Mac, without the price."

- Reads and writes Mac disks.
- Supports most Macintosh Software.
- Supports Hard drive and second floppy.
- Compatible with STE, Stacy.
- 30% bigger screen area than Mac Plus.
- Runs 20% faster than Mac Plus.

Spectre GCR £284.99
With 128K ROM's £384.99

Cumana ST & Amiga 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 slim, quiet and comes complete with integral power supply/data lead. The Amiga drive is slim, quiet and has through port/disable switch. Add £2.50 P&P for drives. ST A/B boot switch, fitted:- £24.99.

Ladbroke Computing Hard Drives

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

42HD 42Mb, 11Ms	£ 549.99	84HD 84Mb, 24Ms.	£ 699.99
48HD/40 48Mb, 40Ms.	£ 499.99	111HD 111Mb,15Ms	£ 829.99
48HD/28 48Mb, 28Ms.	£ 524.99	142HD 142Mb, 15Ms	£ 949.99
61HD 61Mb, 24Ms.	£ 619.99	177HD 177Mb, 15Ms	£ 1099.99
Vortex 40Mb (Amiga)	£ 499.99	Supra 30Mb	£ 474.99

Star Best Selling Printers

All dot matrix printers come complete with Centronics cable which is compatible with ST, Amiga, PC. We can supply cables for other makes of computer for an additional charge. All Star printers include 12 months on site warranty, UK Mainland only.

Star LC-10	140/36cps	£ 169.99	Star FR-10	300/76cps	£ 399.99
Star LC-10 Colour	7 colour	£ 209.99	Star FR-15	15" carriage	£ 499.99
Star LC-10 Mk II	180/45cps	£ 189.99	Star XB-24/10	80cps SLQ	£ 499.99
Star LC-24/10	170/57cps	£ 239.99	Star XB-24/15	15" carriage	£ 649.99
Citizen 120D	120cps	£ 139.99	Star Laser 8	1Mb RAM	£ 2287.99
Citizen Swift	192/64cps	£ 319.99	Atari SLM804 Laser printer		£ 1099.99
Citizen swift Colour upgrade		£ 39.99	FR/XB range colour upgrade		£ 39.99
64K buffer/3 input switcher		£ 79.99	256K buffer/3 input switcher		£ 149.99

SGSnet Network

- Uses Midi ports
- 31Kbaud data transfer rate.
- 32 ST's, connected up to 500ft apart via coax cable.
- Full data correction.
- File locking.
- Networking permissions.

SGSnet Starter kit £149.99 | SGSnet Add on kit £99.99

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 Starter kit £374.99 | Lantech Add on kit £179.99

Phone for best prices on ST, Amiga, Lynx, PC's and DTP packs. Send SAE for full Catalogue.

How to Pay

You can give credit card details over the phone or send a cheque or postal orders made payable to Ladbroke Computing International (please allow clearance time for cheques).

(0772)203166 Fax 561071

Shop & Mail order premises: 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.

To assist us in processing your order please quote this code. **SST4.7**

VOLLEYS AND THUNDER...

Tired of the annual Wimbledon rain-and-hailstones commentary? Colin Campbell takes the covers off of tennis, self-service style

Tennis looks harmless enough, but it's just half a notch down from boxing on the ruthlessness scale. Outrun, outwit and outmanoeuvre the opponent and then psych the son-of-a-bitch. They don't make tennis players like they used to – nowadays they're good.

Computer tennis is much the same. In the past three years it has graduated from tame slap-shot to three dimensional murder. To hell with pretty graphics – we want it rough.

Wimbledon always brings the pre-adolescents on to the streets, armed with racquets and a somewhat less than healthy desire to get in the way of traffic. Some of us have grown out of whacking Slazengers while trying to dodge Vauxhall Vivas and have retired to the safety of silicon.

If you're thinking of taking time out for computer tennis, you're in luck – the choice is limited to half a dozen good games. Here are the *Express* top seeds (plus a few outsiders)...

3D INTERNATIONAL TENNIS

• Palace: ST, Amiga, C64, Spectrum. CPC soon.

Any pretence at aesthetic electro images is hurled through the window in a clear attempt to emulate real tennis fury. All the characters look ridiculous, but they move with such grace. Of all the tennis simulations this is by far the most tennis-like; all the more surprising that it comes from a company not known for attempting to smash pre-determined standards.

At first the wire-frame figures appear unformfortable, but it soon becomes apparent that you can do pretty much anything with the ball. In themselves, top- and side-spin are relatively easy to achieve; getting the spinning ball to land in the appropriate spot is a different matter altogether.

3D Tennis has dispensed with sporting niceties. It's all about earning money and climbing the tables by whipping the trousers off your opponents.

ON THE CONSOLES

For the Sega try *Super Tennis*, but for younger members of the family there's always *Snoopy Tennis*. Sega also has a hand-held game called *Tennis Star*.

However, the Nintendo Gameboy's *Tennis* is nothing short of brilliant. The bigger version loses some of its charm, but is still well worth adding to your collection.

PC Engine owners should try *International Tennis* which makes full use of the console's capabilities.

ADIDAS CHAMPIONSHIP TIEBREAK

• Ocean: C64, ST and Amiga. Other formats soon.

A little less frenetic, but certainly prettier, is Ocean's brand new overhead-perspective tennis effort. Curiously, there's no need to press the fire button, as just getting the joystick movements correct will ensure a good ball.

Tiebreak offers less than *3D International* in its range of shots, and the overhead view lacks ingenuity. But it's good simple fun and offers a broad spectrum of options.

There is the choice of grass, clay or indoor tennis as well as numerous sporting events to try your hand at, including Wimbledon and the French Open. Once again Ocean has served up an ace with this effort.

For those cheapskates among you out there: you might also be interested in budget offerings on the Hit Squad label. For example, for £2.99 Konami *Tennis* and the classic *Matchpoint* are worth a look, even if they are terribly dated.

PRO TENNIS TOUR

• Ubisoft: ST, Amiga, Spectrum

Originally brought out for Wimbledon '89, this French offering gives you the chance to get to grips with the big names in international tennis. Fat graphics are impressive even if movement, while not exactly slow, is some way off blistering.

You view the game from the back of the court and the only difficult part of playing is getting in the correct position to return balls.

In this manner there's little in the way of frustration and Ubisoft has ensured that anyone can quickly graduate to a respectable place in the world rankings. Be warned though, becoming the world number one takes a degree of practice beyond the patience and ability of most people.

TENNIS CUP

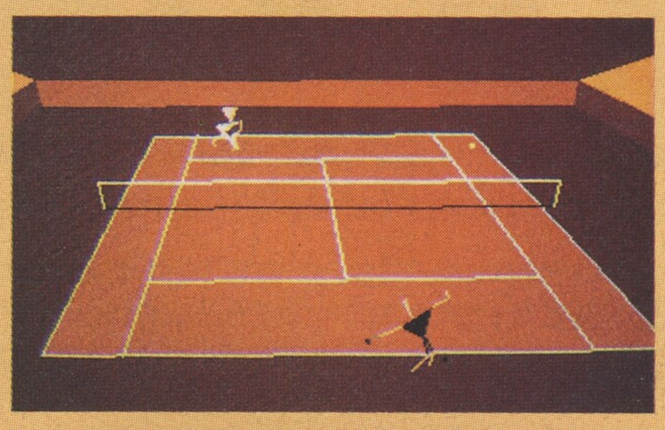
• Loriciels: ST and Amiga

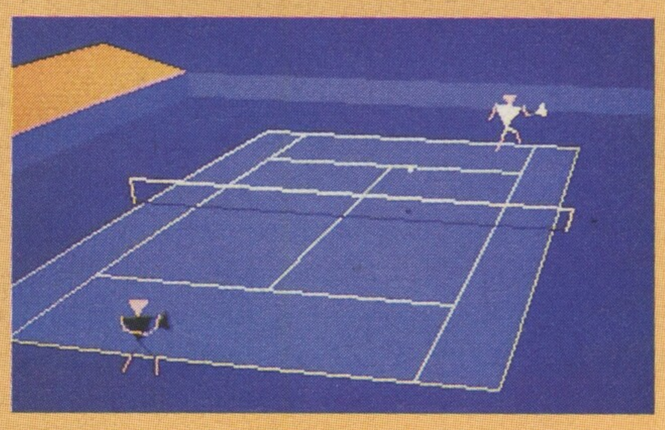
Definitely one of the most complicated tennis games around. The screen is almost multimedia, with split representations and varying sections.

Indeed, it will take concentration on an cyber level to take in all that's happening. Add to this the astonishing range of joystick movements that have to be mastered in order to play the full gamut of shots, and you have an especially challenging game.

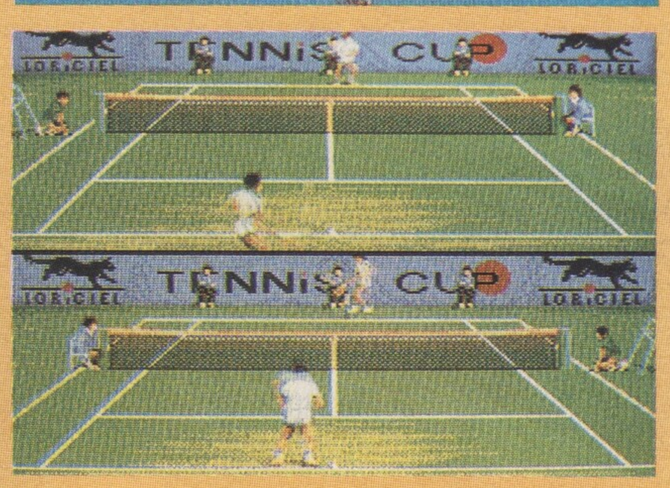
As with most good tennis games, there are plenty of options. *Tennis Cup* has been crafted with style, and is a good way of showing off your hardware as well as having fun.■

SMASH HITS

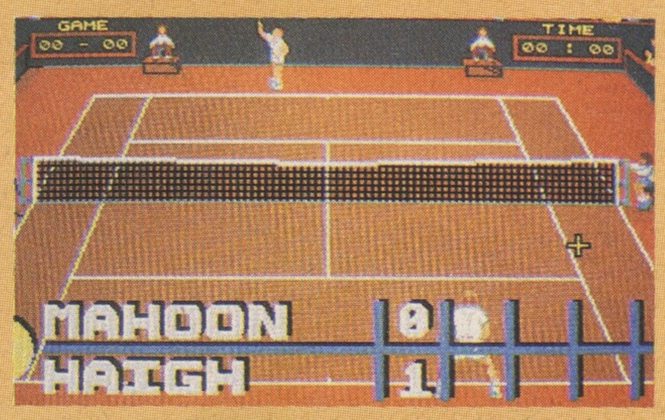


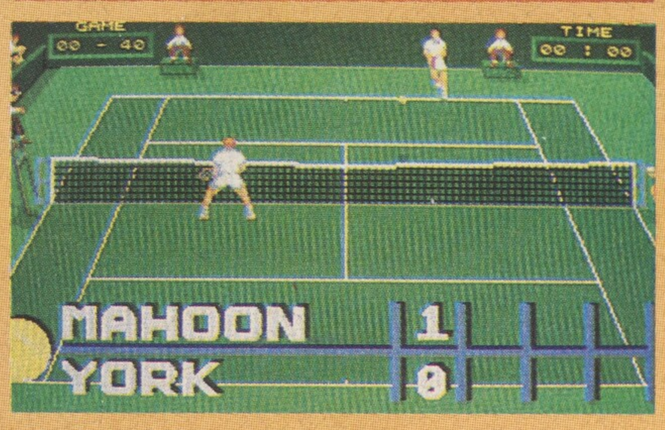


• 3D International Tennis: *most life-like of the lot.*



• Tennis Cup*: it's a challenge to mind and reflexes.*





• Pro Tennis Tour*: a big name boon.*

KICKING UP A STORM

Maff Evans dons his Nikes and heads out to the turf to put *Kick Off* 2 through its paces. Is it another World Cup tie-in searching for the big payoff or is it the next best thing since the original?

A few years ago if anyone had dared to speculate that a small company like Anco (known previously for strip poker games) would come up with a smash hit football sim which would then go on to win the coveted Game of the Year award, he or she would have been laughed into the world of humble mumbles. But Anco was the one to laugh last with the release of the now-classic *Kick Off*.

Many a football game had come and gone, but never before had a computer game managed to capture all the feel of actually booting a ball around the field. *Kick Off*, with it's superb method of control, combined with its breathtaking speed and precision play, managed to bring the athletic atmosphere of a good kick-about into the homes of computer fans. After playing one, all to short, ten minute game it was no surprise to anyone who knew what was good for them that *Kick Off* was such a massive, and instant, success.

Soon enough fans were crying out for more, and Anco released an update in the form of *Kick Off Extra Time* – an expansion disk that allowed the game to be altered with different pitch conditions and adjustable kick power. This boosted the game a little, but was not greeted with anywhere near as much enthusiasm as its predecessor. Now all that has changed – the wait is over. *Kick Off* 2 is here – at the cost of £19.95.

The successor retains all the fun, speed and excitement of the original, but it has a surprising number of additions that make it much more than a straightforward sequel. To begin with, the already excellent graphics have been re-designed, so that the players, ball and pitch are both more detailed and more impressively animated, as well as having clearer and more colourful presentation screens.

Kick Off 2's refinements go much further than cosmetic re-touching and visual embelishments, however. The gameplay has become far more varied and interesting, with more options, competitions and capabilities than you can shake a scarf at.

A full league or cup competition can be played, with each person (up to four people can play at once) selecting a player to represent them as they bid for Barnes and Baggio like glory. Furthermore, different team formations can be called up during the game at the press of a button, and you can even substitute a player who isn't playing to the best of his ability. The 'play in position' option which was introduced in *Player Manager* is also retained.

If you own a copy of *Player Manager* and wish to make use of teams and tactics you've already designed, then simply get your *Player Manager* 'saves disk', load up the necessaries and get on with playing. By combining Player Manager teams and tactics with *Kick Off* 2, what you have in effect is a two-player Player Manager!

One of the most interesting features of *Kick Off* 2 is the ability to load in 'special events' disks, such as Superleagues and European competitions. In fact, the package comes with World Cup '90, a tournament which includes all the teams in the real tournament – even the same groupings!

Add to this the ability to design your own kit, include curve shots, different pitches (normal, wet, soggy and the incredibly fast plastic pitch) and variable wind strengths (the high wind is almost ridiculous). The only thing more realistically footie-like than *Kick Off* 2 is getting signed up to Accrington Stanley!

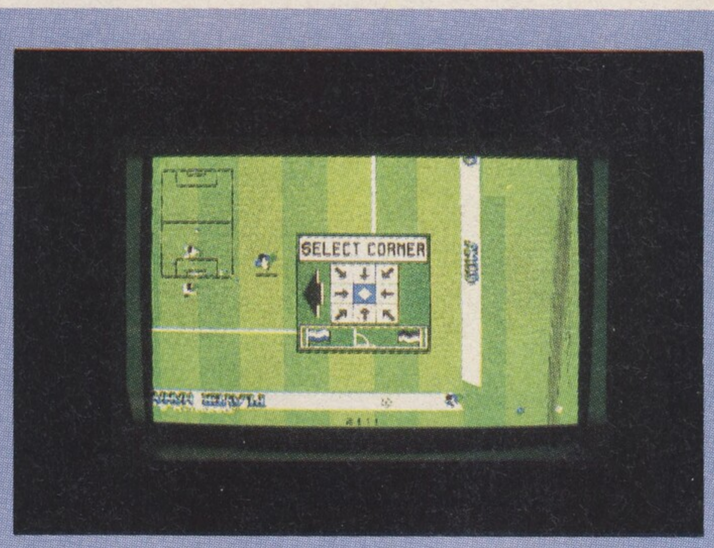
The anticipation of *Kick Off* 2 which had been instilled in fans by the original has been more than justified. It's incredible how much has actually been added to the original – going back to plain old *Kick Off* is now almost impossible!

In summation, the graphics of *Kick Off* 2 are superb, the sound realistic and the playability out of this world. If this game doesn't have the same success as *Kick Off* and *Player Manager*, then the earth has been zapped by an alien stupid-o-ray. Get hold of the money any way you can, and go out and buy a copy now. It's the computer football event of the year!■

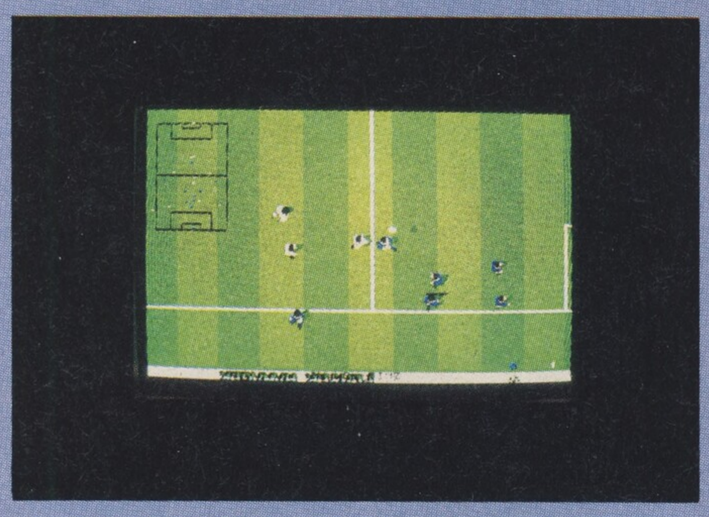




1 • Play in a realistic World Cup competition. All the groupings and team performances are based on this years tournament taking place in Italy, so that even the computer players give realistic results.



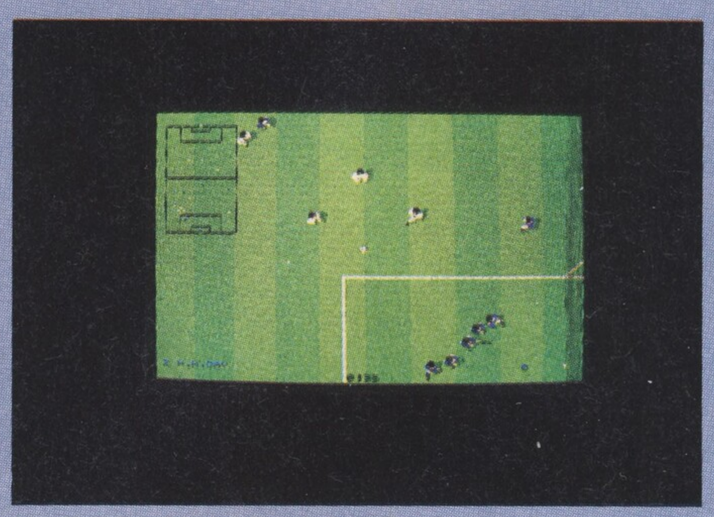
2 • The re-designed corner section now gives even greater control over the ball, from precise shot bending to setting the power behind the kick. Just right for those speedy banana shots into the corner of the net!



3 • A frantic scrabble as the blues try and clear the dangerous ball. Kick Off 2 sports improved goalkeeping though, so the defence doesn't need to worry too much about letting the ball slip through.



4 • Each team can have both the first and second strip customised to taste. Yes, you could have England playing in a pink and green strip - but you're a bit warped if you do!



5 • The blues build a defensive wall against a free kick. Complex set pieces can be carried out by the attacking team to try and break through the shielding defenders and catch the goalkeeper off his guard.

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!

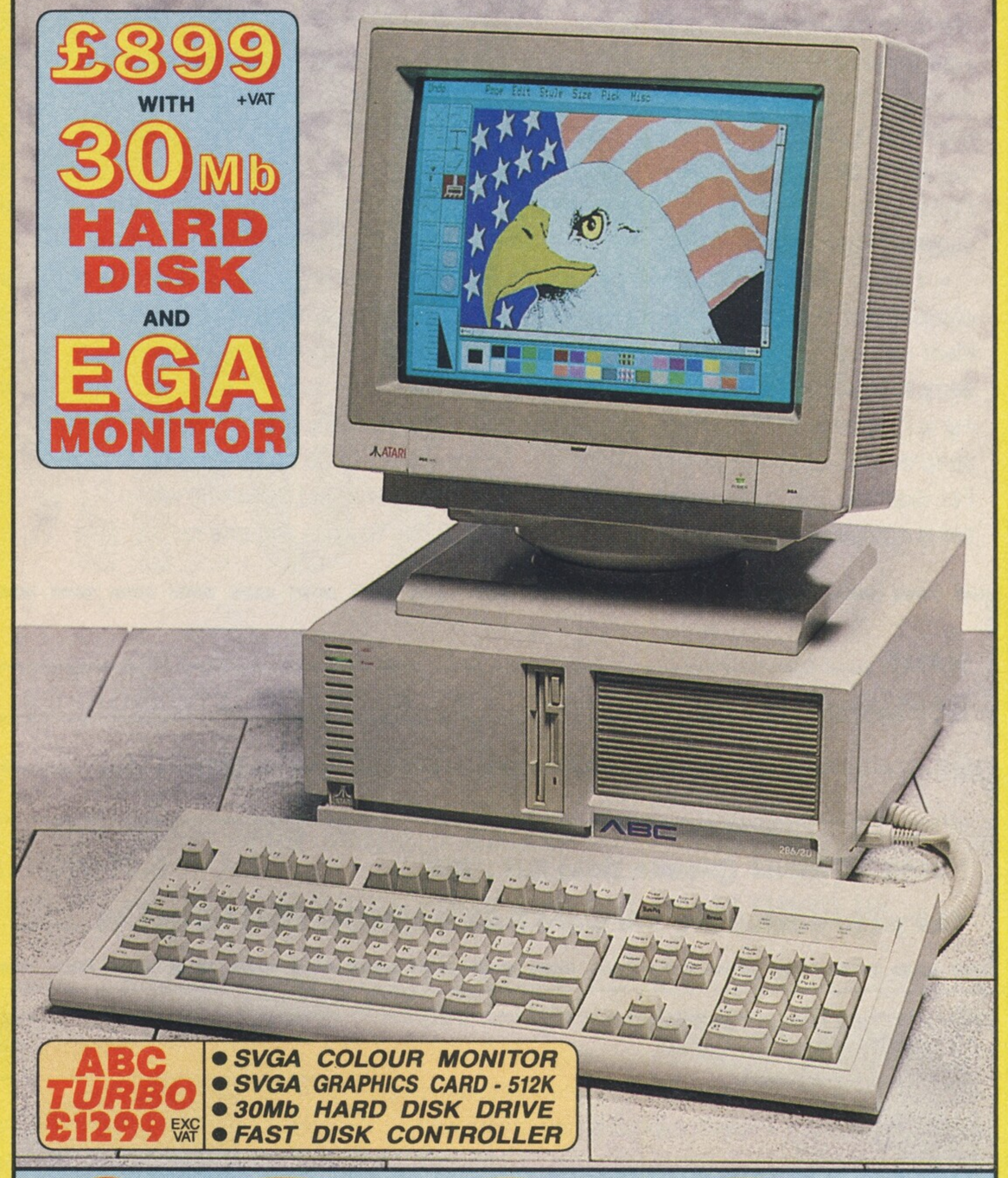
CPU+MOTHERBOARD	• 8Mhz 80286 16-bit CPU • Landmark Speed = 10.3Mhz, Norton SI Test = 9.0 • Latest NEAT (New Enhanced AT) technology chip set • Has user selectable bus, DMA speeds & wait states • Programmable to operate at 0 or 1 wait states • 640K RAM base memory (expandable) • Motherboard expandable 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 NCE-0690-28, 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.

Win Portex perfection for your PC

Just the Word

The time has come to stop filling out your personal organiser pages in smudged pen or broken pencil stub – you have a printer and you're going to use it. PC owners can now win Portex Professional and simply print out on the supplied FiloFax sized paper.

Portex will run on all IBM PCs and compatibles. It operates in memory resident mode and comes with a pop-up diary, address book, automatic file saving and appointment management options, among other essential utilities. For example, the built-in word processor is complete with a spelling checker, a mail-merge facility and more drivers than you would find at Brands Hatch. Our sister magazine *PC Plus* said in a review of Portex: "The results are smart, legible pages plus a near-priceless back-up in case the worst happens and you lose your Fax. A thorough product."

Once you've got everything set up you can print out using the right sized paper for your organiser, in a variety of colours, compatible with tractor feed printers and even Hewlett Packard cut-sheet laser printers.

Portex Professional would normally cost you £149.95 and, with VAT on top of that, you would be talking about £172.44. You can win one for the price of a stamp simply by sitting back with your copy of *Express* and leafing through it.

Somewhere in this issue of *Express* – in the editorial or in an ad – is the word BATRACHOMYOMACHIA. Find the word, then fill in the number of the page it appears on (and that means a page other than this one) in the space provided on the answer form.

Fill in you name and address and send you entry to Portex Competition, *New Computer Express*, 30 Monmouth Street, Bath BA1 2AP, to arrive not later than Monday July 9.

The first five correct entries to be pulled out of the office headgear will be the winners, and the editor's decision is final.

NAME .....

ADDRESS .....

.....

.....

*** DISK FORMAT (please tick) 3.5 INCH ❑ 5.25 INCH ❑**

The page containing the word BATRACHOMYOMACHIA IS .....

WINNERS!

Database Mini Office software goes to the following 24 entrants.

Arthur Lewis, Newtown, Powys; T G Woods, St Helens, Merseyside; P A Payne, Southfield, Northampton; K Penfold, Ringwood, Hants; G Dixon, Golborne, Warrington ; David Butcher, Barnsley, S Yorks ; Ashley Tarver, Leamington Spa, Warwicks; William Dodson, Bramley, Leeds; David Hardwick, Plymouth, Devon; L Oxley, Saltdean, Brighton ; Tony Baker, Basildon, Essex; I F Cornish, Tenterden, Kent; B C Bolger, Falmouth, Cornwall; Uditha Desilva, Bracknell Berks; Ian Johnstone, Uphall, West Lothian ; Ian McCall, Greenhill, Sheffield; Ron Baines, Wolviston, Cleveland; D R Smith, London N12; D Everitt, Norwich, Norfolk; Brian Sherry, Laindon, Essex; N V Shortell, Benfleet, Essex; Keith Crabbe, Bath, Avon; Darryl Wedgner, Hull, Humberside; Brian McGlowe, Belfast.

Well done; the prizes are on their way.

FREE



- **Don't miss out** on Britain's biggest selling computer weekly, packed with the latest news and reviews on the Amiga, ST, PC, Archimedes and CPC – plus specialist columns on other machine types.
- **Don't forget** our unique guarantee – if at any time you are not completely satisfied with your subscription we will refund the cost of all the unmailed issues.
- **Don't waste time** – this offer is for a limited period so fill in the coupon below or ring our credit hotline number on 0458 74011

Get this brilliant new New Computer Express magazine binder worth £5.95 absolutely FREE when you subscribe for 54 issues at only £34.95

For a six month subscription (26 issues) the cost is £17.95, but does not include the New Computer Express binder.

Yes, I would like to subscribe to *New Computer Express.* Please send my free magazine binder when I subscribe for 54 issues at £34.95.

Name_____

Address_____

_____

Postcode_____ **Tel**_____

I wish to pay by ☐ Access ☐ Visa ☐ Cheque ☐ P.O.

Card Number_____ **Expiry Date**_____

Please make cheques/p.o. payable to Future Publishing

Send to: NEW COMPUTER EXPRESS, FREEPOST, SOMERTON, TA11 7BR



SO YOU WANT TO WORK IN COMPUTING?

First there was the industrial age, then there was the electronic age and now it's the age of the computer. Keith Pomfret looks at some of the options available for those who want a career in computing, and he delves into the history of how the computing age has come upon us...

The statement: ' I'd like to work with computers' no longer means that you have to be a punch card operator or a programmer, it can mean many things.

The National Curriculum makes educational demands that include information technology. Consequently, the public education system offers several ways for a school leaver to get into computing. One of the most popular and most common routes is via an Information Technology College (ITeC).

The Government set up the ITeCs in order to provide full and comprehensive training in all aspects of computing, systems and information technology. On top of their educational brief, the ITeCs were to provide a valuable interface with industry and commerce as well as creating a greater awareness within current and future workforces. The ITeCs also planned to keep the trainees and the workforce up to date with the latest technological advancements.

WHO'S ELIGIBLE

The catchment area of an ITeC can come from three distinct sectors; teenagers can be offered a place as part of a Government youth training scheme. In a reversal of the work placement process, industry can train and retrain staff in the new technological ways via an ITeC. Unemployed adults can also be trained at an ITeC, getting an allowance of between £35 and £90 per week while attending.

Not all ITeCs can offer every computer related subject but they can train a person in areas such as the electronic office and other aspects of electronics and technology. There are various courses and qualifications offered. At the end of a two-year stint at an ITeC, a student could expect to come away with a BTEC (Business and Technician Education Council) or at least a City and Guilds qualification.

Depending on the area in which you live, finding a place at an ITeC can be anything from quite difficult to completely impossible. Some ITeC courses are oversubscribed by several times and one lecturer told *Express*: "If I had twenty times the places that I have now, there'd still be a queue of potential students waiting to get in." It isn't always that difficult but it may take a concerted effort to get the training that you want.

BEWARE TEAPOTS

In the main, the ITeCs are well thought of, but for the trainee it isn't always a bed of roses. Some ITeCs proudly provide a high standard of training and work placement while students at other ITeCs moan of placements where they do naught but make the tea. The ITeC ethos is fine, but if it isn't carefully policed it can prove counterproductive to the general morale.

The ITeC system offers many necessary training facilities and being Government sponsored, does so without a heavy financial drain on the person or organisation being serviced. It is a good, middle of the road introduction to technology without too much culture shock and may provide all the training that a student needs to go on into computing.

A word of warning though: the present government has reduced funding and, in the last couple of months, several ITeCs have been forced to close through financial hardship. However, the ones which remain open may give you the direction needed to channel interests and abilities to higher qualifications – just make sure you apply as soon as you can.

SHORT AND SWEET

Company or self-financed short courses are another option. We looked at five courses, costing between £150 and £220, which are offered by the City of London Polytechnic. These run during the summer vacation and are good indicators of the types and quality of the short courses that are available. All of the courses in this instance are graphics-based, but you could also find courses in everything from simple programming to systems management.

An introductory course in paint systems covers 8-bit broadcast-resolution paint systems and gives an essential background in the theory behind the technology. Image capturing is included, and the course is suitable for those with no computing experience at all.

If the appetite is whetted, the 'Advanced Paint Systems' course can build from the introductory sessions. As well as taking all of the basics into greater detail, it covers advanced topics such as output technologies and offers an introduction to the U-Matic video recording system.

Both courses seem to find a middle ground between art/graphics and the media technologies and would seem to be ideal toes in the water for someone wanting to follow either of these paths. The fact that you

WHERE TO GO

- Buckinghamshire College, High Wycombe. Tel: 0494 22141
- Computeach, Jews Lane, Gornal, Dudley, DY3 2AH. Tel: 0384 458515
- JHP (Pitman) Sunderland House, Matlock Road, Foleshill, Coventry CV1 4JQ. Tel: 0203 667891
- London College of Printing, Elephant and Castle, SE1 6SB. Tel: 081-735 8484
- London City Polytechnic, 84 Moorgate EC2M 6SQ. Tel: 071-283 1030
- Molesey Education, 10 Matham Rd, East Molesey, Surrey KT8 OSU. Tel: 081-941 1364
- National Association of ITeCs, Dr Matthew Dixon. Tel: 0298 814087
- Watford College, Hempstead Road, Watford, Hertfordshire WD1 3EZ. Tel: 0923-571617

can talk directly to lecturers, combined with the content of the courses could only help to guide a prospective student into appropriate full time study.

DESK TOP PUBLISHER

For someone interested in the production side of publishing, City Poly's 'Introduction to Desk Top Publishing' course offers four days in which the absolute beginner is guided through the basics of an Apple Macintosh computer. They are then shown how to combine word processing, art and graphics, and page setting using appropriate software. Other topics include digital typography, the PostScript page description language and its grids, digital printing with laser printers and finally, the commercial Linotron.

A course in 3D computer graphics promises a broad background in the subject. It aims to teach the basic principles of data structures, transformations, perspective, interactive modelling, rendering, hidden surface removal and animation.

As well as theory, presentation of slides, 3D, solid modelling and visualisation are also included.

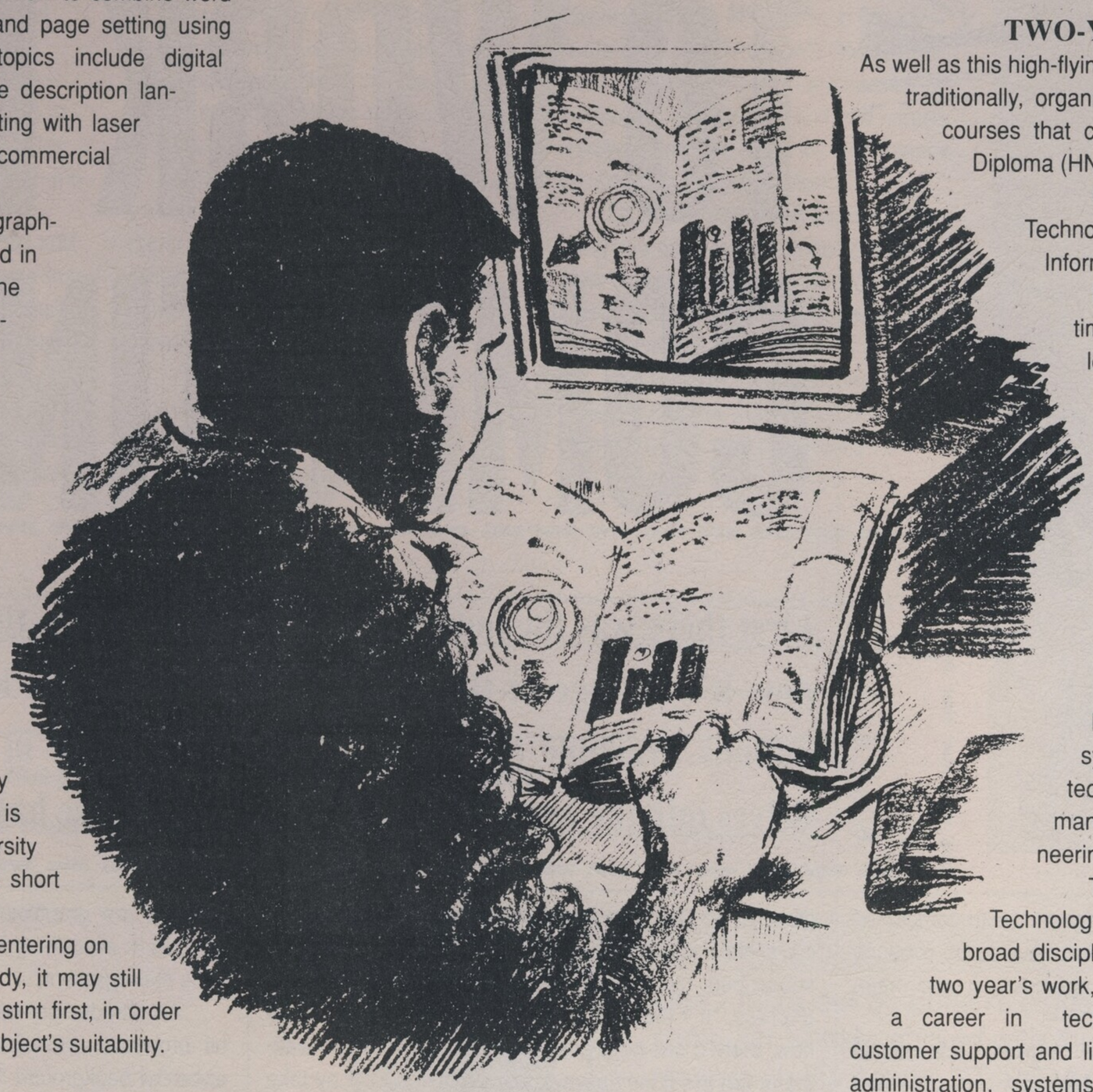
Remaining with graphics, but this time of a different kind, is the Business Graphics course. This is perhaps more suitable for a corporate student wishing to hone the company presentation. Nonetheless, it is included here to show the diversity of training available in just one short course subject area.

Even if you are thinking of entering on a more prolonged course of study, it may still be worth trying a short summer stint first, in order to check your aptitude and the subject's suitability.

GOING ALL THE WAY.

Full-time, full-length courses are a commitment that should not be taken lightly, but they can serve you well if you plan carefully. Three courses on offer at The Buckinghamshire College illustrate the traditional route although, with the single European market around the corner, one of them has a twist in its tail.

The Buckinghamshire College contacted *Express* to tell us that they were combining a foreign language course with one on information systems and that they intended to send students abroad for placements. Two faculties have combined their expertise to make sure that, when the free market arrives, at least there will be some UK graduates ready to take on the rest of Europe on their own terms. The combination of the academic, the practical and the applied, aims to produce graduates able to pursue a career in information systems and business, both in the UK and abroad.



FOUR-YEAR COURSE

The four years of the course start with a year studying software development, computer fundamentals, applications, business and either French or German.

A second year is started with six months industrial placement followed by a return to college for systems analysis, software development, computer systems and the chosen language.

The penultimate year will be spent in France or Germany. A semester in a French or German college will be followed by a six month industrial placement in the chosen country.

The final year, which ends with a project, intensifies to include European business strategy, European systems implementation and various advanced options. The prize at the end is an honours degree in Information Systems for Business in Europe.

TWO-YEAR HNDS

As well as this high-flying course, there are some, more traditionally, organised though intuitive two year-courses that culminate in a Higher National Diploma (HND).

One is simply, 'Information Technology' and the other is 'Business Information Technology'.

Information Technology is a full time course organised around lectures, seminars, group working and laboratory and workshop sessions. As well as the normal college based-work, projects for local companies and European exchange visits are included.

On attaining an HND, a student will be exempted from the first part of the British Computer Society Exams. Possible jobs include system design and analysis, technical marketing, database management and systems engineering.

The Business Information Technology course follows the same broad disciplines. However, at the end of two year's work, a student should be ready for a career in technical marketing and sales, customer support and liaison, office management and administration, systems management and business analysis.

The Buckinghamshire College is only one of many offering traditional Higher National Certificate (HNC), HND and degree courses and a phone call to your local polytechnic or university could pay dividends.

PRINT AND BE DAMNED

Colleges, such as the Buckinghamshire in the public education sector, don't necessarily have to stick to gen-

FIRST DEGREE LEARNS

Traditional paths

For the person who wishes to take a more traditional route through the academic world to a computer-based career, there are the polytechnics and universities. Twenty years ago, it was a simple matter of choosing computer studies and then specialising in a particular branch such as programming or systems analysis. Nowadays, with many more jobs being technology orientated, the decision isn't quite as simple.

A person wishing to go into commercial art, accounting, commerce, publishing, or any of the hi-tech businesses of the 1990s, would benefit from some sort of training in computing. The rule here is to be selective ; an arts course wouldn't be much use to an accountant and a spreadsheet wouldn't enthrall an artist.

List your needs

In order to pick the course that you need, it is necessary to draw up a list of your absolute requirements. Add to this a list of things that, while not essentially required, are certainly desirable. Then check the lists off against what's available. Many colleges offer introductory and pre-degree/qualification courses to allow potential students to try out a subject in order to learn a little about it and ascertain its suitability.

With the hundreds of higher education establishments in the UK, all geared up to teaching computing or computer related subjects, it would take a book of several hundred pages to cover them all in any detail. Instead, we've looked at a few possibilities to show just how diverse computer orientated training can be.

Make contact

To choose your polytechnic, university or other higher education course, it's worth contacting all the colleges that have suitable courses in their curriculum and discussing the application of a course to your needs.

The admissions tutor for a particular course can be a good starting point and, if you can afford it, it is worth a trip to any potential college to see the equipment available.

Local Careers Advice Offices and school careers teachers usually have lists of al university and polytechnic courses available for the coming year.

How many machines

Another important requirement is to know the ratio of computers to students. If you are to learn a computer-intensive subject, it won't be much use if there is only one machine to ten students.

One of the recent trends is toward short intensive courses designed to whet the appetite of the beginner, or top up the knowledge of the experienced.

Many polys and colleges do these and a few days for a few hundred pounds can be time and money well spent when choosing a career or planning a regime of further training.

THAT WAS THEN ... THIS IS NOW

During the industrial revolution, people flocked in their thousands to the newly expanding towns and cities to learn the skills which the clattering new machinery brought with it.

Status could be achieved by simple mechanical knowledge and the will to apply it. The dark satanic mills with their mechanisation and increased production, greedily gobbled the willing workers and taught the new way of life.

Electronic age

The latter half of the twentieth century has seen the dawn of the electronic age and the microchip revolution. The thermionic valve has become a transistor and that in turn has become part of an integrated circuit. The integrated circuit, or chip as it is commonly called, is hungry for disciples and is ready to mould our careers and change our lives.

A recent survey showed that there were over 53,000 unfilled vacancies in computing and the number is growing every day.

Vaulted halls

As recently as the 1970s, working with computers meant stealthily treading air conditioned vaults and feeding the massive machines their diet of punch cards. A job in computers meant endless typing of such cards or programming in some pedantic high level, number-crunching or business-oriented language.

The 'glamourous' career in computing bore no resemblance to the image held of it by the public but still the myth prevailed.

Desktop computing

At the end of the 1970s, computers were shrinking in size but growing more powerful in processing capacity.

By 1980 a computer which could just about sit on a desk could do the same sort of work as one that had filled an auditorium a couple of decades before.

The compact size and increased power of computers today has placed a powerful tool in most offices. It has also produced the need for skilled people to operate these tools. From the smallest one-man band to the largest international conglomerate, all commercial, industrial and educational establishments need a computer literate workforce.

Public Education

From the late seventies, schools and colleges began to include computing in their curriculums.

Universities, colleges and polytechnics had their mainframes and mini-computers while primary and secondary schools opted, in the main, for the much sponsored (and subsidised) BBC B micro-computer.

eral courses. The London College of Printing offers a wide range of print related courses on design, journalism, business studies, photography, pre-printing processes, machine printing, and various other technology-related prospectuses.

As well as the colleges run by the education authorities, there are many commercial organisations offering training in computer-related subjects at all levels. These can be residential, correspondence or attendance based courses and can cover everything from grass-roots programming in Fortran to 'How to use a Word Processor.'

LEARN THE BASICS

The general courses in application software can be a useful way to learn the basics of a package and there are even courses that travel to you. For the individual, these can work out to be quite expensive. However, for a company wishing to train or retrain its staff in word processing, databases, spreadsheets, or programming, on-site group tutition can be the simplest, most convenient and cheapest method.

An example of this mobile system is Molesey Education which offers training on PC, PCW, BBC and other systems. Its latest course, LocoScript on the PC, costs £30 per hour plus £10 per hour travelling time. It is suitable for classes of up to five people. In this way, a company can get five of its workers trained for a day for under £250 without them leaving the office.

Other companies offer similar training and some organise hotel seminars where individuals can join and be trained for a fraction of the cost.

HORSES FOR COURSES

Another company currently offering a broad range of services to the individual is JHP (Pitman) of Coventry. The Pitman system is more often associated with shorthand, but the range of courses run by JHP can offer a student an effective route into computing at any level. JHP provides courses for individuals, groups, companies and government agencies. One might find a JHP course through a government employment training scheme or a company seminar, among other sources. Whichever route you take to get there, the quality of the training is claimed to be high and the courses are designed with specific ends in mind.

A student wouldn't be thrown straight into an unsuitable course. On the systems analysis course for example, a battery of aptitude tests are fired at the student in order to make sure that they have the capability to perform in the chosen field. Bearing in mind the sort of stresses and strains that are involved in systems analysis, a further test of a student's abilities is a 'hostile' interview. JHP says it firmly believes in filtering out the wrong people for each job. Courses lead to various standard qualifications including City and Guilds. The company also has regional centres offering various other courses and qualifications.

COMPUTEACH

Well known among the commercial institutions offering training in computer languages is specialist Computeach. Formed over 25 years ago by its present chairman, it claims to be the oldest established computer training college in the country to specialise in open learning. In this system, the main programming skills are still taught but instead of getting the students to come in, the information and coursework is sent out.

The original Computeach package was a distance learning course similar to the Linguaphone language system. As computers and technology have evolved, so have the courses. A mixture of text books and audio tapes are tied into attendance at a licensed learning centre. This offers the student the flexibility of being able to study at a preferred pace, matching study with spare time, and yet still provides the direct contact so necessary to interactive learning.

Computeach claims over an 80 per cent exam pass rate and was honoured by the City and Guilds institute this year when a student won a top award, a Prince Philip Bronze Medal.

A COURSE UNDER THE MICROSCOPE

With many colleges offering a plethora of courses in the various aspects of computing, we decided to take a 'middle ground' course and have a closer look.

We chose Watford College for its existing expertise and looked at its new software engineering HND. While an HND is a sub-degree qualification, it is fast becoming the industry standard from which software developers and engineers develop.

In October 1989, Watford College launched its pilot scheme, an HND in software engineering. The two year course was a logical follow on to an HNC course which had been in existence for a number of years. The HNC was found to be a useful introduction and the HND pilot scheme was the logical progression.

The pilot was a success and a new version, starting later this year, will retain the overall structure of the pilot while incorporating the lessons which were learnt from its first full year.

Watford College got into software engineering at the beginning. Industry demanded a workforce trained in the production of correct, robust, high quality software. The quality wasn't the only option though, it had to arrive to a deadline and to a budget.

The college realised that by applying similar disciplines to those in other engineering areas, programs could be written that would run faultlessly first time.

The HND course covers the full range of software design principles and languages such as Pascal, C, and 68000 assembly language. Students will learn how to solve the same problem in several languages as well as how to handle interfacing. Documenting the programs, so that they can be modified at a later date by other people if necessary, will be taught and a student can expect to learn about the innermost secrets of a machine.

The course would be ideal for someone who wants a career in computing while not necessarily wanting to spend a full three or four years on a degree course. The HND is an advanced, nationally recognised qualification treated by many prospective employers the same way as a degree.

The course qualifies for student grants and course fees can be paid by local authorities. In addition, sponsorship is available from companies who recognise the value of the qualification.

To qualify for the course, applicants should have an 'A' level in any subject and perhaps a BTEC National certificate. Other qualifications may prove acceptable though, as the prospectus says: 'the most important criteria is the ability to succeed on the course.'

Students can expect to learn subjects such as:

Introductory and Advanced Software Design
Computer Aided Software Engineering (CASE) Tools
Pascal Programming
Ada Programming
System Design
Project Management
Graphics Software Real Time Programming
Compiler Design
Artificial Intelligence
Computer Architecture and Interfacing
Operating Systems
Oranganisation of Systems Development

A student enrolling at Watford college can expect to come into contact with a wide variety of machines as well as a wide and varied curriculum.

The hardware line up at Watford College includes the following:

BBCBs, 68000 microprocessor development systems, 68020 in circuit emulations, PC/AT workstations, and a VAX Cluster running VMS as well as Unix and solid 3D Modelling Graphics Software.

If Watford's the place for you to study, you can get more information from course tutor, Howard Mainwaring on 0923 57613.

TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Send your sorry stories to UncleTech Tip, Beauford Place, 30 Monmouth Street, Bath BA1 2AP. Sorry, but we cannot reply by post, even if you enclose an SAE.

Tip! And tat

My son has a Commodore Plus 4 and he has asked me to fit a disk-drive for him. I have some spare drives for my Amstrad PC1512, and I would like to know if it is possible to fit one of these?

I also have a tip for you and your readers. On a two-drive PC XT insert this line in the `CONFIG.SYS` to configure drive B: as 720Kb.

```
drivparm=/d:1
```

My most heartfelt thanks for all you have done in your column to help in the past, and I will be sure to pass on any more tips I come across in my nightmares on my Amstrad .

T A O'Conner, Devol, Port Glasgow

The bare drive from a 1512 will not simply interface to a Commodore Plus Four. As well as being physically different from the Commodore beastie, the matter of controlling the drives could prove more than a little difficult for the Plus Four's operating system.

Help! Correct currency?

If I buy a modem from the states, will I be able to convert it to work here?

Nick Taylor, Sunderland, Tyne & Wear

A modem purchased in the US will be designed to work from 110/120 volts at 60 cycles. If the modem plugs directly into the mains, you will need a transformer to step down the UK 240 volts to the US 110 volts.

If the modem works from an external transformer, replacing it with a suitable UK mains transformer should be OK. If the modem is on a card for a PC or similar, it should slot straight in and work. We tried three US modems (one of each kind) and had no problem persuading them to work despite the frequency difference (60 cycles US/50 cycles UK).

Something to bear in mind is that the modem that you purchase must support the on-line protocols that you need to access: V23 (1200 recieve/75 send) is not generally supported in the US.

Some UK BBSs and UK Viewdata systems still operate exclusively at V23. To be sure that the system that you buy is compatible, check with your supplier in the US (by letter or phone) that the modem you intend to purchase is fit for the use that you intend it for. If it isn't, it's a long walk back to change it.

Help! To be in business

I am 20 years old and I desperately want to become a business programmer

I have no qualifications yet, although I am currently studying GCSE Maths and English, and I have worked as a freelance programmer, programming in Z80 assembly.

I have always wanted to become a games programmer which is why I have no qualifications – I spent most of my time learning machine code on my Amstrad CPC 464.

Now that the 464 popularity is declining and, the 68000 chip seems to be the one to learn, however, I am wondering if it is really worth my while learning a new chip as business programmers earn a hell of a lot more money than games programmers do, unless you are outstanding and work 12 hours a day. What do you think?

What course(s) do you think I should take to become a business programmer? I was thinking of taking a BA Degree with the OU in programming (which covers PASCAL) or I could go to college and take a BTEC certificate?

I would also like to learn and be qualified in MS DOS, UNIX Framework III, DBase, COBOL and C: what courses would you recommend to learn these?

I am also soon to start my own mail order business selling computer software, and I want to keep all my accounts and all of my stock on the PC (so if a customer phones me I can see on the computer if I have what they want in stock and if not, I can order it), and also I would like to keep all my orders on the computer and word process and spell-check letters.

What PC machines would you recommend so that I can learn business programming, play games and run my business? I was thinking of buying and Amstrad PC 1640 with a hard drive.

Dave, Ushaw Moor, Co Durham

You picked the right week to write to us on this subject. Elsewhere in this issue is a full blown educational feature in which we look at the prospects for a person wanting a career in computing.

That will no doubt answer your questions more fully than any letter reply could. If you had already considered the 1640 and hard drive and considered that it would do the job that you require, go ahead and get it. Thousands of 1640s are out there doing sterling service and while they aren't exactly state of the art, they are certainly a well specified, functional machines.

Help! Wanted: more joy

We own an Atari STFM used by myself mostly for word processing and by the kids for games. Can you recommend a good, *robust* joystick for the shoot-'em-up fiends in my family? They've got through 2 since Christmas.

Mrs Jacqui Espin, Chadwell St Mary, Essex

I looked round my Macintosh for a whole five minutes but couldn't find anywhere to insert a joystick. Our colleagues at *Amstrad Action* and *ST Format* were able to help, though, and after frantic mumblings about random autofire and microswitches, declared the Power Play Cruiser to be a robust beastie.

It also has an adjustable collar that means you can re-jig the firmness of the stick movement.

Help! Add-on concerns

I was wondering if you can get any cards for the PC which contain the Intel 80486, or Intel 80886 – to fit an expansion slot or wherever it's supposed to go?

So let's say we have a relatively slow and weak PC, and plug in any board which contains these chips to transform it into a powerful computer. How much do you think they will cost?

Also, can you tell me if I add a PC emulator and a 5.25-inch disk drive, can I then run most popular PC software, including popular games and flight simulators, eg *F19 Stealth Fighter* and *F16 Combat Pilot*?

Finally, if I add a 5.25-inch disk drive to the archimedes with BBC emulator, does this mean I can run lots of educational software?

Mike Bekket, Dagnem, Essex

No you can't. No there isn't. What? And yes you can.

Help! Bard times

I have an Olivetti PCS 286 with a 20Mb hard disk and a Star LC-10 printer which I write plays on. I use *Topycopy Plus*, and it all works brilliantly – until I start to print. Then it works slowly.

A sign comes up on the screen that says 'Printing' (as if I didn't know) – presumanbly while the computer is loading the data of the file into the printer's buffer. Until it's finished that, and the sign goes away, I can't work on anything else. On a long document (and I create plenty of them) this can take up to 10 minutes.

Given that this machine can do just about everything else far faster than I can even begin to think, this print routine seems to me like an unneccessary waste of time.

My dealer says the answer is for me to spend more money (well, he would, wouldn't he) on a "Parallel In-Line Buffer" which will solve my problem in a trice.

But there must be acres of unused space inside my computer somewhere, if I knew how to get at it. Can you help?

John Clifford, Roslin, Midlothian

Set up a RAM disk (refer to your manual for instructions) and install a print spooler program.on your system. Set the print spooler to spool to the RAM disk. A suitable print spooler can be obtained from Shareware Marketing on 0297 24088.

Help! The upgrade story

Back in March, *Express* 70, Jonathan Guyver wrote a letter asking details of how to upgrade his PCW 8256. Mr Guyver indicated he had instructions on the method, and you advised him on a source to obtain the bits.

What I would like to know is how he got on, and did he complete the project?

I would appreciate Mr Guyver's full address so that I may contact him directly

address so that I may contact him directly to ask – or maybe you would print my request with my address, and he may contact me if he reads the request.

One more thing, is it possible to couple a PCW to a Spectrum Plus 3 via the non-standard RS232 ports? A wiring diagram would be appreciated if this is possible.

Keith Taylor, 341 St Nicholas Driv, Wybers Wood, Grimsby, South Humberside, DN37 9RD

We've left your address in to allow Mr Guyvers to contact you.

The Spectrum and PCW can indeed be connected down the non-standard connectors, but to do this would be a simple way to court disaster unless you truly understand both machines.

Assuming that you can get software for the Spectrum end, you can connect a null modem cable from the Spectrum to... errr, a serial port. As there isn't one on a PCW, you'll have to go out and buy one.from Amstrad or SCA.

Help! Coupé questions

We were concerned to see that MGT had been placed in the reciever's hands only weeks after we took 'good' advice and bought a SAM Coupé. I gather that several thousand have been sold, and I wonder what we will be able to use them for.

After investing £160 in the Coupé we are worried that we may have bought a slanting breeze block. As it has a Spectrum emulator does this mean that with the right software it could be made to emulate a PC?

Could suggest alternative uses for our premature white elephant?

Anon

The Coupé cannot be converted to use MS/DOS as it has the wrong architecture. It only emulates the Spectrum because it uses the same central processor (Z80) and was designed with Spectrum emulation in mind.

As for a list of uses for a Coupé, we contacted MGT MIDI programmer, Joseph Karthauser, and he gathered this list from his programming team.

1 Bootscraper

2 Spoiler for an XR3i

3 Lunchbox with slots for sweet and savoury snacks

4 CD store box.

5 The power supplies make good giant lego bricks

6 Put wheels on and use as a skateboard

7 Wheel wedges for parking on hills

8 Main T-shaped circuit board as a boomerang

9 Use the keys for a good game of *Scrabble*

10 Paperweight.

Help! How fast?

Just a short enquiry about your favourite pastime (computers).

At present I'm thinking, (not too strongly, since I'm a bit short of the old green stuff, or is that blue stuff, these days), of purchasing a computer. So far I've decided on an IBM Compatible, possibly 286 type, with the usual colour CGA monitor, etc.

However, I was wondering whether the Archie is capable of 286 emulation. I understand it can emulate the 'normal' IBM 8086's type, but what about the new generation (286, 386, 486)?

If the Archie can do as requested, is it any faster, slower, smarter, bigger, brighter, sexier or is it a no goer in these arenas?

Tim Taylor, Birkenhead, Wirral

While the latest version of the Archie PC emulator does a pretty whizzy job of pretending to be the lesser 8086-based PC, it doesn't quite have the steam to emulate the 286-based PCs and other such devices.

As a straight PC emulator the Archie is fine, but even its 32-bit RISC architecture isn't up to pretending to be an AT.

Tip! Flying on an LC-10

Although I did not read Paul Gardener's original letter, I gather that he has been having problems with control codes for the LC-10. The advice offered so far in these pages is, I'm afraid, incorrect.

Instead of using `OPEN "PRT:" FOR OUTPUT AS No1`, he should `OPEN "PAR:" FOR OUTPUT AS No1` which bypasses the printer driver and is automatically sent to the parallel port. An example program:

```
OPEN "PAR:" FOR OUTPUT AS No1
PRINT No1, CHR$ (27)+"-
1"="Underlined Text"
CLOSE No1
```

Even though this does not use the printer driver, the `EPSONX[CBM_MPS-1250]` driver should be selected in Preferences.

Hugo Crossley, Oakham, Leics

Thanks very much for your hints. We get more letters about the LC-10 than any other printer, which means that it's very popular if a little quirky at times.

Hints and tips always come in useful – so if anyone has any ideas, LC-10 or otherwise, send them in.

Tips! For Mr Brown

Regarding Mr John Brown, (*Express* 83), I used to use a WS2000 on my old BBC, but now that I have a PC it's just not fast enough – though it did me well.

Now to the point, please find enclosed two manuals for the WS2000 – the early and the late version – as I no longer have any need for them.

If Mr Brown would like, I may still have the autodial board somewhere. It just needs a good home.

Thanks for a great magazine. And keep up the good work!

Steve Mendrys, Waltham Cross, Herts

I've put the manuals in a safe place and if Mr Brown writes back, I'll pass the manuals on to him. I'm sure that the autodial board will be gratefully recieved too, so send that in and I'll make sure it gets passed on as well.

In *Express* 83 in the 'Techtips' section, a Mr John Bown wrote requesting information on how to set up his Miracle Technology modem on his Amiga. I have the same modem and am using it quite happily at 1200/75 baud.

What he needs to do is get hold of a copy of a PD comms software package called *COMM134*, which will enable him to run his modem and Amiga at 1200/75 baud with no problems. To set his Amiga to run with *COMM134*, all he needs to do is open up his workbench, click on the 'Prefs' icon and then select 'Serial'. A screen will appear and the baud rate will be displayed at the top in a box somewhere.

If he then moves his pointer to the down arrow and clicks on it until 1200 is displayed and then clicks on either the 'Use' or 'Save' box, he will be ready to go. The PD software *COMM134* will take care of the buffering for him without problem.

If you pass on my work phone number (because my home phone has been dropped and doesn't work), I will be glad to tell him how to set up his modem for 300/300 baud rate and I will arrange to call him when I get home from work and upload to him the *COMM134* software that he needs to run at 1200/75 baud.

Stuart Walsh, Chadwell Heath, Romford, Work tel: 071-512 1000 ext 3221

Now there's an offer that he won't be able to refuse. What more can I say? Nothing.... OK, I'll shut up then.■

Help! Me and my Olivetti

First a note to Neil Barret of Leeds (*Express* 82) who had problems with his printer. Indeed, the little love is an Olivetti JP101 Printer. It only does NLQ (nearly laughable quality), indeed, this letter was printed on the very same, and I'm sure the editorial will vouch for just how bad it is.

Complaints aside, you can get hold of a copy of the printer manual from a very, very nice man at British Olivetti called Mr Les Bond, 15th Floor, CI Tower, St Georges Square, High Street, New Malden, Surrey KT3 4HH: phone him on 0812 336 1520.

Alternatively, you could upgrade to a John Bull printing outfit or, failing that, get yourself a sharp knife and a bag of potatoes to improve on your basic print capability.

I have a JP101 because it was only £5 as a shop soiled item. That's my excuse and I'm sticking to it.

My other item of well-dodgey hardware is a commodore Amiga Sidecar. It works well enough as a PC, but I can't get the Amiga to send files (eg ASCII & IFF) over to the PC side, nor will the transfer work in the other direction.

This should be simple according to the manual (ha!). It seems not to be set up properly. When the Amiga runs 'DJmount', things lock up a while till the PC replies something like 'Divide overflow' followed by some unfathomable numbers.

Is there anyone out there able to solve this one? I'm offering a personal letter of thanks printed on my JP101. This should be a hoot for the lucky recipient!

Frank Rickett, Sydenham, London

By the stroke of fate, find below a kind soul's fulfillment of your request. Our aim is to please...

I was reading your magazine, *Express* 82, and I refer to the letter of Neil Barret.

I own a JP101 printer made by Olivetti. I enclose a list of some codes. I hope they may help you. I use normal printer paper and find it works OK. I have a local Olivetti agent near me in Clydeforth: 041-248 7523. The nice man can supply you with inkjets for the printer and may be able to get you an instruction book as well. I hope this will help Mr Barrett.

Raymond Maitland, Netherlee, Glasgow

Codes	Effects	Olivetti Inkjet JP101
27, 34, 1	Underline mode	27, 42
27, 45, 0	Cancel underline	27, 4
27, 48	Spacing 1/8"	27, 69
27, 49	Spacing 7/72"	27, 70
27, 64	Initialise printer (reset)	27, 48
27, 82, x	Int. character set English x=	27, 9
27, 87, 1	Double width	27, 51
27, 87, 0	Cancel double width	27, 52
27, 104	Set double height	27, 39
27, 117	Cancel double height	27, 37

Graphics Commands:

27, 75	Normal density bit image mode	27, 71squared



EXPRESS MAiL

Britain's liveliest computing forum – packed with comment, controversy and conflict. Write and tell us what you think! Reach us at: *Express Mail, 30 Monmouth St., Bath BA1 2AP*
Sorry, no personal replies, even with an sae.
This week's replies written by Keith Pomfret.

Get my name right!

Whoever changes his name to Fungus the Bogeyman – I have heard stories in the past on TV about this – must need a straight jacket. Why he can't keep his own name I don't know!

It is true that letters are cut down. I don't mind you cutting this one down because I'm writing for a laugh. But when I wrote for the first time to your Uncle Tech Tip, he cut it down considerably – by two thirds nearly. Please, in the future, cut down the silly letters but not the serious ones.

I must agree with Stuart Smith of Manchester (*Express* 83). The C64 is neglected a lot in your section and your columnist keeps rambling on about *@?!! adventure games. Can't he say something about us serious/arcade users – and I don't want it to be rude.

And finally, for those who wish to contact most probably the best serious C64/128 dealers ever, FSSL's address is Masons Ryde, Defford Road, Pershore, Worcs WR10 1AZ.

Thanks for a great weekly, and spell my name right this time!!

Bryn Stevensoslegogxplltt, Chesterfield, Derbys.

I've only hacked away at the silly bit at the beginning so you've had your say this time. If anything else is missing from your witty and rambling tome, blame our hard-worked production staff (Brother Feinbaum in this instance) It's his job to squeeze our weekly quart into *Express*'s pint pot.

Console cashflow?

Can you tell me why console manufacturers and software suppliers are asking people to pay from £20 to £60 for console software? If there isn't any piracy how can they justify charging these kind of prices?

I also think the leading software houses have decided to jump onto the console bandwagon so that they can produce even more rubbish and charge even higher prices for it.

Furthermore, I would like to say what an excellent mag *New Computer Express* is. Keep up the good work.

Sean Smith, Hemel Hempstead, Herts.

It's not piracy, it's just plain expensive. The reason that it's expensive is that the media that cartridges use (ROMs and EPROMs) are more expensive, and the production, manufacture and copying of cartridges takes more time and cash. Watch out for the Neo Geo with its £200 cartridges due soon.

Paradise

After reading the letter from Jeff in *Express* 84, I felt I had to jump to the defence of PD libraries. If he thinks most people working for a library make a "nice living thank you very much" he is quite welcome to join Paradise Computers and find out that, more often than not, we use our own money to clear bills until enough income has been generated to pay us back.

He says that PD is supposed to be free. True enough, but we do have to charge for a disk, a disk label, the free catalogue that we and most other PDL's give away. This does not include phone bills or paper and other expenses that most people do not take into account.

Another point that Jeff makes, that shows his complete lack of understanding of the subject, is that he mentions it costs more for Mac owners to buy PD. Ever heard of supply and demand, Jeff? It means people who have less popular computers have to pay more because there are fewer of them to cover the overheads.

Membership: if you don't like the idea, don't join!

If Jeff thinks that a PDL could be run by charging only 70p a disk, he's more stupid than his letter makes him out to be. With the exception of a few clubs, all of us work together and thus dispel the idea of PD being a business. Do competitors usually help each other? Most PD clubs are quite willing to let anyone know the secrets of running a PDL and thus have to be above board or else they would be found out.

Finally, people like Jeff should research points before accusing people of something that is just a figment of their over-active imagination. Leave the PDLs to give the service most people enjoy rather than trying to run us into the ground.

Ian Slater, Paradise Computers PDL, Brighton, Sussex

What more can I say? (*nothing – Ed*)

Neighbours

Thank you for inserting the free advert in *Express* 82, which drew an immediate response. However, for the benefit of my helpful next-door neighbour, I wish to point out that my number is 16 (not 15) and I would appreciate it if you would point out to those subscribers who have requested enhanced hardware or are considering doing so, that the group is really aimed at those who wish to make full use of the machine while keeping within the manufacturer's specifications.

We believe the use of compatible software makes it unnecessary to fit expensive unauthorised modifications.

My computer friends and I enjoy your magazine. Keep up the good work.

Joe Donnelly, Standard Sanyo MBC 55X User Group 16 Ulsterville Park, Portadown Co. Armagh, N Ireland

Thanks for the letter, We hope that relations with the neighbour haven't become too strained due to the numerical error. Still, if the chap at number 15 buys a Sanyo, we might all live happily ever after!

Punch and Duty

We read with interest the article in Express 83 regarding the Cajun Punch marketed by Ctrl Alt Deli. Having wrongly ordered a box of 720K 3.5-inch disks instead of 1.44Mb disks, we decided to try a little experiment.

Using the department A4 hole-punch we succeeded in creating the sensing hole as suggested in the article. All the disks we tried were then successfully formatted as 1.44Mb disks. The results were very gratifying to us, but bad news for CTRL ALT DELI, since it appears that any office hole punch will do the job equally well as their Cajun Punch. Our advice is: save yourself £39.95 and DIY!

Thanks for an entertaining read, and how about some more stuff on fractals? We find them fascinating but we're mystified as to what it all means. Perhaps you at *Express* could explain it to us non-mathematical types in your usual clear, concise and witty manner.

S.J. Thornton, London

The Cajun Punch is the right size, and correct fit to punch the hole in a 3.5-inch disk. Using a blunt nail and hammer, hot soldering iron, hole punch, vertical reamer, hammer drill, industrial laser, and various other blunt instruments in the *Express* office, we too managed to perforate the disk in the prescribed manner. In all instances, it would have been easier using the Cajun Punch.

The point is, most jobs can be 'bodged' in one way or another, but a sensible chap always uses the right tool for the job.

Turbo Coupé

Hello. You may have heard of *Turbo*, a magazine which caters for Sam Coupé owners. Well, it also has its own PD Library which is open to all people who subscribe. At the moment we only have two disks, which cost £2.50 each.

Disk 1 contains: *Snake* – eat mushrooms, avoid spikes and your growing body; *Strafer* – blitz a city before you hit a building; *Super Rally* – drive clockwise round a maze avoiding the other car; *Super Rally* – drive round 20 mazes collecting fuel and flags; two fonts – for the art package *Flash!*

Disk 2 contains: *3D Roomz*, *Banner Maker*, *Mandlebrots*, *City* and *Hi-Lo*.

We would be very grateful if you could give us a plug in your column. Are there any other people doing Sam PD stuff, I wonder? Thanks for reading this letter.

Adrian Betts, Editor, Turbo, *8, Healey, Lakeside, Tamworth, Staffs*

Yet another group of people set to support the ailing Coupé. Since MGT called in the reciever, we have heard nothing but promises of support and help for the beleaguered machine.

Now if all of these people could see their way to dipping in their pockets, there's a little firm in Swansea chasing some potential cashflow.... Send all offers to Touche Ross – the reciever.➤

THE GREAT ESCAPE

So you're fenced in and can't get out. You're not experienced enough to apply for that highly paid job. The promised promotion is just as far away as ever and those Monday morning blues are extending to Tuesday and Wednesday.

We know the feeling and have organised an escape route for you into the exciting world of computers.

We normally keep it quiet the fact that the interesting, highly paid jobs we find for escapees every day of the week are not even advertised.

Computeach have been assisting people like you, with few or no qualifications to break the mould and exploit their potential, for 26 years and we have files chock full of personal recommendations to prove it.

It's all a matter of know-how and the right sort of support. We don't have a magic wand. It takes time and effort on your part and a cash investment besides.

But if you are prepared to abandon the telly, place yourself in our hands and devote some of your spare time to study using our award-winning Open Learning System, then, in about 12 months time, you could be adding letters to your name and be in line for a secure job with one of Britain's blue-chip companies.

If you are over 19 years of age, already holding down a job and want a chat about working in Information Technology, as a Programmer or Systems Analyst, then fill in the coupon below and we'll assist you to join The Great Escape.

cut your way out

Computeach International Limited, FREEPOST, Jews Lane, DUDLEY, West Midlands DY3 2BR. (no stamp required). Or ring 0384 459521.
Please send me free details of your Computer Career Development Programme.
(I am over 19)

Name (Mr/Mrs/Miss)_____ Age _____

Address _____

_____ Postcode _____

Tel. No._____ Present Occupation _____

Government Training Loan may be Available NCE28/6/b/B

SAM COUPE

DEFENDERS OF THE EARTH

This is the game that all SAM owners have been waiting for! The first arcade game that makes full use of the SAM's special features including 16 colour, high resolution graphics and quality sound. It is NOT a Spectrum game!!

You play the part of Flash Gordon as he enters the Fortress of the evil Ming the Merciless. With the help of the other Defenders you must find and rescue the children who are trapped somewhere deep in the Dungeons.

Available NOW on both cassette and disk directly from Enigma for £11.99 tape or £14.99 disk (inc p&p). Send cheque or postal order to:

ENIGMA VARIATIONS

13 North Park Rd, Harrogate HG1 5PD
Tel: (0423) 501595

Disks Disks Disks Disks

LOCKABLE STORAGE BOXES

3 1/2"	40 Capacity	£4.50
3 1/2"	80 Capacity	£5.50
3 1/2"	100 Capacity	£6.25
5 1/4"	70 Capacity	£5.50
5 1/4"	100 Capacity	£5.75

LIBRARY CASES

3 1/2"	10 Capacity	£1.05
5 1/4"	10 Capacity	£1.05

MOUSE MATS £2.00	**MOUSE POCKET £2.40**
UNIVERSAL PRINTER STAND £8.50	**CLEANING KITS DISK PLUS FLUID 5 1/4" £2.00 3 1/2" £2.50**

ALL OUR DISKS ARE 100% CERTIFIED AND ERROR FREE

3 1/2" DS/DD 40p each

PLEASE NOTE OFFER ONLY VALID WITH THE COUPON BELOW. ORDER NOW WHILE STOCKS LAST

3 1/2"

Quantity	10	25	100
DS/HD 2mb	£1.18	£1.15	£1.12
DS/HD Preformatted	£1.28	£1.25	£1.22

5 1/4"

Quantity	10	25	100
DS/HD 1.6Mb	£0.45	£0.44	£0.42
DS/DD	£0.22	£0.21	£0.19

ALL PRICES INCLUDE VAT.
3.5 disks come complete with labels
5.25 disks come complete with labels,
write protect tabs and envelopes.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE
NO QUIBBLE REPLACEMENT
OR MONEY BACK GUARANTEE

MV

To:
Media VALUE
Northumberland House,
Dept NCE, Drake Ave,
Staines,
MIDDLESEX TW18 2AP

☎ (0784) 466744
Fax (0784) 450845

CREDIT CARD HOTLINE (24 hours) (0784) 451011

I enclose a cheque/PO for .....

Please charge my Credit Card No. .....

Expiry Date ..... Signature .....

Quantity	Description	Price	Total
		Postage	
		TOTAL	

POSTAGE & PACKING £2.50.
NEXT DAY DELIVERY £10.00

Name .....

Address .....

Postcode ..... Tel .....

SO3

E & O.E

Heat of the moment

First of all, can I point out that my ZX-80 is much better than all those junky 16-bit machines. It's the only home computer with a cheap add-on seismometer – no matter how hard I shake my Amiga, the extra memory refuses to fall off.

When are you going to attract civilised readers by starting a Psion section? How many other machines enable you to retire to the local hostelry to program over a pint? No buying a magazine only to wait for BR to get its act together before you can try any ideas out.

Roger Musson made a mistake in his letter about composing music. He used the word 'good' where he should have said 'tired and cliched'. Or is he seriously rejecting as a waste of space 90 years of classical music and eras of wonderful non-European music? Does he believe music should be like heroin – agonisingly addictive? Pah!

Dylan Harris, Bedford

You forgot to mention that the power supply for the ZX80 would keep an igloo full of eskimos warm through the winter, or that its keyboard had a co-efficient of friction so low that London Transport now uses 4,000 of them as a skid pan to test the reactions of potential bus drivers.

We planned a Psion section, but our resident Psiontist got a job with an Italian washing machine firm and was last heard muttering about applying Psions. Psionara as the Japanese say (*no more puns or you'll be pun-ished – Ed*).

We aren't going to join the great music debate,as music is clearly in the ear of the beholder.

Little Deuce Coupé

In reply to Adrian Betts' letter in a recent issue that complained about MGT's service in regards the Sam Coupé.

Firstly, as an editor of a Spectrum fanzine and now a Coupé samzine, I'd like to say that if you're going to run a samzine around the Coupé, you're going to achieve nothing by whining about the hitches and mistakes Miles Gordon has made. Scrap your samzine, because you're not doing anyone any good, particularly yourself!

Secondly, OK, so the launch of the Coupé hasn't run exactly according to plan (we all know that the computer was late, the DOS was later and the emulator isn't so special), but you have to remember MGT is a relatively small company. Their most successful piece of hardware before the Coupé was a disk drive!

MGT is doing everything it possibly can to rectify the mistakes – at its own expense. You don't think the Coupé has increased in price to £179 for nothing?

Through all of this mess MGT has remained helpful, positive and loyal to customers. How many computer manufacturers do you know that have a recorded message full of general info and a customer care line?

So support MGT. It has taken a risk by launching the Coupé, and now it's time to pay the company the credit it deserves!

Edward Walker, RGB Coupé, Leicester

I'm sure that Alan Miles and Bruce Gordon will feel heartened by yet another supporting letter regarding the ailing company. The Coupé is developed and hopefully some long-sighted businessperson with an eye to the future will step in to ensure its continuity.■

Mr Grumpy writes, and writes, and writes, and writes

It is with a heavy heart and empty wallet that I read of the imminent demise of Miles Gordon Technology as reported in this week's issue of *Express*.

I am surprised, however, that no-one saw it coming. There are remarkable similarities between the company and Sinclair Research – both had brilliant computers which deserved to do well, both had wonderfully clever boffins working away 13 to the dozen, and both had (unfortunately) a remainder of staff that appeared to know as much about the computer as a toy rabbit.

An example: I wrote to MGT about sundry things, and in passing mentioned that in the Coupé manual under the heading of Disk Drives was the statement that each Coupé drive has slots for 256K of extra DRAM (sic). I asked if this was correct, and if so, how come no-one had brought it up before.

The answer I received stated that 'Coupé drives hold 720K'. Not only does this answer not answer my question, it is also incorrect! As any fool can tell you (at least after reading the manual) Coupé Drives hold 780K.

The people at MGT expect us to have no technical knowledge! In the second issue of the Disk manual (the one brought out at the same time as the DOS), they assured us that the reason for typing in `'CALL 491529'` after pressing F9 was to 'tell the computer what size memory you are using'. This, to anyone with a modicum of computer literacy, is a joke.

The major difference, of course, between Sinclair and MGT is that the Spectrum had time to sell a few million before Sir Clive could sabotage it with his C5, whereas the Coupé appears very likely to have sold even less than the MSX (in Britain) when MGT went down the proverbial drainpipe.

This is a shame. Most of us who use the computer are entirely satisfied with it (well, we will be when we get our ROM, and yes, I have sent my guarantee card back) and we have no wish for Amstrad to buy out the company and turn the Coupé into another QL.

I would like to wish the Swansea Enterprise scheme all the best luck in the world, therefore, in its attempts to prevent the demise of MGT. But to be honest, if the only reason for trying to do so is to preserve the 30 odd jobs in the company, then I say now – don't bother.

The staff appears to be the main reason MGT went up the spout in the first place. If our dear Alan decides he does want MGT, perhaps we can offer him a little advice. Why not use it as a direct upgrade from the old Spectrum, scrap the 128, Plus 2a and Plus 3 altogether and include the Spec's ROM on disk (along with changes to make the loading sequence work at the right speed), thus curing compatability problems once and for all?

The Plus 2a and Plus 3 could be sold off at magnificently low prices to the Middle East, there would be a true computer at the head of the Spectrum range, and everyone would be happy.

This would be affordable because you would probably pay a stupidly low price for MGT and would get all the stocks of Coupés that are left over.

I would like to move on to other matters. Can you tell me if Empire/Entertainments International/ Lucasfilm is going to be producing a Coupé version of *Pipe-Mania*? If not, can you print the collective address of this mega-company, because I am in the process of writing such a program,.

Somebody pat Enigma Variations on the back for having the guts to release a game for the Coupé. Admittedly, *Defenders of the Earth* may not have the gameplay of something like *Pipe-Mania*, but I hope it sells well.



• *Are these men really related?*

What happens to all the old arcade machines when no-one uses them any more? There must be thousands of old arcade machines that no-one wants sitting in a warehouse somewhere (probably in Ealing). Why didn't the programmers at Gremlin put a 'Save Game' feature into *Super-Cars*? The game takes so long to complete I would say such a feature was a necessity.

On piracy, FAST has got it all wrong. The organization should have spent money trying to put the Medway boys (among others) behind bars. People are obviously not going to take any notice of adverts like those we've been plagued with for the last year or so when they see these idiots continually releasing disks containing five or six games at a time.

A friend of mine even stated that he thought FAST was wasting money that the software publishers should have spent bringing down prices. What surprised me was that he actually believed what he was saying. He doesn't own a single legitimate game.

I hope to read better Coupé news next week!

Geoff Winkless, Leicester

I'm surprised that someone so adept at kicking people while they're down and telling people how to do their job should be so good at writing long, but otherwise intelligent letters.

Perhaps if you'd seen it coming you wouldn't have bought a Coupé, but, then again, it's easy to be wise after the event. We, like you, hope for better news on the Coupé front, and we have passed on your invaluable advice to FAST.

★ 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 £249 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 NCE-0690-29, 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.

COMPUTER CHAOS

A selection of tales from around the world that have computers as the progenitor of disaster: by Mel Croucher

LONDON, UK

A building society issues summons against mortgage repayment defaulters. The defaulters appeal to the Ombudsman, who finds the High Street money lenders grossly incompetent and throws out the cases. Chief witness is the automatic billing computer, which cannot cope with today's interest rates.

Pre-programmed to handle mortgage repayments up to £1,000.00, when any mortgage breaks the thousand-quid-a-month barrier, the machine simply knocks off the first digit from the bill, much to the delight of hard-pressed householders such as the couple whose repayments have fallen from £935.45 to just under £10.

(*Radio 4 'Money Box'*)

MASSACHUSETTS, USA

Lightning strikes the drawbridge between Vineyard Haven and Oak Bluffs, frying the 3-phase controller and knocking out the computer transformers.

The bridge is fully automatic, and in its 'down' position. Forty sailing boats and tall powerboats are imprisoned inside the lagoon for three days.

This debacle occurs just three weeks after a previous lightning strike had closed the bridge for 24 hours, forcing engineers to install what was called a "foolproof isolation system".

(*Martha's Vineyard Times*)

LONDON, UK

During question time in the House of Commons, it is revealed that the police based the decision to open an emergency gate at the Hillsborough Football Stadium on a computerised turnstile tally.

This record indicated that the ground had ample space to accommodate the crush of supporters trying to get in. Tragically, it was wrong.

(*Hansard*)

MOSCOW, USSR

With the spirit of *glasnost* in thick in the air, the Kremlin is shedding more and more light on past computer cock-ups, such as the famous Soviet Cruise Missile tracked over Norway and downed somewhere in the forests of Finland.

It seems that during New Year celebrations, the missile's guidance system took it into its head to alter its programmed flight-path and drop in on Hamburg.

(*Daily Express*)

NC STATE, USA

Local radio stations report that students in the Research Triangle Park complex have been receiving suspect bills.

The accounts are all in order, but the State computer has been addressing bills to the wrong students. What makes this newsworthy is the fact that the system error is only discovered after somewhere around 6,000 bills have been sent out.

(*Software Engineering Notes*)

PRAGUE, CZECHOSLAVAKIA

At a meeting of the Forum on Risks to the Public in Computer Databases, three delegates require first aid and one is hospitalized after a disagreement over the origin of the word 'bug'.

(*Elsa Szczolpianskya*)

SYDNEY, AUSTRALIA

Hungry visitors can now benefit from the computerised ordering and cash register system at the Sydney Opera House.

Due to technical problems, whatever is keyed in by the waiters is relayed to the kitchen as 'octopus'. A harassed waiter is quoted as saying "the diners settled for octopus anyway".

(*Sydney Morning Herald*)

MAKE SURE OF YOUR COPY OF NEXT WEEK'S EXPRESS

Hand this form to your newsagent to get your copy of *Express* next Thursday

TO THE NEWSAGENT: Please deliver to me / reserve for me (delete as applicable)

_____ copies of ***New Computer Express***

NAME .....

ADDRESS .....

.....

.....

NEXT WEEK

STARTLING SAVINGS
How to make a killing at the computer auctions

HEY, HEY LISA
Does the machine upgraded to a 'Mac XL' live up to its new name?

HANDSOME PRINTS
Affordable laser and crystal shutter printers head-to-head

PLUS

- The Shopping Express guide to the best in Music
- Tech Tips: technical advice with the human touch
- Letters: The best debate outside of Parliament

WITH

A column for your machine. Expert correspondents on ST, PC, Amiga, C64, Spectrum, Archimedes, BBC, MSX, QL, PCW, SAM Coupé and CPC

AND

Six pages of up-to-the-minute news

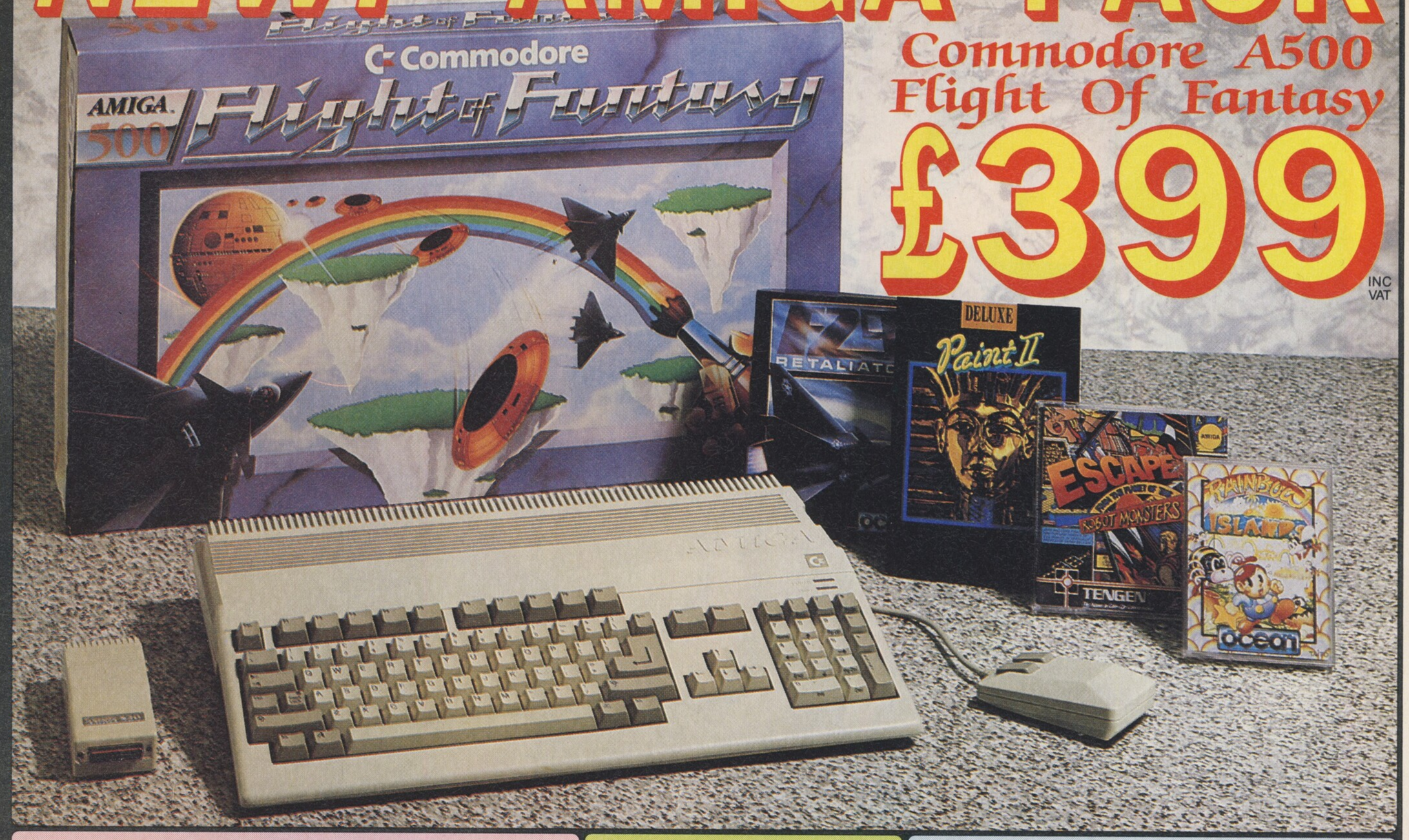
STAY AHEAD WITH EXPRESS EVERY THURSDAY

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 NCE-0690-32, 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.

KICK OFF 2



BLISTERING PACE – PIXEL PERFECT PASSING – SUPERB TACTICAL GAME PLAY

KICK OFF 2 greatly enhances the game play of KICK OFF, winner of THE GAME OF THE YEAR award in U.K. and similar awards right across Europe. A host of new features have been added to the ones that enthralled the players the world over.

Full size multi directional scrolling pitch with the players, markings etc. in correct proportion.

1 to 4 players (Amiga & ST only) option.

2 players TEAM option against the computer or 2 other players.

Hundreds of players, each with a unique combination of attributes (Stamina-Pace etc.) and skills (Passing, Shooting and Tackling etc.)

Instinctive Kick Off joystick controls to dribble, pass, shoot, head or chip a ball and do sliding tackles or scissor kicks.

After Touch controls to bend or dip the ball.

Set Piece Free kicks including dummies to chip the ball or bend the ball round a defensive wall.

9 types of corner kicks with full control of shot power. Long and short Throw In.

Team selection from a squad of 16 with substitution and choice of tactics.

League and Cup competitions with extra time, injury time and sudden death penalty shoot out.

Facility to view, edit and save the action replays and create Golden Shots disc.

Kit design – 6 styles and 32 colours. (Amiga & ST only)

Facility to load Player Manager teams for a single game or league game.

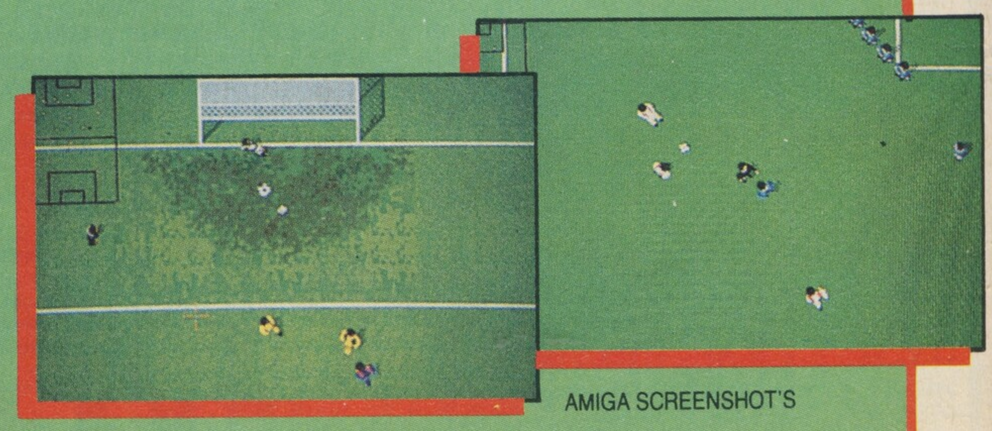
Load your own designed Tactics from Player Manager.

Red & Yellow cards, 16 different referees, Injury time and host of features to create the atmosphere for a game which is a real fun to play.

Special Events provision to load Data Discs or Cassettes for events like World Cup, European Cup etc...

Restricted features on IBM and 8 bit machines.

AMIGA & ST £19.95
IBM (AT & XT Turbo – CGA, EGA & VGA) £24.95
CBM 64 – SPECTRUM – AMSTRAD £9.95/£14.95
SAM COUPE – £10.99/£14.99



AMIGA SCREENSHOT'S

ANCO

ANCO SOFTWARE, UNIT 10, BURNHAM TRADING ESTATE, LAWSON ROAD, DARTFORD, KENT.
TELEPHONE No: 0322 92513/92518 FAX No: 0322 93422